Lenovo (Singapore) Pte. Ltd
151 Lorong Chuan,
#02-01, New Tech Park,
Singapore, 556741
(Tel - 65-6827-1000 & Fax- 65-6827-1100)

EU Declaration of Conformity

For the << TIO24Gen5, A23TIO24 >>
Machine Types: <<12NA .****-**>>
(the * in the model name can be 0 to 9, A to Z, a to z or blank for marketing use only)

We, Lenovo (Singapore) Pte Ltd., declare under sole responsibility that the above products, manufactured for:

Lenovo PC HK Limited.
23/F, Lincoln House, Taikoo Place 979 King's Road,
Quarry Bay, Hong Kong, China

- **Council Directive 2014/35/EU-relating to the making available on the market of electronic equipment designed for use within certain voltage limits.**
- **Council Directive 2014/30/EU relating to electromagnetic compatibility.**
  Council Directive 2009/125/EC ,EU 2019/2021, (EU) 2021/341 , EU 2019/2013 & (EU) 2021/340 establishing a framework for the setting of Ecodesign requirements for Energy-related products.
- **Council Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment as amended by Directive 2015/863/EU.**

Conformity with these Directives has been assessed for this product by demonstrating compliance to the following harmonized standards and/or regulations:

EN55032:2015+A11:2020; EN55035:2017+A11:2020
EN IEC 61000-3-2:2019+A1:2021
EN 61000-3-3:2013+A2:2021

EN IEC 62368-1:2020 – A11:2020, EN 62368-1:2014+A11:2017
EN IEC 63000: 2018,
EN 62087-1.2016
EN 62087-2:2016
EN IEC 62087-7:2019
EN 50564:2011
EU 2019/2021
IEC 60950-1:2005+AMD1:2009+AMD2:2013
EU 2019/1782

Signed: _____ Date: 2023/3/20

Joseph Chua (Executive Director)

European Contact for regulatory topics only:
Lenovo (Slovakia), Landererova 12, 811 09 Bratislava, Slovakia
Tel: +421 2 6868 3018

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 746

Ref. Certif. No

NO125689

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	LCD Monitor
Name and address of the applicant	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Name and address of the manufacturer	Lenovo (Beijing) Limited 201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing 100085 China
Name and address of the factory	See next page(s)
Note: *When more than one factory,please report on page 2*	☑ Additional Information on Page 2
Ratings and Principal characteristics	20Vdc 4.5A Cl. III.
Trademark /Brand (If any)	Lenovo
Customer's Testing Facility (CTF) Stage used	
Model/Type Ref	A23TIO22**, TIO22Gen5, TIO22Gen5Touch
Additional information(If necessary may also be reported on Page 2)	The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '-', '\', '/' or blank, for marketing use only. ☐ Additional Information on Page 2
A sample of the product was tested and found to be in conformity with	IEC 60950-1:2005, IEC 60950-1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013
As shown in the Test Report Ref. No. which forms part of this Certificate	REP005122

This CB Test Certificate is issued by the National Certification Body

Nemko

Philip Pedersen vei 11,
NO-1366 Lysaker, Norway
Date: 10-02-2023

Signature: Okhyun Jeon
Certification department

Disclaimer: This document is controlled and has been released electronically.
Only the version on the IECEE Website is the current document version

	Ref. Certif. No
	NO125689

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.
China

TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.
China

TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

TPV Display Technology (China) Co., Ltd.
No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R.
China

TPV Display Technology (Wuhan) Co. Ltd.
Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.
China

TPV Display Technology (Beihai) Co., Ltd.
China Electronic Beihai Industry Park, Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R.
China

TREND SMART CE MEXICO S. DE R.L. DE C.V.
Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana, Baja California, C.P. 22435
Mexico

Envision Indústria de Produtos Eletrônicos Ltda.
Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM
Brazil

TPV TECHNOLOGY (THAILAND) COMPANY LIMITED
No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District, Prachin Buri Province,
Thailand

GeneTouch Corporation
No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012
Taiwan

Fábrica Austral de Productos Eléctricos S.A.
Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur
Argentina

Dixon Technologies (India) Ltd.
EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526,
India

Additional Information (if necessary)

Nemko

Philip Pedersen vei 11,
NO-1366 Lysaker, Norway
Date: 10-02-2023

Signature: Okhyun Jeon
Certification department

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CB TEST CERTIFICATE

Product	LCD Monitor
Name and address of the applicant	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Name and address of the manufacturer	Lenovo (Beijing) Limited 201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing 100085 China
Name and address of the factory	See next page(s)
Note: *When more than one factory,please report on page 2*	☑ Additional Information on Page 2
Ratings and Principal characteristics	20Vdc 4.5A Cl. III.
Trademark /Brand (If any)	Lenovo
Customer's Testing Facility (CTF) Stage used	
Model/Type Ref	A23TIO24**, TIO24Gen5, TIO24Gen5Touch
Additional information(If necessary may also be reported on Page 2)	The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '-', '\', '/' or blank, for marketing use only. ☐ Additional Information on Page 2
A sample of the product was tested and found to be in conformity with	IEC 60950-1:2005, IEC 60950-1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013
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TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.
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TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.
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Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

TPV Display Technology (China) Co., Ltd.
No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R.
China

TPV Display Technology (Wuhan) Co. Ltd.
Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.
China

TPV Display Technology (Beihai) Co., Ltd.
China Electronic Beihai Industry Park, Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R.
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TREND SMART CE MEXICO S. DE R.L. DE C.V.
Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana, Baja California, C.P. 22435
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Envision Indústria de Produtos Eletrônicos Ltda.
Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM
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No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012
Taiwan

Fábrica Austral de Productos Eléctricos S.A.
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Argentina

Dixon Technologies (India) Ltd.
EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526,
India

Additional Information (if necessary)

Nemko

Philip Pedersen vei 11,
NO-1366 Lysaker, Norway
Date: 10-02-2023

Signature: Okhyun Jeon
Certification department

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TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number. .....:	REP005122
Date of issue.....:	2023-02-09
Total number of pages	71 pages and refer to page 4 for attachment
Name of Testing Laboratory preparing the Report.....:	Nemko Shanghai Ltd. Shenzhen Branch
Applicant's name .....:	TPV Electronics (Fujian) Co., Ltd.
Address.....:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
Test specification:	
Standard.....:	IEC 60950-1:2005, AMD1:2009, AMD2:2013
Test procedure .....:	CB Scheme
Non-standard test method……..:	N/A
Test Report Form No. .....:	IEC60950_1G
Test Report Form(s) Originator ....:	SGS Fimko Ltd
Master TRF.....:	Dated 2019-07-02

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If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

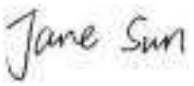
General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

This Test Report, when bearing the Nemko name and logo is only valid when issued by a Nemko laboratory, or by a laboratory having special agreement with Nemko.

Test item description ..... :	LCD Monitor
Trade Mark ..... :	Lenovo
Manufacturer ..... :	Lenovo (Beijing) Limited 201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing, 100085 China
Model/Type reference ..... :	1) A23TIO22**, TIO22Gen5, TIO22Gen5Touch 2) A23TIO24**, TIO24Gen5, TIO24Gen5Touch (The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '–', '\', '/' or blank, for marketing use only.)
Ratings ..... :	Input: 20 V ⎓ 4.5A

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 752

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☐ **CB Testing Laboratory:**	Nemko Shanghai Ltd. Shenzhen Branch	
Testing location/ address .....:	Unit CD, Floor 2 & Floor 10, Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen, Guangdong, China	
Tested by (name, function, signature).....:	Eason Yang (Project handler)	
Approved by (name, function, signature) ..:	Jane Sun (Verificator)	
☐ **Testing procedure: CTF Stage 1:**		
Testing location/ address .....:		
Tested by (name, function, signature).....:		
Approved by (name, function, signature) ..:		
☐ **Testing procedure: CTF Stage 2:**		
Testing location/ address .....:		
Tested by (name + signature).....:		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature) ..:		
☐ **Testing procedure: CTF Stage 3:**		
☐ **Testing procedure: CTF Stage 4:**		
Testing location/ address .....:		
Tested by (name, function, signature).....:		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature) ..:		
Supervised by (name, function, signature) :		

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 753

List of Attachments (including a total number of pages in each attachment):

1. Main Test report (71 pages)

2. Photos (19 pages)

3. Chinese differences (8 pages)

4. Singapore differences (3 pages)

5. Korean differences (1 page)

6. Israeli differences (7 pages)

7. Power adapter CB test report with IEC 62368-1:2014 (2nd Edition); and/or EN62368-1:2014; A11:2017, refer to table 1.5.1 for detail.

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 754

Summary of testing:

Tests performed (name of test and test clause):

Clause	Test(s)
1.6	Input Current Test
1.7	Marking and instructions
2.2	SELV circuits
2.5	Limited power sources
4.1	Stability
4.2	Mechanical strength
4.5	Thermal requirements
4.6	Openings in enclosure
5.3	Abnormal operating and fault conditions

Load condition: Refer to general product information.

Testing location:

See page 3

1.7.2.1 Language of safety markings/instructions.	Instructions and equipment marking related to safety is applied and checked in English and German, the instruction and marking should be checked again when marketed in the countries using other language.
2.5 Limited Power Source.	The main board of monitor has complied with LPS (after F101). The output of main board complying with subclause 2.5 LPS requirement and the components mounted on V-1 or better PCB according to sub-clause 4.7.2.2. Refer to sub-clause 2.5 for detail.
4.2 wall or ceiling mounted equipment	VESA compatible wall mounting kit 100mm x 100mm, 4 piece screw M4 x 10mm used.

Wall Mounting (Optional)

Refer to the instructions that come with the base mounting kit. To convert your LCD display from a desk-mounted to a wall-mounted display, do the following:

Step 1: Verify that the Power button is turned Off, then disconnect the power cord.

Step 2: Lay the LCD display face down on a towel or blanket.

Step 3: Remove the base and stand from the monitor.

Step 4: Attach the mounting bracket from the VESA compatible wall mounting kit (100mm x100mm distance), the type of VESA mounting screw is M4 x 10 mm.

Step 5: Attach the LCD display to the wall, and follow the instructions in the wall-mounting kit.

For use only with UL Listed Wall Mount Bracket with minimum weight/load: 8kg

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 755

Summary of compliance with National Differences

The sample(s) tested compliance with the requirements of IEC 60950-1: 2005 (2nd Edition); Am1: 2009; Am2: 2013.
At the time of issuing this test report, not all countries are listed for IEC 60950-1:2005 (2nd Edition); Am1:2009; Am2:2013. Therefore this test report includes national differences for IEC 60950-1:2005(2nd Edition) Am1:2009 and IEC 60950-1: 2005 (2nd Edition).
All national differences listed in the IECEE Online CB Bulletin are covered by the Common Modifications, Special National Conditions, National Deviations, and the National Requirements noted above except for the countries which are documented in Attachment.
National Differences attached to this test report:
list from IEC 60950-1, 2nd edition: China and Singapore.
list from IEC 60950-1: 2005 (2nd Edition); Am1: 2009: Korea.
list from IEC 60950-1: 2005 (2nd Edition); Am2: 2013: Israeli.

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Copy of marking plates:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.















Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 757

Calibration	All instruments used in the tests given in this test report are calibrated and traceable to national or international standards. Further information about traceability will be given on request.
Measurement uncertainty	Measurement uncertainties are calculated for all instruments and instrument set-ups given in this report. Calculations are based on the principles given in the standard EA-4/02 (Dec. 1999), IEC Guide 115:2007 and other relevant internal Nemko-procedures. Further information about measurement uncertainties will be given on request.
Evaluation of results	If not explicitly stated otherwise in the standard, the test is passed if the measured value is equal to or below (above) the limit line, regardless of the measurement uncertainty. If the measured value is above (below) the limit line, the test is not passed - ref IEC Guide 115:2007. The instrumentation accuracy is within limits agreed by IECEE-CTL.

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Test item particulars..... :	
Equipment mobility.....:	[X] movable [] hand-held [] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains.....:	[] pluggable equipment [] type A [] type B [] permanent connection [] detachable power supply cord [] non-detachable power supply cord [X] not directly connected to the mains
Operating condition.....:	[X] continuous [] rated operating / resting time:
Access location .....:	[X] operator accessible [] restricted access location
Over voltage category (OVC) .....:	[] OVC I [] OVC II [] OVC III [] OVC IV [X] other: Supplied by AC/DC adapter
Mains supply tolerance (%) or absolute mains supply values .....:	N/A
Tested for IT power systems .....:	[] Yes [X] No
IT testing, phase-phase voltage (V) .....:	N/A
Class of equipment .....:	[] Class I [] Class II [X] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	N/A
Pollution degree (PD) .....:	[] PD 1 [X] PD 2 [] PD 3
IP protection class .....:	IPX0
Altitude during operation (m) .....:	≤5000m
Altitude of test laboratory (m) .....:	< 2000m
Mass of equipment (kg) ..... :	For model: A23TIO22**, TIO22Gen5, TIO22Gen5Touch 5.7 kg with base only not include PC, base 2.3kg Dimensions: Horizontal position of the unit: Approx.490mm x 195mm x max.510mm(min.418mm) with Base Vertical position of the unit: Approx.335mm x 195mm x max.610mm(min.505mm) with Base The base: Approx.265mm x 195mm x 415mm For model: A23TIO24**, TIO24Gen5, TIO24Gen5Touch 6.28 kg with base only not include PC, base 2.3g Dimensions: Horizontal position of the unit: Approx.540mm x 195mm x max.545mm(min.418mm) with Base Vertical position of the unit: Approx.350mm x 195mm x max.635mm(min.553mm) with Base The base: Approx.265mm x 195mm x 415mm
Possible test case verdicts:	

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 759

- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2022-12-12
Date(s) of performance of tests .....:	2022-12-12 to 2023-01-06

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 760

General remarks: "(see attachment #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	
1. TPV Electronics (Fujian) Co., Ltd.	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
2. TPV Electronics (Fujian) Co., Ltd.	Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.China
3. TPV Electronics (Fujian) Co., Ltd.	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.China
4. L&T Display Technology (Fujian) Ltd	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.China
5. TPV Display Technology (China) Co., Ltd	No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R. China
6. TPV Display Technology (Wuhan) Co., Ltd	Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.China
7. TPV Display Technology (Beihai) Co.,Ltd.	China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi,P.R.China
8. TREND SMART CE MEXICO S. DE R.L. DE C.V.	Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana, Baja California, C.P. 22435 Mexico
9. Envision Indústria de Produtos Eletrônicos Ltda.	Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM, Brasil
10. TPV TECHNOLOGY (THAILAND) COMPANY LIMITED	No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand
11. GeneTouch Corporation	No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan
12. Fábrica Austral de Productos Eléctricos S.A.	Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina
13. Dixon Technologies (India) Ltd.	EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, DistrictChittoor, Andhra Pradesh, 517526 India

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 761

General product information:

The models are an LCD monitor intended for general office use with following features:

1. The unit is configured with LCD panel (with LED backlight)
2. External approved adapter used, which was evaluated 5000m and maximum ambient temperature 40°C. The output of external approved adapter complied with SELV circuit, but not evaluated according to LPS, therefore LPS test was evaluated for input of main board and LCD panel in this report.
3. Main boards 715GD726 and 715GD745 with HDMI, DisplayPort and USB 3.0 upstream ports, which is embedded with DC/DC converter circuit.
4. Extend board for connecting to tiny PC with DC outlet, DisplayPort and USB 3.0 ports. The tiny PC is supplied by approved adapter too, and the unit under test was tested with tiny PC to simulate normal working condition of LCD monitor. But requirements of tiny PC related to this standard were not evaluated in this report by the request of client.
5. The internal metal chassis is considered as fire enclosure and internal plastic enclosure for extend board connecting to Tiny PC is considered as fire enclosure.
6. The external plastic enclosure is regarded as decorative part.
7. Digital camera on top of LCD monitor (optional).
8. Touch screen (optional).
9. Stand base (optional)

Model difference:

Model name	Mainboard	Panel
A23TIO22**, TIO22Gen5, TIO22Gen5Touch	715GD726	21.5”
A23TIO24**, TIO24Gen5, TIO24Gen5Touch	715GD745	23.8”

Load condition: maximum brightness, maximum contrast, full white screen; speakers were loaded with 1KHz sinusoidal signal and turned to maximum volume; each USB 3.0 port was loaded 5V/0.9A; tiny PC (which is mounted in rear storage of LCD monitor) turned to maximum loading condition by client’s specified software.

Under DP mode represent the worst condition for all tests, if not specified.

Additional information (requested by manufacturer):
The manufacturer declared that the product also fulfilled of the requirements of SANS 60950-1:2014 (Edition 2.2)/IEC 60950-1:2013 (Edition 2.2)

Maximum recommended ambient (Tmra): 40°C

Circuit characteristics: The equipment contains Secondary circuits (SELV).

1.1.2 – Additional requirements:

Exposure to extreme temperatures, excessive dust, moisture or vibration; to flammable gases; to corrosive or explosive atmospheres:

This equipment is intended to operate in a ”normal” environment (Offices and homes).

Electromedical equipment connected to the patient:

This equipment is not an electromedical equipment intended to be physically connected to a patient.

Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:
This equipment is intended to operate in a "normal" environment (Offices and homes) and is intended to

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 762

be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor (1.48 linear interpolation used), specified in table A.2 of IEC 60664-1.

Abbreviations used in the report:

- normal conditions	**N.C.**	- single fault conditions	**S.F.C**
- functional insulation	**OP**	- basic insulation	**BI**
- double insulation	**DI**	- supplementary insulation	**SI**
- between parts of opposite polarity	**BOP**	- reinforced insulation	**RI**

Indicate used abbreviations (if any)

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		—
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	No isolating transformer used.	N/A
1.5.5	Interconnecting cables	Class III equipment.	N/A
1.5.6	Capacitors bridging insulation	No such parts	N/A
1.5.7	Resistors bridging insulation	No such parts	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems	Class III equipment.	N/A
1.5.9	Surge suppressors	No such parts	N/A
1.5.9.1	General	See below.	—
1.5.9.2	Protection of VDRs	See below	—
1.5.9.3	Bridging of functional insulation by a VDR	No such parts	N/A
1.5.9.4	Bridging of basic insulation by a VDR	No such parts	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No such parts.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6	**Power interface**		P
1.6.1	AC power distribution systems	DC supplied	N/A
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	The equipment is not hand-held.	N/A
1.6.4	Neutral conductor	Class III equipment	N/A

1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	The required marking is located on the outside surface of the equipment.	P
1.7.1.1	Power rating marking	See below	P
	Multiple mains supply connections.....:	Only one mains supply connections.	N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	20 V ⎓	P
	Symbol for nature of supply, for d.c. only ..... :	IEC 60417, symbol No. 5031, is used.	P
	Rated frequency or rated frequency range (Hz) ... :	DC supplied	N/A
	Rated current (mA or A) ..... :	4.5A	—
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark ..... :	Lenovo	P
	Model identification or type reference ..... :	See page 2	—
	Symbol for Class II equipment only ..... :	Class III equipment	N/A
	Other markings and symbols ..... :	The additional marking does not give rise to misunderstandings.	P
1.7.2	Safety instructions and marking	Refer below	—
1.7.2.1	General	Refer below	—
1.7.2.2	Disconnect devices	No such parts	N/A
1.7.2.3	Overcurrent protective device	No such parts	N/A
1.7.2.4	IT power distribution systems	Class III equipment	N/A
1.7.2.5	Operator access with a tool	Class III equipment	N/A
1.7.2.6	Ozone	The equipment does not produce Ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment ..... :	No voltage selector.	N/A
	Methods and means of adjustment; reference to installation instructions ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.5	Power outlets on the equipment ..... :	No standard power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	Fuse located in mainboard, marked: F101:T4AL 250V	P
1.7.7	Wiring terminals	Refer below.	—
1.7.7.1	Protective earthing and bonding terminals ..... :	Class III equipment	N/A
1.7.7.2	Terminals for a.c. mains supply conductors	Class III equipment	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	Class III equipment	N/A
1.7.8	Controls and indicators	Refer below.	—
1.7.8.1	Identification, location and marking ..... :	There is no safety control.	N/A
1.7.8.2	Colours ..... :	For functional indication a LED lights when the equipment is operating.	P
1.7.8.3	Symbols according to IEC 60417 ..... :	The standby switch is marked with the symbol " ⏻ " (IEC 60417-1 No. 5009).	P
1.7.8.4	Markings using figures ..... :	No figures used	N/A
1.7.9	Isolation of multiple power sources ..... :	Class III equipment	N/A
1.7.10	Thermostats and other regulating devices ..... :	Class III equipment	N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	No marking is placed on removable parts.	N/A
1.7.13	Replaceable batteries ..... :	No replaceable batteries in the equipment.	N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations ..... :	Equipment not intended for installation in RAL.	N/A

2	**PROTECTION FROM HAZARDS**		N/A
2.1	Protection from electric shock and energy hazards		—
2.1.1	Protection in operator access areas	Supplied by certified AC/DC adapter with SELV	—
2.1.1.1	Access to energized parts	Refer below:	N/A
	Test by inspection ..... :		N/A
	Test with test finger (Figure 2A) ..... :	Complied.	—
	Test with test pin (Figure 2B) ..... :	Complied.	—
	Test with test probe (Figure 2C) ..... :	Complied.	—
2.1.1.2	Battery compartments	No TNV circuits in the equipment.	N/A
2.1.1.3	Access to ELV wiring	Class III equipment	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		N/A
2.1.1.4	Access to hazardous voltage circuit wiring	Class III equipment	N/A
2.1.1.5	Energy hazards .....:	Supplied by certified AC/DC adapter with SELV. No energy hazard in operator access area.	N/A
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage or TNV.	N/A
2.1.1.7	Discharge of capacitors in equipment	Class III equipment, SELV circuit only.	N/A
	Measured voltage (V); time-constant (s).....:		—
2.1.1.8	Energy hazards – d.c. mains supply	Not connected to DC mains supply.	N/A
	a) Capacitor connected to the d.c. mains supply .. :		N/A
	b) Internal battery connected to the d.c. mains supply .....:		N/A
2.1.1.9	Audio amplifiers .....:		N/A
2.1.2	Protection in service access areas	Class III equipment, no hazardous bare parts inside.	N/A
2.1.3	Protection in restricted access locations	Equipment not intended for installation in RAL.	N/A

2.2	**SELV circuits**		P
2.2.1	General requirements	See below	P
2.2.2	Voltages under normal conditions (V) ..... :	(See appended table 2.2)	P
2.2.3	Voltages under fault conditions (V) ..... :		N/A
2.2.4	Connection of SELV circuits to other circuits .....:	SELV circuits are only connected to other SELV circuits	P

2.3	**TNV circuits**		N/A
2.3.1	Limits	No TNV circuits.	N/A
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :		N/A
2.3.3	Separation from hazardous voltages		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Insulation employed ..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed ..... :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	**Limited current circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		—
	Frequency (Hz) ..... :		—
	Measured current (mA) ..... :		—
	Measured voltage (V) ..... :		—
	Measured circuit capacitance (nF or µF) ..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		P
	a) Inherently limited output	(see appended table 2.5)	P
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output	(see appended table 2.5)	P
	Max. output voltage (V), max. output current (A), max. apparent power (VA) ..... :		—
	Current rating of overcurrent protective device (A) .:	(see appended table 1.5.1)	—
2.6	**Provisions for earthing and bonding**		N/A
2.6.1	Protective earthing	Class III equipment, SELV circuit only.	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		—
2.6.3.1	General		—
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.3	Size of protective bonding conductors		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Protective current rating (A), cross-sectional area (mm^2), AWG..... :		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :		N/A
2.6.3.5	Colour of insulation ..... :		N/A
2.6.4	Terminals		—
2.6.4.1	General		—
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment	No interconnection of equipment.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance	No risk of corrosion.	N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	**Overcurrent and earth fault protection in primary circuits**		N/A
2.7.1	Basic requirements	Class III equipment, SELV circuit only.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		—
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices ..... :		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A

2.8	**Safety interlocks**		N/A
2.8.1	General principles	No safety interlocks.	N/A
2.8.2	Protection requirements		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..... :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		N/A
2.9.1	Properties of insulating materials	The equipment is regarded as Class III. No electrical insulation is required for safety purpose.	N/A
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C) ..... :		—
2.9.3	Grade of insulation		N/A
2.9.4	Separation from hazardous voltages		N/A
	Method(s) used ..... :		—
2.10	**Clearances, creepage distances and distances through insulation**		N/A
2.10.1	General	Class III equipment, SELV circuit only.	N/A
2.10.1.1	Frequency .....:		N/A
2.10.1.2	Pollution degrees .....:		N/A
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts		—
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3	Clearances		N/A
2.10.3.1	General		—
2.10.3.2	Mains transient voltages		—
	a) AC mains supply .....:		N/A
	b) Earthed d.c. mains supplies .....:		N/A
	c) Unearthed d.c. mains supplies .....:		N/A
	d) Battery operation .....:		N/A
2.10.3.3	Clearances in primary circuits		N/A
2.10.3.4	Clearances in secondary circuits		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply .....:		N/A
2.10.3.7	Transients from d.c. mains supply .....:		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....:		N/A
2.10.3.9	Measurement of transient voltage levels		—
	a) Transients from a mains supply		N/A
	For an a.c. mains supply .....:		N/A
	For a d.c. mains supply .....:		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances		—
2.10.4.1	General		—
2.10.4.2	Material group and comparative tracking index		—
	CTI tests .....:		—
2.10.4.3	Minimum creepage distances		N/A
2.10.5	Solid insulation		—
2.10.5.1	General		—
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		—
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs) .....:		—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test		—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage .....:		N/A
	a) Basic insulation not under stress .....:		N/A
	b) Basic, supplementary, reinforced insulation .....:		N/A
	c) Compliance with Annex U .....:		N/A
	Two wires in contact inside wound component; angle between 45° and 90° .....:		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		N/A
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage .....:		N/A
	- Basic insulation not under stress .....:		N/A
	- Supplementary, reinforced insulation .....:		N/A
2.10.6	Construction of printed boards		—
2.10.6.1	Uncoated printed boards		N/A
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs).....:		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.12	Enclosed and sealed parts		N/A
3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	Wireways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	P
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltage involved.	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure	No screw for electrical contact	N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	P
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	N/A
3.1.9	Termination of conductors	Class III equipment	N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring	Class III equipment. No sleeving is used as supplementary insulation.	N/A
3.2	**Connection to a mains supply**		N/A
3.2.1	Means of connection	Refer below:	—
3.2.1.1	Connection to an a.c. mains supply	Class III equipment.	N/A
3.2.1.2	Connection to a d.c. mains supply	.	N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		—
3.2.5.1	AC power supply cords		N/A
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG .....:		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm) .....:		—
3.2.9	Supply wiring space		N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals	Not applicable, class III equipment which is provided with DC input Jack (Only SELV)	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) .....:		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) .....:		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		N/A
3.4.1	General requirement	Class III equipment.	N/A
3.4.2	Disconnect devices		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	**Interconnection of equipment**		P
3.5.1	General requirements	Considered.	—
3.5.2	Types of interconnection circuits ..... :	SELV circuit.	P
3.5.3	ELV circuits as interconnection circuits	No ELV.	N/A
3.5.4	Data ports for additional equipment	Class III equipment, SELV circuit of data ports on main board protected by fuse F101 which complied LPS and mounted on PCB of flammability class V-1 or higher.	P
4	**PHYSICAL REQUIREMENTS**		P
4.1	Stability		P
	Angle of 10°	Unit does not overbalance at 10°.	P
	Test force (N) ..... :	The unit is not floor-standing.	N/A
4.2	**Mechanical strength**		P
4.2.1	General	Complies with the requirement also after tests described below are applied.	P
	Rack-mounted equipment.	No rack-mounted equipment.	N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		—
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm) ..... :		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes	CRT(s) not used in the equipment.	N/A
	Picture tube separately certified .....:		N/A
4.2.9	High pressure lamps	No high pressure lamps in the equipment.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) .....:	For model: A20TIO22**, TIO22Gen4, TIO22Gen4Touch Mass of equipment=4.88kg (include PC and without base), tested=144N for 1min. For model: A20TIO24**, TIO24Gen4, TIO24Gen4Touch Mass of equipment=5.46kg (include PC and without base), tested=161N for 1min. 4 piece screws M4 x 10mm used, see summary of tesing for details. The equipment and its associated mounting means still remain secure during the test.	P
4.3	**Design and construction**		P
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N) .....:	No knobs, grips, handles, lever etc.	N/A
4.3.3	Adjustable controls	No hazardous adjustable controls.	N/A
4.3.4	Securing of parts	Class III equipment. Not applicable.	N/A
4.3.5	Connection by plugs and sockets	SELV connectors do not comply with IEC 60320 or IEC 60083.	N/A
4.3.6	Direct plug-in equipment	Not intended to plug directly into a wall socket-outlet.	N/A
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		—
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries	No batteries in the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not generate ionizing radiation or use a laser, and does not contain flammable liquids or gases.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids ..... :	The equipment does not contain flammable liquid.	N/A
	Quantity of liquid (l) ..... :		N/A
	Flash point (°C) ..... :		N/A
4.3.13	Radiation	Refer below:	—
4.3.13.1	General	Refer below:	—
4.3.13.2	Ionizing radiation	The equipment does not generate ionizing radiation.	N/A
	Measured radiation (pA/kg) ..... :		—
	Measured high-voltage (kV) ..... :		—
	Measured focus voltage (kV) ..... :		—
	CRT markings ..... :		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	The equipment does not produce significant UV radiation.	N/A
	Part, property, retention after test, flammability classification ..... :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :	The equipment does not produce significant UV radiation.	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	LEDs provided are exempt type.	P
4.3.13.5.1	Lasers (including laser diodes)	No laser.	N/A
	Laser class ..... :		—
4.3.13.5.2	Light emitting diodes (LEDs)	The following parts are exempt type: Indicating lights are low power. LED backlight is exempt type	—

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.6	Other types ..... :	The equipment does not generate other types of radiation.	N/A
4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General	See below	N/A
4.4.2	Protection in operator access areas ..... :	No moving part	N/A
	Household and home/office document/media shredders	Not intended for installation in RAL.	N/A
4.4.3	Protection in restricted access locations ..... :		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)……:		N/A
	Is considered to cause pain, not injury. b) ……...:		N/A
	Considered to cause injury. c) ……...:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……...:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ……...:		N/A
4.5	**Thermal requirements**		P
4.5.1	General	See below.	P
4.5.2	Temperature tests	(see appended table 4.5)	—
	Normal load condition per Annex L ..... :		P
4.5.3	Temperature limits for materials	(see appended table 4.5)	—
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat ..... :	No thermoplastic parts carrying hazardous voltages.	N/A
4.6	**Openings in enclosures**		P
4.6.1	Top and side openings	See below	P
	Dimensions (mm) ..... :	The equipment after fuse F101 is supplied by limited power source. Fire enclosure was not required. The circuits 20V_TINYF for Tiny PC not supplied by LPS. The metal chassis used as fire enclosure to cover the current circuit and no opening	—

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Clause	Requirement + Test	Result - Remark	Verdict
		near the current circuit. Also, openings are not located within 5° of fire hazardous parts. -numerous Ø1.8mm circular holes -one 8.8mm x 15.5mm rectangle hole (Blocked by mylar sheet V-0)	
4.6.2	Bottoms of fire enclosures	Fire enclosure (metal bottom) construction is considered to comply with the requirements and mylar sheet with flammability category V-0.	P
	Construction of the bottomm, dimensions (mm) ..:	Metal chassis: No bottom opening near the current circuit for Tiny PC, CN101, CN102 and F101 -one L shape 13.6mm x 9.9mm x 7.6mm rectangle hole (Blocked by mylar sheet V-0)	—
4.6.3	Doors or covers in fire enclosures	No doors or covers in fire enclosure.	N/A
4.6.4	Openings in transportable equipment	The unit is not regarded as transportable equipment.	N/A
4.6.4.1	Constructional design measures	The unit is not regarded as transportable equipment.	N/A
	Dimensions (mm) .....:		—
4.6.4.2	Evaluation measures for larger openings	The unit is not regarded as transportable equipment.	N/A
4.6.4.3	Use of metallized parts	The unit is not regarded as transportable equipment.	N/A
4.6.5	Adhesives for constructional purposes	The adhesive for mylar sheet secure was used.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditioning temperature (°C), time (weeks).....:	The tests were performed for mylar sheet secured. 1. 100°C for one week. 2. Remove from oven and leave at 25°C for 1h. 3.Place in freezer at -40°C for 4h. 4.Remove from freezer and allow come to 25°C for 8h. 5. Plase in a compartment at 95% relative humidity for 72h. 6.Remove and leave at 25°C for 1h. 7.Place in oven at 100°C for 4h. 8. Remove and allow sample to reach 25°C over 8h. For source of adhesive material, see appended table 1.5.1 These mylar sheets were then immediately subjected to the tests of 4.2 as applicable. These mylar sheets were not fall off or partly dislodge as a result of these tests.	—
4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame	See below	P
	Method 1, selection and application of components wiring and materials	(See appended table 1.5.1)	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	Refer below.	—
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is not required to cover all parts, except the components CN101, CN102, F101 and the current circuit for Tiny PC.	P
4.7.2.2	Parts not requiring a fire enclosure	The fire enclosure is not required to cover all parts, except the components CN101, CN102, F101 and the current circuit for Tiny PC. All components above are mounted on PCB of more than FLAMMABILITY CLASS V-1 (Refer to Clause 2.5).	P
4.7.3	Materials		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures	Fire enclosure made of metal material and mylar sheet with flammability category V-0.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	Min. HB material. PCB of mainboard is Class V-1. The plastic enclosure case covering the power supply port for Tiny PC was V-0. See appended table 1.5.1.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside fire enclosure are minimum V-2 material.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N/A
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**N/A**
5.1	**Touch current and protective conductor current**		N/A
5.1.1	General	Class III equipment, SELV circuit only.	N/A
5.1.2	Configuration of equipment under test (EUT)	See below.	—
5.1.2.1	Single connection to an a.c. mains supply	No interconnection of equipment.	N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		—
5.1.6	Test measurements		—
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
	Measured protective conductor current (mA) ..... :		—
	Max. allowed protective conductor current (mA) .. :		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports ..... :		—
	b) EUT whose telecommunication ports have no reference to protective earth		—
5.2	**Electric strength**		N/A
5.2.1	General	Class III equipment, SELV circuit only.	N/A
5.2.2	Test procedure	Class III equipment, SELV circuit only.	N/A
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	There is no motor in the equipment.	N/A
5.3.3	Transformers	No isolating transformer.	N/A
5.3.4	Functional insulation ..... :	Class III equipment, SELV circuit only.	N/A
5.3.5	Electromechanical components	No electromechanical components in secondary circuits.	N/A
5.3.6	Audio amplifiers in ITE ..... :		P
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	Refer below:	P
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.9.2	After the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		—
6.1.1	Protection from hazardous voltages		—
6.1.2	Separation of the telecommunication network from earth		—
6.1.2.1	Requirements	No TNV circuit.	N/A
	Supply voltage (V) ..... :		—
	Current in the test circuit (mA) ..... :		—
6.1.2.2	Exclusions ..... :		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements	Not connected to telecommunication networks.	N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ..... :		—
	Current limiting method ..... :		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	General	Not connected to Cable Distribution System.	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples ..... :		—
	Wall thickness (mm)..... :		—
A.1.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.1.3	Mounting of samples ..... :		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D ..... :		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
A.2.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.2.3	Mounting of samples ..... :		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C ..... :		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) ..... :		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) ..... :		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) ..... :		—
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
	Method of protection ..... :		—
C.1	Overload test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
C.2	Insulation		N/A
	Protection from displacement of windings ..... :		N/A
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		N/A
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	Clearances	Class III equipment.	N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply ..... :		N/A
G.2.2	Earthed d.c. mains supplies ..... :		N/A
G.2.3	Unearthed d.c. mains supplies ..... :		N/A
G.2.4	Battery operation ..... :		N/A
G.3	Determination of telecommunication network transient voltage (V) ..... :		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks .... :		N/A
G.4.2	Transients from telecommunication networks ..... :		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		N/A
	Metal(s) used ..... :		—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) ..... :		N/A
K.3	Thermostat endurance test; operating voltage (V) ..... :		N/A
K.4	Temperature limiter endurance; operating voltage (V) ..... :		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		P
L.1	Typewriters	Not used.	N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....:		—
M.3.1.2	Voltage (V) .....:		—
M.3.1.3	Cadence; time (s), voltage (V) .....:		—
M.3.1.4	Single fault current (mA) .....:		—
M.3.2	Tripping device and monitoring voltage .....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.3.2.3	Monitoring voltage (V) .....:		N/A
N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		N/A
	- Preferred climatic categories .....:		N/A
	- Maximum continuous voltage .....:		N/A
	- Combination pulse current .....:		N/A
	Body of the VDR Test according to IEC60695-11-5.....:		N/A
	Body of the VDR. Flammability class of material (min V-1).....:		N/A
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
			—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
			—
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
V.1	Introduction		—
V.2	TN power distribution systems		N/A
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	**Annex X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
Y.1	Test apparatus .....:		N/A
Y.2	Mounting of test samples .....:		N/A
Y.3	Carbon-arc light-exposure apparatus .....:		N/A
Y.4	Xenon-arc light exposure apparatus .....:		N/A
Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**		N/A
AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**		N/A
BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**		—
CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	General		N/A
CC.2	Test program 1.....:		N/A
CC.3	Test program 2.....:		N/A
CC.4	Test program 3.....:		N/A
CC.5	Compliance.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N……..:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……:		N/A

EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols……:		N/A
	Information of user instructions, maintenance and/or servicing instructions……:		N/A
EE.3	Inadvertent reactivation test……:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols……:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) ……:		N/A
	Test with wedge probe (Figure EE1 and EE2) ……:		N/A

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IEC 60950-1			
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1.5.1	**TABLE: list of critical components**	P

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
AC/DC adapter	Delta Electronics, Inc.	ADP-90ME B	INPUT: AC 100-240V, 1.5A 50-60Hz; OUTPUT: DC 20V, 4.5A, 40°C	IEC 62368-1:2014 (2nd Edition); and/or EN62368-1:2014; A11:2017	CB issued by TUV. Cert No.JPTUV-138899 and report No.CN220E9S001
Alt.)	Delta Electronics, Inc.	ADP-90XD B	INPUT: AC 100-240V, 1.5A 50-60Hz; OUTPUT: DC 20V, 4.5A, 40°C	IEC 60950-1:2005 (2nd Edition); Am 1:2009 EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011	CB issued by UL. Cert No.DK-32915-M1-UL and report No. E131881-A1518-CB-2
Alt.)	Lite-On Technology Corporation	PA-1900-74XX (where X = A-Z, 0-9, or “-” or blank)	INPUT: 100-240Vac, 1.5A 50-60Hz; OUTPUT: 20Vdc, 4.5A, 40°C	IEC 62368-1:2014 (2nd Edition); and/or EN62368-1:2014; A11:2017	CB issued by TUV. Cert No.JPTUV-102137 and report No.50310677001

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Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Plastic Enclosure except plastic enclosure cover DP+U3+DC 3 in1 cable	LOTTE Chemical Corporation	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++) (RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, SD-0150T, ABF-0200E	HB or better	UL94	UL
Alt.)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A			UL
Alt.)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S			UL
Alt.)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F			UL
Alt.)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series			UL

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Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Alt.)	LG	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#), GN-2101F(m)	HB or better	UL94	UL

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Alt.)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better	UL94	UL
Alt.)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35			UL
Alt.)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000, ABS-340*(*=0~10), HIPS-2230(+)			UL
Alt.)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c), GA35, NC30, GA65, GA85			UL
Alt.)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+ (+: A to Z)			UL
Alt.)	GUO HENG (DONGGUAN)	YOUHO(####)(Y), YOUHO-1303B, YOUHO1312B, YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(1303)(OP)			UL

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Alt.)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better	UL94	UL
Alt.)	HUIZHOU WOTE	2100			UL
Alt.)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)			UL

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Alt.)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better	UL94	UL
Alt.)	STYRON	STYRON A-TECH 1200			UL
Alt.)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441, 260-XX			UL
Alt.)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106			UL
Alt.)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)			UL
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK			UL
Alt.)	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535, GA-1565			UL
Alt.)	SAMYANG	TRILOY:210NHF (&), 210NHF			UL
Alt.)	COVESTRO DEUTSCHLAND AG	GF99011 MF			UL
Alt.)	Chi mei	PC-540(Y)(a)			UL
Alt.)	QING DAO GON TECHNOLOGY CO.,LTD	ABS21(xx)G-A, ABS2030A, ABS20(xx)B			UL
Alt.)	SHENZHEN FUHENG NEW MATERIAL CO LTD	HIPS-568			UL
Alt.)	UNIC TECHNOLOGY CORP	UR-7085+(R90)			UL
Alt.)	Interchangeable	Interchangeable			UL

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Plastic enclosure cover DP+U3+DC 3 in1 cable	Interchangeable	Interchangeable	V-0 or better, thickness 1.7mm min.	UL94	UL
Base (Optional)	Interchangeable	Interchangeable	Metallic that covered by the plastic which HB or better	UL94	UL
Metal chassis	Interchangeable	Interchangeable	Metal, thickness min.0.3mm	IEC60950-1	Test in the equipment
PCB	Interchangeable	Interchangeable	Min. V-1 105°C	UL796	UL
Speakers (two provided) (optional)	Interchangeable	Interchangeable	Max. 3W Min. 4ohm	IEC60950-1	Test in the equipment
LCD panel For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch	BOE	MV215******* (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	LG Display	LM215********* (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	CHIMEI INNOLUX	M215******* (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	TPV	TPM215HW******** (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	AUO	M215******** (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	COST	MG215****** (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
LCD panel For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch	LG Display	LM238******** (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	AUO	M238******* (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	BOE	MV238******* (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	Samsung	LTM238**** (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	CHIMEI INNOLUX	M238******* (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	COST	MG238****** (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Mylar Sheet	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, FR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Alt.)	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1860B, KLX FRPC-83	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Alt.)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Alt.)	KUNSHAN DOBESTY OPTOELECTRONIC	PC9842B PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370F	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Adhesive for mylar sheet	XIAMEN LABAO OPTICS & ELECTRONICS CO LTD	TD-10	80 ºC, 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	3M China Co ltd	55236, 9448A	80 ºC, 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	SYMBIO	DS50-A, DS50L	100ºC, 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	Dexerials	G4000	80 ºC, 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
The following components are located on mainboard, type 715GD726 and 715GD745					
Fuse (F101)	SUZHOU WALTER ELECTRONIC CO LTD	1032ST	T4AL, 250V	IEC 60127, UL248	TUV, UL
Alt.	LITTELFUSE INC	443*		IEC 60127, UL248	VDE, UL
Alt.	SUZHOU WALTER ELECTRONIC CO LTD	2410LT series		IEC 60127, UL248	TUV, UL
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	244 series		IEC 60127, UL248	TUV, UL
Alt.	LITTELFUSE INC	452 series		IEC 60127, UL248	VDE, UL
Alt.	CONQUER ELECTRONICS CO LTD	SEI		IEC 60127, UL248	TUV, UL

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Supplementary information:					
[1)] an asterisk indicates a mark which assures the agreed level of surveillance.					

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: Opto Electronic Devices	N/A

Manufacturer..... :

Type..... :

Separately tested..... :

Bridging insulation ..... :

External creepage distance ..... :

Internal creepage distance ..... :

Distance through insulation ..... :

Tested under the following conditions ..... :

Input..... :

Output..... :

supplementary information

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: electrical data (in normal conditions)	P

fuse #	Irated (A)	U (V / Hz)	P (W)	I (A)	Ifuse (A)	condition/status
Models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch						
--	4.5	20V dc	86.0	4.3	--	Normal load
Models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch						
--	4.5	20V dc	88.0	4.4	--	Normal load
Supplementary information:						
Maximum normal load refer to general product information.						

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.5 c)	TABLE: max. V, A, VA test	N/A

Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
supplementary information:				
The above measurements are the maximum values (max. V and max. A not obtained at the same time).				

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch			
LED backlight to GND	--	47.4	N/A
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch			
LED backlight to GND	--	53.4	N/A

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch	
L801	47.4 Vdc
D801	0 Vdc
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch	
L801	53.4 Vdc
D801	0 Vdc
supplementary information:	

2.4.2	TABLE: limited current circuit measurement	N/A

Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)
supplementary information:				

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.5	TABLE: limited power sources	P

Circuit output tested: See below

	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
DC power input on mainboard 715GD726 is tested: +20V output				
normal condition (F101 bypass) (with table 2C), Uoc=20.4V	6.5	49.0	119.6	250
HDMI port (CN1002) pin 15, 16 to sec GND, Normal condition (with table 2B), Uoc=3.3V *)	0	8	0	100
HDMI port (CN1002) pin 18 to sec GND, Normal condition (with table 2B), Uoc=5.0V *)	0	8	0	100
HDMI port (CN1002) other pins to sec GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
DP port (CN103), Normal condition pin 3,6 to GND, (with table 2B), Uoc=3.3V *)	0	8	0	100
DP port (CN103), Normal condition pin 20 to GND, (with table 2B), Uoc=3.3V	1.7	8	5.6	100
DP port (CN103), pin 20 to sec GND fault condition (U108 pin2-3 S-C) (with table 2B), Uoc=4.98V	4.9	8	12.5	100
DP output port (CN103), Normal condition other pins to GND, (with table 2B), Uoc=0V *)	0	8	0	100
USB port (CN707), Normal condition pin 1 to GND, (with table 2B), Uoc=5.13V	1.3	8	5.8	100
USB port (CN707), pin 1 to sec GND fault condition (U713 pin1-5 S-C) (with table 2B), Uoc=5.13V	4.6	8	13.0	100
USB port (CN707), Normal condition other pins to GND (with table 2B), Uoc=0V *)	0	8	0	100
USB port (CN702), Normal condition All pins to GND (with table 2B), Uoc=0V *)	0	8	0	100
supplementary information:				
-.Fuse F101 broken with the circuit within 120 sec. with a current equal 210% of fuse rating. *) Can not load				

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.5	TABLE: limited power sources	P

Circuit output tested: See below

	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
DC power input on mainboard 715GD745 is tested: +20V output				
normal condition (F101 bypass) (with table 2C), Uoc=20.4V	6.59	49.0	127.2	250
HDMI port (CN1002) pin 15, 16 to sec GND, Normal condition (with table 2B), Uoc=3.3V *)	0	8	0	100
HDMI port (CN1002) pin 18 to sec GND, Normal condition (with table 2B), Uoc=5.0V *)	0	8	0	100
HDMI port (CN1002) other pins to sec GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
DP port (CN103), Normal condition pin 3,6 to GND, (with table 2B), Uoc=3.3V *)	0	8	0	100
DP port (CN103), Normal condition pin 20 to GND, (with table 2B), Uoc=3.3V	1.3	8	3.9	100
DP port (CN103), pin 20 to sec GND fault condition (U108 pin2-3 S-C) (with table 2B), Uoc=4.95V	4.6	8	11.3	100
DP output port (CN103), Normal condition other pins to GND, (with table 2B), Uoc=0V *)	0	8	0	100
USB port (CN717), Normal condition pin 1 to GND, (with table 2B), Uoc=5.07V	1.7	8	7.2	100
USB port (CN717), pin 1 to sec GND fault condition (U713 pin1-5 S-C) (with table 2B), Uoc=5.07V	4.6	8	13.2	100
USB port (CN717), Normal condition other pins to GND (with table 2B), Uoc=0V *)	0	8	0	100
USB port (CN702), Normal condition All pins to GND (with table 2B), Uoc=0V *)	0	8	0	100
supplementary information:				
-.Fuse F101 broken with the circuit within 120 sec. with a current equal 210% of fuse rating. *) Can not load				

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.2	Table: working voltage measurement	N/A

Location	RMS voltage (V)	Peak voltage (V)	Comments
supplementary information:			

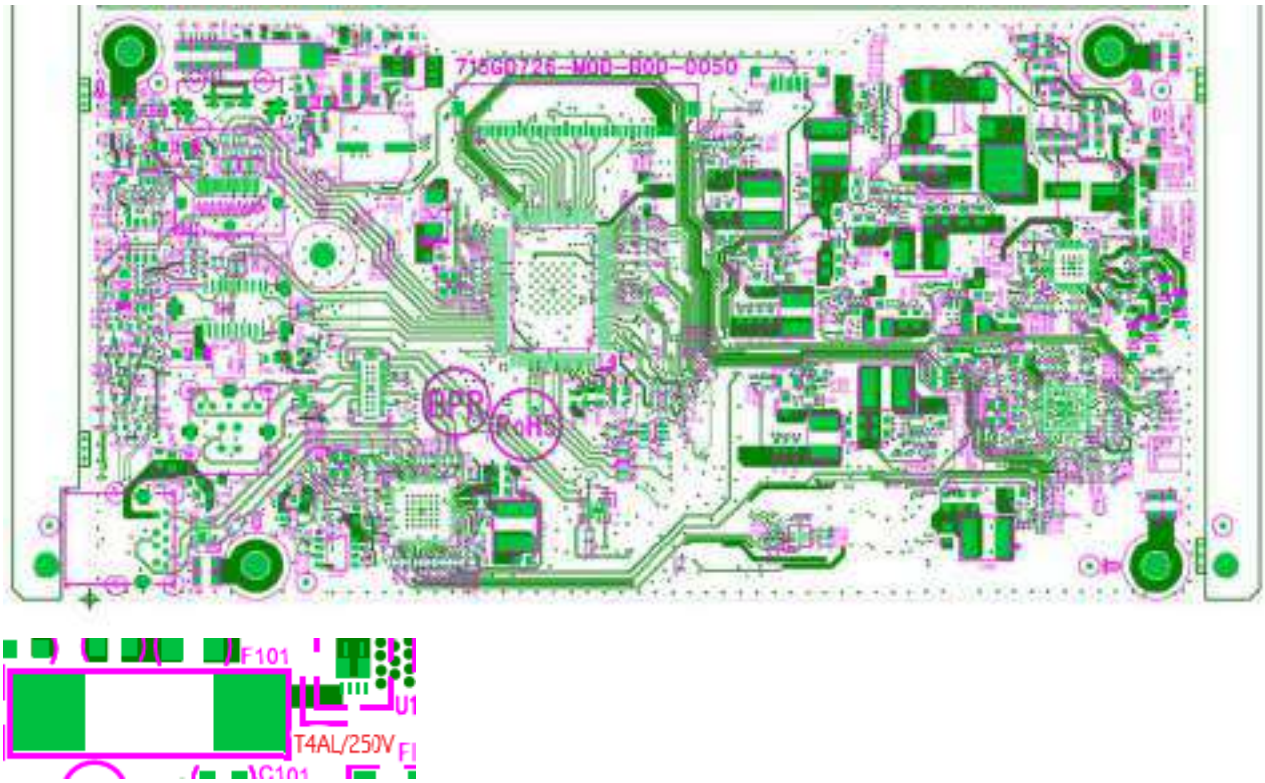
2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements	N/A

Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Supplementary information:						

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

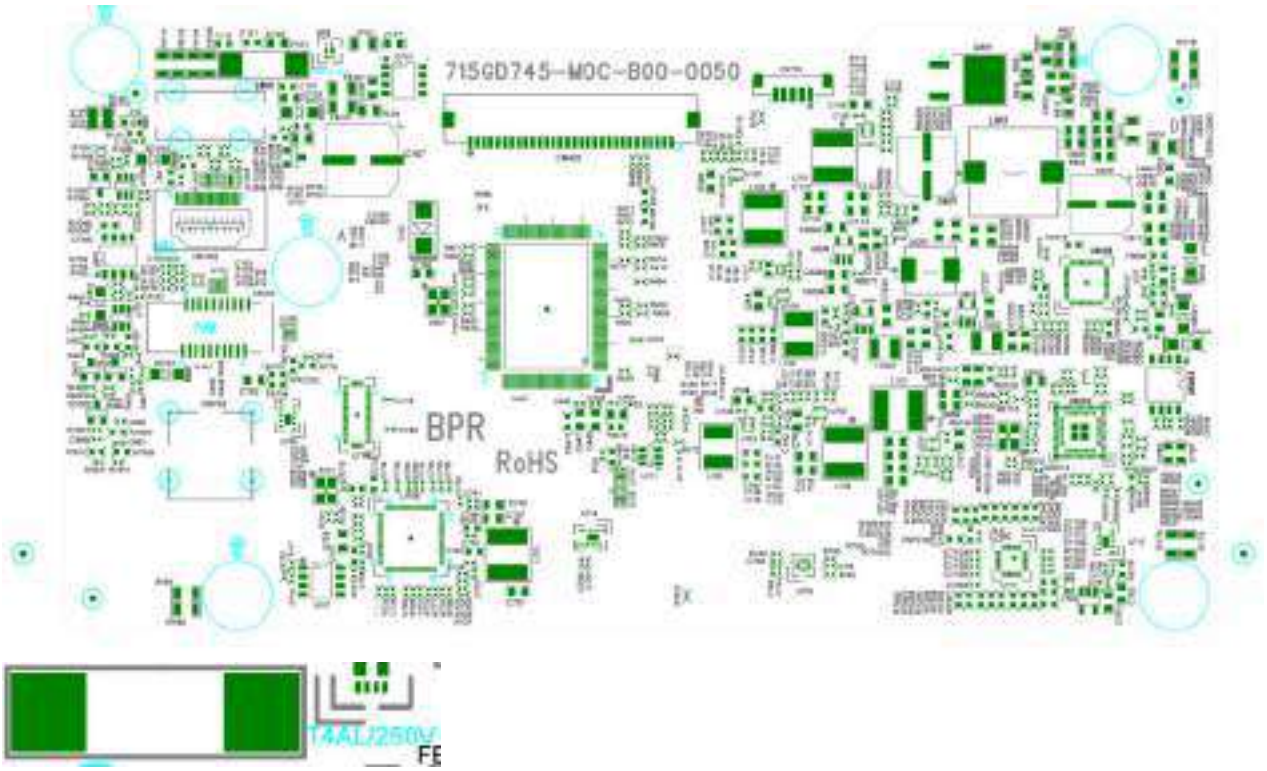
Copy of mainboard, layout of tracing (not to scale): for mainboard 715GD726



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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Copy of mainboard, layout of tracing (not to scale): for mainboard 715GD745



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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.5	TABLE: distance through insulation measurements	N/A

distance through insulation di at/of:	Up (V)	test voltage (V)	required di (mm)	di (mm)
supplementary information:				

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries		N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available			
Is it possible to install the battery in a reverse polarity position?			

	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition									

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		
Supplementary information:		

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries	N/A
Battery category ..... :		
Manufacturer ..... :		
Type / model ..... :		
Voltage ..... :		
Capacity ..... :		
Tested and Certified by (incl. Ref. No.) ..... :		
Circuit protection diagram:		

MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	
Language(s) ……..:	
Close to the battery ……..:	
In the servicing instructions ……:	
In the operating instructions ……..:	

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch horizontal position			
PCB near CN101		49.3	105
PCB near D102		51.5	105
PCB near U706		49.7	105
PCB near U401		53.3	105
L703		50.2	95 *)
L6001		55.5	95 *)
L801		65.7	95 *)
PCB near Q801		56.5	105
C809		52.5	85
Metal enclosure inside near U401		56.1	--
Plastic enclosure inside near U401		46.2	--
Plastic enclosure outside near U401		44.6	95
Panel		45.9	80
Control Key		43.8	85
Base		40.8	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10°C for thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch vertical position (rotating anti-clockwise 90 degree)			
PCB near CN101		48.6	105
PCB near D102		51.3	105
PCB near U706		50.9	105
PCB near U401		53.5	105
L703		50.9	95 *)
L6001		53.6	95 *)
L801		62.4	95 *)
PCB near Q801		53.9	105
C809		49.9	85
Metal enclosure inside near U401		45.9	--
Plastic enclosure inside near U401		42.9	--
Plastic enclosure outside near U401		42.3	95
Panel		42.4	80
Control Key		41.4	85
Base		40.6	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10°C for thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch vertical position (rotating clockwise 90 degree)			
PCB near CN101		47.8	105
PCB near D102		49.9	105
PCB near U706		49.0	105
PCB near U401		52.2	105
L703		49.7	95 *)
L6001		55.4	95 *)
L801		64.7	95 *)
PCB near Q801		56.3	105
C809		53.3	85
Metal enclosure inside near U401		46.1	--
Plastic enclosure inside near U401		43.2	--
Plastic enclosure outside near U401		42.5	95
Panel		44.0	80
Control Key		41.7	85
Base		40.5	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10°C for thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch horizontal position			
PCB near CN101		50.6	105
PCB near U401		55.6	105
PCB near U706		52.4	105
PCB near D102		54.1	105
L703		53.7	95 *)
L6001		59.3	95 *)
L801		61.1	95 *)
PCB near Q801		60.5	105
C107		54.2	85
Metal enclosure inside near U401		47.6	--
Plastic enclosure inside near U401		45.7	--
Plastic enclosure outside near U401		42.5	95
Panel		45.0	80
Control Key		42.4	85
Base		41.0	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10°C for thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch vertical position (rotating anti-clockwise 90 degree)			
PCB near CN101		52.2	105
PCB near U401		57.7	105
PCB near U706		54.9	105
PCB near D102		55.7	105
L703		55.8	95 *)
L6001		59.5	95 *)
L801		59.9	95 *)
PCB near Q801		59.7	105
C107		55.5	85
Metal enclosure inside near U401		48.1	--
Plastic enclosure inside near U401		46.0	--
Plastic enclosure outside near U401		42.6	95
Panel		44.1	80
Control Key		43.5	85
Base		40.8	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10°C for thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch vertical position (rotating clockwise 90 degree)			
PCB near CN101		49.2	105
PCB near U401		55.2	105
PCB near U706		52.5	105
PCB near D102		53.2	105
L703		54.0	95 *)
L6001		59.7	95 *)
L801		61.2	95 *)
PCB near Q801		60.7	105
C107		53.0	85
Metal enclosure inside near U401		46.9	--
Plastic enclosure inside near U401		45.3	--
Plastic enclosure outside near U401		42.5	95
Panel		44.3	80
Control Key		42.9	85
Base		41.0	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10°C for thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	TABLE: Ball pressure test of thermoplastic parts		N/A
	Allowed impression diameter (mm) ..... :	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)

Supplementary information:

4.7	TABLE: resistance to fire			N/A
part	manufacturer of material	type of material	thickness (mm)	flammability class

supplementary information:

5.1	TABLE: touch current measurement			N/A
Measured between:		Measured (mA)	Limit (mA)	Comments/conditions

supplementary information:

5.2	TABLE: Electric strength tests			N/A
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No

Supplementary information:

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) ..... :	25°C, if not specify	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch						
Openings	Blocked	20V dc	3.0hrs	--	--	Unit operated normally, no damaged, no hazard PCB near U401=40.1°C Plastic enclosure outside near U401=34.1°C, Panel=31.3°C, control keys=30.2°C, Base=26.0°C, Ambient=25°C no damaged, no hazard.
Speaker	s-c	20V dc	5 min	--	--	Unit operated normally, except speaker shutdown, no damaged, no hazard.
USB (on monitor)	s-c	20V dc	5 min	--	--	Unit operated normally, except USB shutdown, no damaged, no hazard.
USB (on monitor)	o-l	20V dc	3.2hrs	--	--	USB 3.0 shut down when load increase to 1.3A, no damaged, no hazard PCB near U401=38.9°C Plastic enclosure outside near U401=31.8°C, Panel=31.1°C, control keys=29.9°C, Base=25.7°C, Ambient=25°C no damaged, no hazard.
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch						
Openings	Blocked	20V dc	3.1hrs	--	--	Unit operated normally, no damaged, no hazard PCB near U401=43.0°C Plastic enclosure outside near U401=27.8°C, Panel=33.0°C, control keys=29.2°C, Base=26.2°C, Ambient=25.0°C no damaged, no hazard.

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Speaker	s-c	20V dc	5 min	--	--	Unit operated normally, except speaker shutdown, no damaged, no hazard.
USB (on monitor)	s-c	20V dc	5 min	--	--	Unit operated normally, except USB shutdown, no damaged, no hazard.
USB (on monitor)	o-l	20V dc	3.3hrs	--	--	USB 3.0 shut down when load increase to 1.7A, no damaged, no hazard PCB near U401=42.9°C Plastic enclosure outside near U401=27.9°C, Panel=31.1°C, control keys=30.1°C, Base=26.1°C, Ambient=25.0°C no damaged, no hazard.
Supplementary information:						
s-c: short circuit, o-l: over load						

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: transformer	N/A

Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)

Loc.	Tested insulation	Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers

supplementary information:

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Front view horizontal position for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Back view horizontal position for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



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Front view vertical position for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Back view vertical position for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



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Side view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Side view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



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Top view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch

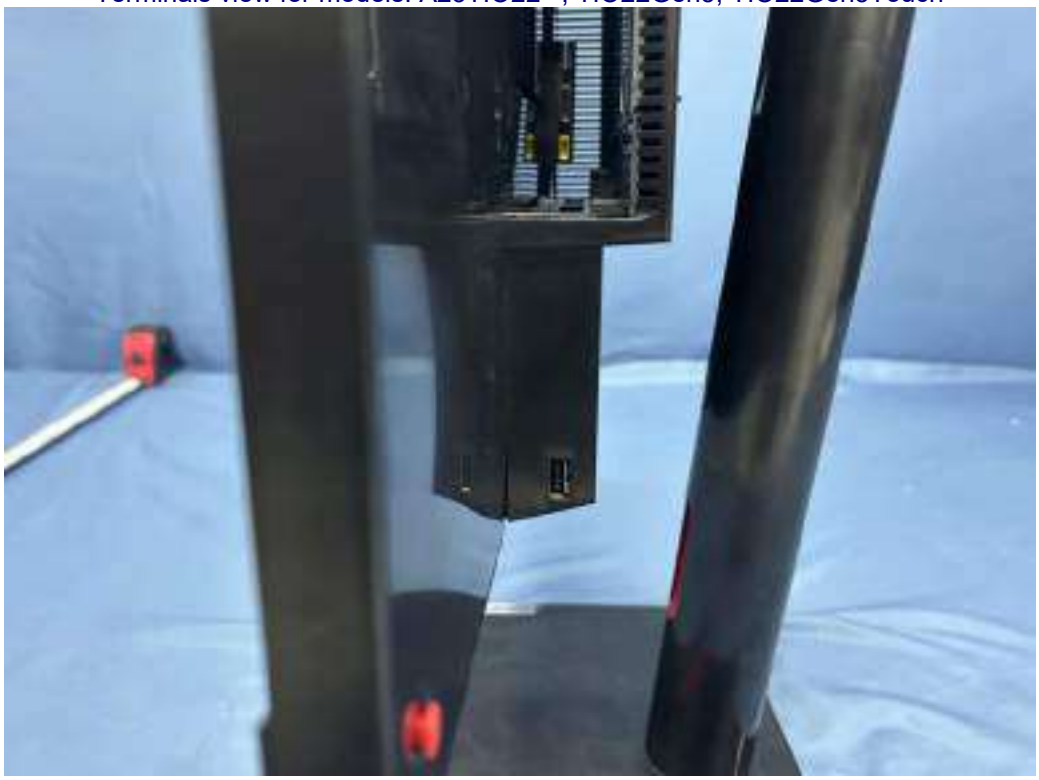


Terminals view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



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Terminals view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Internal view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Mylar sheet

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Internal view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch

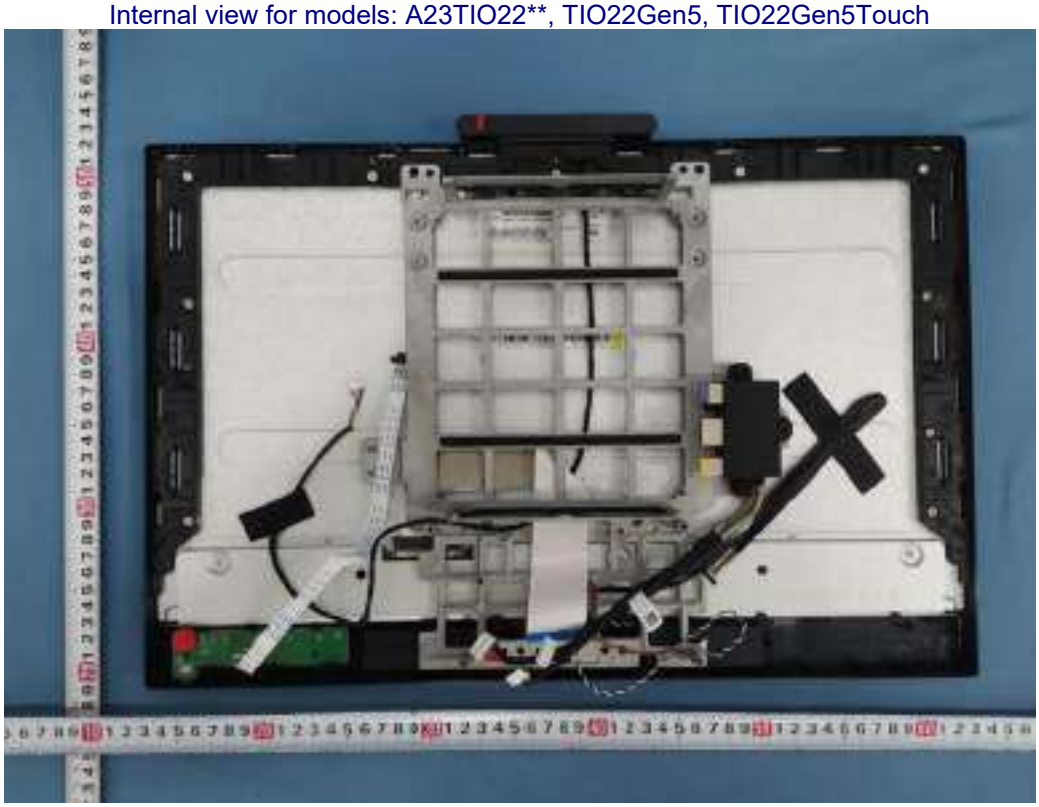


Internal view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch

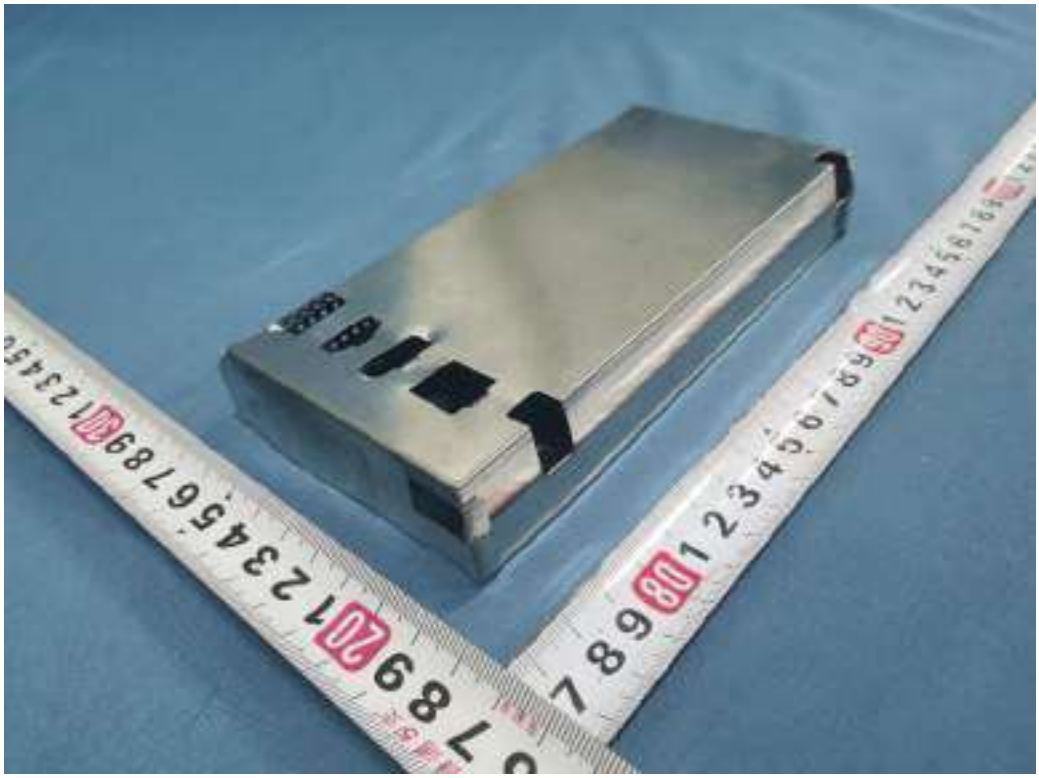


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Internal view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Metal chassis view



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Metal chassis view



Mainboard 715GD726



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Mainboard 715GD726



Front view horizontal position for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Back view horizontal position for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



Front view vertical position for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Back view vertical position for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



Side view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Side view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



Top view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Terminals view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



Terminals view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Internal view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



Mylar sheet

Internal view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Internal view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch

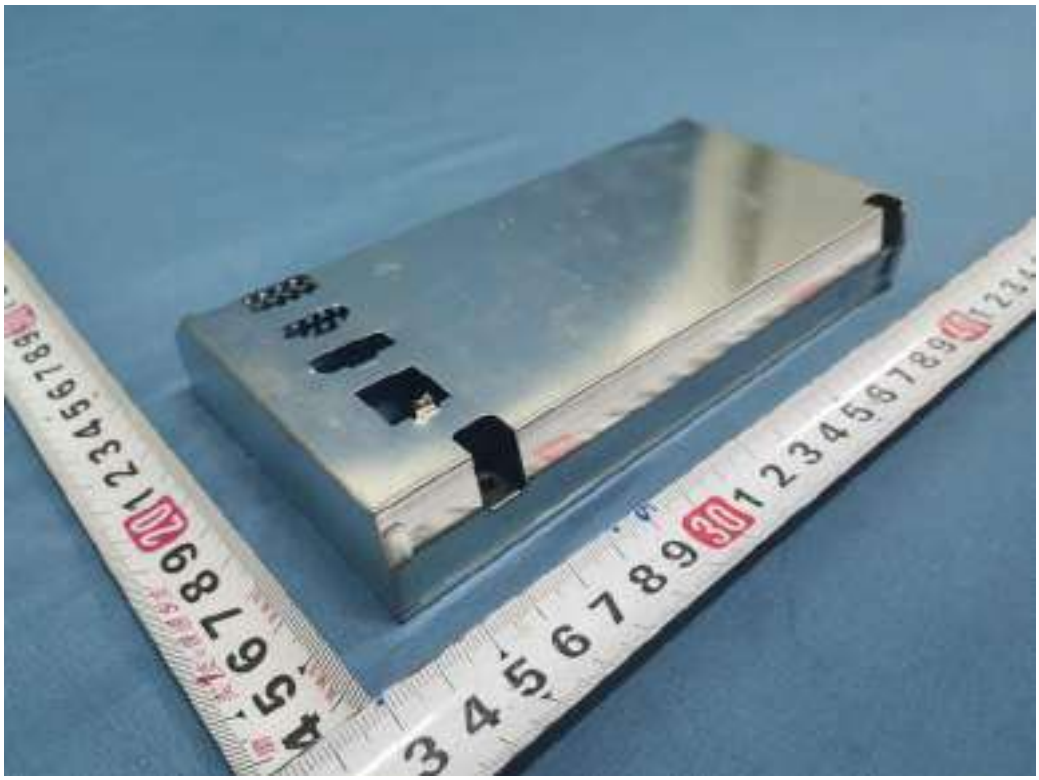


Internal view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch

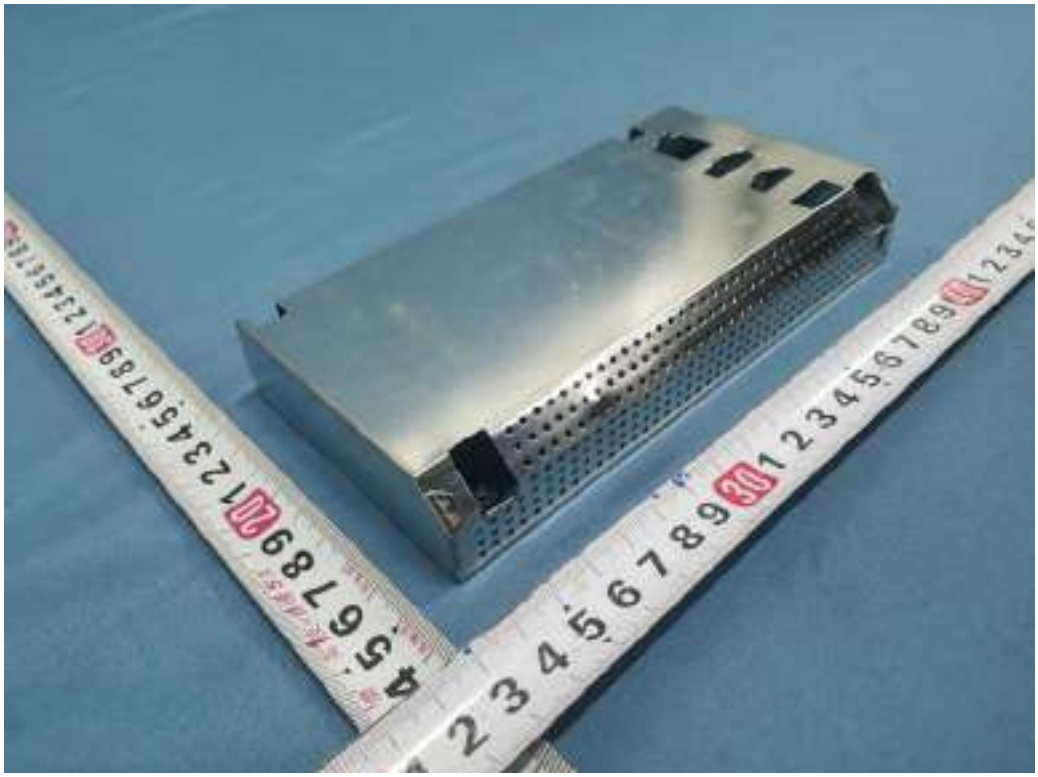


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Metal chassis view



Metal chassis view

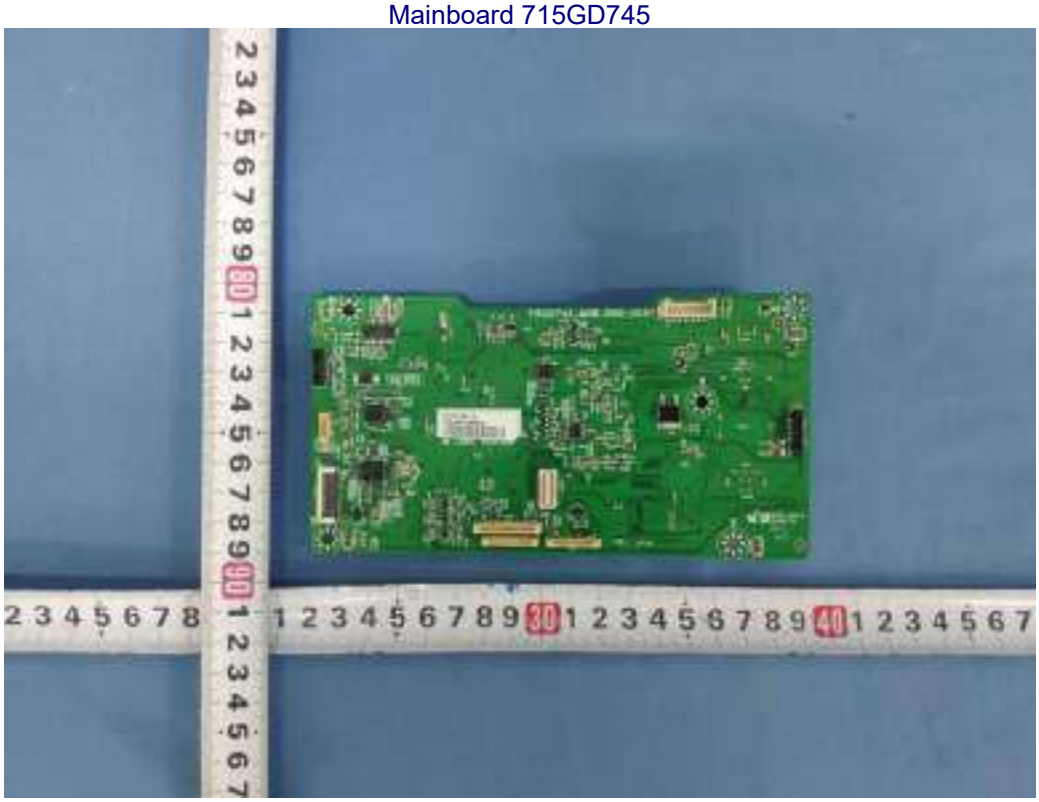


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Mainboard 715GD745

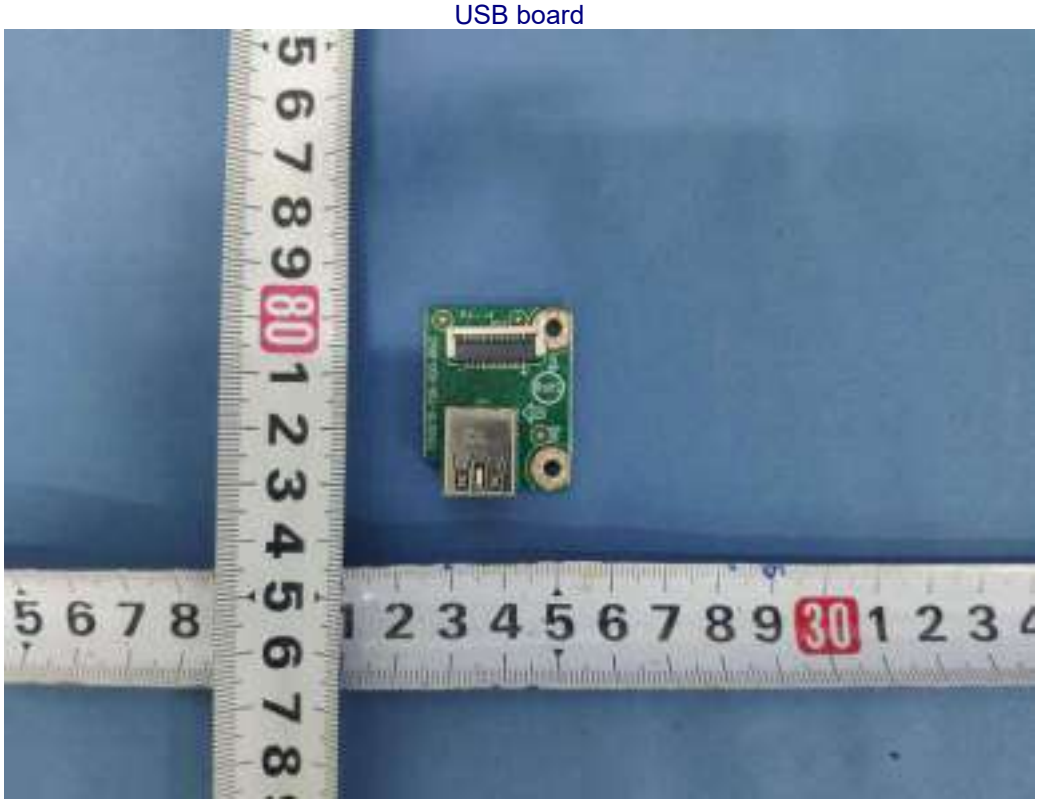


Mainboard 715GD745

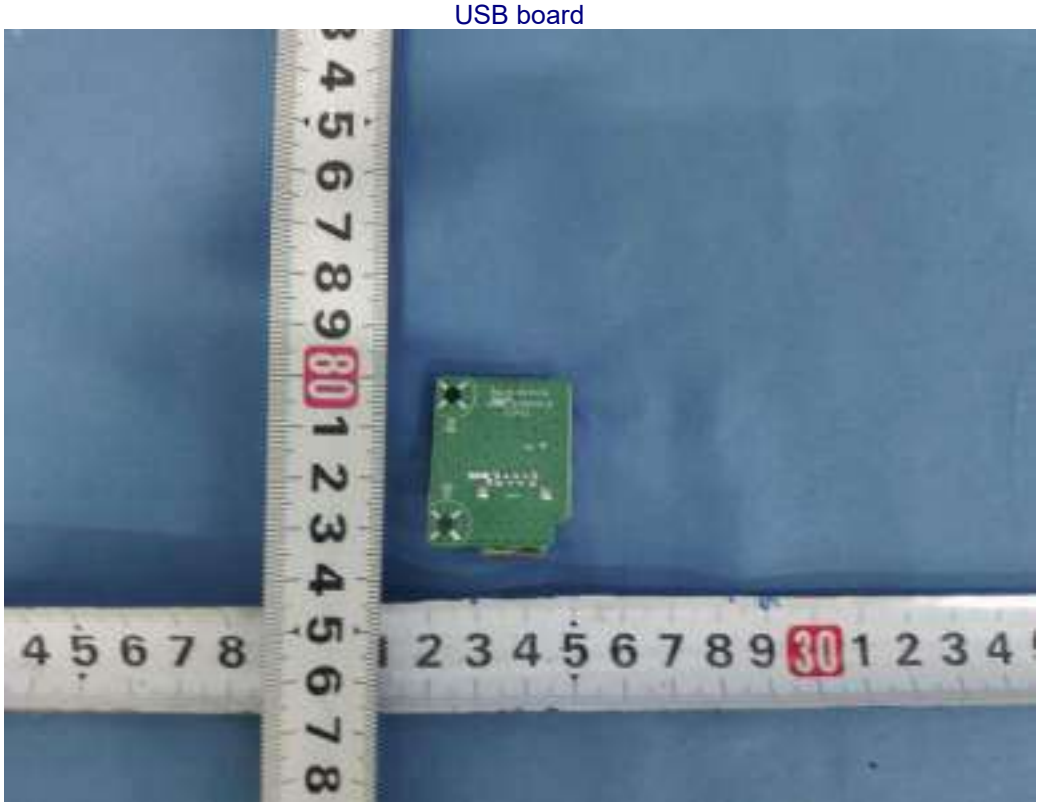


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USB board

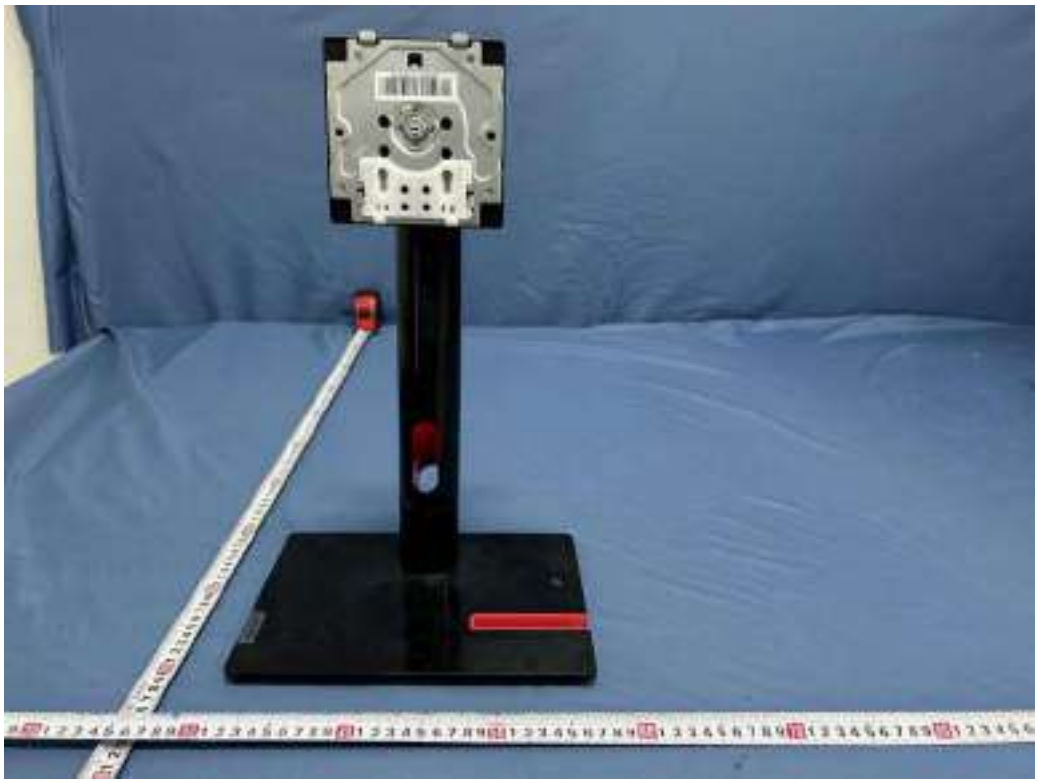


USB board

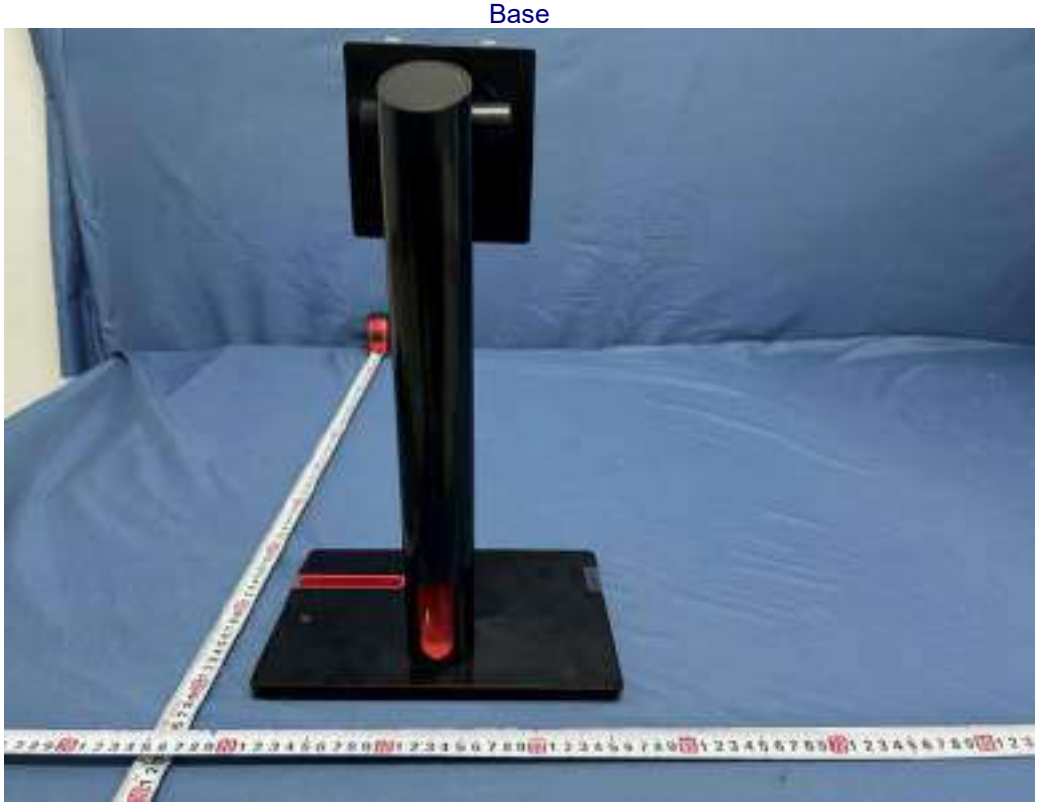


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Base



Base



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ATTACHMENT: CHINESE DIFFERENCES
Test results according to CB BULLETIN

Clause	Requirement - Test	Result - Remark	Verdict
1.1.2	GB 4943.1-2011 applies to equipment for use at altitudes not exceeding 5000m above sea level, primarily in regions with moderate or tropical climates. Amend the third dashed paragraph of 1.1.2 as: ——equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;	See main test report	N/A
1.4.5	After the third paragraph, add a paragraph: If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer. The first dash paragraph "-the RATED VOLTAGE is 230V single -phase or 400V three-phase, in which case the tolerance shall be taken as +10% and -10%" of IEC 60950-1:2005 is deleted in GB 4943.1-2011		N/A
1.4.12.1	Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: For equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration.	Considered.	P
1.5. 2	Add a note behind the first break off section in Clause 1.5.2: A component used shall comply with related requirements corresponding altitude of 5000m.	Must check with marketing china.	—
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.	Must be considered when market to China.	—

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1.7.1	Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V (three-phases) when manufactured. And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.	Class III equipment supplied by a separately certified adaptor.	N/A

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1.7.2.1	Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions: For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."  For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only the symbol used, the explanation of the symbol shall be contained in the instruction manual. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used. If only the symbol used, the explanation of the symbol shall be contained in the instruction manual. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.	5000m and tropical.	N/A
2.7.1	Amended the first paragraph as: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3. Delete note of Clause 2.7.1.	No such protective device	N/A

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2.9.2	First section of Clause 2.9.2 amended as two sections: Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature 40±2℃ and a relative humidity of (93±3)%. During this conditioning the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value between 20 °C and 30 °C such that condensation does not occur. Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.	Class III equipment	N/A
2.10.3.1	Amend the third paragraph of Clause 2.10.3.1 to be: These requirements apply for equipment to be operated up to 2000 m above sea level. For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of IEC 60664-1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	Class III equipment	N/A
2.10.3.3 & 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K、2L and 2M.	Class III equipment	N/A

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2.10.3.4	Add a new section above Table 2K and in Clause 2.10.3.4: Minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1（ IEC 60664-1）. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T16935.1.	Class III equipment	N/A
3.2.1.1	Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.	Class III equipment	N/A
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011. Delete note of Clause 4.2.8.	No such equipment.	N/A
Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35 °C shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.	Thermocouple measurement method	N/A
Annex G.6	Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	Must check with marketing into China.	—
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.		P

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Annex DD (normative)	Added annex DD: Instructions for the new safety warning labels. DD.1 Altitude warning label  Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used at altitude above 2000m . DD.2 Climate warning label  Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used in tropical climate region.	5000m and tropical	N/A
Annex EE (informative)	Added annex EE: Illustration relative to safety explanation in normative Chinese、Tibetan、Mongolian、Zhuang Language and Uighu.	Must be considered when market into China.	—
Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, Including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.	Considered.	P

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Quoting standards and reference documents	The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows: If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments. For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard. When quoting several chapters or clauses of the international standard, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;	Considered.	P

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	- If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005 and GB4943.1-2011.		

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IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 60950-1** **SINGAPORE NATIONAL DIFFERENCES** INFORMATION TECHNOLOGY EQUIPMENT – SAFETY – PART 1: GENERAL REQUIREMENTS			
Differences according to ..... :	Special National Conditions		
TRF template used:..... :	IECEE OD-2020-F3, Ed. 1.1		
Attachment Form No. ..... : **Attachment Originator**..... : **Master Attachment**..... :	SG_ND_IEC60950_1G Intertek Testing Services (Singapore) Pte Ltd 2022-07-08		
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
Chapter 4.2	**Special national conditions (if any)** Controlled goods under the Consumer Protection (Safety Requirements) Registration Scheme (CPS) are required to be tested to additional requirements stipulated by the Consumer Product Safety Office (CPSO) of Enterprise Singapore in Chapter 4.2 of the CPS information booklet. The CPS information booklet is updated on an ongoing basis. At the point of testing, refer to the latest copy of the CPS information booklet for the minimum edition of standard to apply for testing of products under the CPS scheme and any new requirements. Link to CPS information booklet: https://www.consumerproductsafety.gov.sg/files/cps-info-booklet.pdf		-
Clause 1	All appliances must be tested to 230 VAC, 50 Hz.	Class III equipment	N/A
2	Circuit diagrams must be indicated with component's values for products tested to IEC 60065 and IEC 60950.		P
4	Appliance fitted with voltage selector shall be tested as follows: Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.		N/A
5	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.		P

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IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
7	All Class I appliances must be fitted with 3-pin mains plugs that are registered with the CPSO.	Class III equipment	N/A
8	a) All Class II appliances must be fitted with 2-pin mains plug complying with EN 50075. b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that are registered with the CPSO.	Class III equipment	N/A
9	Detachable power cord set must be listed in the test report critical component list.		N/A
14	AC Adaptor incorporated with 13A socket-outlet to be tested to additional tests clauses 13, 17 and 18 of SS 145-3: 2020.		N/A
15	Supplier who is supplying AC adaptors with detachable interchangeable plug pins must include with its products, written instructions to inform customers on the type of detachable interchangeable plug pins that are approved and suitable to use in Singapore. These instructions are to be submitted to the Conformity Assessment Body for verification when applying for Certificate of Conformity.		N/A
16	For AC Adaptors supplied together with Personal Mobility Devices: 1. Registered Supplier to declare the model of the AC adaptor that is to be used with/ bundled together with the PMDs; 2. Registered Supplier to provide valid IEC 60950-1 or IEC 62368-1 test reports for certification and registration of the declared AC adaptor under the CPS scheme; and 3. Registered Supplier to provide the UL 2272 test report as a supporting document, showing that the listed AC adaptor in the UL 2272 test report is the model declared to be used with/ bundled together with the PMDs.		N/A
18	CD/ DVD ROMs (used in personal computers) to have test certificate showing that CD/DVD ROM drive has complied with IEC 60825- 1.		N/A
19	Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950) or at component level.		N/A
20	Powerline Ethernet Adaptor incorporated with 13A socket-outlet, to be tested to additional test clauses 13, 17 & 18 of SS 145-3: 2020.		N/A

IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
46	Plasma/LCD display monitor tested to IEC 60950 would require additional test to clauses 9 (related to antenna only), 10.1, 10.2, 10.3 and 12.5 of IEC 60065.		N/A
	Other additional requirements which may be included in Chapter 4.2 of the information booklet in ongoing basis at the time of testing.		N/A

IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 60950-1** **KOREA NATIONAL DIFFERENCES** (Information technology equipment – Safety – Part 1: General requirements)			
Differences according to ..... :	K 60950-1(2011-12)		
TRF template used: ..... :	IECEE OD-2020-F3, Ed. 1.1		
Attachment Form No..... :	KR_ND_IEC60950_1G		
Attachment Originator ..... :	KTL		
Master Attachment..... :	2022-05-20		
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1.5.1	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean plug standard sheets(KSC 8305)		N/A

	Special national conditions		
Voltage	The marking of rated voltage or rated voltage range, for appliances intended to be connected to the supply mains, shall include 110 V, 220 V or 380 V.	Class III equipment	N/A
Frequency	Only appliances having supply frequency of 60Hz or a frequency range including 60Hz are accepted.	Class III equipment	N/A
Instruction	Instruction manuals shall be in Korean	Should be checked when market into the country.	—

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ATTACHMENT TO TEST REPORT IEC 60950-1:2005, IEC 60950- 1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013 ISRAELI NATIONAL DIFFERENCES (INFORMATION TECHNOLOGY EQUIPMENT – SAFETY: GENERAL REQUIREMENTS)	
Differences according to .....:	SI 60950 Part 1 (2015)
Attachment Form No. .....: **Attachment Originator .....**: **Master Attachment** .....:	IL_ND_IEC60950_1F Standards Institution of Israel Date 2018-08-02
Copyright © 2018 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.	

	National Differences		—
1.6	**Power interface**		—
1.6.1	**AC Power distribution systems** At the end of the clause, the following note shall be added: Note: In Israel, the clause is subject to the Electricity Law. 1954, Electricity Regulations (Earthings and protective means against electrification for voltages up to 1,000 V), 1991, with their updates.	Must be considered when marketing into Israel.	—
1.7	**Marking and instructions**		—
1.7.1	**Power rating and identification markings** At the beginning of the clause, subclause 1.7.1.201 shall be added as follows:		—
1.7.1.201	**Marking in the Hebrew language** The marking in the Hebrew language shall be in accordance with the Consumer Protection Order (Marking of goods), 1983. In addition to the marking required by clause 1.7.1, the following details shall be marked in the Hebrew language: 1.Name of the apparatus and its commercial designation; 2.Manufacturer's name and his address; if the apparatus is imported, also the importer's name and his address; 3.Manufacturer's registered trademark, if any; 4.Name of the model and serial number; 5.Country of manufacture. The details shall be marked on the apparatus or on its packaging, or on a label well attached to the apparatus or its packaging, by bonding or sewing, such that the label cannot be easily removed.	Must be considered when marketing into Israel.	—
1.7.2	**Safety instructions and marking**		—
1.7.2.1	**General** - The following shall be added at the end of the clause: All the instruction and all the warnings related to safety shall also be written also in the Hebrew language.	Must be considered when marketing into Israel.	—
-	At the end of clause 1, clause 1.201 shall be added as follows:		

1.201	**Power consumption in standby mode** The equipment shall comply with the requirements of the Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011, with a permitted deviation of up to 10 %	Must be considered before marketed in Israel.	—
2	**Protection from hazards** At the end of the clause, clause 2.201 shall be added as follows:		—
2.201	**Prevention of electromagnetic interferences**		—
2.201.1	Emission of electromagnetic interferences shall be tested in accordance with Israeli Standard SI 961 Part 6.1 or in accordance with the Israeli Standard that is an adoption of the International Standard CISPR 32. Note: At the time of writing this Standard, the Israeli Standard that is an adoption of the International Standard CISPR 32 is in preparation. Until publication of the Israeli Standard. the International Standard CISPR 32 may be used for testing the emission of electromagnetic interference. If the apparatus contains transmitters, it shall be tested according to Israeli Standard SI 961 Part 48.1 and according to another relevant part of the SI 961 Part 48 series or from the EN 301 489 series, according to the type of transmitter in the apparatus.	Must be considered before marketed in Israel.	—
2.201.2	Immunity to emission of electromagnetic interferences shall be tested in accordance with Israeli Standard SI 961 Part 6.2.	Must be considered before marketed in Israel.	—
2.201.3	Emission of electromagnetic interferences to the public electricity network shall be tested in accordance with the Israeli Standards SI 961 Parts 12.3 and 12.5 or in accordance with the Israeli Standards SI 61000 Part 3.12 and SI 961 Part 12.11, according to the current consumption of the equipment.	Must be considered before marketed in Israel.	—
3	**Wiring, connections and supply**		—
3.2	**Connection to a mains supply**		—
3.2.1	**Means of connection**		—
3.2.1.1	**Connection to an a.c. mains supply** After the NOTE, the following note shall be added: Note: In Israel, the supply plug shall comply with the requirements in Israeli Standard SI 32 Part I.I.	Refer to Summary of Testing in main test report.	—

	Special national conditions (if any)		—
	ANNEX P **Normative references** In place of some of the International Standards cited in the Standard and noted in this annex, the following Israeli Standards shall apply:	Must be considered before marketed in Israel.	—

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60065: 2001 Amendment 1	SI 60065 - Audio, video and similar electronic apparatus – Safety requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60065 - Edition 8.0: 2014-06
IEC 60227-1: 2007	SI 60227 Part I – Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60227-1 - Edition 3.0: 2007-10
IEC 60227-2: 1997 Amendment 1: 2003	SI 6022 7 Part 2 – Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V: Test methods	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60227-2 Edition 2.1: 2003-04
IEC 60245 (all parts)	SI 60245 (all parts) - Rubber insulated cables - Rated voltages up to and including 450/750 V	The Israeli Standard series, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard series IEC 60245 (all parts)
IEC 60309 (all parts) [(a)]	SI 1109 Part I - Plugs, socket-outlets and couplers for industrial purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60309-1 - Fourth edition: 1999-02
	SI 1109 Part 2 - Plugs, socket- outlets and couplers for industrial purposes: Dimensional interchangeability requirements for pin and contact-tube accessories	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60309-2 - Fourth edition: 1999-4

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The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60317 (all parts) [a]	SI 1067 Part 1 – Enamelled [b] round copper wires with high mechanical properties	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
	SI 1067 Part 2 – Self-fluxing enamelled [b] round copper wires	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
	SI 1067 Part 3 – enamelled [b] round copper wires with a temperature index of 180 °C	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
IEC 60320 (all parts) [a]	SI 60320 Part 1 – Appliance couplers for household and similar general purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-1 - Edition 2.1: 2007-11
	SI 60320 Part 2.1 – Appliance couplers for household and similar general purposes: Sewing machine couplers	The Israeli Standard, excluding nation al modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-1 - Second edition: 2000-07
	SI 60320 Part 2.2 – Appliance couplers for household and similar general purposes: Interconnection couplers for household and similar equipment	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-2 - Second edition: 1998-08
	SI 60320 Part 2.3 – Appliance couplers for household and similar general purposes: appliance coupler with a degree of protect ion higher than IPX0	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-3 - First edition: 1998-09
IEC 60364-1: 2001	Electricity Law, 1954, with its Regulations and updates	
IEC 60730-1: 1999 Amendment 1 (2003)	SI 60730 Part I - Automatic electrical controls: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60730-1 - Edition 5.0: 2013-11

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60825-1	SI 60825 Part 1 – Safety of laser products: Equipment classification and requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-1 – Second edition: 2007-03
IEC 60825-2	SI 60825 Part 2 – Safety of laser products: Safety of optical fibre communication systems (OFCS)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-2 – Edition 3.2: 2010-12
IEC 60825-12	SI 60825 Part 2 – Safety of laser products: Safety of free space optical communication systems used for transmission of information	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-12 – First Edition: 2004-02
IEC 60947-1: 2004	SI 60947 Part I – Low-voltage switchgear and controlgear: General rules	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60947-1 – Edition 5.0: 2007-06
IEC 60998-1	SI 60998 Part 1 – Connecting devices for low-voltage circuits for household and similar purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60998-1 – Second Edition: 2002-12
IEC 60999-1	SI 60999 Part 1 – Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: General requirements and particular requirements for clamping units for conductors from 0.2 mm^2 up to 35 mm^2 (included)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60999-1 – Second Edition: 1999
IEC 60999-2	SI 60999 Part 2 – Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: Particular requirements for clamping units for conductors above 35 mm^2 up to 300 mm^2 (included)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60999-2 – Second Edition: 2003-05

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The referenced International Standard	The substituted Israeli Standard	Comments
IEC 61058-1: 2000	SJ 61058 Part I - Switches for appliances: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 61058-1 – Edition 3.2: 2008-04
IEC 62471: 2006	SI 62471 – Photobiological safety of lamps and lamp systems	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 62471 (CIE S 009: 2002) – First edition: 2006-07
ISO 262	SI 876 – ISO general purpose metric screw thread: Basic dimension and selected sizes for screws	The Israeli Standard is based on the International Organization for Standardization publications ISO R 724 - 1968 ISO 262 - 1973
ISO 3864 (all parts) [(a)]	SI 3864 Part I – Graphic symbols – Safety colours and safety signs: Design principles for safety signs in workplaces and public areas	The Israeli Standard, excluding national modifications and additions, is identical to the International Organization for Standardization Standard ISO 3864-1: First edition: 2002-05-15
Notes: (a) In the International Standard series, there are parts not yet adopted as Israeli Standards. This table notes the existing Israeli Standards, and in the Comments column, the corresponding parts of the International Standard series. (b) Not relevant to the translation.		

The following shall be added to the annex:	
Israeli Standards	
SI 32 Part 1.1	Plugs and socket-outlets for household and similar purposes: Plugs and socket-outlets for single phase up to 16A – General requirements
SI 961 Part 6.1	Electromagnetic compatibility: Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
SI 961 Part 6.2	Electromagnetic compatibility: Information technology equipment – Immunity characteristics - Limits and methods of measurement
SI 961 Part 12.3	Electromagnetic compatibility: Limits – Limits for harmonic current emissions (equipment input current ≦16 A per phase)
SI 961 Part 12.5	Electromagnetic compatibility: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≦ 16 A per phase and subject to conditional connection
SI 961 Part 12.11	Electromagnetic compatibility: Limits – Limitation of voltage changes voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≦ 75 A and subject to conditional connection
SI 961 Part 48 (all parts)	Electromagnetic compatibility: Electromagnetic compatibility (EMC) for radio equipment and services
SI 961 Part 48.1	Electromagnetic compatibility: Electromagnetic compatibility (EMC) for radio equipment and services – Common technical requirements
SI 61000 Part 3.12	Electromagnetic compatibility: Limits – Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≦ 75 A per phase

Israeli Laws, Regulations and documents Electricity Law, 1954, with its Regulations and updates Consumer Protection Order (Marking of goods), 1983, Kovetz HaTakanot 4465 dated 1983-02-24, with its updates Electricity Regulations (Earthings and protective means against electrification for voltages up to 1,000 V), 1991, with their updates Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011, with its updates	
European Standards	
EN 301 489 (all parts)	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services

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Product Noise Declaration in Compliance with ISO 7779 and ISO 9296

ThinkCentre M70q Gen 5

Ⅰ.Configuration Information[1]

Components	High Configuration
FFs	1L
CPU	Intel i7-14700T 1.3GHz/20C/32T/33M 35W vPro
Memory	32GB 5600 DDR5 SODIMM
SSD	M.2 2280 Performance 1TB PCIe Gen4
VGA	Onboard graphic
PSU	Tiny PC 135W 89% adapter
FSC Mode	BP

Ⅱ.Machine Types

MT	12TD,12TE,12TF,12TG,12TN,12TQ,12TR,12TS

Ⅲ.Acoustic Noise Emissions Declaration[2]

High Configuration			
Stress Mode	L_{WAd}(bels)	L_{pAm}(dBA)	
		Operator	Bystander
Idle	2.8	19	18
Disk Operating	2.9	21	20
Test Photos			

Legend:

L_{WAd} -Declared (upper limit) A-weighted sound power levels for a random sample of machines, in bels.

L_{pAm} -Measured A-weighted sound pressure levels for a random sample of machines, in dBA

Operator -Mean value of A-weighted sound pressure levels at the operator position, for a random sample of machines, in dBA. The operator position is located 0.5m away from the front of unit.

Bystander -Mean value of A-weighted SPLs averaged over four bystander positions, for a random sample of machines, in dBA. The bystander position is located 1.0m away from the edge of unit

Idle -Indicates idle condition (system is powered on, but no disk activity).

Disk Operating -Indicates HDD or SSD operating condition (disk drive is randomly seeking).

Notes:

1. All test are performed according to ISO 7779 and declared according to ISO 9296.
2. The declared acoustic noise value is based on a typically configured product. If optional items be added or removed, the acoustic noise value should be changed correspondingly.

Approved by:Sophia Liu ***Signed by: yangwp3***

Issued Date: 2024/3/1

IV.Appendix: CNAS 17025 certificate



China National Accreditation Service for Conformity Assessment

LABORATORY ACCREDITATION CERTIFICATE

(Registration No. CNAS L2356)

Lenovo (Beijing) Co., Ltd. Reliability Laboratory

(Legal Entity: Lenovo (Beijing) Co., Ltd.)

Building 2, No.10, Xibeiwang East Road, Haidian District, Beijing, China

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The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule forms an integral part of this certificate.

Effective Date: 2023-01-19

Expiry Date: 2029-01-18

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CXL Consortium (https://www.computeexpresslink.org/)

ETSI-NFV (http://portal.etsi.org/portal/server.pt/community/NFV/367)

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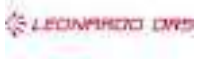

















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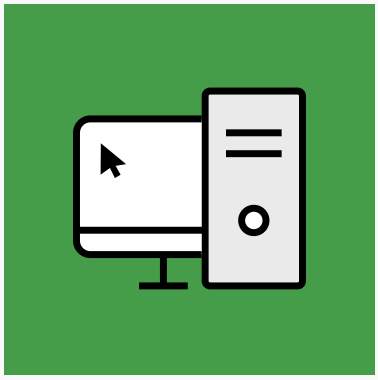
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ThinkCentre M70q Gen 5



COMPUTERS & DISPLAYS

Product Summary:

Product Type:	Desktop
Registered In:	United States
Manufacturer:	Lenovo
EPEAT Tier:	Gold
Registration Date:	2024-06-14
Product Status:	Active
EPEAT Climate+:	Achieved 2024-06-14
Manufacturer Part Number(s):	12TD, 12TE, 12TF, 12TG, 13E2

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EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable "required" criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and	Products that meet all required criteria and	Products that meet all required criteria and

achieve **less than 50%** of the optional points are rated at **EPEAT Bronze**	achieve **50 - 74%** of the optional points are rated at **EPEAT Silver**	achieve **75 - 100%** of the optional points are rated at **EPEAT Gold**

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	**11 / 16**
(4.1.2.1) Restrictions of the use of cadmium	1
(4.1.4.1) Restriction of the use of beryllium	1
(4.1.5.2) Further reduction of bromine and chlorine content of plastic materials	0
(4.1.6.1) Avoidance or elimination of substances on EU REACH Annex XIV (authorization list)	1
(4.1.6.2) Reduction of substances on the EU REACH Candidate List of SVHCs	0
(4.1.8.1) Chemical assessment and selection	0
(4.1.9.1) IEC 62474 declarable substances	1
(4.1.9.2) Requesting substance inventory	1
(4.1.9.3) Acquiring substance inventory	2
(4.1.10.1) Reduce fluorinated gas emissions from flat panel display manufacturing	2
(4.1.10.2) Reduce fluorinated greenhouse emissions from semiconductor production	2
4.4 Product longevity/life-cycle extension	**2 / 2**
(4.4.2.2) Publicly available service information	1
(4.4.2.5) Product upgradeability and repairability	1
4.5 Energy Conservation	**1 / 3**

(4.5.1.4) Energy efficiency for external power supplies exceeding International External Power Supply Efficiency Level VI	1
(4.5.1.5) Product energy consumption less than the ENERGY STAR Maximum Energy Limit	0

4.7 Packaging — 2 / 2

(4.7.3.2) Packaging composed of recycled, and/or biobased, and/or sustainably forested content	1
(4.7.4.1) Offering of a bulk packaging option	1

4.8 Life cycle assessment and carbon footprint — 6 / 6

(4.8.1.1) Product life cycle assessment and public disclosure of analyses	2
(4.8.1.2) Product specific greenhouse gas emissions—product carbon footprint	2
(4.8.2.1) Corporate carbon footprint	1
(4.8.2.2) Greenhouse gas emissions from product transport	1

4.9 Corporate Environmental Performance — 9 / 9

(4.9.1.2) Third party certified environmental management system (EMS) for supplier manufacturing facilities	1
(4.9.2.2) Corporate environmental performance reporting by suppliers	1
(4.9.3.1) Energy management system/energy performance improvement –manufacturers	1
(4.9.3.2) Energy management system/energy performance improvement for suppliers	2
(4.9.4.1) Renewable energy use by manufacturer	2
(4.9.4.2) Renewable energy use by manufacturer suppliers	2

4.10 Corporate social responsibility	**2 / 6**
▪ (4.10.1.1) Socially responsible manufacturing: Labor	0
▪ (4.10.1.2) Socially responsible manufacturing: OHS	0
▪ (4.10.2.2) Participation in an in-region program that advances responsible sourcing of conflict minerals	1
▪ (4.10.2.3) Smelter and refiner participation in OECD-aligned third party mechanisms	1
TOTAL OPTIONAL CRITERIA SCORE:	**33 / 44**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

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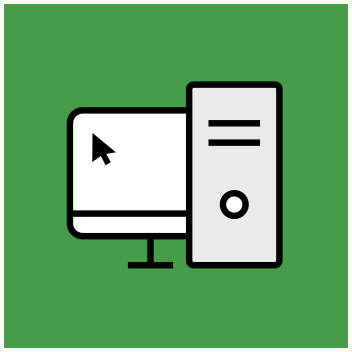
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Lenovo ThinkCentre Tiny-In-One 24 Gen 5



ThinkCentre Tiny-in-One (TIO) 24 Gen 5



COMPUTERS & DISPLAYS

Product Summary:

Product Type:	Monitors
Registered In:	United States
Manufacturer:	Lenovo
EPEAT Tier:	Gold
Registration Date:	2023-06-14
Product Status:	Active
EPEAT Climate+:	Achieved 2023-10-18
Manufacturer Part Number(s):	12NA

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable "required" criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at **EPEAT Bronze**	Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at **EPEAT Silver**	Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at **EPEAT Gold**

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	**13 / 16**
(4.1.2.1) Restrictions of the use of cadmium	1
(4.1.4.1) Restriction of the use of beryllium	1
(4.1.5.2) Further reduction of bromine and chlorine content of plastic materials	0
(4.1.6.1) Avoidance or elimination of substances on EU REACH Annex XIV (authorization list)	1
(4.1.6.2) Reduction of substances on the EU REACH Candidate List of SVHCs	0
(4.1.8.1) Chemical assessment and selection	2
(4.1.9.1) IEC 62474 declarable substances	1
(4.1.9.2) Requesting substance inventory	1
(4.1.9.3) Acquiring substance inventory	2
(4.1.10.1) Reduce fluorinated gas emissions from flat panel display manufacturing	2
(4.1.10.2) Reduce fluorinated greenhouse emissions from semiconductor production	2
4.2 Materials Selection	**3 / 3**
(4.2.1.2) Higher post-consumer recycled, ITE-derived post-consumer recycled plastic, or bio-based content	2
(4.2.1.3) Post-consumer recycled, ITE-derived post-consumer recycled plastic	1
4.4 Product longevity/life-cycle extension	**1 / 2**
(4.4.2.2) Publicly available service information	1
(4.4.2.5) Product upgradeability and repairability	0
4.5 Energy Conservation	**1 / 2**
(4.5.1.5) Product energy consumption less than the ENERGY STAR Maximum Energy Limit	1
4.7 Packaging	**1 / 2**

(4.7.3.2) Packaging composed of recycled, and/or biobased, and/or sustainably forested content	1
(4.7.4.1) Offering of a bulk packaging option	0
4.8 Life cycle assessment and carbon footprint	**6 / 6**
(4.8.1.1) Product life cycle assessment and public disclosure of analyses	2
(4.8.1.2) Product specific greenhouse gas emissions—product carbon footprint	2
(4.8.2.1) Corporate carbon footprint	1
(4.8.2.2) Greenhouse gas emissions from product transport	1
4.9 Corporate Environmental Performance	**9 / 9**
(4.9.1.2) Third party certified environmental management system (EMS) for supplier manufacturing facilities	1
(4.9.2.2) Corporate environmental performance reporting by suppliers	1
(4.9.3.1) Energy management system/energy performance improvement –manufacturers	1
(4.9.3.2) Energy management system/energy performance improvement for suppliers	2
(4.9.4.1) Renewable energy use by manufacturer	2
(4.9.4.2) Renewable energy use by manufacturer suppliers	2
4.10 Corporate social responsibility	**2 / 6**
(4.10.1.1) Socially responsible manufacturing: Labor	0
(4.10.1.2) Socially responsible manufacturing: OHS	0
(4.10.2.2) Participation in an in-region program that advances responsible sourcing of conflict minerals	1
(4.10.2.3) Smelter and refiner participation in OECD-aligned third party mechanisms	1
TOTAL OPTIONAL CRITERIA SCORE:	**36 / 46**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

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Annex B2 - Product environmental attributes
Computers and computer monitors

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Company name *	***Lenovo***	
Contact information * e-mail address	***Lenovo Environmental Social and Governance*** ***environment@lenovo.com***	
Internet site *	***https://www.lenovo.com/us/en/sustainability-resources/***	
Additional information	***The latest version of this document can be found at:*** ***http://www.lenovo.com/ecodeclaration***	

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	***Desktop Computer***
Commercial name *	***ThinkCentre M70q Gen5***
Model number *	***12TD,12TE,12TF,12TG***
Issue date *	***2024-04-08***
Intended market *	☒ **Global** ☒ **Europe** ☒ **Asia, Pacific & Japan** ☒ **Americas** ☐ **Other**
Additional information	***EPEAT(12TD,12TE,12TF,12TG);Energy Star(12TD,12TE,12TF,12TG);TCO(12TD,12TE,12TF,12TG)***

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2
Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:
P4.1 – P4.3 Consumable materials
P9.1 TEC and Print speed
P10.2 - P10.3 Chemical emissions from printing products
P11.1 - P11.3 Consumable materials for printing products.

Anexo PROPOSTA ITEM 1 - ER SOLUÇÕES (1661785) SEI 2025.001317 / pg. 882

Model number *	***12TD,12TE,12TF,12TG***	**Logo**	Lenovo
Issue date *	***2024-04-08***		

Product environmental attributes - Legal requirements		**Requirement met**		
Item		Yes	No	N/A
P1	**Hazardous substances and preparations**			
P1.1*	Products comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (See legal reference) Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (See legal reference). Comment: Legal reference has no maximum concentration values	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (See legal reference)	☒	☐	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (See legal reference)	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 μg/cm²/week (See legal reference) Comment: Max limit in legal reference when tested according to EN1811:2011-5	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): ***https://www.lenovo.com/us/en/Lenovo-REACH-SVHC-Disclosure***	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☒	☐	☐
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☒	☐	☐
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☒	☐	☐
P2.4*	Documentation includes the number of cycles the (secondary) battery can withstand. (See legal reference)	☒	☐	☐
P2.5*	When internal batteries of a notebook computer cannot be “accessed and replaced by a nonprofessional user”, the related text is present and legible on the external packaging (See legal reference)	☒	☐	☐
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): ***https://www.lenovo.com/us/en/compliance/eu-doc for EU*** ***https://www.lenovo.com/us/en/compliance/uk-doc for UK***	☒	☐	☐
P3.2*	The product complies with the applicable Eco design requirements for energy-related products, (See legal reference)	☒	☐	☐
	Required information is; ☒ given in item P15 or added to this document, ☒ available at (add URL): ***http://www.lenovo.com/ecodeclaration***	☒	☐	☐
P5	**Product packaging**			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (See legal reference)	☒	☐	☐
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (See legal reference) Comment: Legal reference has no maximum concentration values	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (***https://lenovo.com/recycling***).	☒	☐	☐

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating “Yes” means that the product is compliant with the mandatory requirements.

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Model number *	***12TD,12TE,12TF,12TG***	**Logo**	Lenovo
Issue date *	***2024-04-08***		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	N/A
P7	**Design** **Disassembly, recycling**			
P7.1*	Parts that have to be treated separately are easily separable	☒	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating	☐	☒	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials	☐	☐	☒
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4	☐	☐	☒
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools	☒	☐	☐
P7.6*	Labels are easily separable (This requirement does not apply to safety/regulatory labels)	☒	☐	☐
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	☒	☐	☐
P7.8*	Upgrading can be done using commonly available tools	☒	☐	☐
P7.9	Spare parts are available after end of production for: ***4*** years			☐
P7.10	Service is available after end of production for: ***4*** years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***SGCC*** Material type: ***PC/PC+ABS*** Material type: ***PC*** Material type: ***ABS*** Material type: ***PC+ABS*** Material type:			
P7.12	Insulation materials of external electrical cables are PVC free	☐	☒	☐
P7.13	Insulation materials of internal electrical cables are PVC free	☐	☒	☐
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content	☐	☐	☒
P7.15	Printed circuit boards, PCBs (without components) are low halogen as defined in IEC 61249-2-21. (See NOTE B2): Only PCBs > 25g ☐ or All PCBs ☐	☐	☒	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according to ISO 1043-4: Marking:	☐	☐	☒
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): TBBPA (additive) ☐, TBBPA (reactive) ☒ (See NOTE B3), Other; chemical name: , CAS #: Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according to ISO 1043-4:	☒ ☒	☐ ☐	☐ ☐
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: " Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according to ISO 1043-4:	☐ ☐	☐ ☐	☒ ☒
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; and Hazard statements: The source(s) for these classifications is/are found at (add URL(s)): , (See NOTE B5)	☐	☐	☒

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

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Model number *	12TD,12TE,12TF,12TG	Logo	Lenovo
Issue date *	2024-04-08		

Product environmental attributes - Market requirements (continued)						Requirement met		
Item						Yes	No	N/A
	Material and substance requirements (continued)							
P7.20*	Postconsumer recycled plastic material content is used in the product (See NOTE B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***15.96*%**. b) The weight of recycled material is ***11.2*** g					☒	☐	☐
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is %. or b) The weight of the biobased plastic material is g					☐	☒	☐
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg					☐	☐	☒
P7.23*	If product includes an integral display, the total mercury content in the integrated display: mg					☐	☐	☒
P8	**Batteries**							
P8.1*	Battery chemical composition: ***Lithium Manganese Dioxide***							☐
P9	**Energy consumption (See NOTE B8)**							
P9.1	For the product the following power levels or energy consumptions are reported:							
Energy mode *		Power level at **100** V AC	Power level at **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method *			☐
Peak (On-Max)		***135*** W	***135*** W	***135*** W	***Full Load***			
Device Category I1								
Short Idle State – WOL Enabled (P_{short_idle})		***7.14*** W	***6.98*** W	***6.89*** W	***ENERGY STAR Computers V8.0***			
Long Idle State – WOL Enabled (P_{long_idle})		***4.56*** W	***4.49*** W	***4.78*** W	***ENERGY STAR Computers V8.0***			
Sleep (S3) – WOL Enabled (P_{Sleep})		***0.96*** W	***0.97*** W	***0.96*** W	***ENERGY STAR Computers V8.0***			
Off Mode (S5) – WOL Enabled (P_{off})		***0.54*** W	***0.54*** W	***0.54*** W	***ENERGY STAR Computers V8.0***			
Device Category I2								
Short Idle State – WOL Enabled (P_{short_idle})		***7.06*** W	***7.39*** W	***7.44*** W	***ENERGY STAR Computers V8.0***			
Long Idle State – WOL Enabled (P_{long_idle})		***5.41*** W	***5.18*** W	***5.41*** W	***ENERGY STAR Computers V8.0***			
Sleep (S3) – WOL Enabled (P_{Sleep})		***0.95*** W	***0.96*** W	***0.95*** W	***ENERGY STAR Computers V8.0***			
Off Mode (S5) – WOL Enabled (P_{off})		***0.54*** W	***0.54*** W	***0.54*** W	***ENERGY STAR Computers V8.0***			
PS No-load (External power supply / charger plugged in the wall outlet but disconnected from the product.)		***0.061*** W	***0.061*** W	***0.061*** W				☒
ETEC * Annual Energy Consumption	***I1***:	***27.25*** kWh/year	***26.81*** kWh/year	***26.79*** kWh/year	Mode Weighting ***Conventional - Desktop / AIOs***			☐
	I2:	***27.75*** kWh/year	***28.45*** kWh/year	***28.75*** kWh/year				
	:	kWh/year	kWh/year	kWh/year				
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * :					***International Efficiency Marking Protocol* (IEMP) for *External Power Supplies***			☒
Display resolution * : megapixels								☒
Default time to enter energy save mode: ***25*** minutes					***ENERGY STAR Computers V8.0***			☐
P9.2*	Information about the energy save function is provided with the product					☒	☐	☐
P9.3	Energy efficiency class (monitors only):							☒

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available;

see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

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Model number *	***12TD,12TE,12TF,12TG***	**Logo**	Lenovo
Issue date *	***2024-04-08***		

Product environmental attributes - Market requirements (continued)				**Requirement met**		
Item				Yes	No	N/A
P10	**Emissions**					
	Noise emission – Declared according to ISO 9296 (See NOTE **B9**)					
P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)			
	Idle	* ***Idle Mode***	* ***2.8***			☐
	Operation	* ***Operating (SSD/HDD)*** * ***Operating (CPU)***	* ***2.9*** *			☐
	Other Mode	***Declared A-weighted sound pressure level (dB)***	***19 (operator position – idle)***			
	Other mode	***Declared A-weighted sound pressure level (dB)***	***21 (operator position – operating-HDD/SSD)*** ***(operator position – operating-CPU)***			
	Measured according to: ☒ ISO 7779 ☐ ECMA-74 ☐ Other (only if not covered by ECMA-74)					
	Electromagnetic emissions					
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):			☐	☐	☒
P12	**Ergonomics for computing products**					
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies			☐	☐	☒
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410			☒	☐	☐
P13	**Packaging and documentation**					
P13.1*	Product packaging material type(s): ***Paper - Corrugated single wall*** weight (kg): ***0.30*** Product packaging material type(s): ***Paper - Corrugated single wall*** weight (kg): ***0.175*** Product packaging material type(s): ***Plastic - Laminated (Fabricated) EPE*** weight (kg): ***0.107*** Product packaging material type(s): ***Plastic - PE (polyethylene)*** weight (kg): ***0.0106*** Product packaging material type(s): weight (kg):					
P13.2*	Product plastic primary packaging is free from PVC			☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***90*** %					☐
P13.4*	Specify media for user and product documentation (tick box): Electronic ☒, Paper ☒, Other ☐					☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify: Totally chlorine-free Elemental chlorine-free Processed chlorine-free			☒ ☒ ☐ ☐	☐	
P14	**Voluntary programs**					
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Eco-label: ***EPEAT*** Eco-label: ***TCO***	Criteria version: ***8.0*** Criteria version: Criteria version: ***9.0***	Date: ***2024.3.26*** Date: Date: ***2024.4.26***	Product category: ***Desktop Computer*** Product category: ***Desktop Computer*** Product category: ***Desktop Computer***		
P15	**Additional information (See NOTE B10)**					
P9	***Energy consumption of computer products; description of the tested product configuration: I1:Intel 300T+64G memory+2T SSD+2T SSD+135W*** ***I2:I5-14500T+64G memory+2T SSD+2T SSD+135W***					
P7.7 ***P7.8***	***In further explanation of Upgradability (P7.7/P7.8), the following components can be upgraded:*** ***Processor*** ***Upgradeable with special tools*** ***Memory*** ***Upgradeable using common tools*** ***Cards*** ***Upgradeable using common tools*** ***Drives/Storage*** ***Upgradeable using common tools***					
	NOTE: Supplier makes no representations, guarantees, assurances or warranties whether express or implied, regarding the information contained in this document. All information provided by supplier in this document is provided based on supplier's knowledge available at the time of completion, and supplier shall have no obligation to update such information. The information provided here is approximate and provided for informational purposes only. See a Lenovo Account Representative for more information.					

NOTE B9 A Guidance document on Acoustic Noise is available;
see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

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Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive)* * Specific exemptions apply for certain products and applications.	P1.1, P3.1
Regulation (EC) 1907/2006 (REACH Regulation), annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2006/66/EC (Battery and accumulators Directive), as amended.* * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2.3, P8.1
Directive 2014/35/EU (Low Voltage Directive)	P3.1
Directive 2014/30/EU (EMC Directive)	P3.1
Directive 2014/53/EU (RE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Commission Regulation (EC) No 278/2009 of 6 April 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power demand and average active efficiency of external power supplies	P3.1, P3.2, P9.1
COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers	P2.4, P2.5, P3.1, P3.2, P7.23, P9.1
Regulation（EC）No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive) Implementing Regulation (EU) 2019/290 establishing the format for registration and reporting of producers of electrical and electronic equipment to the register. Commission Implementing Regulation 2017/699 establishing a common methodology for the calculation of the weight of electrical and electronic equipment (EEE) placed on the national market in each Member State and a common methodology for the calculation of the quantity of waste electrical and electronic equipment (WEEE) generated by weight in each Member State.	P6.1

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Lenovo ErP Lot3 Information Sheet
- PC / Notebook -

As required by COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers (ErP Lot3).

Products scope of this sheet:
Desktop computer, integrated desktop computer, and notebook computer

This document is only valid in connection with the IT Eco Declaration of the specific Product.

Commercial name	***ThinkCentre M70q Gen5***	**Logo**
Model Number	***12TD,12TE,12TF,12TG***	
Issue Date	***2024-04-08***	
Additional information	***EPEAT(12TD,12TE,12TF,12TG);Energy Star(12TD,12TE,12TF,12TG);TCO(12TD,12TE,12TF,12TG)***	

P7.1.1 Product environmental attributes

(d) year of manufacture: ***2024***

(e) **Etec value** (kWh) per ErP Lot 3 Category and capability adjustments applied when **all discrete graphics cards (dGfx) are disabled** and if the system is tested with switchable graphics mode with UMA driving the display

(f) **Etec value** (kWh) per ErP Lot 3 Category and capability adjustments applied when **all discrete graphics cards (dGfx) are enabled**

		Category A (according to ErP Lot 3)	Category B (according to ErP Lot 3)	Category C (according to ErP Lot 3)	Category D (according to ErP Lot 3)
capability adjustments applied during testing	Memory over base [GB]		***64***		***64***
	Additional internal storage	***(Yes / No)***	***Yes*** ***(Yes / No)***	***(Yes / No)***	***Yes*** ***(Yes / No)***
	Discrete television tuner	***(Yes / No)***	***No*** ***(Yes / No)***	***(Yes / No)***	***No*** ***(Yes / No)***
	Discrete Audio Card	***(Yes / No)***	***No*** ***(Yes / No)***	***(Yes / No)***	***No*** ***(Yes / No)***
	Discrete graphics Card(s) [number / #]	***#:*** ***(Yes / No)***	***No #:*** ***(Yes / No)***	***#:*** ***(Yes / No)***	***No #:*** ***(Yes / No)***
	Category of discrete graphics Card(s)		***N/A***		***N/A***
Test results	**Etec Value (kWh) - dGfx disabled** **all discrete graphics cards (dGfx) are disabled/ UMA is active for switchable graphics/ product has no graphics cards (dGfx)**		***26.86***		***30.51***
	Etec Value (kWh) - dGfx enabled **all discrete graphics cards (dGfx) are enabled**		***N/A***		***N/A***

(g) Idle state power demand (Watts); ***7.87*** **W**

(h) Sleep mode power demand (Watts); ***0.99*** **W**

(i) Sleep mode with WOL enabled power demand (Watts) (where enabled); ***0.98*** **W**

(j) Off mode power demand (Watts); ***0.52*** **W**

(k) Off mode with WOL enabled power demand (Watts) (where enabled); ***0.52*** **W**

(l) Internal power supply efficiency at 10%, 20%, 50% and 100% of rated output power (if applicable):

Internal Power Supply Model	Output Power	10% Load Efficiency	20% Load Efficiency	50% Load Efficiency	100% Load Efficiency
	W				
	W				
	W				
	W				
	W				

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(m) external power supply efficiency (if applicable)*:

Power Adapter Model	Output Power	Average Active Efficiency
ADP-65ME BA	***65*** W	*91%*
ADP-90ME BA	***90*** W	*91%*
ADL135SDC3A	***135*** W	*91%*
ADL135SLC3A	*135* W	*89%*
ADL135SCC3A	*135* W	*92%*

*internal note: show values for all available external power supplies

(o)	Minimum number of loading cycles that the batteries can withstand (applies only to notebook computers):	***cycles***
(p-1)	Measurement methodology used to determine information mentioned in points (l) – internal PSU efficiency:	***Not Applicable***
(p-2)	Measurement methodology used to determine information mentioned in points (m) – external PSU efficiency:	***EN 50563:2011***
(p-3)	Measurement methodology used to determine information mentioned in points (o) – loading cycles batteries: ***EN 50563:2011***	
(p-4)	Measurement methodology used to determine information mentioned in maximum, idle, sleep, off mode power as defined in Point P9.1 in the Product IT Eco Declaration:	***ENERGY STAR Computers V8 / IEC 62632:2013***
(q)	Sequence of steps for achieving a stable condition with respect to power demand: ***Based on user manual/Power on->Wait 5 minutes->Stable condition***	
(r)	Description of how sleep and/or off mode was selected or programmed: ***Based on user manual-Set power button behaviors***	
(s)	Sequence of events required to reach the mode where the equipment automatically changes to sleep and/or off mode: ***Based on user manual/Control Panel->Power Options-> Change Settings-> Restore default settings for this plan***	
(t)	**Duration of idle state condition before the computer automatically reaches sleep mode**, or another condition which does not exceed the applicable power demand requirements for sleep mode (in minutes):	***25*** minutes
(u)	**Length of time after a period of user inactivity in which the computer automatically reaches a power mode that has a lower power** demand requirement than sleep mode (in minutes):	***N/A*** minutes
(v)	**Length of time before the display sleep mode is set to activate** after user inactivity (in minutes):	**10** minutes
(w)	Information on the energy-saving potential of power management functionality: ***N/A***	
(x)	user information on how to enable the power management functionality: ***Based on user manual-Set the power plan***	

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(z) Test parameters for measurements: — test voltage in V and frequency in Hz, — total harmonic distortion of the electricity supply system, — information and documentation on the instrumentation, set-up and circuits used for electrical testing:

Test Voltage and Frequency ***230V / 50Hz***

Power Measurement Circuit

Test Parameters

Temperature	***25.0*** ° C
Humidity Range	***46%***
Total Harmonic Distortion of Electrical Supply System	***2.0%***

Test Instruments

Instrument Type	Make/model of Equipment	Date of Last Calibration
AC power Source	***Testo;622;SN:39504298/305***	***2023-09-11***
Power Meter	***YOKOGAWA;WT310;SN:C2RD 07008V***	***01/09/23***
Timer	***CASIO; HS-80W; SN: J111Q01***	***11/09/23***

Additional Notebook Battery Information:

	Battery[ies] **not** user replaceable The battery[ies] in this product cannot be easily replaced by users themselves. (1)	Battery[ies] **are** user replaceable	N/A
Internal/built-in Battery	☐	☐	☒
External/detachable Battery	☐	☐	☒
Bios Backup Battery	☒	☐	☐
Other:	☐	☐	☒

Additional information

1)
The battery[ies] in this product cannot be easily replaced by users themselves.
Акумулаторната[ите] батерия[и] в този продукт не може да се замени[ят] лесно от самите потребители.
Las baterías de este producto no pueden ser sustituidas fácilmente por los propios usuarios.
Výměnu baterie/baterií v tomto výrobku by neměli provádět sami uživatelé.
Brugeren kan ikke uden videre udskifte batteriet/batterierne i dette produkt.
Der Akku/die Akkus dieses Produkts kann/können nicht ohne weiteres vom Benutzer selbst ausgetauscht werden.
Kasutajad ei saa selle toote akut/akusid ise hõlpsasti asendada.
Η μπαταρία[-ες] στο προϊόν αυτό δεν μπορούν να αντικατασταθούν εύκολα από τους ίδιους τους χρήστες
La/les batterie(s présente(s) dans ce produit ne peuvent être facilement remplacée(s) par les utilisateurs eux-mêmes.
Korisnik ne može lako zamijeniti Bateriju sam u ovom proizvodu.
La batteria/le batterie in questo prodotto non può/possono essere facilmente sostituita/e dall'utente.
Lietotāji paši nevar nomainīt šā ražojuma akumulatoru(-us).
Šio gaminio baterijos [baterijų] pats vartotojas negali lengvai pakeisti.
A termék akkumulátorát/akkumulátorait a felhasználó nem tudja egyedül egyszerűen kicserélni.
Il-batterija/batteriji f'dan il-prodott ma tistax/jistgħux tiġi/jiġu sostitwita/i mill-utenti stess.
Batteriet [ene] i dette produktet kan ikke lett erstattes av brukerne selv.
De batterij(en) in dit product is (zijn) door de gebruiker niet gemakkelijk vervangbaar.
Użytkownik nie może sam w łatwy sposób wymienić baterii w tym produkcie.
A ou as baterias deste produto não podem ser facilmente substituídas pelos próprios utilizadores.
Bateria (bateriile) din acest produs nu poate (pot) fi ușor înlocuită (înlocuite) de utilizatorii înșiși.
Batériu(-ie) v tomto výrobku nemôže vymieňať používateľ.
Baterij/baterije v tem izdelku uporabniki sami ne morejo zlahka zamenjati.
Tämän tuotteen akku [akut] ei[vät] ole helposti käyttäjän vaihdettavissa.
Det är inte enkelt för kunden att själv byta ut batteriet/batterierna.
Bu üründeki batarya(lar) kullanıcılar tarafından kolaylıkla değiştirilemez.

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THE ECO DECLARATION

ecma

ECMA/TC38-TG3/2015/026
(Rev. 1 – 15 April 2015)

Annex B2 - Product environmental attributes
Computer Monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under P15.

Brand *	*Lenovo*	**Logo**
Company name *	*Lenovo*	
Contact information * **e-mail address**	*Lenovo Global Environmental Affairs* *Alvin L Carter* alcarter@lenovo.com	
Internet site *	*http://www.lenovo.com/social_responsibility/us/en/environment.html*	
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	*Monitor*
Commercial name *	*ThinkCentre TIO24Gen5/TIO24Gen5Touch*
Model number *	*12NA/12NB/12NC*
Issue date *	*2023/3/1*
Intended market *	☒ **Global** ☐ **Europe** ☐ **Asia, Pacific & Japan** ☐ **Americas** ☐ **Other**
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2

Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:
P4.1 – P4.3 Consumable materials
P9.1 TEC and Print speed
P10.2 - P10.3 Chemical emissions from printing products
P11.1 - P11.3 Consumable materials for printing products.

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Model number *	12NA/12NB/12NC	Logo	Lenovo
Issue date *	2023/3/1		

Product environmental attributes - Legal requirements		Requirement met		
Item		Yes	No	n.a.
P1	**Hazardous substances and preparations**			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	☒	☐	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 µg/cm²/week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): *https://www.lenovo.com/us/en/Lenovo-REACH-SVHC-Disclosure*	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☐	☐	☒
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☐	☐	☒
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☐	☐	☒
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): *https://www.lenovo.com/us/en/compliance/eu-doc*	☒	☐	☐
P3.2*	The product complies with the Eco design requirements for energy-related products, (see legal reference).	☒	☐	☐
	Required information is; ☐ given in item P15 or added to this document, ☒ available at (add URL): ***https://www.lenovo.com/us/en/compliance/eco-declaration***	☒	☐	☐
P5	**Product packaging**			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	☒	☐	☐
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (see legal reference).	☒	☐	☐

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating "Yes" means that the product is compliant with the mandatory requirements.

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Model number *	*12NA/12NB/12NC*	**Logo**	Lenovo
Issue date *	*2023/3/1*		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P7	**Design** **Disassembly, recycling**			
P7.1*	Parts that have to be treated separately are easily separable	☒	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating.	☒	☐	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	☒	☐	☐
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	☒	☐	☐
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	☒	☐	☐
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	☒	☐	☐
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	☐	☐	☒
P7.8*	Upgrading can be done using commonly available tools	☐	☐	☒
P7.9	Spare parts are available after end of production for: 5 years			☐
P7.10	Service is available after end of production for: 5 years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***ABS*** Material type: ***PC*** Material type:			
P7.12	Insulation materials of external electrical cables are PVC free.	☐	☒	☐
P7.13	Insulation materials of internal electrical cables are PVC free.	☐	☒	☐
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	☒	☐	☐
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all ☒ PCBs > 25 g ☐ are low halogen as defined in IEC 61249-2-21. (See 1NOTE B2)	☐	☒	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking:	☐	☐	☒
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): ☐ TBBPA (additive), ☒ TBBPA (reactive) (See NOTE B3), ☐ Other:, CAS #:	☒	☐	☐
	Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4:	☐	☐	☒
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: "	☐	☐	☒
	Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4:	☐	☐	☒
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; and Hazard statements: The source(s) for these classifications is/are found at (add URL(s)): , (See note B5)	☐	☐	☒
P7.20*	Postconsumer recycled plastic material content is used in the product (See Note B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***82.3%. (EPEAT calculation) / 85% (TCO calculation)*** or b) The weight of recycled material is ***995.52*** g.	☒	☐	☐

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

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Model number *	12NA/12NB/12NC	Logo	Lenovo
Issue date *	2023/3/1		

Product environmental attributes - Market requirements (continued)		Requirement met Yes	No	n.a.
Item				
	Material and substance requirements (continued)			
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is *0*%. or b) The weight of the biobased plastic material is *0*g.	☐	☒	☐
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp. If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg	☒	☐	☐
P8	**Batteries**			
P8.1*	Battery chemical composition:			☒
P9	**Energy consumption (See NOTE B8)**			
P9.1	For the product the following power levels or energy consumptions are reported:			

Energy mode *	Power level at 100V 50HzAC	Power level at 100V /60Hz	Power level at **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method *	
ENERGY STAR® On Mode* (System Idle)	**11.82**	**11.83**	**11.8**	**11.85**	ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0	
ENERGY STAR® Low Power Sleep Mode*	**0.27**	**0.27**	**0.27**	**0.29**	ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0	
ENERGY STAR® Off / Apparent Off Mode*	**0.19**	**0.19**	**0.19**	**0.21**	ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0	
PTEC * Typical Energy Consumption	W	W	W	W	***PTEC = Pon x 0.35 + Psleep x 0.65***	☒
ETEC * Annual Energy Consumption	***37.78***kWh /year	***37.81***kWh /year	***37.72*** kWh/year	***37.98***kWh/year	***E_{TEC} = 8.76x (0.35xPon +0.65x Psleep)***	☐
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * :						☒
Display resolution* : ***1920*1080*** megapixels					ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0	
Default time to enter energy save mode: 15 seconds					ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0	

P9.2*	Information about the energy save function is provided with the product.	☒	☐	☐
P9.3*	The product meets the energy requirements of the following voluntary program/s: ENERGY STAR® version: 8.0 Product category: **Display**.	☒	☐	☐
P10	**Emissions**			
	Noise emission – Declared according to ISO 9296 (See NOTE B9)			

P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)	
	Idle	* ***HDD: Idle***	*	☒
	Operation	* ***HDD: Operating***	*	☒
	Other mode	***Declared A-weighted sound pressure level (dB)*** L_{pAm}	***(operator position desktop – idle)***	
	Other mode	***Declared A-weighted sound pressure level (dB)*** L_{pAm}	***(operator position desktop – operating)***	
	Measured according to: ☒ ISO 7779 ☐ ECMA-74 ☐ Other (only if not covered by ECMA-74)			

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

NOTE B9 A Guidance document on Acoustic Noise is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

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Model number *	***12NA/12NB/12NC***	**Logo**	Lenovo
Issue date *	***2023/3/1***		

Product environmental attributes - Market requirements (continued)		**Requirement met**		
Item		Yes	No	n.a.
	Electromagnetic emissions			
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):	☐	☒	☐
P12	**Ergonomics for computing products**			
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.	☒	☐	☐
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.	☐	☐	☒
P13	**Packaging and documentation**			
P13.1*	Product packaging material type(s): ***Carton Box*** weight (kg): ***1.505*** Product packaging material type(s): ***paper+pulp*** weight (kg): ***1.33*** Product packaging material type(s): ***Bag*** weight (kg): ***0.03*** Product packaging material type(s): weight (kg):			
P13.2*	Product plastic primary packaging is free from PVC.	☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***90***%			☐
P13.4*	Specify media for user and product documentation (tick box): ☒ Electronic, ☒ Paper, ☐ Other			☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify:	☒	☐	
	Totally chlorine-free	☒		
	Elemental chlorine-free	☐		
	Processed chlorine-free	☐		
P14	**Voluntary programs**			
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Criteria version: ***8.0*** Date: ***2023-03-27*** Product category: TCO Criteria version: ***TCO9*** Date: ***2023-03-28*** Product category: Eco-label: Criteria version: Date: Product category:			
P15	**Additional information (See NOTE B10)**			
P9	***Energy consumption of specific configuration may vary; description of the tested product configuration:***			
	NOTE: Supplier makes no representations, guarantees, assurances or warranties whether express or implied, regarding the information contained in this document. All information provided by supplier in this document is provided based on supplier's knowledge available at the time of completion, and supplier shall have no obligation to update such information. The information provided here is approximate and provided for informational purposes only. See a Lenovo Account Representative for more information.			
P9	See Energy Star Qualified Monitors & Displays for the latest information: https://www.energystar.gov/products/office_equipment/displays			

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

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Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive) * * Specific exemptions apply for certain products and applications.	P1.1
Regulation (EC) 1907/2006(REACH, Annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2013/56/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2,3, P8.1
Directive 2006/95/EC (Low Voltage Directive)	P3.1
Directive 2004/108/EC (EMC Directive)	P3.1
Directive 1999/5/EC (R&TTE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Regulation（EC）No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive)	P6.1

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OVERVIEW



1. DisplayPort 1.2	6. USB 3.2 Gen 1
2. HDMI 1.4	7. Audio-out (3.5mm)
3. VGA	8. USB 3.2 Gen 1
4. USB-B 3.2 Gen 1	9. USB 3.2 Gen 1
5. USB 3.2 Gen 1	

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PERFORMANCE

Panel

Panel

3-side NearEdgeless, In-Plane Switching

Backlight

WLED

Display Size

23.8 inches

Max View Area

WxH: 527.0 x 296.5 mm

Resolution

1920 x 1080

Aspect Ratio

16:9

Pixel Pitch

0.275 x 0.275 mm

Dot / Pixel Per Inch

93 dpi

Brightness

250 cd/m²

Contrast Ratio

- Dynamic Contrast Ratio: 3000000:1
- Contrast Ratio: 1000:1

View Angle (H / V)

Horizontal: 178°, Vertical: 178°

Response Time

- Extreme Mode: 4 ms
- Normal Mode: 6 ms

Refresh Rate

60Hz

Color Gamut

- Coverage Ratio: 99% sRGB
- Color Area Ratio: 110% sRGB

Color Support

16.7 Million

Color Depth

6-bit (Hi+FRC)

Screen Surface Treatment

Anti-glare

Operating System

Operating System

- Windows® 11 Support
- Windows® 10 Support

Power Supply

Power Consumption

- Typical / Max: 14W / 51W
- Sleep / Off mode: <0.5W
- Switch-off Mode: <0.3W
- Energy Star Power On: 12W
- Energy Star TEC: 38kWh

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- Internal Power Supply

Voltage Required

AC 100 to 240 V (50-60Hz)

Special Features

Special Features

- Lenovo® ThinkColour (Lenovo® Accessories and Display Manager) Support
  Lenovo® ThinkColour supports Windows® 10 & 11, Mac OS, and Windows® On Arm (functions vary across systems).
  Lenovo® Accessories and Display Manager is formerly Lenovo® Display Control Center.
- Natural Low Blue Light

DESIGN

Mechanical

ThinkCentre® M Series Support

ThinkCentre® M Series Tiny Support
For supporting Tiny devices, additional Tiny Clamp Bracket Mounting Kit III (PN: 4XF1K72399) are needed (sold separately).

Bezel Width

- Side: 2mm
- Top / Bottom: 2mm / 17.1mm

Cable Management

Support

Case Color

Raven black

Dimensions (WxDxH)[1]

Models	Dimensions
Lowest Position	539.8 x 199.7 x 349.8mm (21.25 x 7.86 x 13.77 inches)
Highest Position	539.8 x 199.7 x 504.8mm (21.25 x 7.86 x 19.87 inches)
Head Only	539.8 x 49.0 x 321.4 mm (21.25 x 1.93 x 12.65 inches)

Packaging Dimensions (WxDxH)

592 x 152 x 422 mm (23.31 x 5.98 x 16.61 inches)

Weight[2]

Models	Weight
Monitor With Stand	5.4 kg (11.9 lbs)
Monitor Head Only	3.4 kg (7.5 lbs)

Packaging Weight

7.8 kg (17.2 lbs)

Mounting

Supports VESA mount 100mm

Stand

Supports -5° to +23.5° tilt, left & right 45 swivel, 90° pivot, up to 155mm lift

In the Box

- Monitor with Stand
- 1x HDMI® Cable (1.8m)
- 1x USB-A to USB-B Cable (1.8m)
- 1x Power Cable (1.8m)
- Quick Setup Guide
- Warranty Booklet

Notes:

[1] The system dimensions may vary depending on configurations.

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[2] The system weight is approximate and based on results in Lenovo® lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

CONNECTIVITY

Ports[1]

Rear Ports

- 1x USB-B 3.2 Gen 1, USB upstream
- 4x USB 3.2 Gen 1, USB downstream
- 1x HDMI® 1.4[2]
- 1x DisplayPort™ 1.2
- 1x VGA
- 1x Power Connector
- 1x audio-out (3.5mm)

Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
USB4® 40Gbps (USB 40Gbps): 40 Gbit/s;
Thunderbolt™ 3/4: 40 Gbit/s.
[2] Supports 1920x1080@60Hz as specified in HDMI® 1.4

SECURITY & PRIVACY

Security

Physical Locks

Kensington® Security Slot™

SERVICE

Warranty

Base Warranty

3-year limited warranty

CERTIFICATIONS

Green Certifications[1]

Green Certifications

- ENERGY STAR® Certified
- EPEAT™ Gold Registered[2]
- RoHS compliant
- TCO Certified 9.0
- TCO edge 2.0
- Volatile Organic Compound Certification

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit https://compliance.lenovo.com.
[2] EPEAT™ is registered where applicable, please visit epeat.net for registration status by country.

Other Certifications

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Other Certifications

- Eyesafe® Certified 2.0
- TÜV Rheinland® Low Blue Light
- TÜV Rheinland® Low Blue Light (Hardware Solution)

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Ref. Certif. No.

NO122743

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI DACCEPTATION MUTUELLE DE CERTIFICATS DESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit	LCD Monitor
Name and address of the applicant Nom et adresse du demandeur	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Name and address of the manufacturer Nom et adresse du fabricant	Lenovo (Beijing) Limited 201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing, 100085 China
Name and address of the factory Nom et adresse de l'usine Note: When more than one factory, please report on page 2 Note: Lorsque il y plus d'une usine, veuillez utiliser la deuxième page	☑ Additional information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	1.5A 100-240V~ 50/60Hz Cl. I.
Trademark (if any) Marque de fabrique (si elle existe)	Lenovo
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	A22238***, *24*-**,TIO Flex 24*
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire, peuvent être indiqués sur la deuxième page	The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '–', '\', '/' or blank, for marketing use only. ☐ Additional information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2005, IEC 60950-1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport dessais numéro de référence qui constitue partie de ce Certificat	466746

This CB Test Certificate is issued by the National Certification Body
Ce Certificat dessai OC est établi par l'Organisme **National de Certification**

Nemko

Philip Pedersens vei 11,
NO-1366 Lysaker, Norway

Date: 09-06-2022

Signature: Okhyun Jeon
Certification Department

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TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.
China

Fábrica Austral de Productos Eléctricos S.A.
Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, ANTÁRTIDA E ISLAS DEL ATLÁNTICO SUR
Argentina

TPV Display Technology (Beihai) Co., Ltd.
China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi,P.R.
China

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.
China

TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

TPV TECHNOLOGY (THAILAND) COMPANY LIMITED
No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District, Prachin Buri Province,
Thailand

Dixon Technologies (India) Ltd.
EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526
India

TPV Display Technology (Wuhan) Co. Ltd.
Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.
China

L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

TPV Display Technology (China) Co., Ltd.
No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R.
China

Envision Indústria de Produtos Eletrônicos Ltda.
Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM
Brazil

TREND SMART CE MEXICO S. DE R.L. DE C.V.
Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana Baja California, C.P. 22435
Mexico

GeneTouch Corporation
No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012
Taiwan

Nemko
Philip Pedersens vei 11,
NO-1366 Lysaker, Norway

Date: 09-06-2022

Signature: Okhyun Jeon
Certification Department

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TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number. ..... :	466746
Date of issue ..... :	2022-06-09
Total number of pages ..... :	96 pages, other attachments refer to page 4
Name of Testing Laboratory preparing the Report..... :	Nemko Shanghai Ltd. Shenzhen Branch
Applicant's name ..... :	TPV Electronics (Fujian) Co., Ltd.
Address ..... :	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
Test specification:	
Standard..... :	IEC 60950-1:2005, AMD1:2009, AMD2:2013
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1G
Test Report Form(s) Originator .... :	SGS Fimko Ltd
Master TRF..... :	Dated 2019-07

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

This Test Report, when bearing the Nemko name and logo is only valid when issued by a Nemko laboratory, or by a laboratory having special agreement with Nemko.

Test item description ..... :	LCD Monitor
Trade Mark ..... :	Lenovo
Manufacturer ..... :	Lenovo (Beijing) Limited 201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing, China 100085
Model/Type reference ..... :	A22238***, *24*-**, TIO Flex 24* (The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '–', '\', '/' or blank, for marketing use only.)
Ratings ..... :	1.5A 100-240V ~ 50/60Hz, Cl. I

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Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ **CB Testing Laboratory**:	Nemko Shanghai Ltd. Shenzhen Branch	
Testing location/ address.....:	Unit CD, Floor 2 & Floor 10, Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen, Guangdong, China	
☐ **Associated CB Laboratory:**		
Testing location/ address.....:		
Tested by (name + function + signature) .....:	Eason Yang (Project handler)	Eason Yang
Approved by (name + function + signature).....:	Jane Sun (Verificator)	Jane Sun
☐ **Testing procedure: TMP/CTF Stage 1:**		
Testing location/ address.....:		
Tested by (name + signature) .....:		
Approved by (name + signature)..:		
☐ **Testing procedure: WMT/CTF Stage 2:**		
Testing location/ address.....:		
Tested by (name + signature) .....:		
Witnessed by (name + signature).:		
Approved by (name + signature)..:		
☐ **Testing procedure: SMT/CTF Stage 3 or 4:**		
Testing location/ address.....:		
Tested by (name + signature) .....:		
Approved by (name + signature)..:		
Supervised by (name + signature):		

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List of Attachments (including a total number of pages in each attachment):

1. Main Test report (96 pages)
2. Photos (14 pages)
3. Canadian differences (5 pages)
4. Korean differences (1 page)
5. US differences (5 pages)
6. Chinese differences (7 pages)
7. Japanese differences (17 pages)
8. Israeli differences (7 pages)

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Summary of testing:

Tests performed (name of test and test clause):

Clause	Test(s)
1.6	Input Current Test
1.7	Marking and instructions
2.1	Access to energized parts
2.1	Protection from electric shock and energy hazards
2.2	SELV circuit
2.5	Limited power sources
2.6	Earthing conductor
2.9	Electrical insulation
2.10	Clearances, Creepage distances and distances through insulation
4.1	Stability
4.2	Mechanical strength
4.5	Thermal requirements
4.6	Openings in enclosure
5.1	Touch current and protective conductor current
5.2	Electric Strength Test
5.3	Abnormal operating and fault conditions
Annex C	Transformers

Load condition: Refer to general product information

Testing location:

See page 3

Radio and television interference suppression compliance with the EMC directive is necessary for achieving type certification. The appliance shall comply with the relevant EMC standards, depending on the equipment in question.	The LCD Monitor has not been tested for EMC and must be tested and considered before marketed into the country in which is to be sold.
1.5, 3.2.5 Power supply cord set	The equipment shall be provided with an approved mains cord set complying with the national regulations of the countries in which the appliance is to be sold.
1.7.2 Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.	The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt In Sweden: “Apparaten skall anslutas till jordat uttag” In Denmark: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.” The texts for Finland, Denmark Norway and Sweden were shown on the label.
1.7.2.1 Language of safety markings/instructions.	Instructions and equipment marking related to safety is applied and checked in English, the instruction and marking should be checked again when marketed in the countries using other

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	language.
1.7.2.4 The equipment is intended and tested for installation to IT power system (Norway)	The following information should be given (but it is not required) in the installation: “This Product is also designed for IT power system with phase to phase voltage 230 V”.
2.5 Limited Power Source.	Main board, key control board and LED driver supplied by +19V output comply with LPS requirement. The limited power sources complying with subclause 2.5 and the components mounted on V-1 or better PCB according to sub-clause 4.7.2.2. Refer to sub-clause 2.5 for detail.
2.7.5 Protection by several devices.	The standards require also a protective device in the neutral phase when connected to IT power system. For Norway, this is not required; refer to Lists of Decisions from OSM.
2.7.6 Warning to service personnel.	After operation of the protective device, the equipment is still under voltage if it is connected to an IT power system. A warning is required for service personnel. Norway does not require this warning.
4.2 wall or ceiling mounted equipment	VESA compatible wall mounting kit 100mm x 100mm, 4 piece screw M4 x 10mm used.

A. Wall Mounting (Optional)

NOTE: For use only with a UL Listed Wall Mount Bracket.

To obtain a wall-mounting kit or height adjustment base, contact your local dealer. Refer to the instructions that come with the base mounting kit. To convert your display from a desk-mounted to a wall-mounted display, do the following:

1. Find VESA compatible wall-mounting kit which meets the quaternions in section "Specifications".
2. Verify that the power button is turned Off, then disconnect the power cord.
3. Lay the display face down on a towel or blanket.
4. Remove the base. (Screws removal might be required.)
5. Attach the mounting bracket from the wall mounting kit using screws of the appropriate length.
6. Attach the display to the wall, following the instructions in the wall-mounting kit.

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Summary of compliance with National Differences (List of countries addressed):

The sample(s) tested compliance with the requirements of IEC 60950-1: 2005 (2nd Edition); Am1: 2009; Am2: 2013 and all CENELEC members as listed in EN 60950-1: 2006 +A11: 2009+A1: 2010+A12: 2011+ A2: 2013.
At the time of issuing this test report, not all countries are listed for IEC 60950-1:2005 (2nd Edition); Am1:2009; Am2:2013. Therefore this test report includes national differences for IEC 60950-1:2005(2nd Edition) Am1:2009, IEC 60950-1: 2005 (2nd Edition) .
All national differences listed in the IECEE Online CB Bulletin are covered by the Common Modifications, Special National Conditions, National Deviations, and the National Requirements noted above except for the countries which are documented in Attachment.
National Differences attached to this test report:
list from IEC 60950-1, 2nd edition: China.
list from IEC 60950-1: 2005 (2nd Edition); Am1: 2009: Korea.
list from IEC 60950-1: 2005 (2nd Edition); Am2: 2013: USA, Japan, Israeli and Canada

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Copy of marking plates:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)



Calibration	All instruments used in the tests given in this test report are calibrated and traceable to national or international standards. Further information about traceability will be given on request.
Measurement uncertainty	Measurement uncertainties are calculated for all instruments and instrument set-ups given in this report. Calculations are based on the principles given in the standard EA-4/02 (Dec. 1999), IEC Guide 115:2007 and other relevant internal Nemko-procedures. Further information about measurement uncertainties will be given on request.
Evaluation of results	If not explicitly stated otherwise in the standard, the test is passed if the measured value is equal to or below (above) the limit line, regardless of the measurement uncertainty. If the measured value is above (below) the limit line, the test is not passed - ref IEC Guide 115:2007. The instrumentation accuracy is within limits agreed by IECEE-CTL.

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Test item particulars..... :	
Equipment mobility.....:	[X] movable [] hand-held [] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains.....:	[X] pluggable equipment [X] type A [] type B [] permanent connection [X] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition.....:	[X] continuous [] rated operating / resting time:
Access location .....:	[X] operator accessible [] restricted access location
Over voltage category (OVC) .....:	[] OVC I [X] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values .....:	+10% / -10%
Tested for IT power systems .....:	[X] Yes [] No
IT testing, phase-phase voltage (V) .....:	230
Class of equipment .....:	[X] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	16A (20A for Canada and US)
Pollution degree (PD) .....:	[] PD 1 [X] PD 2 [] PD 3
IP protection class .....:	IPX0
Altitude during operation (m) .....:	< 5000m
Altitude of test laboratory (m) .....:	< 2000m
Mass of equipment (kg) .....:	Unit with base type A: Weight: The unit: 5.13kg with base, base: 2.06kg Dimension: Horizontal position of the unit: Approx.538mm x 190mm x max.502mm (min.354mm) with Base Vertical position of the unit: Approx.318mm x 190mm x max.628mm (min.551mm) with Base The base: Approx.255mm x 190mm x 430mm Unit with base type B: Weight: The unit: 6.27kg with base, base: 3.2kg Dimension: The unit: Approx.538mm x 222mm x max.512mm (min.388mm) with Base The base: Approx.340mm x 222mm x 430mm
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)

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- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2022-04-25
Date(s) of performance of tests .....:	2022-04-25 to 2022-05-27

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General remarks:
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	
1. TPV Electronics (Fujian) Co., Ltd.	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
2. TPV Electronics (Fujian) Co., Ltd.	Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.China
3. TPV Electronics (Fujian) Co., Ltd.	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.China
4. L&T Display Technology (Fujian) Ltd	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.China
5. TPV Display Technology (China) Co., Ltd	No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R. China
6. TPV Display Technology (Wuhan) Co., Ltd	Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.China
7. TPV Display Technology (Beihai) Co.,Ltd.	China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi,P.R.China
8. TREND SMART CE MEXICO S. DE R.L. DE C.V.	Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana, Baja California, C.P. 22435 Mexico
9. Envision Indústria de Produtos Eletrônicos Ltda.	Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM - Brasil
10. TPV TECHNOLOGY (THAILAND) COMPANY LIMITED	No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand
11. GeneTouch Corporation	No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan
12. Fábrica Austral de Productos Eléctricos S.A.	Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina
13. Dixon Technologies (India) Ltd.	EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, DistrictChittoor, Andhra Pradesh, 517526 India

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General product information:

The equipment under tests is LCD monitor with internal non-certified power supply for use in general office environment.

The built-in power supply model 715GD297 is an non-approved component, which was manufactured by Top Victory, see appended table 1.5.1 for the detail information.

The unit has the following features:
1. The internal metal chassis which covering building-in switching power supply is considered as a fire enclosure.
2. The external plastic enclosure is regarded as mechanical enclosure and electrical enclosure.
3. The unit is configured with LCD panel (with LED backlight)
4. The unit is configured with HDMI x 1, DP x 1, VGA x 1, USB 3.0 x 4, USB upstream x 1 and audio out x 1 ports, all data ports on main board are optional used.
5. The unit has two bases, type A and type B. Base type A can rotate clockwise 90 degree or anti-clockwise 90 degree. The base type B can be installed a PC which comply with L.P.S. to provide the signal. The PC has not evaluated in this report.

Load condition:
Full white display with Max. Brightness and contrast, picture provided from a computer and load 0.9A for all USB 3.0 port.

Unit with mode DP is considered as the worst case for testing, if not specified.

All the models have same design, except model name and can be any configure as below:

Power board	Main board	Base
715GD297	715GD288	Type A, type B

Additional information (requested by manufacturer):

1)The manufacturer declared that the product also fulfilled of the requirements of SANS 60950-1:2014 (Edition 2.2)/IEC 60950-1:2013 (Edition 2.2)

Maximum recommended ambient (Tmra): 40°C
Connection to the supply: Pluggable equipment type A with detachable power supply cord.
Circuit characteristics: The equipment contains Primary circuits, Secondary circuits (SELV).

1.1.2 – Additional requirements:
Exposure to extreme temperatures, excessive dust, moisture or vibration; to flammable gases; to corrosive or explosive atmospheres:
This equipment is intended to operate in a ”normal” environment (Offices and homes).
Electromedical equipment connected to the patient:
This equipment is not an electromedical equipment intended to be physically connected to a patient.

Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:
This equipment is intended to operate in a "normal" environment (Offices and homes) and is intended to be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor (1.48 linear interpolation used), specified in table A.2 of IEC 60664-1.

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Abbreviations used in the report:

- normal conditions	**N.C.**	- single fault conditions	**S.F.C**
- functional insulation	**OP**	- basic insulation	**BI**
- double insulation	**DI**	- supplementary insulation	**SI**
- between parts of opposite polarity	**BOP**	- reinforced insulation	**RI**

Indicate used abbreviations (if any)

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		—
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	Transformer used are suitable for their intended applications and comply with relevant parts of this standard and particularly Annex C, see Annex C – Transformers.	P
1.5.5	Interconnecting cables	The interconnecting cables do not represent any hazard in the meaning of this standard.	P
1.5.6	Capacitors bridging insulation	X2, X1, Y1 or Y2 capacitors according to IEC 60384-14. (see appended table 1.5.1)	P
1.5.7	Resistors bridging insulation	Refer below:	—
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Bleeder resistors (R9901, R9908 in parallel; R9902, R9909 in parallel; R9903, R9910 in parallel, then three in series) between live and neutral located after main fuse.	P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No resistors bridging double or reinforced insulation between a.c mains and other circuits.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No resistors bridging double or reinforced insulation between a.c mains and antenna or coaxial cable.	N/A
1.5.8	Components in equipment for IT power systems	Certified capacitors connected between line and earth, ref. List of Critical Components and Sub-Cl.1.5.6.	P
1.5.9	Surge suppressors	No such component.	—
1.5.9.1	General	See below.	—
1.5.9.2	Protection of VDRs	See below.	N/A
1.5.9.3	Bridging of functional insulation by a VDR	No such component.	N/A
1.5.9.4	Bridging of basic insulation by a VDR	No such component.	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No such component.	N/A
1.6	**Power interface**		P
1.6.1	AC power distribution systems	TN, and IT for Norway.	—
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	The equipment is not hand-held.	N/A
1.6.4	Neutral conductor	Neutral is insulated from earth with basic insulation throughout the equipment. Components connected between phases and earth are rated and certified for a working voltage: 250V.	P
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	The required marking is located on the outside surface of the equipment.	P
1.7.1.1	Power rating marking	See below	P
	Multiple mains supply connections.....:	Only one mains supply connections.	N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	100-240V~	P
	Symbol for nature of supply, for d.c. only ..... :	The equipment is for a.c. supply.	N/A
	Rated frequency or rated frequency range (Hz) ... :	50/60Hz	—
	Rated current (mA or A)..... :	1.5A	—
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark ..... :	Lenovo	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Model identification or type reference ..... :	See page 2	—
	Symbol for Class II equipment only ..... :	The equipment is Class I.	N/A
	Other markings and symbols ..... :	The additional marking does not give rise to misunderstandings.	P
1.7.2	Safety instructions and marking	N, S, D and FI required marking for a unit which must be connected to protective earth only. The text is required because safety relies on connection to protective earth. The texts for Finland, Denmark Norway and Sweden were shown on the label.	P
1.7.2.1	General	Considered.	—
1.7.2.2	Disconnect devices	The equipment is provided with an appliance coupler.	P
1.7.2.3	Overcurrent protective device	Pluggable equipment Type A.	N/A
1.7.2.4	IT power distribution systems	The following or similar information should be given in the installation instruction: “This product is also designed for IT power distribution system with phase-to-phase voltage 230V”.	—
1.7.2.5	Operator access with a tool	All areas containing hazard(s) are inaccessible to the operator.	P
1.7.2.6	Ozone	The equipment does not produce Ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment ..... :	No voltage selector.	N/A
	Methods and means of adjustment; reference to installation instructions ..... :		—
1.7.5	Power outlets on the equipment ..... :	No standard power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	F9901, T3.15AL 250V (located on PSU primary side)	P
1.7.7	Wiring terminals	Refer below.	—
1.7.7.1	Protective earthing and bonding terminals ..... :	Equipment provided with appliance inlet. Marking of the protective earthing terminal is not applicable.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment is not permanently connected or provided with a non-detachable power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	The equipment is not supplied from d.c mains.	N/A
1.7.8	Controls and indicators	Refer below.	—
1.7.8.1	Identification, location and marking ..... :	No control.	N/A
1.7.8.2	Colours ..... :	No indicators with colours where safety is involved.	N/A
1.7.8.3	Symbols according to IEC 60417 ..... :	The standby switch is marked with the symbol " ⏻ " (IEC 60417-1 No. 5009).	P
1.7.8.4	Markings using figures ..... :	No controls.	N/A
1.7.9	Isolation of multiple power sources..... :	Only one connection supplying hazardous voltages and energy levels to the equipment.	N/A
1.7.10	Thermostats and other regulating devices ..... :	No thermostats or other regulating devices.	N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	No marking is placed on removable parts.	N/A
1.7.13	Replaceable batteries ..... :	No replaceable batteries in the equipment.	N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations ..... :	Equipment not intended for installation in RAL.	N/A

2	**PROTECTION FROM HAZARDS**		P
2.1	Protection from electric shock and energy hazards		—
2.1.1	Protection in operator access areas	Refer below:	—
2.1.1.1	Access to energized parts	There is adequate protection against operator contact with bare parts at ELV or hazardous voltage or parts separated from these with basic or functional insulation only (except protective earth), also after operator detachable parts are removed and doors and covers are opened. No hazardous voltages exceeding 1000V a.c. or 1500V d.c. Checked by test finger and test pin.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Test by inspection ..... :	Complies.	P
	Test with test finger (Figure 2A) ..... :	Complies.	P
	Test with test pin (Figure 2B) ..... :	Complies	P
	Test with test probe (Figure 2C) ..... :	No TNV circuit in the equipment.	N/A
2.1.1.2	Battery compartments	No TNV circuits in the equipment.	N/A
2.1.1.3	Access to ELV wiring	No internal wiring at ELV accessible to the operator.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)	(see appended table 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No internal wiring at ELV accessible to the operator.	N/A
2.1.1.5	Energy hazards .....:	No energy hazard in operator access area. Checked by means of the test finger. (see appended table 2.1.1.5)	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage or TNV.	N/A
2.1.1.7	Discharge of capacitors in equipment	The capacitance of the input circuit is > 0.1µF. The measurements were performed in worst case condition with regard to the fuse.	P
	Measured voltage (V); time-constant (s).....:	Max. time constant measured 564ms for 90V. 648ms for 264V. The X-capacitors and bleeding resistors used are at max. rated value, see Table 1.5.	—
2.1.1.8	Energy hazards – d.c. mains supply	Not connected to DC mains supply.	N/A
	a) Capacitor connected to the d.c. mains supply .. :		N/A
	b) Internal battery connected to the d.c. mains supply .....:		N/A
2.1.1.9	Audio amplifiers .....:		N/A
2.1.2	Protection in service access areas	Checked by inspection unintentional contact is unlikely during service operations.	P
2.1.3	Protection in restricted access locations	Equipment not intended for installation in RAL.	N/A

2.2	**SELV circuits**		P
2.2.1	General requirements	SELV limits are not exceeded under normal condition.	P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.2.2	Voltages under normal conditions (V) ..... :	Within SELV limits. (see appended table 2.2)	P
2.2.3	Voltages under fault conditions (V) ..... :	Within SELV limits. (see appended table 2.2)	P
2.2.4	Connection of SELV circuits to other circuits ..... :	SELV circuits are only connected to other SELV circuits.	P
2.3	**TNV circuits**		N/A
2.3.1	Limits	No TNV circuits.	N/A
	Type of TNV circuits..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed..... :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	**Limited current circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz) ..... :		—
	Measured current (mA)..... :		—
	Measured voltage (V) ..... :		—
	Measured circuit capacitance (nF or µF)..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		P
	a) Inherently limited output	(see appended table 2.5)	P
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		P
	Use of integrated circuit (IC) current limiters		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A) .:		—
2.6	**Provisions for earthing and bonding**		P
2.6.1	Protective earthing	Accessible conductive parts are reliably connected to protective earth.	P
2.6.2	Functional earthing	Functional earthing is separated from hazardous voltages by basic insulation and protective earth or reinforced insulation.	P
2.6.3	Protective earthing and protective bonding conductors		—
2.6.3.1	General		—
2.6.3.2	Size of protective earthing conductors	Detachable power cord set provided. see Appended table 1.5.1.	P
	Rated current (A), cross-sectional area (mm^2), AWG ..... :	0.75mm^2	—
2.6.3.3	Size of protective bonding conductors		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :	Rated current of the circuit under test: 16A (20 A for Canada and US). Refer to sub-cl. 2.6.3.4	—
	Protective current rating (A), cross-sectional area (mm^2), AWG..... :		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :	From the appliance inlet to GND on metal chassis U=0.128V, R=4mΩ,32A/2min U=0.16V, R=4mΩ,40A/2min From the appliance inlet to GND on trace near C9903/C9904 U=0.256V,R=8mΩ,32A/2min U=0.32V, R=8mΩ,40A/2min From the appliance inlet to GND on trace near C9902 U=0.48V,R=15mΩ,32A/2min U=0.6V, R=15mΩ,40A/2min	P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.5	Colour of insulation ..... :	Protective earth terminal and bonding conductors are in appliance inlet. No green/yellow insulated protective earth conductors are provided.	N/A
2.6.4	Terminals		—
2.6.4.1	General		—
2.6.4.2	Protective earthing and bonding terminals	The equipment is provided with an appliance inlet and the test of sub-clause 2.6.3.4 was performed for protective bonding conductor and their terminals.	N/A
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	The equipment is provided with an appliance inlet.	P
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment	No interconnection of equipment.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	There are no switches or overcurrent protective devices in the protective earthing / bonding conductors.	P
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect protective earth without disconnecting mains; an appliance coupler is used as disconnect device.	P
2.6.5.4	Parts that can be removed by an operator	No operator removable parts with protective earth connection except supply cord.	P
2.6.5.5	Parts removed during servicing	Protective earthed parts cannot be removed in a way which impairs safety.	P
2.6.5.6	Corrosion resistance	No risk of corrosion.	P
2.6.5.7	Screws for protective bonding	Adequate connection of protective bonding.	P
2.6.5.8	Reliance on telecommunication network or cable distribution system	Protective earthing does not rely on a telecommunication network.	N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		P
2.7.1	Basic requirements	Protective device is integrated in the equipment, see also Sub-clause 5.3.	P
	Instructions when protection relies on building installation	Protective device is integrated in the equipment.	P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.2	Faults not simulated in 5.3.7	Considered.	N/A
2.7.3	Short-circuit backup protection	Adequate protective device.	P
2.7.4	Number and location of protective devices ..... :	In Norway, IT power distribution system is used. Equipment with a single protective device is accepted in Norway. Other countries (e.g. Germany and Belgium) may have additional requirements.	P
2.7.5	Protection by several devices	Only one protective device. See Sub-clause 2.7.4.	N/A
2.7.6	Warning to service personnel ..... :	After operation of the protective device, the equipment is still under voltage if it is connected to an IT-power distribution system. A warning is required for service persons. Norway does not require this warning. See also Sub-clause 2.7.4.	N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles	No safety interlocks.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..... :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos nor hygroscopic materials are used as insulation. No driving belts or couplings used. After the humidity treatment of 2.9.2, the insulation is then subjected to the relevant electric strength test of 5.2.2.	P
2.9.2	Humidity conditioning	Humidity treatment performed for 120 hrs.	P
	Relative humidity (%), temperature (°C) ..... :	93%, 40°C.	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, supplementary, reinforced or double insulation.	P
2.9.4	Separation from hazardous voltages	See below	P
	Method(s) used ..... :	Method 1 and 2 are used.	—

2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General	See below.	P
2.10.1.1	Frequency ..... :	Considered.	P
2.10.1.2	Pollution degrees ..... :	Pollution Degree 2.	P
2.10.1.3	Reduced values for functional insulation	The functional insulation complied with clause 5.3.4. a) and c)	P
2.10.1.4	Intervening unconnected conductive parts	Considered.	—
2.10.1.5	Insulation with varying dimensions	No such transfomer used.	N/A
2.10.1.6	Special separation requirements	Special separation is not used.	N/A
2.10.1.7	Insulation in circuits generating starting pulses	The circuit will not generate starting pulse.	N/A
2.10.2	Determination of working voltage	(see appended table 2.10.2)	P
2.10.2.1	General	Refer below:	P
2.10.2.2	RMS working voltage	(see appended table 2.10.2)	P
2.10.2.3	Peak working voltage	(see appended table 2.10.2)	P
2.10.3	Clearances	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.1	General	Refer below:	—
2.10.3.2	Mains transient voltages	2500V	—
	a) AC mains supply ..... :	240V	P
	b) Earthed d.c. mains supplies ..... :		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) Unearthed d.c. mains supplies ..... :		N/A
	d) Battery operation ..... :		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	Only the functional insulation in secondary circuits complied with clause 5.3.4.	N/A
2.10.3.5	Clearances in circuits having starting pulses	The circuit will not generate starting pulse.	N/A
2.10.3.6	Transients from a.c. mains supply ..... :	Considered.	P
2.10.3.7	Transients from d.c. mains supply ..... :	Not connected to d.c mains supply.	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems ..... :	Not connected to telecommunication networks and cable distribution systems.	N/A
2.10.3.9	Measurement of transient voltage levels	See below.	—
	a) Transients from a mains supply	Measurement not relevant.	N/A
	For an a.c. mains supply ..... :		N/A
	For a d.c. mains supply ..... :		N/A
	b) Transients from a telecommunication network :	Not connected to telecommunication networks.	N/A
2.10.4	Creepage distances	See below.	—
2.10.4.1	General	Considered.	—
2.10.4.2	Material group and comparative tracking index	See below.	—
	CTI tests..... :	Material group IIIb is used.	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	See below.	—
2.10.5.1	General	Considered.	—
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5	Cemented joints	Not used cemented joints.	N/A
2.10.5.6	Thin sheet material – General	(see appended table 2.10.5)	P
2.10.5.7	Separable thin sheet material	(see appended table 2.10.5)	P
	Number of layers (pcs) ..... :	2 layers provide for T901. (1 layer tested)	—
2.10.5.8	Non-separable thin sheet material	Not used.	N/A
2.10.5.9	Thin sheet material – standard test procedure	The sub-clause 2.10.5.10 is used.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	(see appended table 2.10.5)	P
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	Not used	N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage ..... :		N/A
	a) Basic insulation not under stress ..... :		N/A
	b) Basic, supplementary, reinforced insulation ..... :		N/A
	c) Compliance with Annex U ..... :		N/A
	Two wires in contact inside wound component; angle between 45° and 90° ..... :		N/A
2.10.5.13	Wire with solvent-based enamel in wound components	No wire with solvent-based enamel in wound components.	N/A
	Electric strength test		N/A
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	No additional insulation used	N/A
	Working voltage ..... :		N/A
	- Basic insulation not under stress ..... :		N/A
	- Supplementary, reinforced insulation ..... :		N/A
2.10.6	Construction of printed boards	See below.	—
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards	No special coating in order to reduce distances.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs) ..... :		N/A
2.10.7	Component external terminations	Coatings not used over terminations to increase effective creepage and clearance distances.	N/A
2.10.8	Tests on coated printed boards and coated components	No special coating in order to reduce distance.	N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.9	Thermal cycling	Certified opto-coupler used	P
2.10.10	Test for Pollution Degree 1 environment and insulating compound	Certified opto-coupler used	P
2.10.11	Tests for semiconductor devices and cemented joints	Certified opto-coupler used	P
2.10.12	Enclosed and sealed parts	Certified opto-coupler used	P
3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	Wireways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	P
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltage involved.	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure	Electrical screw connection is only connecting protective earth to chassis. Metal screw engages more than 2 threads. Screws made of insulating material are not used where electrical connections, including protective earthing, are involved.	P
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	P
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.1.9	Termination of conductors	Terminations cannot become displaced so that clearances and creepage distances can be reduced.	P
	10 N pull test	Conducted.	P
3.1.10	Sleeving on wiring	Sleeves are not used as supplementary insulation.	N/A
3.2	**Connection to a mains supply**		P
3.2.1	Means of connection	Refer below:	—
3.2.1.1	Connection to an a.c. mains supply	The equipment is provided with an appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply	The equipment is not for connection to a d.c. mains supply.	N/A
3.2.2	Multiple supply connections	Only one supply connection.	N/A
3.2.3	Permanently connected equipment	The equipment is not intended for permanent connection to the mains.	N/A
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320 and is properly placed to avoid hazards after insertion of the appliance coupler.	P
3.2.5	Power supply cords	Refer below:	—
3.2.5.1	AC power supply cords	Detachable power cord set provided. see Appended table 1.5.1.	P
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG .....:	0.75mm^2	—
3.2.5.2	DC power supply cords	The equipment is not for connecting to d.c. mains.	N/A
3.2.6	Cord anchorages and strain relief	Equipment provided with an appliance inlet.	N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage	No sharp points or cutting edges on the equipment surfaces.	P
3.2.8	Cord guards	The equipment is neither hand-held nor intended to be moved during operation.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Diameter or minor dimension D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm) .....:		—
3.2.9	Supply wiring space	Equipment provided with an appliance inlet.	N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals	Equipment provided with an appliance inlet.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) .....:		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) .....:		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		P
3.4.1	General requirement	See Sub-clause 3.4.2.	P
3.4.2	Disconnect devices	The equipment is provided with an appliance coupler.	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	No parts remain energized after the disconnect device.	N/A
3.4.5	Switches in flexible cords	No isolating switch in the cord set.	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single phase equipment.	N/A
3.4.8	Switches as disconnect devices	No switches provided.	N/A
3.4.9	Plugs as disconnect devices	The appliance coupler is regarded as disconnect device, no warning is required.	N/A
3.4.10	Interconnected equipment	No interconnections using hazardous voltages.	N/A
3.4.11	Multiple power sources	One power source only.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.5	**Interconnection of equipment**		P
3.5.1	General requirements	Considered.	—
3.5.2	Types of interconnection circuits ..... :	SELV	P
3.5.3	ELV circuits as interconnection circuits	No ELV.	N/A
3.5.4	Data ports for additional equipment	SELV circuit of data ports on main board supplied by +20V limited power sources complying with 2.5 and mounted on PCB of more than FLAMMABILITY CLASS V-1 (Refer to Clause 2.5)	P
4	**PHYSICAL REQUIREMENTS**		P
4.1	Stability		P
	Angle of 10°	Unit does not overbalance at 10°. (Requested by manufacturer)	P
	Test force (N) ..... :	The unit is not floor-standing.	N/A
4.2	**Mechanical strength**		P
4.2.1	General	Complies with the requirement also after tests described below are applied.	P
	Rack-mounted equipment.	No rack-mounted equipment.	N/A
4.2.2	Steady force test, 10 N	No hazard, ref. comment in appended table 2.10.3 and 2.10.4	P
4.2.3	Steady force test, 30 N	No hazard, test is performed at internal metal chassis.	P
4.2.4	Steady force test, 250 N	No hazard. The test is performed at all source of plastic enclosure.	P
4.2.5	Impact test	Refer below:	—
	Fall test	500g steel ball falls freely from 1.3m on top, back and bottom of plastic enclosure, all source are tested, no access to hazardous parts.	P
	Swing test	No hazard as result from the steel sphere swing test.	P
4.2.6	Drop test; height (mm) ..... :	Drop test not applicable.	N/A
4.2.7	Stress relief test	Test is carried out at 70°C / 7hrs. No risk of shrinkage or distortion on enclosures due to release of internal stresses.	P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.8	Cathode ray tubes	CRT(s) not used in the equipment.	N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps	No high pressure lamps in the equipment.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Mass of equipment=3.07kg (without base), tested=91N for 1min. 4 piece screws M4 x 10mm used, see summary of tesing for details. The equipment and its associated mounting means still remain secure during the test.	P
4.3	**Design and construction**		P
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N) .....:	No knobs, grips, handles, lever etc.	N/A
4.3.3	Adjustable controls	No hazardous adjustable controls.	N/A
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances is likely to occur.	P
4.3.5	Connection by plugs and sockets	SELV connectors do not comply with IEC 60320 or IEC 60083.	P
4.3.6	Direct plug-in equipment	Not intended to plug directly into a wall socket-outlet.	N/A
	Torque ..... :		—
	Compliance with the relevant mains plug standard ..... :		—
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries	No batteries in the equipment.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.10	Dust, powders, liquids and gases	The equipment does not generate ionizing radiation or use a laser, and does not contain flammable liquids or gases.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids ..... :	The equipment does not contain flammable liquid.	N/A
	Quantity of liquid (l) ..... :		N/A
	Flash point (°C) ..... :		N/A
4.3.13	Radiation	Refer below:	—
4.3.13.1	General	Refer below:	—
4.3.13.2	Ionizing radiation	The equipment does not generate ionizing radiation.	N/A
	Measured radiation (pA/kg) ..... :		—
	Measured high-voltage (kV)..... :		—
	Measured focus voltage (kV) ..... :		—
	CRT markings ..... :		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	The equipment does not produce significant UV radiation.	N/A
	Part, property, retention after test, flammability classification ..... :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :	The equipment does not produce significant UV radiation.	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	No Laser product used.	N/A
4.3.13.5.1	Lasers (including laser diodes)	No laser.	N/A
	Laser class ..... :		—
4.3.13.5.2	Light emitting diodes (LEDs)	LEDs were diffusive type	—
4.3.13.6	Other types ..... :	The equipment does not generate other types of radiation.	N/A

4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General	No moving parts.	N/A
4.4.2	Protection in operator access areas ..... :	No moving parts.	N/A
	Household and home/office document/media shredders	Not intended for installation in RAL.	N/A
4.4.3	Protection in restricted access locations ..... :	Unintentional contact is not likely in service access areas.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.4	Protection in service access areas	No moving parts.	N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)……:		N/A
	Is considered to cause pain, not injury. b) ……...:		N/A
	Considered to cause injury. c) ……...:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……...:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ……...:		N/A
4.5	**Thermal requirements**		P
4.5.1	General	See below.	P
4.5.2	Temperature tests	(see appended table 4.5)	—
	Normal load condition per Annex L ..... :		P
4.5.3	Temperature limits for materials	(see appended table 4.5)	—
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat ..... :	(see appended table 4.5.5)	P
4.6	**Openings in enclosures**		P
4.6.1	Top and side openings	Combined openings with chassis and plastic enclosure in front, side, rear do not allow foreign objects entering the equipment to fall on bare parts. Also, openings are not located within 5°of fire hazardous parts.	P
	Dimensions (mm) ..... :	(see appended table 4.6.1,4.6.2)	—
4.6.2	Bottoms of fire enclosures	Fire enclosure (metal bottom) construction is considered to comply with the requirements	P
	Construction of the bottom, dimensions (mm) ..... :	(see appended table 4.6.1,4.6.2)	—
4.6.3	Doors or covers in fire enclosures	No doors or covers in fire enclosure.	N/A
4.6.4	Openings in transportable equipment	The unit is not regarded as transportable equipment.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.6.4.1	Constructional design measures	The unit is not regarded as transportable equipment.	N/A
	Dimensions (mm) ..... :		—
4.6.4.2	Evaluation measures for larger openings	The unit is not regarded as transportable equipment.	N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	The adhesive for mylar sheet secure was used. All sources listed in table 1.5.1 were tested.	P
	Conditioning temperature (°C), time (weeks) ..... :	The tests were performed for mylar sheet secured. 1. 100°C for one week. 2. Remove from oven and leave at 25°C for 1h. 3.Place in freezer at -40°C for 4h. 4.Remove from freezer and allow come to 25°C for 8h. 5. Plase in a compartment at 95% relative humidity for 72h. 6.Remove and leave at 25°C for 1h. 7.Place in oven at 100°C for 4h. 8. Remove and allow sample to reach 25°C over 8h. For source of adhesive material, see appended table 1.5.1	—
4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 is used.	P
	Method 1, selection and application of components wiring and materials	(see appended table 1.5.1)	P
	Method 2, application of all of simulated fault condition tests	Not used method 2.	N/A
4.7.2	Conditions for a fire enclosure	Refer below.	—
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all parts except key control board and main board.	P
4.7.2.2	Parts not requiring a fire enclosure	Key control board and main board are not required by a fire enclosure.	P
4.7.3	Materials		P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures	The fire enclosure is constructed metal.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	Min.HB material.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside fire enclosure are minimum V-2 material.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N/A
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		P
5.1	**Touch current and protective conductor current**		P
5.1.1	General	Test conducted in accordance with 5.1.2 to 5.1.7.	P
5.1.2	Configuration of equipment under test (EUT)	See below.	—
5.1.2.1	Single connection to an a.c. mains supply	No interconnection of equipment.	N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.3	Test circuit	Tested for connection to IT power distribution system (also relevant for TN or TT power distribution system).	P
5.1.4	Application of measuring instrument	Measuring instrument D1 is used.	P
5.1.5	Test procedure	Considered.	—
5.1.6	Test measurements	See below	—
	Supply voltage (V) ..... :	264V,60Hz	—
	Measured touch current (mA) ..... :	(see appended table 5.1)	—
	Max. allowed touch current (mA) ..... :	(see appended table 5.1)	—
	Measured protective conductor current (mA) ..... :		—
	Max. allowed protective conductor current (mA) .. :		—
5.1.7	Equipment with touch current exceeding 3,5mA	The touch current does not exceed 3.5mA.	N/A
5.1.7.1	General ..... :	See below	—
5.1.7.2	Simultaneous multiple connections to the supply		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Not connected to a telecommunication network nor a cable distribution system.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports ..... :		—
	b) EUT whose telecommunication ports have no reference to protective earth		—
5.2	**Electric strength**		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	(see appended table 5.2)	P
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	There is no motor in the equipment.	N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation ..... :	Complies with a) and c).	P
5.3.5	Electromechanical components	No electromechanical components in secondary circuits.	N/A
5.3.6	Audio amplifiers in ITE ..... :		N/A
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	See below.	P
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.9.2	After the tests	No reduction of clearance and creepage distances. Electric strength test is made on functional ,basic, supplementary and reinforced insulation.	P
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		—
6.1.1	Protection from hazardous voltages		—
6.1.2	Separation of the telecommunication network from earth		—
6.1.2.1	Requirements	No TNV circuit.	N/A
	Supply voltage (V) .....:		—
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions .....:		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ..... :		—
	Current limiting method ..... :		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	General	Not connected to Cable Distribution System.	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.4.3	Impulse test		N/A
A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples ..... :		—
	Wall thickness (mm)..... :		—
A.1.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.1.3	Mounting of samples ..... :		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D ..... :		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
A.2.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.2.3	Mounting of samples ..... :		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C ..... :		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) ..... :		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) ..... :		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) ..... :		—
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		P
	Position ..... :	Primary to SELV	—
	Manufacturer ..... :	(see appended table 1.5.1)	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Type ..... :	(see appended table 1.5.1)	—
	Rated values ..... :	(see appended table 1.5.1)	—
	Method of protection ..... :	Inherent protection	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	The reinforced insulation fulfill the requirement in Sub-clause 2.10 and relevant tests of Sub-clause 5.2.2	P
	Protection from displacement of windings ..... :	Secured by tubing and insulation tape. (see appended table C.2)	P
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		P
D.1	Measuring instrument	Figure D.1 used.	P
D.2	Alternative measuring instrument	Measuring instrument D1 is used.	N/A
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		P
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply ..... :		N/A
G.2.2	Earthed d.c. mains supplies ..... :		N/A
G.2.3	Unearthed d.c. mains supplies ..... :		N/A
G.2.4	Battery operation ..... :		N/A
G.3	Determination of telecommunication network transient voltage (V) ..... :		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks .... :		N/A
G.4.2	Transients from telecommunication networks ..... :		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances ..... :		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		P
	Metal(s) used ..... :		—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) ..... :		N/A
K.3	Thermostat endurance test; operating voltage (V):		N/A
K.4	Temperature limiter endurance; operating voltage (V) ..... :		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		P
L.1	Typewriters	Not used.	N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....:		—
M.3.1.2	Voltage (V) .....:		—
M.3.1.3	Cadence; time (s), voltage (V) .....:		—
M.3.1.4	Single fault current (mA) .....:		—

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.3.2	Tripping device and monitoring voltage .....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) .....:		N/A
N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		N/A
	- Preferred climatic categories .....:		N/A
	- Maximum continuous voltage .....:		N/A
	- Combination pulse current .....:		N/A
	Body of the VDR Test according to IEC60695-11-5.....:		—
	Body of the VDR. Flammability class of material (min V-1).....:		N/A
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
			—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
			—

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		P
V.1	Introduction	See below	—
V.2	TN power distribution systems	See sub-clause 1.6.1.	P

W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A

X	**Annex X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		**P**
X.1	Determination of maximum input current	Considered.	P
X.2	Overload test procedure		P

Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
Y.1	Test apparatus .....:		N/A
Y.2	Mounting of test samples .....:		N/A
Y.3	Carbon-arc light-exposure apparatus .....:		N/A
Y.4	Xenon-arc light exposure apparatus .....:		N/A

Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**	N/A

AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**	N/A
BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**	—

CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	General		N/A
CC.2	Test program 1.....:		N/A
CC.3	Test program 2.....:		N/A
CC.4	Test program 3.....:		N/A
CC.5	Compliance.....:		N/A

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
DD.1	General		N/A
DD.2	Mechanical strength test, variable N……..:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……:		N/A
EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols……:		N/A
	Information of user instructions, maintenance and/or servicing instructions……:		N/A
EE.3	Inadvertent reactivation test……:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols……:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) ……:		N/A
	Test with wedge probe (Figure EE1 and EE2) ……:		N/A

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1.5.1	TABLE: List of critical components	P

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
LCD panel (with LED backlight)	AUO	M238********* (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.
Alt.)	BOE	MV238******** (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.
Alt.)	LGD	LM238******** (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.
Alt.)	Samsung	LTM238******** (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.
Alt.)	INNOLUX	M238******** (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.
Alt.)	TPV	TPM238WF********* (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Plastic Enclosure	LOTTE Chemical Corporation	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++) (RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, SD-0150T, ABF-0200E	HB or better, thickness 1.5mm min.	UL94	UL
Alt.)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A			UL
Alt.)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S			UL
Alt.)	Mocom Compounds GmbH & Co KG	GP-35, GP-22, 495F			UL
Alt.)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series			UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG494(#), XG569(#), GP-1000, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#), GN-2101F(m)	HB or better, thickness 1.5mm min.	UL94	UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, thickness 1.5mm min.	UL94	UL
Alt.)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35			UL
Alt.)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000, ABS-340*(*=0~10), HIPS-2230+			UL
Alt.)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c), GA35, NC30, GA65, GA85			UL
Alt.)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+ (+: A to Z)			UL
Alt.)	GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO-1303B, YOUHO1312B, YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(1303)(OP)			UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, thickness 1.5mm min.	UL94	UL
Alt.)	HUIZHOU WOTE	2100			UL
Alt.)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)			UL
Alt.)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065			UL
Alt.)	Trinseo Europe GmbH	STYRON A-TECH 1200			UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED	3441, 260-XX	HB or better, thickness 1.5mm min.	UL94	UL
Alt.)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106			UL
Alt.)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)			UL
Alt.)	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK			UL
Alt.)	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535, GA-1565			UL
Alt.)	SAMYANG CORPORATION	210NHF(@), 210NHF			UL
Alt.)	COVESTRO DEUTSCHLAND AG	GF99011 MF			UL
Alt.)	CHI MEI CORPORATION	PC-540(Y)(a)			UL
Alt.)	QING DAO GON TECHNOLOGY CO.,LTD	ABS21(xx)G-A, ABS2030A, ABS20(xx)B			UL
Alt.)	SHENZHEN FUHENG NEW MATERIAL CO LTD	HIPS-494, HIPS-568			UL
Alt.)	UNIC TECHNOLOGY CORP	UR-7085+(R90)			UL
Base type A and type B (Optional)	Interchangeable	Interchangeable	Metallic that covered by the plastic which HB or better	IEC 60950-1	Test in equipment.
Metal Chassis (for fire enclosure bottom)	Interchangeable	Interchangeable	Metal, Thickness min 0.5+0.5mm	IEC 60950-1	Test in equipment.
Metal Chassis (for bottom, except fire enclosure bottom)	Interchangeable	Interchangeable	Metal, Thickness min 0.5mm	IEC 60950-1	Test in equipment.
PCB	Interchangeable	Interchangeable	V-1 or better, 130 ºC	UL796	UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Mylar Sheet 1) Located between power supply board and panel 2) located on metal chassis	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR116ECO DFR117, DFR117ECO, DFR117ECOA, DFR117ECOB, DFR117ECOC	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Alt.)	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, V42B	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1870B, KLX FRPC-1860B, KLX FRPC-1860, KLX FRPC-83B, KLX FRPC-83	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Alt.)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE42, HE70	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Alt.)	KUNSHAN DOBESTY OPTOELECTRONIC	PC9842B PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	FR360, TS-FR370F	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Adhesive for mylar sheet	XIAMEN LABAO OPTICS & ELECTRONICS CO LTD	TD-10	80 ºC, 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	3M China Co ltd	55236, 9448A	80 ºC, 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	SYMBIO	DS50-A, DS50L	100ºC, 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	Dexerials	G4000	80 ºC, 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
The following components are located on power supply, type 715GD297					
AC Inlet (CN9901)	Inalways	0707-1, 0714, 0711-2	10A,250Vac 70ºC	IEC 60320-1, UL498	VDE, UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S 7, SA-4S 9, SA-4S 12	10A,250Vac 70ºC	IEC 60320-1, UL498	VDE, UL
Alt.)	Rong Feng	SS-120, SS-7B			VDE, UL
Alt.)	Shenzhen Delikang	CDJ-3, CDJ-3-1			VDE, UL
Alt.)	Shenzhen Delikang	CDJ-7, CDJ-7 1			VDE, UL
Alt.)	Solteam	ST-01			VDE, UL
Alt.)	TECX	TU-301 series			VDE, UL
Alt.)	Yueqing Hongchang	DB-14 series, DB-14, DB-14-05, DB-14-15, DB-14-11-L, DB-14-14-L, DB-14-14-R			VDE, UL
Main Fuse (F9901)	Conquer	MET, MST	T3.15AL, 250V	IEC 60127, UL248	VDE, UL
Alt.)	Littelfuse	392 series, 382 series			VDE, UL
Alt.)	COOPER	SR-5 series, SS-5 series			VDE, UL
Alt.)	Ever Island Electric Co., Ltd & Walter Electric	2000 series, 2010 series			VDE, UL
X-Capacitor (C9901) (X1or X2 type) (Optional)	KEMET	R.46	Max. 0.47uF, min. 250Vac, min. 110ºC	IEC/EN 60384-14, UL 60384-14	ENEC 03, UL
Alt.)	EUROPTRONIC (SUZHOU) CO LTD	MKP			VDE, UL
Alt.)	Liow Gu	GS-L			VDE, UL
Alt.)	Europtronic	MPX, MPX2			VDE, UL
Alt.)	Ultra Tech Xiphi	HQX			VDE, UL
Alt.)	Faratronic	MKP62			VDE, UL
Alt.)	EPCOS	B3292#			VDE, UL
Alt.)	RongGuangDa	MKP			VDE, UL
Alt.)	ZHUHAI SUNG HO ELECTRONICS	CMPP			VDE, UL
Alt.)	FARAD	PXK			VDE, UL
Alt.)	SHENZHEN JINGHAO CAPACITOR CO., LTD	CBB62B			VDE, UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	Interchangeable	Interchangeable	Max. 0.47uF, min. 250Vac, min. 110ºC	IEC/EN 60384-14, UL 60384-14	VDE, UL
Y-Capacitor (C9903, C9904) (Y1 type) (Optional)	Walsin	AH,AC	max.680pF, 250Vac, min. 85ºC	IEC/EN 60384-14, UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JN,JY			VDE, UL
Alt.)	TDK	CD,CS			VDE, UL
Alt.)	Murata	KX,KH			VDE, UL
Alt.)	Wansheng	CT7			VDE, UL
Alt.)	Yinan Don's Electronic	CT81			VDE, UL
Alt.)	Success	SE,SB			VDE, UL
Alt.)	Interchangeable	Interchangeable			VDE, UL
Y-Capacitor (C9902) (Y1 type) (Optional)	Walsin	AH,AC	max.1000pF, 250Vac, min. 85ºC	IEC/EN 60384-14, UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JN,JY			VDE, UL
Alt.)	TDK	CD,CS			VDE, UL
Alt.)	Murata	KX,KH			VDE, UL
Alt.)	Wansheng	CT7			VDE, UL
Alt.)	Yinan Don's Electronic	CT81			VDE, UL
Alt.)	Success	SE,SB			VDE, UL
Alt.)	Interchangeable	Interchangeable			VDE, UL
Photo Coupler (U902)	Lite-on Technlogy Corporation	LTV-817	See appendix, Opto Electronic Devices, min. 100ºC	IEC 60950-1 UL 1577	VDE, UL
Alt.)	Everlight	EL817, EL817M			VDE, UL
Alt.)	Sharp	PC123			VDE, UL
Alt.)	Vishay	TCET1103			VDE, UL
Alt.)	TOSHIBA	TLP781, TLP781F, TLP421F			VDE, UL
Alt.)	Renesas Electronics Corporation	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1 PS2561DL1-1			VDE, UL
Line Choke (L9902) [2])	LIANZHEN	373G01740650Z	Min.130°C	IEC 60950-1	Test in equipment.

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.) - Bobbin of L9902	CHANNELON Changchun plastic	373G0174065H 4115(f1)	Min.130°C V-0, PBT, 120ºC	IEC 60950-1 UL94	Test in equipment. UL
Bridging Diode (BD9901)	Interchangeable	Interchangeable	Min. 2.0A, min. 500V	IEC 60950-1	Test in equipment.
Thermistor NR9901 (Loc. after fuse)	Interchangeable	Interchangeable	Min.2A, Min.3Ω at 25°C	IEC 60950-1	Test in equipment.
Bleeder resistors (R9901, R9902, R9903, R9908, R9909, R9910)	Interchangeable	Interchangeable	Max.1.0MΩ, Min.1/4W (R9901, R9908 in parallel; R9902, R9909 in parallel; R9903, R9910 in parallel, then three in series.Loc. after fuse F9901)	IEC 60950-1	Test in equipment.
Ripple Cap. (C902)	Interchangeable	Interchangeable	10-180μF, min. 450V, 105°C	IEC 60950-1	Test in equipment.
Transistor (Q901)	Interchangeable	Interchangeable	Min. 500V, min. 2A	IEC 60950-1	Test in equipment.
Current sense resistor(R916)	Interchangeable	Interchangeable	Min. 0.68Ω, Min.2W	IEC 60950-1	Test in equipment.
Power Transformer (T901) [3])	LIANFENG DONGJIN	380GL19P533J	Class B	IEC 60950-1	Test in equipment.
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic 150°C	UL94	UL
-Margin tape	YAHUA	WF* (c)(h)	130°C	UL510	UL
-Insulation tape	YAHUA	CT	130°C	UL510	UL
-Tube	GREAT HOLDING	TFL	200°C	UL224	UL
Power Transformer (T901) [3])	PHOENIX	380GL19P533P	Class B	IEC 60950-1	Test in equipment.
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic 150°C	UL94	UL
-Margin tape	YAHUA	WF	130°C	UL510	UL
-Insulation tape	YAHUA SYMBIO	CT 35660 (a)	130°C 130°C	UL510 UL510	UL UL
-Tube	GREAT HOLDING	TFL	200°C	UL224	UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Power Transformer (T901) [3])	TAI CHANG	380GL19P533S	Class B	IEC 60950-1	Test in equipment.
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic 150°C	UL94	UL
-Margin tape	YAHUA	WF	130°C	UL510	UL
-Insulation tape	YAHUA	CT	130°C	UL510	UL
-Tube	GREAT HOLDING	TFL	200°C	UL224	UL
Power Transformer (T901) [3])	LI TAI	380GL19P533L	Class B	IEC 60950-1	Test in equipment.
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic 150°C	UL94	UL
-Margin tape	YAHUA SYMBIO	WF 35661 (c)	130°C 130°C	UL510 UL510	UL UL
-Insulation tape	YAHUA SYMBIO	CT 35660Y (e)	130°C 130°C	UL510 UL510	UL UL
-Tube	GREAT HOLDING	TFL	200°C	UL224	UL
The following components are located on mainboard, type 715GD288					
Limited current IC U7811 for USB (CN1009), U7812 for USB (CN1010), U7808 for USB (CN1012)	Global Mixed-mode Technology Inc	G517******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range (Vdc): 2.7-5.5, Number of Outputs: 1 Operational Current Rating per output (A): 1.0A Overcurrent Protection Current Rating per output (A): 1.1A-1.5A Maximum ambient temperature (°C): -30 to 70	IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+ A11:2017.	CB issued by TUV. Cert No. JPTUV-099276, and report No.50279098 001

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	ANPEC Electronics Corp	APL3553******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range: 2.7-5.5 Vdc Output Continuous Rating: 2.0A Current Limit Rating: 2.9A	IEC 62368-1:2014 (Second Edition)	CB issued by UL (CB report No. E328191-4789118295-1-Original and CB cert No. DK-87208-UL, CB report No. E328191-4789118295-1-Amendment-1 and CB cert No. DK-87208-M1-UL)
Alt.)	DIODES INC	AP22804****** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7 - 5.5 Vdc Outputs: Output Continuous Rating: 2.5 A Output Current Limit: 3.3A Ambient: -40 to 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL. Cert No. US-34018-UL and report No. E322375-A6009-CB-1
Alt.)	DIODES INC	AP2171***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 1.5A Output Current Limit: 3.8A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by NEMKO(CB report No. 375826 and CB cert No. NO107539)
Alt.)	DIODES INC	AP22814***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 3.8A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL(CB report No. E322375-A6009-CB-1 and CB cert No. US-34018-UL)

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	DIODES INC	AP2552** series, AP2553** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 2.1A Output Current Limit: 3.02A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL(CB report No. E322375-A6007-CB-1 and CB cert No. US-34481-UL)
Alt.)	ANPEC Electronics Corp	APL3553******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range: 2.7-5.5 Vdc Output Continuous Rating: 2.0A Current Limit Rating: 2.9A	IEC 62368-1:2014	CB issued by UL (CB report No. E328191-4789118295-1-Amendment-1 and CB cert No. DK-87208-M1-UL)
Alt.)	SILERGY TECHNOLOGY (TAIWAN) INC	SY6861***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.5-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 5A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL (CB report No. E491480-4789092266-3- Original and CB cert No. DK 87012-UL)
Alt.)	JOULWATT TECHNOLOGY CO LIMITED	JW7115** series, JW7111** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 2.0A Output Current Limit: 2.4A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL (CB report No. E497605-A6001-CB-1,CB cert No. DK-83242-UL)
Alt.)	Global Mixed mode Technology Inc.	G518******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 4.0A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2018 (Third Edition), EN IEC 62368-1:2018 + A11:2020	CB issued by TUV RH (CB report No. CN213F86001,CB cert No. JPTUV-127262,JPTUV-127277 and JPTUV-127281)

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	Global Mixed-mode Technology Inc	G524******* series (* can be 0-9, A-Z, a-z, -, \, /, + or blank)	Input Voltage Range (Vdc): 2.7-5.5, Number of Outputs: 1 Operational Current Rating per output (A): 1.1A Overcurrent Protection Current Rating per output (A): 1.2A-1.8A Maximum ambient temperature (°C): -30 to 70	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by TUV. Cert No. JPTUV-099276, and report No. 50279098 001
Alt.	Interchangeable	Interchangeable	Input Voltage: 2.5-5.5Vdc Output Continuous Rating: 104 – 3800mA Output Current Limit: Max: 5A	IEC/EN 62368-1, IEC/EN 60950-1	CB issued by NCB
Limited current IC U7803 for USB (CN1011)	DIODES INC	AP22814***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 3.8A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL(CB report No. E322375-A6009-CB-1 and CB cert No. US-34018-UL)
Alt.)	Global Mixed-mode Technology Inc	G517******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range (Vdc): 2.7-5.5, Number of Outputs: 1 Operational Current Rating per output (A): 1.0A Overcurrent Protection Current Rating per output (A): 1.1A-1.5A Maximum ambient temperature (°C): -30 to 70	IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+ A11:2017.	CB issued by TUV. Cert No. JPTUV-099276, and report No.5027909 8 001

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	ANPEC Electronics Corp	APL3553******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range: 2.7-5.5 Vdc Output Continuous Rating: 2.0A Current Limit Rating: 2.9A	IEC 62368-1:2014 (Second Edition)	CB issued by UL (CB report No. E328191-4789118295-1-Original and CB cert No. DK-87208-UL, CB report No. E328191-4789118295-1-Amendment-1 and CB cert No. DK-87208-M1-UL)
Alt.)	DIODES INC	AP22804 ****** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7 - 5.5 Vdc Outputs: Output Continuous Rating: 2.5 A Output Current Limit: 3.3A Ambient: -40 to 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL. Cert No. US-34018-UL and report No. E322375-A6009-CB-1
Alt.)	DIODES INC	AP2171***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 1.5A Output Current Limit: 3.8A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by NEMKO(CB report No. 375826 and CB cert No. NO107539)
Alt.)	DIODES INC	AP2552** series, AP2553** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 2.1A Output Current Limit: 3.02A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL(CB report No. E322375-A6007-CB-1 and CB cert No. US-34481-UL)

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	ANPEC Electronics Corp	APL3553******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range: 2.7-5.5 Vdc Output Continuous Rating: 2.0A Current Limit Rating: 2.9A	IEC 62368-1:2014	CB issued by UL (CB report No. E328191-4789118295-1-Amendment-1 and CB cert No. DK-87208-M1-UL)
Alt.)	SILERGY TECHNOLOGY (TAIWAN) INC	SY6861***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.5-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 5A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL (CB report No. E491480-4789092266-3- Original and CB cert No. DK 87012-UL)
Alt.)	JOULWATT TECHNOLOGY CO LIMITED	JW7115** series, JW7111** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 2.0A Output Current Limit: 2.4A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL (CB report No. E497605-A6001-CB-1,CB cert No. DK-83242-UL)
Alt.)	Global Mixed mode Technology Inc.	G518******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 4.0A Operating Temperature: -40°C~ 85°C	IEC 62368-1:2018 (Third Edition), EN IEC 62368-1:2018 + A11:2020	CB issued by TUV RH (CB report No. CN213F86001,CB cert No. JPTUV-127262,JPTUV-127277 and JPTUV-127281)

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	Global Mixed-mode Technology Inc	G524******* series (* can be 0-9, A-Z, a-z, -, \, /, + or blank)	Input Voltage Range (Vdc): 2.7-5.5, Number of Outputs: 1 Operational Current Rating per output (A): 1.1A Overcurrent Protection Current Rating per output (A): 1.2A-1.8A Maximum ambient temperature (°C): -30 to 70	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by TUV. Cert No. JPTUV-099276, and report No. 50279098 001
Alt.	Interchangeable	Interchangeable	Input Voltage: 2.5-5.5Vdc Output Continuous Rating: 104 – 3800mA Output Current Limit: Max: 5A	IEC/EN 62368-1, IEC/EN 60950-1	CB issued by NCB
Mains cord set (Saudi Arabia) (Optional)					
Plug:	Longwell	LP-61L, LP-61LA	10 A / 250 V	SASO 2203:2018	CVC
Connector:	Longwell	LS-60	10 A / 250 V	IEC/EN 60320-1	ENEC
Cord:	Longwell	H05VV-F	3 x 0.75mm^2 min.	EN 50525-2-11	CVC
Plug:	Volex	UK13A3	10 A / 250 V	SASO 2203:2018	Intertek (ASTA)
Connector:	Volex	V1625	10 A / 250 V	IEC/EN 60320-1	Intertek (ASTA)
Cord:	Volex	H05VV-F,	3 x 0.75mm^2 min.	EN 50525-2-11	Intertek (ASTA)
Plug:	ASAP	A12-0136-AC2, A12-0137-AC2	10 A / 250 V, 13A / 250V	SASO 2203:2018	CVC
Connector:	ASAP	A12-0120-AC2	10 A / 250 V	IEC/EN 60320-1	ENEC
Cord:	ASAP	H05VV-F, H05RR-F, H05RN-F	3 x 0.75mm^2 min.	EN 50525-2-11	CVC

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Plug: Connector: Cord:	Interchangeable	Interchangeable	10 A / 250 V, 10 A / 250 V 3 x 0.75mm^2 min.	SASO 2203, IEC/EN 60320-1, EN 50525-2-11	Intertek
Supplementary information:					
[1]) An asterisk indicates a mark which assures the agreed level of surveillance [2]) All line choke source L9902 have same construction [3]) All transformer source T901 have same construction.					

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1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer	:	Sharp / Vishay / Everlight / Everlight / Lite-on / Toshoba / Toshiba / Toshiba / Renesas / Renesas / Renesas / Renesas / Renesas
Type	:	PC123 / TCET1103 / EL817 / EL817M / LTV-817 / TLP421F / TLP781 / TLP781F / PS2561-1 / PS2561L-1 / PS2561DL1-1 / PS2561L2-1 / PS2561L1-1
Separately tested	:	Tested by FIMKO, UL
Bridging insulation	:	Reinforced
External creepage distance	:	8 / 8.4 / 7.7 / 7.7 / 8.0 / 8.0 / 8.0 / 8.0 / 7.0 / 7.0 / 7.0 / 7.0 / 7.0mm
Internal creepage distance	:	*) / *) / *) / *) / *) / *) / *) / *) / *) / *) / *) / *) / *)mm
Distance through insulation	:	0.7 / 0.6 / 0.5 / 0.5 / >0.4 / 0.4 / 0.4 / 0.4 / 0.4 / 0.4 / 0.4 / 0.4 /0.4mm
Tested under the following conditions	:	Reinforced
Input	:	
Output	:	
supplementary information		
*) There is not any internal creepage distance. Test according to clause 2.10.9 is only from IEC 60950-1 has been carried out ten times for the components at 100°C / 25°C / 0°C / 25°C. Humidity treatment of 48 hours as well as electric strength tests at 3000V / 1 minute and 5000V / 1 minute were carried out to the component after thermal cycling test.		

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1.6.2	TABLE: electrical data (in normal conditions)	P

fuse #	Irated (A)	U (V / Hz)	P (W)	I (A)	Ifuse (A)	condition/status
F9901	--	90/50	36.76	0.656	0.656	--
F9901	--	90/60	36.76	0.663	0.663	--
F9901	1.5	100/50	36.25	0.600	0.600	--
F9901	1.5	100/60	36.26	0.609	0.609	--
F9901	1.5	240/50	35.35	0.334	0.334	--
F9901	1.5	240/60	35.34	0.328	0.328	--
F9901	--	264/50	35.72	0.308	0.308	--
F9901	--	264/60	35.70	0.307	0.307	--
Supplementary information:						
Load condition as shown on general product information.						

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2.1.1.5 c1)	TABLE: max. V, A, VA test			P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
+19V output	--	17.9	2.7	47.68
supplementary information:				
The above measurements are the maximum values (max. V and max. A not obtained at the same time). -.Directly loaded to power supply board.				

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2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
T901 pin7 – 9	58.5	--	N/A
After R9906/R907/R906/R908/R9911	53.2	--	N/A
After C903/D901	--	17.9	C903/D901
After L801	--	17.9	N/A
After D802	--	54.98	N/A
LED backlight to GND	--	55.10	N/A

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
R906 (s-c)	17.9Vdc (for Vout output)
C903 (s-c)	0Vdc (for Vout output)
D901 pin 1-2 (s-c) *)	0Vdc (for Vout output)
supplementary information:	
s-c=short circuit Input voltage: 264V, 60Hz. *) Unit shutdown.	

2.4	TABLE: Limited Current Circuits	N/A

Location	Voltage (V)	Current (mA)	Freq (KHz)	Limit (mA)
supplementary information:				

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2.5	TABLE: limited power sources	P

Circuit output tested: See below

	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
Circuit output tested: +19V output				
normal condition (with table 2B), Uoc=17.93V	1.08	8	19.2	100
fault condition (U902 pin 1-2 S-C) (with table 2B), Uoc=0V *)	0	8	0	100
fault condition (U902 pin 3-4 S-C) (with table 2B), Uoc=0V *)	0	8	0	100
fault condition (U902 pin 3 O-C) (with table 2B), Uoc=0V *)	0	8	0	100
fault condition (R916 S-C) (with table 2B), Uoc=17.93V	1.2	8	21.3	100
Audio out port (CN603) all pins to sec GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
HDMI port (CN103) pin 15, 16 to sec GND, Normal condition (with table 2B), Uoc=3.3V *)	0	8	0	100
HDMI port (CN103) pin 18 to sec GND, Normal condition (with table 2B), Uoc=5.0V *)	0	8	0	100
HDMI port (CN103) other pins to sec GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
DP port (CN106) pin 15, 17, 18 to GND, Normal condition (with table 2B), Uoc=3.3V *)	0	8	0	100
DP port (CN106) pin 20 to GND, Normal condition (with table 2B), Uoc=3.26V	1.0	8	2.8	100
DP port (CN106) pin 20 to GND, Fault condition (U151 pin1-pin3 S-C) (with table 2B), Uoc=3.26V	1.7	8	3.2	100
DP port (CN106) other pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
VGA port (CN112) pin 9, 12, 15 to sec GND, Normal condition (with table 2B), Uoc=5.0V *)	0	8	0	100
VGA port (CN112) pin 5 to sec GND, Normal condition (with table 2B), Uoc=2.7V *)	0	8	0	100
VGA port (CN112) other pins to sec GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
USB 3.0 port (CN1009) pin 1 to GND, Normal condition (with table 2B), Uoc=5.07V	1.2	8	5.3	100
USB 3.0 port (CN1009) other pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100

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	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
USB 3.0 port (CN1010) pin 1 to GND, Normal condition (with table 2B), Uoc=5.07V	1.2	8	5.3	100
USB 3.0 port (CN1010) other pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
USB 3.0 port (CN1012) pin 1 to GND, Normal condition (with table 2B), Uoc=5.07V	1.2	8	5.3	100
USB 3.0 port (CN1012) other pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
USB 3.0 port (CN1011) pin 1 to GND, Normal condition (with table 2B), Uoc=5.07V	3.8	8	12.2	100
USB 3.0 port (CN1011) other pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
USB 3.0 port (CN1008) all pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
supplementary information:				
S-C=Short circuit, O-C=Open circuit *) Cannot load				

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2.10.2	Table: working voltage measurement	P

Location	RMS voltage (V)	Peak voltage (V)	Comments
T901: Pin1 to pin 7	165	347	--
T901: Pin1 to pin 9	178	344	--
T901: Pin2 to pin 7	164	344	--
T901: Pin2 to pin 9	167	394	--
T901: Pin3 to pin 7	246	416	--
T901: Pin3 to pin 9	246	362	--
T901: Pin5 to pin 7	279	494	--
T901: Pin5 to pin 9	**289**	**519**	--
U902: Pin1 to pin 3	184	358	--
U902: Pin1 to pin 4	186	362	--
U902: Pin2 to pin 3	184	359	--
U902: Pin2 to pin 4	188	361	--
C9902	177	342	--
C9903	182	355	--
C9904	188	350	--
Supplementary information:			
Supply voltage: 240Vac, 60Hz. The highest measured working voltages in transformer are indicated with bold characters.			

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2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements	P

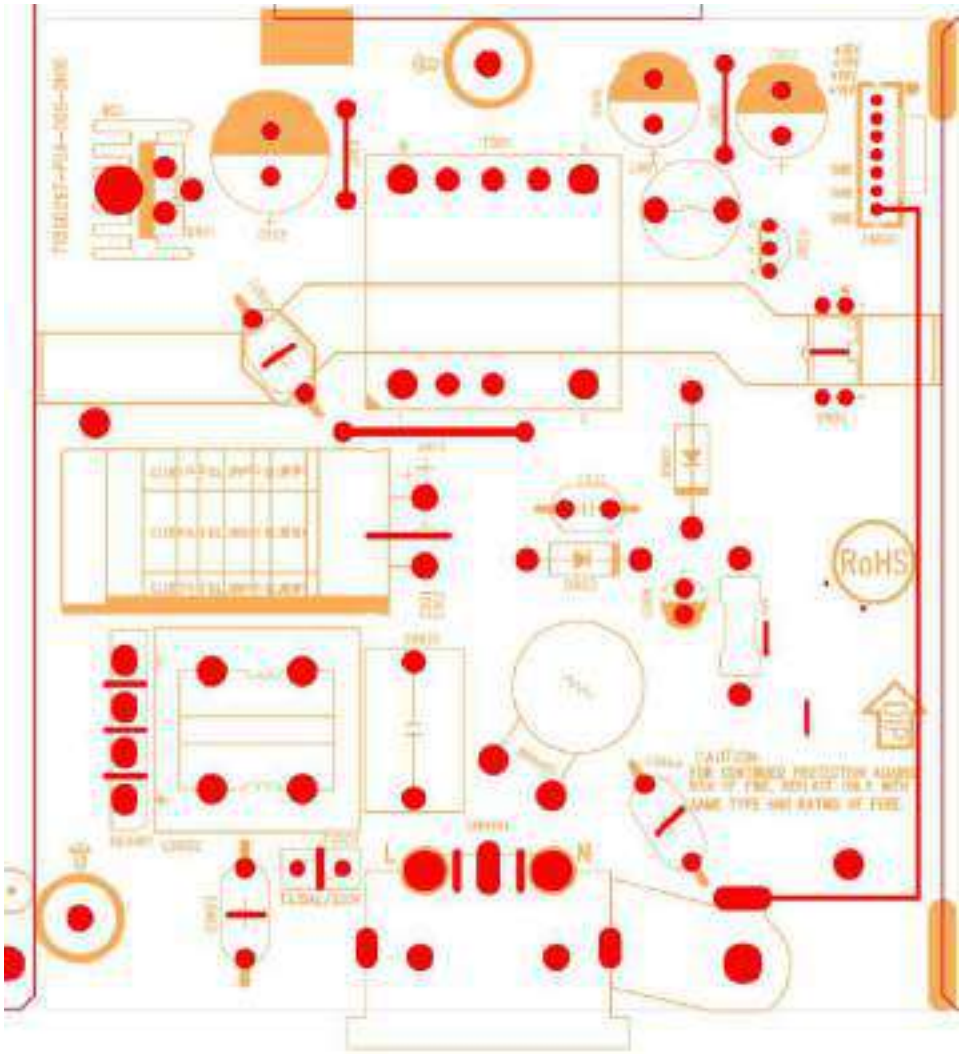
clearance cl and creepage distance dcr at/of/between:	Upeak (V)	U r.m.s. (V)	Required cl (mm) *)*	cl (mm)	Required cr (mm)	cr (mm)
Func.: L to N (before fuse) ***1) 2)***	340	240	2.3	6.0	2.5	6.0
Func.: F9901 pad 1 to F9901 pad 2 ***1) 2)***	340	240	2.3	2.6	2.5	2.6
Basic: Line to GND ***1) 2)***	340	240	3.0	3.0	3.0 *****)***	3.0
Basic: Neutral to GND ***1)2)***	340	240	3.0	3.0	3.0 *****)***	3.0
Basic: C9903 pri. to GND ***1)2)***	355	182	3.0	4.4	3.0 *****)***	4.4
Basic: C9904 pri. to GND ***1)2)***	350	188	3.0	3.0	3.0 *****)***	3.0
Basic: C9902 pri. to GND ***1)2)***	342	177	3.0	7.4	3.0 *****)***	7.4
Basic: F9901 to metal chassis of AC inlet ***3)***	340	240	3.0	3.0	3.0 *****)***	3.0
Basic: BD9901 to metal chassis ***2)***	340	240	3.0	4.2	3.0 *****)***	4.2
Basic: BD9901 to metal chassis ***3)***	340	240	3.0	3.2	3.0 *****)***	3.2
Basic: C902 to metal chassis ***3)***	340	240	3.0	5.0	3.0 *****)***	5.0
Basic: T901 core to metal chassis ***3)***	519	289	3.3	5.8	3.3 *****)***	5.8
Reinf.: primary solder side to panel ***2)***	519	289	6.6	8.0	6.6 *****)***	8.0
Reinf.: U902 pri to sec ***2)***	362	188	6.0	7.9	6.0 *****)***	7.9
Reinforced.: T901 pri to sec ***2)***	519	289	6.6	8.0	6.6 *****)***	8.0

supplementary information:

See appended table C.2 for internal distances of transformer.
1) There is a slot > 1mm under the PCB. ***2)*** Measured on PCB side. ***3)*** Measured on component side
****)*** This equipment is intended to be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor 1.48, specified in table A.2 of IEC 60664-1
*****)*** The requirement for the creepage distance is less than the requirement for the clearance, therefore the requirement for the clearance apply also for the creepage distance requirement.
-. The following component is tested with 10N force: C902, BD9901, mylar sheet and secondary wire.
-. C902 was fixed by glue.
-. There was one mylar sheet located between panel and power supply board.

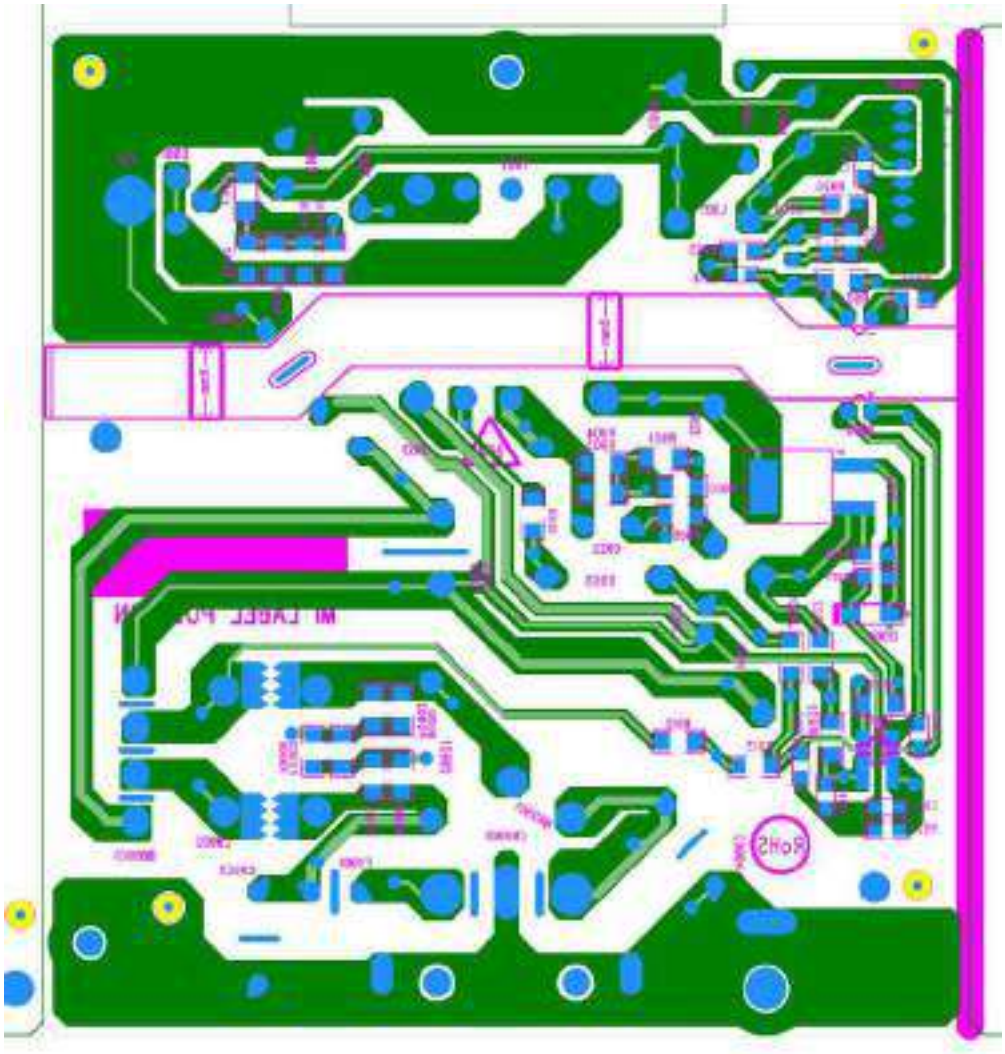
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Copy of PCB, layout of tracing (not to scale): for power supply board 715GD297



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Copy of PCB, layout of tracing (not to scale): for power supply board 715GD297



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2.10.5	TABLE: distance through insulation measurements	P

distance through insulation di at/of:	Up (V)	test voltage (V)	required di (mm)	di (mm)
Reinforced: Mylar sheet located between power supply board and panel, located on metal chassis	519	3000Vac	0.4	0.4
Reinforced: Insulation tape used for transformer (T901) Reinforced: 2 layers. (1 layer tested)	519	3000Vac	2 layers	2 layers
supplementary information:				

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4.3.8	TABLE: Batteries	N/A
Battery category : Manufacturer.....: Type / model.....: Voltage.....: Capacity.....: Tested and Certified by (incl. Ref. No.).....: Circuit protection diagram:		
Max. Reverse charging current (during fault conditions)		
MARKINGS AND INSTRUCTIONS (1.7.13)		
Location of replaceable battery		
Close to the battery		
In the servicing instructions		
In the operating instructions		

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4.3.8	TABLE: Batteries								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available									N/A
Is it possible to install the battery in a reverse polarity position?									N/A
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. Current	Manuf. Specs.		Meas. Current	Manuf. Specs.	Meas. Current	Manuf. Specs.	Meas. Current	Manuf. Specs.
Max. current during normal condition									
Test results:									Verdict
- Chemical leaks									N/A
- Explosion of the battery									N/A
- Emission of flame or expulsion of molten metal									N/A
- Electric strength tests of equipment after completion of tests									N/A
Supplementary information:									

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4.5	TABLE: maximum temperatures			P
	test voltage (V):	90V/60Hz	264V/50Hz	—
maximum temperature T of part/at:		T (°C)		allowed T_{max} (°C)
1. AC inlet near L		56.7	53.9	70
2. C9904 body		57.7	55.9	85
3. C9903 body		60.2	55.4	85
4. PCB near NR9901		83.7	78.5	130
5. PCB near BD9901		81.1	64.6	130
6. C9901 body		62.0	56.3	110
7. L9902 coil		91.1	65.9	120 *)
8. L9902 core		89.7	65.8	120 *)
9. C902 body		77.5	67.0	105
10. C9902 body		75.2	71.8	85
11. T901 coil		87.4	95.6	110 *)
12. T901 core		84.4	87.4	110 *)
13. U902 body		65.9	63.9	100
14. PCB near D901		86.1	87.2	130
15. Mylar sheet near T901		70.9	72.0	80
16. Metal enclosure inside near T901		57.5	57.4	70
17. Plastic enclosure inside near T901		51.5	51.9	--
18. Plastic enclosure outside near T901		46.8	47.1	95
19. Panel		47.7	48.5	80
20. Control keys		44.6	45.1	85
21. Accessible Metal enclosure		48.4	48.3	70
22. Base		40.9	41.4	85
23. Ambient		40.0	40.0	--
supplementary information:				
Tmra = 40°C. Temp. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10°C for thermocouple measurement method. -. Horizontal position				

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4.5	TABLE: maximum temperatures			P
	test voltage (V):	90V/60Hz	264V/50Hz	—
maximum temperature T of part/at:		T (°C)		allowed T_{max} (°C)
1. AC inlet near L		62.4	56.8	70
2. C9904 body		61.9	58.6	85
3. C9903 body		69.4	60.8	85
4. PCB near NR9901		96.0	78.4	130
5. PCB near BD9901		91.1	70.6	130
6. C9901 body		67.1	61.7	110
7. L9902 coil		98.6	71.1	120 *)
8. L9902 core		98.3	70.4	120 *)
9. C902 body		82.2	71.9	105
10. C9902 body		82.1	78.3	85
11. T901 coil		88.3	96.6	110 *)
12. T901 core		86.0	88.8	110 *)
13. U902 body		62.6	61.0	100
14. PCB near D901		93.4	94.5	130
15. Mylar sheet near T901		72.2	72.8	80
16. Metal enclosure inside near T901		60.6	59.1	70
17. Plastic enclosure inside near T901		53.9	52.8	--
18. Plastic enclosure outside near T901		51.0	50.1	95
19. Panel		48.4	47.9	80
20. Control keys		46.3	45.0	85
21. Accessible Metal enclosure		50.9	50.7	70
22. Base		42.3	41.4	85
23. Ambient		40.0	40.0	--
supplementary information:				
Tmra = 40°C. Temp. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10°C for thermocouple measurement method. -. Vertical position rotating anti-clockwise 90 degree				

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4.5	TABLE: maximum temperatures			P
	test voltage (V):	90V/60Hz	264V/50Hz	—
maximum temperature T of part/at:		T (°C)		allowed T_{max} (°C)
1. AC inlet near L		62.2	56.0	70
2. C9904 body		67.8	62.3	85
3. C9903 body		64.8	57.1	85
4. PCB near NR9901		90.5	78.4	130
5. PCB near BD9901		76.7	63.4	130
6. C9901 body		68.4	61.3	110
7. L9902 coil		92.9	66.2	120 *)
8. L9902 core		91.3	66.1	120 *)
9. C902 body		73.2	65.3	105
10. C9902 body		70.8	69.3	85
11. T901 coil		81.4	91.2	110 *)
12. T901 core		81.0	86.1	110 *)
13. U902 body		78.1	75.1	100
14. PCB near D901		79.1	80.6	130
15. Mylar sheet near T901		67.9	69.9	80
16. Metal enclosure inside near T901		53.9	53.8	70
17. Plastic enclosure inside near T901		49.4	49.4	--
18. Plastic enclosure outside near T901		45.7	45.7	95
19. Panel		47.9	47.8	80
20. Control keys		45.5	45.5	85
21. Accessible Metal enclosure		52.8	52.1	70
22. Base		45.7	45.8	85
23. Ambient		40.0	40.0	--
supplementary information:				
Tmra = 40°C. Temp. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10°C for thermocouple measurement method. -. Vertical position rotating clockwise 90 degree				

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4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm) ..... :	≤2mm	—

Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, LOTTE: SD-0150(+)	75	1.3
Plastic Enclosure, LOTTE: VH-0810(+)	75	1.3
Plastic Enclosure, LOTTE: VE-0812(+)	75	1.3
Plastic Enclosure, LOTTE: NH-1000T(+)(&)	75	1.3
Plastic Enclosure, LOTTE: GC-0700(+++) (RR28)	75	1.3
Plastic Enclosure, LOTTE: GC-0700A(RR)	75	1.3
Plastic Enclosure, LOTTE: GC-0750(+)(RR70)	75	1.3
Plastic Enclosure, LOTTE: GC-1017(+)(RR30)	75	1.3
Plastic Enclosure, LOTTE: VE-1890(+)	75	1.3
Plastic Enclosure, LOTTE: BF-0675(+)	75	1.3
Plastic Enclosure, LOTTE: BF-0670(+)	75	1.3
Plastic Enclosure, LOTTE: NH-1017(p)	75	1.3
Plastic Enclosure, LOTTE: NH-1017T	75	1.3
Plastic Enclosure, LOTTE: NH-1017SG(+)	75	1.3
Plastic Enclosure, LOTTE: BF-0677(+)	75	1.3
Plastic Enclosure, LOTTE: HS-7000(+)	75	1.3
Plastic Enclosure, LOTTE: HG-0760(+)	75	1.3
Plastic Enclosure, LOTTE: NE-1030(+)	75	1.3
Plastic Enclosure, LOTTE: HR-1360(+)	75	1.3
Plastic Enclosure, LOTTE: LX-0951(+)	75	1.3
Plastic Enclosure, LOTTE: LX-0957(+)	75	1.3
Plastic Enclosure, LOTTE: TH-1100(+)	75	1.3
Plastic Enclosure, LOTTE: LS-1159(r)LS-1159SF	75	1.3
Plastic Enclosure, LOTTE: LS-1159F	75	1.3
Plastic Enclosure, LOTTE: NH-1036	75	1.3
Plastic Enclosure, LOTTE: SD-0150T	75	1.3
Plastic Enclosure, LOTTE: ABF-0200E	75	1.3
Plastic Enclosure, GRAND PACIFIC PETROCHEMIC AL CORP: D-150	75	1.2
Plastic Enclosure, GRAND PACIFIC PETROCHEMIC AL CORP: D-1000	75	1.2
Plastic Enclosure, GRAND PACIFIC PETROCHEMIC AL CORP: D-1000A	75	1.2
Plastic Enclosure, CHI MEI CORPORATION: PA-757(+)	75	1.4
Plastic Enclosure, CHI MEI CORPORATION: PH-88	75	1.4
Plastic Enclosure, CHI MEI CORPORATION: PA-756S	75	1.4

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Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, Mocom Compounds GmbH & Co KG: GP-35	75	1.3
Plastic Enclosure, Mocom Compounds GmbH & Co KG: GP-22	75	1.3
Plastic Enclosure, Mocom Compounds GmbH & Co KG: 495F	75	1.3
Plastic Enclosure, COVESTRO DEUTSCHLAND AG [PC RESINS]: FR3000 series	75	1.2
Plastic Enclosure, COVESTRO DEUTSCHLAND AG [PC RESINS]: FR3005 series	75	1.2
Plastic Enclosure, QINGDAO HAIER NEW MATERIAL R & D CO LTD: HRABS-RS	75	1.2
Plastic Enclosure, QINGDAO HAIER NEW MATERIAL R & D CO LTD: HRABS-HG	75	1.2
Plastic Enclosure, QINGDAO HAIER NEW MATERIAL R & D CO LTD: CR-3002	75	1.2
Plastic Enclosure, DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD: HL-ABS-PCR85	75	1.3
Plastic Enclosure, DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD: HL-ABS-PCR65	75	1.3
Plastic Enclosure, DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD: HL-ABS-PCR35	75	1.3
Plastic Enclosure, ORINKO (HEFEI) ADVANCED PLASTIC CO LTD: ABS-3070H,	75	1.4
Plastic Enclosure, ORINKO (HEFEI) ADVANCED PLASTIC CO LTD: HIPS-2000,	75	1.4
Plastic Enclosure, ORINKO (HEFEI) ADVANCED PLASTIC CO LTD: HIPS-2230(+)	75	1.4
Plastic Enclosure, ORINKO (HEFEI) ADVANCED PLASTIC CO LTD: ABS-340*(*=0~10)	75	1.4
Plastic Enclosure, WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD: GA(M)(b)(c)	75	1.3
Plastic Enclosure, WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD: GA35	75	1.3
Plastic Enclosure, WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD: NC30	75	1.3
Plastic Enclosure, WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD: GA65	75	1.3
Plastic Enclosure, WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD: GA85	75	1.3
Plastic Enclosure, UNIC TECHNOLOGY CORP: UR- 3006+(RXX)	75	1.4
Plastic Enclosure, UNIC TECHNOLOGY CORP: UR-200+ (+: A to Z)	75	1.4
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO(####)(Y)	75	1.2

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Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO-1303B	75	1.2
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO1312B	75	1.2
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO(1304)(B)	75	1.2
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO(1333)(B)	75	1.2
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO(1303)(OP)	75	1.2
Plastic Enclosure, LG CHEM LTD: HF350(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: HF380(m)	75	1.3
Plastic Enclosure, LG CHEM LTD: HF380NS	75	1.3
Plastic Enclosure, LG CHEM LTD: HF380(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: HF-380(m)	75	1.3
Plastic Enclosure, LG CHEM LTD: HF-380	75	1.3
Plastic Enclosure, LG CHEM LTD: HF-380NS	75	1.3
Plastic Enclosure, LG CHEM LTD: HF380X	75	1.3
Plastic Enclosure, LG CHEM LTD: AF312T1	75	1.3
Plastic Enclosure, LG CHEM LTD: AF342T1	75	1.3
Plastic Enclosure, LG CHEM LTD: LUPOY GN- 5001TF(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: GN-5001RFD	75	1.3
Plastic Enclosure, LG CHEM LTD: LUPOY GN-5008HF(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: LUPOY GP-5008BF(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: SE750(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: XG494(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: XG569(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: GP-1000	75	1.3
Plastic Enclosure, LG CHEM LTD: GP-1000F(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: GP-1000(m)(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: LUMILOY GP-1000(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: SE750(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: LUPOY GN- 5001RF(T)	75	1.3
Plastic Enclosure, LG CHEM LTD: SE885(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: HF388(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: GN-2101F(m)	75	1.3
Plastic Enclosure, KINGFA SCI & TECH CO LTD: 4418	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: 5197	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: FRABS-518	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-5197	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HF-606	75	1.1

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Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HF-626	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: FRABS-518	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011C	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: JH960 6(M)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: FRHIPS-960	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: RS-900	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: RS-300	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: RS-400	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011(L65)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011(L85)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011(HG6)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-100	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-900	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-55111	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: JH960 6(M)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: FRHIPS-960	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-4418	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-3399	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-CM(ee)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-HG(ee)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-510 (o)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-550	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-61(M) (##)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: RS-(hh)0	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HP-126	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: ABS-660	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: ABS-122	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-322	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-332	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-220	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: H12	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: G360	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-55(M) (##)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-58(M) (##)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011C	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011(ww)	75	1.1
Plastic Enclosure, HUIZHOU WOTE: 2100	75	1.5

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Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, TEIJIN LIMITED RESIN AND PLASTIC: TN-7500(c)	75	1.3
Plastic Enclosure, TEIJIN LIMITED RESIN AND PLASTIC: TN-7500F(#)	75	1.3
Plastic Enclosure, TEIJIN LIMITED RESIN AND PLASTIC: MN-3600V(#)	75	1.3
Plastic Enclosure, TEIJIN LIMITED RESIN AND PLASTIC: MN-3600H(#)	75	1.3
Plastic Enclosure, INEOS STYROLUTION GROUP GMBH: 495F GR2	75	1.1
Plastic Enclosure, INEOS STYROLUTION GROUP GMBH: 495F KG2	75	1.1
Plastic Enclosure, INEOS STYROLUTION GROUP GMBH: 495F GR21,	75	1.1
Plastic Enclosure, INEOS STYROLUTION GROUP GMBH: 495F KG21	75	1.1
Plastic Enclosure, INEOS STYROLUTION GROUP GMBH: PC2065	75	1.1
Plastic Enclosure, Trinseo Europe GmbH: STYRON A- TECH 1200	75	1.3
Plastic Enclosure, INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED: 3441	75	1.2
Plastic Enclosure, INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED: 260-XX	75	1.2
Plastic Enclosure, DOOSAN CORPORATION ELECTRO-MATERIALS BG: DS-1107A	75	1.2
Plastic Enclosure, DOOSAN CORPORATION ELECTRO-MATERIALS BG: DS-1202G	75	1.2
Plastic Enclosure, DOOSAN CORPORATION ELECTRO-MATERIALS BG: DS-7106	75	1.2
Plastic Enclosure, SABIC JAPAN L L C: C6600(GG)(X)(VS)	75	1.3
Plastic Enclosure, SABIC JAPAN L L C: C6600E (VS)(X)	75	1.3
Plastic Enclosure, PONTEX POLYBLEND CO LTD: AFE5000N	75	1.2
Plastic Enclosure, PONTEX POLYBLEND CO LTD: AFE5100N	75	1.2
Plastic Enclosure, PONTEX POLYBLEND CO LTD: 9004BK	75	1.2
Plastic Enclosure, CHI LIN TECHNOLOGY CO LTD: GA-1(aaa)	75	1.1
Plastic Enclosure, CHI LIN TECHNOLOGY CO LTD: GA-1535	75	1.1
Plastic Enclosure, CHI LIN TECHNOLOGY CO LTD: GA-1565	75	1.1
Plastic Enclosure, SAMYANG CORPORATION: 210NHF(@)	75	1.3
Plastic Enclosure, SAMYANG CORPORATION: 210NHF	75	1.3
Plastic Enclosure, COVESTRO DEUTSCHLAND AG: GF99011 MF	75	1.2
Plastic Enclosure, CHI MEI CORPORATION: PC-540(Y)(a)	75	1.2
Plastic Enclosure, QINGDAO GUOEN TECHNOLOGY CO LTD: ABS21(xx)G-A	75	1.2
Plastic Enclosure, QINGDAO GUOEN TECHNOLOGY CO LTD: ABS2030A	75	1.2
Plastic Enclosure, QINGDAO GUOEN TECHNOLOGY CO LTD: ABS20(xx)B	75	1.2
Plastic Enclosure, SHENZHEN FUHENG NEW MATERIAL CO LTD: HIPS-568	75	1.2

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Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, SHENZHEN FUHENG NEW MATERIAL CO LTD: HIPS-494	75	1.2
Plastic Enclosure, UNIC TECHNOLOGY CORP: UR-7085+(R90)	75	1.2
Bobbin of L9902, CHANG CHUN PLASTICS CO LTD: 4115(f1)	75	1.1
Supplementary information:		

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4.6.1, 4.6.2	TABLE: Enclosure openings	P

Location	Size(mm)	Comments
Metal enclosure		
Top side (Right side when clockwise 90 degree) (Left side when anti-clockwise 90 degree)	-numerous Ø1.6mm circular holes -two 6.8mm x 1.0mm rectangle hole	 Located on power supply board side, blocked by mylar sheet V-0
Rear side (Bottom at tilt backward position)	-one Ø1.6mm circular holes -eight Ø1.6mm circular holes -one 2.5mm x 21.0mm rectangle hole -one 2.5mm x 21.0mm rectangle hole -one 2.5mm x 22.0mm rectangle hole -one 2.5mm x 22.0mm rectangle hole -one 11.0mm x 2.2mm rectangle hole	Located on secondary side of power supply board supplied by LPS, after evaluated about 5deg projection, no hazard. Located on mainboard side, supplied by LPS Located on secondary side of power supply board side supplied by LPS, blocked by plastic enclosure, after evaluated about 5deg projection, no hazard. Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard. Located on power supply board side, blocked by mylar sheet V-0 Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard. Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard.
Left side (Top side when clockwise 90 degree) (Bottom side when anti-clockwise 90 degree)	-one 64.0mm x 12.8mm rectangle hole	Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard.

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Location	Size(mm)	Comments
	-two 10.4mm x 3.0mm rectangle hole	Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard.
Right side (Top side under anti-clockwise) (Bottom side under clockwise) (Side when Panel upward position.)	No openings	
Bottom side (Right side under anti-clockwise) (Left side under clockwise)	-four 9.7mm x 1.0mm rectangle hole -two 6.8mm x 1.0mm rectangle hole	Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard. Located on power supply board side, blocked by mylar sheet V-0
Plastic enclosure		
Top side (Right side when clockwise 90 degree) (Left side when anti-clockwise 90 degree)	-numerous 2.0mm x 25.4mm rectangle hole	All openings are vertical opening as below picture. After evaluated about 5 deg. Projection, no hazards 
Rear side (Bottom at 90° tilt backward position)	No openings	
Left side (Top side when clockwise 90 degree) (Bottom side when anti-clockwise 90 degree)	-numerous 1.8mm x 16.2mm rectangle hole	All openings are vertical opening as below picture. After evaluated about 5 deg. Projection, no hazards 
Right side (Bottom side when clockwise 90 degree) (Top side when anti-clockwise 90 degree)	-numerous 1.8mm x 16.2mm rectangle hole	All openings are vertical opening as below picture. After evaluated about 5 deg. Projection, no hazards 
Bottom side (Left side when clockwise 90 degree) (Right side when	-numerous 1.8mm x 25.2mm rectangle hole -one 21.2mm x 33.2mm rectangle hole -one 18.2 mm x 147.0mm rectangle	Blocked by metal chassis Blocked by metal chassis Blocked by metal chassis

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Location	Size(mm)	Comments
anti-clockwise 90 degree)	hole -two 2.7mm x 6.7mm rectangle hole	Blocked by metal chassis
Supplementary information:		

4.7	TABLE: resistance to fire			P
part	manufacturer of material	type of material	thickness (mm)	flammability class
Metal chassis (fire enclosure)	Interchangeable	Interchangeable	0.5+0.5	--
supplementary information:				

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5.1	TABLE: touch current measurement	P

Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
Line – metal Chassis (GND)	0.182	3.5	System on
Neutral – metal Chassis (GND)	0.182	3.5	System on
Line –Signal connector	0.02	0.25	System on 1)
Neutral –Signal connector	0.02	0.25	System on 1)
Line – Plastic Enclosure with metal foil	0.005	0.25	System on
Neutral – Plastic Enclosure with metal foil	0.005	0.25	System on
supplementary information:			
All Y-cap are rated max. according to List of critical components. 1) e-switch closed. Vin= 264V/60Hz			

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5.2	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional: Line – Neutral(fuse opened)		AC	1500	No
Basic: Primary – PE		AC	1772	No
Basic: T901 Primary – core		AC	1772	No
Supplementary: T901 Secondary – core		AC	1772	No
Reinforced: T901 Primary – Secondary		AC	3000	No
Reinforced: Primary – Secondary		DC	4242	No
Reinforced: L/N – Plastic enclosure with metal foil		AC	3000	No
Supplementary information:				
-.No flash over or insulation breakdown after test. -.All sources of transformers (see list of critical components) were tested separately with 3000Vac / 60s from primary to secondary. -.The tests mentioned above were performed after humidity test.				

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5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C)..... :	25°C, if not specify.	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Ventilation openings	Blocked	264	3.0hrs	F9901	0.308	Unit operated normally, Max. measured temp.: T901 coil =82.3°C, T901 core=73.5°C, Accessible plastic enclosure=33.7°C, Accessible metal chassis=35.4°C, Panel= 35.9°C, Control key=29.5°C, Base=29.9°C, ambient=24.4°C, no damaged, no hazards. Test under horizontal position
T901 pin7 to 9 after D901 pin 2	o-l	264	4.0hrs	F9901	0.403	Unit shut down when load increase to 1.0A, No hazard.: T901 coil =100.7°C, T901 core=89.8°C, Accessible plastic enclosure=36.9°C, Accessible metal chassis=37.4°C, Panel=33.7°C, Control key=29.3°C, Base=29.7°C, ambient= 26.4°C, no damaged, no hazards. Test under horizontal position
USB 3.0 port (CN1011)	o-l	264	3.4hrs	F9901	0.356	Unit operated normally except USB output shut down when load increase to 3.8A, No hazard. T901coil =86.7°C, T901core=78.5°C, Accessible plastic enclosure=35.9°C, Accessible metal chassis=36.6°C, Panel= 36.8°C, Control key=29.4°C, Base=29.8°C, Ambient= 25.7°C, no damaged, no hazards.
BD9901 (AC - +)	s-c	264	< 1 sec	F9901	***1)***	Fuse F9901 open instantly, no hazard.
C902	s-c	264	< 1 sec	F9901	***1)***	Fuse F9901 open instantly, no hazard.

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Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
R916	s-c	264	5 min.	F9901	0.308	Unit operated normally, no damaged, no hazards.
U901 pin 2 to pin5	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
U901 pin 1 to pin5	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
Q901 (D - G)	s-c	264	5 min.	F9901	0.02	R916, Q901, U901 damaged. Test by three times, the same results. No hazards.
Q901 (G - S)	s-c	264	5 min	F9901	0.02	Unit shut down, no hazards.
Q901 (D - S)	s-c	264	5 min.	F9901	0.02	R916, Q901, U901 damaged. Test by three times, the same results. No hazards.
T901 pin1 to pin2	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
T901 pin3 to pin5	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
T901 pin7 to pin9	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
D901 pin 1 to pin 2	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
C906	s-c	264	5 min.	F9901	0.166	Unit operated normally, no damaged, no hazards.
U902 pin1 to pin 2	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
U902 pin3 to pin 4	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
U902 pin3	o-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
U902 pin1	o-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
19V output	s-c	264	5 min	F9901	0.02	Unit shutdown, no damaged, no hazard.
USB 3.0 port (CN1011)	s-c	264	5 min	F9901	0.291	Normal operation, except USB 3.0, no damaged, no hazard.
Supplementary information:						
s-c = short circuit, o-l = overload, o-c=open circuit ***1)*** Fuse current is more than fuse rating times 2.1. The tests repeated with all sources of fuse and same result came out.						

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C.2	TABLE: transformer	P

Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
T901	Reinforced: Primary Windings –Secondary windings	519	289	3000V ac	6.6 ***1)***	6.6 ***2)***	*)
T901	Reinforced: Primary Windings – core – Secondary windings	519	289	3000V ac	6.6	6.6	*)

Loc.	Tested insulation	Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T901	Primary Windings -Secondary Windings	3000V ac	8.0	8.0	3 layers
T901	Primary Windings – core - Secondary Windings	3000V ac	8.4	8.4	3 layers

supplementary information:

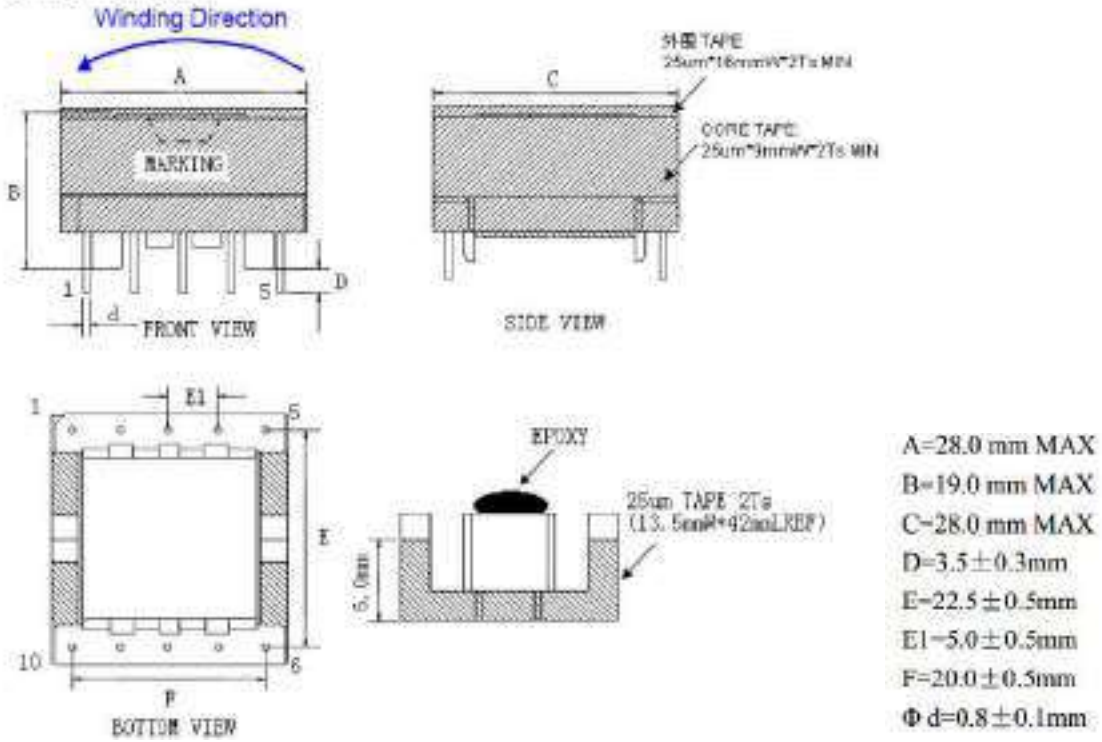
*) 2 or 3 layers / 0.4mm / Annex U
1) This equipment is intended to be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor 1.48, specified in table A.2 of IEC 60664-1
2) The requirement for the creepage distance is less than the requirement for the clearance, therefore the requirement for the clearance apply also for the creepage distance requirement.

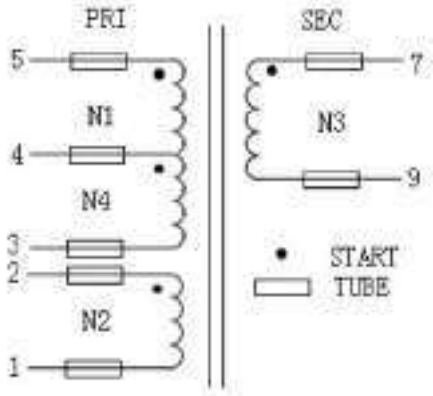
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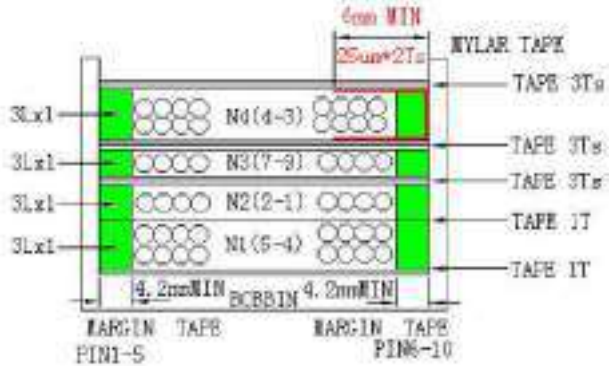
ANNEX C	Transformers specification	P

Construction / winding diagram / component part no.: T901(all sources with the same construction)

3.1 Dimension







PIN	TUBE LENGTH
1,2,3,4,5,7,9	8.0mm MIN

NO.	Winding	Terminal	Wire	Turns	Remark	TAPE
						1T
1	N1	5--4	2UEW φ0.30	23	CLOSED	1T
2	N2	2--1	2UEW φ0.28*3	8	CLOSED	3Ts
3	N3	7--9	2UEW φ0.35*3	7	CLOSED	3Ts
4	N4	4--3	2UEW φ0.30	22	CLOSED	3Ts

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ANNEX C	Transformers specification	P

Construction / winding diagram / component part no.: T901 for LIANFENG DONGJIN

ITEM	MATERIAL	UL NO.	FLAM	MANUFACTURER
BOBBIN	PM-9820 BLACK(94V-0) Thickness: 0.45mm MIN LENGTH: 26.5mm ± 0.5 mm WIDTH: 25.3mm ± 0.5 mm HEIGHT: 16.9mm ± 0.5 mm	E41429	150℃	SUMITOMO BAKELITE CO.,LTD
WIRE	TYAL-130(UEW/QA-B) MW75-C	E245514	130℃	HENG YA ELECTRIC KUN SHAN LTD
	UEW/130, QA/130 MW75-C	E194410	130℃	SHANDONG SAINT ELECTRIC CO LTD
CORE	FERRITE CORE EFD26 NH2C EFD26 MP4B LENGTH: 26.2mm±0.65mm WIDTH: 26.0mm±0.5mm HEIGHT: 9.2mm±0.3mm	N/A	N/A	HAINING LIANFENG MAGNET INDUSTRY CO.,LTD TAIZHOU MAOXIANG CO.,LTD
TAPE	NO. CT [CT(c) , CTI GROUP I, THICKNESS 0.06mm]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
MARGIN TAPE	NO. WF [WF *(c)(h) , CTI GROUP I]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
VARNISH	BC-346A	E317427	200℃	JOHN C.DOLPH CO
	WP-2952F-2G(Y)	E72979	130℃	HITACHI CHEMICAL CO., LTD
FLUX	803	N/A	N/A	LINAN GUITONG CHEMICAL TECHNOLOGY CO LTD
SOLDER	Sn99.95%	N/A	N/A	HAINING HUIPU WELDING MATERIALS CO LTD
LABEL	EX	N/A	N/A	HANGZHOU TOKA INK CHEMICAL CO LTD
	TOUMINGLONG	N/A	N/A	SHANGHAI JINDA PLASTICS CO LTD
TUBE	TEFLON TUBING TFL	E156256	200℃	GREAT HOLDING INDUSTRIAL CO.,LTD
EPOXY	H907-H##	E304477	130℃	DONG GUAN SHI PAI HUA CHUANG MATERIAL FTY

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ANNEX C	Transformers specification	P

Construction / winding diagram / component part no.: T901 PHOENIX

No.	ITEM	MATERIAL TYPE	UL No.	FLAM	MANUFACTURER
1	CORE	EFD26 MH2C LENGTH: 26.2mm±0.65mm WIDTH: 25.3mm±0.5mm HEIGHT: 9.2mm±0.3mm	N/A	N/A	HAINING LIANFENG MAGNET INDUSTRY CO .,LTD
		EFD26 DMR44 LENGTH: 26.2mm±0.65mm WIDTH: 25.3mm±0.5mm HEIGHT: 9.2mm±0.3mm	N/A	N/A	HENG DIAN GROUP DMEGC MAGNET CO.,LTD
2	BOBBIN	PM-9820 BLACK(94V-0) Thickness: 0.51mm MIN LENGTH: 26.5mm ± 0.5 mm WIDTH: 25.3mm ± 0.5 mm HEIGHT: 16.9mm ± 0.5 mm	E41429	150℃	SUMITOMO BAKELITE CO., LTD
3	WIRE	xUEW, QA-x/130 MW75-C	E326617	130℃	HANGZHOU HONGTONG WIRE & CABLE CO.,LTD
		*UEW/130 MW75-C	E194410	130℃	SHANDONG SAINT ELECTRIC CO,.LTD
4	MYLAR TAPE	No. CT [CT(c), CTI GROUP 1 Thickness: 0.06mm]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
		NO.35660 [NO.35660 (a) CTI GROUP II Thickness: 0.055mm]	E50292	130℃	SYMBIO INC
5	MARGIN TAPE	NO. WF [WF(c), CTI GROUP I]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
6	TUBE	TEFLON TUBING TFL	E156256	200℃	GREAT HOLDING INDUSTRIAL CO.,LTD
7	VARISH	V1630FS	E314793	180℃	ELANTAS ZHUHAI CO LTD
8	FLUX	DA-800A	/	/	HUI ZHOU QIANGDA ELECTRONICS INDUSTRY CO.,LTD
9	EPOXY	QD1600(#)	E351561	130℃	HUI ZHOU QIANGDA ELECTRONICS INDUSTRY CO.,LTD
10	SOLDER	SN-0.7CU	N/A	N/A	ZHEJIANG QIANGLI ELECTRONIC MATERIAL CO.,LTD

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ANNEX C	Transformers specification	P

Construction / winding diagram / component part no.: T901 TAI CHANG

NO	SUB PART	TYPE	UL NO	FLAME	MANUFACTURER
1	CORE	EFD26 TP4A EFD26 MP4B L:26.2±0.65mm W:25.3±0.5mm H:9.2±0.3mm	N/A	N/A	TDG HOLDING CO., LTD
					TAIZHOU MAOXIANG CO.,LTD
2	BOBBIN	PM-9820 94V-0 THICKENSS 0.45mm MIN L:26.5±0.5mm W:25.3±0.5mm H:16.9±0.5mm	E41429	150℃	SUMITOMO BAKELITE CO LTD
3	WIRE	xUEW/130, QAx/130	E221719	130℃	ZHEJIANG HONGBO TECHNOLOGY CO LTD
		UEW	E214423	130℃	SHANGHAI ASIA PACIFIC ELECTRIC CO LTD
4	MYLAR TAPE	No. CT [CT(c), CTI GROUPI Thickness: 0.06mm]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD
5	MARGIN TAPE	NO.WF WFI(c) (CTI GPOUP I)	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
6	TUBE	TEFLON TUBING TFL	E156256	200℃	GREAT HOLDING INDUSTRIAL CO.,LTD
7	VARNISH	T-4260(a)	E228349	130℃	WU JIANG TAIHU INSULATING MATERIAL CO LTD
8	EPOXY	H907-H /#	E304477	130℃	DONG GUAN SHI PAI HUA CHUANG MATERIAL FTY
9	SOLDER	Sn(99.3%Sn+0.7%Cu)	N/A	N/A	KUNSHAN DOUBLE TATSU TIN PRODUCTS CO.,LTD
10	FLUX	5108-2	N/A	N/A	JAMCO ELECTRONICS MATERIAL CO.,LTD
		YH-9005	N/A	N/A	LIANYUNGANG YAHENG ELECTRONIC MATERIAL CO.,LTD
11	LABLE		N/A	N/A	TAICANG JIANKANG COLOR PRINTING PACKAGING CO.,LTD
12	INK		N/A	N/A	TAICANG JIANKANG COLOR PRINTING PACKAGING CO.,LTD

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 999

ANNEX C	Transformers specification	P

Construction / winding diagram / component part no.: T901 LI TAI

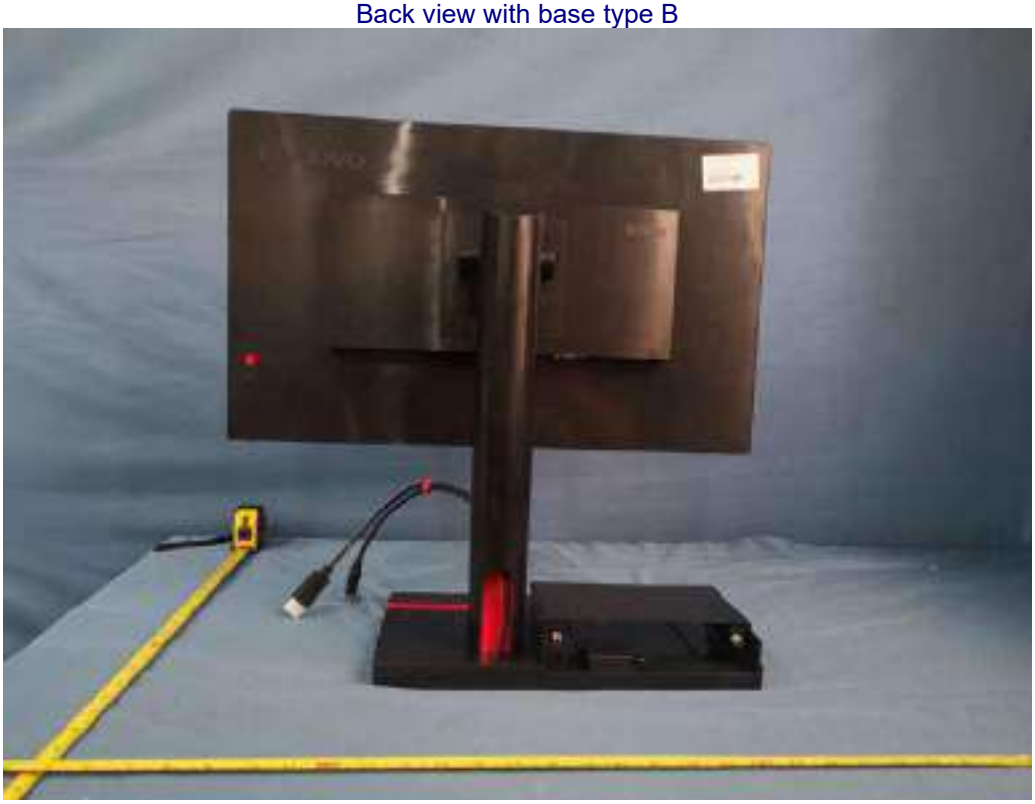
NO	SUB PART	TYPE	UL File NO.	FLAME	MANUFACTURER
1	CORE	EFD25 MP4B/TP4A L:26.3mm+/- 0.5 mm W:25.0mm+/- 0.5mm H:9.1mm+/-0.3mm	N/A	N/A	MAOXIANG TDG
2	BOBBIN	PM-9820 94V-0 THICKNESS 0.45mmMIN L:26.5mm±0.5mm W:25.4m±0.5mm H:17.0mm±0.5mm	E41429	150℃	SUMITOMO BAKELITE CO.,LTD
3	WIRE	DD-NYU (ANSI MW-28)	E64081	130℃	PACIFIC ELECTRIC WIRE & CABLE CO.,LTD
4	TAPE	NO. CT (CT(c), CTI GPOUP I THICKNESS 0.06mm)	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE CO LTD
		NO.35660Y (35660Y (e) CTI=I THICKNESS 0.55mm)	E50292		SYMBIO INC
5	MARGIN TAPE	NO. WF (WF(c), CTI GPOUP I)	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE CO LTD
		NO.35661 (35661(c) (CTI GROUP I))	E50292		SYMBIO INC
6	VARNISH	V1380FC	E75225	130℃	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC
7	EPOXY	E-500(XX)	E218090	130℃	DONGGUAN EATTO ELECTRONIC MATERIAL CO., LTD
8	TUBE	TEFLON TUBE	E156256	200℃	GREAT
9	TIN	Sn99.3Cu0.7	N/A	N/A	WELL FORE SPECIAL WIRE CORPORATION
10	INK		N/A	N/A	多米哥标识科技有限公司
11	SOLDER	(LEAD FREE SOLDER) A02R	N/A	N/A	贵品金属有限公司

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Front view with base type B

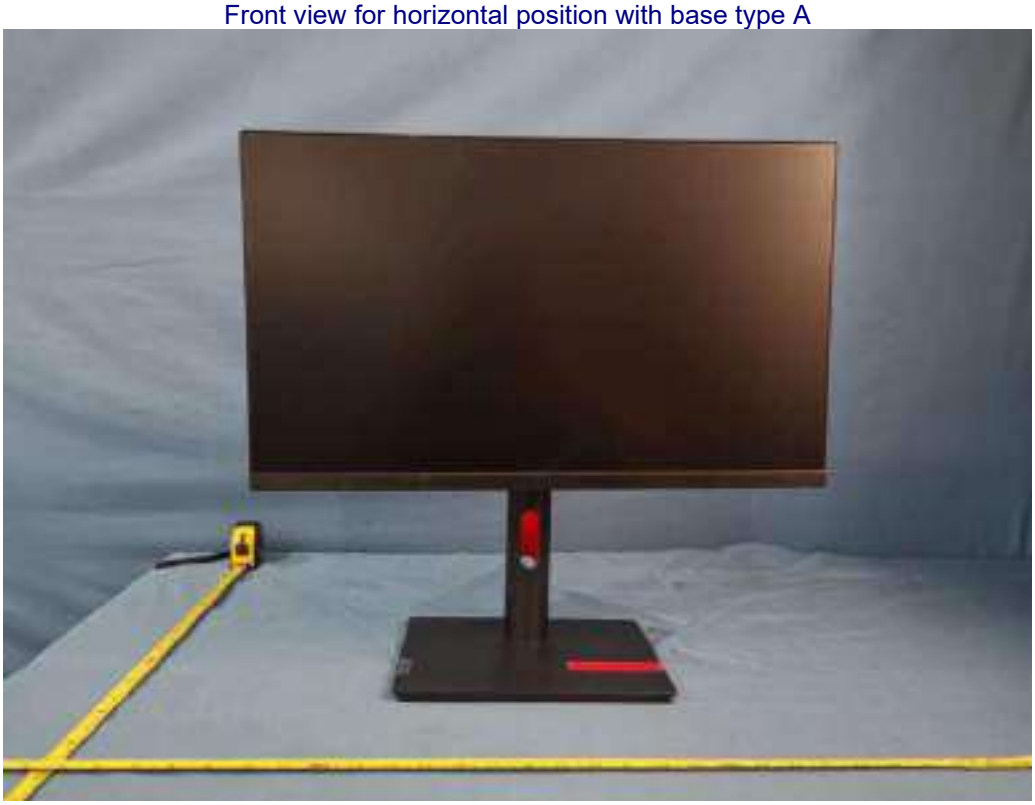


Back view with base type B



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Front view for horizontal position with base type A



Back view for horizontal position with base type A

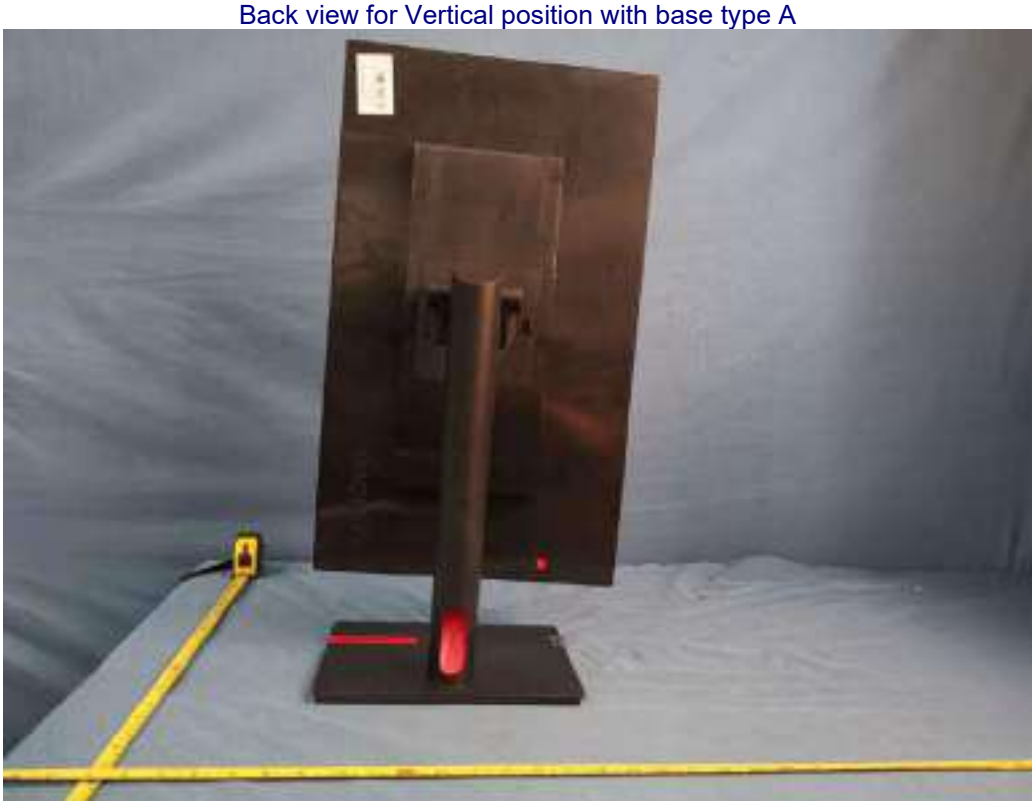


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Front view for Vertical position with base type A

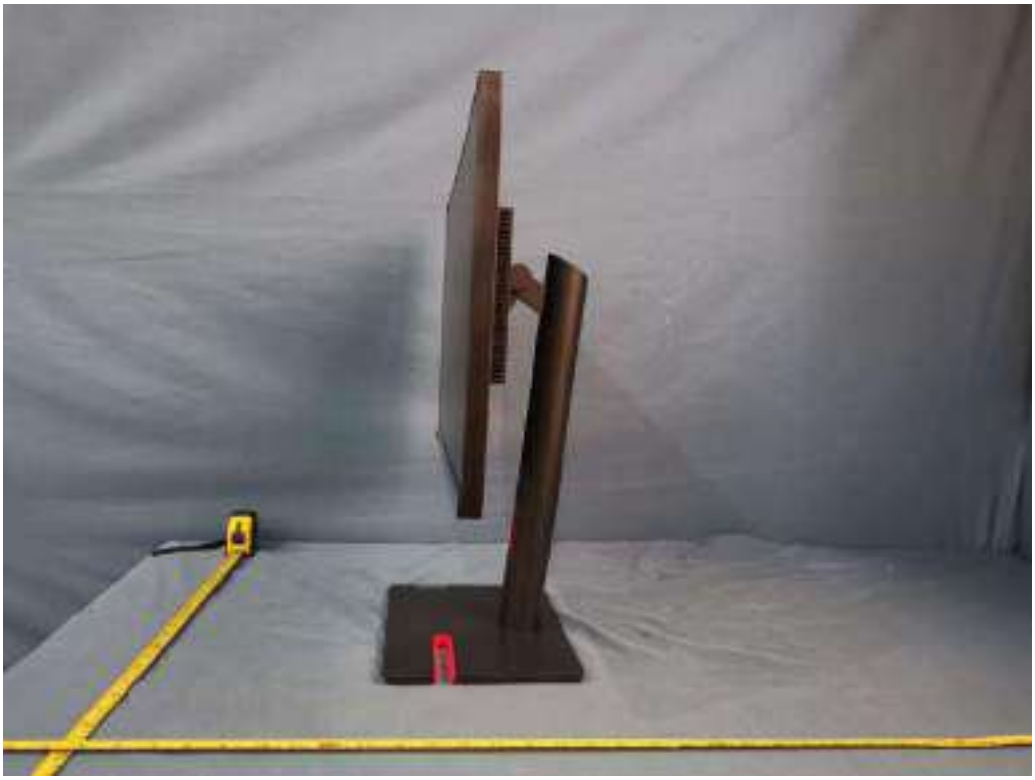


Back view for Vertical position with base type A

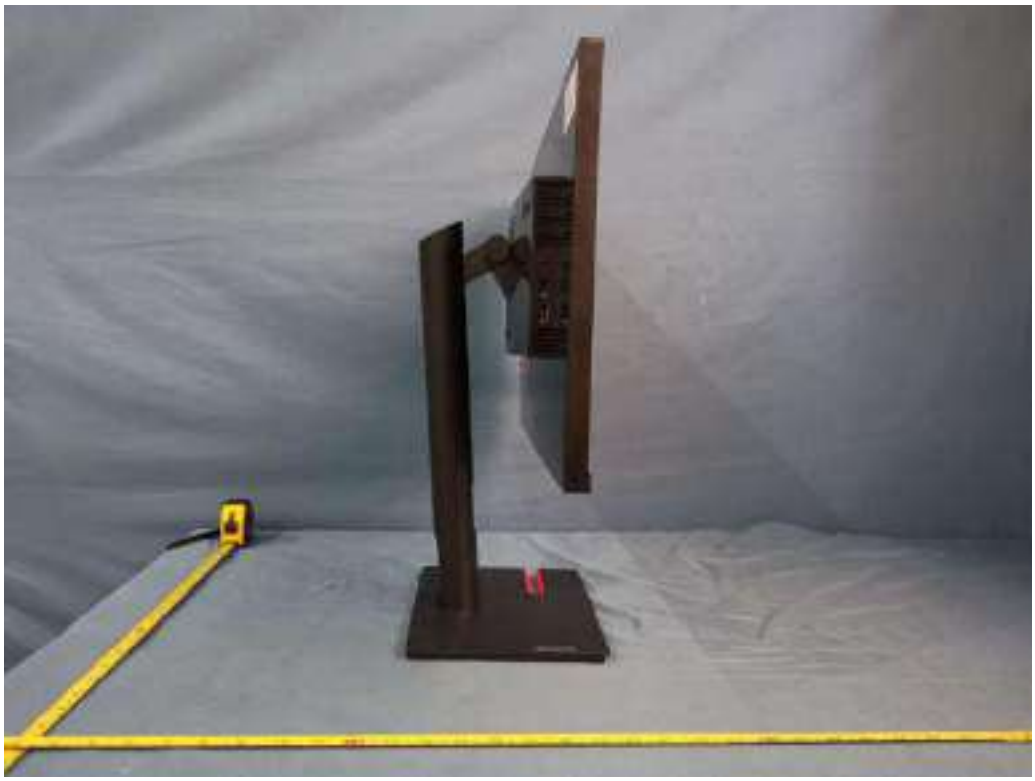


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Side view

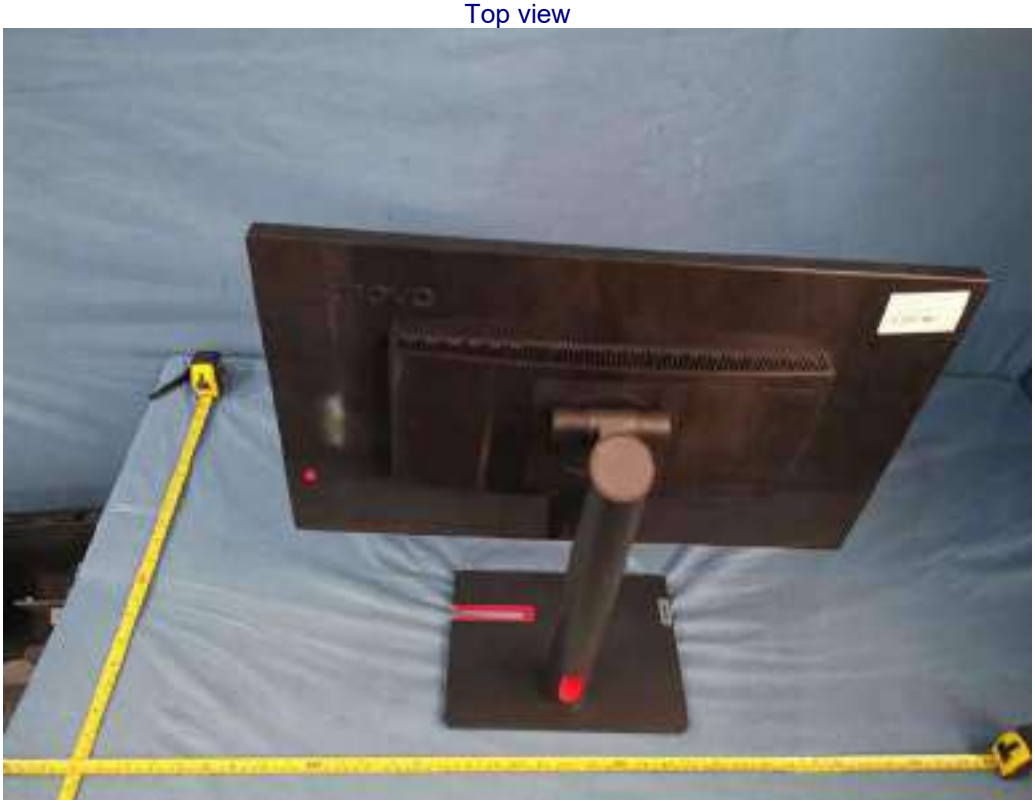


Side view

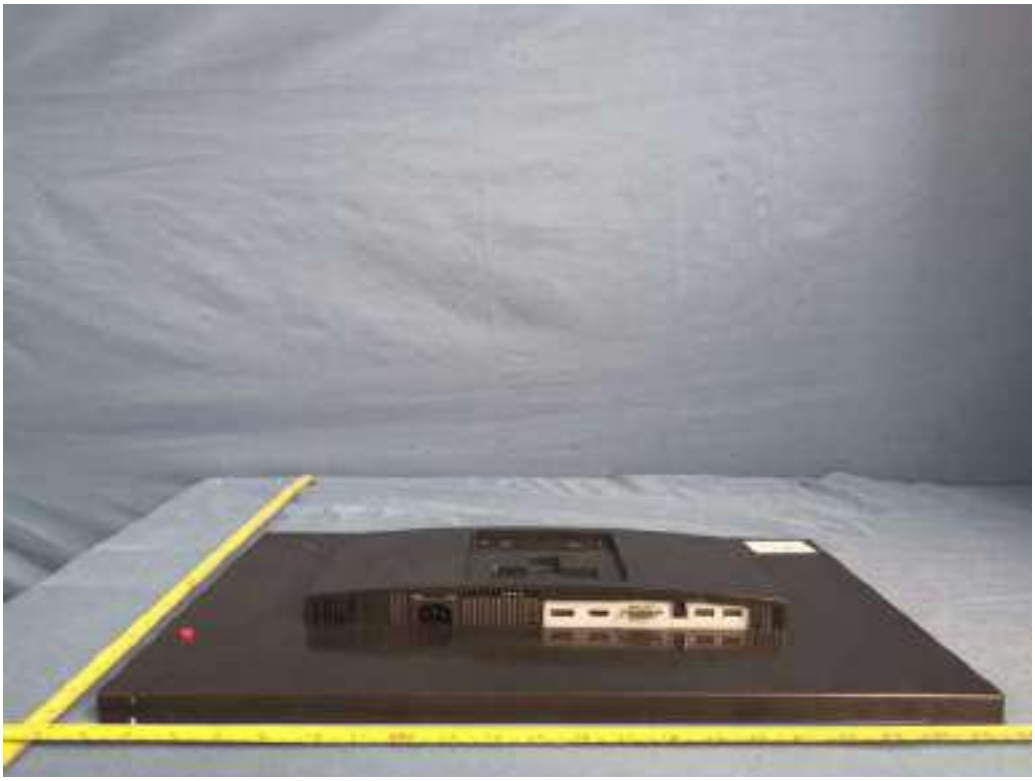


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Top view



Bottom view



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Terminals view



Side terminals view

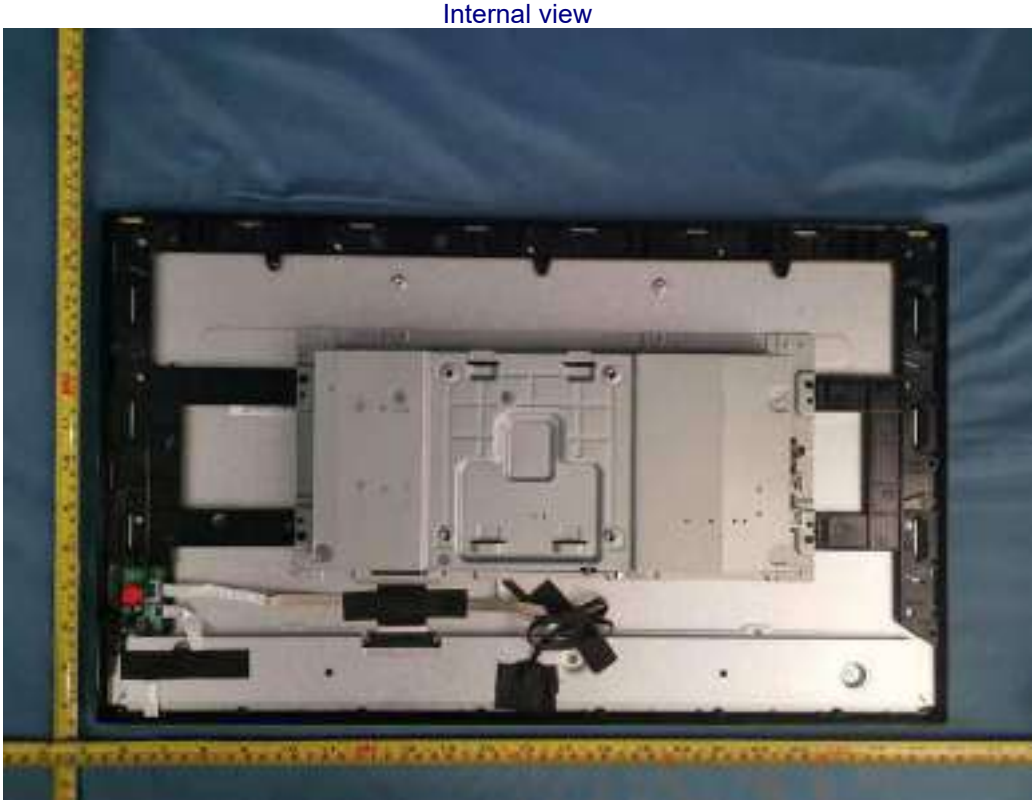


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Internal view

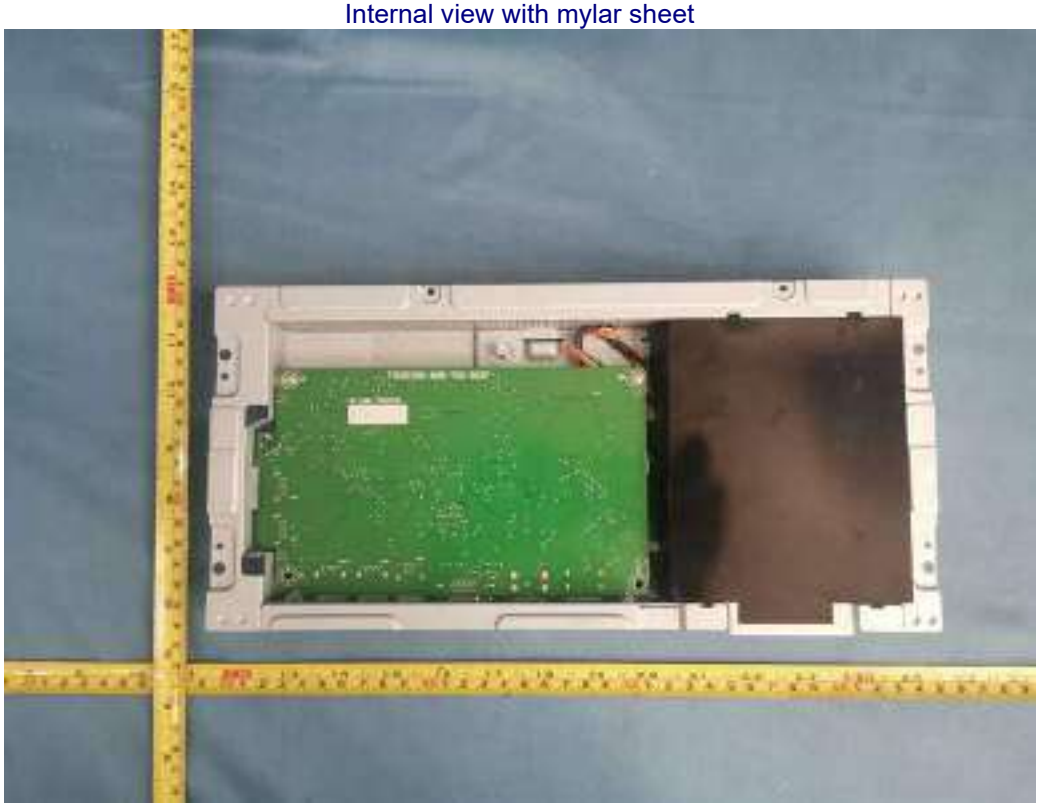


Internal view



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Internal view with mylar sheet



Internal view without mylar sheet



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Metal chassis view

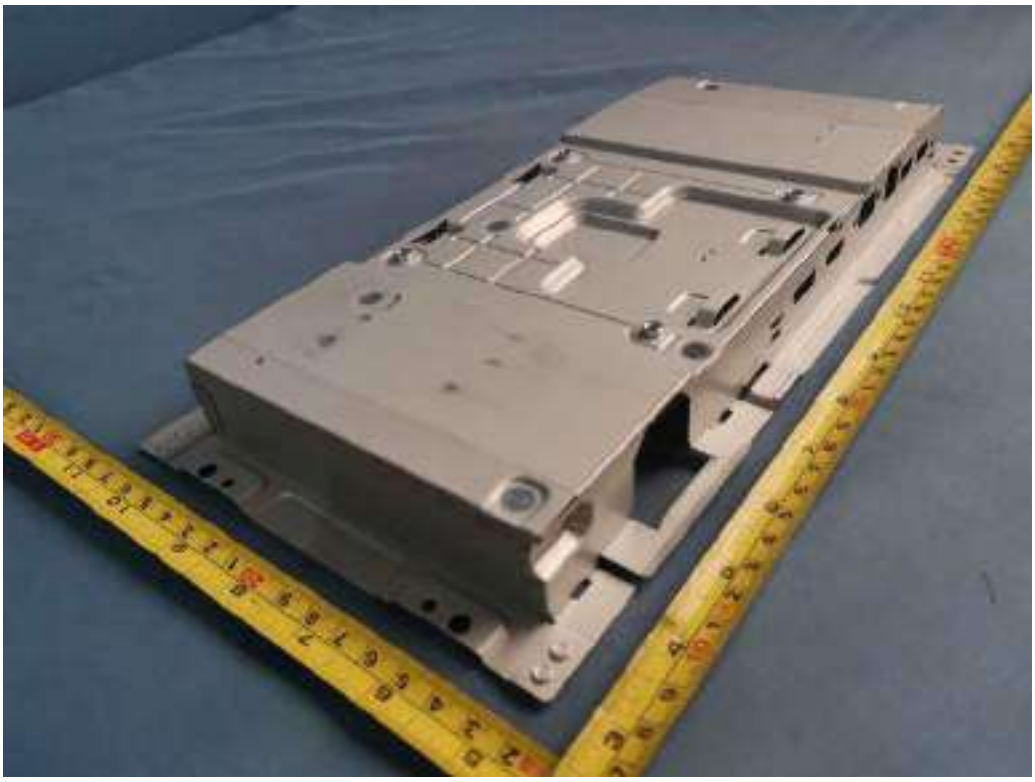


Metal chassis view



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Metal chassis view

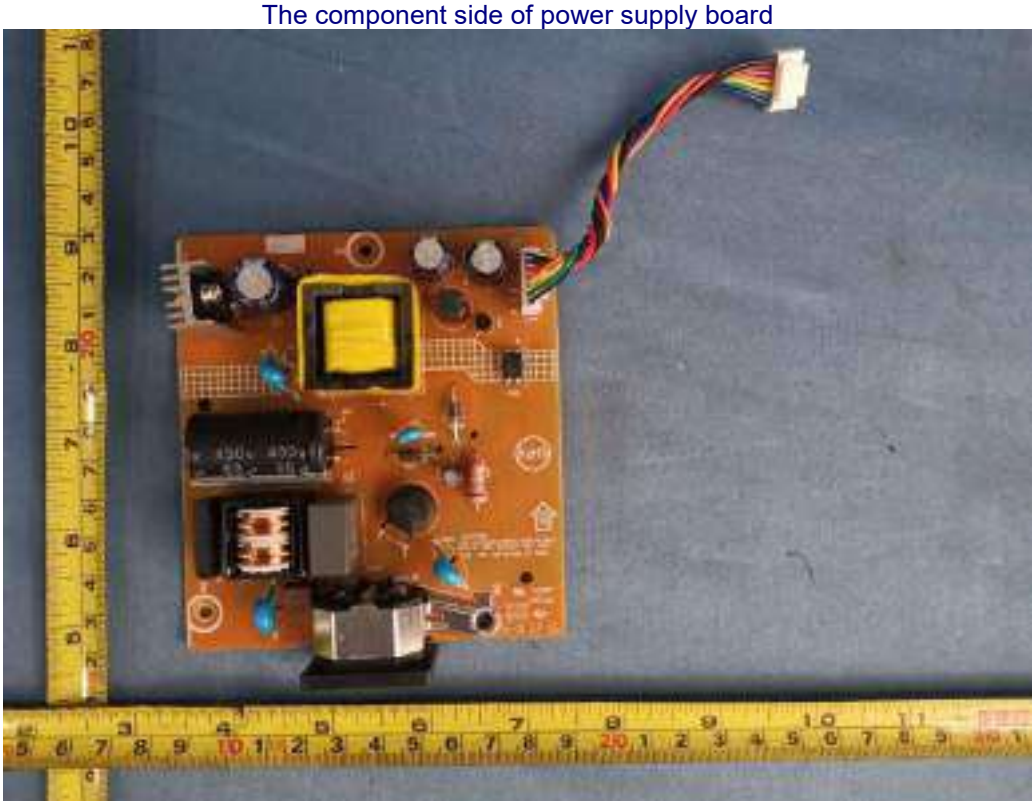


Metal chassis view

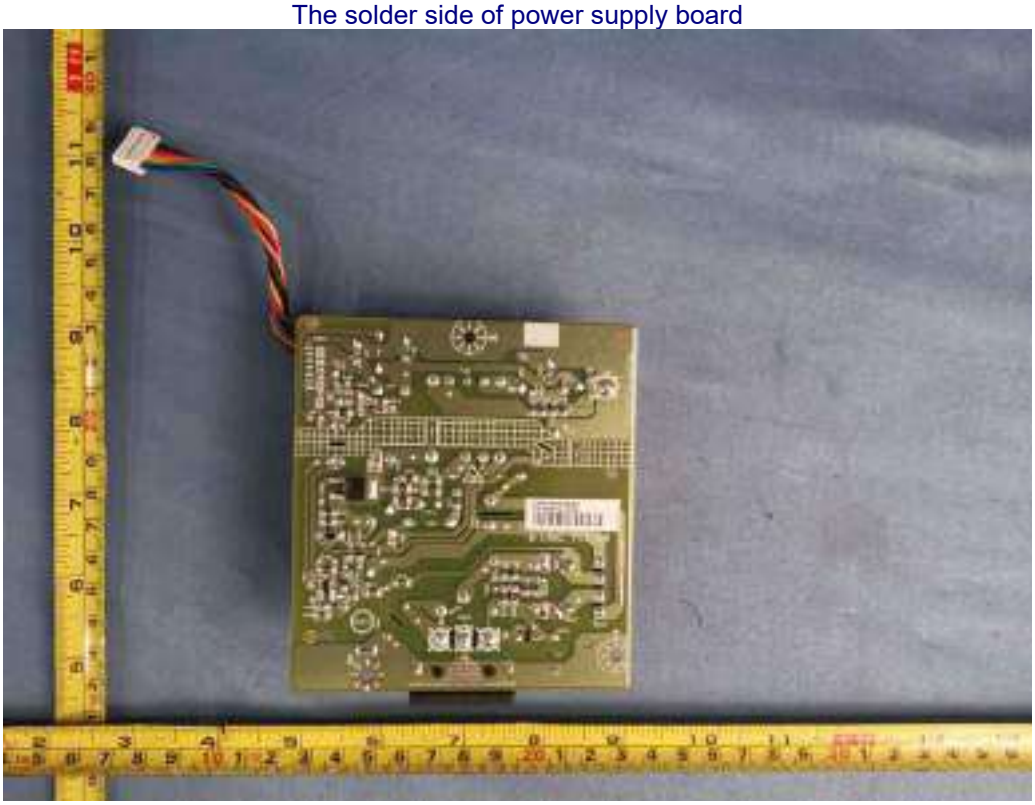


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The component side of power supply board



The solder side of power supply board



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The component side of mainboard

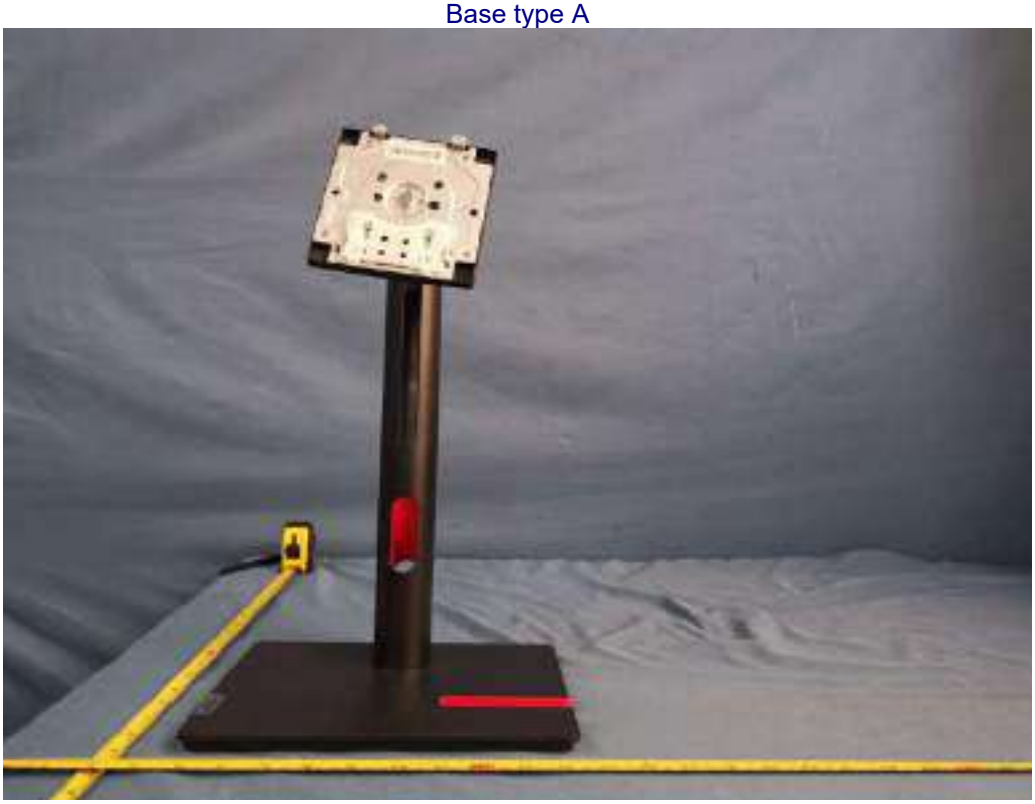


The solder side of mainboard

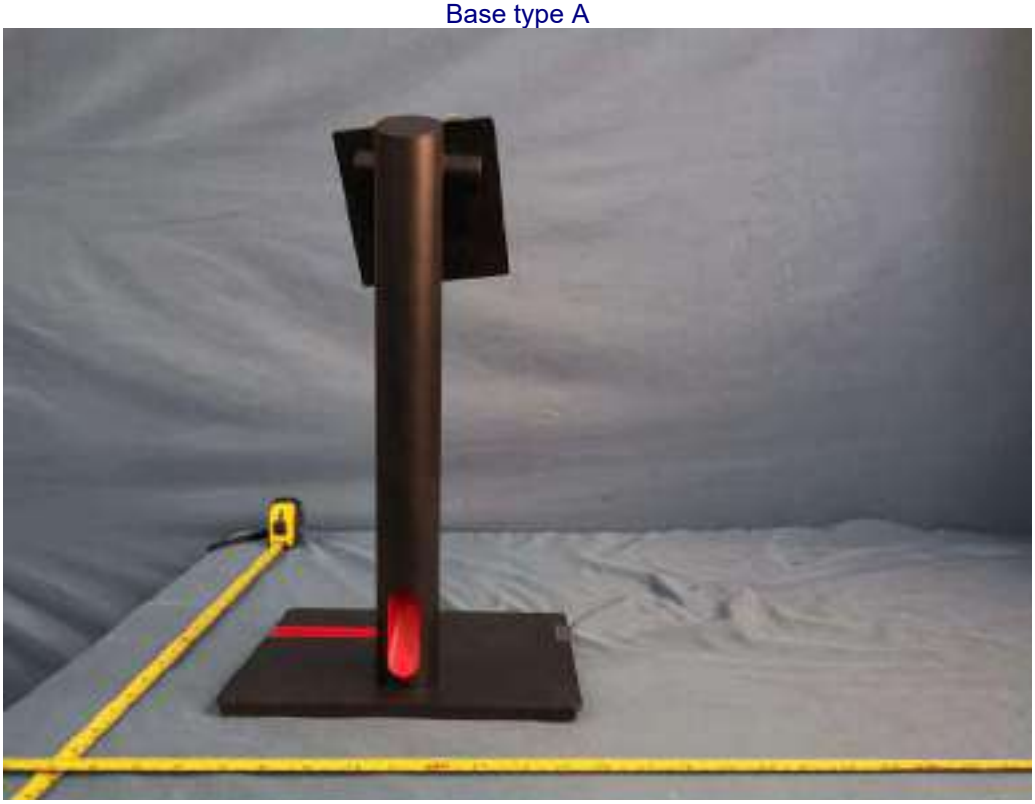


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Base type A

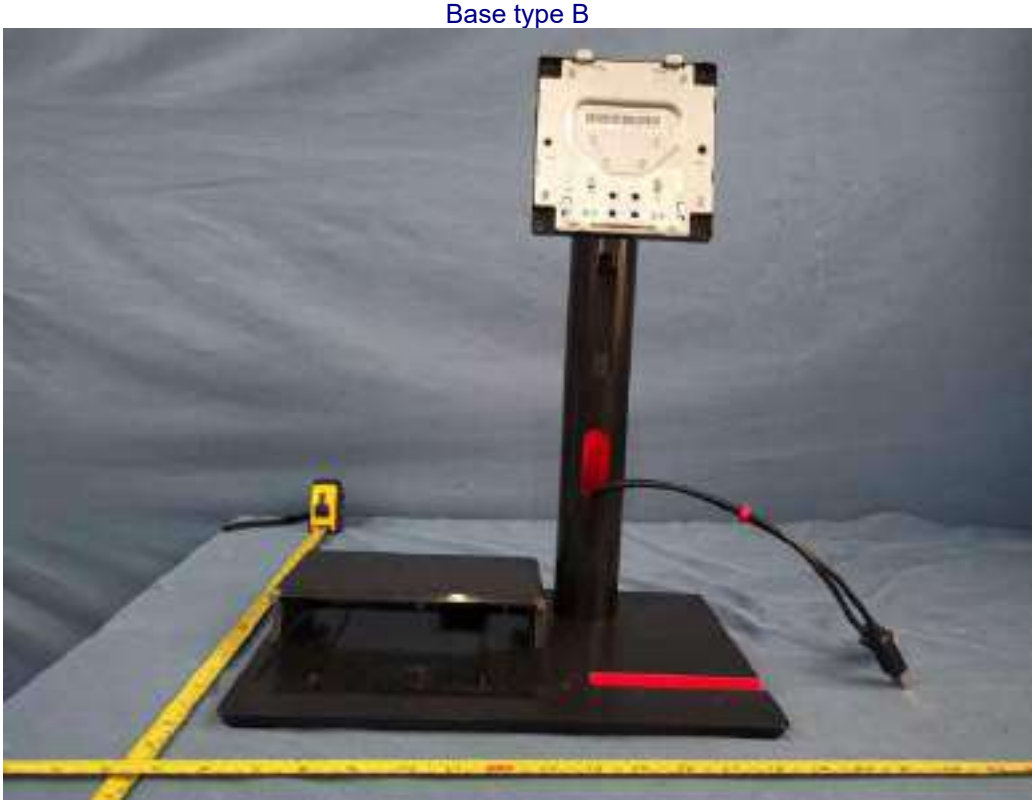


Base type A

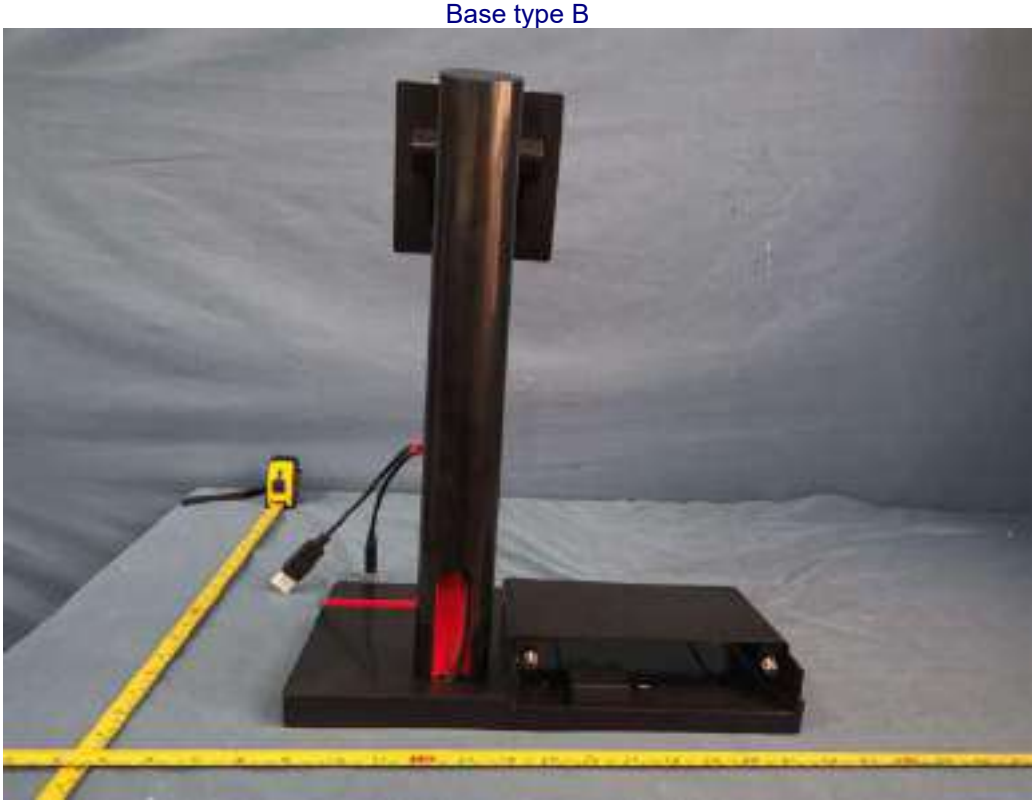


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Base type B



Base type B



Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 1014

ATTACHMENT TO TEST REPORT IEC 60950-1 with A1:2009 and A2:2013
CANADA NATIONAL DIFFERENCES
Information technology equipment – Safety – Part 1: General requirements

Differences according to .....:	CAN/CSA-C22.2 No. 60950-1-07, Amd 1:2011, Amd 2:2014
Attachment Form No. .....:	CA_ND_IEC60950_1F
Attachment Originator.....:	CSA
Master Attachment .....:	Date (2015-05)

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	Special national conditions		
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2.	The equipment is provided with appliance inlet.	P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	The equipment is provided with appliance inlet.	P
1.1.2	Baby monitors are required to comply with ASTM F2951, Consumer Safety Specification for Baby Monitors		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Equipment acceptable for connect to 20A Protection.	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC.	No external interconnecting flexible cord or cable assemblies.	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.	Only one phase conductor.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A
	A voltage rating is not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A

1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC are marked with the voltage rating and “Class 2” or equivalent.	Not Class 2 equipment.	N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable.	No such component.	N/A
2.6	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).	No isolated ground receptacles	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets, receptacles, lamp holders or such transformers.	N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.	The equipment is provided with an appliance inlet.	N/A
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Saudi Arabia power cord provided only. it must be checked when marketing this country.	N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	The Equipment not connected to DC power system.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	The equipment is not permanently connected to the mains.	N/A
3.2.5	Power supply cords are no longer than 4.5 m in length.	Saudi Arabia power cord provided only. it must be checked when marketing this country.	N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected to the mains.	N/A

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3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	The equipment is provided with an appliance inlet.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).	The equipment is provided with an appliance inlet.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are	No permanent wiring.	N/A
	- rated 125 percent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7).		N/A
3.3.5	First column of Table 3E revised to require “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”	The equipment is provided with an appliance inlet.	N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,	No such motors in the equipment.	N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position.	No disconnect switch in the equipment.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No such battery.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.	No flammable liquids within the equipment.	N/A
4.3.13.5.1	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No laser is used.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m3 (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	The equipment has no combustible area greater than 27 cubic feet.	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	The equipment has no combustible material greater than 0.93m^2 or single dimension greater than 1.8m.	N/A
	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043.		N/A

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Annex H	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such part.	N/A
	Other National Differences The following key national differences are based on requirements other than national regulatory requirements.		
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	Critical components are IEC certified. See list of critical components in main CB report (§ 1.5.1). There may be additional requirements for components in CSA.	—
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply.	The Equipment not connected to DC power system.	N/A
	This maximum operating voltage includes consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuitry.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV circuitry.	N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).		N/A

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2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.	Considered	P
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT.	No CRTs in the equipment.	N/A
4.3.2	Equipment with handles complies with special loading tests.	The equipment has no handles.	N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests.	No TNV circuitry.	N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded.	See main test report table 5.3.	P
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary		P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV circuitry.	N/A
Annex EE	UL articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.	This equipment is not Document shredding machines.	N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuitry.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements.	No TNV circuitry.	N/A

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IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 60950-1** **KOREA NATIONAL DIFFERENCES** (Information technology equipment – Safety – Part 1: General requirements)			
Differences according to ..... :	K 60950-1(2011-12)		
TRF template used: ..... :	IECEE OD-2020-F3, Ed. 1.1		
Attachment Form No..... :	KR_ND_IEC60950_1G		
Attachment Originator ..... :	KTL		
Master Attachment..... :	2022-05-20		
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1.5.1	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean plug standard sheets(KSC 8305)	Certified appliance inlet used	N/A

	Special national conditions		
Voltage	The marking of rated voltage or rated voltage range, for appliances intended to be connected to the supply mains, shall include 110 V, 220 V or 380 V.	Shown on label	P
Frequency	Only appliances having supply frequency of 60Hz or a frequency range including 60Hz are accepted.	Shown on label	P
Instruction	Instruction manuals shall be in Korean	Should be checked when market into the country.	—

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 1020

IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 60950-1** **U.S.A. NATIONAL DIFFERENCES** (Information technology equipment – Safety – Part 1: General requirements)			
Differences according to ..... :	UL 60950-1-07(Second Edition) + A1: 2011 + A2: 2014		
TRF template used: .....:	IECEE OD-2020-F3, Ed. 1.1		
Attachment Form No. ..... : **Attachment Originator ..... :** **Master Attachment ..... :**	US_ND_IEC60950_1G UL(US) Dated 2021-03-12		
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	Special National Differences		
1.1.1	All equipment is designed as to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and if applicable, the National Electrical Safety Code, IEEE C2	The equipment is provided with appliance inlet.	P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75	The equipment is provided with appliance inlet.	P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A	Considered.	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the /NEC	No external interconnecting flexible cord and cable assemblies exceeding 3.05m provided.	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings	Single phase only.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions"		N/A
	Likewise, a voltage rating is not to be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions"		N/A

1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with NEC or CEC Part 1 or NEC are marked with the voltage rating and “Class 2” or equivalent	No connectors and field wiring terminal for external Class 2 or Class 3 circuits.	N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable	No such fuse.	N/A
2.6	Equipment with isolated ground (earthing) receptacles is in compliance with NEC 250.146(D) and CEC 10-112 and 10-906(8)	No isolated ground receptacles.	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No special external branch circuit overcurrent devices provided.	N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC	The equipment is provided with inlet.	N/A
3.2.1	Attachment plugs of power supply cords are rated not less than 125 percent of the rated current of the equipment	The equipment is provided with inlet.	N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements	Not connection to DC mains supply.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs	The equipment is not permanently connected to the mains.	N/A
3.2.5	Power supply cords are no longer than 4.5 m in length	It must be checked when marketing this country.	—
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement		N/A
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC		N/A
3.2.9	Permanently connected equipment has a suitable wiring compartment and wire bending space	The equipment is not permanently connected to the mains.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0	The equipment is provided with inlet.	N/A
3.3.3	Wire binding screws are not attached with conductors larger than 10 AWG (5.3 mm2)	The equipment is provided with inlet.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are	The equipment is provided with inlet.	N/A
	- rated 125 per cent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7)		N/A

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3.3.5	Revise first column of Table 3E to “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration”		N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,	No such motor.	N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position	No switch acting as disconnect device	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit	No battery in the equipment.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30	No flammable liquids within the equipment.	N/A
4.3.13.5.1	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No laser product used.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge	The equipment has no combustible area greater than 0.76 m^3	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 52 or less	The equipment has no combustible material greater than 0.9m^2 or single dimension greater than 1.8m.	N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less		N/A
4.7.3.1	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043		N/A
Annex H	Equipment that produces ionizing radiation complies with U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370)	The equipment does not produce ionizing radiation	N/A
	Other National Differences		

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 1023

1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery backup systems, battery packs, cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cut-offs, thermostats, (multi-layer) transformer winding wire, surge protective devices, tubing, vehicle battery adapters, wire connectors, and wire and cables	Critical components are IEC certified. See list of critical components in main CB report (§1.5.1). There may be additional requirements for components in US.	—
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply	Not connection to DC mains supply.	N/A
	This maximum operating voltage includes consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V_{peak} or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions	No TNV Circuit.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts	No TNV Circuit.	N/A
2.6.2	Equipment with functional earthing marked with the functional earthing symbol (IEC 60417-6092)		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified	Considered	P
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT	No CRT used.	N/A
4.3.2	Equipment with handles complies with special loading tests	No handle used.	N/A
4.3.8	Battery packs for both portable and stationary applications comply with special component requirements		N/A

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5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests	No TNV Circuitry.	N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded	See table 5.3 in main test report	P
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test is repeated twice (three tests total) using new components as necessary		P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC	No TNV Circuitry.	N/A
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger	No document/media shredders provide.	N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions	No TNV circuit.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements	No TNV circuit.	N/A

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ATTACHMENT: CHINESE DIFFERENCES
Test results according to CB BULLETIN

Clause	Requirement - Test	Result - Remark	Verdict
1.1.2	GB 4943.1-2011 applies to equipment for use at altitudes not exceeding 5000m above sea level, primarily in regions with moderate or tropical climates. Amend the third dashed paragraph of 1.1.2 as: ——equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;	See main report.	P
1.4.5	After the third paragraph, add a paragraph: If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer. The first dash paragraph "-the RATED VOLTAGE is 230V single -phase or 400V three-phase, in which case the tolerance shall be taken as +10% and -10%" of IEC 60950-1:2005 is deleted in GB 4943.1-2011	Considered.	P
1.4.12.1	Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: For equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration.	Considered.	P
1.5. 2	Add a note behind the first break off section in Clause 1.5.2: A component used shall comply with related requirements corresponding altitude of 5000m.	See main report.	P
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.	Must be considered when marketed to China.	—

1.7.1	Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V (three-phases) when manufactured. And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.	Rated voltage include 220V single phase.	P
1.7.2.1	Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions: For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."  For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only the symbol used, the explanation of the symbol shall be contained in the instruction manual. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.	5000m and tropical requirements	N/A

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2.7.1	Amended the first paragraph as: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3. Delete note of Clause 2.7.1.	Protective device is integrated in the equipment, see also Sub-clause 5.3.	P
2.9.2	First section of Clause 2.9.2 amended as two sections: Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature 40±2℃ and a relative humidity of (93±3)%. During this conditioning the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value between 20 °C and 30 °C such that condensation does not occur. Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.	Must be considered when market to the country.	—

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2.10.3.1	Amend the third paragraph of Clause 2.10.3.1 to be: These requirements apply for equipment to be operated up to 2000 m above sea level. For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of IEC 60664-1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	See main test report.	P
2.10.3.3 & 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K、2L and 2M.	Considered.	P
2.10.3.4	Add a new section above Table 2K and in Clause 2.10.3.4: Minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1（ IEC 60664-1）. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T16935.1.	See main test report.	P
3.2.1.1	Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.	Must be check with market.	—
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011. Delete note of Clause 4.2.8.	No such equipment.	N/A
Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35 °C shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.	Thermocouple measurement method	N/A

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Annex G.6	Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	See main test report.	P
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.	Considered.	P
Annex DD (normative)	Added annex DD: Instructions for the new safety warning labels. DD.1 Altitude warning label  Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used at altitude above 2000m . DD.2 Climate warning label  Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used in tropical climate region.	5000m and tropical requirement.	N/A
Annex EE (informative)	Added annex EE: Illustration relative to safety explanation in normative Chinese、Tibetan、Mongolian、Zhuang Language and Uighu.	Must be considered when market to the country.	—

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Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, Including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.	Considered.	P
Quoting standards and reference documents	The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows: If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments. For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard. When quoting several chapters or clauses of the international standard, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;	Considered.	P

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	- If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005 and GB4943.1-2011.		

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 60950-1 with A1: 2009 and A2:2013 JAPAN NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements			
Differences according to.....: J60950-1 (H29)			
Attachment Form No. .....: JP_ND_IEC60950_1F Attachment Originator.....: JQA Master Attachment.....: 2017-11			
Copyright © 2017 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
1.2.4.1	Add the following new notes. Note: Even if the equipment is designed as Class I, the equipment is regarded as CLASS 0I EQUIPMENT (see 1.2.4.3A) when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.	Must be checked when marketing in country.	—
1.2.4.3A	Add the following new clause. 1.2.4.3A CLASS 0I EQUIPMENT Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by: - using BASIC INSULATION, and - providing either of the following a) or b) in order to connect those conductive parts that might assume a HAZARDOUS VOLTAGES in the event of BASIC INSULATION fault to the PROTECTIVE EARTHING CONDUCTOR in the building wiring. a) Provision of 2-pin plug with earthing lead including the condition of that 2-pin adaptor with earthing lead wire is provided or recommended. b) Provision of an independent earthing terminal, when 2-core mains cord (without earthing conductor) is used. Note – CLASS 0I EQUIPMENT may have a part constructed with Double Insulation or Reinforced Insulation.	Must be checked when marketing in country.	—

IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.2	Add the following notes after the first paragraph: Note 1 Transportable or similar equipment that are relocated frequently for intended usage should not be designed as Class I or CLASS 0I EQUIPMENT unless it is intended to be installed by service personnel. Note 2 Considering wiring circumstance in Japan, equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as Class I or CLASS 0I EQUIPMENT unless it is intended to be installed by service personnel.	Not transportable equipment	N/A
1.5.1	Replace the first paragraph with the follows: Where safety is involved, components shall comply either with the requirements of this standard, with the safety aspects of the relevant JIS component standard, or IEC component standards, or components shall have equivalent to or better properties than these. Replace Note 1 with the following: Note 1 Components complying with the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance. Note 2 JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope. Add the following after the last paragraph: For an appliance connector that is able to fit with appliance inlet compatible with the standard sheet of IEC 60320-1 or JIS C 8283-1, the size of the connector shall comply with relevant standard sheet of IEC 60320-1 or JIS C 8283-1. A power supply cord set complying with JIS C 8286 is regarded to comply with this requirement. Note 3 A power supply cord set provided with appliance connector that is able to fit with appliance inlet compatible with the standard sheet of IEC 60320-1 or JIS C 8283-1 should comply with JIS C 8286.	The component fulfils the relevant IEC standard.	P

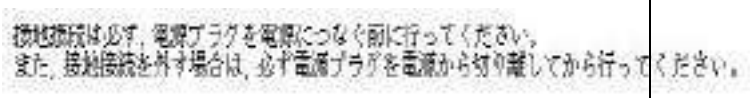
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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.2	Add the following Note 2 after the 4th dashed paragraph: Note 2 See 1.7.5A when Type C.14 appliance coupler rated 10 A per JIS C 8283-1 is used with an equipment rated not more than 125 V and rated more than 10 A.	Rated not more than 10A	P
1.5.5	Add the following Note after the last paragraph: NOTE An interconnection cord sets provided with interconnecting coupler for mains supply complying with JIS C 8283-2-2 should comply with JIS C 8286.		N/A
1.5.9.1	Add the following in the last of NOTE 1. Gas discharge tube connected in series with VDR may be used.	No gas discharge tube (GDT) used.	N/A
1.7	Replace EE.2 and EE.4 with the following: JA.1 Shredder warning JA.3 Shredder power disconnection		N/A
1.7.1.2	Replace first and second dashed paragraphs with the followings: - manufacturer’s or responsible company’s name or trade-mark or identification mark; - manufacturer's or responsible company’s model identification or type reference;	Has been on the label	P
1.7.2.1	Add the following after the second paragraph. Instruction or equipment marking regarding safety shall be written in Japanese unless otherwise permitted in this standard.	Must be checked when market into Japan.	--
1.7.2.5	Replace the last sentence with the following: An acceptable marking for an electric shock hazard is  (6.2.4 of JIS S 0101).		P
1.7.5	Replace the second paragraph with the following. Socket-outlets conforming to JISC8282-1 are examples of standard power supply outlets.	No socket-outlets.	N/A

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5A	Add the following new clause after 1.7.5. 1.7.5A Power supply cord set If appliance coupler according to IEC60320-1, C.14(rated current: 10A) is used in equipment whose rated voltage is less than 125V and rated current is over 10A, the following instruction or equivalent shall be described in the operating instruction. “ Use only designated cord set attached in this equipment” Example in Japanese: “この機器に同こん(梱)した指定の電源コードセットだけを使用して下さい。” If appliance coupler is used for connection to the mains and if the cord set is not provided within the package for the equipment, suitable information regarding to the cord set shall be described in the operating instruction Note Since the combination of appliance inlet with earthing pin and two-core cord set (without earthing conductor) is special, the cord set should be attached in the equipment and the operating instruction should provide the information that the cord set is exclusively used with the equipment and not allowed to use with other equipment.	AC-Inlet is used, the rated current is not over 10A	N/A

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.14A	Add the following new clause after 1.7.14. 1.7.14A Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following or equivalent instructions shall be marked. - the following instruction shall be marked on the mains plug or on the visible place of the main body “Provide an earthing connection” Example in Japanese: “必ず接地接続を行ってください。” - the following instruction shall be marked on the visible place of the main body or written in the operating instructions: “Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.” Example in Japanese:  接地接続は必ず，電源プラグを電源につなぐ前に行ってください。 また，接地接続を外す場合は，必ず電源プラグを電源から切り離してから行ってください。	Must be checked when marketing in country.	—
1.7.14B	Add the following new clause after 1.7.14A 1.7.14B Protective earthing conductor used for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment, the suitable information for the protective earthing connection shall be provided in the operating instruction. (See 2.6.3.2)	Must be checked when marketing in country.	—

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.1	Replace item b) of 2.1.1.1with the following. b) A test with the test finger, Figure 2A, which shall not contact parts described above when applied to openings in the ENCLOSURES after removal of parts that can be detached by an OPERATOR, including fuseholders, and with OPERATOR access doors and covers open. It is permitted to leave lamps in place for this test. Connectors that can be separated by an OPERATOR, other than those complying with JIS C 8303 or JIS C 8285 or IEC 60309 series or JIS C 8283 series or IEC 60320 series, shall also be tested during disconnection. But even if the connector does not comply with these standards, the one having equivalent to or better performance need not be tested during disconnection. Note 4 Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		P
2.5	Replace “IEC 60730-1” with “JIS C 9730-1” (in item b)).		N/A
2.6.2	Delete the following line. • the symbol  ,IEC 60417-5018 (2011-07);	Class I equipment.	N/A
2.6.3.2	Add the following after the first paragraph. However where the single core conductor is used for protective earthing lead or earthing cord for CLASS 0I EQUIPMENT, either of the following condition shall be met. - Use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having equivalent to or more strength and thickness. - Single core cord or single core cab tire cable with 1.25 mm2 or more cross-sectional area	No protective earthing lead or earthing used.	N/A
2.6.3.5	Add the following after the first paragraph. However this requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.4.2	Replace the first paragraph with the following. Equipment required to have protective earthing shall have a main protective earthing terminal. For equipment with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal. However, for CLASS 0I EQUIPMENT provided with the separate main protective earthing terminal other than appliance inlet, the separate main protective earthing terminal may be treated as mains protective earthing terminal.	Appliance inlet used.	N/A
2.6.5.4	Replace the first sentence with the following. Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following: Add the following after last paragraph: Note For CLASS 0I EQUIPMENT,1.7.14A is applied instead of this requirement.	See main test report	P
2.6.5.8A	Add the following new clause after 2.6.5.8 2.6.5.8A Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external location where easily visible.	Must be checked when marketing in country.	—
2.7.6	Replace “ISO 3864, No. 5036” with “6.2.4 of JIS S 0101”.		N/A

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.1	Replace the 8th paragraph with the following The above minimum CLEARANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, or even if it does not comply with the above standards but the one having equivalent to or better performance and dimension which comply with JIS C 8283 series of standards, JIS C 8303 or IEC 60309-2. Note Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		N/A
2.10.3.2 Table 2J	In Japan, the value of the main power supply transient voltage for the nominal ac main power supply voltage of 100 V is determined by applying the row of AC main power supply voltage 150 V.		N/A
2.10.4.3	Replace the 6th paragraph with the following The above minimum CREEPAGE DISTANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, or even if it does not comply with the above standards but the one having equivalent to or better performance and dimension which comply with JIS C 8283 series of standards, JIS C 8303 or IEC 60309-2. Note Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		N/A
2.10.9	Replace “1.4.5” in the third paragraph with “1.4.12”.		N/A
3.2.3	Add the following after the third paragraph. Table 3A applies when cables complying JIS C 3662 series of standards or JIS C 3663 series of standards are used. In case of other cables, cable entries shall be so designed that the cable could be fitted in a conduit.	Not a permanently connected equipment.	N/A
3.2.4	Add the following as 4th dashed paragraph. - be so constructed that mechanical stress shall not transmit to the soldering part of inlet terminal during insertion or removal of the connector except that the body of the inlet is secured and is secured not only soldering.		N/A

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1	Add the following after Note 3: Note 4 In Japan, mains cords having equivalent to or better electro-mechanical and fire safety performance as above and complying with Appendix 1 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance can be used. Replace the paragraph after Note 3 with the following. For equipment required to have protective earthing, a PROTECTIVE EARTHING CONDUCTOR shall be included in the MAINS SUPPLY cord except for CLASS 0I EQUIPMENT having separate protective earthing conductor from mains cord. Add the following after the second paragraph after Note 3: Note 5 For the cross-sectional area of mains cord described in Note 4, relevant Japanese wiring regulation can be applied.	Saudi Arabia power cord provided only. it must be checked when marketing this country.	N/A
3.2.5A	Add the following new clause after 3.2.5 3.2.5A AC mains plug Mains plug for PLUGGABLE EQUIPMENT TYPE A shall comply with JIS C 8282-1 or equivalent to or better performance. Power supply cord set complying with JIS C 8286 is regarded to meet the requirements. Mains plug with fuse link for PLUGGABLE EQUIPMENT TYPE A shall comply with JIS C 8282-2-1 or equivalent to or better performance. Note Mains plug complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.	Appliance inlet used	N/A
3.3.4 Table 3D	Add the following note to Table 3D: Note For cables other than those complying with JIS C 3662 series of standards or JIS C 3663 series of standards, the terminals shall be suitable for the size of the intended cables.		N/A
3.3.7	Add the following after the first sentence: This requirement is not applicable to the external earthing terminal of CLASS 0I EQUIPMENT.		N/A

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.8	Add the following after the first paragraph: Note Intrinsically protected picture tube is required to comply with JIS C 6965 in clause 18 of JIS C 6065. No intrinsically protected picture tube which is out of scope of JIS C 6965 is required to test according to sub-clause 18.2 of JIS C 6065.		N/A
4.3.4	Add the following after the first sentence: This requirement also applies to those connections in CLASS 0I EQUIPMENT, where CLEARANCE or CREEPAGE DISTANCES over BASIC INSULATION would be reduced to less than the values specified in 2.10.		N/A
4.3.5	Replace the first dashed paragraph with the following. Within a manufacturer's unit or system, plugs and sockets likely to be used by the OPERATOR or by a SERVICE PERSON shall not be employed in a manner likely to create a hazard due to misconnection. In particular, connectors complying with IEC 60320/JIS C 8283 series of standards or JIS C 8303 or JIS C 8358 shall not be used for SELV CIRCUITS or TNV CIRCUITS. Keying, location or, in the case of connectors accessible only to a SERVICE PERSON, clear markings are permitted to meet the requirement.		N/A
4.3.6	Replace the 1st paragraph with the following DIRECT PLUG-IN EQUIPMENT shall not impose undue stress on the socket-outlet. The mains plug part shall comply with the standard for the relevant mains plug. (see 3.2.5A)		N/A
4.4.2	Replace the paragraph with the following: HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS shall also comply with Annex JA.		N/A
4.5.3	Add the following note to footnote b) of Table 4B: NOTE In case no data for the material is available, Appendix 4, 1. (1). b. 3 of the Interpretation on the Ministerial Ordinance stipulating Technical Specifications for Electrical Appliances is regarded as maximum temperature limit of the material.		N/A

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<table>
<tr><th colspan="4">IEC 60950_1F ATTACHMENT</th></tr>
<tr><th>Clause</th><th>Requirement + Test</th><th>Result - Remark</th><th>Verdict</th></tr>
<tr><td>5.1.3</td><td>Add a note after the first paragraph as follows:

Note – Attention should be drawn to that majority of three-phase power system in Japan is of delta connection, and therefore, in that case, test is conducted using the test circuit from IEC 60990, figure 13.</td><td>Single phase connection</td><td>N/A</td></tr>
<tr><td>5.1.6</td><td>Replace Table 5A. as follows
<table>
<tr><th>Type of equipment</th><th>Terminal A of measuring instrument connected to:</th><th>Maximum TOUCH CURRENT mA r.m.s. a</th><th>Maximum PROTECTIVE CONDUCTOR CURRENT</th></tr>
<tr><td>ALL equipment</td><td>Accessible parts and circuits not connected to protective earth b</td><td>0,25</td><td>-</td></tr>
<tr><td rowspan="2">HAND-HELD</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>0,75</td><td>-</td></tr>
<tr><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>0,5</td><td>-</td></tr>
<tr><td rowspan="2">MOVABLE (other than HAND_HELD, but including TRANSPORTABLE EQUIPMENT)</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>3,5</td><td>-</td></tr>
<tr><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>1.0</td><td>-</td></tr>
<tr><td rowspan="2">STATIONARY, PLUGGABLE TYPE A</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>3,5</td><td>-</td></tr>
<tr><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>1,0</td><td>-</td></tr>
<tr><td rowspan="2">ALL other STATIONARY EQUIPMENT

- not subject to the conditions of 5.1.7
- subject to the conditions of 5.1.7</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>3.5
-</td><td>-
5 % of input current</td></tr>
<tr><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>1.0
-</td><td>-
-</td></tr>
<tr><td colspan="4">a If peak values of TOUCH CURRENT are measured, the maximum values are obtained by multiplying the r.m.s.values in the table by 1,414.
b Some unearthed accessible parts are covered in 1.5.6 and 1.5.7 and the requirements of 2.4 apply. These may be different from those in 5.1.6.</td></tr>
</table></td><td></td><td>N/A</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table>

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 1043

IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G	Replace the paragraph before Table G.2 with the following The above minimum CLEARANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, and 1.5.1 of this standard in which dimension is comply with JIS C 8283 series, JIS C 8303 or IEC 60309-2.		N/A
Annex V V.1	Replace “3.1.2”in the first line of V.1 with “312” in the first line.		P
Annex W W.1	Replace the third sentence in the first paragraph with the following: Floating circuits can exist in CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and earthed circuits can exist in CLASS II EQUIPMENT.		N/A
Annex BB	This annex is not applicable.		N/A
Annex CC CC.2	Replace the third dashed paragraph with the following: - 10 000 cycles of turning enable on and off with the input connected to a capacitor rated 425 uF ± 10 uF and shorting the output;		N/A
CC.3	Add note at end of CC.3: Note: The fast blow fuse should be the one complying with JIS C 6575-2.		N/A

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
CC.4	Replace the 2nd dashed paragraph with the following: - 10 000 cycles of turning enable on and off with a 100 Ω± 5 Ω resistor and a 425 uF ± 10 uF capacitor in parallel with the output; Replace the 4th dashed paragraph with the following: - 10 000 cycles of turning enable on and off with the input connected to a capacitor rated 425 uF ± 10 uF and shorting the output; Replace the 5th dashed paragraph with the following: −10 000 cycles of turning the input pin on and off with a capacitor rated 425 uF ± 10 uF connected to the input supply while keeping enable active and shorting the output; Replace the 6th dashed paragraph with the following: −10 000 cycles of turning the input pin on and off with an ferrite-core inductor having 350 mH ± 10 mH inductance at 1 kHz and less than 1 Ω d.c. resistance connected to the input supply and return while keeping enable active and shorting the output; Replace the 10th dashed paragraph with the following: −3 cycles of exposing the device (not energized) to 70 °C ± 2 °C for 24 h; followed by at least 1 h at room ambient; followed by at least 3 h at -30 °C ± 2 °C; followed by 3 h at room ambient; Replace the 11th dashed paragraph with the following: −10 cycles of exposing the device (while energized) to 50 °C ± 2 °C for 10 min; followed by 10 min at 0 °C ± 2 °C with a 5 min period of transition from one state to the other;		N/A
Annex EE	Replace Annex EE with the following Annex JA. Annex JA (normative) Document shredding machines		N/A

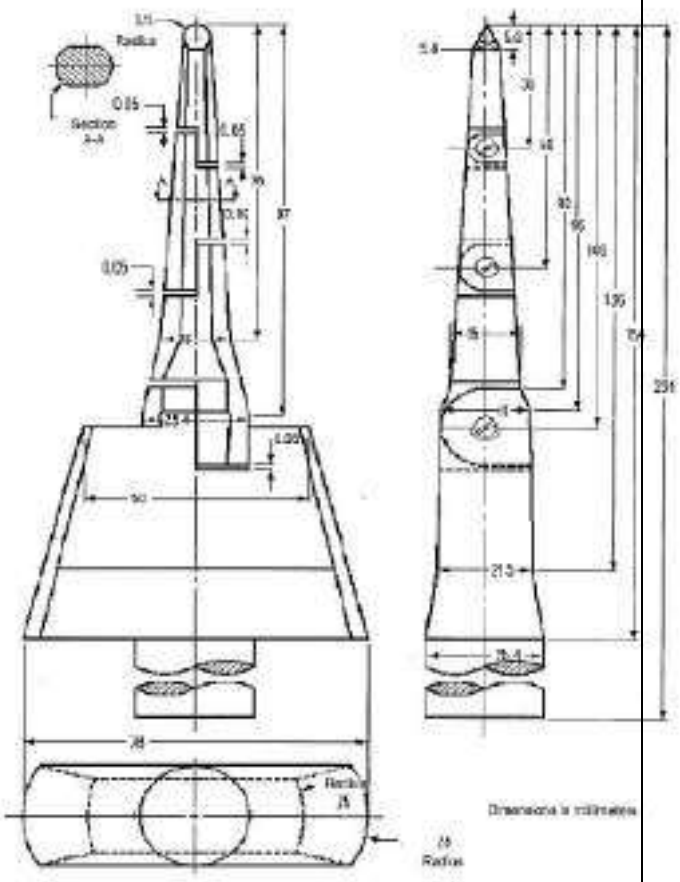
Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 1045

IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS shall additionally comply with the requirements of this annex. JA.1 Markings and instructions The symbol  (JIS S 0101:2000, 6.2.1) and the following precautions for use shall be marked on readily visible part adjacent to document feed opening. The marking shall be clearly legible, permanent, and easily discernible; 子供が使用することによって，傷害などの危害が発生するおそれがある。 ; (that use by infants/children may cause a hazard of injury etc.) 文書投入口に手を触れることによって，細断機構に引き込まれるおそれがある。 ; (that a hand can be drawn into the mechanical section for shredding when touching the document-slot) 文書投入口に衣類が触れることによって，細断機構に引き込まれるおそれがある。 ; (that clothing can be drawn into the mechanical section for shredding when touching the document-slot) 文書投入口に髪の毛が触れることによって，細断機構に引き込まれるおそれがある。 ; (that hairs can be drawn into the mechanical section for shredding when touching the document-slot) - in case of equipment incorporating a commutator motor, 可燃性ガスを噴射することによって引火又は爆発するおそれがある。 (that equipment may catch fire or explode by spraying of flammable gas.) JA.2 Inadvertent reactivation Any safety interlock that can be operated by means of the test finger, Figure JA.1, is considered to be likely to cause inadvertent reactivation of the hazard. Compliance is checked by inspection and, where		

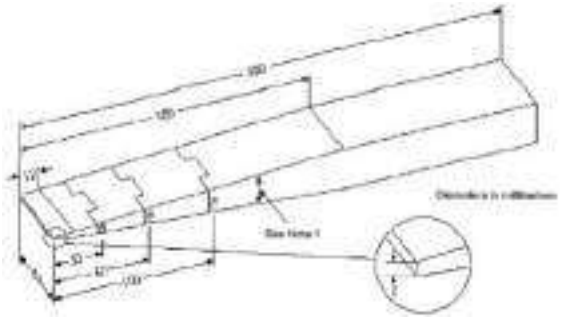
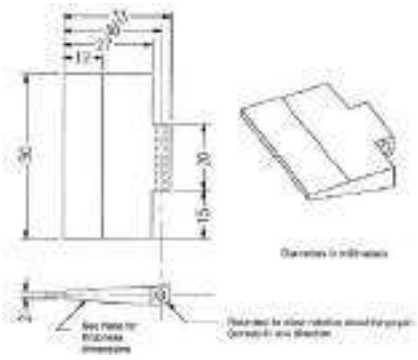
Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 1046

IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	necessary, by a test with the test finger, Figure JA.1. JA.3 Disconnection from the mains supply Document shredding machines shall incorporate an isolating switch complying with sub-clause 3.4.2 as the device disconnecting the power of hazardous moving parts. For this switch, two-position (single-use) switch or multi-position (multifunction) switch (e.g., slide switch) may be used. If two-position switch, the positions for “ON” and “OFF” shall be indicated in accordance with sub-clause 1.7.8. If multi-position switch, the position for “OFF” shall be indicated in accordance with sub-clause 1.7.8 and other positions shall be indicated with proper terms or symbols. Compliance is checked by inspection.		
	JA.4 Protection against hazardous moving parts Any warning shall not be used instead of the structure for preventing access to hazardous moving parts. Document shredding machines shall comply with the following requirements. Insert the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying appreciable force. It shall not be possible to touch hazardous moving parts with the test finger. This consideration applies to all sides of MECHANICAL ENCLOSURES when the equipment is mounted as intended. Before testing with the test finger, remove the parts detachable without a tool. Insert the wedge-probe, Figure JA.2, into the document-slot. And, against all directions of openings, if straight-cutting type, a force of 45 N shall apply to the probe, and 90 N if cross-cutting type. In this case, the weight of the probe is to be factored into the overall applied force. Before testing with the wedge-probe, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shedding, with the probe.		N/A

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	 Figure JA.1 Test finger		N/A

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IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	 		N/A

Distance from the tip (mm)	Thickness of probe (mm)
0	2
12	4
180	24

Note 1 - The thickness of the probe varies linearly, with slope changes at the respective points shown in the table.

Note 2 –The allowable dimensional tolerance of the probe is;

for ≤ 25 mm: +/- 0.13 mm

for > 25 mm: +/- 0.3 mm.

Figure JA.2 Wedge-probe

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ATTACHMENT TO TEST REPORT
IEC 60950-1:2005, IEC 60950- 1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013
ISRAELI NATIONAL DIFFERENCES
(INFORMATION TECHNOLOGY EQUIPMENT – SAFETY: GENERAL REQUIREMENTS)

Differences according to .....:	SI 60950 Part 1 (2015)
Attachment Form No. .....:	IL_ND_IEC60950_1F
Attachment Originator.....:	Standards Institution of Israel
Master Attachment .....:	Date 2018-08-02

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	National Differences		—
1.6	**Power interface**		—
1.6.1	**AC Power distribution systems** At the end of the clause, the following note shall be added: Note: In Israel, the clause is subject to the Electricity Law. 1954, Electricity Regulations (Earthings and protective means against electrification for voltages up to 1,000 V), 1991, with their updates.	Must be considered when marketing into Israel.	—
1.7	**Marking and instructions**		—
1.7.1	**Power rating and identification markings** At the beginning of the clause, subclause 1.7.1.201 shall be added as follows:		—
1.7.1.201	**Marking in the Hebrew language** The marking in the Hebrew language shall be in accordance with the Consumer Protection Order (Marking of goods), 1983. In addition to the marking required by clause 1.7.1, the following details shall be marked in the Hebrew language: 1.Name of the apparatus and its commercial designation; 2.Manufacturer's name and his address; if the apparatus is imported, also the importer's name and his address; 3.Manufacturer's registered trademark, if any; 4.Name of the model and serial number; 5.Country of manufacture. The details shall be marked on the apparatus or on its packaging, or on a label well attached to the apparatus or its packaging, by bonding or sewing, such that the label cannot be easily removed.	Must be considered when marketing into Israel.	—
1.7.2	**Safety instructions and marking**		—
1.7.2.1	**General** - The following shall be added at the end of the clause: All the instruction and all the warnings related to safety shall also be written also in the Hebrew language.	Must be considered when marketing into Israel.	—
-	At the end of clause 1, clause 1.201 shall be added as follows:		

1.201	**Power consumption in standby mode** The equipment shall comply with the requirements of the Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011, with a permitted deviation of up to 10 %	Must be considered before marketed in Israel.	—
2	**Protection from hazards** At the end of the clause, clause 2.201 shall be added as follows:		—
2.201	**Prevention of electromagnetic interferences**		—
2.201.1	Emission of electromagnetic interferences shall be tested in accordance with Israeli Standard SI 961 Part 6.1 or in accordance with the Israeli Standard that is an adoption of the International Standard CISPR 32. Note: At the time of writing this Standard, the Israeli Standard that is an adoption of the International Standard CISPR 32 is in preparation. Until publication of the Israeli Standard. the International Standard CISPR 32 may be used for testing the emission of electromagnetic interference. If the apparatus contains transmitters, it shall be tested according to Israeli Standard SI 961 Part 48.1 and according to another relevant part of the SI 961 Part 48 series or from the EN 301 489 series, according to the type of transmitter in the apparatus.	Must be considered before marketed in Israel.	—
2.201.2	Immunity to emission of electromagnetic interferences shall be tested in accordance with Israeli Standard SI 961 Part 6.2.	Must be considered before marketed in Israel.	—
2.201.3	Emission of electromagnetic interferences to the public electricity network shall be tested in accordance with the Israeli Standards SI 961 Parts 12.3 and 12.5 or in accordance with the Israeli Standards SI 61000 Part 3.12 and SI 961 Part 12.11, according to the current consumption of the equipment.	Must be considered before marketed in Israel.	—
3	**Wiring, connections and supply**		—
3.2	**Connection to a mains supply**		—
3.2.1	**Means of connection**		—
3.2.1.1	**Connection to an a.c. mains supply** After the NOTE, the following note shall be added: Note: In Israel, the supply plug shall comply with the requirements in Israeli Standard SI 32 Part I.I.	Refer to Summary of Testing in main test report.	—

	Special national conditions (if any)		—
	ANNEX P **Normative references** In place of some of the International Standards cited in the Standard and noted in this annex, the following Israeli Standards shall apply:	Must be considered before marketed in Israel.	—

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60065: 2001 Amendment 1	SI 60065 - Audio, video and similar electronic apparatus – Safety requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60065 - Edition 8.0: 2014-06
IEC 60227-1: 2007	SI 60227 Part I – Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60227-1 - Edition 3.0: 2007-10
IEC 60227-2: 1997 Amendment 1: 2003	SI 6022 7 Part 2 – Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V: Test methods	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60227-2 Edition 2.1: 2003-04
IEC 60245 (all parts)	SI 60245 (all parts) - Rubber insulated cables - Rated voltages up to and including 450/750 V	The Israeli Standard series, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard series IEC 60245 (all parts)
IEC 60309 (all parts) [(a)]	SI 1109 Part I - Plugs, socket-outlets and couplers for industrial purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60309-1 - Fourth edition: 1999-02
	SI 1109 Part 2 - Plugs, socket- outlets and couplers for industrial purposes: Dimensional interchangeability requirements for pin and contact-tube accessories	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60309-2 - Fourth edition: 1999-4

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60317 (all parts) [a]	SI 1067 Part 1 – Enamelled [b] round copper wires with high mechanical properties	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
	SI 1067 Part 2 – Self-fluxing enamelled [b] round copper wires	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
	SI 1067 Part 3 – enamelled [b] round copper wires with a temperature index of 180 °C	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
IEC 60320 (all parts) [a]	SI 60320 Part 1 – Appliance couplers for household and similar general purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-1 - Edition 2.1: 2007-11
	SI 60320 Part 2.1 – Appliance couplers for household and similar general purposes: Sewing machine couplers	The Israeli Standard, excluding nation al modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-1 - Second edition: 2000-07
	SI 60320 Part 2.2 – Appliance couplers for household and similar general purposes: Interconnection couplers for household and similar equipment	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-2 - Second edition: 1998-08
	SI 60320 Part 2.3 – Appliance couplers for household and similar general purposes: appliance coupler with a degree of protect ion higher than IPX0	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-3 - First edition: 1998-09
IEC 60364-1: 2001	Electricity Law, 1954, with its Regulations and updates	
IEC 60730-1: 1999 Amendment 1 (2003)	SI 60730 Part I - Automatic electrical controls: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60730-1 - Edition 5.0: 2013-11

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The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60825-1	SI 60825 Part 1 – Safety of laser products: Equipment classification and requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-1 – Second edition: 2007-03
IEC 60825-2	SI 60825 Part 2 – Safety of laser products: Safety of optical fibre communication systems (OFCS)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-2 – Edition 3.2: 2010-12
IEC 60825-12	SI 60825 Part 2 – Safety of laser products: Safety of free space optical communication systems used for transmission of information	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-12 – First Edition: 2004-02
IEC 60947-1: 2004	SI 60947 Part I – Low-voltage switchgear and controlgear: General rules	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60947-1 – Edition 5.0: 2007-06
IEC 60998-1	SI 60998 Part 1 – Connecting devices for low-voltage circuits for household and similar purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60998-1 – Second Edition: 2002-12
IEC 60999-1	SI 60999 Part 1 – Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: General requirements and particular requirements for clamping units for conductors from 0.2 mm^2 up to 35 mm^2 (included)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60999-1 – Second Edition: 1999
IEC 60999-2	SI 60999 Part 2 – Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: Particular requirements for clamping units for conductors above 35 mm^2 up to 300 mm^2 (included)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60999-2 – Second Edition: 2003-05

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 61058-1: 2000	SJ 61058 Part I - Switches for appliances: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 61058-1 – Edition 3.2: 2008-04
IEC 62471: 2006	SI 62471 – Photobiological safety of lamps and lamp systems	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 62471 (CIE S 009: 2002) – First edition: 2006-07
ISO 262	SI 876 – ISO general purpose metric screw thread: Basic dimension and selected sizes for screws	The Israeli Standard is based on the International Organization for Standardization publications ISO R 724 - 1968 ISO 262 - 1973
ISO 3864 (all parts) [(a)]	SI 3864 Part I – Graphic symbols – Safety colours and safety signs: Design principles for safety signs in workplaces and public areas	The Israeli Standard, excluding national modifications and additions, is identical to the International Organization for Standardization Standard ISO 3864-1: First edition: 2002-05-15
Notes: (a) In the International Standard series, there are parts not yet adopted as Israeli Standards. This table notes the existing Israeli Standards, and in the Comments column, the corresponding parts of the International Standard series. (b) Not relevant to the translation.		

The following shall be added to the annex:	
Israeli Standards	
SI 32 Part 1.1	Plugs and socket-outlets for household and similar purposes: Plugs and socket-outlets for single phase up to 16A – General requirements
SI 961 Part 6.1	Electromagnetic compatibility: Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
SI 961 Part 6.2	Electromagnetic compatibility: Information technology equipment – Immunity characteristics - Limits and methods of measurement
SI 961 Part 12.3	Electromagnetic compatibility: Limits – Limits for harmonic current emissions (equipment input current ≦16 A per phase)
SI 961 Part 12.5	Electromagnetic compatibility: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≦ 16 A per phase and subject to conditional connection
SI 961 Part 12.11	Electromagnetic compatibility: Limits – Limitation of voltage changes voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≦ 75 A and subject to conditional connection
SI 961 Part 48 (all parts)	Electromagnetic compatibility: Electromagnetic compatibility (EMC) for radio equipment and services
SI 961 Part 48.1	Electromagnetic compatibility: Electromagnetic compatibility (EMC) for radio equipment and services – Common technical requirements
SI 61000 Part 3.12	Electromagnetic compatibility: Limits – Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≦ 75 A per phase

Israeli Laws, Regulations and documents Electricity Law, 1954, with its Regulations and updates Consumer Protection Order (Marking of goods), 1983, Kovetz HaTakanot 4465 dated 1983-02-24, with its updates Electricity Regulations (Earthings and protective means against electrification for voltages up to 1,000 V), 1991, with their updates Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011, with its updates	
European Standards	
EN 301 489 (all parts)	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services

ENERGY STAR CERTIFIED

Displays

Lenovo - T24i-30 : A22238FT0

Specifications

ENERGY STAR Unique ID:	2398658
Brand Name:	Lenovo
Model Name:	T24i-30
Model Number:	A22238FT0
Product Type:	Monitor
Panel Type:	TFT LCD
Screen Size (inches):	23.8
Screen Area (square inches):	242.18
Native Resolution (pixels):	1920 x 1080
Maximum Luminance (candelas per square meter):	250.0
Total Native Resolution (megapixels):	2.1
Model Features:	None
Signal or Data Interfaces:	VGA,Display,HDMI,USB
Power Source:	Ac to dc internal power supply
Monitor Total Energy Consumption at 115 Volts (kWh/yr):	37.47
On Mode Power (watts):	11.68
Markets:	United States, Taiwan, Japan, Canada
Sleep Mode Power (watts):	0.29
Off Mode Power (watts):	0.27
ENERGY STAR Certified:	Yes
ENERGY STAR Most Efficient:	No

Additional Model Information

P24i-30,A22238FT0,; TIO Flex 24i,A22238FT0,

UPC Codes	196379715079

Captured On:
02/22/2023

BRAND NAME	Lenovo
SALES NAME	T24i-30
MODEL NAME	A22238**0
DISPLAY SIZE	23.8"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	1920x1080
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
TCO CERTIFIED	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084051
CERTIFICATION DATE	2022-08-03
CERTIFICATE VALID UNTIL	2023-08-03
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Minimum 85 % recycled plastics;

CREATE ACCOUNT

ALREADY REGISTERED? LOG IN

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT LOG IN

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ECMA/TC38-TG3/2015/026
(Rev. 1 – 15 April 2015)

Annex B2 - Product environmental attributes
Computer Monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (n.a. for not applicable).
Additional information regarding each item may be found under P15.

Brand *	*Lenovo*	**Logo**
Company name *	*Lenovo*	
Contact information * **e-mail address**	*Lenovo Global Environmental Affairs* *Alvin L Carter* alcarter@lenovo.com	
Internet site *	*https://www.lenovo.com/us/en/sustainability-resources/*	
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	*Monitor*
Commercial name *	*ThinkVision T24i-30&P24i-30&TIO Flex 24i*
Model number *	*63CF,63BE,12BM*
Issue date *	*2022/7/1*
Intended market *	☒ **Global** ☐ **Europe** ☐ **Asia, Pacific & Japan** ☐ **Americas** ☐ **Other**
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2

Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:
P4.1 – P4.3 Consumable materials
P9.1 TEC and Print speed
P10.2 - P10.3 Chemical emissions from printing products
P11.1 - P11.3 Consumable materials for printing products.

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Model number *	*63CF,63BE,12BM*	**Logo**	Lenovo
Issue date *	*2022/7/1*		

Product environmental attributes - Legal requirements		**Requirement met**		
Item		Yes	No	n.a.
P1	**Hazardous substances and preparations**			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	☒	☐	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 μg/cm^2/week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): ***https://www.lenovo.com/us/en/Lenovo-REACH-SVHC-Disclosure***	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☐	☐	☒
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☐	☐	☒
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☐	☐	☒
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): ***https://www.lenovo.com/us/en/compliance/eu-doc for EU and*** ***https://www.lenovo.com/us/en/compliance/uk-doc for UK***	☒	☐	☐
P3.2*	The product complies with the Eco design requirements for energy-related products, (see legal reference).	☒	☐	☐
	Required information is; ☐ given in item P15 or added to this document, ☒ available at (add URL): ***https://www.lenovo.com/us/en/compliance/eco-declaration***	☒	☐	☐
P5	**Product packaging**			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	☒	☐	☐
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (see legal reference).	☒	☐	☐

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating "Yes" means that the product is compliant with the mandatory requirements.

Anexo PROPOSTA ITEM 1 - ER SOLUÇÕES (1661785) SEI 2025.001317 / pg. 1060

Model number *	***63CF,63BE,12BM***	**Logo**	Lenovo
Issue date *	***2022/7/1***		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P7	**Design** **Disassembly, recycling**			
P7.1*	Parts that have to be treated separately are easily separable	☒	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating.	☒	☐	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	☒	☐	☐
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	☒	☐	☐
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	☒	☐	☐
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	☒	☐	☐
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	☐	☐	☒
P7.8*	Upgrading can be done using commonly available tools	☐	☐	☒
P7.9	Spare parts are available after end of production for: ***5*** years			☐
P7.10	Service is available after end of production for: ***5*** years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***ABS*** Material type: ***PC*** Material type:			
P7.12	Insulation materials of external electrical cables are PVC free.	☐	☒	☐
P7.13	Insulation materials of internal electrical cables are PVC free.	☐	☒	☐
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	☒	☐	☐
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all ☒ PCBs > 25 g ☐ are low halogen as defined in IEC 61249-2-21. (See 1NOTE B2)	☐	☒	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking:	☐	☒	☐
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): ☐ TBBPA (additive), ☒ TBBPA (reactive) (See NOTE B3), ☐ Other:, CAS #:	☒	☐	☐
	Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4:	☐	☐	☒
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: "	☐	☐	☒
	Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4:	☐	☐	☒
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; and Hazard statements: The source(s) for these classifications is/are found at (add URL(s)): , (See note B5)	☐	☐	☒
P7.20*	Postconsumer recycled plastic material content is used in the product (See Note B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***81.61 %. (EPEAT calculation) / 85% (TCO calculation)*** or b) The weight of recycled material is ***705.55***g.	☒	☐	☐

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

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Model number *	63CF,63BE,12BM	Logo	Lenovo
Issue date *	2022/7/1		

Product environmental attributes - Market requirements (continued)	Requirement met		
Item	Yes	No	n.a.

	Material and substance requirements (continued)			
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is 0%. or b) The weight of the biobased plastic material is 0g.	☐	☒	☐
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp. If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg	☒	☐	☐
P8	**Batteries**			
P8.1*	Battery chemical composition:			☒
P9	**Energy consumption (See NOTE B8)**			
P9.1	For the product the following power levels or energy consumptions are reported:			

Energy mode *	Power level at 100V 50HzAC	Power level at 100V /60Hz	Power level at **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method *
ENERGY STAR® On Mode* (System Idle)	**11.75**	**11.74**	**11.68**	**11.68**	***ENERGY STAR® Program Requirements for Displays: Ver. 8.0***
ENERGY STAR® Low Power Sleep Mode*	**0.29**	**0.29**	**0.29**	**0.33**	***ENERGY STAR® Program Requirements for Displays: Ver. 8.0***
ENERGY STAR® Off / Apparent Off Mode*	**0.27**	**0.27**	**0.29**	**0.31**	***ENERGY STAR® Program Requirements for Displays: Ver. 8.0***
PTEC * Typical Energy Consumption	W	W	W	W	☒
ETEC * Annual Energy Consumption	***37.68***kWh /year	***37.65***kWh /year	***37.46*** kWh/year	***37.69***kWh/year	E_{TEC} = 8.76x (0.35xPon +0.65x Psleep) ☐
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * :					☒
Display resolution* : ***1920*1080*** megapixels					ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0
Default time to enter energy save mode: 15 seconds					ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0

P9.2*	Information about the energy save function is provided with the product.	☒	☐	☐
P9.3*	The product meets the energy requirements of the following voluntary program/s: ENERGY STAR® version: 8.0 Product category: **Display**.	☒	☐	☐
P10	**Emissions**			
	Noise emission – Declared according to ISO 9296 (See NOTE B9)			

P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)
	Idle	* ***HDD: Idle***	* ☒
	Operation	* ***HDD: Operating***	* ☒
	Other mode	***Declared A-weighted sound pressure level (dB)*** L_{pAm}	***(operator position desktop – idle)***
	Other mode	***Declared A-weighted sound pressure level (dB)*** L_{pAm}	***(operator position desktop – operating)***
	Measured according to: ☒ ISO 7779 ☐ ECMA-74 ☐ Other (only if not covered by ECMA-74)		

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

NOTE B9 A Guidance document on Acoustic Noise is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

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Model number *	63CF,63BE,12BM	Logo	Lenovo
Issue date *	2022/7/1		

Product environmental attributes - Market requirements (continued)		Requirement met		
Item		Yes	No	n.a.
	Electromagnetic emissions			
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):	☐	☒	☐
P12	**Ergonomics for computing products**			
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.	☒	☐	☐
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.	☐	☐	☒
P13	**Packaging and documentation**			
P13.1*	Product packaging material type(s): ***Corrugated - Double Wall*** weight (kg): ***1.080*** Product packaging material type(s): ***Molded Pulp*** weight (kg): ***0.370*** Product packaging material type(s): ***Cardboard*** weight (kg): ***0.400*** Product packaging material type(s): ***LDPE Bag*** weight (kg): ***0.025***			
P13.2*	Product plastic primary packaging is free from PVC.	☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***90***%			☐
P13.4*	Specify media for user and product documentation (tick box): ☒ Electronic, ☒ Paper, ☐ Other			☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify:	☒	☐	
	Totally chlorine-free	☒		
	Elemental chlorine-free	☐		
	Processed chlorine-free	☐		
P14	**Voluntary programs**			
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Criteria version: ***8.0*** Date: ***2022/7/19*** Product category: TCO Criteria version: ***TCO9*** Date: ***2022/8/3*** Product category: Eco-label: Criteria version: Date: Product category:			
P15	**Additional information (See NOTE B10)**			
P9	***Energy consumption of specific configuration may vary; description of the tested product configuration:***			
	NOTE: Supplier makes no representations, guarantees, assurances or warranties whether express or implied, regarding the information contained in this document. All information provided by supplier in this document is provided based on supplier's knowledge available at the time of completion, and supplier shall have no obligation to update such information. The information provided here is approximate and provided for informational purposes only. See a Lenovo Account Representative for more information.			
P9	***See Energy Star Qualified Monitors & Displays for the latest information: https://www.energystar.gov/products/office_equipment/displays***			

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

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Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive) * * Specific exemptions apply for certain products and applications.	P1.1
Regulation (EC) 1907/2006(REACH, Annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2013/56/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2,3, P8.1
Directive 2006/95/EC (Low Voltage Directive)	P3.1
Directive 2004/108/EC (EMC Directive)	P3.1
Directive 1999/5/EC (R&TTE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Regulation（EC）No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive)	P6.1

Anexo PROPOSTA ITEM 1 - ER SOLUÇÕES (1661785) SEI 2025.001317 / pg. 1064

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São Paulo, 27 de junho de 2025.

À
E.R. SOLUÇÕES INFORMÁTICA LTDA

A **LENOVO TECNOLOGIA (BRASIL) LTDA.** ("Lenovo"), pessoa jurídica de direito privado, inscrita no CNPJ/MF sob o nº 07.275.920/0001-61, com escritório administrativo estabelecido na Rua Werner Von Siemens, 111 — Prédio 11 / Torre A — 3º e 4º andar— Bairro da Lapa — São Paulo / SP - CEP 05069-900, **DECLARA** que a empresa **E.R. SOLUÇÕES INFORMÁTICA LTDA**, inscrita no CNPJ/MF sob o nº **05.778.325/0005-47** , sediada na **AV. CEM S/N - SERRA - ES,** está cadastrada nos sistemas internos da Lenovo como revenda autorizada, estando apta a comercializar os produtos abaixo discriminados:

Família	Part Number	Garantia/SLA
ThinkCentre M70Q Gen 5	**13E2CTO1WW**	**Garantia de 60 meses on site - 5WS0T36190 + Retenção HD 60 meses on site - 5PS0K26186 + Danos Acidentais 60 meses on site - 5PS0Q13075**
ThinkCentre M70Q Gen 5	**12TGCTO1WW**	**Garantia de 60 meses on site - 5WS0T36190 + Retenção HD 60 meses on site - 5PS0K26186 + Danos Acidentais 60 meses on site - 5PS0Q13075**
ThinkVision TIO24 Gen 5	**12NAGAR1US**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkVision T24i-30	**63CFMAR1BR**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkStation P3 Tower	**30GUCTO1WW**	**Garantia de 60 meses on site - 5WS1F52293 + Retenção HD 60 meses on site - 5PS0Q11741 + Danos Acidentais 60 meses on site - 5PS0Q25585**
ThinkVision T27HV-30	**63D6UAR3US**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkVision T27I-30	**63A4MAR1BR**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkPad E14 Intel Gen 6	**21M8CTO1WW**	**Garantia de 60 meses on site - 5WS1C98064 + Retenção HD 60 meses on site - 5PS0K27099 + Danos Acidentais 60 meses on site - 5PS0K27092 + Bateria 36 meses - 5WS0L01988**
ThinkPad P16v Gen 2	**21KYCTO1WW**	**Garantia de 60 meses on site - 5WS1H31751 + Retenção HD 60 meses on site - 5PS1H31796 + Danos Acidentais 60 meses on site - 5PS1H31752 + Bateria 36 meses - 5WS1H31713**
ThinkCentre M70Q Gen 5	**13E2CTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39013**
ThinkCentre M70Q Gen 5	**12TGCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39013**
ThinkStation P3 Tower	**30GUCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39164**
ThinkPad E14 Intel Gen 6	**21M8CTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39126**
ThinkPad P16v Gen 2	**21KYCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1M88187**

A Lenovo declara ainda que os produtos acima citados:

- Teclado no padrão ABNT2 Português.
- Cpu, teclado, mouse e monitor possuem mesmo padrão de cor e são de fabricação Lenovo.
- Placa mãe fabricada para uso exclusivo
- BIOS com direitos copyright.
- Componentes do produto são novos (sem uso, reforma ou recondicionamento) e produtos pertencentes à Linha Corporativa.
- Os equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, que utilizam materiais recicláveis.
- Os produtos estão em linha de produção sem previsão de encerramento antes de 90 dias.
- Possuem BIOS desenvolvida pela Lenovo em Flash Memory onde somos responsáveis por atualizações e manutenções, em idioma inglês ou português. Implementada em memória Flash-ROM, com suporte plug-and-play, tipo flash EPROM e SMBIOS 2.4.
- Possui Memoria não volátil e reprogramável.
- Possuir recursos de controle de permissão através de senhas.

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- Possibilita que a senha de acesso ao BIOS seja ativada e desativada via SETUP. Suporte a senha de inicialização, Power on, administrador e disco rígido.
- Logo do fabricante na inicialização sendo permitido sua customização, número de série do equipamento gravada na Bios, campo editável que permite inserir identificação customizada como inclusão de identificação e patrimônio, podendo ser consultada e atualizada por software de gerenciamento e via comandos DMI.
- Bios com capacidade de habilitar/desabilitar drivers de entrada e saída, individualmente portas USB, webcam, áudio e microfone.
- Atualização da BIOS por meio de interface gráfica através de utilitário, dentro do sistema operacional ou site do fabricante.
  Em atendimento as diretrizes da lei Nº 12 305/2010, que institui a Política Nacional de Resíduos Sólidos, o fabricante do equipamento será responsável pelo mecanismo de Logística Reversa.
- Suporte ao padrão de gerenciamento DMI 2.0 em conformidade com a especificação UEFI 2.8 e capturáveis pela aplicação de inventário SCCM.
- Suporte a ACPI 6.3 com controle automático de rotação do ventilador da CPU. Monitoramento das velocidades dos coolers, temperatura do processador e tensão utilizada pela fonte Possui sistema de dissipação de calor dimensionado suportando operar por 12 horas diárias.
- Software de Diagnóstico, embarcado no BIOS para diagnóstico de problemas que permite o teste do equipamento, com independência do Sistema Operacional, capaz de ser executado através da tecla função. Capaz de verificar, testar emitir relatório através de tela gráfica com o andamento do teste e informações sobre o fabricante, modelo do equipamento, processador memória, firmware, capacidade do disco.
- Conformidade com a NIST 800 147 nos padrões de criptografia com função integrada para apagar dados do disco rígido de forma segura não permitindo sua recuperação através de ferramentas.
  Em Conformidade NIST 800-88
- A BIOS está em conformidade com a normativa de segurança NIST 800-193 ou ISO/IEC 19678:2015, de maneira a usar métodos de criptografia robusta para verificar a integridade da BIOS antes de passar o controle de execução à mesma;
- Capacidade de desligamento do vídeo e do disco após tempo determinado pelo usuário e religamento por acionamento de teclado ou movimentação do mouse com função de economia de energia para monitor, placa mãe e disco.
- Permite o boot através de unidade de disco óptico, dispositivo USB ou pela rede.
- Permite a replicação da Bios pela rede ou por USB.
- Placa mãe fabricada pela Lenovo, com Lenovo serigrafado na placa, desenvolvida para o mercado corporativo.
  Placa mãe suporta Virtualização baseada em hardware.
- Possui Chip de segurança TPM 2.0 integrado, acompanhado do software capaz de implementar as principais funcionalidades do mesmo.
- Lenovo possui sistema de carregamento de imagens personalizadas, e serviço de gravação de logotipo a laser no gabinete.
- Placa de Rede com tecnologia WOL e PXE 2.1.
- Disco com suporte a tecnologia SMART, e tecnologia redutora de danos ao disco rígido, NCQ e AHCI.
- Placa mãe suporta os padrões de gerenciamento WMI.
- Acompanha cabo de alimentação e plug de acordo com a NBR 14136.
- Todas as fontes são bivolts (100 a 240 V)
- A garantia do monitor ofertado cobre ainda o reparo ou substituição do monitor no caso do aparecimento de no mínimo 3 pixels queimados.
- Suporte ao sistema operacional Linux Ubuntu.
  O Bios mostra as configurações de hardware, possuí modo gráfico interativo por mouse e teclado e possuí no próprio hardware cópia de segurança capaz de restauração automática, permitindo carregar em outro equipamento do mesmo modelo estando com senha ou não.
  O Bios possui gravação de Log de eventos acessíveis pelo BIOS, Sistema Operacional e Software de Gerenciamento.
- Bios reconhece automaticamente os discos rígidos instalados.
- Teclado (TECLA00) - possui proteção contra o derramamento de líquidos;

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- Teclado do Notebook citado possui proteção contra o derramamento de líquidos. Acabamentos feito de materiais não cortantes. Permite que o equipamento seja aberto sem a perda de garantia.
- Possuem a capacidade de funcionalidade de segurança avançada de rastreamento pela internet que, em caso de furto ou extravio, permita recuperação e localização do equipamento.
- O compartilhamento randômico de memória RAM com a placa gráfica integrada pode chegar até 50% do total de memória RAM instalada, com o sistema operacional Windows Pro.
- Equipamentos com Microsoft Windows possuem chave de ativação gravada na Bios.
- O desktop possui função que permite ligar o equipamento através de uma combinação de teclas no teclado conectado através de porta USB.
- Conectores integrados à placa-mãe identificados no padrão de cores PC'99 System Design Guide.
- Bios possui capacidade de proteção da memória flash contra gravação.
- Possui função de teste do equipamento, com independência do sistema operacional instalado, capaz de ser executado a partir da UEFI, através do acionamento da tecla função (F1...F12). Este teste verifica, mostra o andamento e emite relatório de componentes, como processador, memória, disco rígico, etc.
- Equipamentos que possuem RJ-45, a interface de rede é compatível com os padrões Ethernet, Fast-Ethernet e Gigabit Ethernet, autosense, full-duplex e plug-and-play, configurável totalmente por software, com função wake-on-lan instalada e em funcionamento, PXE 2.1, TCP/IP/UDP Checksum Offload e RSS (Receive Side Scailling), operando em 10/100/1000 Mbps de forma automática.
- Garantia onsite com atendimento 9x5 (nove horas por cinco dias úteis).
- A substituição das peças estão inclusas durante o prazo de garantia.
- O atendimento pela Assistência Técnica (tempo de solução de um chamado técnico para a definitiva solução) será conforme o edital.
- A garantia não será afetada caso a Contratante venha a instalar placas de rede local, de fax-modem, interfaces específicas para acionamento de outros equipamentos, adicionar unidades de disco rígido, bem como se alterar a capacidade de memória RAM do equipamento, ressaltando que a garantia destes opcionais será total responsabilidade da Contratante.
- O Desktop SFF suporta o peso do monitor quando está na horizontal.
- Para o processo listado, os equipamentos possuem as seguintes fontes:
- -TIO24+M70Q: possuir eficiência igual ou superior a 89%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -P3 Tower: possuir eficiência igual ou superior a 92%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -E14 Intel G6: possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -P16v G2: possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);

- Assistências Técnicas:
- -Regional Manaus - Sede: Manaus - Rua Paracaima, n° 120, Novo Israel, Manaus - AM - Tel.: (92) 98125-1119

- https://support.lenovo.com/br/pt

- O número 0800-701-4815 é o telefone do suporte técnico da Lenovo para os produtos ThinkVision, ThinkPad, ThinkCentre, ThinkStation e ThinkServer.

A Lenovo é responsável pelo atendimento "on site" da garantia padrão dos equipamentos, conforme o Termo de Garantia Padrão da Lenovo, mediante assistência técnica devidamente autorizada e credenciada.

A Garantia adicional/SLA deve ser previamente adquirida pela Revenda, mediante os termos de extensão da Garantia dos produtos.

Para acesso a certificações e quaisquiser outras informações sobre os produtos acima listados, podem ser consultadas no site: https://psref.lenovo.com

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Para acesso a Drivers, atualizações, Software, Diagnósticos, Catálogos, Manuais e Guia de Instalação, podem ser consultados no site: https://pcsupport.lenovo.com/br/pt

Os drivers, atualizações e suporte dos produtos Lenovo estão disponíveis para download, e busca das autorizadas técnicas Lenovo mais próxima no site:
https://pcsupport.lenovo.com/br/en/partnerlocator#providerProductName

A Lenovo dispõe de telefone gratuito 0800-701-4815 (ligações fora da cidade de São Paulo) para abertura de chamados técnicos em Língua Portuguesa e service desk.

A presente declaração foi emitida por solicitação da **E.R. SOLUÇÕES INFORMÁTICA LTDA** para atendimento ao Edital **94010/2025**, promovido pela **PROCURADORIA GERAL DE JUSTIÇA DO ESTADO DO AMAZONAS - MPAM.**

Atenciosamente,

Assinado por:
Valter Artea
91541403867D44E...

DocuSigned by:
Maurício Misumi
9359B24D385E4FE...

Valter Artea **Maurício Misumi**
LENOVO TECNOLOGIA (BRASIL) LTDA.

Docusign Envelope ID: 584A497D-0AF3-4A88-9365-C6BBBAB81E01

São Paulo, 27 de junho de 2025.

À
E.R. SOLUÇÕES INFORMÁTICA LTDA

A **LENOVO TECNOLOGIA (BRASIL) LTDA.** ("Lenovo"), pessoa jurídica de direito privado, inscrita no CNPJ/MF sob o nº 07.275.920/0001-61, com escritório administrativo estabelecido na Rua Werner Von Siemens, 111 — Prédio 11 / Torre A — 3º e 4º andar— Bairro da Lapa — São Paulo / SP - CEP 05069-900, **DECLARA** que a empresa **E.R. SOLUÇÕES INFORMÁTICA LTDA**, inscrita no CNPJ/MF sob o nº **05.778.325/0005-47** , sediada na **AV. CEM S/N - SERRA - ES,** está cadastrada nos sistemas internos da Lenovo como revenda autorizada, estando apta a comercializar os produtos abaixo discriminados:

Família	Part Number	Garantia/SLA
ThinkCentre M70Q Gen 5	**13E2CTO1WW**	**Garantia de 60 meses on site - 5WS0T36190 + Retenção HD 60 meses on site - 5PS0K26186 + Danos Acidentais 60 meses on site - 5PS0Q13075**
ThinkCentre M70Q Gen 5	**12TGCTO1WW**	**Garantia de 60 meses on site - 5WS0T36190 + Retenção HD 60 meses on site - 5PS0K26186 + Danos Acidentais 60 meses on site - 5PS0Q13075**
ThinkVision TIO24 Gen 5	**12NAGAR1US**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkVision T24i-30	**63CFMAR1BR**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkStation P3 Tower	**30GUCTO1WW**	**Garantia de 60 meses on site - 5WS1F52293 + Retenção HD 60 meses on site - 5PS0Q11741 + Danos Acidentais 60 meses on site - 5PS0Q25585**
ThinkVision T27HV-30	**63D6UAR3US**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkVision T27I-30	**63A4MAR1BR**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkPad E14 Intel Gen 6	**21M8CTO1WW**	**Garantia de 60 meses on site - 5WS1C98064 + Retenção HD 60 meses on site - 5PS0K27099 + Danos Acidentais 60 meses on site - 5PS0K27092 + Bateria 36 meses - 5WS0L01988**
ThinkPad P16v Gen 2	**21KYCTO1WW**	**Garantia de 60 meses on site - 5WS1H31751 + Retenção HD 60 meses on site - 5PS1H31796 + Danos Acidentais 60 meses on site - 5PS1H31752 + Bateria 36 meses - 5WS1H31713**
ThinkCentre M70Q Gen 5	**13E2CTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39013**
ThinkCentre M70Q Gen 5	**12TGCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39013**
ThinkStation P3 Tower	**30GUCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39164**
ThinkPad E14 Intel Gen 6	**21M8CTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39126**
ThinkPad P16v Gen 2	**21KYCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1M88187**

A Lenovo declara ainda que os produtos acima citados:

- Teclado no padrão ABNT2 Português.
- Cpu, teclado, mouse e monitor possuem mesmo padrão de cor e são de fabricação Lenovo.
- Placa mãe fabricada para uso exclusivo
- BIOS com direitos copyright.
- Componentes do produto são novos (sem uso, reforma ou recondicionamento) e produtos pertencentes à Linha Corporativa.
- Os equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, que utilizam materiais recicláveis.
- Os produtos estão em linha de produção sem previsão de encerramento antes de 90 dias.
- Possuem BIOS desenvolvida pela Lenovo em Flash Memory onde somos responsáveis por atualizações e manutenções, em idioma inglês ou português. Implementada em memória Flash-ROM, com suporte plug-and-play, tipo flash EPROM e SMBIOS 2.4.
- Possui Memoria não volátil e reprogramável.
- Possuir recursos de controle de permissão através de senhas.

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- Possibilita que a senha de acesso ao BIOS seja ativada e desativada via SETUP. Suporte a senha de inicialização, Power on, administrador e disco rígido.
- Logo do fabricante na inicialização sendo permitido sua customização, número de série do equipamento gravada na Bios, campo editável que permite inserir identificação customizada como inclusão de identificação e patrimônio, podendo ser consultada e atualizada por software de gerenciamento e via comandos DMI.
- Bios com capacidade de habilitar/desabilitar drivers de entrada e saída, individualmente portas USB, webcam, áudio e microfone.
- Atualização da BIOS por meio de interface gráfica através de utilitário, dentro do sistema operacional ou site do fabricante.
  Em atendimento as diretrizes da lei Nº 12 305/2010, que institui a Política Nacional de Resíduos Sólidos, o fabricante do equipamento será responsável pelo mecanismo de Logística Reversa.
- Suporte ao padrão de gerenciamento DMI 2.0 em conformidade com a especificação UEFI 2.8 e capturáveis pela aplicação de inventário SCCM.
- Suporte a ACPI 6.3 com controle automático de rotação do ventilador da CPU. Monitoramento das velocidades dos coolers, temperatura do processador e tensão utilizada pela fonte Possui sistema de dissipação de calor dimensionado suportando operar por 12 horas diárias.
- Software de Diagnóstico, embarcado no BIOS para diagnóstico de problemas que permite o teste do equipamento, com independência do Sistema Operacional, capaz de ser executado através da tecla função. Capaz de verificar, testar emitir relatório através de tela gráfica com o andamento do teste e informações sobre o fabricante, modelo do equipamento, processador memória, firmware, capacidade do disco.
- Conformidade com a NIST 800 147 nos padrões de criptografia com função integrada para apagar dados do disco rígido de forma segura não permitindo sua recuperação através de ferramentas.
  Em Conformidade NIST 800-88
- A BIOS está em conformidade com a normativa de segurança NIST 800-193 ou ISO/IEC 19678:2015, de maneira a usar métodos de criptografia robusta para verificar a integridade da BIOS antes de passar o controle de execução à mesma;
- Capacidade de desligamento do vídeo e do disco após tempo determinado pelo usuário e religamento por acionamento de teclado ou movimentação do mouse com função de economia de energia para monitor, placa mãe e disco.
- Permite o boot através de unidade de disco óptico, dispositivo USB ou pela rede.
- Permite a replicação da Bios pela rede ou por USB.
- Placa mãe fabricada pela Lenovo, com Lenovo serigrafado na placa, desenvolvida para o mercado corporativo.
  Placa mãe suporta Virtualização baseada em hardware.
- Possui Chip de segurança TPM 2.0 integrado, acompanhado do software capaz de implementar as principais funcionalidades do mesmo.
- Lenovo possui sistema de carregamento de imagens personalizadas, e serviço de gravação de logotipo a laser no gabinete.
- Placa de Rede com tecnologia WOL e PXE 2.1.
- Disco com suporte a tecnologia SMART, e tecnologia redutora de danos ao disco rígido, NCQ e AHCI.
- Placa mãe suporta os padrões de gerenciamento WMI.
- Acompanha cabo de alimentação e plug de acordo com a NBR 14136.
- Todas as fontes são bivolts (100 a 240 V)
- A garantia do monitor ofertado cobre ainda o reparo ou substituição do monitor no caso do aparecimento de no mínimo 3 pixels queimados.
- Suporte ao sistema operacional Linux Ubuntu.
  O Bios mostra as configurações de hardware, possuí modo gráfico interativo por mouse e teclado e possuí no próprio hardware cópia de segurança capaz de restauração automática, permitindo carregar em outro equipamento do mesmo modelo estando com senha ou não.
  O Bios possui gravação de Log de eventos acessíveis pelo BIOS, Sistema Operacional e Software de Gerenciamento.
- Bios reconhece automaticamente os discos rígidos instalados.
- Teclado (TECLA00) - possui proteção contra o derramamento de líquidos;

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- Teclado do Notebook citado possui proteção contra o derramamento de líquidos. Acabamentos feito de materiais não cortantes. Permite que o equipamento seja aberto sem a perda de garantia.
- Possuem a capacidade de funcionalidade de segurança avançada de rastreamento pela internet que, em caso de furto ou extravio, permita recuperação e localização do equipamento.
- O compartilhamento randômico de memória RAM com a placa gráfica integrada pode chegar até 50% do total de memória RAM instalada, com o sistema operacional Windows Pro.
- Equipamentos com Microsoft Windows possuem chave de ativação gravada na Bios.
- O desktop possui função que permite ligar o equipamento através de uma combinação de teclas no teclado conectado através de porta USB.
- Conectores integrados à placa-mãe identificados no padrão de cores PC'99 System Design Guide.
- Bios possui capacidade de proteção da memória flash contra gravação.
- Possui função de teste do equipamento, com independência do sistema operacional instalado, capaz de ser executado a partir da UEFI, através do acionamento da tecla função (F1...F12). Este teste verifica, mostra o andamento e emite relatório de componentes, como processador, memória, disco rígico, etc.
- Equipamentos que possuem RJ-45, a interface de rede é compatível com os padrões Ethernet, Fast-Ethernet e Gigabit Ethernet, autosense, full-duplex e plug-and-play, configurável totalmente por software, com função wake-on-lan instalada e em funcionamento, PXE 2.1, TCP/IP/UDP Checksum Offload e RSS (Receive Side Scailling), operando em 10/100/1000 Mbps de forma automática.
- Garantia onsite com atendimento 9x5 (nove horas por cinco dias úteis).
- A substituição das peças estão inclusas durante o prazo de garantia.
- O atendimento pela Assistência Técnica (tempo de solução de um chamado técnico para a definitiva solução) será conforme o edital.
- A garantia não será afetada caso a Contratante venha a instalar placas de rede local, de fax-modem, interfaces específicas para acionamento de outros equipamentos, adicionar unidades de disco rígido, bem como se alterar a capacidade de memória RAM do equipamento, ressaltando que a garantia destes opcionais será total responsabilidade da Contratante.
- O Desktop SFF suporta o peso do monitor quando está na horizontal.
- Para o processo listado, os equipamentos possuem as seguintes fontes:
- -TIO24+M70Q: possuir eficiência igual ou superior a 89%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -P3 Tower: possuir eficiência igual ou superior a 92%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -E14 Intel G6: possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -P16v G2: possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);

- Assistências Técnicas:
- -Regional Manaus - Sede: Manaus - Rua Paracaima, n° 120, Novo Israel, Manaus - AM - Tel.: (92) 98125-1119

- https://support.lenovo.com/br/pt

- O número 0800-701-4815 é o telefone do suporte técnico da Lenovo para os produtos ThinkVision, ThinkPad, ThinkCentre, ThinkStation e ThinkServer.

A Lenovo é responsável pelo atendimento "on site" da garantia padrão dos equipamentos, conforme o Termo de Garantia Padrão da Lenovo, mediante assistência técnica devidamente autorizada e credenciada.

A Garantia adicional/SLA deve ser previamente adquirida pela Revenda, mediante os termos de extensão da Garantia dos produtos.

Para acesso a certificações e quaisquiser outras informações sobre os produtos acima listados, podem ser consultadas no site: https://psref.lenovo.com

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Para acesso a Drivers, atualizações, Software, Diagnósticos, Catálogos, Manuais e Guia de Instalação, podem ser consultados no site: https://pcsupport.lenovo.com/br/pt

Os drivers, atualizações e suporte dos produtos Lenovo estão disponíveis para download, e busca das autorizadas técnicas Lenovo mais próxima no site:
https://pcsupport.lenovo.com/br/en/partnerlocator#providerProductName

A Lenovo dispõe de telefone gratuito 0800-701-4815 (ligações fora da cidade de São Paulo) para abertura de chamados técnicos em Língua Portuguesa e service desk.

A presente declaração foi emitida por solicitação da **E.R. SOLUÇÕES INFORMÁTICA LTDA** para atendimento ao Edital **94010/2025**, promovido pela **PROCURADORIA GERAL DE JUSTIÇA DO ESTADO DO AMAZONAS - MPAM.**

Atenciosamente,

Assinado por:
Valter Artea
91541403867D44E...

DocuSigned by:
Maurício Misumi
9359B24D385E4FE...

Valter Artea **Maurício Misumi**
LENOVO TECNOLOGIA (BRASIL) LTDA.

IBM BRASIL - Indústria, Máquinas e Serviços Ltda.
***Av.* Pasteur, 138/146 - Rio de Janeiro/RJ**
CEP 22290-240 Tel.: (21) 2132-5252 Fax: (21) 2132-5082
Internet: www.ibm.com.br CNPJ: 33.372.251/0001-56

DECLARAÇÃO

A IBM Brasil - Indústria, Máquinas e Serviços Ltda., inscrita no CNPJ 11º33.372.251/0001-56, e a PROXXI TECNOLOGIA LTDA, inscrita no CNPJ/MF sob o n.º 47.379.565/0001-95, por intermédio do seu representante legal abaixo assinado, declara para os devidos fins, que prestam serviços de suporte técnico para a Lenovo Tecnologia (Brasil) Ltda, incluindo serviços de instalação e reparos para toda a sua linha de produtos Think (Servidores, Workstation, Desktops, Notebook e Tablet) em todo o território nacional, de acordo com o contrato Master Agreement for Services & MA-14-000138 (the "Master Agreement") e os contratos: SERVICES AGREEMENT SOW & SA-49S1600326 (the "CC&FS SOW") e o contrato SERVICES AGREEMENT SOW SA-49S1600327 the "Parts SOW") firmados entre ambas as partes.
Informamos ainda que possuímos centros de apoio reparos para assegurar atendimento local, na modalidade Centro de Atendimento Técnico do Próprio Fabricante, através de nossas filiais assim distribuídas:

REGIONAL	SEDE TECNICA	ENDEREÇO	CIDADE	UF	Telefone	GERENTE REGIONAL	e-mail
BAURU	ARACATUBA	Rua Marechal Deodoro, 64	ARACATUBA	SP	14 98136 0984	MARCOS ANTONIO	marcant1@br.ibm.com
BAURU	BAURU	Rua Waldemar Pereira da Silveira, 340, quadra 3, lote 2, CEP: 17034-280, Bauru, São Paulo	BAURU	SP	14 98136 0984	MARCOS ANTONIO	marcant1@br.ibm.com
BAURU	VARGINHA	Praça José Resende, 02 - Terreo - Centro	VARGINHA	MG	14 98136 0984	MARCOS ANTONIO	marcant1@br.ibm.com
BELEM	BELEM	Travessa Padre Eutíquio, 1379 - Batista Campos, Belém/PA - CEP 66035-045	BELEM	PA	85 98219 3781	FABIO REGIS	fabregm@br.ibm.com
BELEM	IMPERATRIZ	R. Cel. Manoel Bandeira, 1763 - Centro, Imperatriz - MA, 65900-000 - 1o andar	IMPERATRIZ	MA	85 98219 3781	FABIO REGIS	fabregm@br.ibm.com
BELEM	MACAPA	Rua Candido Mendes, 1316 - Centro	MACAPA	AP	85 98219 3781	FABIO REGIS	fabregm@br.ibm.com
BELEM	SAO LUIS	Rua dos Ipes, 30 Quadra 29, Gleba A do Loteamento Jardim Renascença, no Bairro São Francisco, São Luís/MA - CEP 65075-200	SAO LUIS	MA	85 98219 3781	FABIO REGIS	fabregm@br.ibm.com
BELO HORIZONTE	BELO HORIZONTE	Via Expressa, 3115 Galpão 4 Modulo D - Contagem/MG - CEP 32370-970	CONTAGEM	BH	31 99897 3254	GUSTAVO CAIXETA	gcaixepx@br.ibm.com
BELO HORIZONTE	DIVINOPOLIS	Av. 1 de Junho, 333 - 1º andar	DIVINOPOLIS	MG	31 99897 3254	GUSTAVO CAIXETA	gcaixepx@br.ibm.com
BRASILIA	BRASILIA	SIBS (Setor de industrias Bernardo Sayão) Quadra 02 Conjunto C Lotes 13,14 e 15 - Nucleo Bandeirante - Brasilia/DF - CEP 71736-203	BRASILIA	DF	61 9 9911 6068	MARCELLO BRAGA MATTOS	marcbrag@br.ibm.com
BRASILIA	GOIANIA	Av. Perimetral, 979 - Qd. 33 Lt. 2 - St. Campinas, Goiânia - GO	GOIANIA	GO	61 9 9911 6068	MARCELLO BRAGA MATTOS	marcbrag@br.ibm.com
BRASILIA	PALMAS	Rua de Pedestres No 09 Conjunto 03. 103 Norte 2 - Palmas TO	PALMAS	TO	61 9 9911 6068	MARCELLO BRAGA MATTOS	marcbrag@br.ibm.com
CAMPINAS	CAMPINAS	Rua Ambrogio Bisogni,709 - Parque Rural Fazenda Santa Candida - Campinas - SP	CAMPINAS	SP	19 98187 1385	AUGUSTO JOSE LEONESSA	augustoj@br.ibm.com
CIDADE DE DEUS	LAPA	Av. Kenkiti Simomoto, 448 - Jaguaré, São Paulo/SP - CEP 053477-010	LAPA	SP	11 98481 8695	REGINALDO FERNANDES DOS SANTOAS	rfsantos@br.ibm.com
CUIABA	CAMPO GRANDE	Rua Trindade, 451 - Vila Progresso, Campo Grande/MS - CEP 79050-480	CAMPO GRANDE	MS	81 98299 3455	JOSE ERISON DO NASCIMENTO	josecord@br.ibm.com
CUIABA	CUIABA	Avenida Coronel Escolástico, 310, Parte 2, bairro Lixeira, CEP 78.008-500, Cuiabá-MT	CUIABA	MT	81 98299 3455	JOSE ERISON DO NASCIMENTO	josecord@br.ibm.com
CURITIBA	CURITIBA	Rua Bom Jesus de Iguape, 6230 - Boqueirão, Curitiba/PR - CEP 81730-020	CURITIBA	PR	41 99178 8712	VALMIR MARTINS FARIA	vfariapx@br.ibm.com
CURITIBA	LONDRINA	R: Minas Gerais,337 esq. R: Sta. Catarina, 57 – Londrina	LONDRINA	PR	41 99178 8712	VALMIR MARTINS FARIA	vfariapx@br.ibm.com
CURITIBA	MARINGA	PR-317 KM 2, 2394 - Barracão comercial, 16 - Parque Industrial, Maringá/PR - CEP 87065-005	MARINGA	PR	41 99178 8712	VALMIR MARTINS FARIA	vfariapx@br.ibm.com
FEIRA DE SANTANA	ARACAJU	Rua Santa Catarina, 311 Siqueira Campos	ARACAJU	SE	71 99928 3402	WILSON DE SOUZA ARAUJO	wilsapx@br.ibm.com
FEIRA DE SANTANA	FEIRA DE SANTANA	Rua Brumado 935 –Jardim Cruzeiro, CEP 44024-378 - Feira de Santana –BA	FEIRA DE SANTANA	BA	71 99928 3402	WILSON DE SOUZA ARAUJO	wilsapx@br.ibm.com
FLORIANOPOLIS	FLORIANOPOLIS	Rua Gisela, 1233 Anexo Parte 2, Bairro: Barreiros, CEP: 88110-110 São José SC	FLORIANOPOLIS	SC	11 99801 7708	KAIO CORREA	kaiopc@br.ibm.com
FORTALEZA	FORTALEZA	Av Desembargador Moreira, 2800 - Loja - 01 PARTE - Dionisio Torres Fortaleza - CE / CEP 60170-172	FORTALEZA	CE	85 98219 2210	LEONARDO RABELLO	leopx@br.ibm.com
FORTALEZA	JUAZEIRO DO NORTE	Rua da Conceição, 503 Centro	JUAZEIRO DO NORTE	CE	85 98219 2210	LEONARDO RABELLO	leopx@br.ibm.com
FORTALEZA	MOSSORO	R. Coronel Vicente Saboia, 74 2 º andar Centro	MOSSORO	RN	85 98219 2210	LEONARDO RABELLO	leopx@br.ibm.com
FORTALEZA	NATAL	Avenida Lima e Silva, 1344 - Lagoa Nova, Natal/RN - CEP 59063-400	NATAL	RN	85 98219 2210	LEONARDO RABELLO	leopx@br.ibm.com
FORTALEZA	TERESINA	Rua São Pedro 3.330 Loja 1 CEP 64001-260 Teresina - PI	TERESINA	PI	85 98219 2210	LEONARDO RABELLO	leopx@br.ibm.com
MANAUS	BOA VISTA	Endereço: Av. Major Williams, 518, Centro, Boa Vista – RR	BOA VISTA	RR	92 98125 1119	LUCIENE DA SILVA CARVALHO	carsiluc@br.ibm.com
MANAUS	CACOAL	Av. Porto Velho, 2091 - 2andar	CACOAL	RO	92 98125 1119	LUCIENE DA SILVA CARVALHO	carsiluc@br.ibm.com
MANAUS	MANAUS	Rua Paracaima, nº 120, Novo Isreal, Manaus/AM, CEP 69039-40	MANAUS	AM	92 98125 1119	LUCIENE DA SILVA CARVALHO	carsiluc@br.ibm.com
MANAUS	PORTO VELHO	Avenida Jose Vieira Caula, 5551, Igarapé – Porto Velho -RO	PORTO VELHO	RO	92 98125 1119	LUCIENE DA SILVA CARVALHO	carsiluc@br.ibm.com
MANAUS	RIO BRANCO	Av. Getúlio Vargas, 1314 - Bosque, Rio Branco - AC, 69900-469	RIO BRANCO	AC	92 98125 1119	LUCIENE DA SILVA CARVALHO	carsiluc@br.ibm.com
PORTO ALEGRE	PELOTAS	Pça. Cel Pedro Osório, 152 Bairro Centro	PELOTAS	RS	51 99518 9688	TAIRAN GUSTAVO BITENCOURT GUBERT	taigugu@br.ibm.com
PORTO ALEGRE	PORTO ALEGRE	Rua Sergio Jungblut Dieterich 604 - SARANDI	PORTO ALEGRE	RS	51 99518 9688	TAIRAN GUSTAVO BITENCOURT GUBERT	taigugu@br.ibm.com
RECIFE	JOAO PESSOA	R. Duque de Caxias, 401 1º andar Centro	JOAO PESSOA	PB	81 98299 4205	JULLIUS ANDERSON REICHERT DO AMARAL	reichepx@br.ibm.com
RECIFE	MACEIO	Rua Professor José da Silveira Camerino, 880 Salas 121 e 122 - Pinheiro, Maceió/AL - CEP 57057-250	MACEIO	AL	81 98299 4205	JULLIUS ANDERSON REICHERT DO AMARAL	reichepx@br.ibm.com
RECIFE	PAULO AFONSO	Av. Getúlio Vargas, 40 1º andar Centro	PAULO AFONSO	BA	81 98299 4205	JULLIUS ANDERSON REICHERT DO AMARAL	reichepx@br.ibm.com
RECIFE	RECIFE	AV. Sul Governador Cid Sampaio 2993, Galpões C1 e C2 - Imbiribeira, Recife/PE - CEP 51160-000	RECIFE	PE	81 98299 4205	JULLIUS ANDERSON REICHERT DO AMARAL	reichepx@br.ibm.com
RIBEIRAO PRETO	ARARAQUARA	Rua São Bento nº 975 - 1º andar	ARARAQUARA	SP	17 99622 7064	ALBANY CLEBER GODOI	albanypx@br.ibm.com
RIBEIRAO PRETO	CATANDUVA	Praça da República, 52	CATANDUVA	SP	17 99622 7064	ALBANY CLEBER GODOI	albanypx@br.ibm.com
RIBEIRAO PRETO	PARACATU	Av. Deputado Quintino Vargas, 431 Centro	PARACATU	MG	17 99622 7064	ALBANY CLEBER GODOI	albanypx@br.ibm.com
RIBEIRAO PRETO	RIBEIRAO PRETO	Rua Octavio Machado Filh0, No 395 Lote BP Quadra 37, Parque Cidade Industrial Lagoinha. Ribeirão Preto - SP	RIBEIRAO PRETO	SP	17 99622 7064	ALBANY CLEBER GODOI	albanypx@br.ibm.com
RIBEIRAO PRETO	SAO JOSE DO RIO PRETO	R João Clemente, 550 - Conj. Hab. São Deocleciano, São José do Rio Preto/SP - CEP 15057-440	SAO JOSE DO RIO PRETO	SP	17 99622 7064	ALBANY CLEBER GODOI	albanypx@br.ibm.com
RIBEIRAO PRETO	UBERLANDIA	Avenida Palmeira Imperial, 517 – Bosque Buritis – Cep 38406-582 Uberlândia – MG	UBERLANDIA	MG	17 99622 7064	ALBANY CLEBER GODOI	albanypx@br.ibm.com
RIO DE JANEIRO	RIO DE JANEIRO	RUA Teixeira Ribeiro, 130 RAMOS - RIO DE JANEIRO RJ 21.040-242	RIO DE JANEIRO	RJ	21 98921 7368	MARCIO HENRIQUES DE MELLO	mamello@br.ibm.com
SALVADOR	EUNAPOLIS	Av Porto Seguro, 510 1º Andar - Centro	EUNAPOLIS	BA	71 99928 3402	WILSON DE SOUZA ARAUJO	wilsapx@br.ibm.com
SALVADOR	SALVADOR	Travessa da Liberdade, 81 Galpão 9 e 10 - Pirajá, Salvador/BA - CEP 41295-195	SALVADOR	BA	71 99928 3402	WILSON DE SOUZA ARAUJO	wilsapx@br.ibm.com
SALVADOR	VITORIA DA CONQUISTA	R Maximiliano Fernandes, 50 Centro	VITORIA DA CONQUISTA	BA	71 99928 3402	WILSON DE SOUZA ARAUJO	wilsapx@br.ibm.com
SAO JOSE DOS CAMPOS	CAMPOS DOS GOYTACAZES	Avenida Boulevard Francisco de Paula Carneiro, 28 - Centro	CAMPOS DOS GOYTACAZES	RJ	11 94444 8449	ALEXANDRE NOVAK LORENA	alenovak@br.ibm.com
SAO JOSE DOS CAMPOS	SAO JOSE DOS CAMPOS	Av. Benedito Friggi, 3330 Fundos - Bairro Vista Verde – SJC, São Jose dos Campos - SP	SAO JOSE DOS CAMPOS	SP	11 94444 8449	ALEXANDRE NOVAK LORENA	alenovak@br.ibm.com
SAO JOSE DOS CAMPOS	VOLTA REDONDA	Avenida Amaral Peixoto, 424 - Centro	VOLTA REDONDA	BA	11 94444 8449	ALEXANDRE NOVAK LORENA	alenovak@br.ibm.com
SOROCABA	SANTOS	Rua Batista Pereira, 137 - Macuco, Santos/SP - CEP 11015-100	SANTOS	SP	19 99726 1784	EDUARDO PONSONI	eponsopx@br.ibm.com
SOROCABA	SOROCABA	Rua São Bento, 233 2 andar, Sorocaba- SP	SOROCABA	SP	19 99726 1784	EDUARDO PONSONI	eponsopx@br.ibm.com
VITORIA	GOVERNADOR VALADARES	Av. Minas Gerais, 395 - Térreo - Centro	GOVERNADOR VALADARES	MG	11 97254 0262	ANDESON COSTA	ancostpx@br.ibm.com
VITORIA	IPATINGA	Av. 28 de Abril, 176 - Terreo - Centro	IPATINGA	MG	11 97254 0262	ANDESON COSTA	ancostpx@br.ibm.com
VITORIA	JUIZ DE FORA	Rua São Mateus, 506 - São Mateus	JUIZ DE FORA	MG	11 97254 0262	ANDESON COSTA	ancostpx@br.ibm.com
VITORIA	MONTES CLAROS	Rua João Pinheiro, 659, Sala Andar Corrido, Centro,Montes Claros, MG	MONTES CLAROS	MG	11 97254 0262	ANDESON COSTA	ancostpx@br.ibm.com
VITORIA	MURIAE	Rua Cel Marciano Rodrigues, 175 / Sobre loja - Centro	MURIAE	MG	11 97254 0262	ANDESON COSTA	ancostpx@br.ibm.com
VITORIA	VITORIA	Rua Luciano das Neves, 602, sala 101 - Centro, Vila Velha/ES - CEP 29100-200	VITORIA	ES	11 97254 0262	ANDESON COSTA	ancostpx@br.ibm.com

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Tendo também como pessoa para contato o Sr. Rodrigo Franco, Gerente de Vendas, através do telefone (11) 95049-7190 ou pelo email francor@br.ibm.com.

São Paulo, 10 de fevereiro de 2025

e-Signed by Rodrigo Franco
on 2025-02-10

Rodrigo Franco
Senior Sales Specialist
Technology Lifecycle Services
IBM / Proxxi

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Code Construct (https://codeconstruct.com.au)

CoreWeave (https://www.coreweave.com/)

Cornelis Networks, Inc. (http://www.cornelisnetworks.com)

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Samsung (https://semiconductor.samsung.com/)

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ASHRAE (https://www.ashrae.org/home)

Broadband Forum (BBF) (https://www.broadband-forum.org/)

China Communications Standards Association (http://www.ccsa.org/cn/english)

China Electronics Standardization Institute (CESI) (http://www.en.cesi.cn/)

CXL Consortium (https://www.computeexpresslink.org/)

ETSI-NFV (http://portal.etsi.org/portal/server.pt/community/NFV/367)

HDBaseT (https://hdbaset.org/)

MIPI Alliance (https://www.mipi.org/)

NVM Express (http://nvmexpress.org/)

OMG-Cloud Working Group (http://www.cloud-council.org)

Open Compute Project (OCP) (http://www.opencompute.org/)

Open Data Center Committee (ODCC) (http://www.opendatacenter.cn/)

Open Fabrics Alliance (OFA) (https://www.openfabrics.org/)

Open Grid Forum (http://ogf.org)

OpenInfra Foundation (https://openinfra.dev/)

PCI Industrial Computer Manufacturer Group (PICMG) (https://www.picmg.org/)

PCI-SIG (https://pcisig.com/)

SNIA (http://www.snia.org/)

TeleManagement Forum (http://www.tmforum.org/)

The Green Grid (http://www.thegreengrid.org)

The Open Group (http://www.opengroup.org)

Unified Extensible Firmware Interface (http://www.uefi.org/)

Universal Chiplet Interconnect Express (UCIe) (https://www.uciexpress.org/)

Academic Alliance

"Gheorghe Asachi" Technical University of Iaşi (http://www.tuiasi.ro/en/)

Arizona State University (https://www.asu.edu/)

Athens University of Economics and Business (https://www.aueb.gr/en)

Dongguk University (http://www.dongguk.edu)

Federal Institute of Technology of Espirito Santo (https://www.ufes.br/)

George Mason University (http://c4i.gmu.edu)

Hungarian Academy Of Sciences Institute For Computer Science And Control (https://sztaki.hu/en)

Indian Institute of Technology Roorkee (https://www.iitr.ac.in/)

Institute of Information Security (IISEC) (https://www2.iisec.ac.jp/english/)

Kasetsart University (https://www.ku.ac.th/th)

Logitrain (https://logitrain.edu.au)

Marshall University (http://www.marshall.edu)

National Technical University of Athens (http://www.ntua.gr/)

Paul Sabatier University (https://www.univ-tlse3.fr/)

Research Center on Scientific and Technical Information (CERIST) (http://www.cerist.dz/index.php/en/)

Ruprecht-Karls-University Heidelberg (https://www.uni-heidelberg.de/en)

Shanghai Jiao Tong University (http://en.sjtu.edu.cn/)

Swami Rama Himalayan University (http://www.srhu.edu.in/)

Technische Universitaet Dresden (https://tu-dresden.de/)

Texas Tech University (http://www.ttu.edu/)

Universidade de Sao Paulo (https://www5.usp.br)

University of California (https://www.universityofcalifornia.edu/)

University of New Hampshire (http://unh.edu)

University of Pisa - Italy (https://www.unipi.it/)

University of Seville (https://www.us.es/)

University of Sydney (https://www.sydney.edu.au/)

University of Western Ontario (https://www.uwo.ca/)

University of Wuerzburg (https://www.uni-wuerzburg.de/startseite/)

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Realtek Semiconductor (http://www.realtek.com.tw)

Western Digital Technologies, Inc. (https://www.westerndigital.com/)

Redfish Forum Promoter

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Ericsson AB (http://www.ericsson.com)

Hewlett Packard Enterprise (http://www.hpe.com)

HP, Inc (http://www.hp.com/)

IBM (http://www-03.ibm.com/systems/power/)

Inspur Electronic Information Industry Co.,Ltd. (https://zh.ieisystem.com/)

Intel Corporation (http://www.intel.com)

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Microsoft Corporation (http://www.microsoft.com)

Supermicro (http://www.supermicro.com)

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VMware Inc. (http://www.vmware.com)

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Alibaba (China) Co., Ltd

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Fujitsu (http://www.fujitsu.com/)

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A

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- Advanced Micro-Fabrication Equipment Inc. China
- Advania AB - R
- Airbus SE
- Allegro MicroSystems
- Alphabet Inc. - R
- Altria Client Services LLC.
- Amazon.com, Inc. - R
- Amkor Technology, Inc. - R
- Amphenol Corporation
- Analog Devices, Inc. - R
- Appl[illegible] - F
- Applied Materials - R
- Arista Networks - R
- ARRIS Group - F
- Arrow Electronics
- ASE Technology Holding Co., Ltd.
- ASM International - F
- ASML Holding - R
- ASUSTeK Computer Inc. - F
- Atea ASA - R
- Avaya

B

- Belden
- Best Buy - F
- Beyondsoft International
- Block, Inc.
- BMW Group - R
- Bosch Sensortec - R
- Bose Corporation - R
- Broadcom, Inc.
- Brother Industries Ltd.
- BT plc
- Bullitt Group Ltd

C

- Cadence Design Systems
- Canon Inc. - R
- CECONOMY AG
- Celestica - R
- CGI IT UK Ltd. - R
- Changhong Meiling Co., Ltd. - R
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- Ciena - R
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- Cisco - F
- Citrix
- Comcast Corporation
- Compal Electronics - R
- Continental AG
- Currys PLC

D

- Dell Technologies - F
- Dexcom Malaysia - R
- Dupont Electronics & Industrial
- Dustin AB
- Dysons Operations

E

- Easee - R
- Eaton Corporation
- Edwards Ltd. - R
- EIZO Corporation
- Element Solutions Inc
- Element TV Company, LP
- Ericsson - R

F

- Fabrinet - R
- Fairphone B.V.
- F5 Networks
- First Solar Inc. - R
- Flex - R
- FLSmidth A/S
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- Foxconn - R
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- Fujitsu Limited
- Funai Electric Co., Ltd. - R

G

- General Electric Company
- Global Foundries - R

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H

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- Hasbro, Inc. - F
- Hewlett Packard Enterprise - F
- Hisense USA Corporation - R
- HP Inc. - F
- HTC Corporation
- Huawei Technologies Co., Ltd. - R
- Hypertechnology Ciara Inc.
- Hyve Solutions - R

I

- IBM Corporation - R
- Ichor Systems
- Impinj
- Infineon Technologies AG - R
- Insulet Corporation
- Intel Corporation - F
- Inventec Corporation - R
- iRobot Corporation
- ISU Petasys Co., Ltd. - R

J

- Jabil - F
- JB HI-FI Limited
- JK Imaging Ltd. - R
- JT International SA
- Juniper Networks - R

K

- Keurig Dr Pepper - F
- Key Foundry Co., Ltd.
- Keysight Technologies, Inc.
- Kingston Technology
- KINPO GROUP - R
- Kioxia Holdings Corporation - R
- KLA Corporation - R
- Konica Minolta - R
- Kyndryl
- KYOCERA AVX Components Corporation
- KYOCERA Corporation
- KYOCERA Document Solutions Inc. - R

L

- Lam Research Corporation
- Lenovo - R
- Lexmark - R
- LG Chem Ltd.
- LG Display
- LG Electronics - R
- LG Energy Solution
- Logitech International S.A. - R
- Longwell Company - R
- Lumentum Holdings Inc. - F

M

- Marvell - R
- Meta
- Microchip Technology Incorporated - F
- Micron Technology, Inc. - R
- Microsoft - R
- Mitsubishi Electric Corporation
- ModusLink
- Molex - R
- Monolithic Power Systems, Inc.
- Motorola Solutions, Inc. - R
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N

- Navico
- NetApp - R
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- New H3C Group
- Nexperia
- Nielsen
- Nokia Solutions and Networks Oy
- Nordic Semiconductor ASA
- Nvidia Corporation - F
- NXP Semiconductors - F

O

- onsemi - F
- Onto Innovation Inc.
- Oracle America, Inc.

P

- Palo Alto Networks
- Panasonic Holdings Corporation
- Pegatron - R
- Philips - R
- Philip Morris International - R
- Plexus - R
- Polestar Performance AB
- Poly
- Positivo Tecnologia S.A.
- Powertech Technology Inc. - F
- Pure Storage, Inc.

Q

- Qorvo, Inc. - R
- Qualcomm - F
- Quanta Computer Inc. - R
- Quest Global

R

- Rambus, Inc. - R
- Renesas Electronics Corporation - R
- Ricoh Company Ltd.
- Roku, Inc.

S

- Sagemcom - R
- Samsung Display
- Samsung Electro-Mechanics
- Samsung Electronics - R
- Sanmina - R
- Schneider Electric
- Seagate Technology - F
- Seiko Epson Corporation - R
- Semtech Corporation
- Senju Metal Industry Co., Ltd. - R
- Sharp Corporation
- Signify - R
- Silicon Laboratories Inc.
- Silicon Motion Technology Corp.
- Siltronic AG
- Simatelex Manufactory Co. Ltd.
- Simplo Technology Co., Ltd.
- SK hynix Inc. - R
- Skyworks Solutions, Inc. - F
- SMART Global Holdings - R
- Snap Inc. - R
- Solidigm - R
- Sonos, Inc.
- Sony Group Corporation - F
- STMicroelectronics - F
- Sumitomo Electric Industries, Ltd.
- Synopsys, Inc.

T

- Taiwan Chinsan Electronics Industrial Co., Ltd. - R
- Taiwan Semiconductor Manufacturing Company, Ltd. - F
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- TDK Group
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U

- United Group B.V. - R
- Universal Electronics Inc. - R

V

- Vantiva SA - F
- Veritas - R
- Versuni
- VIAVI Solutions Inc.
- Vishay Intertechnology, Inc. - R
- Vitesco Technologies GmbH
- VIZIO Inc. - R
- Volvo Car Group
- V.S. Industry Berhad

W

- Walmart
- Western Digital - R
- Wistron Corp. - R

X

- Xerox - R
- XP Power - R

Z

- Zaptec - R
- Zebra Technologies Corporation - R
- Zhen Ding Technology Holding Ltd.
- ZT Systems

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AGS Sundyne Technologies Pvt. Ltd.

Airdesk Ltd.

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Balance Software Corp.

Basemark Oy

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BCM Advanced Research

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Check Point Software

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CHUNGHSIN INDUSTRY GROUP

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Circuitco

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Computer Task Group

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Cray, Inc.

CrossInfo Architects

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Diablo Technologies, Inc.

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Genesi USA Inc.

Gigabyte United Inc.

GIGAPC

GIT Japan Inc.

Glacier Peak Technology, LLC

Grain Media, Inc.

Greencroft Code

Guidance Software, Inc.

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HTC Corporation

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Fax: +1.503.644.6708 (tel:+1.503.644.6708)
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CERTIFICATE

Certificate Number: 111969.00
With Two Page Addendum

The Quality Management System and implementation of:

Lenovo Group, LTD

With Central Functions At:
8001 Development Drive
Morrisville, NC 27560
United States

meets the requirements of the standard:

ISO 9001:2015

Scope:

Design, development, manufacturing, distribution, fulfillment, and repair of computer products and devices, data center products, mobile devices, smart devices, and accessories.

Certification Structure: Multi-site

Certificate Expires:	June 30, 2025
Certificate Issued:	July 01, 2022
Certified Since:	July 01, 2016



Dr. Cem O. Onus
Managing Director
DEKRA Certification, Inc.
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North Wales, PA 19454 USA
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http://www.dekra.us/en/audit

ANAB
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ISO/IEC 17021-1
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IAF

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CERTIFICATE ADDENDUM

Certificate Number: 111969.00
ADDENDUM Page One of Two

The Quality Management System and implementation of:

Lenovo Group, LTD

meets the requirements of the standard:

ISO 9001:2015

Site Address	Scope Per Site:
Central Function: 8001 Development Drive; Morrisville, NC 27560 USA	Responsibility of the company's overall QMS through the management of documentation/changes, management review, corrective actions, internal audit, planning/evaluation and compliance to applicable requirements.
8001 Development Drive; Morrisville, NC 27560 USA	Design, development, fulfillment, services, marketing, and sales of computer products and devices, data center products, mobile devices, smart devices, and accessories.
19/1A, & 2A Edayar, Cuddalore Main Road, Edayar Palayam Village – Pondicherry, India	Manufacturing of computer products and devices.
Plant #1: Boulevard Escobedo No 316, Apodaca Technology Park, Apodaca, Nuevo Leon C.P. 66600 Plant #2: Boulevard Escobedo No 318, Apodaca Technology Park, Apodaca, Nuevo Leon C.P. 66627	Manufacturing of computer products and devices, and data center products.
Estrada Municipal José Costa de Mesquita, 200 – Chácara Alvorada – Indaiatuba/SP, Brazil	Manufacturing of computer products and devices, and data center products.

Certificate Expires: June 30, 2025
Certificate Issued: July 01, 2022
Certified Since: July 01, 2016

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Managing Director
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North Wales, PA 19454 USA
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Certificate Number: 111969.00
ADDENDUM Page Two of Two

The Quality Management System and implementation of:

Lenovo Group, LTD

meets the requirements of the standard:

ISO 9001:2015

Site Address	Scope Per Site:
6540 Franz Warner Parkway; Whitsett, NC 27377 USA	Manufacturing, distribution, fulfillment and services of computer products and devices, data center products, mobile devices, smart devices, and accessories.
Digital Park, Einsteinova 851 01; Bratislava, Slovakia	Fulfillment, services, marketing, and sales of computer products and devices, data center products, mobile devices, smart devices, and accessories.
Minatomiral Center Building; 2F 3-6-1; Minatomiral, Nishi-Ku; Yokohama, Japan	Design and development of computer products and devices.
Motorola Mobility LLC: 222 W Merchandise Mart Plaza, Chicago, IL 60654 USA	Design, development, fulfillment, services, marketing, and sales of computer products and devices, data center products, mobile devices, smart devices, and accessories.
K-Sped krt. 28, Ullo, 2225 Hungary	Manufacturing of computer products and devices, and data center products.
C/Puerto de Somport 9 Planta 1 (Ed. Oxxeo) - 28050 Madrid Spain	Fulfillment, services, marketing, and sales of computer products and devices, data center products, mobile devices, smart devices, and accessories.
Sants FirstWorkplace Carrer de Tarragona 161, planta 13. 08014 Barcelona, Spain	Fulfillment, services, marketing, and sales of computer products and devices, data center products, mobile devices, smart devices, and accessories.

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Certificate Issued: July 01, 2022
Certified Since: July 01, 2016

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The Environmental Management System and implementation of:

Lenovo Group, LTD

With Central Functions At:
8001 Development Drive
Morrisville, NC 27560
United States

meets the requirements of the standard:

ISO 14001:2015

Scope:

Design, development, manufacturing, distribution, fulfillment, and repair of computer products and devices, data center products, mobile devices, smart devices, and accessories.

Certification Structure: Multi-site

Certificate Expires:	July 16, 2025
Certificate Issued:	July 17, 2022
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Certificate Number: 141968.00
ADDENDUM Page One of One

The Environmental Management System and implementation of:

Lenovo Group, LTD

meets the requirements of the standard:

ISO 14001:2015

Site Address	Scope Per Site:
Central Function: 8001 Development Drive; Morrisville, NC 27560 USA	Responsibility of the company's overall EMS through the management of documentation/changes, management review, corrective actions, internal audit, planning/evaluation and compliance to applicable requirements.
8001 Development Drive; Morrisville, NC 27560 USA	Design and development of data center products
19/1A, & 2A Edayar, Cuddalore Main Road, Edayar Palayam Village – Pondicherry, India	Manufacturing of computer products and devices.
Plant #1: Boulevard Escobedo No 316, Apodaca Technology Park, Apodaca, Nuevo Leon C.P. 66600 Plant #2: Boulevard Escobedo No 318, Apodaca Technology Park, Apodaca, Nuevo Leon C.P. 66627	Manufacturing of computer products and devices and data center products.
Estrada Municipal José Costa de Mesquita, 200 – Chácara Alvorada – Indaiatuba/SP, Brazil	Manufacturing of computer products and devices and data center products.
6540 Franz Warner Parkway; Whitsett, NC 27377 USA	Manufacturing, distribution, fulfillment, and repair of computer products and devices, data center products, mobile devices, smart devices, and accessories.
Am Zehnthof 77, 45307 Essen, Germany	Design and development of computer products and devices.
Minatomiral Center Building; 2F 3-6-1; Minatomiral, Nishi-Ku; Yokohama, Japan	Design and development of computer products and devices.
Motorola Mobility LLC: 222 W Merchandise Mart Plaza, Chicago, IL 60654 USA	Design and development of computer products and devices, data center products, mobile devices, smart devices, and accessories.
K-Sped krt. 28, Ullo, 2225 Hungary	Manufacturing of computer products and devices and data center products.

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Certificate Issued: July 17, 2022
Certified Since: July 17, 2013

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Managing Director

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Dados básicos

CNPJ: 07.275.920/0001-61
Razão social: LENOVO TECNOLOGIA (BRASIL) LTDA
Nome fantasia: LENOVO TECNOLOGIA (BRASIL) LTDA
Data de abertura: 03/03/2005

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Logradouro: ESTM JOSE COSTA DE MESQUITA
N.º: 200
Bairro: CHACARA ALVORADA
CEP: 13337-200
Complemento: MOD 5 A 10
Municipio: INDAIATUBA
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Categoria	Detalhe
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Conforme dados disponíveis na presente data, a pessoa jurídica acima possui Certificado de Regularidade em conformidade com as obrigações cadastrais e de prestação de informações ambientais sobre as atividades desenvolvidas sob controle e fiscalização do Ibama, por meio do CTF/APP.

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Cadastro Técnico Federal de Atividades e Instrumentos de Defesa Ambiental - CTF/AIDA

Código	Atividade
0005-40	Gerenciamento de resíduos perigosos - armazenamento de resíduos perigosos - Lei nº 12.305/2010
0005-10	Gerenciamento de resíduos perigosos - geração de resíduos perigosos - Lei nº 12.305/2010
0004-00	Gerenciamento de resíduos sólidos não perigosos - Lei nº 12.305/2010

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A inscrição no CTF/AIDA constitui declaração, pela pessoa jurídica, de observância dos padrões técnicos normativos estabelecidos pela Associação Brasileira de Normas Técnicas – ABNT, pelo Instituto Nacional de Metrologia, Qualidade e Tecnologia – INMETRO e pelo Conselho Nacional de Meio Ambiente - CONAMA.

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greeneletron

SÃO PAULO, 03 DE AGOSTO DE 2018.

DECLARAÇÃO

Declaramos para os devidos fins, que a empresa **Lenovo Tecnologia (Brasil) Ltda**, sediada à Estrada Municipal José Costa de Mesquita, 200 Módulo 5 a 10 - Chácara Alvorada - Indaiatuba SP CEP 13337-200, inscrita no CNPJ sob o nr. 07.275.920/0001-61, é associada a **GREEN Eletron** (Gestora para Resíduos de Equipamentos Eletroeletrônicos Nacional), sob o registro nr. **7005** desde 27/Junho/2016, e que até o presente momento cumpriu rigorosamente suas Obrigações Estatutárias, bem como, o recolhimento das Contribuições Associativas.

Por ser verdade, firmamos a presente Declaração.

Ademir Brescansin

ASSOCIADOS

Conheça as empresas que já fazem parte da Green Eletron e garantem o descarte sustentável de seus equipamentos.

Programa Descarte Green Eletroeletrônicos

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ASUS | BOSCH | brother | CASIO | COMPAL
COMPAQ | dazz | DELL | DL | EATON
DURACELL | EPSON | FAME | flex | FOXCONN
FORON | FUJIFILM | HAYAMAX | HAYONIK | hp
HDL | intelbras | JABIL | jacto | JVL
KÄRCHER | KLATTER | legrand | Lenovo | MG
maxprint | Microsoft | motorola | MULTILASER | POSITIVO TECNOLOGIA
QUANTUM | SAMSUNG | SODIMAC | Schneider | STECK
tilibra | VAIO | YAMAHA

Distribuidores

Bluevix | cogra | dicomp | Data | INGRAM
INPOWER | NAGEM | ODERÇO | SND | VEANS
WDC

Programa Green Recicla Pilha

green reciclapilha

Fabricantes e Importadores



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Página Inicial do Produto

Usar o Lenovo Vantage facilita a sua vida

Descrição

Seu PC Lenovo possui características únicas que você não encontrará em nenhum outro computador, e o Lenovo Vantage torna mais fácil para que você obtenha o máximo do seu dispositivo. Tudo dentro do Lenovo Vantage é feito sob medida para você: você encontrará informações úteis e recomendações com base no seu dispositivo e a maneira como você o utiliza. Com uma interface fácil de usar, você pode:

- Personalizar suas configurações
- Melhorar a segurança do WiFi,
- Atualizar drivers
- Executar o diagnóstico do dispositivo
- Identificar o número de série do sistema e o número de produto
- Solicitação de suporte e muito mais.

Conheça mais sobre o Lenovo Vantage assistindo vídeos tutoriais no Lenovo Suporte no YouTube (https://www.youtube.com/channel/UCAlvKsUHOASIzduN8Tuv3jA/videos)

- (video) Obtenha drivers recentes através do Lenovo Vantage (https://www.youtube.com/watch?v=JV69KDHrOsw&t=2s)
- Dicas Lenovo: ***www.lenovo.com/tips*** (https://www.lenovo.com/tips)

Nota:

- Lenovo Vantage foi criado especificamente para PCs com o Windows 10. Link para download: **https://www.microsoft.com/en-us/store/p/lenovo-companion/9wzdncrfj4mv** (https://www.microsoft.com/en-us/store/p/lenovo-companion/9wzdncrfj4mv)
- O Lenovo Vantage substitui o Lenovo Companion, Lenovo Settings e o Lenovo Account Portal.

Marcas aplicáveis

Desktops, Notebooks, Tablets, Workstations

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Sistema Operacional

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 1109

- Windows 10

Solução

Lenovo Vantage (substituto do Lenovo Companion) é um app que mantém o seu dispositivo funcionando corretamente e o ajuda a fazer ainda mais com o seu dispositivo.



Principais características:

- Ajuste o seu PC Lenovo com configurações personalizadas:
  - Power: Ajuda a gerenciar e prolongar a vida da bateria do notebook
  - Áudio, Visual: Configurações da câmera, controle de brilho, configurações de microfone, configurações Dolby
  - Configurações inteligentes: Ajusta automaticamente o seu áudio e exibição com base em aplicativos que estão sendo usados.
  - Entrada: Touchpad, tecla de função (Fn), teclado luminoso, as configurações do mouse/caneta/toque
- Acesso para o Lenovo Migration Assistant - um aplicativo gratuito que transfere perfeitamente arquivos e configurações de um PC para outro
- Protege o seu PC e atualiza os drivers e softwares de sistemas importantes
- Avaliação da integridade do sistema e execução do diagnóstico no seu dispositivo
- Acesso ao guia do usuário do seu sistema e obtenção de suporte
- Descubra outras coisas divertidas e aplicativos úteis
- Veja os acessórios compatíveis com seu dispositivo
- Explore ofertas exclusivas em serviços e produtos da Lenovo
- Identifique o status da garantia
  - Data de início e data de término
  - Links para as opções de garantia e upgrades
- Obter dicas úteis e manter-se atualizado sobre as últimas notícias de tecnologia, com artigos da Lenovo

Como baixar o Lenovo Vantage

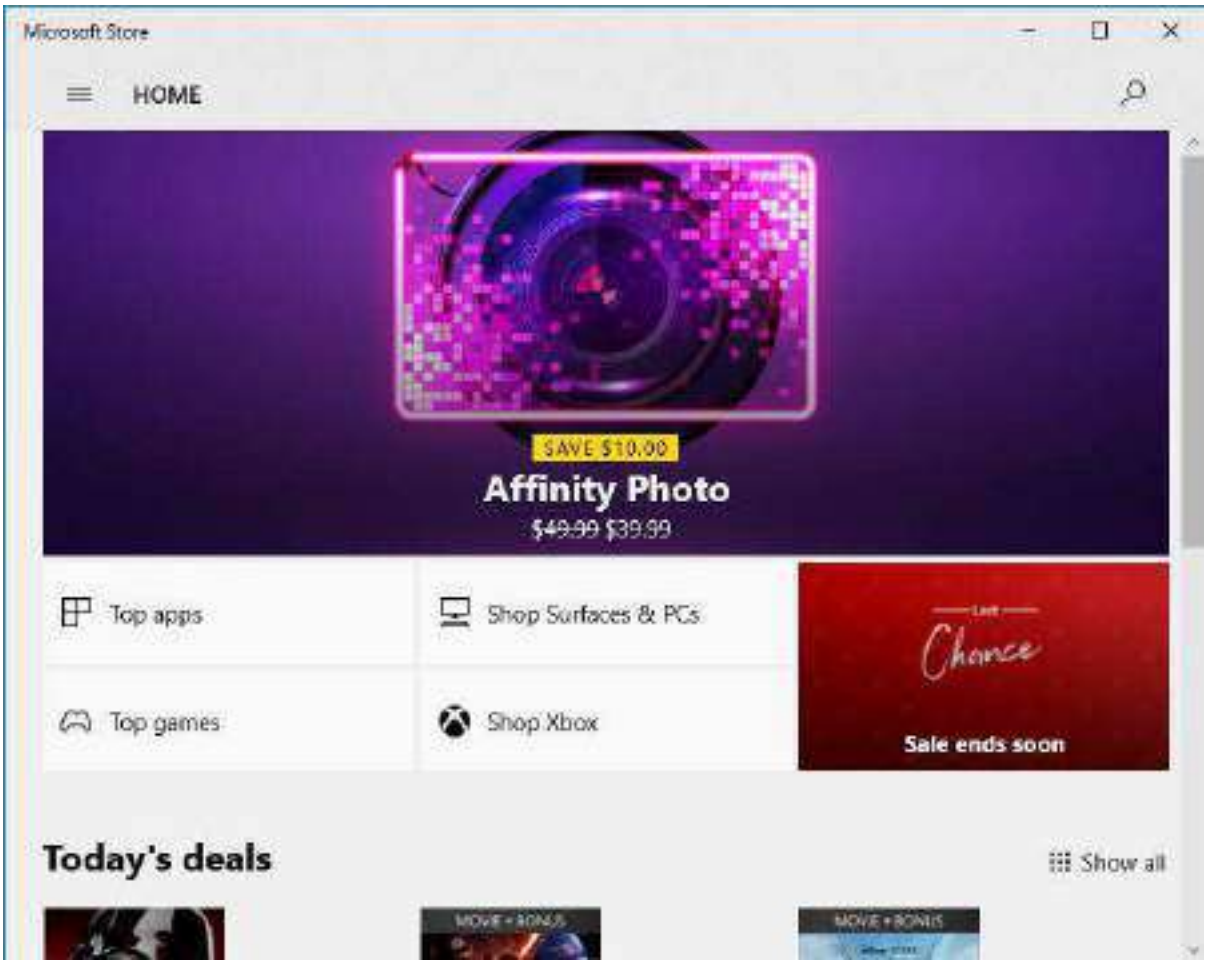
Consulte abaixo os passos para baixar e instalar o Lenovo Vantage.

1. Encontre a Microsoft Store no menu Iniciar

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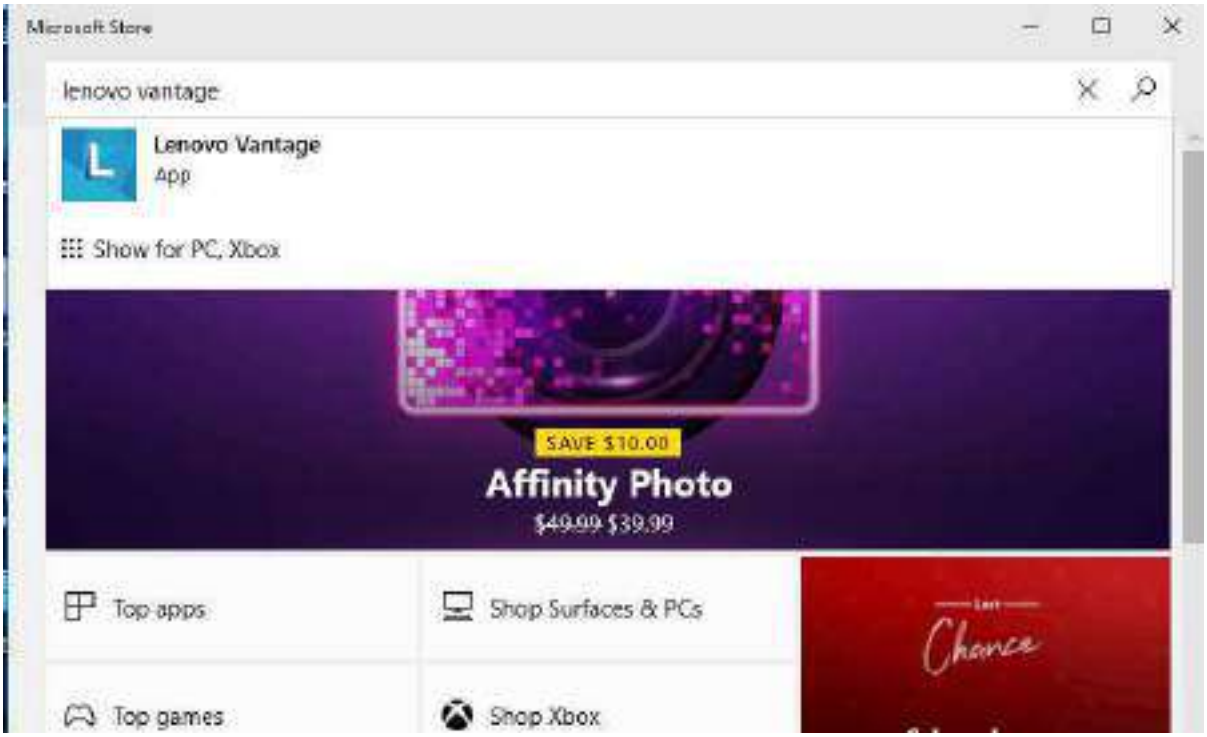




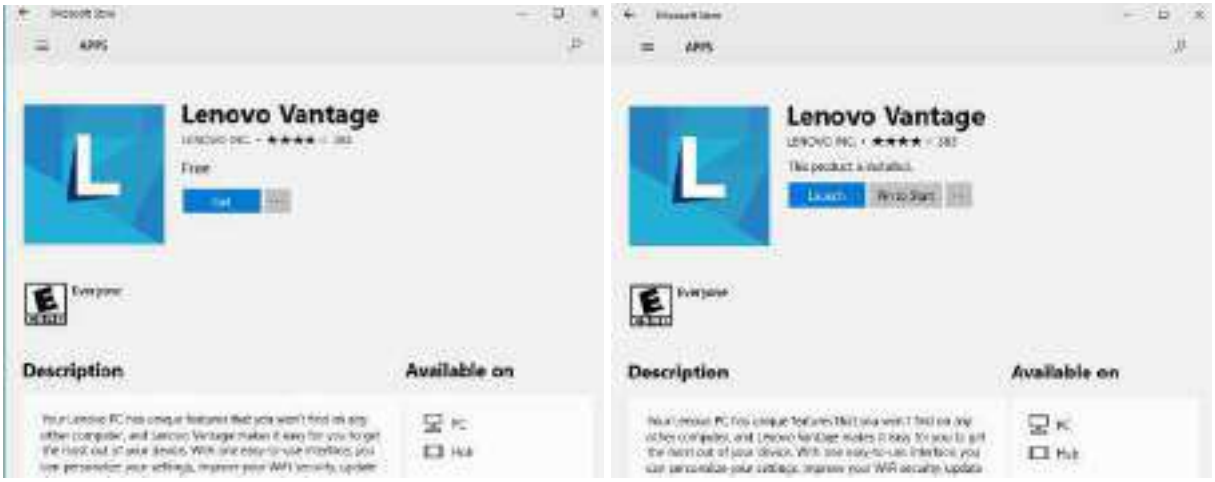
2. Toque "Lenovo Vantage" na barra de pesquisa no Microsoft Store

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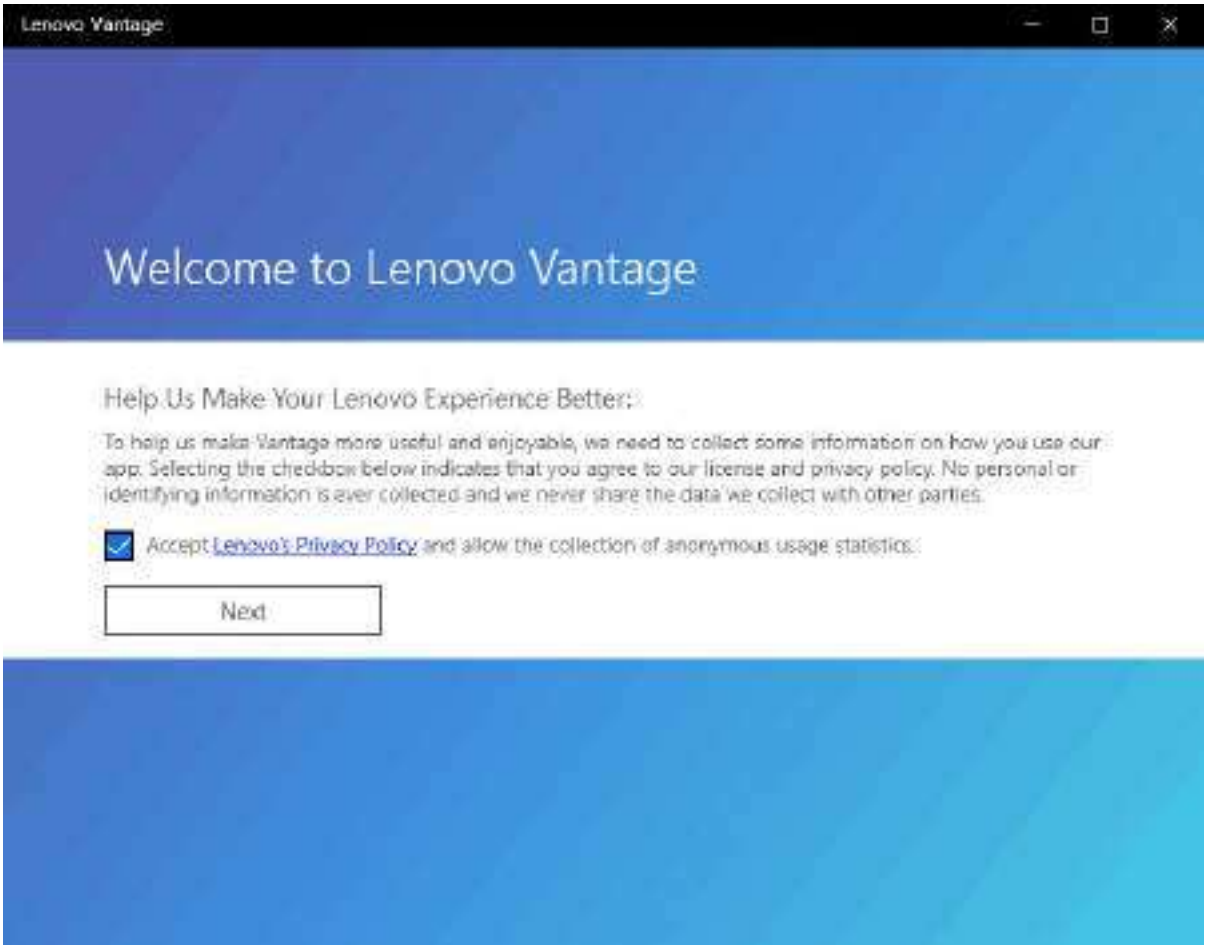
3. Clique no ícone Lenovo Vantage para acessar a página de aplicativos. Então, clique em Obter para lançar e baixar o Lenovo Vantage.



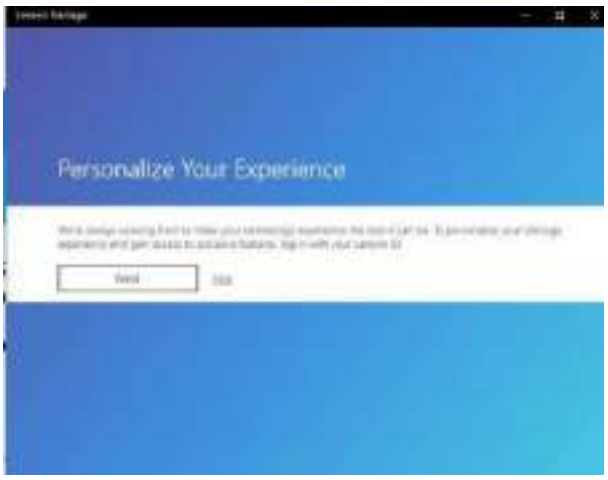
4. Após baixar Lenovo Vantage, execute o arquivo. Em seguida, marque "aceitar a política de privacidade da Lenovo" para ir ao próximo passo.

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5. Se você possui o Lenovo ID, pode entrar com ele. Se você não tiver, você pode pular esta etapa para acessar diretamente o Lenovo Vantage, e registrar mais tarde se quiser.





Como encontrar o Lenovo Vantage

Use um dos procedimentos a seguir para encontrar Lenovo Vantage no seu dispositivo:

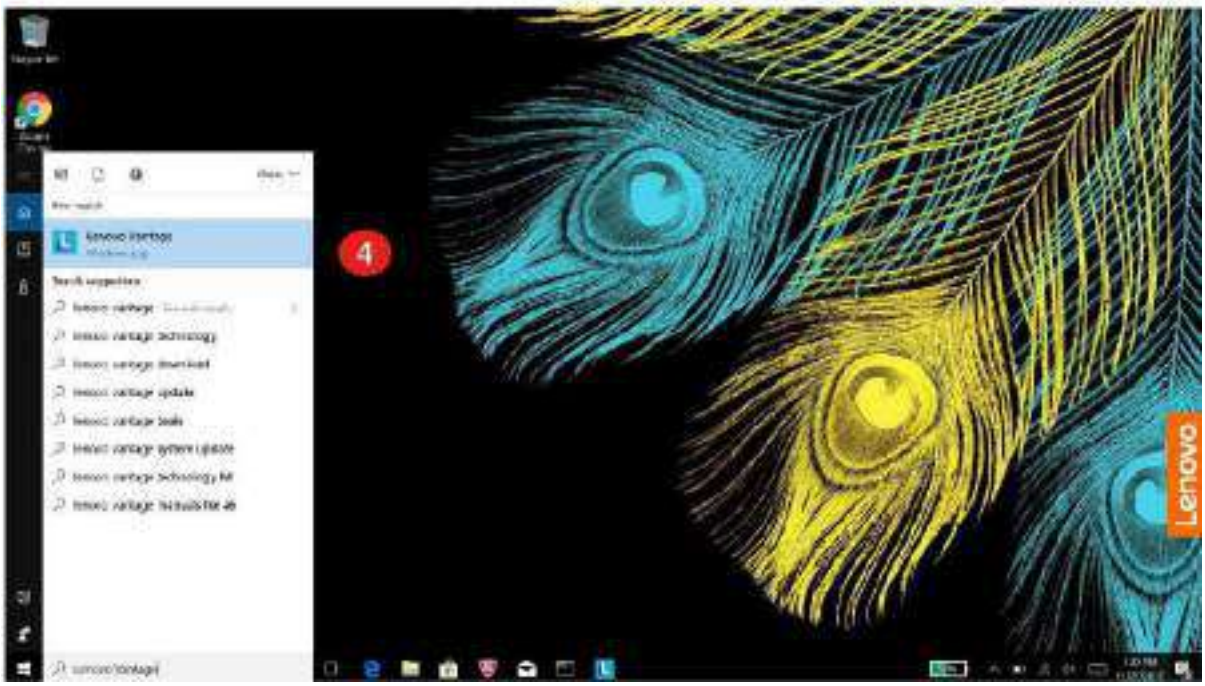
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1. Menu iniciar: Listados na lista de aplicativos instalados.
2. *Tiles (*quadradinhos*)* do Windows
3. Barra de tarefas

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4. Barra de pesquisa do Windows





Caso o Lenovo Vantage não esteja instalado no seu dispositivo, você deve baixá-lo gratuitamente na Microsoft Store em **https://www.microsoft.com/en-us/store/p/lenovo-companion/9wzdncrfj4mv** (https://www.microsoft.com/en-us/store/p/lenovo-companion/9wzdncrfj4mv).

Artigos relacionados

- (videos) Saiba tudo sobre o Lenovo Vantage (https://www.youtube.com/watch?v=JV69KDHrOsw&list=PL02UOv7eDl1U8cN2fg0hvwG37HqIASstQ)aqui (https://support.lenovo.com/br/pt/videos/VID500030)
- Encontrar número de série (https://support.lenovo.com/br/pt/solutions/HT505229)

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- (video) Encontre o número de série usando o Lenovo Vantage (https://www.youtube.com/watch?v=XUVeNYXS0F4)
- Para acessar os canais de suporte da Lenovo Brasil, como Chat, WhatsApp, Facebook, Contatos, clique aqui (https://www.lenovo.com/br/pt/contato)
- Para vídeos tutoriais sobre como resolver problemas diversos, acesse aqui (https://www.youtube.com/channel/UCAlvKsUHOASIzduN8Tuv3jA/videos)
- **Conheça o canal Lenovo Suporte no YouTube, clique aqui** (https://www.youtube.com/channel/UCAlvKsUHOASIzduN8Tuv3jA/videos)
- Lenovo Vantage exibe Informação da versão do BIOS equivocada - ThinkPad, ThinkCentre, IdeaPad, IdeaCentre (https://support.lenovo.com/solutions/HT506091)
- Tópicos populares para PC's (/solutions/HT503909)
- Atualização de drivers (https://support.lenovo.com/br/pt/solutions/ht504759)
- Lenovo ID: Acesse tudo da Lenovo, através de todos os nossos sites com um nome de usuário e senha (/solutions/HT103471)
- Suporte técnico para PCs (https://pcsupport.lenovo.com/br/pt/)
- Verifique sua garantia (https://support.lenovo.com/br/pt/warrantylookup)
- Saiba mais sobre a garantia de PCs Lenovo (https://pcsupport.lenovo.com/br/pt/warrantylookup)
- Encontre os principais tópicos pro seu computador (https://support.lenovo.com/br/pt/solutions/HT503909)

Esta informação foi útil?

Sua opinião ajuda a melhorar este site.

Sim Não

ID do documento: HT505081
Última atualização: 5/17/2018

Fique em contato

(//www.facebook.com/lenovo)

(//twitter.com/lenovo)

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(//www.youtube.com/lenovovision)

(//pinterest.com/lenovous/)

Nosso compromisso com o meio ambiente (//www.lenovo.com/us/en/about#social-responsibility)

A Lenovo tem o compromisso de liderança ambiental em operações para design de produtos e soluções de reciclagem.

Veja o nosso Relatório Global de Sustentabilidade. (https://www3.lenovo.com/us/en/social_responsibility/sustainability_reports/)

Sobre a Lenovo

Nossa Empresa (https://www.lenovo.com/br/pt/lenovo/?linkTrack=footer:About%20Lenovo_Our%20Company)

Notícias (https://www3.lenovo.com/br/pt/noticias?linkTrack=footer:About Lenovo_News)

INVESTIDORES (http://static.lenovo.com/ww/lenovo/investor_relations.html?linkTrack=footer:About%20Lenovo_Investor%20Relations)

Responsabilidade Social (https://www3.lenovo.com/us/en/social_responsibility/product/?linkTrack=footer:About%20Lenovo_Social%20Responsibility)

Product Compliance (https://www.lenovo.com/us/en/lenovo/compliance?linkTrack=footer:About%20Lenovo_Product%20Compliance)

Informações Legais (https://www.lenovo.com/br/pt/legal/?linkTrack=footer:About Lenovo_Legal Information)

OPORTUNIDADES (http://lenovocareers.com/por/index.html)

Loja

Notebooks e Ultrabooks (http://shop.lenovo.com/br/pt/laptops/)

Tablets (http://shop.lenovo.com/br/pt/tablets/)

Workstations (http://shop.lenovo.com/br/pt/desktops/>Desktops e All-in-Ones <a href=)

Servidores (https://www.lenovo.com/us/en/data-center/servers/c/servers?menu-id=explore_servers)

Acessórios e Atualizações (http://shop.lenovo.com/br/pt/acessorios/?IPromoID=LEN130115)

Ofertas (http://shop.lenovo.com/br/pt/ofertas/)

services and repairs (http://shop.lenovo.com/br/pt/servicos_e_garantia/?IPromoID=LEN930148)

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Suporte

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Login de prestador

Downloads (/ng/pt/products/downloads?linkTrack=footer:Support_Downloads)

Documentação (/ng/pt/products/documentation?linkTrack=footer:Support_Manuals)

Como fazer & soluções (/ng/pt/products/solutions?linkTrack=footer:Support_Solutions)

Pesquisa de garantia (/ng/pt/warrantylookup?linkTrack=footer:Support_Warranty Lookup)

Fale conosco (/ng/pt/contactus)

Lista de telefones de Suporte (/ng/pt/supportphonelist)

Suporte para Armazenamento (https://download.lenovo.com/lenovoemc/la/pt)

Recursos

Fale Conosco (http://shop.lenovo.com/br/pt/contato/)

Onde Comprar (http://shop.lenovo.com/br/pt/revendedores/)

Blogs (http://news.lenovo.com/blog/?linkTrack=footer:Resources_Blogs)

Fóruns (http://forums.lenovo.com/)

Acessibilidade do Produto (//www.lenovo.com/social_responsibility/us/en/accessibility_notebooks/)

Informação ambiental (http://www.lenovo.com/social_responsibility/br/pt/)

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Termos de uso (//www.lenovo.com/br/pt/legal/) | Política de privacidade (//www.lenovo.com/br/pt/privacy/) | Mapa do site (/sitemap) | Procurar Compatibilidade (/solutions/browsercompatibility)

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Certificate CN19/31787.06

Lenovo Tecnologia (Brazil) Ltd.

Business Registration Address: ESTRADA MUNICIPAL JOSÉ COSTA DE MESQUITA, 200-BAIRRO CHÁCARA ALVORADA-MODULES 5 TO 10-INDAIATUBA / SP BRAZIL – ZIP CODE: 13.337-200 Brasil
Business Operation Address: ESTRADA MUNICIPAL JOSÉ COSTA DE MESQUITA, 200-BAIRRO CHÁCARA ALVORADA-MODULES 5 TO 10-INDAIATUBA / SP BRAZIL – ZIP CODE: 13.337-200 Brasil

Has been assessed under the management system of the certified organisation defined in the main certificate CN19/31787.00 as meeting the requirements of

ISO 45001:2018

For the following activities

Manufacture of Computer Products and Servers.

This certificate is valid from 28 October 2022 until 27 October 2025 and remains valid subject to satisfactory surveillance audits.
Issue 2.
The validity of this certificate depends on the validity of the main certificate.

Authorised by
Jonathan Hall
Global Head - Certification Services

SGS United Kingdom Ltd
Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK
t +44 (0)151 350-6666 - www.sgs.com

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Base de Conhecimento & Guias

Download Lenovo Tools for Administrators

Este é um artigo traduzido automaticamente, por favor clique aqui para

As seguintes ferramentas são fornecidas para auxiliar os administradores de TI no gerenciamento e implantação de produtos Lenovo

- System Update (https://support.lenovo.com/us/en/solutions/ht037099#tvsu)
- Thin Installer (https://support.lenovo.com/us/en/solutions/ht037099#ti)
- Update Retriever (https://support.lenovo.com/us/en/solutions/ht037099#ur)
- Gerente de Dock (https://support.lenovo.com/us/en/solutions/ht037099#dm)

Guia de implantação System Update
Este guia se destina a administradores de TI ou responsáveis por implantar e usar o System Update do sistema de programas (Lenovo System Update , Update Retriever, Thin I
suas organizações. Este guia fornece as informações necessárias para instalar e configurar esses aplicativos em um ou mais computadores.

- Guia de implantação System Update (https://download.lenovo.com/cdrt/docs/DG-SystemUpdateSuite.pdf) (inglês)

System Update

- System Update 5.07.0127 (https://download.lenovo.com/pccbbs/thinkvantage_en/system_update_5.07.0127.exe) (7,92 MB)
- Leiame da System Update (https://download.lenovo.com/pccbbs/thinkvantage_en/system_update_5.07.0127.txt) 5.07.0127 (18 KB)

O que mudou:

```
- (Novo)  1. Suporta novas atualizações de firmware baseadas em cápsulas 2. Atualize a biblioteca de CV para 3.1.20 - (Correção) 1. Não é possível
```

Lenovo System Update baixa atualizações de software, drivers e BIOS de um Lenovo diretamente da Internet sem exigir conhecimento específico do usuário de onde o pacote
necessário para o sistema de destino. System Update pode determinar quais atualizações são necessárias e aplicá-las. System Update também pode ser direcionada a um repos
Update Retriever.

Observação:

- System Update 5.07 é **SOMENTE** compatível com Microsoft Windows 10 e Windows 7; pode ser usado como está no Windows 8 / 8.1
- O Microsoft .NET Framework versão 4.5.2 (https://www.microsoft.com/en-us/download/details.aspx?id=42643) ou superior é necessário para que a System Update
- Antes de usar a System Update com o Windows 7, clique aqui (http://www.catalog.update.microsoft.com/search.aspx?q=kb4474419) para baixar e instalar a atualiza

lançada pela Microsoft para garantir que as System Update possam ser instaladas com êxito. Para obter mais informações sobre esta atualização de segurança da Micros
https://support.microsoft.com/en-us/help/4472027/2019-sha-2-code-signing-support-requirement-for- windows -and-wsus (https://support.microsoft.com/en-us/help
signing-support-requirement-for-windows-and-wsus) .

Ferramentas de administrador
O arquivo de modelo administrativo (ADM) define as configurações de política usadas por aplicativos nos computadores clientes. As políticas são configurações específicas qu
do aplicativo. As configurações de política também definem se o usuário terá permissão para definir configurações específicas por meio do aplicativo. As configurações definid
servidor são definidas como políticas. As configurações definidas por um usuário no computador cliente para um aplicativo são definidas como preferências. Conforme definid
configurações de política têm precedência sobre as preferências.

- Baixe as System Update (511 KB) (https://download.lenovo.com/pccbbs/thinkvantage_en/zb59_tvsu_win7_win8_admin110.exe)

Thin Installer

- Thin Installer 1.3.0031 (https://download.lenovo.com/pccbbs/thinkvantage_en/lenovo_thininstaller_1.3.0031.exe) (6,7 MB)
- Leiame do Thin Installer (https://download.lenovo.com/pccbbs/thinkvantage_en/lenovo_thininstaller_1.3.0031.txt) 1.3.0031 (9 KB)

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O que mudou:

```
1. Suporta novas atualizações de firmware baseadas em cápsulas. 2. Atualize a biblioteca de CV para 3.1.20. 3. Corrija alguns problemas.
```

Thin Installer é uma versão menor do System Update que não requer instalação - pode simplesmente ser copiado para o sistema de destino. Thin Installer procura os pacotes c que você cria. O repositório pode ser criado em seu disco rígido local, um compartilhamento de rede, um servidor web ou mídia externa, como um CD, DVD ou disco rígido US termina de instalar os pacotes aplicáveis, não existe nenhuma chave de registro relacionada ao Thin Installer - portanto, o usuário só precisa excluir a pasta que contém o Thin arquivos associados ao Thin Installer e ao repositório associado.

Observação:

- Thin Installer **SÓ** é compatível com Microsoft Windows 10 e Windows 7; pode ser usado como está no Windows 8 / 8.1
- O Microsoft .NET Framework versão 4.5.2 (https://www.microsoft.com/en-us/download/details.aspx?id=42643) ou superior é necessário para que o Thin Installer fu

Update Retriever

- Updateretriever_5.00.0085 (https://download.lenovo.com/pccbbs/thinkvantage_en/updateretriever_5.00.0085.exe) (5,6 MB)
- Updateretriever_5.00.0085 Leiame (https://download.lenovo.com/pccbbs/thinkvantage_en/updateretriever_5.00.0085.txt) (11 KB)

O que mudou:

```
1. Atualize a biblioteca CV para 3.1.18.
```

Update Retriever é um programa que permite a um administrador procurar e fazer download de atualizações do Lenovo para uma pasta de repositório em uma unidade local ou pasta do repositório fornece o armazenamento para pacotes de atualização. System Update ou o Thin Installer podem ser configurados para pesquisar pacotes de atualização r compartilhamento de rede em vez de pesquisar no site de suporte Lenovo Com o Update Retriever, é possível iniciar manualmente a pesquisa de pacotes de atualização ou age de novos pacotes de atualização em um intervalo de tempo especificado. Isso permite maior controle das atualizações disponíveis para dispositivos gerenciados.

Observação:

- O Microsoft .NET Framework versão 4.5.2 (https://www.microsoft.com/en-us/download/details.aspx?id=42643) ou superior é necessário para que o Update Retriev

Gerente de Dock

- Dock Manager 1.1.0.13 (https://download.lenovo.com/consumer/options/dockmanagersetup_1.1.0.13.exe)
- Leiame do Dock (https://download.lenovo.com/consumer/options/dock_manager_1.1.0.13.txt)

O que mudou:

```
[Atualizações importantes] - Adicione suporte para " ThinkPad Universal USB -C Dock " [Novas funções ou aprimoramentos] - Melhore os registros que
```

Lenovo Dock Manager é uma nova solução para melhorar a implementação em grande escala de atualizações de firmware para docks da Lenovo Esta solução é executada em s das versões atuais do firmware para docks Lenovo Quando um dock com firmware de nível inferior é conectado, ele é atualizado automaticamente pelo Dock Manager. Ele poc atualizações de firmware do Lenovo Support diretamente da Internet ou de um repositório local em sua rede que é criado e mantido usando o Update Retriever. O aplicativo ta docas no WMI para os administradores consultarem remotamente para fins de gerenciamento. Consulte o Guia do usuário para obter mais detalhes.

Recursos adicionais:

- Guia de usuario (https://download.lenovo.com/consumer/options/dockmanager user manual.pdf)
- Arquivo de modelo de política de grupo (https://download.lenovo.com/consumer/options/policy_setup.exe)

Observação:

- O Microsoft .NET Framework versão 4.5.2 (https://www.microsoft.com/en-us/download/details.aspx?id=42643) ou superior é necessário para que o Dock Manager

Artigos relacionados

Anexo PROPOSTA ITEM 1 - ER SOLUÇÕES (1661785) SEI 2025.001317 / pg. 1120

- Soluções de implantação empresarial (https://support.lenovo.com/us/en/solutions/HT104232)
- Lenovo Diagnostic Solutions (https://pcsupport.lenovo.com/lenovodiagnosticsolutions)
- Tópicos populares para PC (/solutions/HT503909)
- Lenovo ID: acesso a tudo da Lenovo , em todos os Lenovo com um nome de usuário e senha (/solutions/HT103471)
- Centro de Suporte do Windows (https://support.lenovo.com/windows-support)

Data de
Data da

Esta informação foi útil?

Sua opinião ajuda a melhorar este site.

Sim Não

Ajuda

Obtenha ajuda na página inicial do produto

Encontre mais soluções, ferramentas e informações úteis em nossa página inicial do produto.

Fale Conosco

Economize tempo iniciando sua solicitação de suporte onl

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(//www.facebook.com/lenovo)
(//twitter.com/lenovo)
(//www.youtube.com/lenovovision)
(//pinterest.com/lenovous/)

Nosso compromisso com o meio ambiente
(https://www.lenovo.com/us/en/about#social-responsibility)

Veja o nosso Relatório Global de Sustentabilidade. (https://www3.lenovo.com/us/en/social_responsibility/sustainability_reports/)

Sobre a Lenovo

Nossa Empresa (https://www.lenovo.com/br/pt/lenovo/?linkTrack=footer:About%20Lenovo_Our%20Company)
Notícias (https://www3.lenovo.com/br/pt/noticias?linkTrack=footer:About Lenovo_News)
INVESTIDORES (https://static.lenovo.com/ww/lenovo/investor_relations.html?linkTrack=footer:About%20Lenovo_Investor%20Relations)
Responsabilidade Social (https://www3.lenovo.com/us/en/social_responsibility/product/?linkTrack=footer:About%20Lenovo_Social%20Responsibility)
Product Compliance (https://www.lenovo.com/us/en/lenovo/compliance?linkTrack=footer:About%20Lenovo_Product%20Compliance)
Código aberto Lenovo (/br/pt/solutions/HT511330)
Informações Legais (https://www.lenovo.com/br/pt/legal/?linkTrack=footer:About Lenovo_Legal Information)
OPORTUNIDADES (https://lenovocareers.com/por/index.html)

Loja

Notebooks e Ultrabooks (https://shop.lenovo.com/br/pt/laptops/)
Tablets (https://shop.lenovo.com/br/pt/tablets/)
Workstations (https://www.lenovo.com/br/pt/desktops-y-all-in-one/c/DESKTOPS)
Servidores (https://www.lenovo.com/us/en/data-center/servers/c/servers?menu-id=explore_servers)
Acessórios e Atualizações (https://shop.lenovo.com/br/pt/acessorios/?IPromoID=LEN130115)
Ofertas de laptop (https://shop.lenovo.com/br/pt/ofertas/)
services and repairs (https://shop.lenovo.com/br/pt/servicos_e_garantia/?IPromoID=LEN930148)

Suporte

Anexo PROPOSTA ITEM 1 - ER SOLUÇÕES (1661785) SEI 2025.001317 / pg. 1121

Drivers e Software (/br/pt/products/desktops-and-all-in-ones/thinkcentre-m-series-desktops/thinkcentre-m80q/downloads?linkTrack=footer:Support_Downloads)

Documentação (/br/pt/products/desktops-and-all-in-ones/thinkcentre-m-series-desktops/thinkcentre-m80q/documentation?linkTrack=footer:Support_Manuals)

Como fazer & soluções (/br/pt/products/desktops-and-all-in-ones/thinkcentre-m-series-desktops/thinkcentre-m80q/solutions?linkTrack=footer:Support_Solutions)

Pesquisa de garantia (/br/pt/warrantylookup?linkTrack=footer:Support_Warranty Lookup)

Fale Conosco (/br/pt/contactus)

Suporte para Armazenamento (https://download.lenovo.com/lenovoemc/la/pt)

Recursos

Fale Conosco (https://shop.lenovo.com/br/pt/contato/)

Onde Comprar (https://shop.lenovo.com/br/pt/revendedores/)

Blogs (https://news.lenovo.com/blog/?linkTrack=footer:Resources_Blogs)

Especificações do produto (PSREF) (https://psref.lenovo.com/)

Fóruns (https://forums.lenovo.com/)

Acessibilidade do Produto (https://www.lenovo.com/social_responsibility/us/en/accessibility_notebooks/)

Informação ambiental (https://www.lenovo.com/social_responsibility/br/pt/)

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Anexo PROPOSTA ITEM 1 - ER SOLUÇÕES (1661785) SEI 2025.001317 / pg. 1122

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

PROPOSTA DE PREÇOS

Proposta que faz a empresa Positivo Tecnologia S/A (Filial), inscrita no CNPJ (MF) n.º 81.243.735/0009-03, localizada Rua Ásia, s/n – Lote 05 – Quadra N – Bairro Iguape – Ilhéus – Bahia – CEP 45.658-464, fone (41) 3239-7928 / (41) 3312-3677, e-mail: editais.info@positivo.com.br / contratosgov@positivo.com.br, para o fornecimento dos bens abaixo relacionados, de acordo com todas as especificações e condições estabelecidas no Pregão Eletrônico n.º94.010/2025-CPL/MP/PGJ-SRP, promovido pelo MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS / PROCURADORIA-GERAL DE JUSTIÇA:

Item	Descrição	Marca / Modelo	Quantidade	Valor Unitário R$	Subtotal R$
3	COMPUTADOR TIPO 3 - "NOTEBOOK DE 14"". Especificações técnicas em anexo.	**MARCA**: Positivo **MODELO**: Positivo Master N8450 **FABRICANTE**: Positivo Tecnologia S.A.	300	R$ 5.700,00 (cinco mil e setecentos reais)	R$ 1.710.000,00 (Um milhão, setecentos e dez mil reais)
VALOR TOTAL DA PROPOSTA: R$ 1.710.000,00 (Um milhão, setecentos e dez mil reais)					

A Positivo Tecnologia S/A (Filial) declara que concorda com todas as especificações do Edital.

a. Prazo de validade da proposta: **90 (noventa) dias,** a contar da data de sua apresentação.
b. Prazo de entrega: **90 (noventa) dias corridos,** contados do primeiro dia útil subsequente ao do recebimento da respectiva Nota de Empenho.
c. Modo de Transporte dos Produtos:
( ) rodoviário/terrestre
(X) aéreo: (X) normal ( ) expresso
( ) outros. Especificar: _____
d. Prazo de garantia: 60 (sessenta) meses, contados a partir da emissão do TERMO DERECEBIMENTO DEFINITIVO do objeto.
e. Nome, meios de contato e endereço completo da assistência técnica ou representante em Manaus-AM:

- Dados da Assistência Técnica autorizada da Positivo:

AM	**Razão Social**	POSITIVO TECNOLOGIA S/A (OP.COM TÉCNICO PROPRIO -POSITIVO TECNOLOGIA)
	Endereço	Endereço: R JUAN DE QUINTANA,42 -ADRIANOPOLIS- MANAUS 69057-550 (end. Base de peças e logística - empresa terceira)
	CNPJ	81.243.735/0001-48
	Telefone/e-mail	41 99290-7230 jnunes@positivo.com.br
	Responsável Técnico	Jorge Henrique Fernandes Nunes

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f. Site e/ou e-mail do fabricante, se houver: www.positivotecnologia.com.br / editais.info@positivo.com.br
g. Dados Bancários: Banco: Banco do Brasil Agência:3306-5/Corporate Paraná Conta Corrente: 211.210-8
h. Contato para fins de faturamento: (indicar o nome, cargo, endereço, telefone, e-mail de contato do responsável pelo recebimento das futuras notas de empenho);
i. Dados dos 3 (três) principais integrantes do quadro acionário da licitante, assim compreendidos aqueles que detenham maior parcela das cotas societárias ou o poder de gestão da sociedade: Conforme Declaração em anexo.

Caso seja vencedora indicamos para assinar o contrato o seguinte responsável:
NOME: Alberto Manoel Custodio
TITULARIDADE: Representante Comercial / Representante Legal
CPF: 510.378.076-34 RG: 1.846.112/SSP/MG
ENDEREÇO: Av. Dom Pedro II, nº 1.111 - Centro, na Cidade de Porto Velho/RO
DADOS BANCÁRIOS:
Banco: Banco do Brasil **Agência:** 3306-5/Corporate Paraná **Conta Corrente:** 99.878-8

DECLARAÇÕES:

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:
a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;
b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo acionistas, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou por afinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;
c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;
d) os documentos e declarações apresentados são fiéis e verdadeiros;
e) caso seja vencedora do certame e não cadastrada no SISTEMA DEADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DOESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;
f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;
g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Caso seja vencedora indicamos para assinar o contrato o seguinte responsável:
NOME: Alberto Manoel Custodio
TITULARIDADE: Representante Comercial / Representante Legal
CPF: 510.378.076-34 RG: 1.846.112/SSP/MG
ENDEREÇO: Av. Dom Pedro II, nº 1.111 - Centro, na Cidade de Porto Velho/RO

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POSITIVO
TECNOLOGIA

DADOS BANCÁRIOS: Banco: Banco do Brasil **Agência:**3306-5/Corporate Paraná **Conta Corrente:** 211.210-8

Nos preços unitários e totais apresentados nesta proposta estão inclusos todos os impostos vigentes até esta data.

Curitiba, 01 de julho de 2025.



Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

Rua Ásia, s/n, Lote 05 Quadra N | Iguape
45.658 464 | Ilhéus - BA

Javari, 1.255, Lote 2578 | Distrito Industrial
69075 110 | Manaus - AM

Positivo Tecnologia S.A.
Rua João Bettega, 5200 | CIC
CEP 81350 000 | Curitiba - PR

www.positivotecnologia.com.br

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO DE COMPOSIÇÃO ACIONÁRIA

POSITIVO TECNOLOGIA S.A. ("POSITIVO"), pessoa jurídica de direito privado, inscrita no CNPJ sob o nº 81.243.735/0009-03, estabelecida na Rua Ásia, s/n, Lote 05, Quadra N, Bairro Iguape, na Cidade de Ilhéus, Estado da Bahia, CEP 45.658-464, neste ato representada na forma de seu Estatuto Social/Procuração, por meio da sua representante legal abaixo assinada, em atendimento aos subitens 5.3 e 5.4 do Anexo II e item 3.7 do Edital, **DECLARA**, para os devidos fins de direito e há quem possa interessar:

I. Que por se tratar de sociedade anônima, a composição acionária da POSITIVO não é descrita em seu Estatuto Social, razão pela qual é emitida a presente declaração.

II. Destaca-se, que a POSITIVO é uma sociedade anônima de capital aberto com ações negociadas na B3 – Brasil, Bolsa, Balcão, e a totalidade do seu capital é representada por 141.800.000 ações ordinárias, distribuídas entre milhares de acionistas[1], com negociações na bolsa de valores e, consequentemente, com variação diária da titularidade de suas ações, o que impossibilita a apresentação de documento societário contendo a lista da totalidade de seus acionistas.

III. Neste sentido, visando dar integral atendimento à exigência de abertura da composição acionária, com base no que determina as normas regulamentadoras da CVM (Resolução CVM 80/22, art. 25, §3º, V[2]), abaixo é apresentada a abertura do quadro acionário da POSITIVO, contendo os acionistas detentores de mais de 5% do capital social da Companhia.

IV. Importante esclarecer que as informações abaixo reportadas tratam-se de dados públicos, que periodicamente são divulgadas pela POSITIVO diretamente no sistema da CVM - Comissão de Valores Mobiliários, também disponíveis para consulta por meio do link https://sistemas.cvm.gov.br/[3] ou, ainda, em seu website de Relação com os Investidores, por meio do link https://ri.positivotecnologia.com.br/informacoes-ao-mercado/formulario-de-referencia/.

---

[1] Visando dar maior clareza sobre a dimensão da composição acionária da Positivo, na data de 29/12/2023 a Positivo possuía mais de 47.000 acionistas e em data de 29/05/2024 possuía mais de 43.000 acionistas.

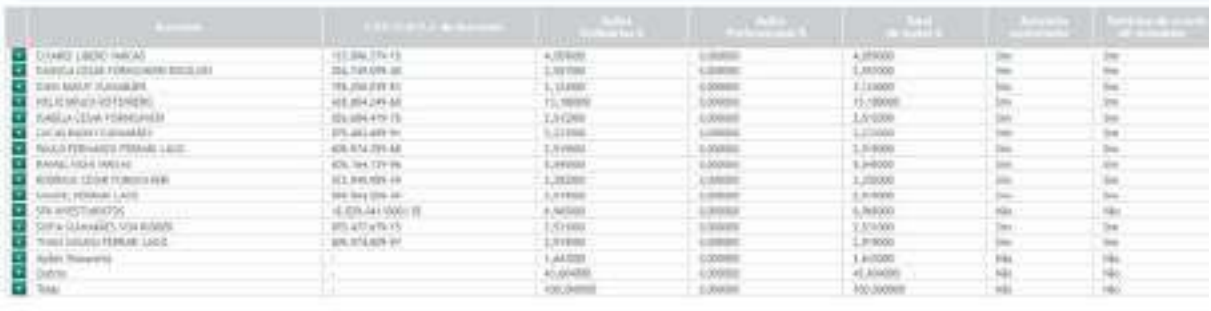
[2] Art. 25. O formulário de referência é o documento eletrônico cujo conteúdo reflete o Anexo C. (...)
§ 3º O emissor registrado na categoria A deve atualizar os campos correspondentes do formulário de referência, em até 7 (sete) dias úteis contados da ocorrência de qualquer dos seguintes fatos: (...)
V – alteração dos acionistas controladores, diretos ou indiretos, ou variações em suas posições acionárias que os levem a ultrapassar, para cima ou para baixo, os patamares de 5% (cinco por cento), 10% (dez por cento), 15% (quinze por cento), e assim sucessivamente, de uma mesma espécie ou classe de ações do emissor;
VI – quando qualquer pessoa natural ou jurídica, ou grupo de pessoas representando um mesmo interesse, direta ou indiretamente, ultrapassar, para cima ou para baixo, os patamares de 5% (cinco por cento), 10% (dez por cento), 15% (quinze por cento), e assim sucessivamente, de uma mesma espécie ou classe de ações do emissor, desde que o emissor tenha ciência de tal alteração;

[3] Ao clicar no link acima, seguir os seguintes passos: **1.** Clicar em Companhia. **2.** Clicar em Consulta de Documentos de Companhia. **3.** Digitar o nome Positivo no campo de pesquisa e clicar em Continuar. **4**. Clicar no número do CNPJ da Positivo. **5.** Expandir o "+Exibir Filtros de Pesquisa". **6.** No campo "Data de Entrega", selecionar "No período" e determinar um período mínimo de 12 meses. **7.** No campo "Categoria", selecionar a opção FRE – Formulário de Referência. **8.** Clicar em "Consultar". **9.** Selecionar a versão mais recente do documento pela Data de Entrega e na coluna "Ações", clicar no ícone com lupa para "Visualizar Documento". **10.** Ao abrir uma nova janela contendo o FRE - Formulário de Referência, selecionar na caixa de opções com lista suspensão o capítulo "6. Controle e grupo Econômico" e o subitem "6.1/2 Posição Acionária".

Proposta de Preço ITEM 3 - POSITIVO TECNOLOGIA (1661786) SEI 2025.001317 / pg. 1126

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POSITIVO
TECNOLOGIA



*O quadro acima trata-se de print do FRE – Formulário de Referência, disponível para consulta no sistema da CVM

V. As informações acima são extraídas do Formulário de Referência (FRE), cujo encaminhamento periódico e eventual, previsto no artigo 22, inciso II, da Resolução CVM nº 80/22, reúne todas as informações referentes ao emissor de valores mobiliários admitidos à negociação em mercados regulamentados de valores mobiliários.

Ante todo o exposto, tem a presente declaração o intuito de esclarecer a identificar os principais beneficiários finais da participação, indireta, no capital social da POSITIVO, baseando-se em registros atualizados e públicos nesta data. Aproveitamos a oportunidade para reiterar nossos votos de estima e consideração, bem como nos colocamos à inteira disposição para eventuais dúvidas e esclarecimentos necessários.

Curitiba, 01 de julho de 2025.



Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO

A empresa **POSITIVO TECNOLOGIA S.A (Filial)**, pessoa jurídica de direito privado, estabelecida na Rua Ásia, s/n – Lote 05 – Quadra N – Bairro Iguape, na Cidade de Ilhéus, Estado da Bahia – CEP 45.658-464, inscrita sob o CNPJ n.º 81.243.735/0009-03, declara como fabricante dos equipamentos ofertados para o pregão em referência que:

- Os produtos ofertados serão industrializados, novos e entregues acondicionados adequadamente em suas embalagens originais lacradas, acompanhados de guias e manuais de utilização e de cabos e conectores, além de licenças dos softwares necessários à sua perfeita instalação e funcionamento;
- A licença do software dedicado terá cobertura equivalente ao período de garantia do equipamento (60 meses) e estará plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;
- Os equipamentos pertencem à linha corporativa, não sendo equipamentos destinados ao uso da linha doméstica;
- A fonte de alimentação modelo PI-ADAP090-A(02) possui eficiência superior a 85% com 50% da carga de trabalho e implementa PFC (Power Factor Correction) ativo;
- A fonte de alimentação modelo PI-ADAP090-A(02) é totalmente compatível e homologada para utilização no equipamento POSITIVO MASTER N8450.
- Os equipamentos adquiridos incluem solução de segurança e rastreamento remoto, garantindo proteção contra acessos não autorizados, controle administrativo centralizado e mitigação de riscos relacionados à perda, furto ou roubo. A solução é fornecida com licenciamento válido para o período de 60 (sessenta) meses, com uma licença individual para cada equipamento adquirido, sem necessidade de aquisição de licenças adicionais além das atribuídas ao uso de cada dispositivo.

- A solução conta com as seguintes funcionalidades obrigatórias:

    - **Gerenciamento Centralizado na Nuvem**: A solução opera totalmente na nuvem, permitindo o gerenciamento remoto e centralizado de todos os equipamentos licenciados, sem necessidade de infraestrutura local dedicada para controle e administração.
    - **Rastreamento e Geolocalização**: Possibilita o rastreamento dos equipamentos em tempo real, utilizando geolocalização via rede, garantindo a identificação da última localização conhecida dos dispositivos cadastrados.
    - **Bloqueio e Proteção contra Acessos Não Autorizados**: Permite o bloqueio remoto do equipamento em caso de perda, furto ou uso indevido, garantindo que os dados armazenados fiquem inacessíveis a terceiros até a recuperação ou redefinição do dispositivo.
    - **Proteção contra Adulteração**: Inclui mecanismo de proteção contra tentativas de remoção ou desativação da solução, mesmo em casos de substituição do disco rígido ou reinstalação do sistema operacional, assegurando a persistência do software de segurança.

Rua Ásia, s/n, Lote 05 Quadra N | Iguape
45.658 464 | Ilhéus - BA

Javari, 1.255, Lote 2578 | Distrito Industrial
69075 110 | Manaus - AM

Positivo Tecnologia S.A.
Rua João Bettega, 5200 | CIC
CEP 81350 000 | Curitiba - PR

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- **Monitoramento de Hardware e Atividade**: Permite o monitoramento do status do hardware e da atividade do equipamento, gerando logs e relatórios sobre tentativas de acesso, movimentação e uso não autorizado.
- **Recuperação do Dispositivo**: A solução oferece mecanismos que auxiliem na recuperação do equipamento em caso de extravio ou furto, incluindo mensagens na tela para identificação do proprietário e envio de alertas automáticos para administradores da solução.

- **Outros Requisitos Técnicos e de Compatibilidade**

  - O software é compatível com Windows 11 Pro, garantindo suporte integral às funcionalidades do sistema operacional sem restrições.
  - A implementação da solução permite integração com ferramentas institucionais de gerenciamento de ativos, caso necessário, garantindo compatibilidade com os sistemas já utilizados pela **CONTRATANTE**.
  - O fornecedor garante atualizações contínuas e suporte técnico durante os 60 (sessenta) meses de vigência da licença, sem custos adicionais para a **CONTRATANTE**.

Curitiba, 01 de julho de 2025.



Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

Docusign Envelope ID: 54F15E46-B8A6-4035-8A8D-0ECBBBB97FE8

POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO

Retorno de Equipamentos: A Positivo Tecnologia oferece serviço de coleta dos equipamentos, ao final da vida útil, através de solicitação e em condições a serem negociadas. Para utilização deste serviço e orçamento basta o cliente entrar em contato com a Central de Relacionamento Positivo pelo 0800-644-6591.

Prazo de Fornecimento de Peças de Reposição: A Positivo Tecnologia garante a disponibilidade de peças, sob orçamento, de equipamentos dentro do período de até 5 (cinco) anos após a fabricação do mesmo. Para obter maiores informações sobre a aquisição de peças de reposição para equipamentos fora da garantia, basta o cliente entrar em contato com a Central de Relacionamento Positivo pelo 0800-644-6591. A peça disponibilizada terá funcionamento equivalente ou superior ao da peça original. O prazo de fornecimento das peças será conforme disponibilidade.

Serviço de Manutenção Adicional: A Positivo Tecnologia disponibiliza o Serviço de Manutenção por até 36 (trinta e seis) meses adicionais após o vencimento da garantia contratada, mediante orçamento. Para a utilização deste serviço, o cliente deverá formalizar o interesse no ato da compra do equipamento.

Curitiba, 01 de julho de 2025.



Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

Rua Ásia, s/n, Lote 05 Quadra N | Iguape
45.658 464 | Ilhéus - BA

Javari, 1.255, Lote 2578 | Distrito Industrial
69075 110 | Manaus - AM

Positivo Tecnologia S.A.
Rua João Bettega, 5200 | CIC
CEP 81350 000 | Curitiba - PR

www.positivotecnologia.com.br

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
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Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO

A empresa **POSITIVO TECNOLOGIA S.A (Filial)**, pessoa jurídica de direito privado, estabelecida na Rua Ásia, s/n – Lote 05 – Quadra N – Bairro Iguape, na Cidade de Ilhéus, Estado da Bahia – CEP 45.658-464, inscrita sob o CNPJ n.º 81.243.735/0009-03, declara como fabricante dos equipamentos ofertados ao pregão em referência, que conhece, aceita, se submete e atende plenamente todos os requisitos e as cláusulas do Edital e seus anexos, bem como, esclarecimentos adicionais se for o caso.

Curitiba, 01 de julho de 2025.



Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

CONDIÇÕES GERAIS

PRAZO DE ENTREGA	:	**90 (noventa) dias corridos,** contados do primeiro dia útil subsequente ao do recebimento da respectiva Nota de Empenho.
VALIDADE DA PROPOSTA	:	**90 (noventa) dias,** a contar da data de sua apresentação.
PRAZO DE VALIDADE DA ATA DE REGISTRO DE PREÇOS	:	**12 (doze) meses,** a partir da data de publicação do extrato da Ata de Registro no Portal Nacional de Contratações Públicas - PNCP.
CONDIÇÕES DE PAGAMENTO	:	**Até 10 (dez) dias úteis,** contados da finalização da liquidação da despesa.
GARANTIA	:	**60 (sessenta) meses on-site,** prestado pela Positivo ou por sua rede de assistência técnica autorizada. Para as baterias, a garantia será de 36 (trinta e seis) meses. O prazo máximo para conclusão dos reparos será de 5 (cinco) dias úteis, e consistirá na reparação das eventuais falhas dos produtos e na substituição de peças ou componentes que se apresentem defeituosos, completamente de acordo com manuais e normas técnicas específicas para os materiais.

Curitiba, 01 de julho de 2025.



Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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Certificado de Conclusão

Identificação de envelope: 54F15E46-B8A6-4035-8A8D-0ECBBBB97FE8
Status: Concluído
Assunto: Complete com o Docusign: 01 - Proposta PGJ AM.docx
Empresa Responsável: Positivo Tecnologia
Envelope fonte:
Documentar páginas: 10
Assinaturas: 6
Certificar páginas: 1
Rubrica: 4
Assinatura guiada: Ativado
Selo com EnvelopeId (ID do envelope): Ativado
Fuso horário: (UTC-03:00) Brasília

Remetente do envelope:
Hingrid Barbara Miguel
Rua João Bettega, 5200.
Curitiba, PR 81530000
hingridm@positivo.com.br
Endereço IP: 200.186.50.209

Rastreamento de registros

Status: Original
01 de julho de 2025 | 10:45
Portador: Hingrid Barbara Miguel
hingridm@positivo.com.br
Local: DocuSign

Eventos do signatário	Assinatura	Registro de hora e data
MARIA HELENA PEREIRA mhpereira@positivo.com.br Positivo Tecnologia S.A. Nível de segurança: E-mail, Autenticação da conta (Nenhuma), Certificado Digital **Detalhes do provedor de assinatura:** Tipo de assinatura: ICP Smart Card Emissor da assinatura: AC Certisign RFB G5 **Termos de Assinatura e Registro Eletrônico:** Não oferecido através da Docusign	Signed by: MARIA HELENA PEREIRA 83968BDA4C4443B... Adoção de assinatura: Estilo pré-selecionado Usando endereço IP: 200.186.50.209	Enviado: 01 de julho de 2025 | 10:47 Visualizado: 01 de julho de 2025 | 11:21 Assinado: 01 de julho de 2025 | 11:23

Eventos do signatário presencial	Assinatura	Registro de hora e data

Eventos de entrega do editor	Status	Registro de hora e data

Evento de entrega do agente	Status	Registro de hora e data

Eventos de entrega intermediários	Status	Registro de hora e data

Eventos de entrega certificados	Status	Registro de hora e data

Eventos de cópia	Status	Registro de hora e data

Eventos com testemunhas	Assinatura	Registro de hora e data

Eventos do tabelião	Assinatura	Registro de hora e data

Eventos de resumo do envelope	Status	Carimbo de data/hora
Envelope enviado	Com hash/criptografado	01 de julho de 2025 | 10:47
Entrega certificada	Segurança verificada	01 de julho de 2025 | 11:21
Assinatura concluída	Segurança verificada	01 de julho de 2025 | 11:23
Concluído	Segurança verificada	01 de julho de 2025 | 11:23

Eventos de pagamento	Status	Carimbo de data/hora

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POSITIVO
TECNOLOGIA

ESPECIFICAÇÕES TÉCNICAS

Item : 3
Marca : Positivo
Modelo : Positivo Master N8450
Fabricante : Positivo Tecnologia S.A.
Quantidade : 300 (Trezentas) unidades.

Os equipamentos serão fornecidos nas especificações/configurações abaixo:

1. PLACA PRINCIPAL (PLACA MÃE)
1. A placa mãe é construída pelo próprio fabricante do microcomputador sendo produzida sob a especificação do mesmo, não sendo placas de livre comercialização no mercado, nem em regime de OEM;
2. Possui 2 (dois) slots para memória RAM, “do tipo DDR-5 SODIMM”, permitindo a instalação de até 40 (quarenta) Gigabytes. Possui 2 slots com 1 módulo de memória cada, como configuração superior, em substituição aos módulos soldados na placa principal;
3. Suporta tecnologia Dual Channel de utilização de memória RAM;
4. Possui 1 (um) Socket M.2 para SSD SATA ou NVMe;
5. Possui 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;
6. Possui recursos DASH 1.1 (Desktop and mobile Architecture for System Hardware) e vPro;
7. É compatível com Energy Star 7.0/7.1;
8. Possui capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;
9. Possui chip TPM (Trusted Platform Module), versão 2.0, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;
10. Possui suporte a virtualização por hardware;
11. Possui suporte a implementação de extensões de virtualização de I/O por hardware;
13. Possui suporte a aceleração de segurança AES no hardware;
14. Possui suporte à tecnologia de acesso remoto out-of-band embutida no hardware;
15. Possui controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;
16. Suporta boot por pendrive ou disco conectado a uma porta USB 3.2;
17. Suporta a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.

2. BIOS
1. O BIOS é desenvolvido pelo mesmo fabricante do equipamento;
2. O fabricante do equipamento, é totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, promovendo as alterações que se façam necessárias e corrigindo problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.9 (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);
4. O fabricante comprova a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;
5. É do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;
6. É lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;
7. Tem suporte a ACPI;
8. É desenvolvido de acordo com o padrão de segurança NIST 800-147, para garantir a integridade do BIOS;

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9. Possui recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;
10. Possui software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características:
    1. Permite o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico é capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F11);
    2. O software de diagnóstico é capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;
11. Possui ferramenta que possibilita realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88r1. Esta ferramenta é nativa do BIOS, é oficialmente homologada pelo fabricante do equipamento;
12. Possui opção para exportar/importar configurações;
13. Oferece a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela CONTRATANTE;
14. Possui campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permite inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;
15. Permite o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados;
    1. Permite acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado;
    2. Permite acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional;
    3. Possui a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.

3. PROCESSADOR
1. Possui, 2 (dois) núcleos, e 14 (quatorze) threads de processamento com frequência de operação interna básica de, 1.6 GHz;
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos e ciclos de clock base (MHz);
3. Memória cache total de 12MB;
4. O processador ofertado será o Intel Core Ultra 5, "de 1ª geração";
5. O processador é da última geração disponível utilizada pelo fabricante do equipamento, com desempenho de 17.467 (dezessete mil quatrocentos e sessenta e sete) pontos, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante;
    1. O desempenho é comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php.
    2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.
6. Possui tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos, podendo atingir até 4.4 GHz;
7. Possui controlador com suporte à memória RAM do tipo DDR5-5600 MT/s;
8. Possui tecnologia de fabricação de 7nm (sete nanômetros);
9. TDP (Thermal Design Power) mínimo de 12W, e máximo de 57W, declarado pelo fabricante;
10. Possui instruções do padrão AVX 2.0;
11. Possui instruções do padrão SSE4.1/4.2;

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12. Possui instruções que implementem extensões de virtualização de hardware;
13. Possui instruções AES-NI embutidas;
14. O proponente declara em sua proposta comercial o modelo do processador ofertado: Intel Core Ultra 5 135U.

4. MEMÓRIA RAM
1. Possui 16 (dezesseis) GB de memória RAM instalados, com capacidade de expansão de 64 (sessenta e quatro) GB;
2. É do tipo DDR-5 SODIMM e possui 5600 MT/s de velocidade de comunicação com o barramento principal;
3. A implementação do total de memória RAM utiliza 2 (dois) módulos de 8 (oito) GB, utilizando tecnologia dual channel;
    1. Ambos os módulos são do tipo SODIMM, e removíveis como configuração superior a soldada;
4. Os módulos removíveis serão instalados durante o processo de manufatura do computador, e homologados como parte do equipamento, inclusive estando cobertos pela garantia e suporte como descrito no Termo de Referência.

5. UNIDADE DE ARMAZENAMENTO
1. Possui 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade de 256 GB e velocidade mínima de gravação de 1.200MB/s;
2. Utiliza interface tipo M.2 PCIe 4.0, com o protocolo NVMe;
3. É instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.

6. CONECTIVIDADE
1. Possui 4 (quatro) portas USB;
    1. Do total de portas, 2 (duas) são do tipo USB 3.2 tipo A;
    2. 2 (duas) são do tipo USB 3.2 Tipo C;
2. Possui 1 (uma) porta de vídeo adicional, suportando a utilização de 1 (um) monitor auxiliar simultânea e independentemente da tela integrada;
3. O tipo da porta auxiliar de vídeo supracitada é HDMI 2.1.

7. INTERFACES DE REDE
1. Possui 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função Wake On Lan instalada e em funcionamento;
2. A controladora ethernet, é do tipo "onboard", e suporta recurso WOL (Wake On LAN);
3. Possui 1 (uma) interface de rede sem fios no padrão Wi-Fi 6E (802.11 B/G/N/AX), com velocidade de até 2.4Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3;
4. As controladoras Wi-Fi e Bluetooth, estarão em um único cartão M.2, conectado em slot específico na placa mãe, que é instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;
5. A interface Wireless ofertada possui, na data da entrega da proposta, homologação junto à ANATEL com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.

8. CONTROLADORA DE VÍDEO
1. Possui controlador 3D/2D com suporte a DirectX 12.2;
2. Suporta Pixel Shader 3.0;
3. Suporta OpenGL 4.6;
4. Suporta HDCP ou HDR;
5. Suporta a resolução de 1920 X 1080 @ 60 Hz;
6. Possui tecnologia de controle dinâmico de frequência, podendo atingir 1.9GHz;
7. Suporta o uso de 3 (três) monitores simultânea e independentemente.

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9. CONTROLADORA DE SOM E MULTIMÍDIA
1. O equipamento possui uma controladora de som integrada, do tipo "onboard";
2. Possui uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;
3. Possui 2 alto-falantes internos, com 2 Watt RMS de potência cada, compatíveis com a controladora de som;
4. Incorpora microfones, com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.

10. TECLADO
1. É integrado e retroiluminado no idioma padrão, português (Brasil), ABNT-II;
2. Possui teclas multimídia, com aumentar e diminuir volume, além do mute;
    1. Utiliza-se de teclas de função (F1...F12), para tais ações.

11. DISPOSITIVOS APONTADORES
1. Possui um touchpad integrado, com dois botões, e área útil superior a 4 (quatro) pol²;
    1. Admite-se que os botões sejam integrados, como cliques diretos na parte inferior do touchpad;
2. Suporta gestos de rolagem;
3. Acompanha um mouse adicional, da mesma cor e do mesmo fabricante do equipamento ofertado;
    1. É óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, possui resolução por hardware de 1.000 dpi.

12. TELA INTEGRADA
1. É de tecnologia IPS (In-Plane Switching);
2. Tamanho de 14 polegadas widescreen;
3. Suporta 16 milhões de cores;
4. Resolução de 1920x1200@60Hz;
5. Ângulo de visão de 85° horizontal e vertical;
6. Possui brilho de 300 cd/m².

13. WEBCAM
1. O equipamento possui uma webcam integrada, de 2 megapixels, com resolução de vídeo FHD, não sendo solução externa;
2. Possui mecanismo de bloqueio por tampa, como solução de privacidade, também integrada ao equipamento.

14. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO
1. O equipamento é produzido no formato laptop.
2. O peso total do equipamento sem a fonte, não excede os 1.6 Kg (um quilo e seiscentos gramas);
3. A dobradiça do equipamento, é construída em metal, e com articulação de 180º;
4. O material do gabinete é de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;
5. Possui botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do computador, quando ele estiver aberto;
6. Possui leitor biométrico integrado, em área acessível, quando o notebook estiver aberto;
7. Oferece a possibilidade de, se demandado, aplicar logo oficial da CONTRATANTE, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas na parte inferior do laptop, visando medidas de segurança;
8. O computador possui fenda de encaixe padrão "Kensington" para utilização de cabo de aço do mesmo tipo;
9. É fornecido com fonte de carregamento/alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas, além de possibilitar o pleno carregamento da bateria do equipamento;

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10. A fonte de alimentação possui eficiência superior a 85%, com 50% da carga de trabalho e que implementa PFC (Power Factor Correction);
11. A fonte possui tensão de entrada 110 e 220 Volts de forma automática;
12. A fonte fornece uma alimentação de 90W para o equipamento;
13. Os plugues de conexão à rede elétrica seguem o padrão NBR 14136:2002.

15. BATERIA
1. É integrada ao corpo do equipamento, (não destacável);
2. Potência de 57Wh;
3. Possui 3 (três) células de carregamento;
    1. É capaz de manter o equipamento funcionando ininterruptamente por no mínimo 11 (onze) horas, conforme o padrão de teste do aplicativo Mobile Mark 2018.

16. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES
1. Acompanha o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, no idioma Português Brasil;
2. O equipamento será entregue com o Windows 11 Professional 64 bits, instalado;
3. Cada equipamento inclui uma licença específica de software dedicado para:
- Controle: Funções de bloqueio e desbloqueio remoto.
- Inventário: Gestão detalhada de hardware e software do equipamento.
- Rastreabilidade: Recursos de geolocalização integrados.
4. O software de controle e monitoramento possui a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;
5. A interface de controle e monitoramento dos equipamentos é baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;
6. A licença do software dedicado tem cobertura equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e estará plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.

17. COMPATIBILIDADE
1. É apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Consta no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado.
    1. A comprovação da compatibilidade é efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, sendo indicação no site da Microsoft;
2. O equipamento possui certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade é efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;
3. O equipamento, na configuração ofertada, possui certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC62368-1) e de imunidade eletromagnética (IEC 61000), comprovado através de certificado nos moldes da portaria 304/2023 vigente do INMETRO.

18. OUTROS REQUISITOS
1. Todas as partes do computador têm coloração neutra em gradações de preto, mantendo o padrão e cor;
2. Acompanha maleta, para transporte com segurança, de tamanho suficiente para acondicionar o equipamento e seus acessórios (fonte de alimentação e cabos), confeccionada em material resistente e impermeável;
3. Equipamento será novo, partes e peças, de primeiro uso, que serão acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;

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4. Informa marca e modelo dos componentes utilizados na solução e apresenta prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identificam e constatam as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;
5. Todos os equipamentos serão entregues idênticos, ou seja, todos os componentes externos e internos terão os mesmos modelo e marca;
6. O equipamento proposto estará em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;
7. Não sendo produtos descontinuados por seus fabricantes, não consta em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não tem previsão de descontinuidade de fornecimento, suporte ou vida;
8. O equipamento em pleno funcionamento atende à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que acompanha a proposta;
9. Tem compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado emitido por órgão credenciado pelo INMETRO;
10. Tem compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) da DMTF (Desktop Management Task Force), o fabricante do equipamento é membro do consórcio DMTF listado na categoria BOARD;
11. Tem compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trusted Computing Group), o fabricante é membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;
12. Tem compatibilidade com EPEAT na nova categoria Bronze, comprovada através de indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze, que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT.
13. Não contêm substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs),éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);
14. Os equipamentos pertencem à linha corporativa, não sendo equipamentos destinados ao uso da linha doméstica.
    1. A comprovação é apresentada junto com a proposta;
15. Não sendo equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;
16. Garantia de 60 (sessenta) meses on-site, prestado pelo fabricante. Para as baterias, a garantia é de 36 (trinta e seis) meses. Nos meses que restarem para completar o prazo total de garantia, a FORNECEDORA disporá de bateria para venda em caso de eventual necessidade, e a realizar o suporte e assistências técnicas sem ônus para a CONTRATANTE.

Componentes	**Marca**	**Modelo**
Placa-mãe	POSITIVO	POS-SIPWOAA
Processador	INTEL	INTEL CORE ULTRA 5 135U
Memórias	ZILIA	ZMS5WMC3C1J0B46SPG
Interface de rede LAN	INTEL	I219-LM
Interface de rede Wireless	INTEL	Wi-Fi 6E AX211
Fonte de alimentação	POSITIVO	PI-ADAP090-A(02)
Unidade de armazenamento	SSSTC	CL4-8D256

Curitiba, 01 de julho de 2025.



Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

Certificado de Conclusão

Identificação de envelope: 73049949-2E23-4A55-A930-1D7BA15A95AA
Status: Concluído
Assunto: Complete com o Docusign: 02 - Especificacão Técnica - ITEM 3.docx
Empresa Responsável: Positivo Tecnologia
Envelope fonte:
Documentar páginas: 6
Assinaturas: 1
Certificar páginas: 1
Rubrica: 5
Assinatura guiada: Ativado
Selo com EnvelopeId (ID do envelope): Ativado
Fuso horário: (UTC-03:00) Brasília

Remetente do envelope:
Hingrid Barbara Miguel
Rua João Bettega, 5200.
Curitiba, PR 81530000
hingridm@positivo.com.br
Endereço IP: 200.186.50.209

Rastreamento de registros

Status: Original
01 de julho de 2025 | 11:02
Portador: Hingrid Barbara Miguel
hingridm@positivo.com.br
Local: DocuSign

Eventos do signatário	Assinatura	Registro de hora e data
MARIA HELENA PEREIRA mhpereira@positivo.com.br Positivo Tecnologia S.A. Nível de segurança: E-mail, Autenticação da conta (Nenhuma), Certificado Digital **Detalhes do provedor de assinatura:** Tipo de assinatura: ICP Smart Card Emissor da assinatura: AC Certisign RFB G5 **Termos de Assinatura e Registro Eletrônico:** Não oferecido através da Docusign	Signed by: MARIA HELENA PEREIRA 83968BDA4C4443B... Adoção de assinatura: Estilo pré-selecionado Usando endereço IP: 200.186.50.209	Enviado: 01 de julho de 2025 | 11:03 Visualizado: 01 de julho de 2025 | 11:19 Assinado: 01 de julho de 2025 | 11:21

Eventos do signatário presencial	Assinatura	Registro de hora e data

Eventos de entrega do editor	Status	Registro de hora e data

Evento de entrega do agente	Status	Registro de hora e data

Eventos de entrega intermediários	Status	Registro de hora e data

Eventos de entrega certificados	Status	Registro de hora e data

Eventos de cópia	Status	Registro de hora e data

Eventos com testemunhas	Assinatura	Registro de hora e data

Eventos do tabelião	Assinatura	Registro de hora e data

Eventos de resumo do envelope	Status	Carimbo de data/hora
Envelope enviado	Com hash/criptografado	01 de julho de 2025 | 11:03
Entrega certificada	Segurança verificada	01 de julho de 2025 | 11:19
Assinatura concluída	Segurança verificada	01 de julho de 2025 | 11:21
Concluído	Segurança verificada	01 de julho de 2025 | 11:21

Eventos de pagamento	Status	Carimbo de data/hora

POSITIVO MASTER *N8450*

ALTA PERFORMANCE E DURABILIDADE + TECNOLOGIA Intel® vPro®

Com a linha de notebooks Positivo Master N8450 sua empresa terá o máximo em performance, produtividade, segurança e gerenciamento remoto com os processadores Intel® Core™ Ultra e Windows 11 Pro. Alta durabilidade e resistência para sua empresa focar apenas no negócio, sem preocupações extras. Proteja o seu investimento com um notebook com as tecnologias mais modernas e recentes, eficiência e a qualidade comprovadas pelas principais certificações exigidas para o ambiente corporativo.





INTELIGÊNCIA ARTIFICIAL

A Positivo oferece recurso de IA para acelerar a sua produtividade. O Positivo Master N8450 possui uma nova arquitetura de PC híbrida com CPU, GPU e NPU*. **NPU é um processador projetado para otimizar cargas de trabalho específicas de Inteligência Artificial.**

intel CORE ULTRA 5 | intel CORE ULTRA 7 | intel vPRO | Windows 11



MICROSOFT COPILOT

Com tecla de atalho para o Copilot. O aplicativo Copilot no Windows é um assistente que integra a IA nas suas atividades, ajuda você a obter respostas e inspiração em suas tarefas, apoia a criatividade e ajuda você a se concentrar.

DESEMPENHO EXCEPCIONAL

- Conta com Processadores Intel® Core™ Ultra
- Gerenciamento remoto Intel® vPro®
- Memória DDR5 e duas portas Thunderbolt 4™
- Opção de Armazenamento com SSD PCIe NVMe Gen 4
- Opção de bateria estendida com maior autonomia
- Opções com a tecnologia mais recente de WiFi – WiFi 6E e 7



DURABILIDADE DE ALTO NÍVEL

Estrutura de metal robusto e teclado resistente ao derramamento de líquido com dreno para escoamento. Projetado para ser extremamente resistente e submetido aos mais variados testes, incluindo rígidas normas militares para computadores.

TESTADO NORMAS MILITARES

O MÁXIMO EM SEGURANÇA

Leitor de impressão digital tipo Touch* e Chip TPM* (Trusted Platform Module) integrado para autenticação e criptografia de informações que requerem mais segurança.

DESIGN FEITO PARA O DIA A DIA

Com apenas 17.9 mm de espessura e pesando a partir de 1,41 kg, é fácil carregar o notebook para qualquer lugar

TECLADO RETRO ILUMINADO

Teclado resistente a líquidos e retro iluminado com LED* para melhor digitação em ambientes escuros



E mais: Dobradiças metálicas e resistentes com **abertura em até 180°** para utilização mais confortável do notebook e compartilhamento da tela; **Windows Hello** no Windows e em aplicativos compatíveis com segurança de nível empresarial; Conecte todos os seus dispositivos com as **4 portas USB disponíveis**, sendo duas delas **Thunderbolt 4;** Autonomia da bateria** de **até 11 hrs** obtido pelo MobileMark 25.

* Itens opcionais. Consulte os modelos com disponibilidade. ** Autonomia real da bateria pode variar conforme a configuração do produto, softwares, configurações de gerenciamento de energia, brilho da tela e utilização do notebook. Configuração: Processador Intel Core Ultra 5 135U, 8 GB de RAM, tela FHD+, brilho da tela 50%, bateria 57Wh, Windows 11 no modo de energia equilibrado.

POSITIVO MASTER *N8450*

Processadores	• Intel® Core™ Ultra 5 / 7 (Série 1) Série U e H • Intel® Core™ Ultra 5 / 7 (Série 2) Série U e H TDP de 15W para processadores Série U | TDP de 28W para processadores Série H
NPU	Integrado ao processador, Intel® AI Boost *Somente em modelos de processadores selecionados*
Sistema Operacional	• Windows 11 Pro (64 bits) • Windows 11 Home (64 bits) • Linux • Shell EFI *Outras opções sob consulta*
Tela	• LCD 14", 16:10, anti-reflexiva, Resolução Full HD+ (WUXGA) 1920 x 1200, LED, IPS, brilho 300 nits, contraste 800:1. • LCD 14", 16:10, anti-reflexiva, Resolução Full HD+ (WUXGA) 1920 x 1200, LED, IPS, brilho 350 nits, contraste 1500:1, com filtro de privacidade eletrônico integrado. Ângulo de abertura do LCD de 180°
Placa-mãe / Chipset	Positivo POS-SIPWOAA | SoC (System on Chip), funcionalidades integradas junto ao processador Suporta Tecnologia de Virtualização Intel® para E/S (VT-d)
Gerenciamento de Sistema	• Intel® vPro® Enterprise Suporta a tecnologia Intel® vPro® para gerenciamento remoto por meio da plataforma Intel® Active Management Technology
BIOS/UEFI	• BIOS desenvolvida pela Positivo seguindo a UEFI versão 2.9 • Memória flash ROM de 32MB de acordo com SMBIOS V.3.6 e com função "Plug & Play" • Idiomas: Português ou Inglês • Conformidade com as diretrizes do NIST SP800-147 e SP800-193 para proteção contra ataques maliciosos • Permite customização do logo de inicialização (BMP ou JPG) • Senhas de administrador/usuário para controle de acesso ao BIOS, alteração da configuração e inicialização do equipamento • Senha para proteção da unidade de armazenamento • Capacidade de habilitar/desabilitar as portas USBs, Webcam, LAN, SSD, WiFi, Bluetooth, Leitor de Cartão e Touchpad • Capacidade de boot através de: Unidades de Armazenamento, Adaptador de Rede (WoL/PXE) e interfaces USB • Suporte a ACPI versão 6.5 com funções de economia de energia e controle automático de temperatura • Registro de número de série e patrimônio com até 20 caracteres, podendo ser lido remotamente via comandos SMBIOS • Função Desktop Management Interface e Common Information Model (CIM) • Suporta atualização remota por meio de software de gerenciamento • Suporte às tecnologias PXE 2.1, S.M.A.R.T., AHCI e NVMe • Compatível com a plataforma SCCM da Microsoft
Memória RAM	2x slots SO-DIMM DDR5 com suporte para até 64 GB e 4800/5600 MT/s. Com suporte ao modo dual-channel
Armazenamento	• SSD de até 1 TB, PCIe Gen 4.0 x4, NVMe, M.2 2280 • SSD de até 1 TB, PCIe Gen 3.0 x4, NVMe, M.2 2280 • SSD de até 1 TB, SATA III, M.2 2280
Leitor de Cartões	Leitor de cartões MicroSD 4.0 (SD / SDHC / SDXC)
Câmera	• FHD 1080p • Infravermelho (IR) FHD 1080p | Suporte ao Windows Hello Cortina de privacidade integrada
Áudio	Áudio de alta definição (HD Áudio), Realtek ALC233 Dois microfones digitais integrados 2x alto-falantes em configuração estéreo com amplificador (total de 4W) Sistema de cancelamento de ruído dos microfones
Conectividade	**LAN** • Intel I219-LM 10/100/1000 Mbps, padrão Gigabit Ethernet (autosense) • Intel I226-LM 2.5 Gbps (autosense) - Conformidade com os padrões IEEE 802.3, 802.3u e 802.3ab - Suporta Wake-on-LAN (WoL), SNMP, PXE, CSMA/CD e iAMT - Compatível com os padrões DASH 1.1, DASH 1.2 e WS-MAN[5] - Conformidade com os padrões IEEE 802.1q, 802.1p, 802.2, 802.1x, 802.3x - Eficiência de Energia IEEE 802.3az - Auto-negociação IEEE 802.3u, Full-Duplex, configurável totalmente por software, compatível com TCP/IP v.4/v.6 **WLAN + Bluetooth** • Intel® Wi-Fi 7 BE200 (802.11be) 2x2 + Bluetooth 5.4[1] • Intel® Wi-Fi 6E AX211 (802.11ax) 2x2 + Bluetooth 5.3[1]

POSITIVO MASTER *N8450*

Portas de Conexão	• 2x USB-C Thunderbolt™ 4 (Alimentação de dispositivos, Power Delivery 3.1, Dados, DisplayPort 2.1 e carregamento da bateria) • 1x USB 3.2 Gen 2 (com função Always On) • 1x USB 3.2 Gen 1 • 1x HDMI 2.1 • 1x RJ-45 • 1x DC-IN • 1x Áudio combo (entrada + saída de áudio) • 1x Leitor de cartão Smart Card (opcional)
Slots	1x PCIe Gen 4.0 x4, M.2 2280, para SSD 1x PCIe Gen 4.0 x4 / SATA, M.2 2280, para SSD 1x PCIe, M.2 2230, para WiFi
Gráficos	• Intel® Graphics integrado ao processador, com memória alocada dinamicamente. Suporte a Microsoft® DirectX® 12.1 e OpenGL 4.6. • Intel® Arc™ Graphics integrado aos processador, com memória alocada dinamicamente. Suporte a Microsoft® DirectX® 12.2 e OpenGL 4.6. *- Varia de acordo com o modelo do processador.* *- Intel Arc Graphics está disponível em modelos de processadores selecionados da série H, com no mínimo 16 GB de memória RAM e sistema configurado em dual-channel.*
Teclado	• Com retroiluminação • Sem retroiluminação - Padrão ABNT2, 84 teclas com sinalizador visual da tecla CapsLock ativa - Resistência a derramamento de líquidos com dreno para escoamento - Teclas impressas do tipo permanente - Teclas de Função (Fn + tecla de função): Função mudo, aumenta/diminui volume. Ativa/desativa microfone. Liga/desliga e alterna a intensidade da iluminação do teclado retroiluminado (opcional). Aumenta/diminui o brilho da tela. Ativa/desativa touchpad. Alterna entre tela do notebook e tela externa. Ativa/desativa modo avião (WiFi e bluetooth). Função Suspender.
Touchpad	Touchpad com botões integrados, suporte a toques múltiplos, gestos e função de rolagem Resistência a derramamento de líquidos
Segurança	• Leitor de impressões digitais integrado tipo Touch compatível com Windows Hello (opcional). • Sensor de intrusão integrado para detecção da abertura do notebook. • Leitor de cartão Smart Card em conformidade com a norma ISO-7816 (opcional). • Solução TPM 2.0 integrado no SoC. | Chip de criptografia TPM 2.0 discreto certificado pelo TCG e FIPS 140-2 (opcional). • Abertura para trava tipo Kensington. • Limpeza segura dos dados do SSD via BIOS em conformidade com as diretrizes do NIST SP800-88r1. • Suporte a soluções de segurança Absolute². • Suporta Intel® Boot Guard que ajuda a proteger o BOOT contra vírus e ataques de softwares maliciosos.
Chassi	Tampas externas de alumínio | Dobradiças metálicas | Base antiderrapante
LEDs indicadores	Indicador de ligado/hibernação, atividade da unidade de armazenamento, WiFi, indicador de bateria em nível baixo e status de carregamento, Caps Lock, câmera e atividade de rede na porta LAN
Diagnóstico (opcional)	• Solução para recuperação de BIOS corrompido através de hardware local, unidade local ou de unidade externa USB. Possui função de verificação de inicialização que permite recuperação automática. • Ferramenta de diagnóstico pré-boot de hardware abrangendo testes dos seguintes componentes: CPU, Memória, Unidades de armazenamento, Teclado, Mouse, Vídeo, Bateria, Interface de rede, portas USBs e componentes da Placa Mãe. • Sistema de diagnóstico de hardware através de LED e alerta sonoro.
Softwares Positivo (opcional)	• Software de gerenciamento para gestão de TI • Software para atualizações de drivers e BIOS • Software para gerenciamento e controle do TPM • Software para criptografia de dados • Software de backup • Software para consulta de vigência da garantia
Fonte de alimentação	• 65W, USB-C • 65W, DC-IN • Outras opções sob consulta Eficiência nível VI, 100~240V (+/-10%) / 50~60Hz automática, 3 pinos – Com suporte a fast charging (carregamento de 80% da capacidade da bateria em até 1 hora com o notebook desligado)
Bateria	• 45 Wh (3 células, 3948mAh, 11.4V) • 57 Wh (3 células, 4936mAh, 11.55V) Bateria de Polímero de Lítio-Ion interna removível, 3 células, com suporte a fast charging (carregamento de 80% da capacidade da bateria em até 1 hora com o notebook desligado)
Cor	Cinza

POSITIVO MASTER *N8450*

Dimensões (L x P x A)	• 318 x 224,9 x 17.9 mm (modelos com tela comum) • 318 x 224,9 x 19.3 mm (modelos com tela com filtro de privacidade integrado)
Peso Líquido[3]	• 1,41 Kg (modelos com bateria de 45Wh) • 1,43 Kg (modelos com bateria de 57Wh)
Documentos e Acessórios (opcional)	• Adaptador CA • Cabo de alimentação NBR 14136/02 – 2P+T • Adaptador de tomada padrão antigo para NBR 14136/02 • Guia Rápido e/ou Manual do Usuário • Discos/Mídias de Recuperação • Trava/Kit de Segurança • Mouse/MiniMouse Ótico • Mousepad • Maleta/Mochila para transporte • Docking Station / HUB USB • Adaptadores de vídeo HDMI/USB-C para DVI/HDMI/DP/VGA • Fone de Ouvido / Headset
Certificações/ Compatibilidades[4]	**Compatibilidade de hardware:** Microsoft® Windows 11® (x64) **Segurança, Compatibilidade Eletromagnética e Eficiência Energética:** Portaria INMETRO 304/2023 **Compatibilidade eletromagnética:** IEC 61000, CISPR22 e CISPR24 **Segurança do usuário:** IEC 60950/IEC 62368 **Ruído acústico:** De acordo com NBR 10152 (ISO 7779 e ISO 9296) **Equipamento ecológico:** RoHS **Certificado DMI:** DMI 2.0
MIL-STD 810H	Teste queda, Método 516.8, Procedimento IV Teste choque mecânico, Método 516.8, Procedimento I Teste umidade, Método 507.6, Procedimento II Teste alta temperatura, Método 501.7, Procedimento II Teste baixa temperatura, Método 502.7, Procedimento II Teste baixa pressão em operação, Método 500.6, Procedimento I Teste baixa pressão em armazenamento, Método 500.6, Procedimento II Teste areia e poeira, Método 510.7, Procedimento I Teste rajadas de poeira, Método 510.7, Procedimento II Teste vibração, Método 514.8, Procedimento II Teste congelamento e descongelamento, Método 524.1, Procedimento III

1 A versão do Bluetooth pode variar devido a limitação do sistema operacional.
2 Equipamento preparado para receber as soluções de segurança Absolute. Para aquisição consulte os termos e condições em https://homeoffice.absolute.com/pt-br.
3 O peso final do notebook pode variar conforme a sua configuração.
4 As certificações podem variar de acordo com a configuração do equipamento.
5 A tecnologia DASH estará disponível quando a tecnologia Intel® vPro™estiver habilitada e funcional.

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Processador Intel® Core™ Ultra 5 135U
12 M de cache, até 4,40 GHz

Processador Intel® Core™ Ultra 5 135U
12 M de cache, até 4,40 GHz

Adicionar para comparar

Conheça os processadores Intel mais recentes e experimente o desempenho aprimorado

Essenciais

Coleção de produtos	Intel® Core™ Ultra processors (Series 1)
Codinome	Products formerly Meteor Lake
Segmento vertical	Mobile
Número do processador	135U
Litografia	Intel 4

Especificações da CPU

Número de núcleos	12
Nº de Performance-cores	2
Nº de Efficient-cores	8
Nº de Efficient-core de baixo consumo de energia	2
Total de threads	14
Frequência turbo max	4.4 GHz
Frequência turbo máx. do Performance-core	4.4 GHz
Frequência turbo máx. do Efficient-core	3.6 GHz
Frequência turbo máx. do Efficient-core de baixo consumo de energia	2.1 GHz
Frequência base do Performance-core	1.6 GHz
Frequência base do Efficient-core	1.1 GHz
Frequência base do Efficient-core de baixo consumo de energia	700 MHz
Cache	12 MB Intel® Smart Cache
Potência básica do processador	15 W
Energia turbo máxima	57 W

Proposta de Preço ITEM 3 - POSITIVO TECNOLOGIA (1661786) SEI 2025.0013177 / pg. 1145

Potência mínima garantida	12 W
Intel® Deep Learning Boost (Intel® DL Boost)	Yes
Frameworks de software de IA suportados pela CPU	OpenVINO™, WindowsML, ONNX RT

Informações complementares

Status	Launched
Data de introdução	Q4'23
Opções integradas disponíveis	Yes
Ajuste de produto (usos embarcados)	Yes
Ficha técnica	Veja agora

Especificações de memória

Tamanho máximo de memória (de acordo com o tipo de memória)	96 GB
Tipos de memória	Up to LPDDR5/x 7467 MT/s Up to DDR5 5600 MT/s
Nº máximo de canais de memória	2
Compatibilidade com memória ECC ‡	No

GPU Specifications

GPU Name‡	Intel® Graphics
Máxima frequência dinâmica da placa gráfica	1.9 GHz
Saída gráfica	DP2.1 UHBR20, HDMI2.1
X^e-cores	4
Traçado de raio	Yes
Resolução máxima (HDMI)‡	4096 x 2304 @ 60Hz (HDMI 2.1 TMDS) 7680 x 4320 @ 60Hz (HDMI2.1 FRL)
Resolução máxima (DP)‡	7680 x 4320 @ 60Hz
Resolução máxima (eDP - tela plana integrada)‡	3840x2400 @ 120Hz
Suporte para DirectX*	12.2
Suporte para OpenGL*	4.6
Suporte a OpenCL*	3.0
Mecanismos de Codec Multiformatos	2
Codificação/Decodificação de hardware H.264	Yes
Codificação/Decodificação de hardware H.265 (HEVC)	Yes
Codificação/Decodificação AV1	Yes
Fluxo de bits e decodificação VP9	Yes
Intel® Quick Sync Video	Yes

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Nº de monitores aceitos ‡	4
ID do dispositivo	0x7D45
Intel® Deep Learning Boost (Intel® DL Boost) na GPU	Yes
Frameworks de software de IA suportados pela GPU	OpenVINO™, WindowsML, DirectML, ONNX RT, WebGPU

Especificações da NPU

Nome da NPU‡	Intel® AI Boost
Suporte à esparsidade	Yes
Suporte para efeitos do Windows Studio	Yes
Frameworks de software de IA suportados pela NPU	OpenVINO™, WindowsML, DirectML, ONNX RT

Opções de expansão

Intel® Thunderbolt™ 4	Yes
Suporte para PCI	4.0
Configurações PCI Express ‡	3 (x4) Gen4 + 8 (x1,x2,x4) Gen4
Nº máximo de linhas PCI Express	20

Especificações de encapsulamento

Soquetes suportados	FCBGA2049
Configuração máxima da CPU	1
Temperatura máxima de operação	110 °C
Tamanho do pacote	50 mm x 25 mm

Tecnologias avançadas

Acelerador Gaussiano e Neural da Intel®	3.5
Intel® Thread Director	Yes
Intel® Image Processing Unit	6.0
Tecnologia Intel® Smart Sound	Yes
Intel® Wake on Voice	Yes
Áudio de alta definição Intel®	Yes
Tecnologia Intel® Adaptix™	Yes
Tecnologia Intel® Speed Shift	Yes
Tecnologia Intel® Turbo Boost Max 3.0 ‡	No
Tecnologia Hyper-Threading Intel® ‡	Yes
Conjunto de instruções	64-bit
Extensões do conjunto de instruções	Intel® SSE4.1, Intel® SSE4.2, Intel® AVX2
Tecnologias de monitoramento térmico	Yes
Acesso de Memória Flexível Intel®	Yes

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Intel® Volume Management Device (VMD - Dispositivo de Gerenciamento de Volume)	Yes

Segurança e confiabilidade

Elegibilidade Intel vPro® ‡	Intel vPro® Enterprise
Intel® Threat Detection Technology (TDT)	Yes
Intel® Active Management Technology (AMT) ‡	Yes
Intel® Standard Manageability (ISM) ‡	Yes
Intel® Remote Platform Erase (RPE) ‡	Yes
Intel® One-Click Recovery ‡	Yes
Elegibilidade para o Intel® Hardware Shield ‡	Yes
Intel® Control-Flow Enforcement Technology	Yes
Intel® Total Memory Encryption - Multi Key	Yes
Novas instruções Intel® AES	Yes
Chave Segura	Yes
Intel® Trusted Execution Technology ‡	Yes
Bit de desativação de execução ‡	Yes
Intel® OS Guard	Yes
Intel® Boot Guard	Yes
Controle de Execução baseado em Modo (MBEC — Mode-based Execute Control)	Yes
Programa Intel® da Plataforma de Imagem Estável (SIPP)	Yes
Tecnologia de Virtualização Intel® com proteção de redirecionamento (VT-rp) ‡	Yes
Tecnologia de virtualização Intel® (VT-x) ‡	Yes
Tecnologia de virtualização Intel® para E/S dirigida (VT-d) ‡	Yes
Intel® VT-x com Tabelas de páginas estendidas (EPT) ‡	Yes

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SKUs "anunciados" ainda não estão disponíveis. Favor consultar a data de lançamento para a disponibilidade no mercado.

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Os gráficos Intel® Arc™ estão disponíveis apenas em sistemas selecionados equipados com processadores Intel® Core™ Ultra série V com design térmico do sistema qualificado ou sistemas selecionados equipados com o processador Intel® Core™ Ultra série H, com pelo menos 16 GB de memória do sistema em uma configuração de canal duplo. É necessária a habilitação do OEM. Outras configurações de sistema com processador Intel® Core™ Ultra apresentam gráficos Intel®. Verifique com o OEM ou varejista os detalhes da configuração do sistema.

Apenas gráficos Intel® Iris® Xe: para usar a marca Intel® Iris® Xe, o sistema deve ser preenchido com memória de 128 bits (canal duplo). Caso contrário, use a marca Intel® UHD.

Consulte https://www.intel.com.br/content/www/br/pt/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading para obter mais informações, incluindo detalhes sobre quais processadores são compatíveis com a Tecnologia Hyper-Threading Intel®.

Alguns produtos suportam as novas instruções AES com uma atualização da Configuração do processador, em particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Favor entrar em contato com o OEM para o BIOS que inclui a mais recente atualização da Configuração do processador.

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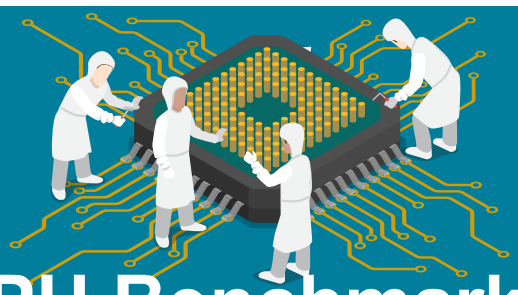
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CPU Benchmarks



CPU Benchmarks

Over 1,000,000 CPUs Benchmarked

Intel Core Ultra 5 135U

Benchmarks for the Intel Core Ultra 5 135U can be found below. Release dates, price and performance comparisons are also listed when available. This is made using thousands of PerformanceTest benchmark results and is updated daily.

- The first graph shows the relative performance of the CPU compared to the 10 other common (single) CPUs in terms of PassMark CPU Mark.
- The 2nd graph shows the value for money, in terms of the CPUMark per dollar.
- The pricing history data shows the price for a single Processor. For multiple Processors, multiply the price shown by the number of CPUs.

Is the Intel Core Ultra 5 135U Good for Gaming?

This is relatively new CPU that contains 12 Cores and 14 Threads. The Intel Core Ultra 5 135U also has reasonable threaded performance that will serve well in games. Paired with a good videocard, *is this CPU Good for Gaming?* Yes, this would be a suitable CPU for gaming. [More ...]

Intel Core Ultra 5 135U	Average CPU Mark
Description: Intel Graphics	Multithread Rating **17488**
Class: Laptop / **Socket:** FCBGA2049	Single Thread Rating **3356**
Total Cores: 12 Cores, 14 Threads	Samples: 519*
Performance Cores: 2 Cores, 4 Threads, 1.6 GHz Base, 4.4 GHz Turbo	*Margin for error: Low
Efficient Cores: 10 Cores, 10 Threads, 1.1 GHz Base, 3.6 GHz Turbo	+ COMPARE
Typical TDP: 28 W / **TDP Down:** 12 W	
TDP Up : 57 W	
Cache per CPU Package: L1 Instruction Cache: 2 x 64 KB, L1 Data Cache: 2 x 48 KB, L2 Cache: 5 x 2048 KB, L3 Cache: 12 MB / **Cache per Eff. CPU Package:** Eff. L1 Instruction Cache: 10 x 64 KB, Eff. L1 Data Cache: 10 x 32 KB	
Memory Support: Max. Memory Size: 96 GB (Up to LPDDR5/x 7467 MT/s Up to DDR5 5600 MT/s)	

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Other names: Intel(R) CoreTM Ultra 5 135U, Intel(R) Core(TM) Ultra 5 135U, Intel Core Ultra 5 135U

CPU Benchmarks

CPUmark/$Price: NA

Overall Rank:
938th fastest in multithreading out of 5246 CPUs
455th fastest in single threading out of 5246 CPUs
215th fastest in out of 1496 Laptop CPUs

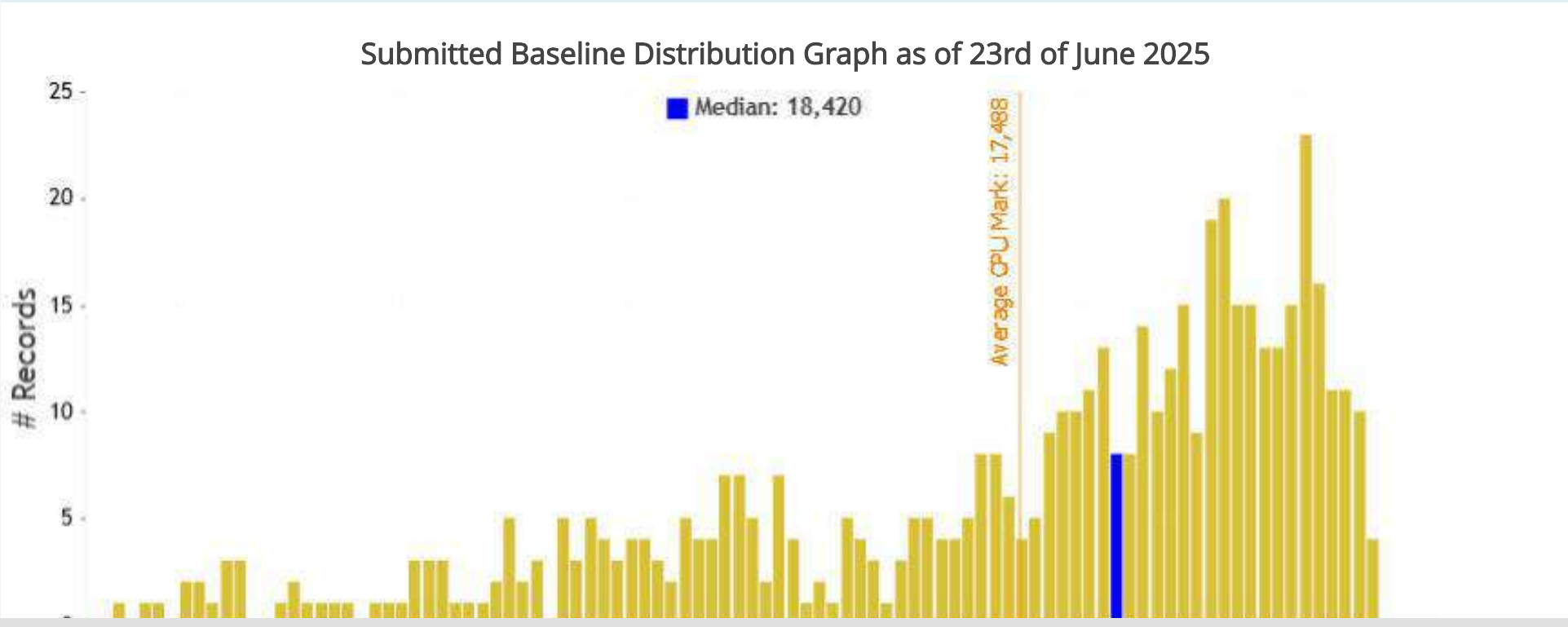
Last Price Change: NA

CPU Test Suite Average Results for Intel Core Ultra 5 135U

Integer Math	57,035 MOps/Sec
Floating Point Math	41,480 MOps/Sec
Find Prime Numbers	65 Million Primes/Sec
Random String Sorting	21,769 Thousand Strings/Sec
Data Encryption	12,300 MBytes/Sec
Data Compression	198,850 KBytes/Sec
Physics	1,129 Frames/Sec
Extended Instructions	11,262 Million Matrices/Sec
Single Thread	3,356 MOps/Sec

From submitted results to PerformanceTest V10 as of 27th of June 2025.

CPU Mark Distribution for Intel Core Ultra 5 135U



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From submitted results since PerformanceTest V10 as of 23rd of June 2025.

For distribution graph only: Results are trimmed to exclude outliers by disregarding the bottom 1% and top 1% of submissions.

CPU Benchmarks

Search for Intel Core Ultra 5 135U

from the Featured Merchants below:

amazon

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Machines with this CPU (or similar)



Dell Latitude 5450 5000 14" FHD Business Laptop Computer, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 16GB DDR5 RAM, 512GB PCIe SSD, WiFi 6E, Backlit Keyboard, Thunderbolt 4, HDMI, Windows 11 Pro — $979.00 (www.amazon.com)



Dell Latitude 3550 Laptop Computer for Business Work, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 16GB DDR5 RAM, 512GB PCIe SSD, 15.6" FHD, WiFi 6, Backlit Keyboard, Fingerprint Reader, Windows 11 Pro — $849.00 (www.amazon.com)



Dell Latitude 5550 5000 Business Laptop Computer, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 32GB DDR5 RAM, 1TB PCIe SSD, 15.6" FHD, WiFi 6, Thunderbolt 4, Backlit KB, Fingerprint Reader, Win11 Pro — $1299.00 (www.amazon.com)



Dell Latitude 5550 Multi-Touch Laptop 15.6" FHD, Intel Core Ultra 5-135U vPro, 64GB RAM, 2TB NVMe SSD, Webcam, WiFi 6E, BT, Backlit Keyboard, Thunderbolt, HDMI, USB C, Windows 11 Pro, Notebook Grey — $1199.99 (www.amazon.com)



Dell Latitude 5550 15 5000 15.6" FHD Business AI Laptop Computer, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 16GB DDR5 RAM, 512GB SSD, WiFi 6, BT 5.3, Backlit KB, FR, Thunderbolt 4, Windows 11 Pro — $1179.00 (www.amazon.com)

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CPU Mark Relative to Top 10 Common Laptop CPUs

As of 27th of June 2025 - Higher results represent better performance

Processor	Average CPU Mark	
Apple M1 Max 10 Core 3200 MHz		22,145
AMD Ryzen 7 5800H		20,823
Intel Core i7-11800H @ 2.30GHz		20,052
AMD Ryzen 7 4800H		18,243
Intel Core Ultra 5 135U		17,488

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Apple M2 8 Core 3500 MHz		15,657

CPU Benchmarks

Intel Core i7-10750H @ 2.60GHz		11,641
Intel Core i7-9750H @ 2.60GHz		10,689
Intel Core i5-1135G7 @ 2.40GHz		9,534

CPU Value (CPU Mark / $Price)

As of 27th of June 2025 - Higher results represent better value

Processor	CPU Mark / $Price	
Intel Core i7-11800H @ 2.30GHz		50.76
Intel Core i5-1135G7 @ 2.40GHz		30.85
Intel Core i7-9750H @ 2.60GHz		11.13
Intel Core Ultra 5 135U		NA
Apple M1 8 Core 3200 MHz		NA
Apple M2 8 Core 3500 MHz		NA
Apple M1 Max 10 Core 3200 MHz		NA
AMD Ryzen 7 5800H		NA
AMD Ryzen 7 4800H		NA
AMD Ryzen 5 5600H		NA
Intel Core i7-10750H @ 2.60GHz		NA

Single Thread Rating

As of 27th of June 2025 - Higher results represent better performance

Processor	Average Thread Rating	
Apple M2 8 Core 3500 MHz		3,901
Apple M1 Max 10 Core 3200 MHz		3,836
Apple M1 8 Core 3200 MHz		3,680
Intel Core Ultra 5 135U		3,356

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AMD Ryzen 7 5800H	3,025

CPU Benchmarks

Intel Core i5-1135G7 @ 2.40GHz	2,644
Intel Core i7-10750H @ 2.60GHz	2,630
AMD Ryzen 7 4800H	2,598
Intel Core i7-9750H @ 2.60GHz	2,406

Last 5 Baselines for Intel Core Ultra 5 135U

Most recent listed first

Baseline	CPU Mark
BL2720376 - Jun 25 2025	19741
BL2716188 - Jun 23 2025	19062
BL2715161 - Jun 23 2025	20359
BL2715160 - Jun 23 2025	20440
BL2711176 - Jun 21 2025	20337

Additional baselines can be obtained using Windows version of PerformanceTest's Manage Baselines feature.

Popular comparisons for Intel Core Ultra 5 135U

As of 27th of June 2025 - Higher results represent better performance

Processor	Average CPU Mark
Intel Core Ultra 5 135U	17,488
Apple M3 8 Core vs Intel Core Ultra 5 135U	19,182 *(+9.7%)*
Intel Core Ultra 5 125U vs Intel Core Ultra 5 135U	17,499 *(+0.1%)*
Intel Core Ultra 7 165U vs Intel Core Ultra 5 135U	17,137 *(-2.0%)*
Intel Core Ultra 7 155U vs Intel Core Ultra 5 135U	16,460 *(-5.9%)*
Intel Core 7 150U vs Intel Core Ultra 5 135U	15,355 *(-12.2%)*
Intel Core i5-1335U vs Intel Core Ultra 5 135U	14,314 *(-18.2%)*
Intel Core i7-1355U vs Intel Core Ultra 5 135U	14,307 *(-18.2%)*

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Intel Core 3 100U vs Intel Core Ultra 5 135U	14,049 (-19.7%)

CPU Benchmarks

Intel Core i7-1255U vs Intel Core Ultra 5 135U	13,253 (-24.2%)
Intel Core Ultra 7 164U vs Intel Core Ultra 5 135U	13,250 (-24.2%)

Is the Intel Core Ultra 5 135U Good for Gaming?

As of 27th of June 2025 - Higher results represent better performance

Processor	Relative Gaming Score
AMD Ryzen 9 9955HX3D	9,834
Intel Core Ultra 9 275HX	8,937
Intel Core Ultra 7 255HX	8,128
Intel Core Ultra 7 265	8,089
Intel Core Ultra 7 265H	7,774
Intel Core i9-14900HX	7,051
AMD Ryzen AI Max 390	7,027
Intel Core 7 250H	6,905
AMD Ryzen AI Max Pro 390	6,823
Intel Core i9-13900HX	6,783
Intel Core i9-13980HX	6,764
Intel Core i9-13950HX	6,757
Intel Core Ultra 5 135U	3,964

Software

- BurnInTest
- PerformanceTest
- OSForensics
- MemTest86

Hardware

- USB3.0 Loopback Plugs
- USB2.0 Loopback Plugs
- PCIe Test Cards
- USB Power Delivery Tester

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- Zoom Search Engine
- Free Software

CPU Benchmarks

Benchmarks

- CPU Benchmarks
- Video Card Benchmarks
- Hard Drive Benchmarks
- RAM Benchmarks
- PC Systems Benchmarks
- Software Marketshare
- Database Benchmarks
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HEADQUARTERS

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Memory Module Datasheet

DDR5-5600 SODIMM
Based on 16Gb P-die

Jul 04th, 2024

Rev 1.0

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Identificação interna do documento: H2SE6K90B9-TDFBBO1

Ordering Information

Part Number	Description	Device Vendor
ZMS5WMC3C1J0B46SPG	8GB SODIMM (1Gx64) 1Rx16, DDR5-5600 (46-45-45), 1Gx16 based IC, 262-pin, 1.1V, 30.00 mm, Halogen-Free (RoHS Compliant)	IC Zilia P/N ZDRPAH6Y16XCWM1N9T Samsung IC ref. P/N K4RAH165VP-BCWM, Samsung module ref. P/N M425R1GB4PB0-CWMOD
ZMS5WMC8C2J0B46SPG	16GB SODIMM (2Gx64) 1Rx8, DDR5-5600 (46-45-45), 2Gx8 based IC, 262-pin, 1.1V, 30.00 mm, Halogen-Free (RoHS Compliant)	IC Zilia P/N ZDRPAH2Y08XCWM8N9T Samsung IC ref. P/N K4RAH086VP-BCWM Samsung module ref. P/N M425R2GA3PB0-CWMOD
ZMS5WMC8C4J0B46SPG	32GB SODIMM (4Gx64) 2Rx8, DDR5-5600 (46-45-45), 2Gx8 based IC, 262-pin, 1.1V, 30.00 mm, Halogen-Free (RoHS Compliant)	IC Zilia P/N ZDRPAH2Y08XCWM8N9T Samsung IC ref. P/N K4RAH086VP-BCWM, Samsung module ref. P/N M425R4GA3PB0-CWMOD

Proposta de Preço ITEM 6 - PREGÃO ELETRÔNICO Nº 13501/23 Identificação interna do documento: H2SE6K90B9-TDFBBQ1 SEI 2025.001317 / pg. 1160

Part Number Decoder

Z	M	S	5	W	M	C	#	C	#	J	0	B	4	6	S	P	G
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

1	**Module Manufacturer** **Z:** Zilia Technologies
2	**Product Identification** **M:** Memory Module (RoHS & Halogen-Free & Sb-Free)
3	**DIMM Type** **S:** Small Outline DIMM
4	**DRAM Component Type** **5:** DDR5 SDRAM
5~6	**Speed** **WM:** DDR5-5600B (46-45-45)
7	**Temperature & Power** **C:** Commercial Temp (0°~85°C) & Normal Power
8	**DRAM Bit Organization** **3:** x16 **8:** x8
9	**DRAM Package Type** **C:** FBGA(Flip-Chip)
10~11	**Module Depth** **1J**: 1Gb **2J**: 2Gb **4J**: 4Gb
12	**PCB Revision** **0:** None
13	**PMIC & RCD Information** **B:** RNS
14~15	**Module Pinout/Data Width** **46:** 262-Pin x64
16	**Module Design** **S:** Samsung
17	**DRAM IC Generation** **P:** P-die
18	**Internal Code** **G**

Proposta de Preço ITEM 8 - PREGÃO ELETRÔNICO SRP Nº 90011/24 SEI 2025.001317 / pg. 1161
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

Revision History

Date	Description
Jul 04th, 2024	Initial release.

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Identificação interna do documento: H2SE6K90B9-TDFBBQ01

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17.1 1Gx16 based x64 Module (1 Rank) - ZMS5WMC3C1J0B46SPG 83
17.2 2Gx8 based x64 Module (1 Rank) - ZMS5WMC8C2J0B46SPG 84
17.3 2Gx8 based x64 Module (2 Ranks) - ZMS5WMC8C4J0B46SPG 85

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1.0 DDR5 SMALL OUTLINE DIMM ORDERING INFORMATION

[Table 1] Ordering Information

Part Number	Density	Organization	Component Composition	Number of Rank	Height
ZMS5WMC3C1J0B46SPG	8GB	1Gx64	1Gx16(ZDRPAH6Y16XCWM1N9T) * 4	1	30mm
ZMS5WMC8C2J0B46SPG	16GB	2Gx64	2Gx8(ZDRPAH2Y08XCWM8N9T) * 8	1	30mm
ZMS5WMC8C4J0B46SPG	32GB	4Gx64	2Gx8(ZDRPAH2Y08XCWM8N9T) * 16	2	30mm

2.0 KEY FEATURES

[Table 2] Speed Bin

Speed	DDR5-4400	DDR5-4800	DDR5-5200	DDR5-5600	Unit
	36-36-36	40-39-39	42-42-42	46-45-45	
tCK(min)	0.454	0.416	0.384	0.357	ns
CAS Latency	36	40	42	46	nCK
tRCD(min)	16.000	16.000	16.000	16.000	ns
tRP(min)	16.000	16.000	16.000	16.000	ns
tRAS(min)	32.000	32.000	32.000	32.000	ns
tRC(min)	48.000	48.000	48.000	48.000	ns

- JEDEC standard compliant.
- VDD = VDDQ = 1.1V (1.067V(- 3%) ~ 1.166V(+6%)).
- VPP = 1.8V (1.746 (-3%) ~ 1.908 (+6%).
- 2000MHz fCK for 4000Mb/sec/pin, 2200MHz fCK for 4400Mb/sec/pin, 2400MHz fCK for 4800Mb/sec/pin. 2600MHz fCK for 5200Mb/sec/pin 2800MHz fCK for 5600Mb/sec/pin.
- 32 Banks (8 Bank Groups).
- Programmable CAS Latency (posted CAS): 22,26,28,30,32,36,40,42,46,50
- Programmable CAS Write Latency (CWL) = CL-2.
- 16-bit prefetch.
- Burst Length: 16 by default. 8 with tCCD=8, which does not allow gapless READ or WRITE, where BC8 and BL32 refer to CA5 BL*=L.
- Bi-directional Differential Data-Strobe.
- Internal ZQ calibration via Multi-Purpose Command (MPC) - ZQcal start and ZQcal Latch.
- On Die Termination (ODT) via Mode Register setting : RTT_PARK, RTT_WR, RTT_NOM_WR, RTT_NOM_RD.
- Average Refresh period 3.9us at lower than TCASE 85°C, 1.95us at 85°C < TCASE < 95 °C.
- Connectivity Test Mode (TEN) is supported.
- Asynchronous Reset.

3.0 ADDRESS CONFIGURATION

[Table 3] Address Information

Configuration		2Gb x8	1Gb x16
Bank Address	BG Address	BG0~BG2	BG0~BG1
	Bank Address in a BG	BA0~BA1	BA0~BA1
	# BG / # Banks per BG / # Banks	8 / 4 / 32	4 / 4 / 16
Row ddress		R0~R15	R0~R15
Column Address		C0~C9	C0~C9
Page size		1KB	2KB

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Identificação interna do documento: H2SE6K90B9-TDFBBQ1

4.0 SMALL OUTLINE DIMM PIN INFORMATION

[Table 4] PIN Configuration

Pin#	Front Side	Pin#	Back Side	Pin#	Front Side	Pin#	Back Side	Pin#	Front Side	Pin#	Back Side
1	VIN_BULK	2	HSA	99	CB2_A	100	DQS4_A_c	195	DQ6_B	196	VSS
3	VIN_BULK	4	HSCL	101	VSS	102	DQS4_A_t	197	VSS	198	DQ7_B
5	RFU	6	HSDA	103	CB3_A	104	VSS	199	DQ8_B	200	VSS
7	PWR_GOOD	8	PWR_EN	105	VSS	106	CS0_A_n	201	VSS	202	DQ9_B
9	VSS	10	VSS	107	CA0_A	108	ALERT_n	203	DQ10_B	204	VSS
11	DQ0_A	12	DQ1_A	109	CA1_A	110	CS1_A_n	205	VSS	206	DQ11_B
13	VSS	14	VSS	111	VSS	112	VSS	207	DQS1_B_c	208	VSS
15	DQ2_A	16	DQ3_A	113	CA2_A	114	CA3_A	209	DQS1_B_t	210	DM1_B_n
17	VSS	18	VSS	115	CA4_A	116	CA5_A	211	VSS	212	VSS
19	DM0_A_n	20	DQS0_A_c	117	VSS	118	VSS	213	DQ12_B	214	DQ13_B
21	VSS	22	DQS0_A_t	119	CA6_A	120	CA7_A	215	VSS	216	VSS
23	DQ4_A	24	VSS	121	CA8_A	122	CA9_A	217	DQ14_B	218	DQ15_B
25	VSS	26	DQ5_A	123	VSS	124	VSS	219	VSS	220	VSS
27	DQ6_A	28	VSS	125	CA10_A	126	CA11_A	221	DQ16_B	222	DQ17_B
29	VSS	30	DQ7_A	KEY				223	VSS	224	VSS
31	DQ8_A	32	VSS	127	CA12_A	128	RFU	225	DQ18_B	226	DQ19_B
33	VSS	34	DQ09_A	129	VSS	130	VSS	227	VSS	228	VSS
35	DQ10_A	36	VSS	131	CK0_A_t	132	CK1_A_t	229	DM2_B_n	230	DQS2_B_c
37	VSS	38	DQ11_A	133	CK0_A_c	134	CK1_A_c	231	VSS	232	DQS2_B_t
39	DQS1_A_c	40	VSS	135	VSS	136	VSS	233	DQ20_B	234	VSS
41	DQS1_A_t	42	DM1_A_n	137	CK0_B_t	138	CK1_B_t	235	VSS	236	DQ21_B
43	VSS	44	VSS	139	CK0_B_c	140	CK1_B_c	237	DQ22_B	238	VSS
45	DQ12_A	46	DQ13_A	141	VSS	142	VSS	239	VSS	240	DQ23_B
47	VSS	48	VSS	143	RFU	144	CA12_B	241	DQ24_B	242	VSS
49	DQ14_A	50	DQ15_A	145	CA11_B	146	CA10_B	243	VSS	244	DQ25_B
51	VSS	52	VSS	147	VSS	148	VSS	245	DQ26_B	246	VSS
53	DQ16_A	54	DQ17_A	149	CA9_B	150	CA8_B	247	VSS	248	DQ27_B
55	VSS	56	VSS	151	CA7_B	152	CA6_B	249	DQS3_B_c	250	VSS
57	DQ18_A	58	DQ19_A	153	VSS	154	VSS	251	DQS3_B_t	252	DM3_B_n
59	VSS	60	VSS	155	CA5_B	156	CA4_B	253	VSS	254	VSS
61	DM2_A_n	62	DQS2_A_c	157	CA3_B	158	CA2_B	255	DQ28_B	256	DQ29_B
63	VSS	64	DQS2_A_t	159	VSS	160	VSS	257	VSS	258	VSS
65	DQ20_A	66	VSS	161	CS0_B_n	162	CA1_B	259	DQ30_B	260	DQ31_B
67	VSS	68	DQ21_A	163	RESET_n	164	CA0_B	261	VSS	262	VSS
69	DQ22_A	70	VSS	165	CS1_B_n	166	VSS				
71	VSS	72	DQ23_A	167	VSS	168	CB0_B				
73	DQ24_A	74	VSS	169	DQS4_B_c	170	VSS				
75	VSS	76	DQ25_A	171	DQS4_B_t	172	CB1_B				
77	DQ26_A	78	VSS	173	VSS	174	VSS				
79	VSS	80	DQ27_A	175	CB3_B	176	CB2_B				
81	DQS3_A_c	82	VSS	177	VSS	178	VSS				
83	DQS3_A_t	84	DM3_A_n	179	DQ0_B	180	DQ1_B				
85	VSS	86	VSS	181	VSS	182	VSS				
87	DQ28_A	88	DQ29_A	183	DQ2_B	184	DQ3_B				
89	VSS	90	VSS	185	VSS	186	VSS				
91	DQ30_A	92	DQ31_A	187	DM0_B_n	188	DQS0_B_c				
93	VSS	94	VSS	189	VSS	190	DQS0_B_t				
95	CB0_A	96	CB1_A	191	DQ4_B	192	VSS				
97	VSS	98	VSS	193	VSS	194	DQ5_B				

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[Table 5] PIN Description

Pin Name	Description
CA0_A – CA12_A, CA0_B – CA12_B	SDRAM Command/Address bus
CS0_A_n – CS1_A_n, CS0_B_n – CS1_B_n	SDRAM Chip Select
DQ0_A – DQ31_A, DQ0_B – DQ31_B	DIMM memory data bus
CB0_A – CB3_A, CB0_B – CB3_B	DIMM ECC check bits
DQS0_A_t – DQS4_A_t, DQS0_B_t – DQS4_B_t	SDRAM data strobes (positive line of differential pair)
DQS0_A_c – DQS4_A_c, DQS0_B_c – DQS4_B_c	SDRAM data strobes (negative line of differential pair)
DM0_A_n – DM3_A_n, DM0_B_n – DM3_B_n	SDRAM data masks
CK0_A_t, CK1_A_t, CK0_B_t, CK1_B_t	SDRAM clocks (positive line of differential pair)
CK0_A_c, CK1_A_c, CK0_B_c, CK1_B_c	SDRAM clocks (negative line of differential pair)

Pin Name	Description
HSCL	SidebandBus clock
HSDA	SidebandBus data
HSA	SidebandBus address
ALERT_n	SDRAM ALERT_n
RESET_n	Set DRAMs to a Known State
VIN_BULK	5V power input supply to the PMIC for analog circuits
VSS	Power supply return (ground)
PWR_GOOD	Power good indicator
PWR_EN	PMIC Enable
RFU	Reserved for future use

NOTE :
1) DDR5 SO-DIMM has 2 channels (channel-A and channel-B) of signal bus.
The signals with suffix: _A (e.g. DQ0_A) are for channel-A, and the signals with suffix: _B (e.g. DQ0_B) are for channel-B

Proposta de Preço ITEM 6 - FINANCIAMENTO TECNOLÓGICO (15501189) SEI 2025.001317 / pg. 1166
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

5.0 INPUT/OUTPUT FUNCTIONAL DESCRIPTION

[Table 6] Input/Output Function Description

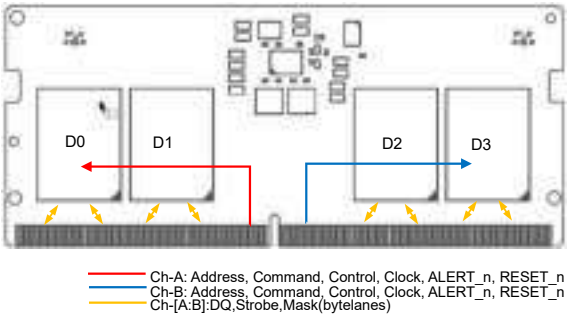
Symbol	Type	I/O Level	Function
CK0_A_t, CK0_A_c, CK1_A_t, CK1_A_c, CK0_B_t, CK0_B_c, CK1_B_t, CK1_B_c	Input	VDD	Clock: CK_t and CK_c are differential clock inputs. All address and control input signals are sampled on the crossing of the positive edge of CK_t and negative edge of CK_c.
CA0_A - CA12_A, CA0_B –CA12_B	Input	VDD	Command/Address Inputs: CA signals provide the command and address inputs according to the Command Truth Table. Note: Since some commands are multi cycle, the pins may not be interchanged between devices on the same bus.
CS0_A_n – CS1_A_n, CS0_B_n – CS1_B_n	Input	VDD	Chip Select: All commands are masked when CS_n is registered HIGH. CS_n provides for external Rank selection on systems with multiple Ranks.
DQ0_A – DQ31_A, DQ0_B – DQ31_B	Input/Output	VDDQ	Data Input/Output: Bi-directional data bus. If CRC is enabled via Mode register then CRC code is added at the end of Data Burst.
CB0_A – CB3_A, CB0_B – CB3_B	Input/Output	VDDQ	DIMM ECC check bits.
DQS0_A_t – DQS4_A_t, DQS0_A_c – DQS4_A_c, DQS0_B_t – DQS4_B_t, DQS0_B_c – DQS4_B_c	Input/Output	VDDQ	Data Strobe: output with read data, input with write data. Edge-aligned with read data, centered in write data. DDR5 SDRAM supports differential data strobe only and does not support single-ended.
DM0_A_n – DM3_A_n, DM0_B_n – DM3_B_n	Input	VDDQ	Input Data Mask: DM_n is an input mask signal for write data. Input data is masked when DM_n is sampled LOW coincident with that input data during a Write access. DM_n is sampled on both edges of DQS. For x8 device, the function of DM_n is enabled by MR5:OP[5]=1.
ALERT_n	Input/Output	VDD	Alert: If there is error in CRC, then Alert_n goes LOW for the period time interval and goes back HIGH. During Connectivity Test mode, this pin works as input. Using this signal or not is dependent on system. In case of not connected as Signal, ALERT_n Pin must be bounded to VDDQ on board.
RESET_n	Input	VDD	Active Low Asynchronous Reset: Reset is active when RESET_n is LOW, and inactive when RESET_n is HIGH. RESET_n must be HIGH during normal operation. RESET_n is a CMOS rail to rail signal with DC high and low at 80% and 20% of VDDQ,
HSCL	Input	1.0V	Host SidebandBus bus clock, supplied by the master.
HSDA	Input/Output	1.0V	Host SidebandBus data, connected from the master to hubs or host bus client devices.
HSA	Input	2.1V max	Host SidebandBus bus device ID address pin; input to a hub or other client device to distinguish between identical devices in the I3C Basic address range.
RFU			Reserved for Future Use. No on DIMM electrical connection is present.
PWR_GOOD	Input/Output	Open Drain	Power good indicator. Open Drain output. The PMIC floats this pin high when VIN_Bulk input supply as well as all enabled output buck regulators and all LDO regulator tolerance threshold is maintained as configured in appropriate register. The PMIC drives this pin low when VIN_Bulk input goes below the threshold or when any of the enabled switch output regulators exceed the threshold configured in the appropriate register or any LDO output regulator exceeds the threshold tolerance. Input: The PMIC disables its output regulators when this pin is low. The LDO outputs shall remain on.
PWR_EN	Input	3.3V	PMIC Enable. When this pin is high, the PMIC turns on the regulator. When this pin is low, the PMIC turns off the regulator. This signal is connected to PMIC's VR_EN pin.
VIN_BULK	Supply	5V	5 V power input supply to the PMIC for analog circuits.
VSS	Supply		Ground.

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6.0 FUNCTION BLOCK DIAGRAM

6.1 8GB, x64 DIMM (Populated as 1 rank of x16 DDR5 SDRAMs)

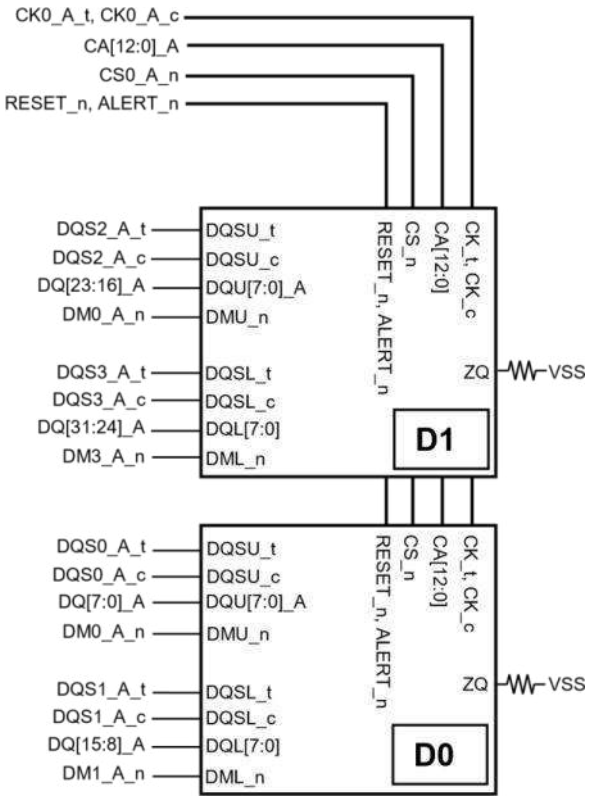
6.1.1 8GB, x64 DIMM (Populated as 1 rank of x16 DDR5 SDRAMs) – Part 1 of 4



Proposta de Preço ITEM 6 - PREGÃO ELETRÔNICO SRP (1551189) SEI 2025.001317 / pg. 1168
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

6.1.2 8GB, x64 DIMM (Populated as 1 rank of x16 DDR5 SDRAMs) – Part 2 of 4

Channel A



NOTE :

1) Unless otherwise noted resistors are 15Ω ± 5% 2) ZQ resistors are 240Ω ± 1%.

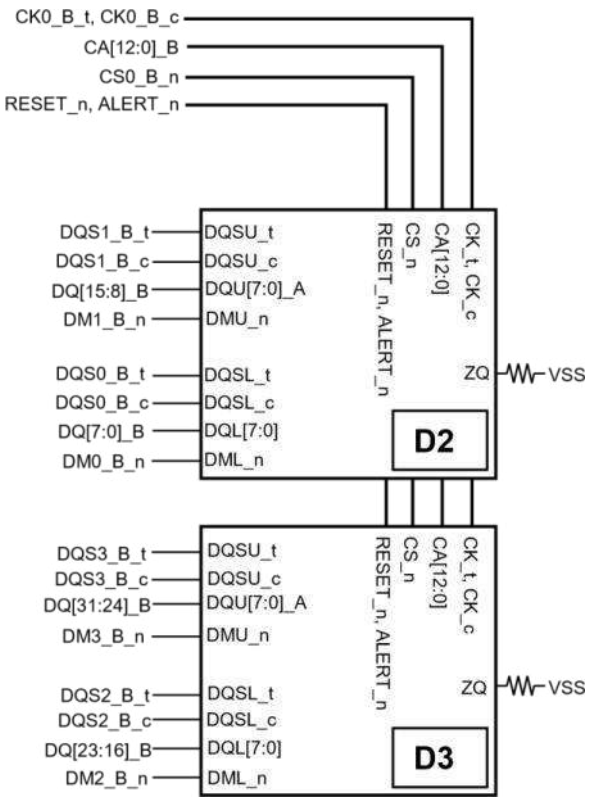
3) CK1_[A:B]_t/c edge pin signals are each terminated with 33Ω ± 5% resistor to VSS.

4) CS1_[A:B]_n edge pin signals are each terminated with 39Ω ± 5% resistor to VSS.

Proposta de Preço ITEM 6 - PREGÃO ELETRÔNICO SGM/[illegible] (25501489) SEI 2025.001317 / pg. 1169
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

6.1.3 8GB, x64 DIMM (Populated as 1 rank of x16 DDR5 SDRAMs) – Part 3 of 4

Channel B

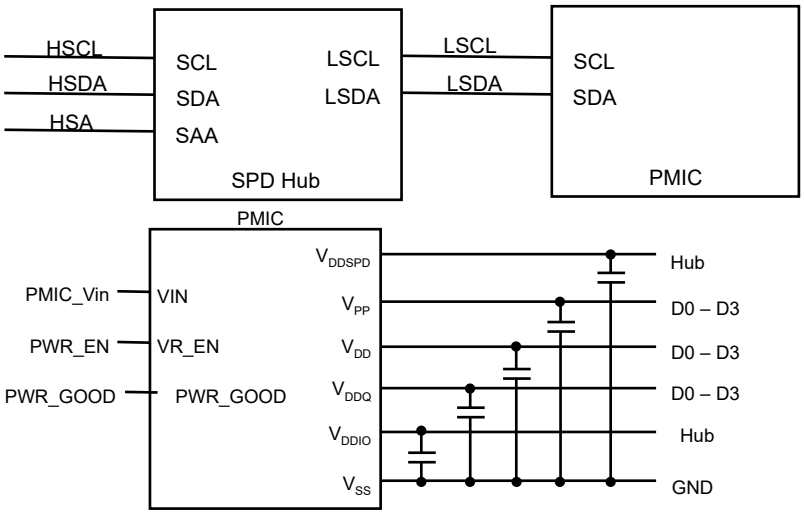


NOTE :

1) Unless otherwise noted resistors are
15Ω ± 5% 2) ZQ resistors are 240Ω ± 1%.
3) CK1_[A:B]_t/c edge pin signals are each terminated with 33Ω ± 5% resistor to VSS.
4) CS1_[A:B]_n edge pin signals are each terminated with 39Ω ± 5% resistor to VSS.

Proposta de Preço ITEM 6 - PREGÃO ELETRÔNICO Nº 135/2024 (Identificação interna do documento: H2SE6K90B9-TDFBBQ1) SEI 2025.001317 / pg. 1170

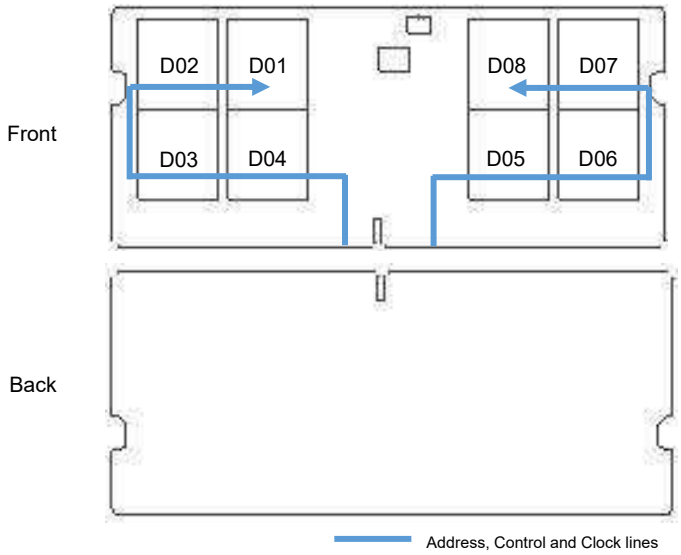
6.1.4 8GB, x64 DIMM (Populated as 1 rank of x16 DDR5 SDRAMs) – Part 4 of 4



Proposta de Preço ITEM 6 - Memória RECONHECIDA (15501789) SEI 2025.001317 / pg. 1171
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

6.2 16GB, x64 DIMM (Populated as 1 rank of x8 DDR5 SDRAMs)

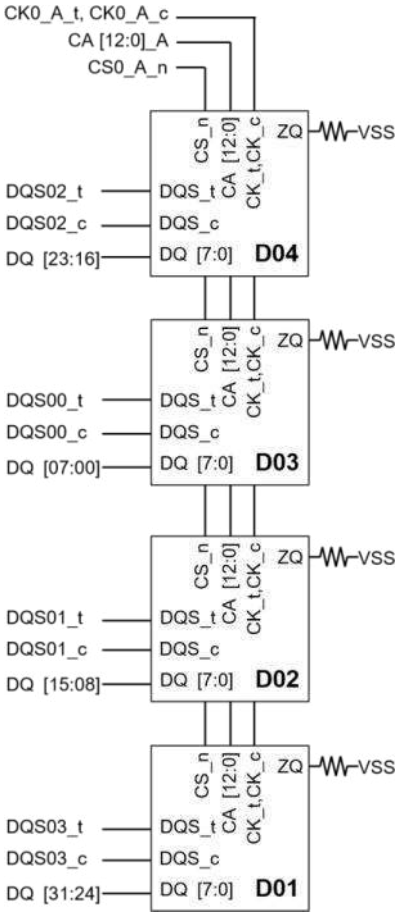
6.2.1 16GB, x64 DIMM (Populated as 1 rank of x8 DDR5 SDRAMs) - Part 1 of 4



Proposta de Preço ITEM 6 - PREGÃO ELETRÔNICO SRP Nº 90039/2025 SEI 2025.001317 / pg. 1172
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

6.2.2 16GB, x64 DIMM (Populated as 1rank of x8 DDR5 SDRAMs) - Part 2 of 3

Channel A



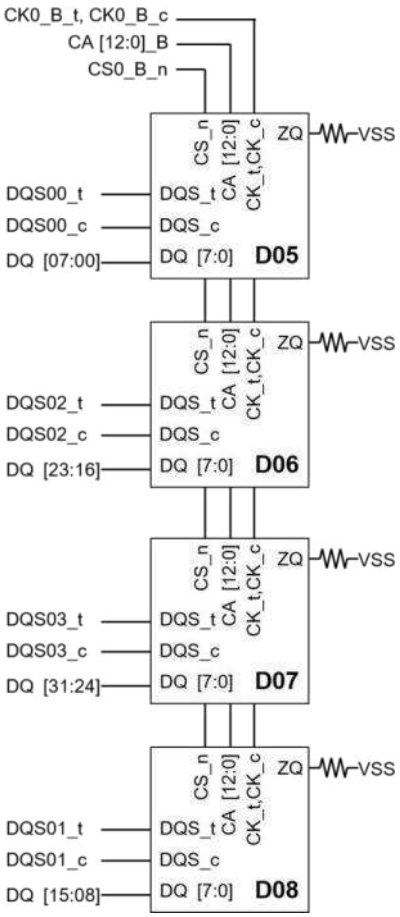
NOTE :

1) ZQ resistors are 240 Ω ± 1%.

Proposta de Preço ITEM 6 - Memória RECORDE (15501189) SEI 2025.001317 / pg. 1173
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

6.2.3 16GB, x64 DIMM (Populated as 1rank of x8 DDR5 SDRAMs) - Part 3 of 3

Channel B

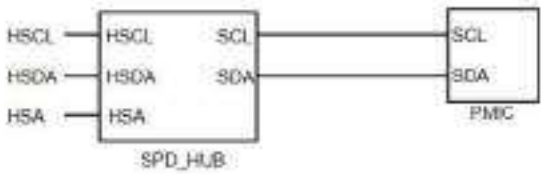


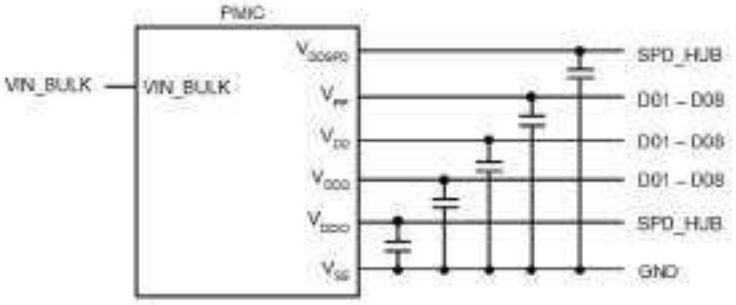
NOTE :

1) ZQ resistors are 240 Ω ± 1%.

Proposta de Preço ITEM 6 - PREGÃO ELETRÔNICO Nº 125/2024 SEI 2025.001317 / pg. 1174
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

6.2.4 16GB, x64 DIMM (Populated as 1 rank of x8 DDR5 SDRAMs) - Part 4 of 4

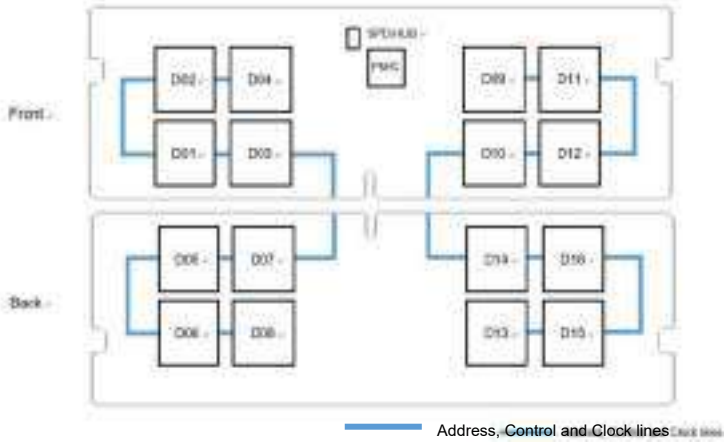




Proposta de Preço ITEM 6 - Processo SEI 2025.001317 / pg. 1175
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

6.3 32GB, x64 DIMM (Populated as 2 ranks of x8 DDR5 SDRAMs)

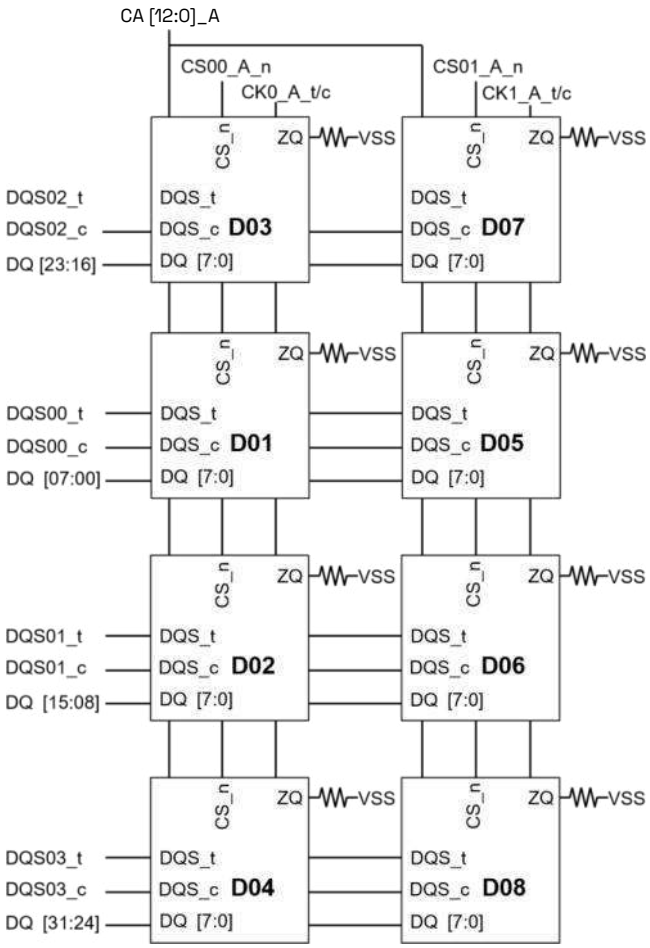
6.3.1 32GB, x64 DIMM (Populated as 2 ranks of x8 DDR5 SDRAMs) - Part 1 of 4



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Identificação interna do documento: H2SE6K90B9-TDFBBQ1

6.3.2 32GB, x64 DIMM (Populated as 2 ranks of x8 DDR5 SDRAMs) - Part 2 of 4

Channel A



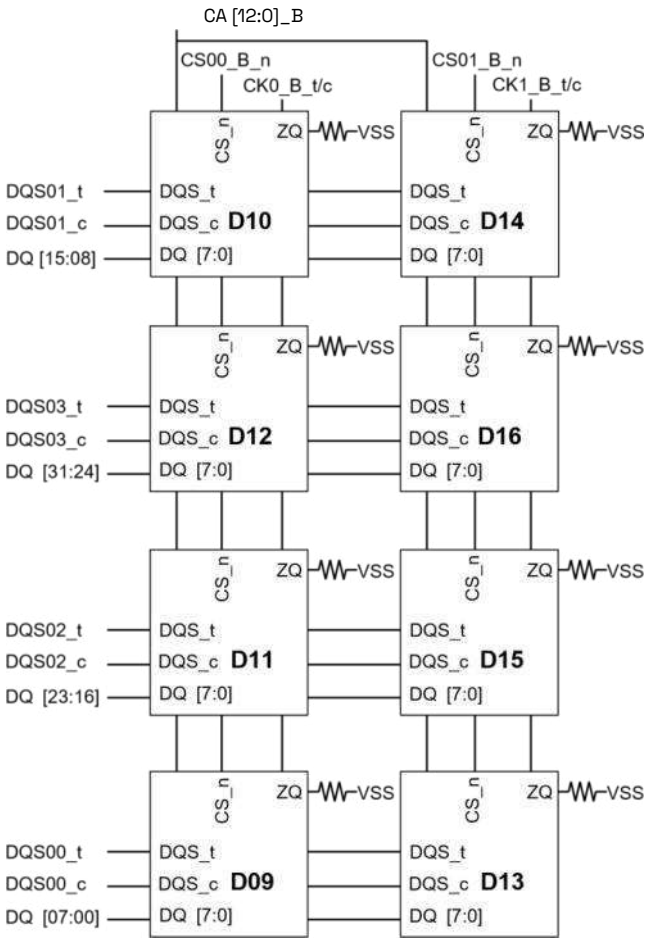
NOTE :

1) ZQ resistors are 240 Ω ± 1%.

Proposta de Preço ITEM 6 - PREGÃO ELETRÔNICO Nº 13501/89 - SEI 2025.001317 / pg. 1177
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

6.3.3 32GB, x64 DIMM (Populated as 2 ranks of x8 DDR5 SDRAMs) - Part 3 of 4

Channel B

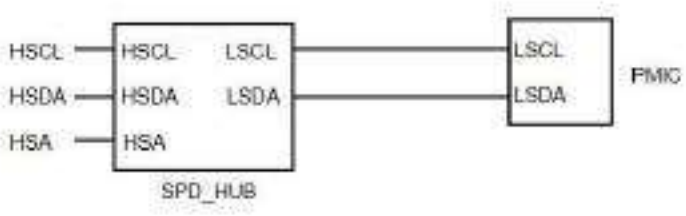


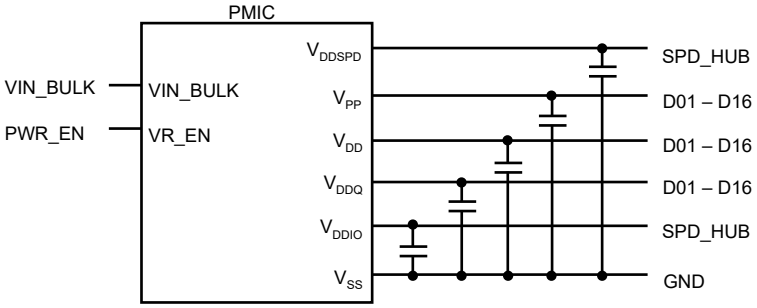
NOTE :

1) ZQ resistors are 240 Ω ± 1%.

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6.3.4 32GB, x64 DIMM (Populated as 2 ranks of x8 DDR5 SDRAMs) - Part 4 of 4





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7.0 AC & DC OPERATING CONDITIONS

7.1 DIMM Voltage Requirements

The DIMM input voltage requirements and the SDRAM voltage requirements are not identical. The DIMM voltage requirements must meet the PMIC input voltage requirements. The PMIC output voltage requirements must meet the SDRAM voltage requirements. There must be some allowance for a small voltage drop across the DIMM for both supply voltages and PMIC output voltages. Table 15 defines the requirements from the Host at the DIMM socket and at the post-PMIC SDRAM pin. Some modules have lower current requirements. Each specific module configuration must meet the PMIC 50x0, SDRAM, DDR5RCDxx and DDR5DBxx voltage requirements for its worst case supply currents

[Table 15] DDR5 SODIMM DC Operating Voltage [1,2,3]

Symbol	Parameter	Voltage Rating (Volts)			Maximum Expected Current (Amps)	Power State
		Minimum	Typical	Maximum		
VIN_BULK	Host Supply Voltage	4.25	5.0	5.5	2A	Operational
SWA, SWB	PMIC Output Supply Voltage	-	1.1	-	6	Operational
SWA+SWB	PMIC Output Supply Voltage	-	1.1	-	12	Operational
SWC	PMIC Output Supply Voltage	-	1.8	-	2	Operational
1.8V LDO	PMIC Output Supply Voltage	-	1.8	-	0.025	Operational
1.0V LDO	PMIC Output Supply Voltage	-	1.0	-	0.020	Operational

NOTE:
1) During first power on, the input voltage supply must reach minimum 4.25 V for PMIC to detect valid input supply. 2) The ramp up rate between 300 mV and 4.0 V.
3) The ramp down rate between 4.0 V and 300 mV.
4) The area under the curve above VIN_Bulk = TBD V. VIN_Bulk_AC spec must also be satisfied.
5) The minimum input current requirement is to deliver the maximum output current on VOUT_1.8V and VOUT_1.0V LDO plus the current
6) VIN_Bulk = 5.0 V. Measured at room temperature. All circuitry including output regulators and LDOs are off. VR_EN signal is static
7) VIN_Bulk = 5.0 V. Measured at room temperature. All output regulators and LDOs are on with 0 A output load. VR_EN signal is static 8) 20 MHz bandwidth limited measurement for all voltages in the table
9) Voltages are measured at the DIMM gold fingers and at PMIC output pins
10) The SDRAM specification must be met and take precedence over this document
11) Maximum current establishes the platform maximum current regulation point. It provides a data point for DIMM developers to set power plane impedances 12) Typical voltage is platform dependent. This is a suggested value only

7.2 Recommended Operating Temperature Ranges

[Table 16] Recommended Operating Temperature Ranges

Parameter/Condition	Device Rating	Symbol	Min	Normal	Extended
Commercial Temperature	CT	TOPER-CT	0°C	85°C	95°C
Industrial Temperature	IT	TOPER-IT	-40°C	85°C	95°C

NOTE:
1) The operating temperature is the case surface temperature on the center-top side of the DDR5 device. For measurements conditions, refer to JESD51-2 2) Normal is the maximum limit when device is operating in the Normal Temperature Mode
3) Extended is the maximum limit when device is operating in the Extended Temperature Mode
4) Support for the Industrial Temperature device is TBD

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8.0 AC & DC INPUT MEASUREMENT LEVELS

8.1 CA Rx Voltage and Timings

The following draft assumes internal CA VREF. If the VREF is external, the specs will be modified accordingly.

The command and address (CA) including CS input receiver compliance mask for voltage and timing is shown in the figure below. All CA signals apply the same compliance mask and CS signal applies its own compliance mask independently. All signals applied to the compliance mask operate in single data rate mode.

The CA input receiver mask for voltage and timing is shown in the figure below is applied across all CA pins. The receiver mask (Rx Mask) defines the area that the input signal must not encroach in order for the DRAM input receiver to be expected to be able to successfully capture a valid input signal; it is not the valid data-eye.

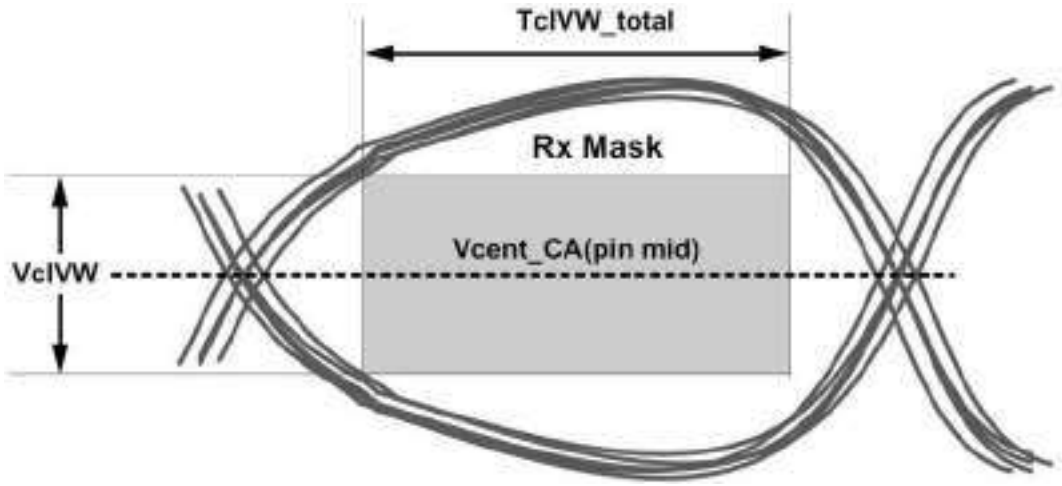


Figure 12. CA Receiver (Rx) mask

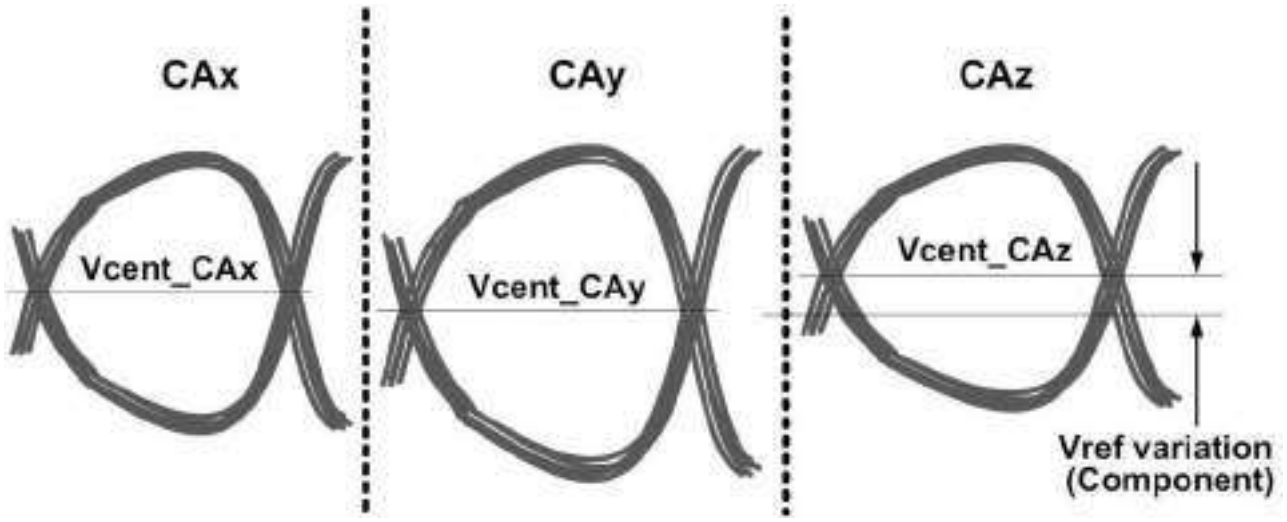
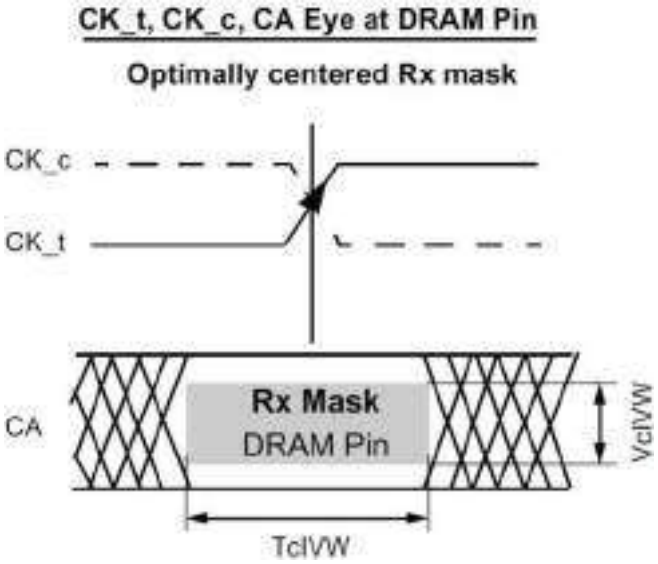


Figure 13. Across pin V_{REF}CA voltage variation

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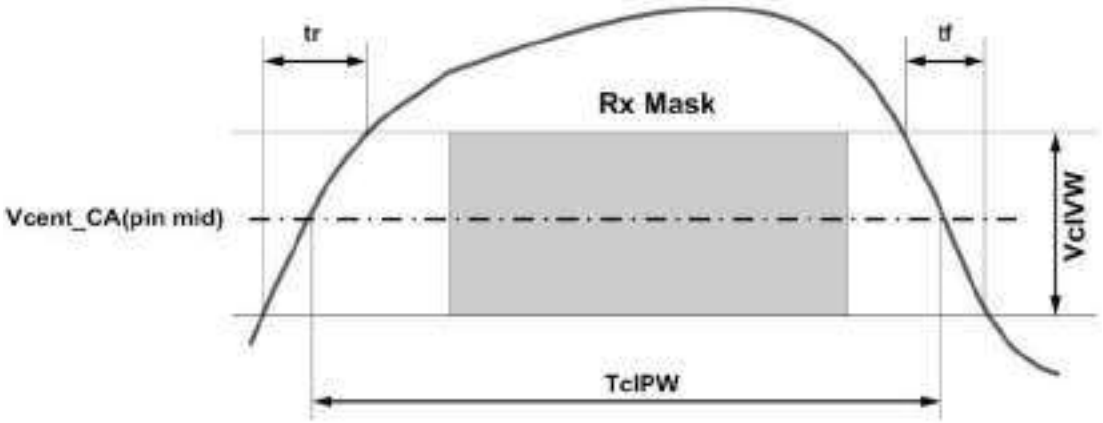
Vcent_CA(pin mid) is defined as the midpoint between the largest Vcent_CA voltage level and the smallest Vcent_CA voltage level across all CA and CS pins for a given DRAM component. Each CA Vcent level is defined by the center, i.e. widest opening, of the cumulative data input eye as depicted in Figure 14. This clarifies that any DRAM component level variation must be accounted for within the DRAM CA Rx mask. The component level VREF will be set by the system to account for Ron and ODT settings.



TcIVW is not necessarily center aligned on CK_t/CK_c crossing at the DRAM pin, but is assumed to be center aligned at the DRAM Latch.

Figure 14. CA Timings at the DRAM Pins

All of the timing terms in Figure 14 are measured from the CK_t/CK_c to the center (midpoint) of the TcIVW window taken at the VcIVW_total voltage levels centered around Vcent_CA (pin mid).



NOTE :
1) SRIN_cIVW=VcIVW_Total/(tr or tf), signal must be monotonic within tr and tf range

Figure 15. CA TcIPW and SRIN_cIVW definition (for each input pulse)

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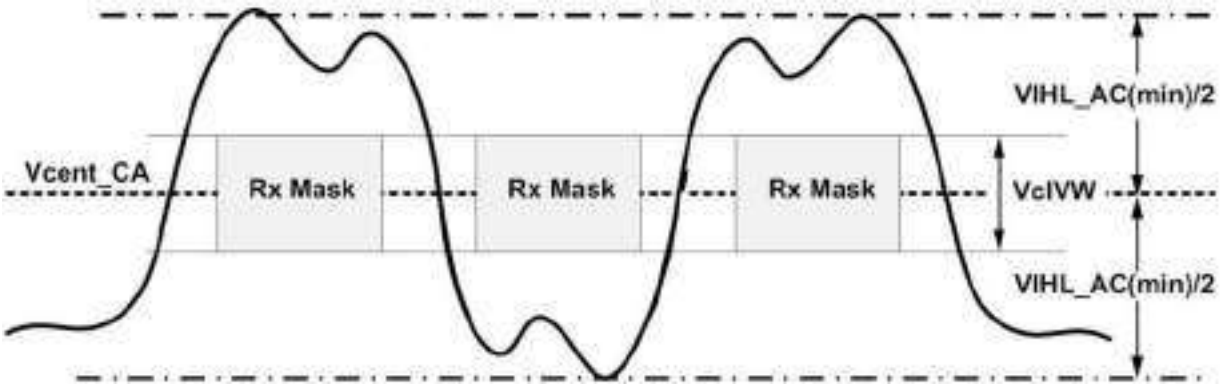


Figure 16. CA VIHL_AC definition (for each input pulse)

[Table 17] DRAM CA, CS Parametric values

Parameter	Symbol	DDR5-4400 to 4800		DDR5-5200 to 5600		Unit	Notes
		Min	Max	Min	Max		
Rx Mask voltage - p-p	VciVW	-	130	-	80 (Cl max=0.55pF) 85 (Cl max=0.5pF)	mV	1,2,4
Rx Timing Window	TciVW	-	0.2	-	0.2	UI*	1,2,3,4,8
CA Input Pulse Amplitude	VIHL_AC	150		110		mV	7
CA Input Pulse Width	TciPW	0.58		0.58		UI*	5,8
Input Slew Rate over VcIVW	SRIN_cIVW	1	7	1	7	V/ns	6

NOTE:
1) CA Rx mask voltage and timing parameters at the pin including voltage and temperature drift
2) Rx mask voltage VcIVW total(max) must be centered around Vcent_CA(pin mid)
3) Rx differential CA to CK jitter total timing window at the VcIVW voltage levels
4) Defined over the CA internal V_{REF} range. The Rx mask at the pin must be within the internal V_{REF} CA range irrespective of the input signal common mode
5) CA only minimum input pulse width defined at the Vcent_CA(pin mid)
6) Input slew rate over VcIVW Mask centered at Vcent_CA(pin mid)
7) VIHL_AC does not have to be met when no transitions are occurring
8) UI=tCK(avg)min

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8.2 Input Clock Jitter Specification

8.2.1 Overview

The clock is being driven to the DRAM either by the RCD for SODIMM modules. (Figure 17)

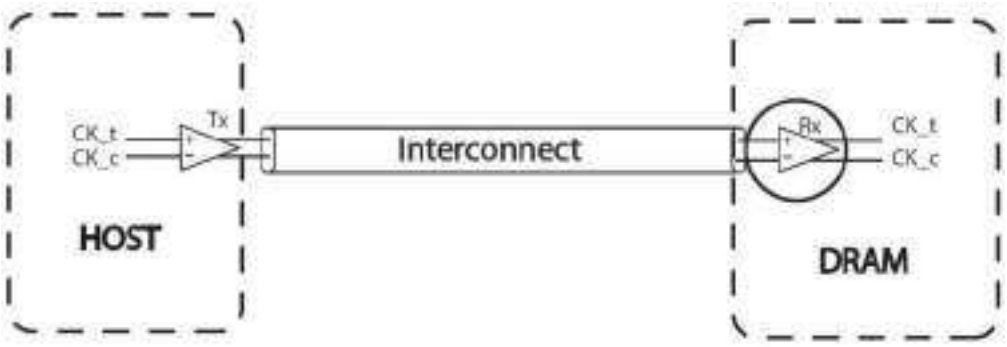


Figure 17. HOST driving clock signals to the DRAM

8.2.2 Specification for DRAM Input Clock Jitter

The Random Jitter (Rj) specified is a random jitter meeting a Gaussian distribution. The Deterministic Jitter (Dj) specified is bounded. Input clock violating the min/max jitter values may result in malfunction of the DDR5 SDRAM device.

[Table 18] DRAM Input Clock Jitter Specifications

[BUJ=Bounded Uncorrelated Jitter; DCD=Duty Cycle Distortion; Dj=Deterministic Jitter; Rj=Random Jitter; Tj=Total jitter; pp=Peak-to-Peak]

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
DRAM Reference clock frequency	tCK	0.9999* f0	1.0001* f0	0.9999* f0	1.0001* f0	0.9999* f0	1.0001* f0	0.9999* f0	1.0001* f0	MHz	1,11
Duty Cycle Error	tCK_Duty_UI_Error	-	0.05	-	0.05	-	0.05	-	0.05	UI	1,4,11
Rj RMS value of 1-UI Jitter	tCK_1UI_Rj_NoBUJ	-	0.0037	-	0.0037	-	0.0037	-	0.0037	UI (RMS)	3,5,11
Dj pp value of 1-UI Jitter	tCK_1UI_Dj_NoBUJ	-	0.030	-	0.030	-	0.030	-	0.030	UI	3,6,11
Tj value of 1-UI Jitter	tCK_1UI_Tj_NoBUJ	-	0.090	-	0.090	-	0.090	-	0.090	UI	3,6,11
Rj RMS value of N-UI Jitter, where N=2,3	tCK_NUI_Rj_NoBUJ, where N=2,3	-	0.0040	-	0.0040	-	0.0040	-	0.0040	UI (RMS)	3,7,11
Dj pp value of N-UI Jitter, where N=2,3	tCK_NUI_Dj_NoBUJ, where N=2,3	-	0.074	-	0.074	-	0.074	-	0.074	UI	3,7,11
Tj value of N-UI Jitter, where N=2,3	tCK_NUI_Tj_NoBUJ, where N=2,3	-	0.140	-	0.140	-	0.140	-	0.140	UI	3,8,11
Rj RMS value of N-UI Jitter, where N=4,5,6,...,30	tCK_NUI_Rj_NoBUJ, where N=4,5,6,...,30	-	-	-	-	-	-	-	-	UI (RMS)	3,9,11,12
Dj pp value of N-UI Jitter, N=4,5,6,...,30	tCK_NUI_Dj_NoBUJ, where N=4,5,6,...,30	-	-	-	-	-	-	-	-	UI	3,10,11,12
Tj value of N-UI Jitter, N=4,5,6,...,30	tCK_NUI_Tj_NoBUJ, where N=4,5,6,...,30	-	-	-	-	-	-	-	-	UI	3,10,11,12

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NOTE:

1) f0 = Data Rate/2, example: if data rate is 4800MT/s, then f0=2400
2) Rise and fall time slopes (V / nsec) are measured between +100 mV and -100 mV of the differential output of reference clock
3) On-die noise similar to that occurring with all the transmitter and receiver lanes toggling need to be stimulated. When there is no socket in transmitter measurement setup, in many cases, the contribution of the cross-talk is not significant or can be estimated within tolerable error even with all the transmitter lanes sending patterns. When a socket is present, such as DUT being DRAM component, the contribution of the cross-talk could be significant. To minimize the impact of crosstalk on the measurement results, a small group of selected lanes in the vicinity of the lane under test may be turned off (sending DC), while the remaining Tx lanes send patterns to the corresponding Rx receivers so as to excite realistic on-die noise profile from device switching. Note that there may be cases when one of Dj and Rj specs is met and another violated in which case the signaling analysis should be run to determine link feasibility
4) Duty Cycle Error defined as absolute difference between average value of all UI with that of average of odd UI, which in magnitude would equal absolute difference between average of all UI and average of all even UI
5) Rj RMS value of 1-UI jitter without BUJ, but on-die system-like noise present. This extraction is to be done after software correction of DCD
6) Dj pp value of 1-UI jitter(after software assisted DCC).Without BUJ,but on-die system like noise present.Dj indicates Djdd of dual-Dirac fitting,after software correction of DCD
7) Rj RMS value of N-UI jitter without BUJ, but on-die system like noise present. Evaluated for 1 < N < 4. This extraction is to be done after software correction of DCD
8) Dj pp value of N-UI jitter without BUJ, but on-die system like noise present. Evaluated for 1 < N < 4. Dj indicates Djdd of dual-Dirac fitting, after software correction of DCD
9) Rj RMS value of N-UI jitter without BUJ, but on-die system like noise present. Evaluated for 3 < N < 31. This extraction is to be done after software correction of DCD
10) Dj pp value of N-UI jitter without BUJ, but on-die system like noise present. Evaluated for 3 < N < 31. Dj indicates Djdd of dual-Dirac fitting, after software correction of DCD 11) The validation methodology for these parameters will be covered in future ballots
12) If the clock meets total jitter Tj at BER of $1E^{-16}$, then meeting the individual Rj and Dj components of the spec can be considered optional. Tj is defined as Dj + 16.2*Rj for BER of $1E^{-16}$

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8.3 Differential Input Clock (CK_t, CK_c) Cross Point Voltage (VIX)

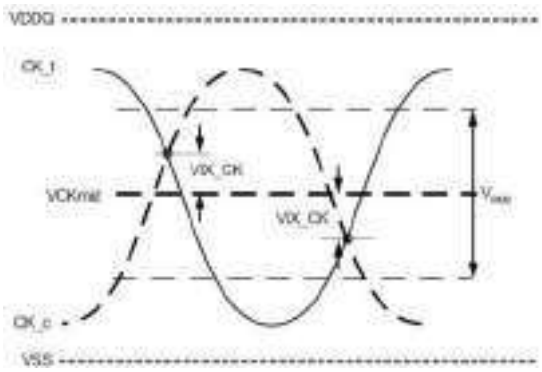


Figure 18. VIX Definition (CK)

[Table 19] Crosspoint Voltage (VIX) for Differential Input Clock

Parameter	Symbol	DDR5-4400 to 5600		Unit	Note
		min	max		
Clock differential input crosspoint voltage ratio	VIX_CK_Ratio	-	50	%	1,2,3

NOTE :
1) The VIX_CK voltage is referenced to VCKmid(mean) = (CK_t voltage + CK_c voltage) /2, where the mean is over 8 UI.
2) VIX_CK_Ratio = (|VIX_CK| / |VRMS|)*100%, where VRMS = RMS(CK_t voltage - CK_c voltage). 3) Only applies when both CK_t and CK_c are transitioning

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8.4 Differential Input Clock Voltage Sensitivity

The differential input clock voltage sensitivity test provides the methodology for testing the receiver's sensitivity to clock by varying input voltage in the absence of Inter-Symbol Interference (ISI), jitter (Rj, Dj, DCD) and crosstalk noise. This specifies the Rx voltage sensitivity requirement. The system input swing to the DRAM must be larger than the DRAM Rx at the specified BER

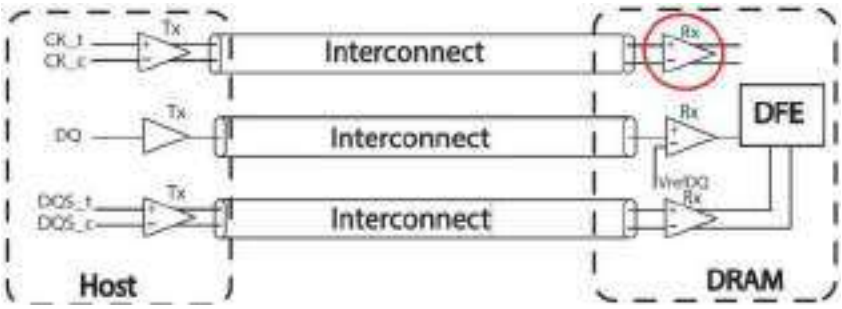


Figure 19. Example of DDR5 Memory Interconnect

8.4.1 Differential Input Clock Voltage Sensitivity Parameter

Differential input clock (CK_t, CK_c) VRx_CK is defined and measured as shown below. The clock receiver must pass the minimum BER requirements for DDR5.

[Table 20] Differential Input Clock Voltage Sensitivity Parameter

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Note
		min	max	min	max	min	max	min	max		
Input Clock Voltage Sensitivity (differential pp)	VRx_CK	-	180	-	160	-	140	-	120	mV	1,2

NOTE:
1) Refer to the minimum BER requirements for DDR5
2) The validation methodology for this parameter is TBD

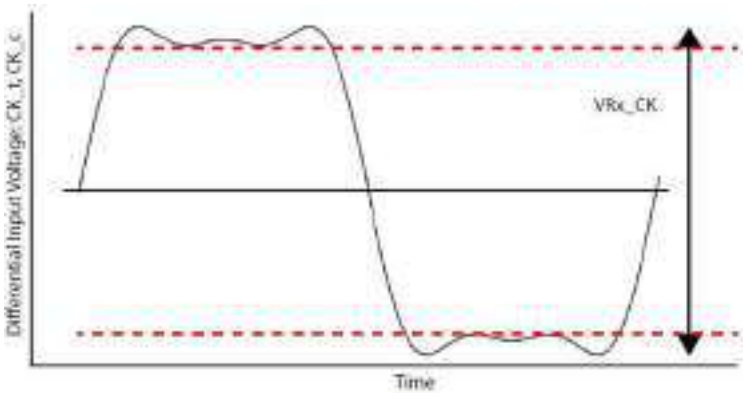


Figure 20. VRx_CK

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8.4.2 Differential Input Voltage Levels for Clock

[Table 21] Differential Clock (CK_t, CK_c) Input Levels

From	Parameter	DDR5 4400 ~ 5600	Note
VIHdiffCK	Differential input high measurement level (CK_t, CK_c)	0.75 x Vdiffpk-pk	1,2
VILdiffCK	Differential input low measurement level (CK_t, CK_c)	0.25 x Vdiffpk-pk	1,2

NOTE:
1) Vdiffpk-pk defined in Figure 21
2) Vdiffpk-pk is the mean high voltage minus the mean low voltage over TBD samples
3) All parameters are defined over the entire clock common mode range

8.4.3 Differential Input Slew Rate Definition for Clock (CK_t, CK_c)

Input slew rate for differential signals (CK_t, CK_c) are defined and measured as shown below.

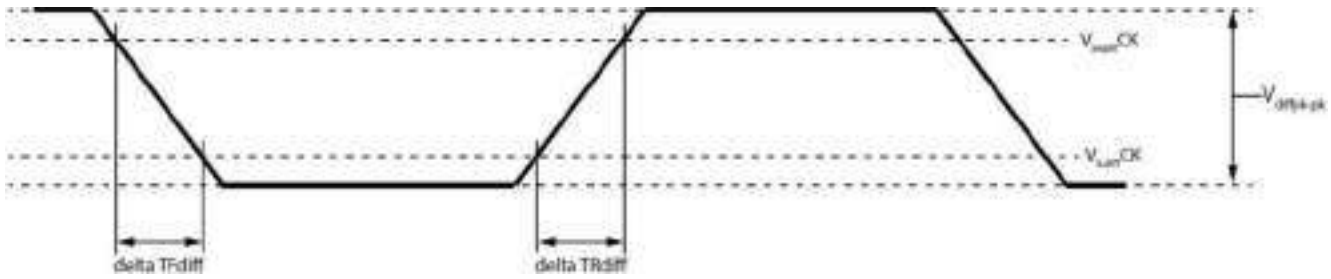


Figure 21. Differential Input Slew Rate Definition for CK_t, CK_c

[Table 22] Differential Input Slew Rate Definition for CK_t, CK_c

Parameter	Measured		Defined by	Notes
	From	To		
Differential Input slew rate for rising edge (CK_t - CK_c)	$VIL_{diff}CK$	$VIH_{diff}CK$	($VIH_{diff}CK$ - $VIL_{diff}CK$) /deltaTRdiff	
Differential Input slew rate for falling edge (CK_t - CK_c)	$VIH_{diff}CK$	$VIL_{diff}CK$	($VIH_{diff}CK$ - $VIL_{diff}CK$) /deltaTFdiff	

[Table 23] Differential Input Slew Rate for CK_t, CK_c

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		min	max	min	max	min	max	min	max		
Differential Input Slew Rate for CK_t, CK_c	SRIdiff_CK	2	14	2	14	2	30	2	30	V/ns	

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8.5 Rx DQS Jitter Sensitivity

The receiver DQS jitter sensitivity test provides the methodology for testing the receiver's strobe sensitivity to an applied duty cycle distortion (DCD) and/ or random jitter (Rj) at the forwarded strobe input without adding jitter, noise and ISI to the data. The receiver must pass the appropriate BER rate when no cross-talk nor ISI is applied, and must pass through the combination of applied DCD and Rj.

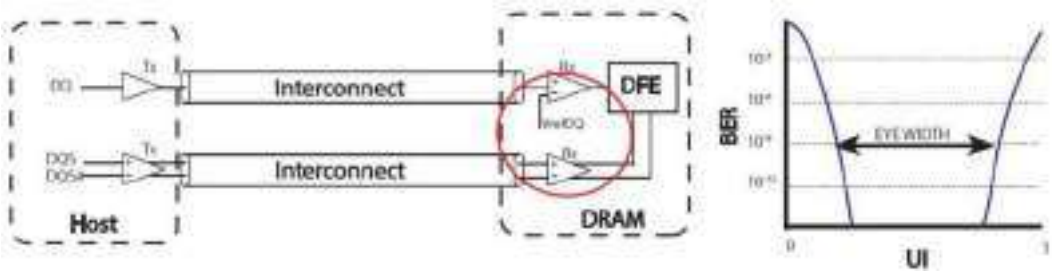


Figure 22. SDRAM's Rx Forwarded Strobes for Jitter Sensitivity Testing

8.5.1 Rx DQS Jitter Sensitivity Specification

The following table provides Rx DQS Jitter Sensitivity Specification for the DDR5 DRAM receivers when operating at various possible transfer rates. These parameters are tested on the CTC2 card with neither additive gain nor Rx Equalization set.

[Table 24] Rx DQS Jitter Sensitivity Specification

[BER = Bit Error Rate; DCD = Duty Cycle Distortion; Rj =Random Jitter]

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		min	max	min	max	min	max	min	max		
DQ Timing Width	tRx_DQ_tMargin	0.825	-	0.825	-	0.825	-	0.825	-	UI	1,2,3,8,9,10
Degradation of timing width compared to tRx_DQ_tMargin, with DCD injection in DQS	tRx_DQ_tMargin _ DQS_DCD	-	0.06	-	0.06	-	0.06	-	0.06	UI	1,4,8,9,10
Degradation of timing width compared to tRx_DQ _tMargin, with Rj injection in DQS	tRx_DQ_tMargin _ DQS_Rj	-	0.09	-	0.09	-	0.09	-	0.09	UI	1,5,8,9,10
Degradation of timing width compared to tRx_DQ_tMargin, with both DCD and Rj injection in DQS	tRx_DQ_tMargin _ DQS_DCD_Rj	-	0.15	-	0.15	-	0.15	-	0.15	UI	1,2,6,8,9,10
Delay of any data lane relative to the DQS_t DQS_c crossing	tRx_DQS2DQ	114	738	114	729	114	721	114	714	ps	1,7,8,9,10
Delay of any data lane relative to any other data lane	tRX_DQ2DQ	-	50	-	50	-	50	-	50	ps	1,7,8,9,10 11,12

NOTE :

1) Validation methodology will be defined in future JEDEC ballots. 2UI is defined as 1tCK for this parameter.
2) Each of ?tRx_DQ_tMargin_DQS_DCD, ?tRx_DQ_tMargin_DQS_Rj, and ?tRx_DQ_tMargin_DQS _DCD_Rj can be relaxed by up to 5% if tRx_DQ_tMargin exceeds the spec by 5% or more.
3) DQ Timing Width - timing width for any data lane using repetitive patterns (check note 4 for the pattern) measured at BER=E-9.
4) Magnitude of degradation of timing width for any data lane using repetitive no ISI patterns with DCD injection in forwarded strobe DQS compared to tRx_DQ_tMargin, measured at BER=E-9. The magnitude of DCD is specified under Test Conditions for Rx DQS Jitter Sensitivity Testing. Test using clock-like pattern of repeating 3 "1s" and 3 "0s".

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5) Magnitude of degradation of timing width for any data lane using repetitive no ISI patterns with only Rj injection in forwarded strobe DQS measured at BER=E-9, compared to tRx_tMargin. The magnitude of Rj is specified under Test Conditions for Rx DQS Jitter Sensitivity Testing
6) Magnitude of degradation of timing width for any data lane using repetitive no ISI patterns with DCD and Rj injection in forwarded strobe DQS measured at BER=E-9, compared to tRx_tMargin. The magnitudes of DCD and Rj are specified under Test Conditions for Rx DQS Jitter Sensitivity Testing.
7) Delay of any data lane relative to the strobe lane, as measured at the end of Tx+Channel. This parameter is a collective sum of effects of data clock mismatches in Tx and on the medium connecting Tx and Rx.
8) All measurements at BER=E-9.
9) This test should be done after the DQS and DQ Voltage Sensitivity tests are completed and passing.
10) The user has the freedom to set the voltage swing and slew rates for strobe and DQ signals as long as they meet the specification. The DQS and DQ input voltage swing and/or slew rate can be adjusted, without exceeding the specifications, for this test.
11) DQ to DQ offset is skew between DQs within a nibble (x4) or a byte (x8, x16) at the DDR5 SDRAM balls.
12) This parameter is relative to the per-pin trained DQS2DQ value, and only appliesafterper-pin DQS2DQ training is complete.

8.5.2 Test Conditions for Rx DQS Jitter Sensitivity Tests

Table 25 lists the amount of Duty Cycle Distortion (DCD) and/or Random Jitter (Rj) that must be applied to the forwarded strobe when measuring the Rx DQS Jitter Sensitivity parameters specified in Table 24.

[Table 25] Test Conditions for Rx DQS Jitter Sensitivity Testing

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Applied DCD to the DQS	tRx_DQS_DCD	-	0.045	-	0.045	-	0.045	-	0.045	UI	1,2,3,6,7,10
Applied Rj RMS to the DQS	tRx_DQS_Rj	-	0.0075	-	0.0075	-	0.0075	-	0.0075	UI (RMS)	1,2,4,6,8,10
Applied DCD and Rj RMS to the DQS	tRx_DQS_DCD_Rj	-	0.045UI DCD + 0.0075UI Rj RMS	-	0.045UI DCD + 0.0075UI Rj RMS	-	0.045UI DCD + 0.0075UI Rj RMS	-	0.045UI DCD + 0.0075UI Rj RMS	UI	1,2,5,6,7,9,10

NOTE:
1) While imposing this spec, the strobe lane is stressed, but the data input is kept large amplitude and no jitter or ISI injection. The specified voltages are at the Rx input pin.
The DQS and DQ input voltage swing and/or slew rate can be adjusted, without exceeding the specifications, for this test.
2) The jitter response of the forwarded strobe channel will depend on the input voltage, primarily due to bandwidth limitations of the clock receiver. For this revision, no separate specification of jitter as a function of input amplitude is specified, instead the response characterization done at the specified clock amplitude only. The specified voltages are at the Rx input pin
3) Various DCD values should be tested, complying within the maximum limits
4) Various Rj values should be tested, complying within the maximum limits
5) Various combinations of DCD and Rj should be tested, complying within the maximum limits. The maximum timing margin degradation as a result of these injected jitter is specified in a separate table
6) Although DDR5 has bursty traffic, current available BERTs that can be used for this test do not support burst traffic patterns. A continuous strobe and continuous DQ are used for this parameter. The clock like pattern repeating 3 “1s” and 3 “0s” is used for this test.
7) Duty Cycle Distortion (in UI DCD) as applied to the input forwarded DQS from BERT (UI)
8) RMS value of Rj (specified as Edge jitter) applied to the input forwarded DQS from BERT (values of the edge jitter RMS values specified as % of UI)
9) Duty cycle distortion (specified as UI DCD) and rms values of Rj (specified as edge jitter) applied to the input forwarded DQS from BERT (values of the edge jitter RMS values specified as % of UI)
10) The user has the freedom to set the voltage swing and slew rates for strobe and DQ signals as long as they meet the specification.
The DQS and DQ input voltage swing and/or slew rate can be adjusted, without exceeding the specifications, for this test.

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8.6 Rx DQS Voltage Sensitivity

8.6.1 Overview

The receiver DQS (strobe) input voltage sensitivity test provides the methodology for testing the receiver's sensitivity to varying input voltage in the absence of Inter-Symbol Interference (ISI), jitter (Rj, Dj, DCD) and crosstalk noise.

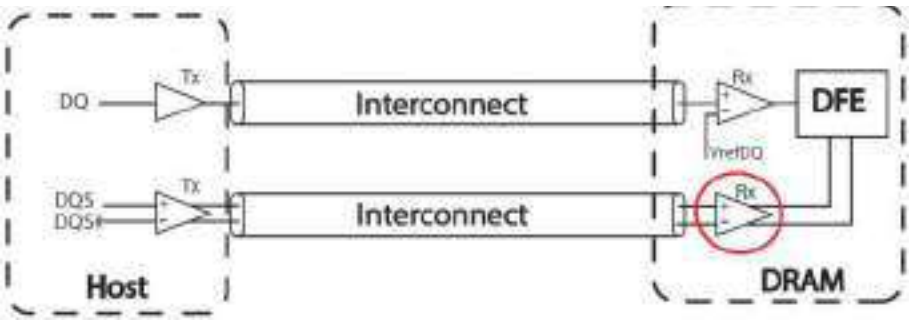


Figure 23. Example of DDR5 Memory Interconnect

8.6.2 Receiver DQS Voltage Sensitivity Parameter

Input differential (DQS_t, DQS_c) VRx_DQS is defined and measured as shown below. The receiver must pass the minimum BER requirements for DDR5. These parameters are tested on the CTC2 card with neither additive gain nor Rx Equalization set.

[Table 26] Rx DQS Input Voltage Sensitivity Parameter

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
DQS Rx Input Voltage Sensitivity (differential pp)	VRx_DQS	-	100	-	100	-	90	-	90	mV	1,2,3

NOTE:

1) Refer to the minimum BER requirements for DDR5
2) The validation methodology for this parameter is TBD
3) Test using clock like pattern of repeating 3 "1s" and 3 "0s"

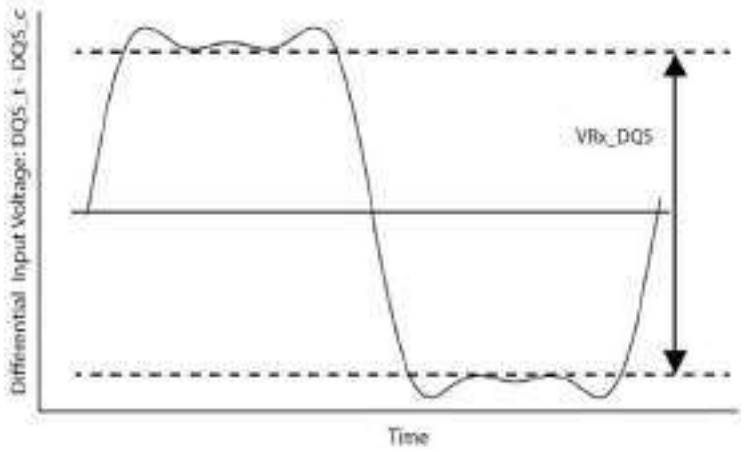


Figure 24. VRx_DQS

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8.7 Differential Strobe (DQS_t, DQS_c) Input Cross Point Voltage (VIX)

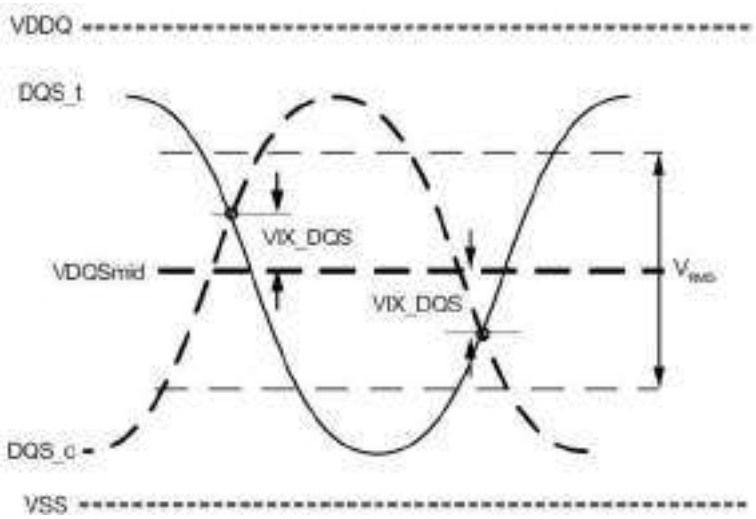


Figure 14. VIX Definition (DQS)

[Table 24] Crosspoint Voltage (VIX) for DQS Differential Input Signals

Parameter	Symbol	DDR5-4400 to 5600		Unit	Notes
		Min	Max		
DQS differential input crosspoint voltage ratio	VIX_DQS_Ratio	-	50	%	1,2,3

NOTE :
1) The VIX_DQS voltage is referenced to VDQSmid(mean) = (DQS_t voltage + DQS_c voltage) /2, where the mean is over 8 UI
2) VIX_DQS_Ratio = (|VIX_DQS| / |VRMS|)*100%, where VRMS = RMS(DQS_t voltage - DQS_c voltage)
3) Only applies when both DQS_t and DQS_c are transitioning (including preamble)

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8.8 Rx DQ Voltage Sensitivity

8.8.1 Overview

The receiver data input voltage sensitivity test provides the methodology for testing the receiver's sensitivity to varying input voltage in the absence of Inter-Symbol Interference (ISI), jitter (Rj, Dj, DCD) and crosstalk noise.

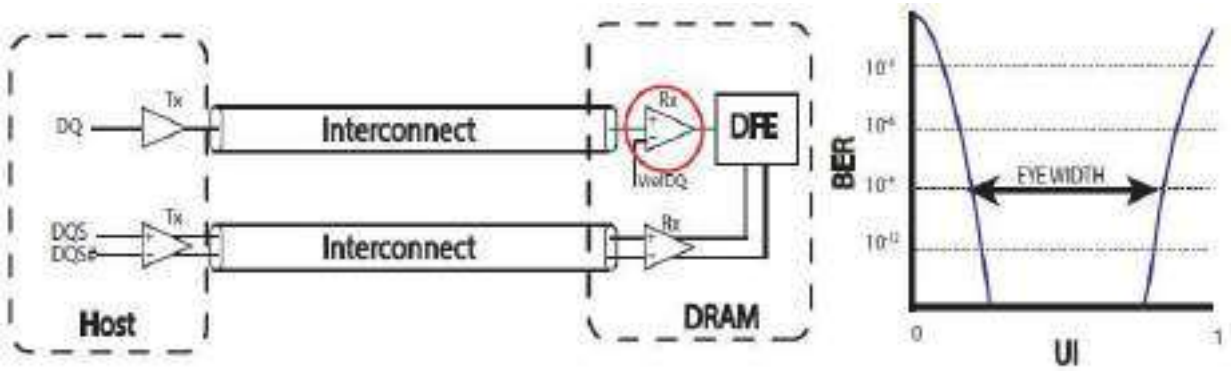


Figure 15. Example of DDR5 Memory Interconnect

8.8.2 Receiver DQ Input Voltage Sensitivity Parameters

Input single-ended VRx_DQ is defined and measured as shown below. The receiver must pass the minimum BER requirements for DDR5. These parameters are tested on the CTC2 card with neither additive gain nor Rx Equalization set.

[Table 20] Rx DQ Input Voltage Sensitivity Parameters

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Minimum DQ Rx input voltage sensitivity applied around Vref	VRx_DQ	-	65	-	65	-	60	-	60	mV	1,2,3

NOTE :
1) Refer to the minimum BER requirements for DDR5
2) The validation methodology for this parameter is TBD
3) Recommend testing using clock like pattern such as repeating 3 "1s" and 3 "0s"

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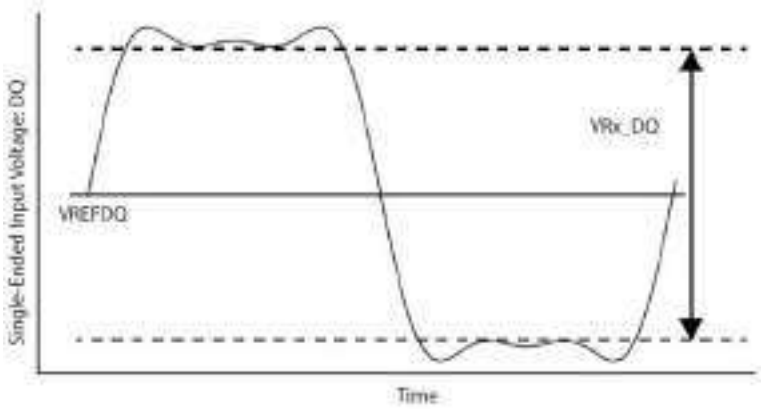


Figure 16. VRx_DQ

8.8.3 Differential Input Levels for DQS

[Table 21] Differential Input Levels for DQS (DQS_t, DQS_c)

From	Parameter	DDR5 4400 to 5600	Notes
$V_{IHdiff}DQS$	Differential input high measurement level (DQS_t, DQS_c)	0.75 x $V_{diffpk-pk}$	1,2,3
$V_{ILdiff}DQS$	Differential input low measurement level (DQS_t, DQS_c)	0.25 x $V_{diffpk-pk}$	1,2,3

NOTE :
1) Vdiffpk-pk defined in Figure 17
2) Vdiffpk-pk is the mean high voltage minus the mean low voltage over TBD samples
3) All parameters are defined over the entire clock common mode range

8.8.4 Differential Input Slew Rate for DQS_t, DQS_c

Input slew rate for differential signals are defined and measured as shown below.

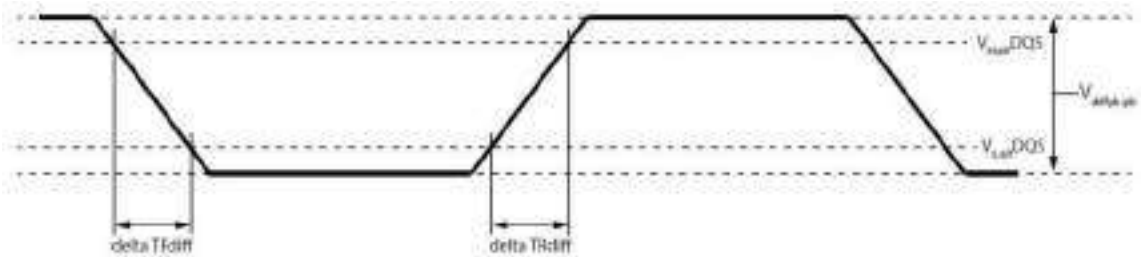


Figure 17. Differential Input Slew Rate Definition for DQS_t, DQS_c

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[Table 22] Differential Input Slew Rate Definition for DQS_t, DQS_c

Parameter	Measured		Defined by	Notes
	From	To		
Differential Input slew rate for rising edge (DQS_t, DQS_c)	$V_{ILdiff}DQS$	$V_{IHdiff}DQS$	($V_{IHdiff}DQS$ - $V_{ILdiff}DQS$) / deltaTRdiff	
Differential Input slew rate for falling edge (DQS_t, DQS_c)	$V_{IHdiff}DQS$	$V_{ILdiff}DQS$	($V_{IHdiff}DQS$ - $V_{ILdiff}DQS$) / deltaTFdiff	

[Table 23] Differential Input Slew Rate for DQS_t, DQS_c

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Differential Input Slew Rate for DQS_t, DQS_c	SRIdiff_DQS	1.5	30	1.5	30	2.0	30	2.0	30	Vins	1

NOTE :
1) Only applies when both DQS_t and DQS_c are transitioning.

8.9 Rx Stressed Eye

The stressed eye tests provide the methodology for creating the appropriate stress for the DRAM's receiver with the combination of ISI (both loss and reflective), jitter (Rj, Dj, DCD), and crosstalk noise. The receiver must pass the appropriate BER rate when the equivalent stressed eye is applied through the combination of ISI, jitter and crosstalk

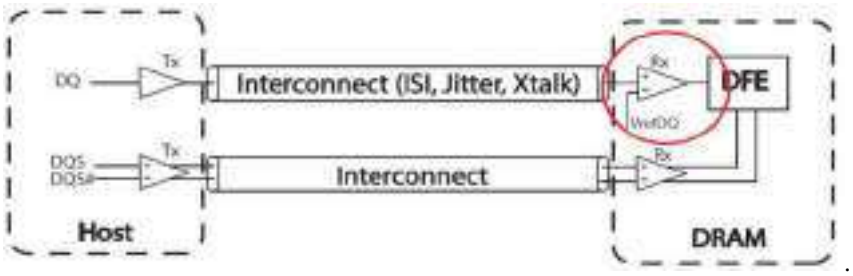


Figure 18. Example of Rx Stressed Test Setup in the Presence of ISI, Jitter and Crosstalk

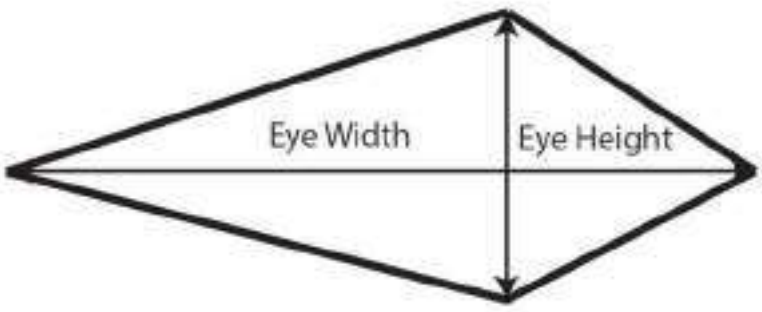


Figure 19. Example of Rx Stressed Eye Height and Eye Width

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8.9.1 Parameters for DDR5 Rx Stressed Eye Tests

[Table 24] Test Conditions for Rx Stressed Eye Tests

[BER=Bit Error Rate; DCD=Duty Cycle Distortion; Rj=Random Jitter; Sj=Sinusoidal Jitter; p-p =peak to peak]

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Eye height of stressed eye for Golden Reference Channel 1	RxEH_Stressed_Eye_Golden_Ref_Channel_1	-	75	-	70	-	65	-	60	mV	1,2,3,4,5,6,7,8,9
Eye width of stressed eye Golden Reference Channel 1	RxEW_Stressed_Eye_Golden_Ref_Channel_1	-	0.25	-	0.25	-	0.235	-	0.235	UI	1,2,3,4,5,6,7,8,9
Vswing stress to meet above data eye	Vswing_Stressed_Eye_Golden_Ref_Channel_1	-	600	-	600	-	600	-	600	mV	1,2
Injected sinusoidal jitter at 200 MHz to meet above data eye	Sj_Stressed_Eye_Golden_Ref_Channel_1	0	0.45	0	0.45	0	0.45	0	0.45	UI p-p	1,2
Injected Random wide band (10 MHz-1 GHz) Jitter to meet above data eye	Rj_Stressed_Eye_Golden_Ref_Channel_1	0	0.04	0	0.04	0	0.04	0	0.04	UI RMS	1,2
Injected voltage noise as PRBS23, or Injected voltage noise at 2.1 GHz	Vnoise_Stressed_Eye_Golden_Ref_Channel_1	0	125	0	125	0	125	0	125	mV p-p	1,2
Golden Reference Channel 1 Characteristics as measured at TBD	Golden_Ref_Channel_1_Characteristics									dB	3

NOTE :

1) Must meet minimum BER of $1E^{-16}$ or better requirement with the stressed eye at the slice of the receiver (after equalization is applied in the summer). The eye shape is verified by measuring to BER E^{-9} and extrapolating to BER E^{-16}.
2) These parameters are applied on the defined golden reference channel with parameters TBD.
1) DFE Tap 1-4 Bias settings that give the best eye margin are used and referring to Table 132, Min/Max Ranges for the DFE Tap Coefficients. DFE tap range limits apply: sum of absolute values of Tap-2, Tap-3, and Tap-4 shall be less than 60mV (|Tap-2| + |Tap-3| + |Tap-4| < 60mV) after the tap multiflier is applied.
2) Evaluated with no DC supply voltage drift.
3) Evaluated with no temperature drift.
4) Supply voltage noise limited according to DC bandwidth spec, see DC Operating Conditions
5) The stressed eye is to be assumed to have a diamond shape
6) The VREFDQ, DFE Gain Bias Step, and DFE Taps 1,2,3,4 Bias Step can be adjusted as needed, without exceeding the specifications, for this test, including the limits placed in Note 3.
7) The stressed eye is defined as centered on the DQS_t/DQS_c crossing during the calibration. Measurement includes an optimal set of DQS_t/DQS_c location, VrefDQ, and DFE solution to give the best eye margin.
10) The Rx stressed eye spec applies at 2933MT/s and faster data rates.
11) EH/EW are measured at the slicer of the receiver

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8.10 Connectivity Test Mode - Input level and Timing Requirement

During CT Mode, input levels are defined below.
TEN pin: CMOS rail-to-rail with AC high and low at 80% and 20% of VDDQ
CS_n: CMOS rail-to-rail with AC high and low at 80% and 20% of VDDQ.
Test Input pins: CMOS rail-to-rail with AC high and low at 80% and 20% of VDDQ.
RESET_n: CMOS rail-to-rail with AC high and low at 80% and 20% of VDDQ.

Prior to the assertion of the TEN pin, all voltage supplies must be valid and stable.

Upon the assertion of the TEN pin, the CK_t and CK_c signals will be ignored and the DDR5 memory device will enter into the CT mode after time tCT_Enable. In the CT mode, no refresh activities in the memory arrays, initiated either externally (i.e., auto-refresh) or internally (i.e., self-refresh), will be maintained.

The TEN pin may be asserted after the DRAM has completed power-on, after RESET_n has de-asserted, the wait time after the RESET_n de-assertion has elapsed, and prior to starting clocks (CK_t, CK_c).

The TEN pin may be de-asserted at any time in the CT mode. Upon exiting the CT mode, the states of the DDR5 memory device are unknown and the integrity of the original content of the memory array is not guaranteed; therefore, the reset initialization sequence is required.

All output signals at the test output pins will be stable within tCT_valid after the test inputs have been applied to the test input pins with TEN input and CS_n input maintained High and Low respectively.

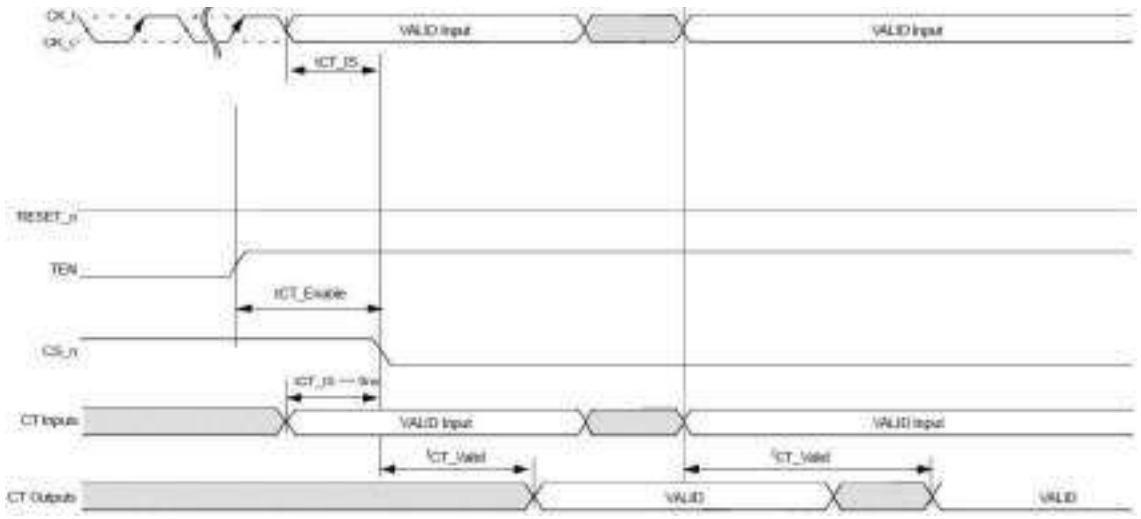


Figure 20. Timing Diagram for Connectivity Test (CT) Mode

[Table 25] AC parameters for Connectivity Test (CT) Mode

Symbol	Min	Max	Unit
tCT_IS	0	-	ns
tCT_Enable	200	-	ns
tCT_Valid	-	200	ns

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8.10.1 Connectivity Test (CT) Mode Input Levels

Following input parameters will be applied for DDR5 SDRAM Input Signals during Connectivity Test Mode.

[Table 26] CMOS rail to rail Input Levels for TEN, CS_n and Test inputs

Parameter	Symbol	Min	Max	Unit	Notes
TEN AC Input High Voltage	VIH(AC)_TEN	0.8 * VDDQ	VDDQ	V	1
TEN DC Input High Voltage	VIH(DC)_TEN	0.7 * VDDQ	VDDQ	V	
TEN DC Input Low Voltage	VIL(DC)_TEN	VSS	0.3 * VDDQ	V	
TEN AC Input Low Voltage	VIL(AC)_TEN	VSS	0.2 * VDDQ	V	2
TEN Input signal Falling time	TF_input_TEN	-	10	ns	
TEN Input signal Rising time	TR_input_TEN	-	10	ns	

NOTE :
1) Overshoot might occur. It should be limited by the Absolute Maximum DC Ratings.
2) Undershoot might occur. It should be limited by Absolute Maximum DC Ratings.

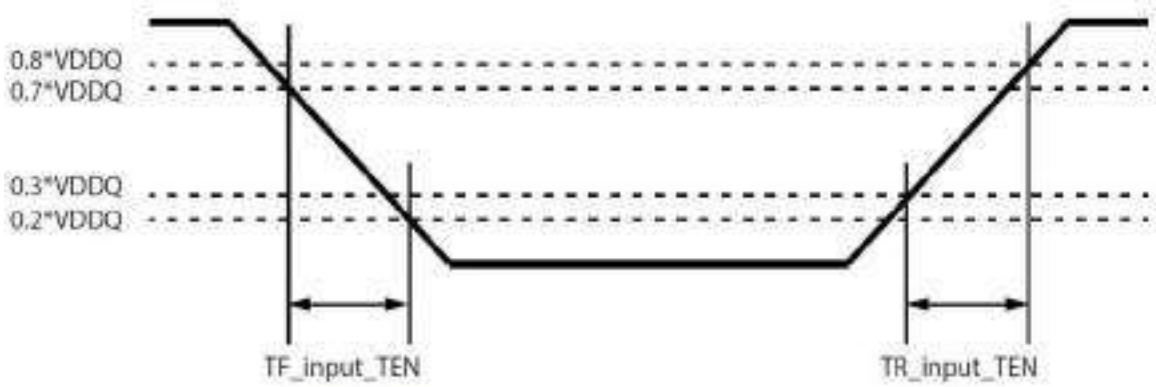


Figure 21. TEN Input Slew Rate Definition

8.10.2 CMOS rail to rail Input Levels for RESET_n

[Table 27] CMOS rail to rail Input Levels for RESET_n

Parameter	Symbol	Min	Max	Unit	NOTE
AC Input High Voltage	VIH(AC)_RESET	0.8*VDDQ	VDDQ	V	5
DC Input High Voltage	VIH(DC)_RESET	0.7*VDDQ	VDDQ	V	2
DC Input Low Voltage	VIL(DC)_RESET	VSS	0.3*VDDQ	V	1
AC Input Low Voltage	VIL(AC)_RESET	VSS	0.2*VDDQ	V	6
Rising time	TR_RESET	-	1.0	us	
RESET pulse width	tPW_RESET	1.0	-	us	3,4

NOTE :
1) After RESET_n is registered LOW, RESET_n level shall be maintained below VIL(DC)_RESET during tPW_RESET, otherwise, SDRAM may not be reset.
2) Once RESET_n is registered HIGH, RESET_n level must be maintained above VIH(DC)_RESET, otherwise, SDRAM operation will not be guaranteed until it is reset asserting RESET_n signal LOW.
3) RESET is destructive to data contents.

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4) This definition is applied only for “Reset Procedure at Power Stable”.
5) Overshoot might occur. It should be limited by the Absolute Maximum DC Ratings.
6) Undershoot might occur. It should be limited by Absolute Maximum DC Ratings.

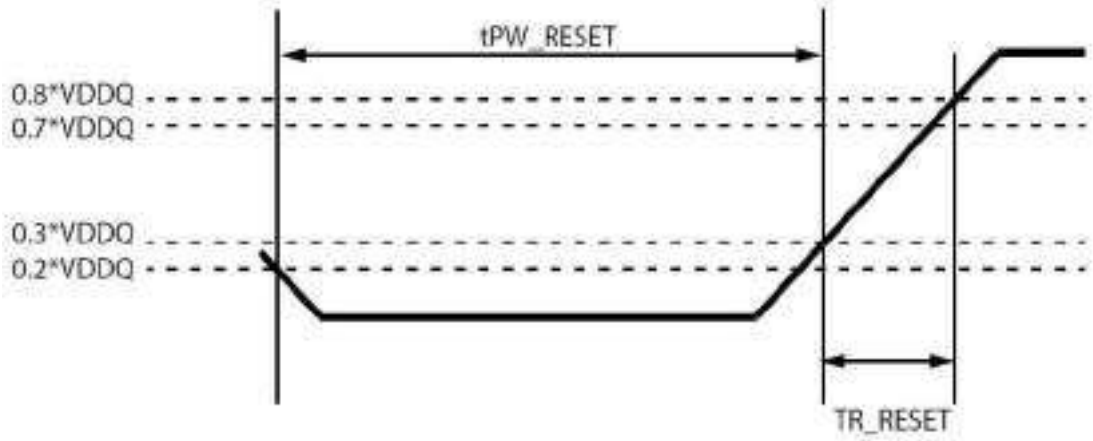


Figure 22. RESET_n Input Slew Rate Definition

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9.0 AC&DC OUTPUT MEASUREMENT LEVELS and TIMING

9.1 Output Driver DC Electrical Characteristics for DQS and DQ

The DDR5 driver supports two different Ron values. These Ron values are referred as strong(low Ron) and weak mode(high Ron). A functional representation of the output buffer is shown in the figure below.

Output driver impedance RON is defined as follows:

The individual pull-up and pull-down resistors (RON_{Pu} and RON_{Pd}) are defined as follows:

$$RON_{Pu} = \frac{VDDQ - Vout}{|I\,out|}$$ under the condition that RONPd is off

$$RON_{Pd} = \frac{Vout}{|I\,out|}$$ under the condition that RONPu is off

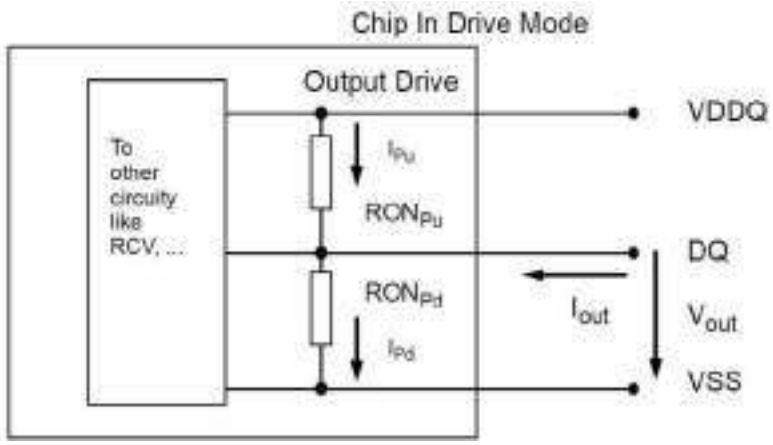


Figure 34. Output Driver Impedance Ron

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[Table 36] Output Driver DC Electrical Characteristics, assuming RZQ = 240ohm; entire operating temperature range; after proper ZQ calibration

RON_{NOM}	Resistor	Vout	Min	Nom	Max	Unit	NOTE
34Ω	RON34Pd	VOLdc= 0.5*VDDQ	0.8	1	1.1	RZQ/7	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/7	1,2
		VOHdc= 0.95* VDDQ	0.9	1	1.25	RZQ/7	1,2
	RON34Pu	VOLdc= 0.5* VDDQ	0.9	1	1.25	RZQ/7	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/7	1,2
		VOHdc= 0.95* VDDQ	0.8	1	1.1	RZQ/7	1,2
48Ω	RON48Pd	VOLdc= 0.5*VDDQ	0.8	1	1.1	RZQ/5	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/5	1,2
		VOHdc= 0.95* VDDQ	0.9	1	1.25	RZQ/5	1,2
	RON48Pu	VOLdc= 0.5* VDDQ	0.9	1	1.25	RZQ/5	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/5	1,2
		VOHdc= 0.95* VDDQ	0.8	1	1.1	RZQ/5	1,2
Mismatch between pull-up and pull-down, MMPuPd		VOMdc= 0.8* VDDQ	-10		10	%	1,2,3,4
Mismatch DQ-DQ within byte variation pull-up, MMPudd		VOMdc= 0.8* VDDQ			10	%	1,2,4
Mismatch DQ-DQ within byte variation pull-dn, MMPddd		VOMdc= 0.8* VDDQ			10	%	1,2,4

NOTE :

1) The tolerance limits are specified after calibration with stable voltage and temperature. For the behavior of the tolerance limits if temperature or voltage changes after calibration, see following section on voltage and temperature sensitivity(TBD)"ZQ Calibration Commands" section.
2) Pull-up and pull-dn output driver impedances are recommended to be calibrated at 0.8 * VDDQ. Other calibration schemes may be used to achieve the linearity spec shown above, e.g. calibration at 0.5 * VDDQ and 0.95 * VDDQ.
3) Measurement definition for mismatch between pull-up and pull-down, MMPuPd : Measure RONPu and RONPD both at 0.8*VDD separately;

Ronnom is the nominal Ron value

$$MMPuPd = \frac{RONPu - RONPd}{RONNOM} * 100$$

4) RON variance range ratio to RON Nominal value in a given component, including DQS_t and DQS_c.

$$MMPudd = \frac{RONPuMax - RONPuMin}{RONNOM} * 100$$

$$MMPddd = \frac{RONPdMax - RONPdMin}{RONNOM} * 100$$

5) This parameter of x16 device is specified for Upper byte and Lower byte.

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9.2 Output Driver DC Electrical Characteristics for Loopback Signals LBDQS, LBDQ

The DDR5 Loopback driver supports 34 ohms. A functional representation of the output buffer is shown in the figure below.

$$RON_{Pu} = \frac{VDDQ - Vout}{|I\,out|} \quad \text{under the condition that } RON_{Pd} \text{ is off}$$

$$RON_{Pd} = \frac{Vout}{|I\,out|} \quad \text{under the condition that } RON_{Pu} \text{ is off}$$

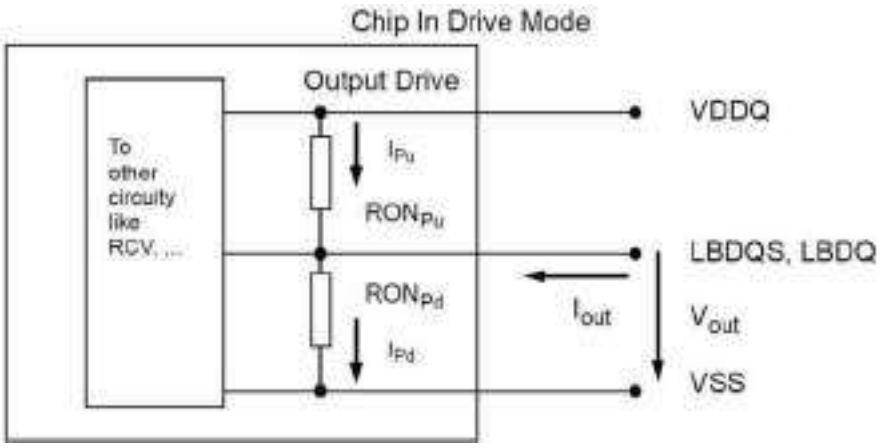


Figure 35. Output Driver for Loopback Signals

[Table 37] Output Driver DC Electrical Characteristics, assuming RZQ = 240ohm entire operating temperature range; after proper ZQ calibration

RON_{NOM}	Resistor	Vout	Min	Nom	Max	Unit	Notes
34Ω	RON34Pd	VOLdc= 0.5*VDDQ	0.8	1	1.1	RZQ/7	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/7	1,2
		VOHdc= 0.95* VDDQ	0.9	1	1.25	RZQ/7	1,2
	RON34Pu	VOLdc= 0.5* VDDQ	0.9	1	1.25	RZQ/7	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/7	1,2
		VOHdc= 0.95* VDDQ	0.8	1	1.1	RZQ/7	1,2
Mismatch between pull-up and pull- down, MMPuPd		VOMdc= 0.8* VDDQ	-10		10	%	1,2,3,4
Mismatch LBDQS-LBDQ within device variation pull-up, MMPudd		VOMdc= 0.8* VDDQ			10	%	1,2,4
Mismatch LBDQS-LBDQ within device variation pull-dn, MMPddd		VOMdc= 0.8* VDDQ			10	%	1,2,4

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NOTE :

1) The tolerance limits are specified after calibration with stable voltage and temperature. For the behavior of the tolerance limits if temperature or voltage changes after calibration, see following section on voltage and temperature sensitivity(TBD)"ZQ Calibration Commands" section.
2) Pull-up and pull-dn output driver impedances are recommended to be calibrated at 0.8 * VDDQ. Other calibration schemes may be used to achieve the linearity spec shown above, e.g. calibration at 0.5 * VDDQ and 0.95 * VDDQ.
3) Measurement definition for mismatch between pull-up and pull-down, MMPuPd : Measure RONPu and RONPD both at 0.8*VDD separately;

Ronnom is the nominal Ron value

$$MMPuPd = \frac{RONPu - RONPd}{RONNOM} * 100$$

4) RON variance range ratio to RON Nominal value in a given component, including LBDQS and LBDQ

$$MMPudd = \frac{RONPuMax - RONPuMin}{RONNOM} * 100$$

$$MMPddd = \frac{RONPdMax - RONPdMin}{RONNOM} * 100$$

9.3 Loopback Output Timing

Loopback strobe LBDQS to Loopback data LBDQ relationship is illustrated inFigure 36.

- tLBQSH describes the single-ended LBDQS strobe high pulse width
- tLBQSL describes the single-ended LBDQS strobe low pulse width
- tLBDQSQ describes the latest valid transition of LBDQ measured at both rising and falling edges of LBDQS
- tLBQH describes the earliest invalid transition of LBDQ measured at both rising and falling edges of LBDQS
- tLBDVW describes the data valid window per device per UI and is derived from (tLBQH-tLBDQSQ) of each UI on a given DRAM

[Table 38] Loopback Output Timing Parameters

Speed		DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Units	Notes
Parameter	Symbol	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
Loopback LBDQS Output Low Time	tLBQSL	0.7	-	0.7	-	0.7	-	0.7	-	tCK	1
Loopback LBDQS Output High Time	tLBQSH	0.7	-	0.7	-	0.7	-	0.7	-	tCK	1
Loopback LBDQS to LBDQ Skew	tLBDQSQ	0.5	-	0.5	-	0.5	-	0.5	-	tCK/2	1,2
Loopback LBDQ Output Time from LBDQS	tLBQH	0.5	-	0.5	-	0.5	-	0.5	-	tCK/2	1,2
Loopback Data valid window (tLBQH-tLBDQSQ) of each UI per DRAM	tLBDVW	1.6	-	1.6	-	1.6	-	1.6	-	tCK/2	1

NOTE:

1) Based on Loopback 4-way interleave setting.
2) tLBQ_Set is measured from LBDQ first transition to LBDQS falling edge and tLBQ_Hld is measured from LBDQS falling edge to LBDQ last transition.

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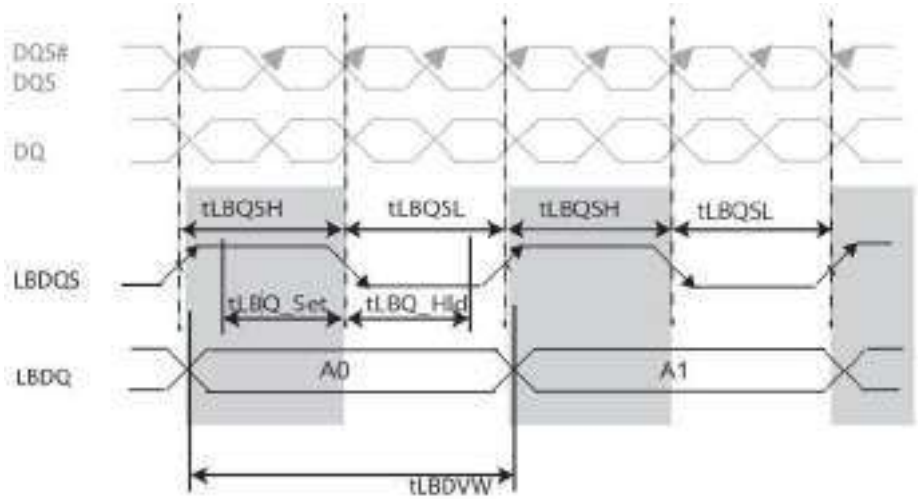


Figure 36. Loopback Strobe to Data Relationship

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9.3.1 Alert_n output Drive Characteristic

A functional representation of the output buffer is shown in the figure below. Output driver impedance RON is defined as follows:

$$RON_{Pd} = \frac{Vout}{|\ Iout\ |} \quad \text{under the condition that } RON_{Pu} \text{ is off}$$

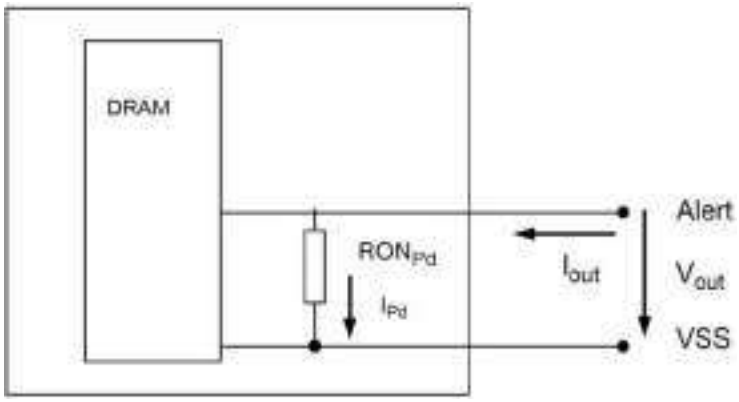


Figure 37. Alert Driver

Resistor	Vout	Min	Max	Unit	Notes
RON_{Pd}	VOLdc= 0.1* VDDQ	0.3	1.1	$R_{ZQ}/7$	
	V_{OMdc} = 0.8* VDDQ	0.4	1.1	$R_{ZQ}/7$	
	V_{OHdc} = 0.95* VDDQ	0.4	1.25	$R_{ZQ}/7$	

9.3.2 Output Driver Characteristic of Connectivity Test (CT) Mode

Following Output driver impedance RON will be applied to the Test Output Pin during Connectivity Test (CT) Mode.
The individual pull-up and pull-down resistors (RONPu_CT and RONPd_CT) are defined as follows:

$$RON_{Pu_CT} = \frac{V_{DDQ}-V_{OUT}}{|\ Iout\ |}$$

$$RON_{Pd_CT} = \frac{V_{OUT}}{|\ Iout\ |}$$

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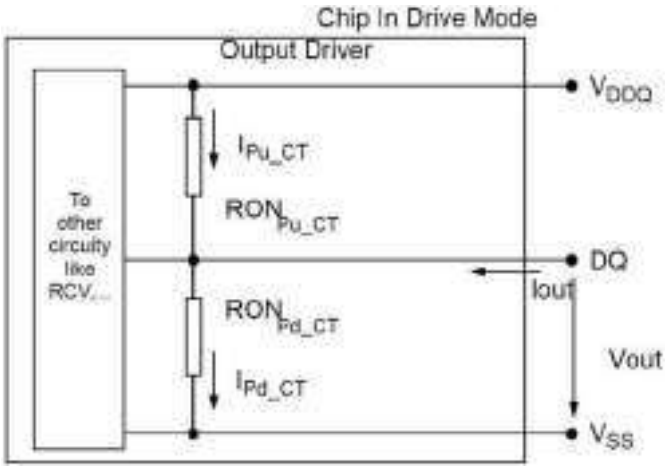


Figure 38. Output Driver

RONNOM_CT	Resistor	Vout	Max	Units	NOTE
34Ω	RONPd_CT	VOBdc = 0.2 x VDDQ	1.9	RZQ/7	1,2
		VOLdc = 0.5 x VDDQ	2.0	RZQ/7	1,2
		VOMdc = 0.8 x VDDQ	2.2	RZQ/7	1,2
		VOHdc = 0.95 x VDDQ	2.5	RZQ/7	1,2
	RONPu_CT	VOBdc = 0.2 x VDDQ	1.9	RZQ/7	1,2
		VOLdc = 0.5 x VDDQ	2.0	RZQ/7	1,2
		VOMdc = 0.8 x VDDQ	2.2	RZQ/7	1,2
		VOHdc = 0.95 x VDDQ	2.5	RZQ/7	1,2

NOTE:
1) Connectivity test mode uses un-calibrated drivers, showing the full range over PVT. No mismatch between pull up and pull down is defined 2) Uncalibrated drive strength tolerance is specified at +/- 30%

9.4 Single-ended Output Levels - VOL/VOH

[Table 39] Single-ended Output levels

Symbol	Parameter	DDR5-4400 to 5600	Units	Notes
VOH	Output high measurement level (for output SR)	0.75 x V_{pk-pk}	V	1
VOL	Output low measurement level (for output SR)	0.25 x V_{pk-pk}	V	1

NOTE:

1) V_{pk-pk} is the mean high voltage minus the mean low voltage over 8UI samples

9.5 Single-Ended Output Levels - VOL/VOH for Loopback Signals

[Table 40] Single-ended Output levels for Loopback Signals

Symbol	Parameter	DDR5-4400 to 5600	Units	Notes
VOH	Output high measurement level (for output SR)	0.75 x V_{pk-pk}	V	1
VOL	Output low measurement level (for output SR)	0.25 x V_{pk-pk}	V	1

NOTE:
1) V_{pk-pk} is the mean high voltage minus the mean low voltage over 8UI samples

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9.6 Single-ended Output Slew Rate

With the reference load for timing measurements, output slew rate for falling and rising edges is defined and measured between V_{OL} and V_{OH} for single ended signals as shown in Table 41 and Figure 39.

[Table 41] Single-ended output slew rate definition

Description	Measured		Defined by
	From	To	
Single ended output slew rate for rising edge	V_{OL}	V_{OH}	[V_{OH}-V_{OL}] / delta TRse
Single ended output slew rate for falling edge	V_{OH}	V_{OL}	[V_{OH}-V_{OL}] / delta TFse

NOTE:
1) Output slew rate is verified by design and characterization, and may not be subject to production test

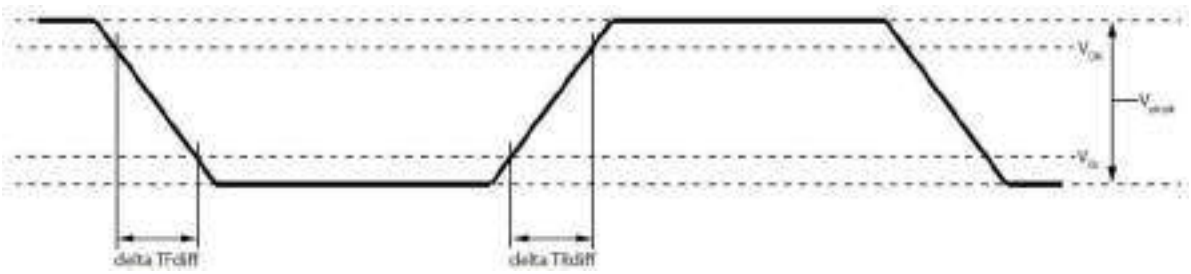


Figure 39. Single-ended Output Slew Rate Definition

[Table 42] Single-ended Output Slew Rate

Speed		DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Units	Notes
Parameter	Symbol	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
Single ended output slew rate	SRQse	8	24	8	24	12	24	12	24	V/ns	

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9.7 Differential Output Levels

[Table 43] Differential Output levels

Symbol	Parameter	DDR5-4400 to 5600	Units	Notes
V_{OHdiff}	Differential output high measurement level (for output SR)	0.75 x $V_{diffpk-pk}$	V	1
V_{OLdiff}	Differential output low measurement level (for output SR)	0.25 x $V_{diffpk-pk}$	V	1

NOTE:

1) $V_{diffpk-pk}$is the mean high voltage minus the mean low voltage over 8UI samples

9.8 Differential Output Slew Rate

With the reference load for timing measurements, output slew rate for falling and rising edges is defined and measured between V_{OLdiff} and V_{OHdiff} for differential signals as shown in Table 44 and Figure 40.

[Table 44] Differential output slew rate definition

Description	Measured		Defined by
	From	To	
Differential output slew rate for rising edge	V_{OLdiff}	V_{OHdiff}	[V_{OHdiff}-V_{OLdiff}] / delta TRdiff
Differential output slew rate for falling edge	V_{OHdiff}	V_{OLdiff}	[V_{OHdiff}-V_{OLdiff}] / delta TFdiff

NOTE:

1) Output slew rate is verified by design and characterization, and may not be subject to production test

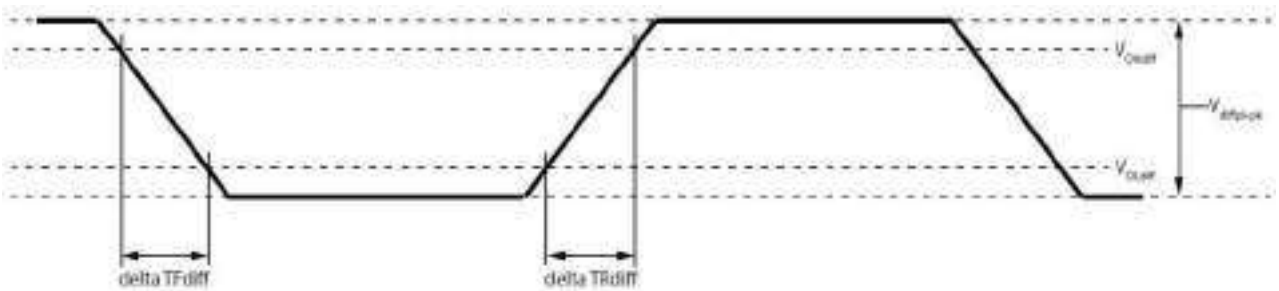


Figure 40. Differential Output Slew Rate Definition

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[Table 45] Differential Output Slew Rate

Speed		DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Units	Notes
Parameter	Symbol	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
Differential output slew rate	SRQdiff	16	48	16	48	24	48	24	48	V/ns	

9.9 Tx DQS Jitter

The Random Jitter (Rj) specified is a random jitter meeting a Gaussian distribution. The Deterministic Jitter (Dj) specified is bounded. The DDR5 device output jitter must not exceed maximum values specified in Table 46.

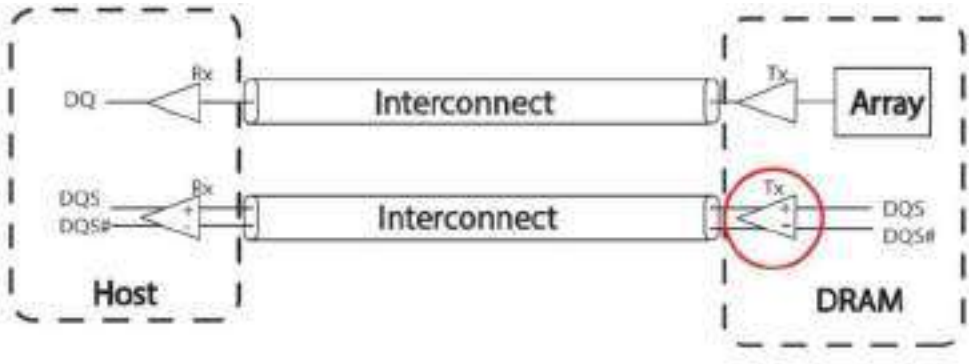


Figure 41. Tx DQS Jitter

9.9.1 Tx DQS Jitter Parameters

[Table 46] Tx DQS Jitter Parameters

[Dj=Deterministic Jitter; Rj=Random Jitter; DCD=Duty Cycle Distortion; BUJ=Bounded Uncorrelated Jitter; pp=Peak to Peak]

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Rj RMS Value of 1-UI Jitter without BUJ	tTx_DQS_1UI_Rj_NoBUJ	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	UI (RMS)	1,2,3,4, 5,6,7,8,9, 10,11,12
Dj pp Value of 1-UI Jitter without BUJ	tTx_DQS_1UI_Dj_NoBUJ	-	0.150	-	0.150	-	0.130	-	0.130	UI	1,2,3,5,6, 7,8,9,10,11
Rj RMS Value of N-UI jitter without BUJ, where 1<N< 4	tTx_DQS_NUI_Rj_NoBUJ	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	UI (RMS)	1,2,3,5,6, 7,8,9,10,11 12
Dj pp Value of N-UI Jitter without BUJ, where 1<N < 4	tTx_DQS_NUI_Dj_NoBUJ	-	0.150	-	0.150	-	0.130	-	0.130	UI	1,2,3,5,6, 7,8,9,10,11

NOTE:

1) On-die noise similar to that occurring with all the transmitter and receiver lanes toggling need to be stimulated. When there is no socket in transmitter measurement setup, in many cases, the contribution of the cross-talk is not significant or can be estimated within tolerable error even with all thetransmitter lanes sending patterns. When a socket is present, such as DUT being DRAM component, the contribution of the cross-talk could be significant. To minimize the impact of crosstalk on the measurement results, a small group of selected lanes in the vicinity of the lane under test may be turned off (sending DC), while the remaining TX lanes send patterns to the corresponding RX receivers so as to excite realistic on-die noise profile from device switching. Note that there may be cases when one of Dj and Rj specs is met and another violated in which case the signaling analysis should be run to determine link feasibility
2) On-die noise similar to that occurring with all the transmitter and receiver lanes toggling need to be stimulated. When there is no socket in transmitter measurement setup, in many cases the contribution of BUJ is not significant or can be estimated within tolerable error even with all the transmitter

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lanes sending patterns. When a socket is present, such as DUT being DRAM component, the contribution of the cross-talk could be significant. To minimize the impact of crosstalk on the measurement results, a small group of selected lanes in the vicinity of the lane under test may be turned off (sending DC), while the remaining TX lanes send patterns to the corresponding RX receivers, so as to excite realistic on-die noise profile from device switching. Note that there may be cases when one of Dj and Rj specs is met and another violated in which case the signaling analysis should be run to determine link feasibility

3) The validation methodology for these parameters will be covered in future ballots
4) Rj RMS value of 1-UI jitter. Without BUJ, but on-die system like noise present. This extraction is to be done after software correction of DCD
5) See Chapter 12 for details on the minimum BER requirements
6) See Chapter 12 for details on UI, NUI and Jitter definitions
7) Duty Cycle of the DQ pins must be adjusted as close to 50% as possible using the Global and Per Pin Duty Cycle Adjuster feature prior to running the Tx DQ Jitter test
8) The Mode Registers for the Duty Cycle Adjuster are MR43 and MR44, and the Mode Registers for the Per Pin DCA of DQS are MR103 - MR110
9) Spread Spectrum Clocking (SSC) must be disabled while running the Tx DQ Jitter test
10) These parameters are tested using the continuous clock pattern which are sent out from the dram device without the need for sending out continuous MRR commands. The MR25 OP[3] is set to “1” to enable this feature
11) Tested on the CTC2 card only
12) The max value of tTx_DQS_Rj_1UI_NoBUJ and tTx_DQS_Rj_NUI_NoBUJ can be 6mUI RMS

9.10 Tx DQ Jitter

9.10.1 Overview

The Random Jitter (Rj) specified is a random jitter meeting a Gaussian distribution. The Deterministic Jitter (Dj) specified is bounded. The DDR5 device output jitter must not exceed maximum values specified in Table 47.

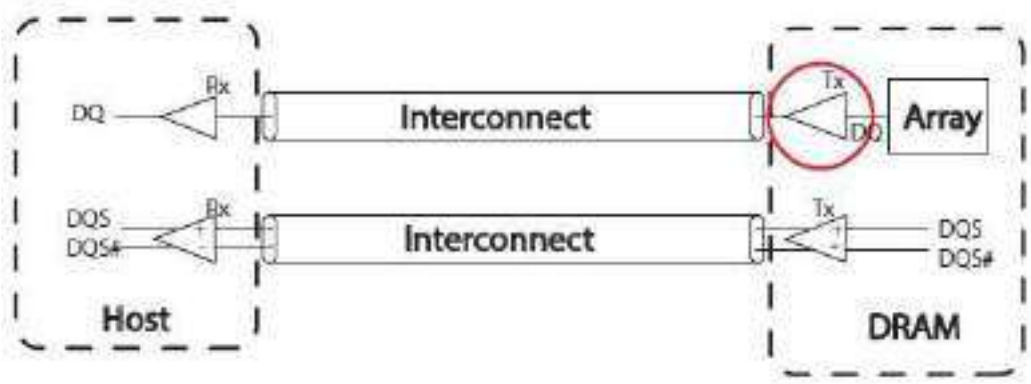


Figure 42. Tx DQ Jitter

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9.10.2 Tx DQ Jitter Parameters

[Table 47] Tx DQ Jitter Parameters

[Dj=Deterministic Jitter; Rj=Random Jitter; DCD=Duty Cycle Distortion; BUJ=Bounded Uncorrelated Jitter; pp=Peak to Peak]

Parameter	Symbol	DDR5-4400 to 4800		DDR5-5200 to 5600		Unit	Notes
		Min	Max	Min	Max		
Rj RMS Value of 1-UI Jitter without BUJ	tTx_DQS_1UI_Rj _NoBUJ	-	tCK_1UI_Rj_ NoBUJ+0.002	-	tCK_1UI_Rj_ NoBUJ+0.002	UI (RMS)	1,2,3,4, 5,6,7,8,9, 10,11,12
Dj pp Value of 1-UI Jitter without BUJ	tTx_DQS_1UI_Dj _NoBUJ	-	0.150	-	0.130	UI	1,2,3,5,6, 7,8,9,10,11
Rj RMS Value of N-UI jitter without BUJ, where 1<N< 4	tTx_DQS_NUI_Rj _NoBUJ	-	tCK_NUI_Rj_ NoBUJ+0.002	-	tCK_NUI_Rj_ NoBUJ+0.002	UI (RMS)	1,2,3,5,6, 7,8,9,10,11 12
Dj pp Value of N-UI Jitter without BUJ, where 1<N < 4	tTx_DQS_NUI_Dj _NoBUJ	-	0.160	-	0.130	UI	1,2,3,5,6, 7,8,9,10,11
Delay of any data lane relative to strobe lane	tTx_DQS2DQ	-0.100	0.100	-0.100	0.100		

NOTE:

1) On-die noise similar to that occurring with all the transmitter and receiver lanes toggling need to be stimulated. When there is no socket in transmittermeasurement setup, in many cases, the contribution of the cross-talk is not significant or can be estimated within tolerable error even with all thetransmitter lanes sending patterns. When a socket is present, such as DUT being DRAM component, the contribution of the cross-talk could be significant.To minimize the impact of crosstalk on the measurement results, a small group of selected lanes in the vicinity of the lane under test may be turned off (sending DC), while the remaining TX lanes send patterns to the corresponding RX receivers so as to excite realistic on-die noise profile from device switching. Note that there may be cases when one of Dj and Rj specs is met and another violated in which case the signaling analysis should be run to determine link feasibility
2) On-die noise similar to that occurring with all the transmitter and receiver lanes toggling need to be stimulated. When there is no socket in transmitter measurement setup, in many cases, the contribution of BUJ is not significant or can be estimated within tolerable error even with all the transmitter lanes sending patterns. When a socket is present, such as DUT being DRAM component, the contribution of the cross-talk could be significant. To minimize the impact of crosstalk on the measurement results, a small group of selected lanes in the vicinity of the lane under test may be turned off (sending DC), while the remaining TX lanes send patterns to the corresponding RX receivers so as to excite realistic on-die noise profile from device switching. Note that there may be cases when one of Dj and Rj specs is met and another violated in which case the signaling analysis should be run to determine link feasibility
3) The validation methodology for these parameters will be covered in future ballots
4) Rj RMS value of 1-UI jitter without BUJ, but on-die system like noise present. This extraction is to be done after software correction of DCD 5) Delay of any data lane relative to strobe lane, as measured at Tx output
6) Vref noise level to DQ jitter should be adjusted to minimize DCD
7) See Chapter 12 for details on the minimum BER requirements
8) See Chapter 12 for details on UI, NUI and Jitter definitions
9) Duty Cycle of the DQ pins must be adjusted as close to 50% as possible using the Global and Per Pin Duty Cycle Adjuster feature prior to running this test
10) The Mode Registers for the Duty Cycle Adjuster are MR43 and MR44. Also the Mode Registers for the Per Pin DCA of DQLx are MR(133+8x) and MR(134+8x), where 0≤x≤7, and the Mode Registers for the Per Pin DCA of DQUy are MR(197+8y) and MR(198+8y), where 0≤y≤7. 11) Spread Spectrum Clocking (SSC) must be disabled while running this test
12) These parameters are tested using the continuous clock pattern which are sent out from the dram device without the need for sending out continuous MRR commands. The MR25 OP[3] is set to “1” to enable this feature.
13) Tested on the CTC2 card only
14) The max value of tTx_DQ_Rj_1UI_NoBUJ and tTx_DQ_Rj_NUI_NoBUJ can be 6mUI RMS

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9.11 Tx DQ Stressed Eye

Tx DQ stressed eye height and eye width must meet minimum specification values at BER=E^{-9} and confidence level 99.5%. Tx DQ Stressed Eye shows the DQS to DQ skew for both Eye Width and Eye Height. In order to support different Host Receiver (Rx) designs, it is the responsibility of the Host to insure the advanced DQS edges are adjusted accordingly via the Read DQS Offset Timing mode register settings (MR40 OP[3:0]).

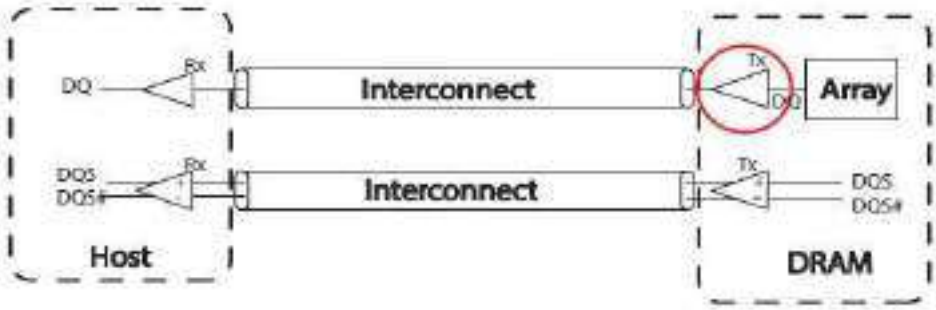


Figure 43. Example of DDR5 Memory Interconnect

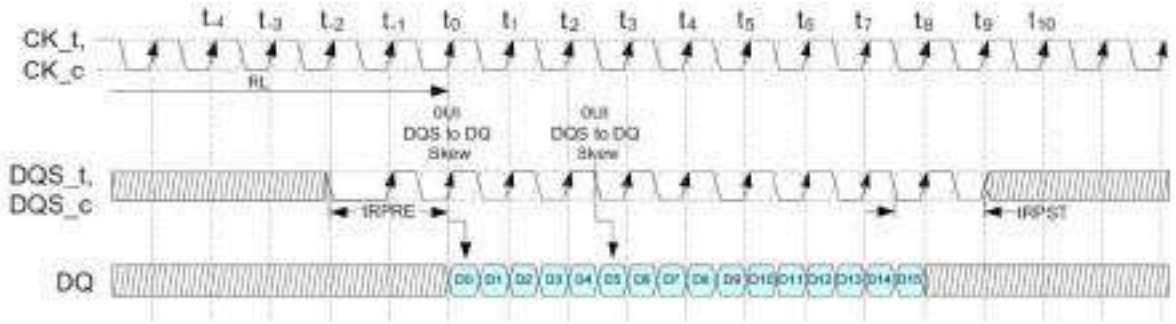


Figure 44. Read burst example for pin DQx depicting bit 0 and 5 relative to the DQS edge for 0 UI skew

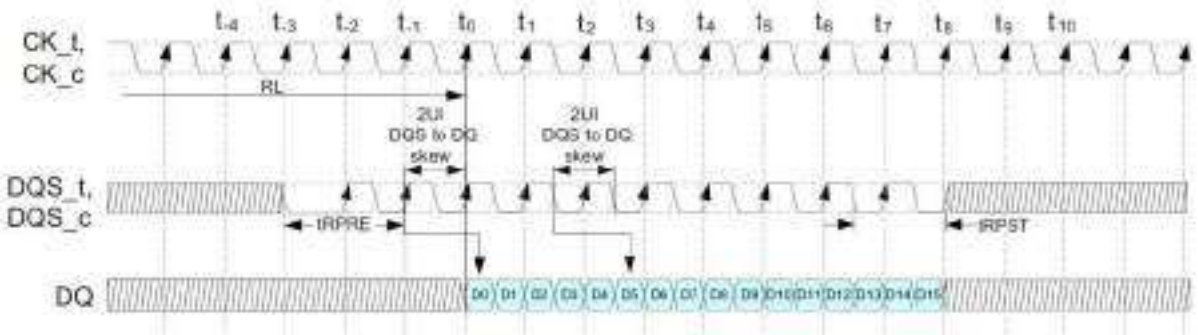


Figure 45. Read burst example for pin DQx depicting bit 0 and 5 relative to the DQS edge for 2 UI skew with Read DQS Offset Timing set to 1 Clock (2UI)

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9.11.1 Tx DQ Stressed Eye Parameters

[Table 48] Tx DQ Stressed Eye Parameters

[EH=Eye Height, EW=Eye Width; BER=Bit Error Rate, SES=Stressed Eye Skew]

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Eye Width specified at the transmitter with a skew between DQ and DQS of 1UI	TxEW_DQ_SES_1UI	0.72	-	0.72	-	0.74	-	0.74	-	UI	1,2,3,4,6,7, 8,9,10
Eye Width specified at the transmitter with a skew between DQ and DQS of 2UI	TxEW_DQ_SES_2UI	0.72	-	0.72	-	0.74	-	0.74	-	UI	1,2,3,4,6,7, 8,9,10
Eye Width specified at the transmitter with a skew between DQ and DQS of 3UI	TxEW_DQ_SES_3UI	0.72	-	0.72	-	0.74	-	0.74	-	UI	1,2,3,4,6,7, 8,9,10
Eye Width specified at the transmitter with a skew between DQ and DQS of 4UI	TxEW_DQ_SES_4UI	-	-	-	-	0.74	-	0.74	-	UI	1,2,3,4,6,7, 8,9,10

NOTE:

1) Minimum BER E-9 and Confidence Level of 99.5% per pin
2) Refer to the minimum Bit Error Rate (BER) requirements for DDR5
3) The validation methodology for these parameters is TBD
4) Mismatch is defined as DQS to DQ mismatch, in UI increments
5) The number of UI's accumulated will depend on the speed of the link. For higher speeds, higher UI accumulation may be specified. For lower speeds, N=4,5 UI may not be applicable
6) Duty Cycle of the DQ pins must be adjusted as close to 50% as possible using the Global and Per Pin Duty Cycle Adjuster feature prior to running this test
7) The Mode Registers for the Duty Cycle Adjuster are MR43 and MR44. Also the Mode Registers for the Per Pin DCA of DQS are MR103-MR110, the Mode Registers for the Per Pin DCA of DQLx are MR(133+8x) and MR(134+8x), where 0≤x≤7, and the Mode Registers for the Per Pin DCA of DQUy are MR(197+8y) and MR(198+8y), where 0≤y≤7.
8) Spread Spectrum Clocking (SSC) must be disabled while running this test
9) These parameters are tested using the continuous PRBS8 LFSR training pattern which are sent out on all DQ lanes off the dram device without the need for sending out continuous MRR commands. The MR25 OP[3] is set to "1" to enable this feature.
10) Tested on the CTC2 card only
11) Matched DQS to DQ would require the DQs to be adjusted by 0.5UI to place it in the center of the DQ eye. 1UI mismatch would require the DQS to be adjusted 1.5UI. Generally, for XUI mismatch the DQ must be adjusted XUI + 0.5UI to be placed in the center of the eye

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10.0 SPEED BIN

[Table 49] DDR5-4400 Speed Bins and Operations

Speed Bin					DDR5-4400		Unit	Notes
CL-nRCD-nRP					36-36-36			
Parameter				Symbol	min	max		
Read command to first data				tAA	16.000	22.222	ns	12
Activate to Read or Write command delay time				tRCD	16.000	-	ns	7
Row Precharge Time				tRP	16.000	-	ns	7
Activate to Precharge command period				tRAS	32.000	5 x tREFI1	ns	7
Activate to Activate or Refresh command period				tRC (tRAS +tRP)	48.000	-	ns	7,8
CAS Write Latency				CWL	RESERVED		nCK	
Speed Bin[5]	tAAmin (ns)[5]	tRCDmin tRP-min (ns)[5]	Read CL[12]	Supported Frequency Down Bins				
-	20.952	-	22	tCK(AVG)	0.952	1.010	ns	6,9
3200C	17.500	17.500	28	tCK(AVG)	0.625	0.681	ns	
3200BN,B	16.250	16.250	26	tCK(AVG)	0.625	0.681	ns	
3200AN	15.000	15.000	24	tCK(AVG)	RESERVED		ns	
3600C	17.777	17.777	32	tCK(AVG)	0.555	<0.625	ns	
3600BN,B	16.666	16.666	30	tCK(AVG)	0.555	<0.625	ns	
3600AN	14.444	14.444	26	tCK(AVG)	RESERVED		ns	
4000C	18.000	17.500	36	tCK(AVG)	0.500	<0.555	ns	
4000BN,B	16.000	16.000	32	tCK(AVG)	0.500	<0.555	ns	
4000AN	14.000	14.000	28	tCK(AVG)	RESERVED		ns	
4400C	18.181	17.727	40	tCK(AVG)	0.454	<0.500	ns	
4400BN,B	16.363	16.363	36	tCK(AVG)	0.454	<0.500	ns	
4400AN	14.545	14.545	32	tCK(AVG)	RESERVED		ns	
Supported CL					22,26,28,30,32,36,40		nCK	12

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[Table 50] DDR5 4800 Speed Bins and Operations

Speed Bin					DDR5-4800		Unit	Notes
CL-nRCD-nRP					40-39-39			
Parameter				Symbol	min	max		
Read command to first data				tAA	16.000	22.222	ns	12
Activate to Read or Write command delay time				tRCD	16.000	-	ns	7
Row Precharge Time				tRP	16.000	-	ns	7
Activate to Precharge command period				tRAS	32.000	5 x tREFI1	ns	7
Activate to Activate or Refresh command period				tRC (tRAS +tRP)	48.000	-	ns	7,8
CAS Write Latency				CWL			nCK	
Speed Bin[5]	tAAmin (ns)[5]	tRCDmin tRP-min (ns)[5]	Read CL[12]	Supported Frequency Down Bins				
-	20.952	-	22	tCK(AVG)	0.952	1.010	ns	6,9
3200C	17.500	17.500	28	tCK(AVG)	0.625	0.681	ns	
3200BN,B	16.250	16.250	26	tCK(AVG)	0.625	0.681	ns	
3200AN	15.000	15.000	24	tCK(AVG)	RESERVED		ns	
3600C	17.777	17.777	32	tCK(AVG)	0.555	<0.625	ns	
3600BN,B	16.666	16.666	30	tCK(AVG)	0.555	<0.625	ns	
3600AN	14.444	14.444	26	tCK(AVG)	RESERVED		ns	
4000C	18.000	17.500	36	tCK(AVG)	0.500	<0.555	ns	
4000BN,B	16.000	16.000	32	tCK(AVG)	0.500	<0.555	ns	
4000AN	14.000	14.000	28	tCK(AVG)	RESERVED		ns	
4400C	18.181	17.727	40	tCK(AVG)	0.454	<0.500	ns	
4400BN,B	16.363	16.363	36	tCK(AVG)	0.454	<0.500	ns	
4400AN	14.545	14.545	32	tCK(AVG)	RESERVED		ns	
4800C	17.500	17.500	42	tCK(AVG)	0.416	<0.454	ns	
4800BN	16.666	16.666	40	tCK(AVG)	0.416	<0.454	ns	
4800B	16.666	16.250	40	tCK(AVG)	0.416	<0.454	ns	
4800AN	14.166	14.166	34	tCK(AVG)	RESERVED		ns	
Supported CL					22,26,28,30,32,36, 40,42		nCK	12

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[Table 51] DDR5 5200 Speed Bins and Operations

Speed Bin					DDR5-5200		Unit	Notes
CL-nRCD-nRP					42-42-42			
Parameter				Symbol	min	max		
Read command to first data				tAA	16.000	22.222	ns	12
Activate to Read or Write command delay time				tRCD	16.000	-	ns	7
Row Precharge Time				tRP	16.000	-	ns	7
Activate to Precharge command period				tRAS	32.000	5 x tREFI1	ns	7
Activate to Activate or Refresh command period				tRC (tRAS +tRP)	48.000	-	ns	7,8
CAS Write Latency				CWL			nCK	
Speed Bin[5]	tAAmin (ns)[5]	tRCDmin tRP-min (ns)[5]	Read CL[12]	Supported Frequency Down Bins				
-	20.952	-	22	tCK(AVG)	0.952	1.010	ns	6,9
3200C	17.500	17.500	28	tCK(AVG)	0.625	0.681	ns	
3200BN,B	16.250	16.250	26	tCK(AVG)	0.625	0.681	ns	
3200AN	15.000	15.000	24	tCK(AVG)	RESERVED		ns	
3600C	17.777	17.777	32	tCK(AVG)	0.555	<0.625	ns	
3600BN,B	16.666	16.666	30	tCK(AVG)	0.555	<0.625	ns	
3600AN	14.444	14.444	26	tCK(AVG)	RESERVED		ns	
4000C	18.000	17.500	36	tCK(AVG)	0.500	<0.555	ns	
4000BN,B	16.000	16.000	32	tCK(AVG)	0.500	<0.555	ns	
4000AN	14.000	14.000	28	tCK(AVG)	RESERVED		ns	
4400C	18.181	17.727	40	tCK(AVG)	0.454	<0.500	ns	
4400BN,B	16.363	16.363	36	tCK(AVG)	0.454	<0.500	ns	
4400AN	14.545	14.545	32	tCK(AVG)	RESERVED		ns	
4800C	17.500	17.500	42	tCK(AVG)	0.416	<0.454	ns	
4800BN	16.666	16.666	40	tCK(AVG)	0.416	<0.454	ns	
4800B	16.666	16.250	40	tCK(AVG)	0.416	<0.454	ns	
4800AN	14.166	14.166	34	tCK(AVG)	RESERVED		ns	
5200C	17.692	17.692	46	tCK(AVG)	0.384	<0.416		
5200BN,B	16.153	16.153	42	tCK(AVG)	0.384	<0.416		
5200AN	14.615	14.615	38	tCK(AVG)	RESERVED			
Supported CL					22,26,28,30,32,36, 40,42,46		nCK	12

[Table 52] DDR5 5600 Speed Bins and Operations

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Speed Bin				DDR5-5600			
CL-nRCD-nRP				46-45-45		Unit	Notes
Parameter			Symbol	min	max		
Read command to first data			tAA	16.000	22.222	ns	12
Activate to Read or Write command delay time			tRCD	16.000	-	ns	7
Row Precharge Time			tRP	16.000	-	ns	7
Activate to Precharge command period			tRAS	32.000	5 x tREFI1	ns	7
Activate to Activate or Refresh command period			tRC (tRAS +tRP)	48.000	-	ns	7,8
CAS Write Latency			CWL			nCK	
Speed Bin[5]	tAAmin (ns)[5]	tRCDmin tRP-min (ns)[5]	Read CL[12]	Supported Frequency Table			
-	20.952	-	22	tCK(AVG)	0.952	1.010	ns	6,9
3200C	17.500	17.500	28	tCK(AVG)	0.625	0.681	ns	
3200BN,B	16.250	16.250	26	tCK(AVG)	0.625	0.681	ns	
3200AN	15.000	15.000	24	tCK(AVG)	RESERVED		ns	
3600C	17.777	17.777	32	tCK(AVG)	0.555	<0.625	ns	
3600BN,B	16.666	16.666	30	tCK(AVG)	0.555	<0.625	ns	
3600AN	14.444	14.444	26	tCK(AVG)	RESERVED		ns	
4000C	18.000	17.500	36	tCK(AVG)	0.500	<0.555	ns	
4000BN,B	16.000	16.000	32	tCK(AVG)	0.500	<0.555	ns	
4000AN	14.000	14.000	28	tCK(AVG)	RESERVED		ns	
4400C	18.181	17.727	40	tCK(AVG)	0.454	<0.500	ns	
4400BN,B	16.363	16.363	36	tCK(AVG)	0.454	<0.500	ns	
4400AN	14.545	14.545	32	tCK(AVG)	RESERVED		ns	
4800C	17.500	17.500	42	tCK(AVG)	0.416	<0.454	ns	
4800BN	16.666	16.666	40	tCK(AVG)	0.416	<0.454	ns	
4800B	16.666	16.250	40	tCK(AVG)	0.416	<0.454	ns	
4800AN	14.166	14.166	34	tCK(AVG)	RESERVED		ns	
5200C	17.692	17.692	46	tCK(AVG)	0.384	<0.416		
5200BN,B	16.153	16.153	42	tCK(AVG)	0.384	<0.416		
5200AN	14.615	14.615	38	tCK(AVG)	RESERVED			
5600C	17.857	17.500	50	tCK(AVG)	0.357	<0.384		
5600BN	16.428	16.428	46	tCK(AVG)	0.357	<0.384		
5600B	16.428	16.071	46	tCK(AVG)	0.357	<0.384		
5600AN	14.285	14.285	40	tCK(AVG)	RESERVED			
Supported CL				22,26,28,30,32,36, 40,42,46,50		nCK	12

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NOTE:

1) Minimum timing parameters are defined according to the rules in the Rounding Definitions and Algorithms section.
2) The translation of all timing parameters from ns values to nCK values shall follow the Rounding Algorithm. The translation of tAA to CL shall follow the explicit combinations listed in the Speed Bin Tables.
3) The CL setting and CWL setting result in tCK(avg).MIN and tCK(avg).MAX requirements. When selecting tCK(avg), requirements from the CL setting as well as requirements from the CWL setting shall be fulfilled.
4) 'Reserved' settings are not allowed. The user shall program a different value.
5. This column shows the intended native speed bin timings to be replaced and supported when down clocking. This column does not necessarily show the actual minimum speed bin timings allowed and supported when down clocking because the timings could be faster according to the Rounding Algorithm, depending on the specific speed bin and down clock frequency combination.
6) DDR5-3200 AC timings apply if the DRAM operates slower than the 2933 MT/s data rate. This is not limited to only the Speed Bin Table timings.
7) Parameters apply from tCK(avg)min to tCK(avg)max.
8) tRC(min) shall always be greater than or equal to tRAS(min) + tRP(min), and when using the appropriate rounding algorithms, nRC(min) shall always be greater than or equal to nRAS(min) + nRP(min).
9) tCK(avg).max of 1.010 ns (1980 MT/s data rate) is defined to allow for 1% SSC down-spreading at a data rate of 2000 MT/s according to JESD404-1.
10) Each speed bin lists the timing requirements that need to be supported in order for a given DRAM to be JEDEC standard. The JEDEC standard does not require support for all speed bins within a given speed. The JEDEC standard requires meeting the parameters for a least one of the listed speed bins.
11) Any speed bin also supports functional operation at slower frequencies as shown in the table which are not subject to Production Tests but are verified by Design/Character -ization.
12) The CL Algorithm can be used to mathematically determine the valid CAS Latencies listed in the Speed Bin Tables. The CL Algorithm calculates supported CAS Latencies by rounding the operating frequency up to the next faster native speed bin (i.e., 3200 MT/s, 3600 MT/s...). Using the resulting tCK(AVG)min, and the bin target timings, the CL Algorithm then uses the Rounding Algorithm to calculate the valid CAS Latency. Because the DDR5 SDRAM specification only supports even CAS Latencies, odd CAS Latencies are rounded up to the next even CAS Latency. The 1980-2100 MT/s data rate always uses CL22. If tAA(corrected) or tRCDtRP(corrected) are violated, the CL Algorithm uses a slower combination of tAA(target) and tRCDtRP(target) to return slower valid CAS Latencies. The DDR5 SDRAM can support up to four valid CAS Latencies, CL(AN), CL(B), CL(BN), and CL(C), for a given frequency. tAA(corrected) and tRCDtRP(corrected) are calculated by reducing tAA(min), tRCD(min), and tRP(min) by the Rounding Algorithm correction factor. The proper setting of CL shall be determined by the memory controller, either by using the Speed Bin Tables, or by using the CL Algorithm, or by some other means. Refer to the Rounding Definitions and Algorithm section for more information.

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11.0 IDD,IDDQ,IPPSPECIFICATION PARAMETERS AND TEST CONDITIONS

11.1 IDD, IPP and IDDQ Measurement Conditions

In this chapter, IDD, IPP and IDDQ measurement conditions such as test load and patterns are defined. Figure 46 shows the setup and test load for IDD, IPP and IDDQ measurements.

- IDD currents (such as IDD0, IDDQ0, IPP0, IDD0F, IDDQ0F, IPP0F, IDD2N, IDDQ2N, IPP2N, IDD2NT, IDDQ2NT, IPP2NT, IDD2P, IDDQ2P, IPP2P, IDD3N, IDDQ3N, IPP3N, IDD3P, IDDQ3P, IPP3P, IDD4R, IDDQ4R, IPP4R, IDD4RC, IDD4W, IDDQ4W, IPP4W, IDD4WC, IDD5F, IDDQ5F, IPP5F, IDD5B, IDDQ5B, IPP5B, IDD5C, IDDQ5C, IPP5C, IDD6N, IDDQ6N, IPP6N, IDD6E, IDDQ6E, IPP6E, IDD7, IDDQ7, IPP7, and IDD8, IDDQ8, IPP8) are measured as time-averaged currents with all VDD balls of the DDR5 SDRAM under test tied together. Any IDDQ or IPP current is not included in IDD currents.
- IDDQ currents are measured as time-averaged currents with all VDDQ balls of the DDR5 SDRAM under test tied together. Any IDD or IPP current is not included in IDDQ currents.
- IPP currents are measured as time-averaged currents with all VPP balls of the DDR5 SDRAM under test tied together. Any IDD or IDDQ current is not included in IPP currents.

Attention: IDDQ values cannot be directly used to calculate IO power of the DDR5 SDRAM. They can be used to support correlation of simulated IO power to actual IO power as outlined in Figure 47.

For IDD, IPP and IDDQ measurements, the following definitions apply:

- “0” and “LOW” is defined as VIN <= VILAC(max).
- “1” and “HIGH” is defined as VIN >= VIHAC(min).
- “MID-LEVEL” is defined as inputs are VREF = 0.75 * VDDQ.
- Detailed IDD, IPP and IDDQ Measurement-Loop Patterns are described in Table 51 through Table 60.
- IDD Measurements are done after properly initializing and training the DDR5 SDRAM. This includes but is not limited to setting

RON = RZQ/7 (34 Ohm in MR5);
RTT_NOM = RZQ/6 (40 Ohm in MR35);
RTT_WR = RZQ/2 (120 Ohm in MR34), only during IDD4 & IDD7 measurements, RTT_OFF for all other IDD measurements
RTT_PARK = Disable in MR33 and MR34;
Qoff = 0B (Output Buffer enabled) in MR5;
TDQS_t disabled in MR5;
CRC disabled in MR50;
DM disabled in MR5;
1N mode enabled and set CS assertion duration (MR2:OP[4]) as 1B in MR2, unless otherwise specified in the IDD, IDDQ and IPP patterns’ conditions definitions;

- Attention: The IDD, IPP and IDDQ Measurement-Loop Patterns need to be executed at least one time before actual IDD, IDDQ or IPP measurement is started.
- TCASE defined as 0 - 95°C, unless stated in the specific condition definition table below.
- For all IDD, IDDQ and IPP measurement loop timing parameters, refer to the timing parameters defined in the spec to calculate the nCK required.

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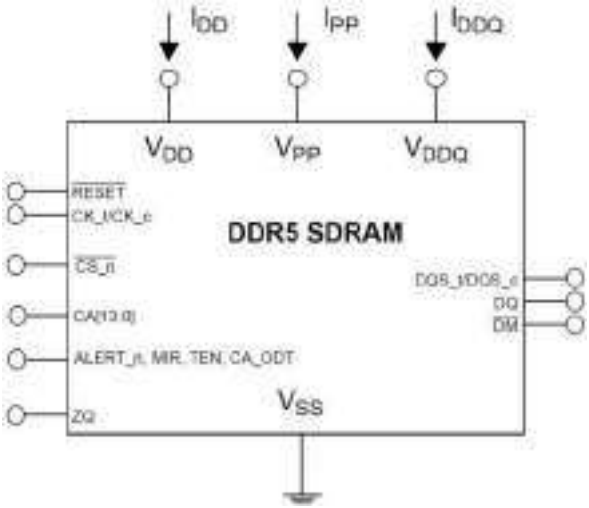


Figure 46. Measurement Setup and Test Load for IDD, IPP and IDDQ Measurements

NOTE:
1) DIMM level Output test load condition may be different from above.

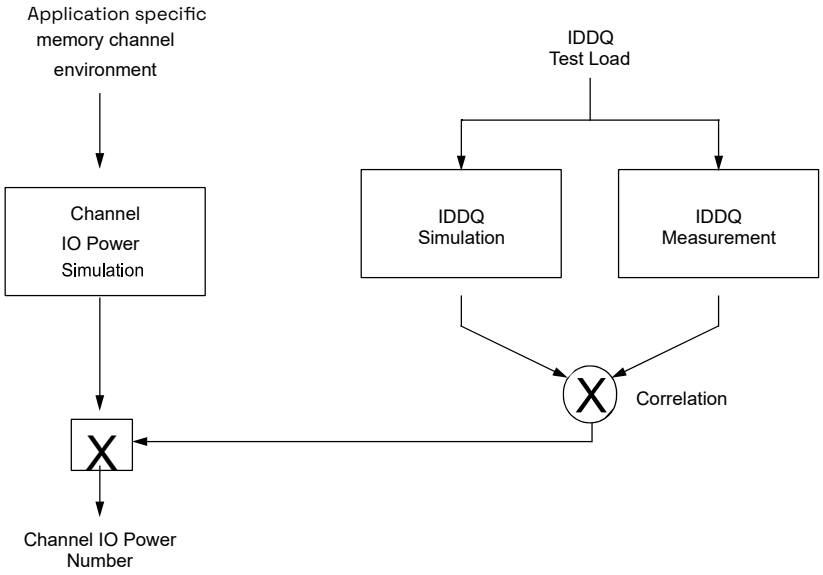


Figure 47. Correlation from simulated Channel IO Power to actual Channel IO Power supported by IDDQ Measurement.

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[Table 53] Basic IDD, IDDQ and IPP Measurement Conditions

Symbol	Description
IDD0	Operating One Bank Active-Precharge Current External clock: On; tCK, nRC, nRAS, nRP, nRRD: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between ACT and PRE; CA Inputs: partially toggling according to Table 54. Data IO: VDDQ; DM_n: stable at 1; Bank Activity: Cycling with one bank active at a time: 0,0,1,1,2,2,... (see Table 54); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 54
IDD0Q	Operating One Bank Active-Precharge IDDQ Current Same condition with IDD0, however measuring IDDQ current instead of IDD current
IPP0	Operating One Bank Active-Precharge IPP Current Same condition with IDD0, however measuring IPP current instead of IDD current
IDD0F	Operating Four Bank Active-Precharge Current External clock: On; tCK, nRC, nRAS, nRP, nRRD: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between ACT and PRE; CA Inputs: partially toggling according to Table 55; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: Cycling with four bank active at a time: (see Table 55); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 55
IDD0QF	Operating Four Bank Active-Precharge IDDQ Current Same condition with IDD0F, however measuring IDDQ current instead of IDD current
IPP0F	Operating Four Bank Active-Precharge IPP Current Same condition with IDD0F, however measuring IPP current instead of IDD current
IDD2N	Precharge Standby Current External clock: On; tCK: refer to Chapter 13.3 Timing Parameters by Speed Grade; CS_n: stable at 1; CA Inputs: partially toggling according to Table 56; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: all banks closed; Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 56
IDD2Q	Precharge Standby IDDQ Current Same condition with IDD2N, however measuring IDDQ current instead of IDD current
IPP2N	Precharge Standby IPP Current Same condition with IDD2N, however measuring IPP current instead of IDD current
IDD2NT	Precharge Standby Non-Target Command Current External clock: On; tCK: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between WRITE commands; CS_n, CA Inputs: partially toggling according to Table 57; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: all banks closed; Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 57
IDD2NT (Optional)	Precharge Standby Non-Target Command IDDQ Current Same condition with IDD2NT, however measuring IDDQ current instead of IDD current

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[Table 53] Basic IDD, IDDQ and IPP Measurement Conditions

Symbol	Description
IPP2NT (Optional)	Precharge Standby Non-Target Command IPP Current Same condition with IDD2NT, however measuring IPP current instead of IDD current
IDD2P	Precharge Power-Down Device in Precharge Power-Down, External clock: On; tCK: refer to Chapter 13.3 Timing Parameters by Speed Grade; CS_n: stable at 1 after Power Down Entry command; CA Inputs: stable at 1; CA11=H during the PDE command; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: all banks closed; Output Buffer and RTT: Enabled in Mode Registers[2];
IDDQ2P	Precharge Power-Down Same condition with IDD2P, however measuring IDDQ current instead of IDD current
IPP2P	Precharge Power-Down Same condition with IDD2P, however measuring IPP current instead of IDD current
IDD3N	Active Standby Current E xternal clock: On; tCK: refer to Chapter 13.3 Timing Parameters by Speed Grade; CS_n: stable at 1; CA Inputs: partially toggling according to Table 56; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: all banks open; Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 56
IDDQ3N	Active Standby IDDQ Current Same condition with IDD3N, however measuring IDDQ current instead of IDD current
IPP3N	Active Standby IPP Current Same condition with IDD3N, however measuring IPP current instead of IDD current
IDD3P	Active Power-Down Current Device in Active Power-Down, External clock: On; tCK: refer to Chapter 13.3 Timing Parameters by Speed Grade; CS_n: stable at 1 after Power Down Entry command; CA Inputs: stable at 1; CA11=H during the PDE command; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: all banks open; Output Buffer and RTT: Enabled in Mode Registers[2];
IDDQ3P	Active Power-Down IDDQ Current Same condition with IDD3P, however measuring IDDQ current instead of IDD current
IPP3P	Active Power-Down IPP Current Same condition with IDD3P, however measuring IPP current instead of IDD current
IDD4R	Operating Burst Read Current External clock: On; tCK, nCCD_S, CL: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between RD; CA Inputs: partially toggling according to Table 56; Data IO: seamless read data burst with different data between one burst and the next one according to Table 58; DM_n: stable at 1; Bank Activity: all banks open, RD commands cycling through banks: 0,0,1,1,2,2,... (see Table 58); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 58
IDD4RC	Operating Burst Read Current with Read CRC Read CRC enabled[4]. Other conditions: see IDD4R
IDDQ4R	Operating Burst Read IDDQ Current Same definition like for IDD4R, however measuring IDDQ current instead of IDD current
IPP4R	Operating Burst Read IPP Current Same condition with IDD4R, however measuring IPP current instead of IDD current
IDD4W	Operating Burst Write Current External clock: On; tCK, nCCD_S_WR, CL: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between WR; CA Inputs: partially toggling according to Table 59; Data IO: seamless write data burst with different data between one burst and the next one according to Table 59; DM_n: stable at 1; Bank Activity: all banks open, WR commands cycling through banks: 0,0,1,1,2,2,... (see Table 59); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 59
IDD4WC	Operating Burst Write Current with Write CRC Write CRC enabled[3], Other conditions: see IDD4W
IDDQ4W	Operating Burst Write IDDQ Current Same condition with IDD4W, however measuring IDDQ current instead of IDD current
IPP4W	Operating Burst Write IPP Current Same condition with IDD4W, however measuring IPP current instead of IDD current

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Symbol	Description
IDD5B	Burst Refresh Current (Normal Refresh Mode) External clock: On; tCK, nRFC1: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between REF; CA Inputs: partially toggling according to Table 60; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: REF command every nRFC1 (see Table 60); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 60
IDDQ5B	Burst Refresh IDDQ Current (Normal Refresh Mode) Same condition with IDD5B, however measuring IDDQ current instead of IDD current
IPP5B	Burst Refresh IPP Current (Normal Refresh Mode) Same condition with IDD5B, however measuring IPP current instead of IDD current

[Table 53] Basic IDD, IDDQ and IPP Measurement Conditions

Symbol	Description
IDD5F	Burst Refresh Current (Fine Granularity Refresh Mode) tRFC=tRFC2, Other conditions: see IDD5B
IDDQ5F	Burst Refresh IDDQ Current (Fine Granularity Refresh Mode) Same condition with IDD5F, however measuring IDDQ current instead of IDD current
IPP5F	Burst Refresh IPP Current (Fine Granularity Refresh Mode) Same condition with IDD5F, however measuring IPP current instead of IDD current
IDD5C	Burst Refresh Current (Same Bank Refresh Mode) External clock: On; tCK, nRFCsb: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between REF; CA Inputs: partially toggling according to Table 61; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: REF command every nRFCsb (see Table 61); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 61
IDDQ5C	Burst Refresh IDDQPP Current (Same Bank Refresh Mode) Same condition with IDD5C, however measuring IDDQ current instead of IDD current
IPP5C	Burst Refresh IPP Current (Same Bank Refresh Mode) Same condition with IDD5C, however measuring IPP current instead of IDD current
IDD6N	Self Refresh Current: Normal Temperature Range TCASE: 0 - 85°C; External clock: Off; CK_t and CK_c: HIGH; tCK, nCPDED: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n#: low; CA, Data IO: High; DM_n: stable at 1; Bank Activity: Self-Refresh operation; Output Buffer and RTT: Disabled by the DRAM upon entry into Self- Refresh
IDDQ6N	Self Refresh IDDQ Current: Normal Temperature Range Same condition with IDD6N, however measuring IDDQ current instead of IDD current
IPP6N	Self Refresh IPP Current: Normal Temperature Range Same condition with IDD6N, however measuring IPP current instead of IDD current
IDD6E	Self Refresh Current: Extended Temperature Range) TCASE: 85 - 95°C; Extended4; External clock: Off; CK_t and CK_c: HIGH; tCK, nCPDED: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: low; CA, Data IO: High; DM_n:stable at 1; Bank Activity: Self-Refresh operation; Output Buffer and RTT: Disabled by the DRAM upon entry into Self-Refresh
IDDQ6E	Self Refresh IDDQ Current: Extended Temperature Range Same condition with IDD6E, however measuring IDDQ current instead of IDD current
IPP6E	Self Refresh IPP Current: Extended Temperature Range Same condition with IDD6E, however measuring IPP current instead of IDD current

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Symbol	Description
IDD7	Operating Bank Interleave Read Current External clock: On; tCK, nRC, nRAS, nRCD, nRRD_S, nFAW, tCCD_S CL: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between ACT and RDA; CA Inputs: partially toggling according to Table 63; Data IO: read data bursts with different data between one burst and the next one according to Table 63; DM_n: stable at 1; Bank Activity: two times interleaved cycling through banks (0, 1,...7) with different addressing, see Table 63; Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 63
IDDQ7	Operating Bank Interleave Read IDDQ Current Same condition with IDD7, however measuring IDDQ current instead of IDD current
IPP7	Operating Bank Interleave Read IPP Current Same condition with IDD7, however measuring IPP current instead of IDD current
IDD8	Maximum Power Saving Deep Power Down Current External clock: Off; CK_t and CK_c: HIGH; tCK, nCPDED: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n#: low; CA:High, DM_n: stable at 1; Bank Activity: All banks closed and device in MPSM deep power down mode5; Output Buffer and RTT: Enabled in Mode Registers[2]; Patterns Details: same as IDD6N but MPSM is enabled in mode register.
IDDQ8	Maximum Power Saving Deep Power Down IDDQ Current Same condition with IDD8, however measuring IDDQ current instead of IDD current
IPP8	Maximum Power Saving Deep Power Down IPP Current Same condition with IDD8, however measuring IPP current instead of IDD current
IDD9 (Optional)	MBIST Current Device in MBIST mode, External clock: On; CS_n: Stable at 1 after MBIST entry; CA Inputs: stable at 1; Data IO: VDDQ; Bank Activity: MBIST operation; Output Buffer and RTT: Enabled in Mode Registers[2];
IDDQ9 (Optional)	MBIST IDDQ Current Same condition with IDD9, however measuring IDDQ current instead of IDD current
IPP9 (Optional)	MBIST IPP Current Same condition with IDD9, however measuring IPP current instead of IDD current

NOTE:
1) Burst Length: BL16 fixed by MR0 OP[1:0]=00
2) Output Buffer Enable
- set MR5 OP[0] = 0] : Qoff = Output buffer enabled
- set MR5 OP[2:1] = 00]: Pull-Up Output Driver Impedance Control = RZQ/7
- set MR5 OP[7:6] = 00]: Pull-Down Output Driver Impedance Control = RZQ/7
RTT_Nom enable
- set MR35 OP[5:0] = 110110: RTT_NOM_WR = RTT_NOM_RD = RZQ/6
RTT_WR enable
- set MR34 OP[5:3] = 010 RTT_WR = RZQ/2
RTT_PARK disable
- set MR34 OP[2:0] = 000
3) WRITE CRC enabled
- set MR50 OP[2:1] = 11 4) Read CRC enabled
- set MR50:OP[0]=1
5) MPSM Deep Power Down Mode
- set MR2:OP[3]=1 if PDA Enumerate ID not equal to 15
- set MR2:OP[5]=1 if PDA Enumerate ID equal to 15

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11.2 IDD0, IDDQ0, IPP0 Pattern

Executes Active and PreCharge commands with tightest timing possible while exercising all Bank and Bank Group addresses. Note 2 applies to the entire table.

[Table 54] IDD0, IDDQ0, IPP0

Sub-Loop	Sequence	Command	CS_n	C/A [13:0]	Row Address [17:0]	BA [1:0]	BG [2:0]	CID [2:0]	Special Instructions
0	0	ACT	L H	-	0x00000	0x0	0x00	0x0	
	1	DES	H	Toggling[1]					Repeat sequence to satisfy tRAS(min), truncate if required
	2	PREpb	L	-		0x0	0x00	0x0	
	3	DES	H	Toggling[1]					Repeat sequence to satisfy tPR(min), truncate if required
	4	ACT	L H	-	0x03FFF	0x0	0x00	0x0	
	5	DES	H	Toggling[1]					Repeat sequence to satisfy tRAS(min), truncate if required
	6	PREpb	L	-		0x0	0x00	0x0	
	7	DES	H	Toggling[1]					Repeat sequence to satisfy tPR(min), truncate if required
1	8-15	Repeat sub-loop 0, use BG[2:0]=0x1 instead							
2	16-23	Repeat sub-loop 0, use BG[2:0]=0x2 instead							
3	24-31	Repeat sub-loop 0, use BG[2:0]=0x3 instead							
4	32-39	Repeat sub-loop 0, use BG[2:0]=0x4 instead							skip for x16
5	40-47	Repeat sub-loop 0, use BG[2:0]=0x5 instead							skip for x16
6	48-55	Repeat sub-loop 0, use BG[2:0]=0x6 instead							skip for x16
7	56-63	Repeat sub-loop 0, use BG[2:0]=0x7 instead							skip for x16
8-15	64-127	Repeat sub loops 0-7, use BA[1:0]=0x1 instead							
16-23	128-191	Repeat sub loops 0-7, use BA[1:0]=0x2 instead							
24-31	192-255	Repeat sub loops 0-7, use BA[1:0]=0x3 instead							
...	...	Repeat sub loops 0-31 for each 3DS logical rank, if applicable							CID[2:0]=0x1-0x7

NOTE :
1) Utilize DESELECTs between commands while toggling all C/A bits per the 4-cycle sequence defined in the IDD2N, IDD3N pattern

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11.3 IDDOF, IDDQOF, IPPOF Pattern

Executes a rolling four bank group Active and PreCharge commands per tRC time while exercising all Bank, Bank, Group and CID addresses. Note 2 applies to the entire table.

[Table 55] IDDOF, IDDQOF, IPPOF

Sub-Loop	Sequence	Command	CS_n	C/A [13:0]	Row Address [17:0]	BA [1:0]	BG [2:0]	CID [2:0]	Special Instructions
0	0	ACT	L H		0x00000	0x0	0x00	0x0	
	1	DES	H	Toggling[1]					Repeat to satisfy tRRD(min) (6 DES to meet 8nCK)
	2	ACT	L H		0x00000	0x0	0x01	0x0	
	3	DES	H	Toggling[1]					Repeat to satisfy tRRD(min) (6 DES to meet 8nCK)
	4	ACT	L H		0x00000	0x0	0x02	0x0	
	5	DES	H	Toggling[1]					Repeat to satisfy tRRD(min) (6 DES to meet 8nCK)
	6	ACT	L H		0x00000	0x0	0x03	0x0	
	7	DES	H	Toggling[1]					Repeat to satisfy tRAS(min) from Sequence 0
	8	PREpb	L			0x0	0x00	0x0	
	9	DES	H	Toggling[1]					Repeat for tRRD(min) (7 DES to meet 8nCK) This allows for next PRE to meet tRAS(min)
	10	PREpb	L			0x0	0x01	0x0	
	11	DES	H	Toggling[1]					Repeat for tRRD(min) (7 DES to meet 8nCK) This allows for next PRE to meet tRAS(min)
	12	PREpb	L			0x0	0x02	0x0	
	13	DES	H	Toggling[1]					Repeat for tRRD(min) (7 DES to meet 8nCK) This allows for next PRE to meet tRAS(min)
	14	PREpb	L			0x0	0x03	0x0	
	15	DES	H	Toggling[1]					Repeat for tRRD(min) (7 DES to meet 8nCK) This allows for next PRE to meet tRAS(min)
	16	DES	H	Toggling[1]					Repeat for tRC(min) from Sequence 0 first ACTIVATE. This will be zero DESELECTS for speed 4000Mbps and slower.
1	17-33	Repeat sub-loop 0, use Row Address = 0x03FFF for the ACT instead							
2-3	34-67	Repeat sub-loop 0-1, use BG[2:0]=0x4,0x5,0x6,0x7 instead of 0x0,0x1,0x2,0x3							skip for x16
4-7	68-101	Repeat sub-loops 0-3, use BA[1:0]=0x1 instead							
8-11	102-135	Repeat sub-loops 0-3, use BA[1:0]=0x2 instead							
12-15	136-169	Repeat sub-loops 0-3, use BA[1:0]=0x3 instead							
...	...	Repeat sub loops 0-15 for each 3DS logical rank, if applicable							CID[2:0]=0x1-0x7

NOTE:

1) Utilize DESELECTs between commands while toggling C/A bits per the 4-cycle sequence defined in the IDD2N, IDD3N pattern.

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11.4 IDD2N, IDD3N Pattern

Executes DESELECT commands while exercising all command/address pins in a predefined pattern. All notes apply to entire table. **[Table 56] IDD2N, IDDQ2N, IPP2N, IDD3N, IDDQ3N, IPP3N**

Sequence	Command	CS	C/A [13:0]
0	DES	H	0x0000
1	DES	H	0x3FFF
2	DES	H	0x3FFF
3	DES	H	0x3FFF

NOTE:
1) Data is pulled to VDDQ
2) DQS_t and DQS_c are pulled to VDDQ
3) Command / Address ODT is disabled
4) Repeat sequence 0 through 3
5) All banks of all logical ranks mimic the same test condition

11.5 IDD2NT, IDDQ2NT, IPP2NT Pattern

Executes Non-Target WRITE commands simulating Rank to Rank timing while exercising all C/A bits. Notes 3-6 apply to entire table.

[Table 57] IDD2NT, IDDQ2NT, IPP2NT

Sequence	Command	CS_n	C/A [13:0]	Special Instructions
0	WRITE	L	0x002D	All valid C/A inputs to VSS
		L	0x0000	
1	DES	H	Toggling[2]	Repeat sequence to meet 1*tCCD_S(min), truncate if required
2	WRITE	L	0x3FED	All valid C/A inputs to VDDQ
		L	0x3FFF	
3	DES	H	Toggling[2]	Repeat sequence to meet 1*tCCD(min), truncate if required

NOTE:
1) WRITE with CS_n=L on both cycles indicated a non-target WRITE
2) Utilize DESELECTs between commands while toggling C/A bits per the 4-cycle sequence defined in the IDD2N, IDD3N pattern
3) Time between Non-Target WRITEs reflect tCCD_S (min) for one rank
4) DQ signals are VDDQ
5) DQS_t, DQS_c are VDDQ
6) Repeat 0 through 3

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11.6 IDD4R, IDDQ4R, IPP4R Pattern

Executes READ commands with tightest timing possible while exercising all Bank, Bank Group and CID addresses. Notes 2-9 apply to entire table **[Table 58] IDD4R, IDDQ4R, IPP4R**

Sub-Loop	Sequence	Command	CS_n	C/A [13:0]	Column Address [10:0]	BA [1:0]	BG [2:0]	CID [3:0]	Data Burst (BL=16)	Special Instructions
0	0	READ	L H	-	0x000	0x00	0x0	0x0	Pattern A	All "Valid" inputs = VDDQ
	1	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
1	2	READ	L H	-	0x3F0	0x00	0x1	0x0	Pattern B	All "Valid" inputs = VDDQ
	3	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
2	4-5	Repeat sub-loop 0, use BG[2:0]=0x2 instead								
3	6-7	Repeat sub-loop 1, use BG[2:0]=0x3 instead								
4	8-9	Repeat sub-loop 0, use BG[2:0]=0x4 instead								skip for x16
5	10-11	Repeat sub-loop 1, use BG[2:0]=0x5 instead								skip for x16
6	12-13	Repeat sub-loop 0, use BG[2:0]=0x6 instead								skip for x16
7	14-15	Repeat sub-loop 1, use BG[2:0]=0x7 instead								skip for x16
8	16	READ	L H	-	0x3F0	0x00	0x0	0x0	Pattern B	All "Valid" inputs = VDDQ
	17	DES	H	Toggling[1]						Repeat sequence to satisfy tCCD_S(min), truncate if required
9	18	READ	L H	-	0x000	0x00	0x1	0x0	Pattern A	All "Valid" inputs = VDDQ
	19	DES	H	Toggling[1]						Repeat sequence to satisfy tCCD_S(min), truncate if required
10	20-21	Repeat sub-loop 8, use BG[2:0]=0x2 instead								
11	22-23	Repeat sub-loop 9, use BG[2:0]=0x3 instead								
12	24-25	Repeat sub-loop 8, use BG[2:0]=0x4 instead								skip for x16
13	26-27	Repeat sub-loop 9, use BG[2:0]=0x5 instead								skip for x16
14	28-29	Repeat sub-loop 8, use BG[2:0]=0x6 instead								skip for x16
15	30-31	Repeat sub-loop 9, use BG[2:0]=0x7 instead								skip for x16
16-31	32-33	Repeat sub-loops 0-15, use BA[1:0]=0x1 instead								
32-47	34-35	Repeat sub-loops 0-15, use BA[1:0]=0x2 instead								
48-63	36-37	Repeat sub-loops 0-15, use BA[1:0]=0x3 instead								
...	...	Repeat sub-loops 0-63 for each 3DS logical rank, if applicable								CID[2:0]=0x1-0x7

NOTE:

1) Utilize DESELECTs between commands while toggling all C/A bits 100% each cycle (0x3FFF, 0x0000, 0x3FFF, 0x0000...) per the 4-cycle sequence defined in the IDD2N,
IDD3N pattern

2) READs performed with Auto Precharge = H, Burst Chop = H

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3) Row address is set to 0x0000
4) Data reflects burst length of 16
5) Data Pattern A for x4: 0x0, 0xF, 0xF, 0x0, 0x0, 0xF, 0x0, 0xF, 0xF, 0x0, 0x0, 0xF, 0x0, 0xF, 0x0, 0xF
6) Data Pattern B for x4: 0xF, 0x0, 0x0, 0xF, 0xF, 0x0, 0xF, 0x0, 0x0, 0xF, 0xF, 0x0, 0xF, 0x0, 0xF, 0x0
7) Data Pattern for x8 each beat will reflect two like nibbles (Data Pattern A = 0x00, 0xFF, 0xFF...)
8) Data Pattern for x16 each beat will reflect two like bytes (Data Pattern A = 0x0000, 0xFFFF, 0xFFFF...)
9) Where C/A column is not populated, refer to command truth table, column address, BA, BG, and CID for the C/A state

11.7 IDD4W, IDDQ4W, IPP4W Pattern

Executes WRITE commands with tightest timing possible while exercising all Bank, Bank Group and CDI CID addresses. Notes 2-6 apply to entire table.

[Table 59] IDD4W, IDDQ4W, IPP4W

Sub-Loop	Sequence	Command	CS_n	C/A [13:0]	Column Address [10:0]	BA [1:0]	BG [2:0]	CID [3:0]	Data Burst (BL=16)	Special Instructions
0	0	WRITE	L H	-	0x000	0x00	0x0	0x0	Pattern A	All “Valid” inputs = VDDQ
	1	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
1	2	WRITE	L H	-	0x3F0	0x00	0x1	0x0	Pattern B	All “Valid” inputs = VDDQ
	3	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
2	4-5	Repeat sub-loop 0, use BG[2:0]=0x2 instead								
3	6-7	Repeat sub-loop 1, use BG[2:0]=0x3 instead								
4	8-9	Repeat sub-loop 0, use BG[2:0]=0x4 instead								skip for x16
5	10-11	Repeat sub-loop 1, use BG[2:0]=0x5 i nstead								skip for x16
6	12-13	Repeat sub-loop 0, use BG[2:0]=0x6 instead								skip for x16
7	14-15	Repeat sub-loop 1, use BG[2:0]=0x7 instead								skip for x16
8	16	WRITE	L H	-	0x3F0	0x00	0x0	0x0	Pattern B	All “Valid” inputs = VDDQ
	17	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
9	18	WRITE	L H	-	0x000	0x00	0x1	0x0	Pattern A	All “Valid” inputs = VDDQ
	19	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
10	20-21	Repeat sub-loop 8, use BG[2:0]=0x2 instead								
11	22-23	Repeat sub-loop 9, use BG[2:0]=0x3 instead								
12	24-25	Repeat sub-loop 8, use BG[2:0]=0x4 instead								skip for x16
13	26-27	Repeat sub-loop 9, use BG[2:0]=0x5 instead								skip for x16
14	28-29	Repeat sub-loop 8, use BG[2:0]=0x6 instead								skip for x16
15	30-31	Repeat sub-loop 9, use BG[2:0]=0x7 instead								skip for x16
16-31	32-33	Repeat sub-loops 0-15, use BA[1:0]=0x1 instead								

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Sub-Loop	Sequence	Command	CS_n	C/A [13:0]	Column Address [10:0]	BA [1:0]	BG [2:0]	CID [3:0]	Data Burst (BL=16)	Special Instructions
32-47	34-35	Repeat sub-loops 0-15, use BA[1:0]=0x2 instead								
48-63	36-37	Repeat sub-loops 0-15, use BA[1:0]=0x3 instead								
...	...	Repeat sub-loops 0-63 for each 3DS logical rank, if applicable								CID[2:0]=0x1-0x7

NOTE:
1) Utilize DESELECTs between commands per the 4-cycle sequence defined in the IDD2N, IDD3N pattern
2) WRITEs performed with Auto Precharge = H, Burst Chop = TBD
3) Row address is set to 0x0000
4) Data reflects burst length of 16
5) Refer to IDD4R measurement loop table for data pattern definition
6) Where C/A column is not populated, refer to command truth table, column address, BA, BG, and CID for the C/A state

11.8 IDD5B, IDDQ5B, IPP5B, IDD5F, IDDQ5F, IPP5F Pattern

Executes Refresh (all Banks) command at minimum tRFC. Notes 3-6 apply to entire table.

[Table 60] IDD5B, IDD5B, IDDQ5B, IPP5B, IDD5F, IDDQ5F, IPP5F

Sub-Loop	Command	CS	C/A [13:0]	CA8	CID[2:0]	Special Instructions
0	REFab	L	-	H	0x0	All “valid” inputs = VDDQ
1	DES	H	Toggling[1]	-	-	Repeat sequence to satisfy tRFC(min), truncate if required
2	REFab	L	-	H	0x0	All “valid” inputs = VDDQ
3	DES	H	Toggling[1]	-	-	Repeat sequence to satisfy tRFC(min), truncate if required
...	Repeat sequence 0-3 for each 3DS logical rank, if applicable					CID[2:0]=0x1-0x7

NOTE:
1) Utilize DESELECTs between commands per the 4-cycle sequence defined in the IDD2N, IDD3N pattern
2) For IDD5B, use tRFC1(min). For IDD5F, use tRFC2(min)
3) DQ signals are VDDQ
4) All banks of all “non-target” logical ranks are Idd2N condition
5) Where C/A[13:0] column is not populated, refer to command truth table, CA8, and CID columns for the C/A state 6) Must set CA8=H on REFab commands to indicate 1X refresh rate on devices that support RIR

11.9 IDD5C, IDDQ5C and IPP5C Patterns

Executes Refresh (Same Bank) command at minimum tRFCsb. Notes 2-5 apply to entire table.

[Table 61] IDD5C, IDDQ5C, IPP5C

Sub-Loop	Command	CS	C/A [13:0]	CA8	BA[1:0]	CID[2:0]	Special Instructions
0	REFsb	L	-	H	0x0	0x0	
1	DES	H	Toggling[1]	-			Repeat sequence to satisfy tRFCsb(min), truncate if required
2	REFsb	L	-	H	0x1	0x0	
3	DES	H	Toggling[1]	-		-	Repeat sequence to satisfy tRFCsb(min), truncate if required
4	REFsb	L	-	H	0x2	0x0	

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Sub-Loop	Command	CS	C/A [13:0]	CA8	BA[1:0]	CID[2:0]	Special Instructions
5	DES	H	Toggling[1]	-		-	Repeat sequence to satisfy tRFCsb(min), truncate if required
6	REFsb	L	-	H	0x3	0x0	
7	DES	H	Toggling[1]	-			Repeat sequence to satisfy tRFCsb(min), truncate if required
...	Repeat sequence 0-7 for each 3DS logical rank, if applicable						CID[2:0]=0x1-0x7

NOTE:
1) Utilize DESELECTs between commands per the 4-cycle sequence defined in the IDD2N, IDD3N pattern 2) DQ signals are VDDQ
3) All banks of all “non-target” logical ranks are Idd2N condition
4) Where C/A[13:0] column is not populated, refer to command truth table, CA8, and CID columns for the C/A state
5) All banks of all “non-target” logical ranks are Idd2N condition

11.10 IDD6N, IDDQ6N, IPP6N, IDD6E, IDDQ6E, IPP6E, IDD6R, IDDQ6R, IPP6R Pattern

All notes apply to entire table.

[Table 62] IDD6N, IDDQ6N, IPP6N, IDD6E, IDDQ6E, IPP6E, IDD6R, IDDQ6R, IPP6R

Sub-Loop	Command	Clock	CS	C/A[13:0]	Special Instructions
0	SRE	Valid	L	0x3BF7	Clocks must be valid tCKLCS(min) time
1	DES	Valid	H	0x3FFF	Repeat sequence to satisfy tCPDED(min), truncate if required
2	All C/A=H	Valid	L	0x3FFF	
3	All C/A=H	CK_t = CK_c = H	L	0x3FFF	Repeat sequence indefinitely

NOTE:
1) Data is pulled to VDDQ
2) DQS_t and DQS_c are pulled to VDDQ
3) ODT disabled in Mode Registers

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11.11 IDD7, IDDQ7 and IPP7 Patterns

Executes ACTVATE, READ/A commands with tightest timing possible while exercising all Bank, Bank Group and CID addresses. Notes 2-6 apply to entire table.

[Table 63] IDD7, IDD7Q, IPP7

Sub-Loop	Sequence	Command	CS	C/A [13:0]	Row Address [17:0]	Column Addres s [10:0]	BA [1:0]	BG [2:0]	CID [2:0]	Data Burst (BL=16)	Special Instructions
0	0	ACT	L H	-	0x00000	-	0x0	0x0	0x0	-	
	1	DES	H	Toggling[1]							Repeat sequence to satisfy tRRD_S(min), tFAW(min), and tRCD(min). Truncate if required.
1	2	ACT	L H	-	0x03FFF	-	0x0	0x1	0x0	-	
	3	DES	H	Toggling[1]							Repeat sequence to satisfy tRRD_S(min), tFAW(min), and tRCD(min). Truncate if required.
2	4-5	Repeat sub-loop 0, use BG[2:0]=0x2 instead									
3	6-7	Repeat sub-loop 1, use BG[2:0]=0x3 instead									
4	8-9	Repeat sub-loop 0, use BG[2:0]=0x4 instead									skip for x16
5	10-11	Repeat sub-loop 1, use BG[2:0]=0x5 instead									skip for x16
6	12-13	Repeat sub-loop 0, use BG[2:0]=0x6 instead									skip for x16
7	14-15	Repeat sub-loop 1, use BG[2:0]=0x7 instead									skip for x16
8	16	RDA	L H	-	-	0x3F0	0x0	0x0	0x0	Pattern A	
	17	ACT	L H	-	0x00000	-	0x1	0x0	0x0	-	
	18	DES	H	Toggling[1]							Repeat sequence to satisfy tCCD_S(min), tFAW(min), and tRCD(min). Truncate if required.
9	19	RDA	L H	-	-	0x000	0x0	0x1	0x0	Pattern B	
	20	ACT	L H	-	0x03FFF	-	0x1	0x1	0x0	-	
	21	DES	H	Toggling[1]							Repeat sequence to satisfy tCCD_S(min), tFAW(min), and tRCD(min). Truncate if required.
10	22-24	Repeat sub-loop 8, use BG[2:0]=0x2 instead									
11	25-27	Repeat sub-loop 9, use BG[2:0]=0x3 instead									
12	28-30	Repeat sub-loop 8, use BG[2:0]=0x4 instead									skip for x16
13	31-33	Repeat sub-loop 9, use BG[2:0]=0x5 instead									skip for x16
14	34-36	Repeat sub-loop 8, use BG[2:0]=0x6 instead									skip for x16

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Sub-Loop	Sequence	Command	CS	C/A [13:0]	Row Address [17:0]	Column Addres s [10:0]	BA [1:0]	BG [2:0]	CID [2:0]	Data Burst (BL=16)	Special Instructions
15	37-39	Repeat sub-loop 9, use BG[2:0]=0x7 instead									skip for x16
16-23	40-64	epeat sub-loops 8-15, use BA[1:0]=0x1 for the RDA and BA[1:0]=0x2 for the CT									
24-31	65-89	epeat sub-loops 8-15, use BA[1:0]=0x2 for the RDA and BA[1:0]=0x3 for the CT									
32-39	90-114	epeat sub-loops 8-15, use BA[1:0]=0x3 for the RDA and BA[1:0]=0x0 for the CT									
...	...	Repeat sub-loops 0-18 for each 3DS logical rank, if applicable									CID[2:0]=0x1-0x7

NOTE:
1) Utilize DESELECTs between commands per the 4-cycle sequence defined in the IDD2N, IDD3N pattern
2) READs performed with Auto Precharge = H, Burst Chop = H
3) x8 or x16 may have different Bank or Bank Group Address
4) Data reflects burst length of 16
5) Refer to IDD4R measurement loop table for data pattern definition

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12.0 IDD SPEC TABLE

IDD values are for typical operating range of voltage and temperature unless otherwise noted.

Symbol	ZMS5WMC3C1J0B46SPG: 1Rx16 8GB Module	ZMS5WMC8C2J0B46SPG: 1Rx8 16GB Module	ZMS5WMC8C4J0B46SPG: 2Rx8 32GB Module	Unit
	DDR5-5600	DDR5-5600	DDR5-5600	
	46-45-45	46-45-45	46-45-45	
	IDD Max.	IDD Max.	IDD Max.	
	VDD 1.1V, VDDQ 1.1V, VPP 1.8V	VDD 1.1V, VDDQ 1.1V, VPP 1.8V	VDD 1.1V, VDDQ 1.1V, VPP 1.8V	
IDD0	TBD	TBD	TBD	mA
IDD0F	TBD	TBD	TBD	mA
IDD2N	TBD	TBD	TBD	mA
IDD2NT	TBD	TBD	TBD	mA
IDD2P	TBD	TBD	TBD	mA
IDD3N	TBD	TBD	TBD	mA
IDD3P	TBD	TBD	TBD	mA
IDD4R	TBD	TBD	TBD	mA
IDD4W	TBD	TBD	TBD	mA
IDD5B	TBD	TBD	TBD	mA
IDD5F	TBD	TBD	TBD	mA
IDD5C	TBD	TBD	TBD	mA
IDD6N	TBD	TBD	TBD	mA
IDD7	TBD	TBD	TBD	mA
IDD8	TBD	TBD	TBD	mA

NOTE :

1) DIMM IDD SPEC is based on the condition that de-actived rank (IDLE) is IDD2N. Please refer to Table.
2) IDD current measure method and detail patterns are described on DDR5 component datasheet.
3) Module IDD is based on PMIC 5V input current, each IDD parameter includes all IDD/IDDQ/IPP of DRAM and PMIC efficiency.

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[Table 64] DIMM Operating Status

IDD Status	Operating Rank	De-actived rank
I_{DD0}	I_{DD0}	I_{DD2N}
I_{DD0F}	I_{DD0F}	I_{DD2N}
I_{DD2N}	I_{DD2N}	I_{DD2N}
I_{DD2NT}	I_{DD2NT}	I_{DD2N}
I_{DD2P}	I_{DD2P}	I_{DD2P}
I_{DD3N}	I_{DD3N}	I_{DD2N}
I_{DD3P}	I_{DD3P}	I_{DD2P}
I_{DD4R}	I_{DD4R}	I_{DD2N}
I_{DD4W}	I_{DD4W}	I_{DD2N}
I_{DD5B}	I_{DD5B}	I_{DD2N}
I_{DD5F}	I_{DD5F}	I_{DD2N}
I_{DD5C}	I_{DD5C}	I_{DD2N}
I_{DD6N}	I_{DD6N}	I_{DD6N}
I_{DD7}	I_{DD7}	I_{DD2N}
I_{DD8}	I_{DD8}	I_{DD8}

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13.0 INPUT/OUTPUT CAPACITANCE

[Table 65] Silicon Pad I/O Capacitance

Symbol	Parameter	DDR5-4400 to 4800		DDR5-5200 to 5600		Unit	NOTE
		min	max	min	max		
CIO	Input/output capacitance (DQ, DM_n, DQS_t, DQS_c, TDQS_t, TDQS_c)	0.35	0.9	0.35	0.85	pF	1,2
CDIO	Input/output capacitance delta (DQ, DM_c)	-0.1	0.1	-0.1	0.1	pF	1,2,8
CDDQS	Input/output capacitance delta (DQS_t and DQS_c)		0.04		0.04	pF	1,2,4
CCK	Input capacitance (CK_t and CK_c)	0.2	0.6	0.2	0.55	pF	1,2
CDCK	Input capacitance delta (CK_t and CK_c)		0.05		0.05	pF	1,2,3
CI	Input capacitance (CS_n & CA[13:0] pins only)	0.2	0.6	0.2	(CI Option1) 0.55 (CI Option2) 0.5	pF	1,2,5,1 2
CDI_ CS_n	Input capacitance delta (CS_n pin only)	-0.1	0.1	-0.1	0.1	pF	1,2,6
CDI_ CA	Input capacitance delta (CA[13:0] pins only)	-0.1	0.1	-0.1	0.1	pF	1,2,7
CALERT	Input/output capacitance of ALERT	0.3	1.5	0.3	1.5	pF	1,2
CLoopback	Input/output capacitance of Loopback (LBDQ, LBDQS)	0.3	1.0	0.3	1.0	pF	1,2
CTEN	Input capacitance of TEN	0.2	2.3	0.2	2.3	pF	1,2,9
CZQ	Input capacitance of ZQ	-	5	-	5	pF	1,2,11
CSTRAP	Input capacitance of MIR, CAI, CA_ODT pins	-	10	-	10	pF	1,2,10

NOTE :

1) This parameter is not subject to production test. This parameter is measured by using vendor specific measurement methodology.
2) This parameter applies to monolithic devices only; stacked/dual-die devices are not covered here.
3) Absolute value CIO(CK_t)-CIO(CK_c).
4) Absolute value of CIO(DQS_t)-CIO(DQS_c).
5) CI applies to CS_n and CA[13:0].
6) CDI_CS_n = CI(CS_n)-0.5*(CI(CK_t)+CI(CK_c)). 7) CDI_CA = CI(CA[13:0])-0.5*(CI(CK_t)+CI(CK_c)).
8) CDIO = CIO(DQ,DM)-Avg(CIO(DQ,DM)).
9) TEN pin may be DRAM internally pulled low through a weak pull-down resistor to VSS. In this case CTEN might not be valid and system shall verify TEN signal with Vendor specific information.
10) MIR, CAI, and CA_ODT are strap pins used to configure module or point to point use cases depending on power, signal integrity, and termination requirements. No active AC signaling requirements defined for these pins.
11) Maximum external load capacitance on ZQ pin: 25pF. The ZQ functionality / accuracy with the max capacitive load is characterized.
12) CI Options are incorporated VcIVW in table 9 in Section 8.2.

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14.0 tREFI and tRFC Parameters

The maximum average refresh interval (tREFI) requirement for the DDR5 SDRAM depends on the refresh mode setting (Normal or FGR), and the device's case temperature (Tcase). When the refresh mode is set to Normal Refresh mode, REFab commands are issued (tRFC1), and Tcase<=85°C, the maximum average refresh interval (tREFI1) is tREFI. When the refresh mode is set to FGR mode, REFab commands are issued (tRFC2) and Tcase<=85°C, the maximum average refresh interval (tREFI2) is tREFI/2. This same tREFI/2 interval value is also appropriate if the refresh mode is set to Normal Refresh mode and REFab commands are issued (tRFC1) but 85°C<Tcase<=95°C. Finally, if the refresh mode is set to FGR mode, REFab commands are issued (tRFC2), and 85°C<Tcase<=95°C, the maximum average refresh interval (tREFI2) is tREFI/4.

The DDR5 SDRAM includes an optional method for the host to indicate when Refresh commands are being issued at the 2x (tREFI2) refresh interval rate. The 2x Refresh Interval Rate indicator (MR4:OP[3]) alerts the DRAM if the host supports the refresh interval rate indication as part of the REF command using CA8. If enabled (MR4:OP[3]=1), the host will issue 1x REF commands with CA8=H (Tcase<=85°C), and the host will issue 2x REF commands with CA8=L (Tcase any allowable temperature). MR4:OP[3] is a Status Read/Write "SR/W" MR bit which shows DDR5 SDRAM support of this optional feature.
Reading MR4:OP[3] will return a "1" if the 2x Refresh Interval Rate indicator is supported. A "0" will be returned if not supported.
tREFI is based on the 8,192 refresh commands that need to be issued within the baseline tREF=32ms refresh period on the DDR5 SDRAM.

[Table 66] tREFI parameters for REFab and REFsb Commands

Command	Refresh Mode	Symbol & Range		Expression	Value	Unit	Notes
REFab	Normal	tREFI1	0°C <= TCASE <= 85°C	tREFI	3.9	us	
			85°C < TCASE <= 95°C	tREFI/2	1.95	us	
REFab	Fine Granularity	tREFI2	0°C <= TCASE <= 85°C	tREFI/2	1.95	us	
			85°C < TCASE <= 95°C	tREFI/4	0.975	us	
REFsb	Fine Granularity	tREFIsb	0°C <= TCASE <= 85°C	tREFI/(2*n)	1.95/n	us	1
			85°C < TCASE <= 95°C	tREFI/(4*n)	0.975/n	us	1

NOTE :
1) *n* is the number of banks in a bank group (e.g. 8G: n=2; 16G: n=4).

[Table 67] tRFC parameters by device density

Refresh Mode	Symbol	16Gb	Unit	Notes
Normal Refresh (REFab)	tRFC1(min)	295	ns	
Fine Granularity Refresh (REFab)	tRFC2(min)	160	ns	
Same Bank Refresh (REFsb)	tRFCsb(min)	130	ns	

[Table 68] Same Bank Refresh parameters

Refresh Mode	Symbol	16Gb	Unit	Notes
Same Bank Refresh to ACT delay	tREFSBRD_slr(min)	30	ns	

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15.0 TIMING PARAMETERS BY SPEED GRADE

15.1 Timing Parameters by Speed Bin

Speed		DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Units	Notes
Parameter	**Symbol**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**		
Clock Timing											
Average Clock Period	tCK(avg)	0.454	-	0.416	-	0.384		0.357	-	ns	1
Command and Address Timing											
Read to Read command delay for same bank group	tCCD_L	max(8nCK, 5ns)	-	max(8nCK, 5ns)	-	max(8nCK, 5ns)		max(8nCK, 5ns)	-	nCK,ns	
Write to Write command delay for same bank group	tCCD_L_WR	max(32nCK, 20ns)	-	max(32nCK, 20ns)	-	max(32nCK, 20ns)		max(32nCK, 20ns)	-	nCK,ns	
Write to Write command delay for same bank group, second write not RMW	tCCD_L_WR2	Max(16nCK, 10ns)	-	Max(16nCK, 10ns)	-	Max(16nCK, 10ns)		Max(16nCK, 10ns)	-	nCK,ns	
Read to Write command delay for same bank group	tCCD_L_RTW	CL - CWL + RBL/2 + 2tCK - (Read DQS offset) + (tRPST - 0.5tCK) + tWPRE								nCK,ns	3,5,6
Write to Read command delay for same bank group	tCCD_L_ WTR	CWL + WBL/2 + Max(16nCK,10ns)								nCK,ns	4,6
Read to Read command delay for different bank group	tCCD_S	8	-	8	-	8		8	-	nCK	
Write to Write command delay for different bank group	tCCD_S_WR	8	-	8	-	8		8	-	nCK	
Read to Write command delay for different bank group	tCCD_S_RTW	CL - CWL + RBL/2 + 2tCK - (Read DQS offset) + (tRPST - 0.5tCK) + tWPRE								nCK,ns	3,5,6
Write to Read command delay for different bank group	tCCD_S_ WTR	CWL + WBL/2 + Max(4nCK,2.5ns)								nCK,ns	4,6
Write to Read with Auto Precharge command delay for same bank	tCCD_WTRA	CWL + WBL/2 + tWR - tRTP								nCK,ns	2,4,6
Activate to Activate command delay to same bank group for 1KB page size	tRRD_L(1K)	Max(8nCK, 5ns)	-	max(8nCK, 5ns)	-	max(8nCK, 5ns)		max(8nCK, 5ns)	-	nCK,ns	
Activate to Activate command delay to same bank group for 2KB page size	tRRD_L(2K)	Max(8nCK, 5ns)	-	max(8nCK, 5ns)	-	max(8nCK, 5ns)		max(8nCK, 5ns)	-	nCK,ns	
Activate to Activate command delay to differ- ent bank group for 1KB page size	tRRD_S(1K)	8	-	8	-	8		8	-	nCK	
Activate to Activate command delay to differ- ent bank group for 2KB page size	tRRD_S(2K)	8	-	8	-	8		8	-	nCK	
Four activate window for 1KB page size	tFAW (1K)	Max(32nCK, 16.000ns)	-	Max(32nCK, 14.545ns)	-	Max(32nCK, 14.545ns)		Max(32nCK, 12.307ns)	-	nCK, ns	
Four activate window for 2KB page size	tFAW (2K)	Max(40nCK, 20.000ns)	-	Max(40nCK, 18.181ns)	-	Max(40nCK, 18.181ns)		Max(40nCK, 15.384ns)	-	nCK, ns	
Read to Precharge command delay	tRTP	Max(12nCK, 7.5ns)	-	Max(12nCK, 7.5ns)	-	Max(12nCK, 7.5ns)		Max(12nCK, 7.5ns)	-	nCK,ns	
Precharge to Precharge command delay	tPPD	2	-	2	-	2		2	-	nCK	7
Write recovery time	tWR	30	-	30	-	30		30	-	ns	

NOTE:

1) tCK(avg)min listed for reference only, refer to the Speed Bins and Operations section which lists all valid tCK(avg) values.
2) tCCD_WTRA(min) shall always be greater than or equal to CWL + WBL/2 + tWR(min) - tRTP(min), and when using the appropri- ate rounding algorithms, nCCD_WTRA(min) shall always be greater than or equal to CWL + WBL/2 + nWR(min) - nRTP(min).
3) RBL: Read burst length associated with Read command.
RBL = 32 (36 w/ RCRC on) for fixed BL32 and BL32 in BL32 OTF mode RBL = 16 (18 w/ RCRC on) for fixed BL16 and BL16 in BL32 OTF mode RBL = 16 (18 w/ RCRC on) for BL16 in BC8 OTF mode and BC8 in BC8 OTF mode.
4) WBL: Write burst length associated with Write command

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WBL = 32 (36 w/ WCRC on) for fixed BL32 and BL32 in BL32 OTF mode.
WBL = 16 (18 w/ WCRC on) for BL16 in BC8 OTF mode and BC8 in BC8 OTF mode.
5) The following is considered for tRTW equation.
1tCK needs to be added due to tDQS2CK.
Read DQS offset timing can pull in the tRTW timing 1tCK needs to be added when 1.5tCK
postamble. 6) CWL=CL-2
7) This parameter only specifies minimum values (there is no maximum value). The maximum value cells have been merged in the table to improve legibility.

15.2 DDR5 Function Matrix

DDR5 SDRAM has several features supported by ORG and also by Speed. The following Table is the summary of the features.

[Table 69] Function Matrix (By ORG. V:Supported, Blank:Not supported)

Functions	x8	x16	NOTE
Write Leveling	V	V	
Temperature controlled Refresh	V	V	
Fine Granularity Refresh	V	V	
Same Bank Refresh	V	V	
Refresh for Management			
Data Mask	V	V	
Command Address Inversion	V	V	
TDQS	V	V	
ZQ calibration	V	V	
DQ Vref Training	V	V	
Per DRAM Addressability	V	V	
Mode Register Readout	V	V	
WRITE CRC	V	V	
READ CRC	V	V	
Programmable Preamble/Postamble	V	V	
Maximum Power Saving Mode	V	V	
Connectivity Test Mode	V	V	
Bit Error Rate Test	V	V	
Package Output Driver Test Mode	V	V	
3DS			
CA Training Mode	V	V	
CS Training Mode	V	V	
DQS interval Oscillator	V	V	
ECC Transparency and Error Scrub	V	V	
Lookback	V	V	
Duty Cycle Adjuster	V	V	

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16.0 DDR5 MODULE RANK AND CHANNEL TIMINGS

16.1 Module Rank and Channel Limitations for DDR5 DIMMs

To achieve efficient module power supply design for JEDEC-standard DDR5 DIMMs, minimum timings as well as limitations in the number of DRAMs are provided for Refresh, and Write operations occurring on a single module. As well, since these modules are organized as two independent 36-bit or 40-bit channels (32 bits for non-ECC DIMMs), additional restrictions apply in order to limit localized power delivery noise on the module. To provide best performance, the different channels may initiate commands on the same cycle provided the rank to rank timings are met, the maximum number of DRAMs in a given activity is not exceeded, and the applicable component timings shown elsewhere in this specification are met. The timing and operational relationships for DDR5 DIMMs are shown in Table 68 below.

[Table 70] DDR5 Module Rank and Channel Timings for DDR5 DIMMs

DIMM Configuration	Maximum number of DRAM die in simultaneous or overlapping activity			
	Refresh (All-Bank Refresh)		Write, Write-Pattern	
	Die per Physical Rank	Die per DIMM	Die per Channel	Die per DIMM
SR x16	No restriction			
DR x16	No restriction		2	4
SR x8	No restriction			
DR x8	No restriction		5	10
SR x4	No restriction			
DR x4	No restriction		10	20
Notes	1, 2, 3, 4, 7, 8, 9		1, 5, 6, 7, 9	

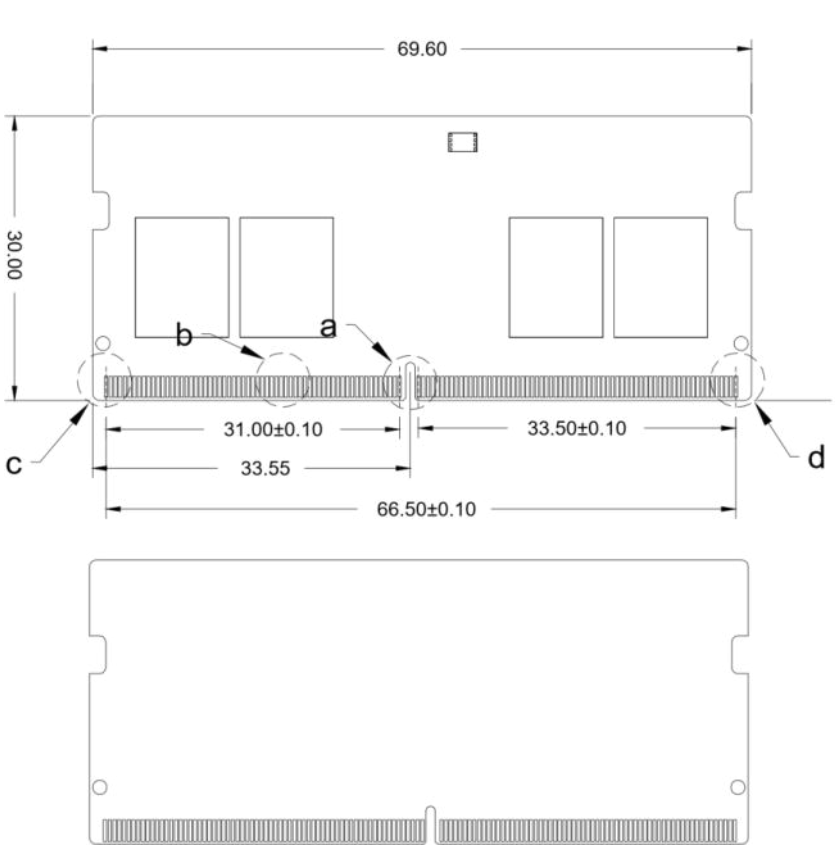
NOTE:
1) Any combination of commands with up to the maximum of die per channel and per DIMM, per condition is allowed 2) Refresh commands to different channels do not require stagger
3) tRFC_dlr must be met for refresh commands to different logical ranks within a package rank on the same channel
4) Any DRAM is considered to be in Refresh mode until tRFC time has been met
5) tCCD parameters must be met for Write and Write-Pattern commands to different logical ranks or physical ranks within the same channel; no overlapping write data bus activity is allowed on two physical or logical ranks within the same channel
6) Write and Write-Pattern commands to different channels do not require stagger
7) Each rank consists of one group of DRAMs making up a 36 or 40 bit channel (32 bits for non-ECC DIMMs)
8) These restrictions only apply to explicit all-banks refresh commands (REFab) and not to self-refresh entry or exit
9) Restrictions apply to DIMMs built with JEDEC PMICXXXX, but may not apply to DIMMs built with higher current capacity PMICs

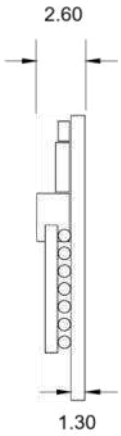
Proposta de Preço ITEM 6 - PREGÃO ELETRÔNICO Nº 90039/2025 (Identificação interna do documento: H2SE6K90B9-TDFBBQ1) SEI 2025.001317 / pg. 1240

17.0 PHYSICAL DIMENSIONS

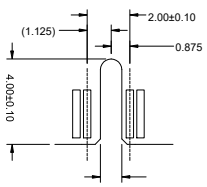
17.1 1Gx16 based x64 Module (1 Rank) - ZMS5WMC3C1J0B46SPG

Units : mm



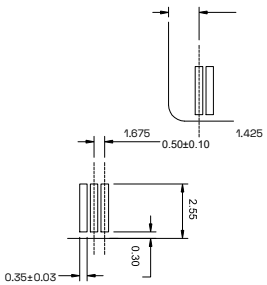


DETAIL a

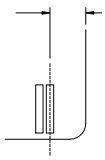


DETAIL b

DETAIL c



DETAIL d

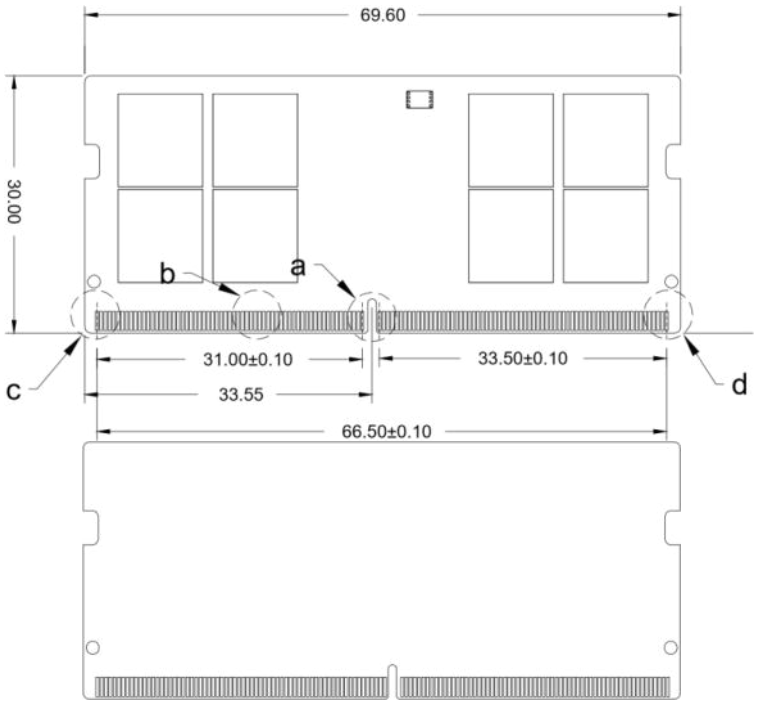


NOTE: Tolerances on all dimensions ±0.15 unless otherwise specified

Proposta de Preço ITEM 6 - PREGÃO ELETRÔNICO SRP Nº 90039/2025 (Identificação interna do documento: H2SE6K90B9-TDFBBQ1) SEI 2025.001317 / pg. 1241

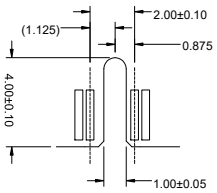
17.2 2Gx8 based x64 Module (1 Rank) - ZMS5WMC8C2J0B46SPG

Units : mm

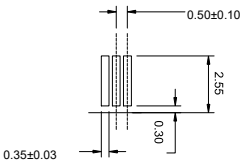




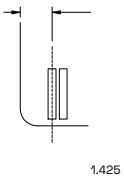
DETAIL a



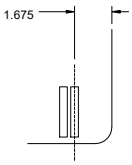
DETAIL b



DETAIL c



DETAIL d

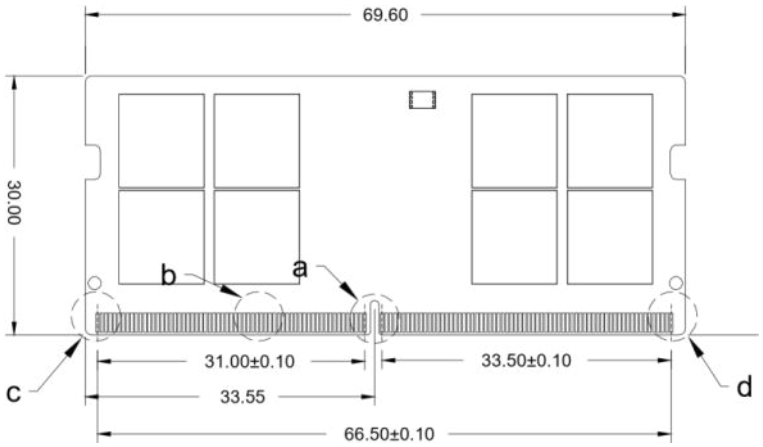


NOTE: Tolerances on all dimensions ±0.15 unless otherwise specified

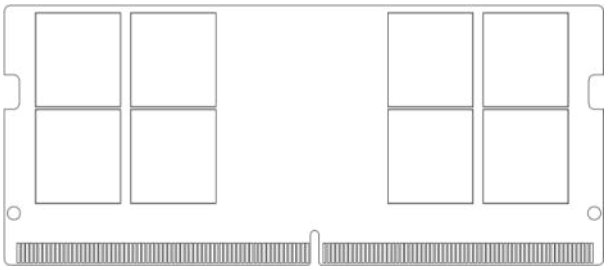
Proposta de Preço ITEM 6 - PRESIDÊNCIA/SECRETARIA DE TECNOLOGIA (25611789) SEI 2025.001317 / pg. 1242
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

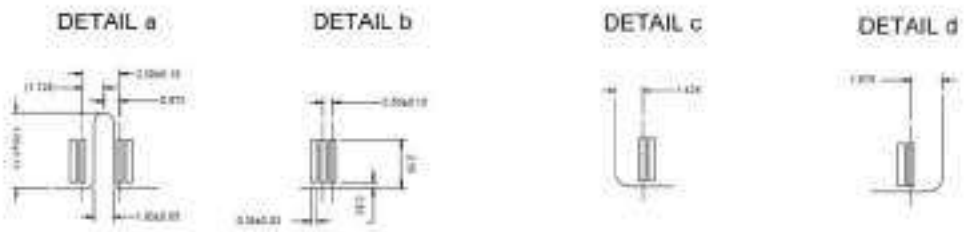
17.3 2Gx8 based x64 Module (2 Ranks) - ZMS5WMC8C4J0B46SPG

Units : mm









NOTE: Tolerances on all dimensions ±0.15 unless otherwise specified

Proposta de Preço ITEM 6 - Pregão nº 12/2025 (1551189) SEI 2025.001317 / pg. 1243
Identificação interna do documento: H2SE6K90B9-TDFBBQ1

Identificação interna do documento H2SE6K90B9-TDFBBO1



Nome do arquivo:
DS_ZMS5WMC8C2J0B46SPG_20240704_DDR5_sodimm_8GB-16GB-32GB_202501151134525100573.pdf
Data de vinculação à solicitação: 15/01/2025 11:34
Aplicativo: 53250

Identificação interna do documento H2SE6K90B9-TDFBBO1

Intel® Wi-Fi 6E AX211

Gig+

Intel® Wi-Fi 6E AX211

Gig+

Adicionar para comparar

Conheça os processadores Intel mais recentes e experimente o desempenho aprimorado

Essenciais

Coleção de produtos	Intel® Wi-Fi série 6E (Gig+)
Codinome	Produtos com denominação anterior Garfield Peak
Status	Launched
Data de introdução	Q3'21
Peso (em gramas)	2.83
Faixa de temperatura operacional	0 °C to 50 °C
Temperatura máxima de operação	50 °C
Temperatura mínima de operação	0 °C
Sistemas operacionais suportados	Windows 11, 64-bit*, Windows 10, 64-bit*, Linux*, Chrome OS*
Antena	2x2

Informações complementares

Descrição resumida do produto	Veja agora

Especificações de rede

Streams TX/RX	2x2
Bandas	2.4, 5, 6 GHz (160MHz)
Velocidade máxima	2.4 Gbps
Wi-Fi CERTIFICADO*	Wi-Fi 6E (802.11ax)
Conformidade	FIPS, FISMA
Bluetooth integrado	Sim
Versão do Bluetooth	5.3

Especificações de encapsulamento

Proposta de Preço ITEM 3 - POSITIVO TECNOLOGIA (1661786) SEI 2025.001317 / pg. 1245

Fator de forma da placa	M.2 2230, M.2 1216
Tamanho do pacote	22mm x 30mm x 2.4mm, 12mm x 16mm x 1.65mm
Tipo de interface de sistema	M.2: CNVio2

Tecnologias avançadas

MU-MIMO	Sim
Acesso múltiplo por divisão de frequência ortogonal (OFDMA — Orthogonal Frequency-Division Multiple Access)	Sim
Compatível com a Tecnologia Intel® vPro™	Sim

Todas as informações fornecidas estão sujeitas a alterações a qualquer momento, sem aviso prévio. A Intel pode alterar o ciclo de vida da fabricação, as especificações e as descrições dos produtos a qualquer momento, sem aviso prévio. As informações aqui contidas são fornecidas "no estado em que se encontram" e a Intel não atribui qualquer declaração ou garantias relacionadas à precisão das informações, nem sobre os recursos dos produtos, disponibilidade, funcionalidade ou compatibilidade dos produtos listados. Para obter mais informações sobre os produtos ou sistemas, entre em contato com o fornecedor do sistema.

Intel classifications are for general, educational and planning purposes only and consist of Export Control Classification Numbers (ECCN) and Harmonized Tariff Schedule (HTS) numbers. Any use made of Intel classifications are without recourse to Intel and shall not be construed as a representation or warranty regarding the proper ECCN or HTS. Your company as an importer and/or exporter is responsible for determining the correct classification of your transaction.

Consulte a Ficha técnica para obter definições formais de propriedades e recursos de produtos.

‡ Este recurso pode não estar disponível em todos os sistemas de computação. Verifique com o fornecedor do sistema para determinar se seu sistema oferece este recurso ou consulte as especificações de seu sistema (motherboard, processador, chipset, alimentação, HDD, controle gráfico, memória, BIOS, drivers, monitor de máquina virtual [VMM], software de plataforma e/ou sistema operacional) para saber sobre a compatibilidade do recurso. A funcionalidade, o desempenho e outros benefícios deste recurso podem variar, dependendo das configurações do sistema.

SKUs "anunciados" ainda não estão disponíveis. Favor consultar a data de lançamento para a disponibilidade no mercado.

Informações sobre a empresa

Nosso compromisso

Inclusão

Relações com investidores

Fale conosco

Sala de imprensa

Mapa do site

Empregos

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Termos de uso

*Marcas comerciais

Cookies

Privacidade

Transparência da cadeia de fornecimento

As tecnologias Intel® podem exigir ativação de hardware, software específico ou de serviços. // Nenhum produto ou componente pode ser totalmente seguro. // Os seus custos e resultados podem variar. // O desempenho varia de acordo com o uso, a configuração e outros fatores. Saiba mais em intel.com/performanceindex // Veja nossos Avisos e isenções de responsabilidade legais completos. // A Intel está comprometida em respeitar os direitos humanos e evitar cumplicidade com abusos de direitos humanos. Consulte Princípios Globais de Direitos Humanos da Intel. Os produtos e software da Intel são destinados a serem utilizados apenas em aplicações que não causem ou contribuam com a violação de um direito humano reconhecido internacionalmente.

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POSITIVO ADAPTADOR CA PI-ADAP090-A(02)



Imagem meramente ilustrativa

MINI PC / NOTEBOOK / 90W

Modelo	PI-ADAP090-A(02)
Aplicação	Mini PC / Mini Pro / Notebook
Potência	90W
Tensão de entrada	Bivolt, 100-240V (+/- 10%), seleção automática
Frequência de entrada	50-60Hz (+/- 10%)
Tensão nominal de saída	19V
Corrente de saída	4,74A
PFC Ativo	Sim
Cabo de alimentação	3 pinos, NBR 14136
Tamanho do pino	DC-in
Cor	Preto
Dimensões (CxLxA)	127 x 50,4 x 30,4 mm

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POSITIVO MOUSE SM-6620

Versátil com resposta rápida e precisa, funciona sobre qualquer superfície



Ótico (LED) / 1.000 dpi / Ambidestro

Modelo	SM-6620
Tipo	Ótico (LED)
Interface	USB 2.0 Tipo A
Botões	3 botões incluindo botão de rolagem (wheel) Entrada P2 3.5 mm para acionadores externos (opcional)
Resolução	1.000 dpi
Força Operacional	Botões (esquerda/direita): 75+25 gf Botão whell: 180+50 gf
Configuração	Ambidestro com pegada Palm
Recursos	Plug and Play
Comprimento do cabo	1,8m
Dimensões	Largura de 65mm Comprimento de 117mm Altura de 36mm
Peso	90g
Cor	Preto
Compatibilidade	Windows XP, Vista, 7, 8/8.1, 10, 11 e Linux
Segurança	FCC, CE
Norma	Compatível com normativa RoHS
Fabricante	Positivo Tecnologia S/A

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POSITIVO MALETA TSS898

Maleta/Pasta Slim para Notebooks de até 15,6”



Produzida com um mix de materiais resistentes mantendo a leveza e a praticidade

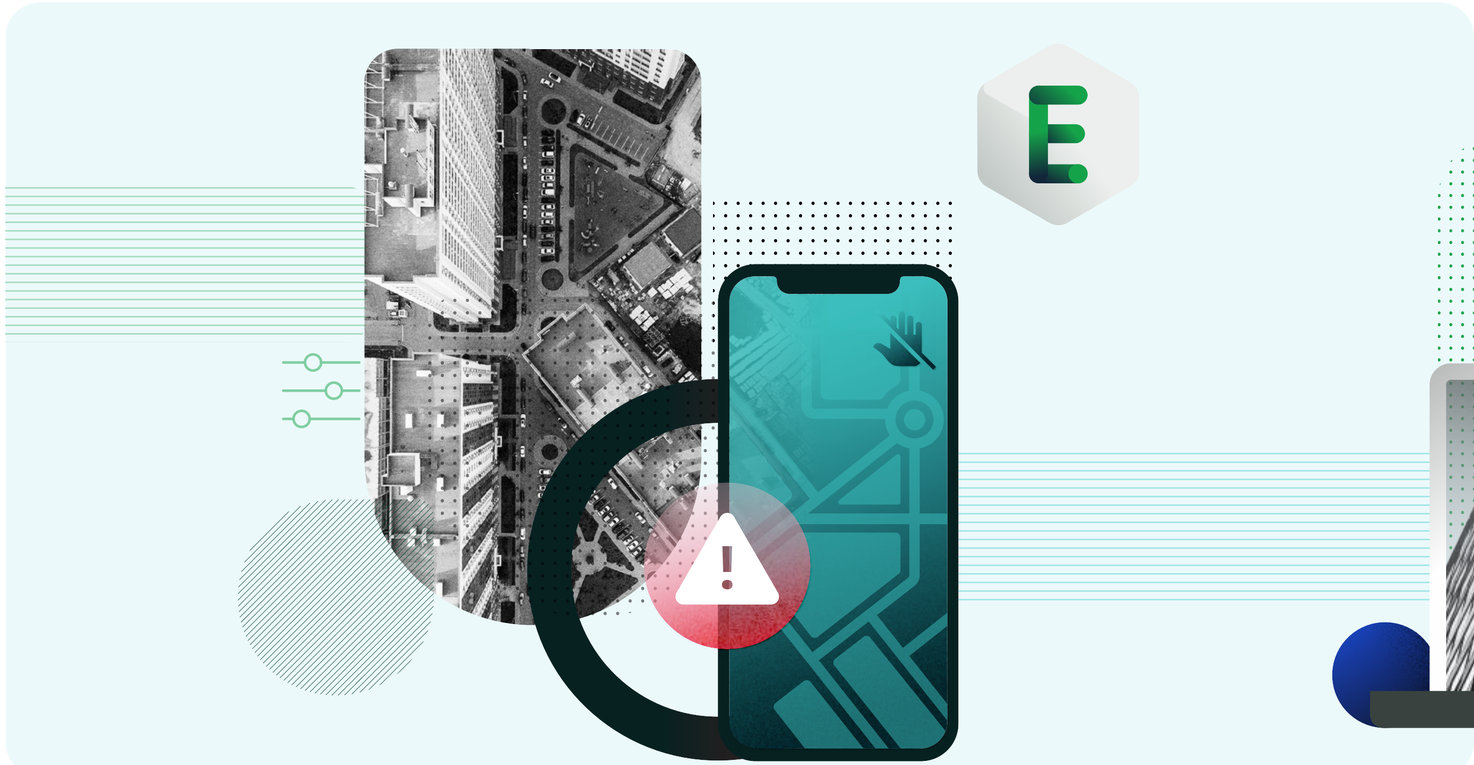
Descrição	Maleta/Pasta Slim para notebook, em poliester, com alça de ombro removível
Peso	0,450 kg
Medidas (LxAxP)	5,3 x 33 x 40 cm (aproximadamente)
Características	Compartimento acolchoado com zíper duplo e divisor de documentos Bolso frontal com zíper que armazena telefone, carregador e outros acessórios Alça de ombro ajustável e removível Alça traseira para acoplar malas de mão (Alça Carona) Alça de mão Design leve e slim Compatível com notebooks de até 15,6“ Material impermeável
Cor	Preto
Fabricante	Positivo Tecnologia S/A

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FOLHA DE DADOS

Absolute Control

Mantenha o controle de todos os seus dispositivos endpoint sempre, mesmo que sejam fora de sua rede corporativa.

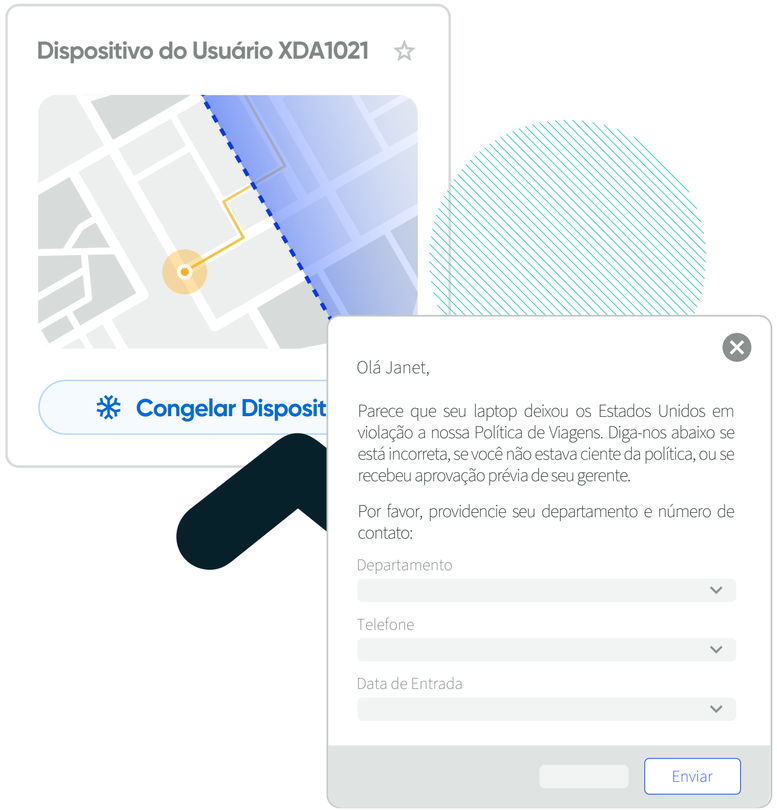


A visibilidade dos dispositivos endpoint é importante. Entretanto, é ainda mais crucial salvaguardar seus dispositivos, aplicações e dados com base no que você aprendeu etando a verdade através de seus dispositivos endpoint. O controle de dispositivos endpoint é, portanto, o próximo passo lógico em sua estratégia de gerenciamento e segurança de dispositivos. Isto é especialmente verdade porque a maioria dos ataques começa nos dispositivos endpoint usados por indivíduos, não no firewall ou servidores. Os atacantes normalmente ganham controle desses pontos de entrada na rede através de técnicas como phishing; a partir daí, eles podem se mover lateralmente para obter acesso a seus servidores. De lá, eles podem se mover lateralmente para obter acesso a seus servidores.

É, portanto, crucial manter sempre o controle sobre todos os dispositivos endpoint para que os riscos possam ser remediados antes que se tornem incidentes.

absolute.com

ABSOLUTE®



Aproveite o Poder da Plataforma Absolute

É aí que a Absolute Control™ ajuda, pois combina todas as capacidades do **Absolute Visibility™** (por exemplo, relatórios sobre inventário de hardware/software, uso de dispositivos e aplicativos da Web, postura de segurança de dispositivos, status de aplicativos críticos, descoberta de dados de dispositivos endpoint e geolocalização) com funções críticas de controle, tais como limpeza remota de arquivos e apagamento de dados, congelamento de dispositivos sob demanda quando em risco, envio de mensagens ao usuário final, bem como cercos de proteção e alertas.

Você pode controlar todo seu conjunto de dispositivos a partir do console Absolute® baseado em nuvem ou através do aplicativo Absolute Mobile, que são parte da **Plataforma Absolute**. Aproveitando a conexão sempre ativa proporcionada pela tecnologia Absolute Persistence®, integrada em mais de 600 milhões de dispositivos dos principais fabricantes de sistemas, você pode manter o controle de todos os seus dispositivos endpoint. Toda vez que um usuário tenta alterá-lo ou removê-lo, a Absolute se reinstala, garantindo uma conexão segura e sempre ativa entre a Plataforma Absoluta e o dispositivo endpoint.

Su Salva-vidas para proteger os dispositivos em risco

A Absolute Control fornece a salva-vidas para proteger dispositivos e dados em risco, mesmo que estejam fora de sua rede corporativa.

- Defina os cercos de proteção. Defina cercos de proteção e temporizadores para acionar automaticamente as ações sempre que um dispositivo sair de uma zona "segura" ou ficar offline, bem como para detectar movimento não autorizado do dispositivo.
- Excluir seletivamente os arquivos do dispositivo. Limpar remotamente arquivos específicos de dispositivos em risco, executar ações de fim de vida útil e agilizar a desativação de dispositivos remotos.
- Limpeza de dados do dispositivo. Limpar remotamente dados de dispositivos endpoint de risco e executar remediação de mídia no fim da vida útil apagando remotamente o disco rígido de um dispositivo e gerando certificados de conformidade.
- Congelamento remoto de dispositivos em risco. Congelar dispositivos em risco sob demanda ou conforme um cronograma e evitar a propagação de uma infecção por ransomware ou preservar provas para fins de litígio.
- Enviar mensagens seguras aos usuários. Informar os usuários de forma oportuna e coordenada, exibindo mensagens importantes na tela de seus dispositivos e solicitar feedback.
- Proteção Remota de Firmware*. Ativar o controle de firmware de supervisão à distância e em escala, e minimizar o risco de ataques de firmware.

*Somente dispositivos Lenovo

Procurando Mais Ferramentas?

Enquanto a Absolute Control lhe oferece uma salva-vidas para proteger dispositivos e dados em risco, o portfólio de produtos Absolute Secure Endpoint lhe oferece opções adicionais de nível de serviço que podem atender a outras necessidades comerciais. Consulte Absolute Visibility e Absolute ResilienceTM para determinar qual nível de serviço é o mais adequado para você.

Absolute Visibility

Fonte de verdade para dispositivo e aplicação de dispositivos e aplicações.

O que está incluso?

- ✓ Status do dispositivo
- ✓ Postura de segurança
- ✓ Status da aplicação
- ✓ Utilização do dispositivo
- ✓ Geolocalização
- ✓ Uso de Aplicativos da Web
- ✓ Endpoint Data Discovery

Absolute Control

Salva-vidas para proteger os dispositivos e dados em risco.

Todas as características do Visibility, mais:

- ✓ Cercos de proteção
- ✓ Congelamento do dispositivo
- ✓ Limpeza de arquivos
- ✓ Limpeza do dispositivo
- ✓ Mensagens do usuário final
- ✓ Proteção Remota de Firmware

COMPLEMENTOS DE ABSOLUTE CONTROL

- ✓ Absolute Insights for Endpoints
  Capacite seus administradores com informações sobre dispositivos e tendências de segurança para toda a sua frota.
- ✓ Serviço de Recuperação de Dispositivos Perdidos da Absolute
  Uma equipe de especialistas em recuperação absoluta rastreia, localiza e protege os dispositivos e até mesmo entra em contato com os usuários para recuperá-los.
- ✓ Absolute Ransomware Response para Control
  Aumente suas capacidades de controle para obter uma vantagem na preparação e recuperação do ransomware em todo o seu conjunto de dispositivos.

PACOTES DE PRODUTOS RELACIONADOS

- ✓ Absolute Control para Chromebooks
  Recursos projetados especificamente para usuários de Chromebooks.

MAIS POTÊNCIA

Absolute Resilience

Oferece uma auto-reparação de aplicação e uma resposta confiante ao risco.

Todas as características do Control, mais:

- ✓ Aplicação Resilience
- ✓ Biblioteca de Scripts de Remediação
- ✓ Investigações e recuperação de dispositivos perdidos/roubados

Veja Recursos Relacionados

Proposta de Preço ITEM 3 - POSITIVO TECNOLOGIA (1661786) SEI 2025.001317 / pg. 1253



/ABSOLUTE®

Com a confiança de mais de 18.000 clientes, a Absolute Software é o único fornecedor de soluções de segurança inteligentes e auto-reparáveis. Integrado em mais de 600 milhões de dispositivos, a Absolute é a única plataforma que oferece uma conexão digital sempre ativa que aplica de forma inteligente e dinâmica a visibilidade, controle e capacidade de auto-reparacão aos dispositivos endpoint, aplicações e conexões de rede, ajudando os clientes a fortalecer a resiliência cibernética diante da crescente ameaça de ransomware e ataques maliciosos.

Solicite uma Demonstração

Nasdaq | ABST TSX | ABST

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June 30, 2025

DECLARATION

Absolute Software Corporation, registered with the Tax ID under number 98-1186081, located at 980 Howe Street, Suite 1400, Vancouver, British Columbia V6Z 0C8, declares for all due purposes that the Control and Monitoring Software meets the following technical specifications:

- *Control: Remote locking and unlocking functions.*
- *Inventory: Detailed management of equipment hardware and software.*
- *Traceability: Integrated geolocation capabilities.*

The control and monitoring software has persistence functionality designed to allow the client to preserve the software and its functionalities, even after total data loss or hard drive formatting, using firmware residency technology.

The equipment control and monitoring interface is cloud-based, without the need for additional licenses beyond those assigned to each piece of equipment;

The dedicated software license will be made available upon payment to the authorized reseller by the CONTRACTING PARTY.

Signed by:
964F101EA6B24A3...

John Herrema
Chief Product Officer

980 Howe Street, #1400
Vancouver, BC V6Z 0C8
T: 1-604-730-9851 / 1-800-220-0733 F: 1-604-730-2621
absolute.com

POSITIVO DIAG 2.0 – FICHA TÉCNICA

DESCRIÇÃO: O **Positivo Diag 2.0** é uma ferramenta de diagnóstico abrangente integrada diretamente ao firmware UEFI (Unified Extensible Firmware Interface) dos dispositivos. Projetado para oferecer diagnósticos rápidos e confiáveis, sendo executado diretamente a partir da Flash ROM da BIOS, sem depender de sistemas operacionais, drives ou dispositivos de armazenamento externos.

FUNCIONALIDADES PRINCIPAIS: O software permite a análise completa do hardware, garantindo diagnósticos independentes do estado dos dispositivos de armazenamento do computador. Sua interface gráfica intuitiva possibilita a realização de testes básicos e avançados de forma acessível. Fornece informações detalhadas sobre a configuração do sistema, tais como: Fabricante e modelo do equipamento; Data e versão da BIOS (firmware) do equipamento; Marca, modelo e clock de funcionamento (em GHz) do processador, capacidade de memória RAM e sua velocidade; Modelo, capacidade, versão do firmware e número de série dos dispositivos de armazenamento do sistema (se houver); Nome, tipo e informações adicionais de dispositivos USB conectados; Informações de dispositivos PCI conectados.

REQUISITOS DO SISTEMA:

- Suporte a UEFI (Unified Extensible Firmware Interface).
- Processadores baseados na arquitetura x86 ou x64.
- Teclado e/ou mouse funcional.
- Tela compatível com saída gráfica padrão.

MÉTODOS DE INICIALIZAÇÃO:

- Pela tecla de atalho F11 durante o POST (momento de inicialização da máquina).
- Diretamente no Setup da BIOS, dentro da aba “Salvar & Sair”.

COMPONENTES DOS TESTES E RESUMO:

- **Informações do Sistema:** Verifica e exibe informações como: Nome, modelo, número de série, fabricante, versão e data da BIOS e especificações dos componentes de hardware.
- **Teste de Sistema:** Realiza um teste geral em todos os componentes. Dispensando apenas os testes que necessitam da interação com o usuário, são eles: Teclado, mouse e USB.
- **Processador (CPU):** Verifica a integridade e desempenho da CPU, incluindo autoteste interno (BIST), estresse dos núcleos, monitoramento de temperatura, testes de criptografia e cálculos matemáticos.
- **Memória RAM:** Avalia a estabilidade e integridade da memória RAM por meio de operações de estresse multicore, verificações de endereçamento e operações relacionadas a padrões de dados.
- **Dispositivos de Armazenamento:** Realiza verificações nos dispositivos de armazenamento conectados, incluindo teste de superfície não destrutivo e testes de S.M.A.R.T (SATA, NVMe e eMMC).
- **Dispositivos PCI:** Verifica os dispositivos PCI conectados ao sistema, validando informações e funcionalidade, detectando possíveis problemas de comunicação e compatibilidade.
- **Conectores USB:** Testa e exibe informações dos conectores USB disponíveis, verificando se os dispositivos foram reconhecidos corretamente (o procedimento requer a interação do usuário).
- **Capacidade de Exibição Gráfica (Vídeo):** Avalia a capacidade de exibição gráfica do sistema, identificando diferentes resoluções e qualidade visual. É solicitado ao usuário inspecionar a tela e relatar qualquer irregularidade visual.
- **Conexão de Rede (Ethernet):** Valida a conexão de rede cabeada do equipamento.
- **Dispositivos de Conectividade Sem Fio:** Verifica a presença e especificações dos dispositivos de conectividade sem fio no sistema (Placa Wi-Fi e dispositivos Bluetooth).
- **Teclado:** Verifica o funcionamento do teclado, solicitando ao usuário que pressione todas as teclas presentes no dispositivo.
- **Mouse:** Verifica o funcionamento dos botões e a capacidade de movimento do mouse solicitando a interação com o usuário.
- **Áudio:** Avalia a presença e funcionamento de controladores, codecs de áudio e drivers de saída de som, como alto-falantes internos ou externos. É solicitado ao usuário uma confirmação da percepção do sinal sonoro apresentado.
- **Bateria (exclusivo para notebooks):** Analisa as especificações e o estado atual da bateria.
- **Térmico:** verifica as temperaturas dos componentes principais do sistema, como a CPU.
- **Sistema de Refrigeração:** Avalia o desempenho das ventoinhas do sistema.
- **Fonte de Alimentação (exclusivo para desktops):** Verifica o funcionamento da fonte de alimentação, garantindo que ela esteja fornecendo energia de forma estável.
- **TPM:** Exibe as principais informações do dispositivo, verifica o status das hierarquias e realiza um autoteste.
- **Boot do SO:** Verifica o boot path do sistema operacional, avalia a integridade do bootloader e suas dependências.

VISÃO GERAL DO SOFTWARE:



ERROS COMUNS E SOLUÇÕES:

Consulte a **Tabela de Códigos de Erros** disponível no Manual do Usuário, a tabela possui códigos de erro do programa, acompanhados de suas respectivas descrições. Caso um erro ocorra, consulte o código correspondente para entender sua causa e possíveis ações corretivas.

Unified Extensible Firmware Interface Forum

Menu

Home > Membership > Membership List

Membership List

The UEFI Forum community of members is represented by industry-leading OEMs, IHVs, chip manufactures, BIOS and firmware vendors and operating system vendors.

Promoters

AMD

American Megatrends, Inc.

Apple Inc.

ARM Limited

Dell

Hewlett Packard Enterprise

HP, Inc.

Insyde Software

Intel

Lenovo

Microsoft

Phoenix Technologies

Contributors

Absolute Software Corporation

Alibaba (China) Co., Ltd.

Ampere Computing LLC

BELMICRO TECNOLOGIA S/A

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Broadcom Corporation

Canonical Limited

Carnegie Mellon University (SEI)

Cirrus Logic, Inc.

Cisco

Cloud Software Group

Cumulus Networks Inc. (NVIDIA)

Cybercom Industria E Comercio de Produtos Eletronico LTDA

Daten Tecnologia

Douyin Vision (Beijing) Co., Ltd. (Beijing Bytedance Network Technology Ltd.)

Dynabook Inc

Fagundez Distribuição Ltda.

Google

Huawei Technologies Co., Ltd

IBM

ICC Intelligent Platforms GmbH

IEIT Systems Co., Ltd. (Inspur)

Linaro Ltd.

Login Informatica Com. Repr. LTDA

Loongson Technology Corporation Limited

Marvell Asia Pte. Ltd.

Montage Technology

Multilaser Industrial S/A

Nanjing Byosoft Co., Ltd.

NVIDIA

Oracle America, Inc.

Positivo Tecnologia S.A.

Qualcomm Inc.

Realtek Semiconductor Corp.

Red Hat, Inc.

Rivos Inc.

SIFIVE, INC.

SUPER MICRO Computer, Inc.

SUSE LLC

Synaptics (DisplayLink (UK) Limited)

The Linux Foundation

The MITRE Corporation

Ventana Micro Systems Inc.

Western Digital Technologies

xFusion Digital Technologies Co., Ltd.

Zoom Tecnologia Ltda.

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Adopters

3MD dba Hard Drives NW

3MDEB Embedded Systems Consulting

9elements GmbH

A.D. Nieman & Associates, LLC

A.I.Corporation/BIOS Group

A.I.Corporation/BIOS Group

AAEON Technology Inc.

ACAS Technologies, Inc.

Accurate Always Inc.

Accusys, Inc.

Acer Inc.

Adaptec, Inc.

Ademco, Inc DBA ADI Global Distribution

ads-tech GmbH

Advantech Co., Ltd.

AGN Group Suprimentos

AGS Sundyne Technologies Pvt. Ltd.

Airdesk Ltd.

Alcor Micro Corp.

Allion Labs, Inc.

Alpha Tecnologia e Inovação,

ALTELL Ltd.

AlterSciences

American Arium

AMOI Electronics Co., Ltd.

Anna University - College of Engineering

Apricorn

Arca Noae, LLC

Arista Corp.

Arquimedes Automacao E Informatica LTDA.

ASSET InterTech, Inc.

AssurAware, Inc.

ASUSTeK COMPUTER INC.

Atlona Inc.

ATTO Technology

Attobotics

AuthenTrend Technology Inc.

Authorizer Technologies, Inc.

Aver Networks Corp.

Avery Design Systems

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Avid Technology, Inc.

Axiom Electronics, LLC

Axiomtek Co., Ltd.

Balance Software Corp.

Basemark Oy

Battelle Memorial Institute, Pacific Northwest Division

BCM Advanced Research

BedRock Systems, Inc.

Beijing AnHeng SecoTech Information Technology Co., Ltd.

Bergamo & Cavalcante Informática Ltda

BINARLY Inc.

BiTMICRO Networks Inc.

Booz Allen Hamilton

Brown's Operating System Services Limited

BSQUARE Corporation

CalDigit, Inc.

Calxeda, Inc.

Canon Inc.

Captec Ltd.

Centerm Information Co., Ltd.

CenterTools Software GmbH

Central South University

Check Point Software

Chelsio Communications, Inc.

China Greatwall Computer Shenzhen Co., Ltd.

CHUNGHSIN INDUSTRY GROUP

CircleSoft LLC

Circuitco

Cisc Systems

Citrix Systems, Inc.

Cix Technology (Shanghai) Co., Ltd.

Computer Task Group

Concordia SA

Concurrent Technologies Plc

congatec A.G.

conpal GmbH

coresystems GmbH

Courtyard Electronics Ltd.

Cray, Inc.

CrossInfo Architects

Cryptomill Technologies Ltd.

CSWL, Inc.

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Dawning Information Industry (Beijing) Corp., Ltd. (Sugon)

Def-Logix, Inc.

Denali Software

DeviceVM, Inc.

Diablo Technologies, Inc.

Dialogue Technology Corp.

Diskeeper Corporation

Dot Hill

DreamBig Semiconductor Inc.

Eclypsium, Inc

Egis Technology Inc.

Elite Group Computer Systems Co., Ltd.

EliteBytes Limited

Eltan B.V.

Embedded Now, Inc

Embedded Research Solutions

emBoot Inc.

Emerson Network Power, Embedded Computing

EMUTEX LTD.

Enmotus, Inc.

EPEAK Studio Ltd.

Etegro Technologies

Eurosoft (UK) Ltd.

EVOC

ExpressLuck Industrial Ltd.

Extreme Engineering Solutions, Inc.

F5 Networks, Inc.

Fastwel Group Co., Ltd.

Federal University of Ceara, Brazil

Fermilab

FernUniversität in Hagen

FirmTek, LLC

Flextronics Instituto de Tecnologia

focian Computer

Founder Technology Group Corp.

Framework Computer LLC

Freescale Semiconductor, Inc.

Fujitsu Ltd.

Gdai Industria Comercio & Eletronicos (Intelligency)

Gemalto SA

General Dynamics Canada

Genesi USA Inc.

Gigabyte United Inc.

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GIGAPC

GIT Japan Inc.

Glacier Peak Technology, LLC

Grain Media, Inc.

Greencroft Code

Guidance Software, Inc.

HighPoint Technologies, Inc.

Hitachi, Ltd.

Horus Serviços de Tecnologia LTDA

Houter Brasil Eireli

HTC Corporation

Hunan New Cloudnet Technology Co., Ltd.

HXT Semitech

IATECAM

ICP Electronics, Inc.

Inforlandia, S.A.

InfoTeCS

Infrant Technologies, Inc.

Inphi Corp.

Institute of Physics, Academia Sinica

Integrated Device Technology Inc.

Intellico, LLC

Intelligency

Intelligraphics, Inc.

Inventec Corporation

Inventec Electronic (Tianjin) Co., Ltd.

InvoVision Optoelectronics (Kunshan) Co., Ltd.

IRCONA

ITSC Library

Japan Digital Laboratory Co., Ltd.

JARI

Jetway Information Security Industry Co., Ltd.

KingTrust Systems Ltd.

Kioxia Corporation

Konsulko Group

Kontron Embedded Modules GmbH

Kraftway Corporation PLC

Kuhrman Technology Solutions LLC

LCC Rubinteh

LCFC

LG Electronics

LI Informática e Serviços LTDA

Lockheed Martin Corporation

Lontium Semiconductor Corporation

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Lower Crossing, Inc.

LucidLogix

Matrixed Reality Technology Co., Ltd.

Matrox Graphics Inc.

MBDA UK Ltd.

MBM Tecnologia e Industria de Informatica LTDA

MediaTek Inc.

MediCapture, Inc.

Mensys B.V.

Mercury Computer Systems

Micro-Star Int'l Co., Ltd

Microchip Technology

Micron Technology, Inc.

Microsemi Corporation

Mitrastar Technology Corp.

MokaFive

Moore Threads Technology Co., Ltd.

Mossbit Technologies

Multibeam Nanofab (Carleton University)

Myricom, Inc.

National Instruments Corporation

National Technical Systems

Naval Postgraduate School

NEC Personal Products Ltd.

Neterion, Inc.

Netlist Inc.

Network 2000 Inc.

NetXen Inc.

Neusoft

New H3C Technologies Co., Ltd.

Newport Enterprises Inc.

Nextiva

Nokia

NOLO Co., Ltd.

NTI Corporation

NVELO, Inc.

NXP B.V,

OpenMars Development LLC

Order N Development, LLC

Orion Technologies, LLC

OSBASE, LLC

Panasonic Connect Co., Ltd.

Parallels International GmbH

Pegatron Corporation

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Peppercon AG

PGP Corporation

PixelNext Inc.

PLX Technology, Inc.

Portlock

PQURE Technology AB

Proformatique

Quanta Computer Inc.

Radisys Corporation

Red Flag Software Co., Ltd.

Renesas Electronics Corporation

RIVAI Technologies (Shenzhen) Co., Ltd.

RPA RusBITech

rubbersoft.com

Ruijie Networks

Sage-Microelectronics

Samsung Electronics Co., Ltd.

Sandia National Laboratories

SanDisk Corporation

Sanmina Corporation d/b/a Viking Technology

Schweitzer Engineering Laboratories, Inc.

SDL Eletro Eletronica Ltda - EPP

Seagate Technology LLC

SecurStar GmbH

SEMP TOSHIBA INFORMATICA LTDA

Sensics, Inc.

ServerEngines Corp.

Shandong University

Shanghai Advanced Research Institute

Shanghai IP3 Technology Co., Ltd.

Silicon Image, Inc.

Silicon Integrated Systems Corp.

Sinces Tecnologia Coercio & Services - EXIX

SinoSun Technology, Ltd.

SoftIron, Inc.

softKVM LLC

Solarflare Communications Inc.

Spirent Communications

Sprezzatech

SSWW

ST-Ericsson SA

STEC, Inc.

Stonewood Electronics Ltd.

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Stream Labs

StreamView GmbH (Thomson)

Super Future Equities, Inc.

SYBERA GmbH

Symantec Corporation

System Fabric Works

System Garden Ltd.

System Industrie electronic GmbH

TCORP

Terascala, Inc.

Themis Computer, Inc.

ThinkIT Data Solutions

TimeLab Corporation

Tokyo Electron Device Ltd.

Top Victory Investments

Toshiba Samsung Storage Technology Korea Corporation

Trend Micro

Tsinghua Tongfang Co., Ltd.

Tuxera Inc.

TYA

Ubiquitous AI Corporation

ULINK Technology, Inc.

UNH InterOperability Laboratory

Unicompute Technology Co., Ltd

UniFabriX Ltd.

Uninter Informatica S/A

Unisys Corporation

University of California, Davis

UPEK, Inc.

US Technology Resources (M) SDN. BHD.

V&G Information System Co., Ltd.

VAIO Corporation

Validity Sensors

Venetex Corp

Vestel Dijital Yretim Sanayi A. S.

VIA Alliance Semiconductor Co., Ltd.

VIA Technologies, Inc.

VMware, Inc.

VNPT Technology

VT Miltope

Wacom Technology

Wave Systems Corp.

WinMagic Inc.

Winsiders Seminars & Solutions, Inc.

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WinSystems, Inc.

Wiwynn Corporation

Wuhan University

Wyse Technology

XGI Technology Inc.

Xi'an Saming Technology Co., Ltd.

Xi3 Corporation

Xitrix Computer Corporation

Xsense Connectivity Inc.

ZD Technology (Beijing) Co., Ltd. (Kunlun Technology (Beijing) Co., Ltd)

Zhejiang Dahua Technology Co., Ltd.

ZNYX Networks

Individual Adopters

Alex Kunovszky

Archer Pergande

Barry Gian James

Ben Lee Hughes

Benson Lin

Canh Kha

Cheng-Lung Chang

Connor Horman

Connor Wood

David Boyd

Dharmesh Tarapore

Don MacKellar

Ed Brundage

Elika S. Kohen

Ezri Buerger

Gail B. Keown

George Fulk

Gregory Havenga

Howard Peng

Ing-chao Lin

Jake Lehotsky

James Bottomley

Jason Christopher Stone

Jeong Kim

John A. Newton

John Blacker

John David Datuin

John M. Hare

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Jonathan J. Willemin

Joseph LeGarreta

Juan Pablo Black Romero

Justin Loo

Justin Sligh

Karl O. Van Leuven IV

Kushal Koolwal

Lee Fisher

Liqiang Ni

Lucien Pullen

Martin Treadwell

Marvin Häuser

Michael Johnston

Michael Neaves

Michael Zimmermann

MUHAMMAD AYMAN BIN MUHAMMAD IDZMI

Patrick J. Kennedy

Paulo Henrique L. Amorim

Pete Batard

Phooen Sonpooshi

Piryanshu Pareek

Priyanshu Pareek

Robert Jandacek

Robert Johnston

Rocky Wang

Roger Bertoldi

Roger Thompson

Seppe Sol

Shannon Lewis

Shawn M. Pedersen

VALETTE Teddy

Vincent du Lau

Wang Qiang

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ZongQi Li

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Youku

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Windows Compatible Products List

Welcome to the Windows Compatible Products List! Windows Hardware Compatibility means that a manufacturer has rigorously tested their hardware and met all of Microsoft's compatibility requirements. Use the search below to find Compatible products and download a Verification Report for any OS.

For Server products, we recommend you use the Windows Server Catalog as it is designed to give you more detailed and Server specific information.

Marketing/Product Name*	Company Name	D & U Status	Select Operating System
N8450	Search f	All	All Opera

Search

Product Name	D/U Status	Company	Certifications	Verification Report
Positivo Master N8450	Not Universal Not Declarative	Positivo Tecnologia SA	Certified for Microsoft Windows 11 Client family version 22H2, x64	Download Certification Report
Positivo Master N8450	Not Universal Not Declarative	Positivo Tecnologia SA	Certified for Microsoft Windows 11 Client family version 24H2, x64	Download Certification Report

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Surface Laptop Go 3
Microsoft Copilot
AI in Windows
Explore Microsoft products
Windows 11 apps
Microsoft Store support
Returns
Order tracking
Certified Refurbished
Microsoft Store Promise
Flexible Payments
Microsoft Teams for Education
Microsoft 365 Education
How to buy for your school
Educator training and development
Deals for students and parents
AI for education
Microsoft Power Platform
Microsoft Teams
Microsoft 365 Copilot
Small Business
Support for AI marketplace apps
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Microsoft

Hardware certification report **Approved**

Private product ID:	**13907734486947735**
Shared product ID:	**401966739**
Submission ID:	**1152921505698355209**
Submission date:	**10/1/2024**
Completion date:	**10/1/2024**
Company:	**Positivo Tecnologia SA**
Product name:	**Positivo Master N8450**
Category:	**System**
Product type:	**Laptop**
Qualification level:	**Certified for Microsoft Windows 11 Client family version 24H2, x64**
Marketing name:	**Positivo Master N8450**

Microsoft Certified



← VOLTAR

Modelo Homologado

ID	Inserção	Distribuição / Kernel	Certificado QA	Especificações
181563	27/02/2025	Ubuntu 24.04 / Kernel: 6.11.0-17-generic	SIM	

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← VOLTAR

Detalhes do Hardware:

Tipo	Hardware
Chassis	Positivo Tecnologia S.A. Notebook
Processor	Intel Core Ultra 5 115U @ 4.2 GHz
Processor	Intel Core Ultra 5 125H @ 4.5 GHz
Processor	Intel Core Ultra 5 125U @ 4.3 GHz
Processor	Intel Core Ultra 5 135H @ 4.6 GHz

Tipo	Hardware
Processor	Intel Core Ultra 5 135U@ 4.4 GHz
Processor	Intel Core Ultra 7 155H @ 4.8 GHz
Processor	Intel Core Ultra 7 155U @ 4.8 GHz
Processor	Intel Core Ultra 7 165H @ 5.0 GHz
Processor	Intel Core Ultra 7 165U @ 4.9 GHz
Base board	Positivo Tecnologia S.A. POS-SIPWOAA
Storage	Goldkey NSP095P3451-H06Q2J0 SSD M.2 / 512GB/ NVMe / Gen3
Storage	Goldkey NSP475P4456-H06D2J0 SSD M.2 / 256GB / NVMe / Gen4
Storage	Adata SM2P41C8-001TC5 SSD M.2 /1024GB / NVMe
Storage	Adata SM2P41C8-256GC5 SSD M.2 / 256GB / NVMe
Storage	Adata SM2P41C8-512GC5 SSD M.2 / 512GB / NVMe
Storage	Solid State Storage Technology Corp SSD 256GB NVMe M2 CL4-8D256
Storage	Solid State Storage Technology Corp SSD 512GB NVME M2 CL4-8D512
Storage	Solid State Storage Technology Corp SSD M.2 / 1TB / NVMe -CL4-8D1024
Video card	Intel Iris® Xe Graphics
Video card	Intel UHD Graphics Family
Network	Intel I219LM 10/100/1000 Mbps, Gigabyte Ethernet
Network	Intel i219LM 1G Base-TX Ethernet LAN for vPro
Network	Intel i219V 10/100/1000 Mbps, Gigabyte Ethernet
Network	Intel I225LM 10/100/1000 Mbps, Gigabyte Ethernet
Network	Intel i226LM 2.5G Base-TX Ethernet LAN for vPro

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Tipo	Hardware
Network	Intel WI-FI 6 AX201
Network	Intel Wi-Fi 6E AX211
Sound card	Realtek ALC233 HD Audio
Sound card	Realtek ALC269Q-VB6-CG High Definition

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Certificado de Conformidade

Certificate of Compliance

Nº: OFF 2484-23-19

Data de Emissão: 07/02/2025
Date of Issue

Valido até: 06/02/2028
Valid Term

Fornecedor (Solicitante):
Supplier (Applicant)
Positivo Tecnologia S.A.
Rua Ásia, S/N, Iguape, Ilhéus – BA – Brasil, CEP: 45658-464
CNPJ: 81.243.735/0009-03

Fabricante:
Manufacturer
Positivo Tecnologia S.A.
Rua Ásia, S/N, Iguape, Ilhéus – BA – Brasil, CEP: 45658-464
CNPJ: 81.243.735/0009-03

Produto:
Product
Computador Portátil – Notebook

Marca:
Brand
Positivo

Modelo:
Model
Positivo Master N6440; Positivo Master N8440; Positivo Master N6445; Positivo Master N6450 e Positivo Master N8450.

Família:
Family
Computador Portátil – Notebook

Descrição:
Description
Conforme Anexo A - Relação de Componentes Críticos.

Código de Barras:
Barcode
N/A

Marca concedida
O uso da marca de Certificação da T&A Brasil é limitado às condições estabelecidas no contrato. A validade deste Certificado está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da T&A Brasil previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro. Este certificado é de uso exclusivo do Cliente da T&A Brasil e é fornecido de acordo com o contrato de certificação entre T&A Brasil e seu cliente. A responsabilidade da T&A Brasil está limitada aos termos e condições do contrato. A T&A Brasil não assume qualquer responsabilidade, salvo por parte do cliente, de acordo com o contrato, por perda, despesa ou dano causado pela utilização deste Certificado e/ou da marca. Apenas o cliente está autorizado a permitir a cópia ou distribuição deste Certificado. Para mais informações, contate: e-mail: tea@teabrasil.com.br ou Telefone: +55 11 3509-3507 – Avenida Industrial, 780 – 12º Andar – Sala 1208 e 1209 – Jardim Park Business – Santo André – CEP 09080-510 – Bairro Campestre.

Certificado de Conformidade válido somente acompanhado das páginas de 1 à 7

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Certificado de Conformidade

Certificate of Compliance

Nº: OFF 2484-23-19

Data de Emissão: 07/02/2025
Date of Issue

Valido até: 06/02/2028
Valid Term

Normas/Portarias:
Standards/Ordinances

Norma/*Ordinance*	**Ano de Publicação**/ *Publication' Year*
Portaria Inmetro nº 304	06 de novembro de 2023
IEC 62368-1	2023
CISPR 22	2008
CISPR 24	2010
IEC 61000-3-2	2014
IEC 61000-3-3	2013
IEC 61000-4-2	2008
IEC 61000-4-3	2010
IEC 61000-4-4	2012
IEC 61000-4-5	2014
IEC 61000-4-6	2013
IEC 61000-4-8	2009
IEC 61000-4-11	2020

Modelo de Certificação: Modelo 05
Certification model

Data da Auditoria: **26/09/2024**
Date of the Audit

Laboratório de Ensaios: *Testing Laboratory*	**Relatório de Ensaios nº:** *Report N°*	**Data de Emissão:** *Date of Issue*
Instituto de Pesquisas Eldorado – Laboratório de Ensaios e Testes	LET-ENE-RE 2395-12328-01 – C-01.00	22/02/2023
	LET-ENE-RE 2395-13153-01 – C-01.00	27/07/2023
	LET-ENE-RE 2395-15701-01 – C-01.00	26/09/2024
	LET-EMC-RE 2395-16081-01 – C-01.00	19/01/2025
	LET-EMC-RE 2395-16081-02 – C-01.00	19/01/2025
	LET-EMC-RE 2395-16081-03 – C-01.00	19/01/2025
	LET-EMC-RE 2395-16081-04 – C-01.00	19/01/2025
TÜV Rheinland Taiwan Ltd.	CN23JUFM 001	27/09/2023
TÜV Rheinland (Shenzhen) Co., Ltd.	CN23OCB5 001	14/11/2023

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TÜV Rheinland (Guangdong) Ltd.	CN245LUG 001	06/11/2024
	CN24OCHI 001	08/11/2024
SGS do Brasil Ltda. – Laboratório E&E	BRES241200029101	07/01/2025
	BRES241200029201	07/01/2025
	BRES241200029301	07/01/2025
	BRES241200029401	07/01/2025
	BRSS241200146702	29/01/2025
	BRSS241200146801	28/01/2025
	BRSS241200146901	28/01/2025
	BRSS241200147002	29/01/2025
	BREI250600037601	27/06/2025
	BREI250600037701	27/06/2025
	BREI250600038701	27/06/2025
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou	085-250183201-000	20/03/2025
TÜV Rheinland Taiwan Ltd.	CN22M67K 003	31/08/2023
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES250200119001	27/02/2025

Data de Revisão: ***Review date***	**Justificativa de Revisão:** ***Review reason***
09/05/2025	Inclusão do componente Fonte de Alimentação modelos Palermsh3 e HKA06519034-6K e relatórios de ensaio 085-250183201-000 e SZES250200119001.
30/06/2025	Inclusão do componente Fonte de Alimentação modelos PI-ADAP090-A(02), PI-ADAP090-L(01) e PI-ADAP090-F(03).

Nota: ***Note***
A validade deste Certificado está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações do OAC e previstas no RAC específico da Portaria n° 304 de 2023".
Lista de componentes críticos consta no Anexo A, páginas 4 a 7.
"Certificado de Conformidade válido somente acompanhado de todas as suas páginas".

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ALEX SANDRO MENDES DE OLIVEIRA:40180876830
Santo André-SP

Alex Oliveira
Gerente Geral

"A Cgcre é signatária do Acordo de Reconhecimento Multilateral do IAF para Certificação de Produtos"

Anexo A – Relação de Componentes Críticos

Componente	Fabricante	Modelo
Fonte de Alimentação	FSP	CHARGER.20V 65W.3.25A. FSP065-A1BR3. USB 3.0 TYPE C. LEAD-FREE.FSP
	Liteon	RGER.20V 65W.3.25A.PA-1650-58AD. USB 3.0 TYPE C. LEADFREE.LITEON
	Positivo	FSP065-A1BR3 - 100-240V 50-60HZ 1.7A / 20V 65W
		PA-1650-58 - 100-240V 50-60HZ 1.6A / 20V 65W
		PA-1650-58AD/ 65W p- type C
		PA-1650-90B1 / 65W / 4mm C/CABO - plug
		PA-1650-90 / 65W / 4mm C/CABO – plug
		FSP065-A1BR3 / 65W p- type C
		Palermsh3 - 100-240V 50/60Hz 1.6A / 19V 3.42A
		HKA06519034-6K - 100-240V 50/60Hz 1.5A / 19V 3.42A

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		PI-ADAP090-A(02)
		PI-ADAP090-L(01)
		PI-ADAP090-F(03)
	SUNWARD	19V 64.98W.3.42A..AD65ABM190342..OD5.5mm.....LEAD-FREE
	JHD ELETRONICS	JHD-AD066C6-190342BA-A
Ventilador	GOODWAY	FAN SET. 65.5*62*5mm. W/CABLE. CF40CM. LEAD-FREE. WINMA
Bateria	BMS	BATTERY.LI.11.4V.CF40CM-3S5000-B1G1. 5000mAh. W/CABLE. LEAD-FREE.BMS
		BATTERY.LI.11.4V.CF40CM-3S3950-B1G1. 3950mAh. W/CABLE. LEAD-FREE.BMS
	Taimatsu	BATTERY.LI.11.4V.CF40CM-3S4000-T1V1. 4000mAh. W/CABLE. LEAD-FREE.TAIMATSU
	Positivo	CF40CM-3S5000-B1G1 - 11.4Vdc - 5000mAH/57Wh
		CF40CM-3S3950-B1G1 - 11.4Vdc - 3950mAH/45Wh
		CF40CM-3S4000-T1V1 - 11.4Vdc - 4000mAH/45Wh
		DN50-45 / 546781-3S / 3948 mAh, 45Wh
		DN50-57 / 556781-3S / 4936mAh, 57Wh
	GANGFENG	DN50-57 / 556781-3S / 4936mAh, 57Wh

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Data de Emissão: *Date of Issue* 07/02/2025

Valido até: *Valid Term* 06/02/2028

LCD	BOE	LCD.HD.14.1366*768.0.22629mm. ANTI-GLARE TYPE.NT140WHM-N44 V8.0.W/LED. HF.LEAD-FREE.BOE
		LCD.HD.14.1920*1080.0.161mm. ANTI-GLARE TYPE.NV140FHMN48 V8.2.IPS,W/LED...HF.LEAD-FREE.BOE
		NT140WHM-N44 1366 X 768
		QV140FHM-N48 1920 x 1080
		FHD_TN_1920*1080_315.81*197.45(W/ PCB)*3.0mm max_AA309.312*173.988mm_220_EDP1.2_BOE_NT140FHM-N44 V8.1__BOE
		FHD.15.6.1920*1080.0.17925mm....ANTI-GLARE TYPE.NV156FHM-N48 V8.2.250nits,W/LED...HF.LEAD-FREE.BO
		NT140WHM-N49
		NV140FHM-N69 / Panel_14'_Anti-Glare_IPS_1920*1080_315.81*195.57(W/ PCB)*3.0mm
		NV140FHM-N48-894A
		NV140WUM-N44 V8.0
		NE140WUM-N68
		NE140WUM-N66
	Innolux	N140HCA-EAC 1920 X 1080
		FHD.15.6.1920*1080.0.17925mm....ANTI-GLARE TYPE.N156HCA-EAB.212nits,W/LED....LEAD-FREE.INNOLUX
		N140JLR-GT1

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	HEHUI	EE00QBA62.A
DC FAN	APHEX	B85D5HA21G2 4500±15% RPM
	Jiangsu jiazhirui electronic technology	BF095A05PS0235 4200±10%rpm
	WINMA ELETRONICS	EFC-76050V1-1AH
	HR LIMITED CO LTD	BF095A05P 5VDC, 0.5A
	YINGFAN	R.FN05-A-DT5-SH4-GP2
Placa Mãe	Positivo	DN50/DN50E/DN50F
		ARN50
		POS-SIPWOAA
SSD	Intercambiável	SSD de até 1TB, SATA III, AHCI, M.2 2280 e SSD de até 1TB, PCIex4, NVMe, M.2 2280
		"SSD de até 1 TB, SATA III, AHCI, M.2 2280 SSD de até 1 TB, PCIe Gen 3 x4, NVMe, M.2 2280 SSD de até 1 TB, PCIe Gen 4 x4, NVMe, M.2 2280"

***Nota: São considerados componentes intercambiáveis os SSDs de fabricantes e modelos que atendam as características definidas no campo DADOS TÉCNICOS deste certificado.**

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SERVIÇOS TECNOLÓGICOS & INOVAÇÃO

RELATÓRIO TÉCNICO



TESTES MECÂNICOS

Medição de nível de pressão sonora emitido por equipamento eletrônico, atuando sobre operador sentado

POSITIVO TECNOLOGIA S/A.

outubro/2024

lactec

Medição de nível de pressão sonora emitido por equipamento eletrônico, atuando sobre operador sentado

MASTER N8450

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TIPO DE DOCUMENTO
Relatório Técnico **Ref. Proposta 40047/2024_A14** **Centro de custo principal: 1422**

PROPONENTE
EMPRESA: POSITIVO TECNOLOGIA S/A **RESPONSÁVEL:** Fernando Tavares dos Santos Fone: (41) 3312-3684 **E-mail:** fernandot@positivo.com.br

EXECUTOR
EMPRESA: Instituto de Tecnologia para o Desenvolvimento – Lactec Av. Comendador Franco, nº 1341 | Jardim Botânico CEP 80215-090 | Curitiba – Paraná – Brasil **COORDENADOR DO SERVIÇO:** Claiton da Silva Mattos **E-mail:** claiton.mattos@lactec.com.br

EQUIPE DO SERVIÇO		
Empresa	Área/Função	Nome
LACTEC	Tecnologia em Integridade Estrutural Pesquisador - Eng. Mecânico, Me.	Claiton da Silva Mattos
LACTEC	Tecnologia em Integridade Estrutural Técnico Especialista I	Willian José Hoffman
POSITIVO TECNOLOGIA S/A	Proponente	Fernando Tavares dos Santos

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REVISÕES			
No.	Data	Alterado por	Resumo da alteração
00	**14/10/2024**	**Claiton da Silva Mattos**	**Criação/Elaboração do documento**
01	**15/10/2024**	**Claiton da Silva Mattos**	**Emissão do relatório**
02	**09/06/2025**	**Claiton da Silva Mattos**	**Alteração descrição memória, tabela 1**

RESUMO

Com o objetivo de se avaliar o nível de exposição de um operador, na posição sentada, ao ruído emitido por um computador tipo notebook, modelo MASTER N8450, produzido pela POSITIVO, foram realizadas medições com um sonômetro. As medições foram realizadas com o computador em modo repouso (*idle*) e em modo de sobrecarga (*stressed*). Os procedimentos foram baseados no código ECMA-74 19th *Edition/December* 2021 – *Measurement of Airborne Noise emitted by Information Technology and Telecommunications Equipment.*

PALAVRAS-CHAVE

- Positivo Tecnologia;
- Emissão Sonora;
- ECMA-74.

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1. OBJETIVO

Apresentar os resultados do ensaio de medição de nível de pressão sonora sobre o operador, na posição sentada, emitido pelo computador tipo notebook modelo MASTER N8450, produzido pela POSITIVO, bem como a descrição simplificada do método utilizado, equipamentos e condições gerais do ambiente no qual foi conduzido o ensaio.

2. DESCRIÇÃO DO ITEM AVALIADO

O equipamento submetido ao ensaio foi um computador tipo notebook, modelo MASTER N8450, produzido pela Positivo Tecnologia. Os ensaios foram conduzidos no dia 09/10/2024. Os componentes (configuração) do notebook são apresentados na Tabela 1.

Tabela 1 - Componentes do notebook

Processador	Intel Ultra 7 155H
RAM Instalada	DDR5
Tipo de sistema	x64
GPU instalada	Intel UHD Graphics

3. CONDIÇÕES AMBIENTAIS E CARACTERÍSTICAS DA SALA DE ENSAIO

Os ensaios foram conduzidos em um ambiente à temperatura de 15°C, umidade relativa de 94% e pressão de 1020 hPa.

O ambiente utilizado foi uma sala com paredes e porta isoladas acusticamente para atenuar ruídos externos.

4. REFERÊNCIAS

a) *ECMA-74 19th Edition/December 2021 – Measurement of Airborne Noise emitted by Information Technology and Telecommunications Equipment*
b) ABNT NBR 10152 – Acústica – Níveis de Pressão Sonora em ambientes internos a edificações
c) PAL Acoustics – *Sound Pressure Level Test Report* KH1_13_0050 – 2013-4-3
d) CPqD – DOT-04436.RE.01-A – Ensaios e medição de pressão sonora no operador sentado – 25/07-2018
e) ISO 7779:2010 (Third Edition) - Acoustics – *Measurement of airborne noise emitted by information technology and telecommunications equipment*
f) ISO 9296:1988(E) – *Acoustics – Declared noise emission values of computer and business equipment*

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5. ESQUEMA DE MONTAGEM

O notebook foi montado sobre uma mesa de teste, com a distância frontal da borda da mesa de 0,05 m e posicionado equidistante das bordas laterais. O ângulo de abertura da tela do notebook foi ajustado para permanecer em um plano normal à direção do eixo do microfone.

O microfone (decibelímetro) foi posicionado centralizado, em frente ao computador, a uma distância de 0,25 metros de sua aresta frontal, a uma altura de 1,20 m em relação ao chão, e inclinado 30° em relação ao plano horizontal (apontando para o computador).

6. INSTRUMENTO UTILIZADO E CONFIGURAÇÃO

As medições foram realizadas com um decibelímetro/sonômetro (analisador) da marca Brüel & Kjær, modelo (type) 2231, número de série 1791477, equipado com um microfone da marca G.R.A.S. modelo 40 AE, com número de série 43652. O certificado de calibração do equipamento é o Nº CBR 2300336, emitido em 17/05/2023, pela Spectris do Brasil.

O analisador foi configurado para realizar a medição de nível de pressão sonora equivalente, Leq, com um tempo de integração de 30 segundos, ponderação no tempo do tipo Fast e ponderação em frequência do tipo A.

Foram medidos os níveis equivalentes do ruído de fundo (ambiente sem o computador ligado), do computador ligado em condição de repouso (*idle*) e em condição de sobrecarga operacional (*stressed*). Para gerar a condição de sobrecarga, foi utilizado o software *BurnIn V10.2*, configurado para gerar uma condição de 100% de uso da CPU, da memória RAM, do disco rígido e do processador gráfico, como mostrado na Figura 1.



Figura 1 - Modo de sobrecarga operacional - BurnIn

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7. RESULTADOS

Os resultados obtidos no ensaio são apresentados na Tabela 2, a seguir:

Tabela 2 - Resultados das medições.

	Nível de pressão sonora equivalente - L_{Aeq} (dB)	**L_{Aeq} corrigido* (dB)**	**Média Aritmética L_{Aeq} corrigido (dB)**
Ruído de fundo	22,0	-	20,8
	19,5	-	
MASTER N8450 - *idle*	19,9	18,6	18,4
	19,4	18,1	
MASTER N8450 - *stress*	47,2	-	47,3
	47,3	-	

*Correção aplicável quando a diferença entre os níveis do ruído de fundo e o emitido pelo equipamento é inferior a 6 dB. De acordo com a norma ISO 11201, o fator de correção, neste caso, é de 1,3 dB.

8. COMENTÁRIOS

Os resultados se referem exclusivamente ao modelo testado, e nas condições de ensaio relatadas, e são para fins de planejamento, verificação de níveis de emissão ou para auxiliar na definição de valores declarados. Não devem ser confundidos com os valores declarados de emissão da fonte sonora.

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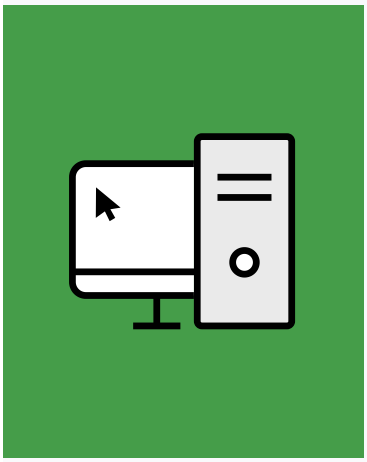
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MASTER N8450



COMPUTERS & DISPLAYS

Product Summary:

Product Type:	Notebook
Registered In:	Brazil
Manufacturer:	Positivo Tecnologia S.A.
EPEAT Tier:	Bronze
Registration Date:	2024-10-23
Product Status:	Active

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. Click here to see a list of the required criteria for this product category.

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This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at
EPEAT Bronze

Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at
EPEAT Silver

Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at
EPEAT Gold

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
+ 4.1 Substance Management	0 / 16
+ 4.2 Materials Selection	0 / 3
+ 4.4 Product longevity/life-cycle extension	0 / 4
+ 4.5 Energy Conservation	0 / 3

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+ 4.7 Packaging	0 / 2
+ 4.8 Life cycle assessment and carbon footprint	0 / 6
+ 4.9 Corporate Environmental Performance	0 / 9
+ 4.10 Corporate social responsibility	0 / 6
TOTAL OPTIONAL CRITERIA SCORE:	**0 / 49**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us.

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MASTER N8450

COMPUTERS & DISPLAYS

Computers & Displays Product Category Required Criteria

All EPEAT Computers & Displays Products must meet, at a minimum, the following required criteria.

(4.1.1)	Product carbon footprint disclosure and assurance
(4.1.1.1)	Conformance with European Union ROHS Directive substance restrictions
(4.1.2)	Corporate GHG Inventory
(4.1.3.1)	Elimination of intentionally added mercury in light sources
(4.1.5.1)	Reduction of bromine and chlorine content in plastic parts >25 grams
(4.1.7.1)	Compliance with provisions of EU Battery Directive
(4.2.1)	Manufacturer GHG reduction target aligned with climate science
(4.2.1.1)	Minimum post-consumer recycled plastic, ITE-derived post-consumer recycled plastic or bio-based plastic content
(4.3.1)	Communication of energy management requirements for key component facilities
(4.3.1.1)	Identification of materials and components requiring selective treatment
(4.3.2.1)	Plastic parts compatible with recycling
(4.3.2.2)	Plastic parts separable for recycling
(4.4.1)	Manufacturer use of renewable electricity
(4.4.1.1)	Service support
(4.4.2.1)	Removal of external enclosure
(4.4.2.3)	Spare parts
(4.4.2.4)	Battery replacement and information
(4.5.1.1)	Conformance to current ENERGY STAR program requirements
(4.5.1.2)	Lowest Power Mode limit
(4.6.1)	Conformance with applicable ENERGY STAR® product eligibility criteria
(4.6.1.1)	Provision of product take-back services
(4.6.2)	External power supply energy efficiency
(4.6.2.1)	Provision of a removable rechargeable battery take-back program
(4.6.3)	Battery charger system energy efficiency
(4.6.3.1)	End-of-life processing
(4.7.1.1)	Elimination of intentionally added heavy metals in packaging
(4.7.1.2)	Elimination of elemental chlorine as a bleaching agent in packaging material

que product identifier

able “required” criteria.

l points. It is not

that meet all required
nd achieve **75 - 100%** of
nal points are rated at
Gold

oduct are listed below.

	Scores
+ 4.7 Packaging	0 / 2
+ 4.8 Life cycle assessment and carbon footprint	0 / 6
+ 4.9 Corporate Environmental Performance	0 / 9

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+	4.10 Corporate social responsibility	0 / 6
	TOTAL OPTIONAL CRITERIA SCORE:	0 / 49

Please note that it is
required for a produ
achieve any optiona

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(4.4.2.3)	Spare parts
(4.4.2.4)	Battery replacement and information
(4.5.1.1)	Conformance to current ENERGY STAR program requirements
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(4.6.3)	Battery charger system energy efficiency
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12069-21-04423	AX211NGW	Intel Corporation SAS	Transceptor de Radiação Restrita	01/09/2025	

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(Intransferível)

Nº **12069-21-04423**

Validade: **Indeterminada**

Emissão: **20/09/2023**

Requerente:
CNPJ: 57.286.247/0001-33
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Tipo - Categoria:
Transceptor de Radiação Restrita - II

Modelo - Nome Comercial (s):
AX211NGW

Características técnicas básicas:

Faixa de Frequências Tx (MHz)	Designação de Emissões	Tecnologias	Potência Máxima de Saída (W)	Tipo de Modulação
2.400,0 a 2.483,5	931KF7D	SALTO EM FREQÜÊNCIA	0,0103	GFSK
2.400,0 a 2.483,5	1M44G7D	SALTO EM FREQÜÊNCIA	0,0088	¶/4DQPSK e 8DPSK
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2.400,0 a 2.483,5	1M14F7D	SEQÜÊNCIA DIRETA	0,0069	GFSK
2.400,0 a 2.483,5	10M3X9D	SEQÜÊNCIA DIRETA	0,25	DBPSK, DQPSK e CCK
2.400,0 a 2.483,5	16M9X9D	OFDM	0,504	BPSK, QPSK, 16 QAM, 64 QAM
2.400,0 a 2.483,5	17M7X9D	OFDM	0,514	BPSK, QPSK, 16 QAM, 64 QAM
2.400,0 a 2.483,5	36M5X9D	OFDM	0,498	BPSK, QPSK, 16 QAM, 64 QAM
2.400,0 a 2.483,5	19M1X9D	OFDMA	0,424	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
2.400,0 a 2.483,5	38M1X9D	OFDMA	0,499	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.725,0 a 5.850,0	15M7X9D	OFDM	0,135	BPSK, QPSK, 16 QAM, 64 QAM
5.725,0 a 5.850,0	18M9X9D	OFDM	0,283	BPSK, QPSK, 16 QAM, 64 QAM
5.725,0 a 5.850,0	37M4X9D	OFDM	0,249	BPSK, QPSK, 16 QAM, 64 QAM
5.725,0 a 5.850,0	18M9X9D	OFDM	0,283	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.725,0 a 5.850,0	37M4X9D	OFDM	0,249	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.725,0 a 5.850,0	78M0X9D	OFDM	0,194	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.725,0 a 5.850,0	19M1X9D	OFDMA	0,134	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.725,0 a 5.850,0	38M1X9D	OFDMA	0,143	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.150,0 a 5.350,0	-	OFDM	0,093	BPSK, QPSK, 16 QAM, 64 QAM
5.150,0 a 5.350,0	-	OFDM	0,097	BPSK, QPSK, 16 QAM, 64 QAM
5.150,0 a 5.350,0	-	OFDM	0,087	BPSK, QPSK, 16 QAM, 64 QAM
5.150,0 a 5.350,0	-	OFDM	0,097	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.150,0 a 5.350,0	-	OFDM	0,087	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.150,0 a 5.350,0	-	OFDM	0,056	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.150,0 a 5.350,0	-	OFDM	0,028	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.150,0 a 5.350,0	-	OFDMA	0,045	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.150,0 a 5.350,0	-	OFDMA	0,052	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.150,0 a 5.350,0	-	OFDMA	0,035	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.150,0 a 5.350,0	-	OFDMA	0,032	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.470,0 a 5.725,0	-	OFDM	0,36	BPSK, QPSK, 16 QAM, 64 QAM
5.470,0 a 5.725,0	BPSK, QPSK, 16 QAM, 64 QAM	OFDM	0,333	BPSK, QPSK, 16 QAM, 64 QAM
5.470,0 a 5.725,0	-	OFDM	0,314	BPSK, QPSK, 16 QAM, 64 QAM
5.470,0 a 5.725,0	-	OFDM	0,333	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.470,0 a 5.725,0	-	OFDM	0,314	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.470,0 a 5.725,0	-	OFDM	0,21	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.470,0 a 5.725,0	-	OFDM	0,111	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.470,0 a 5.725,0	-	OFDMA	0,087	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.470,0 a 5.725,0	-	OFDMA	0,068	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.470,0 a 5.725,0	-	OFDMA	0,084	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.470,0 a 5.725,0	-	OFDMA	0,094	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM

Faixa de Frequências Tx (MHz)	Designação de Emissões	Tecnologias	Potência Máxima de Saída (W)	Tipo de Modulação
5.925,0 a 7.125,0	-	OFDM	0,017	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.925,0 a 7.125,0	-	OFDM	0,02	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.925,0 a 7.125,0	-	OFDM	0,044	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.925,0 a 7.125,0	-	OFDM	0,02	BPSK, QPSK, 16 QAM, 64 QAM
5.925,0 a 7.125,0	-	OFDM	0,044	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.925,0 a 7.125,0	-	OFDM	0,098	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.925,0 a 7.125,0	-	OFDM	0,181	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.925,0 a 7.125,0	-	OFDMA	0,023	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.925,0 a 7.125,0	-	OFDMA	0,043	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.925,0 a 7.125,0	-	OFDMA	0,085	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.925,0 a 7.125,0	-	OFDMA	0,226	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM

Ensaio de SAR não aplicável: Produto não acabado, cuja integração em outro equipamento requer nova avaliação.

Observações

Na instalação do produto devem ser observadas as condições de uso conforme estabelecido no Regulamento sobre Equipamentos de Radiocomunicação de Radiação Restrita.

Este certificado substitui o de mesmo número emitido em 24/06/2023

Constitui obrigação do fabricante do produto no Brasil providenciar a identificação do produto homologado, nos termos da regulamentação de telecomunicações, em todas as unidades comercializadas, antes de sua efetiva distribuição ao mercado, assim como observar e manter as características técnicas que fundamentaram a certificação original.

As informações constantes deste certificado de homologação podem ser confirmadas no SCH - Sistema de Gestão de Certificação e Homologação, disponível no portal da Anatel. (www.anatel.gov.br).

Secundino da Costa Lemos
Gerente de Certificação e Numeração - substituto

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 234.2025.CPL.1661731.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, encaminhamos os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto às proposta de preço abaixo elencadas:

1. E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.º 05.778.325/0005-47, para o Item 1 (doc. 1661785); e

2. Positivo Tecnologia S/A (Filial), CNPJ (MF) n.º 81.243.735/0009-03, para o Item 3 (doc. 1661786).

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 01/07/2025, às 14:58, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1661731** e o código CRC **427D7503**.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - CEP 69000-000 - Manaus - AM - www.mpam.mp.br

PARECER Nº 15.2025.SIET.1661793.2025.001317

PROCESSO DE COMPRA: 2025.001317 Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317
OBJETO: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da proposta da empresa **ER SOLUÇÕES INFORMÁTICA LTDA.** melhor classificada para o **ITEM 1: MICROCOMPUTADOR TIPO 1 - "ALL IN ONE" COM MONITOR AUXILIAR**, na fase de disputas do Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ, documentos 1661785 e 1661819, recebido no dia 1/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 1: MICROCOMPUTADOR TIPO 1 - "ALL IN ONE" COM MONITOR AUXILIAR** **Marca/Modelo de Referência:** Monitor Lenovo ThinkVision T24i30.	1.000	**Microcomputador tipo All in One:** Lenovo Tiny-In-One 23,8' Gen 5 12NAGAR1US + Lenovo ThinkCentre M70q Gen 5 Tiny (Configurado para atender ao edital) + **Monitor auxiliar:** Lenovo ThinkVision T24i-30 IPS - PN 63CFMAR1BR

2.2 Análise comparativa

DESCRIÇÃO	PARECER	OBSERVAÇÕES
SUBITEM 1.1: MICROCOMPUTADOR TIPO "ALL IN ONE"		
1. PLACA PRINCIPAL (PLACA MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação do mesmo, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;	☐	
2. Deverá possuir chipset produzido pelo mesmo fabricante do processador, e indicado para a linha corporativa/profissional;	☐	
3. Deve possuir, no mínimo, 2 (dois) slots para memória RAM, "do tipo DDR-5 SODIMM, ou superior", permitindo a instalação de até 64 (sessenta e quatro) Gigabytes;	☐	
4. Deve suportar tecnologia Dual Channel de utilização de memória RAM;	☐	
5. Deve possuir 2 (dois) Sockets M.2 para SSD SATA ou NVMe;	☐	
6. Deve possuir 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;	☐	
7. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;	☐	
8. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;	☐	
9. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa-mãe e unidades de armazenamento internas;	☐	
10. Deve possuir chip TPM (*Trusted Platform Module*), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do *Trusted Computing Group*;	☐	
11. Deve possuir sistema de detecção de intrusão de chassis, com respectivo acionador instalado no gabinete que permita a detecção de abertura ainda que o equipamento esteja desligado da fonte de energia, devendo gerar log na memória flash da BIOS com todos os eventos de intrusão;	☐	
12. Deve possuir suporte a virtualização por hardware;	☐	
13. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;	☐	

14. Deve possuir suporte a aceleração de segurança AES no hardware;		
15. Deve possuir suporte à tecnologia de acesso remoto *out-of-band* embutida no hardware;		
16. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
17. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1;		
18. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.		
2. BIOS		
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http://www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características:		
1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12);		
2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;		
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela **CONTRATANTE**;		
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e		

disponibilizados para download no web site de suporte do fabricante;		
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados;		
1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado;		
2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional;		
3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.		
3. PROCESSADOR		
1. O processador ofertado, deverá possuir minimamente 6 (seis) núcleos e 12 (doze) threads de processamento, podendo atingir frequência de operação interna de até 4.8 GHz em modo turbo, no mínimo;		
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos, threads e ciclos de clock base (MHz);		
3. Memória cache total de, no mínimo, 22MB;		
4. O processador ofertado deverá ser Intel Core i5, "de 13ª geração", ou AMD Ryzen 5 PRO, "serie 8000", admitindo-se famílias ou gerações mais novas;		
5. O processador deverá pertencer à última geração disponível utilizada pelo fabricante do equipamento, **com desempenho mínimo de 21.900 (vinte e um mil e novecentos) pontos**, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em http://www.cpubenchmark.net/cpu_list.php; 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.		
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos;		
7. Deve possuir controlador com suporte à memória RAM do tipoDDR5-4800 MT/s, ou superior;		
8. Deverá possuir tecnologia de fabricação de 10 nm (dez nanômetros) ou inferior;		
9. TDP(Thermal Design Power) típico de 35W, e máximo de 95W, declarado pelo fabricante;		
10. Deve possuir instruções do padrão AVX 2.0, ou superior;		
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;		
12. Deve possuir instruções que implementem extensões de virtualização de hardware;		
13. Deve possuir instruções AES-NI embutidas;		
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.		
4. MEMÓRIA RAM		
1. Deverá possuir, no mínimo, 16 (dezesseis) Gb de memória RAM instalados, com capacidade de expansão mínima de 64 (sessenta e quatro) Gb;		
2. Deverá ser do tipo DDR-5 SODIMM ou superior e possuir, no mínimo, 4.800 MT/s de velocidade de comunicação com o barramento principal;		
3. A implementação do total de memória RAM deve utilizar 2 (dois) módulos, em modo dual channel;		
4. A memória ofertada, deverá possuir as melhores		

especificações possíveis dentre as disponíveis para o equipamento proposto;		
5. Os módulos devem ser instalados durante o processo de manufatura do computador, e homologados como parte do equipamento, inclusive estando cobertos pela garantia e suporte como descrito no Termo de Referência.		
5. UNIDADE DE ARMAZENAMENTO		
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo *Solid State Drive* (SSD) interna instalada do tipo M.2, na capacidade mínima de 256 GB e velocidade mínima de gravação de 1.200MB/s;		
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;		
3. Deve ser instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.		
6. CONECTIVIDADE		
1. Deverá possuir no mínimo 4 (quatro) portas USB 3.2;		
2. Possuir 1 (uma) porta USB 3.2 Tipo C;		
3. Possuir, no mínimo, um total de 2 (duas) portas de vídeo adicionais, suportando a utilização de até 2 (dois) monitores auxiliares simultânea e independentemente do monitor principal;		
1. Os tipos das portas auxiliares de vídeo supracitadas devem ser, no mínimo, 1 (um) HDMI 1.4 e 01 (uma) DisplayPort 1.2. Em caso de versões miniaturizadas destas, adaptadores revertendo para elas devem ser fornecidos sem custo adicional.		
7. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, *autosense*, *full-duplex* e *plug-and-play*, configurável totalmente por *software* e com função Wake On Lan instalada e em funcionamento;		
2. A controladora ethernet, deverá ser do tipo "*onboard*", e suportar recurso WOL (Wake On LAN);		
3. Deve possuir, no mínimo, 1 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3 ou superior;		
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, conectado em slot específico na placa mãe, que deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;		
5. As interfaces Wireless ofertadas devem possuir, na data da entrega da proposta, homologação junto à ANATEL com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
8. CONTROLADORA DE VÍDEO		
1. Deve possuir controladora 3D/2D com suporte a DirectX 12, ou superior;		
2. Deve suportar Pixel Shader 3.0, ou superior;		
3. Deve suportar OpenGL 4.5, ou superior;		
4. Deve suportar a resolução mínima de 1920 X 1080 @ 60 Hz;		
5. Deve possuir tecnologia de controle dinâmico de frequência, podendo atingir, no mínimo, 1.5GHz;		
6. Frequência base de 350 MHz, no mínimo;		
7. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente.		
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "*onboard*";		

2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;		
3. Deve possuir, no mínimo, 2 alto-falantes internos, com 2 Watts RMS de potência, compatíveis com a controladora de som;		
4. Deve incorporar microfone, com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.		
10. TECLADO		
1. A marca do teclado deverá ser igual à do fabricante do equipamento ofertado;		
2. Deve ser USB no idioma padrão, português (Brasil), ABNT-II;		
3. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute;		
4. Admite-se a utilização de teclas de função (F1...F12), para tais ações;		
5. Deve possuir teclado numérico integrado;		
6. Deve possuir, no mínimo, LEDs indicadores de estado das teclas capslock e numlock;		
7. Deve possuir ajuste de inclinação;		
8. Deve ser em gradações das cores preto ou prata;		
9. Não será aceito teclado com cabo retrátil;		
10. Não será aceito teclado wireless/bluetooth (sem fio).		
11. MOUSE		
1. Deve ser óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 1.000 dpi;		
2. Deve ser da mesma marca do fabricante do equipamento ofertado;		
3. Deve ser em gradações das cores preto ou prata;		
4. Deve acompanhar mousepad ergonômico com apoio em gel para o pulso, do mesmo fabricante do equipamento.		
5. O mouse ou teclado ofertados, deve possuir um leitor biométrico, certificado para trabalhar com a autenticação do Microsoft Windows Hello.		
12. MONITOR/TELA INTEGRADA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 23,5 polegadas widescreen, ou superior;		
3. Deve suportar, no mínimo, 16 milhões de cores;		
4. Resolução mínima de 1920x1080@60Hz;		
5. Ângulo de visão mínimo de 170° horizontal e vertical;		
6. Deve possuir brilho mínimo de 250 cd/m² e contraste de 1000:1;		
7. Deve possuir controle digital de brilho e contraste, no mínimo;		
8. Deve possuir, no mínimo, ajuste de altura e inclinação;		
9. O equipamento deve possuir uma webcam integrada, de 1.5 megapixels, FHD (1080P), no mínimo, não sendo aceita solução externa.		
13. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		
1. O computador deve ser produzido no formato All in One.		
2. Serão aceitos monitores com projetos específicos para acoplamento de desktops do tipo mini/micro com volume		

máximo de 1.2l, onde ambos (monitor + computador) devem ser do mesmo fabricante;		
1. Neste tipo de solução, a conexão do desktop à tela/monitor deverá ser feita através de conector específico (docking) ou via um cabo único 3-1 (energia, USB e DisplayPort) a ser conectado em uma porta específica upstream. Devendo, portanto, ligar e desligar o equipamento através de botão presente na frente do monitor, não sendo necessário o acesso do usuário a parte de trás do equipamento, mantendo um uso de apenas um ponto de energia elétrica.		
2. Caso a licitante opte pela proposta de solução modular, deverão ser respeitadas todas as demais exigências, como no tocante a quantidade de portas, conectores, capacidade de expansão, e demais especificações;		
3. Não será aceito o uso de suportes ou adaptadores externos, para acoplamento do equipamento ao monitor.		
3. Em ambos os casos, “All in One ou Conjunto Modular”, o sistema deverá possuir ajuste de altura e inclinação;		
4. No caso de sistema modular, à exemplo do formato All in One, todo o conjunto deve ser mantido por uma única fonte de energia;		
5. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;		
6. O gabinete deve possuir acabamento interno composto de superfícies não cortantes;		
7. Deve possuir botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do gabinete;		
8. Deve oferecer a possibilidade de, se demandado, aplicar logo oficial da **CONTRATANTE**, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas no gabinete do computador ou na parte traseira do monitor AIO, visando medidas de segurança;		
9. O gabinete deverá possuir fenda de encaixe padrão "Kensington" ou "Noble Wedge" para utilização de cabo de aço do mesmo tipo;		
10. No caso de conjunto modular, a unidade computacional deve possuir mecanismo de acoplagem e travamento no corpo ou na base do monitor principal, impossibilitando a remoção não autorizada da mesma;		
11. Deve ser fornecido com fonte de alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas (Monitor principal, placa mãe, interfaces, unidades de armazenamento, memória RAM e demais componentes e periféricos);		
12. A fonte de alimentação deve possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);		
13. A fonte deve possuir tensão de entrada 110 e 220 Volts de forma automática;		
14. Os cabos de conexão à rede elétrica devem seguir o padrão NBR 14136:2002;		
15. Admite-se o fornecimento de fonte externa para o atendimento deste item, desde que corresponda a todos os requisitos.		
14. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;		
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;		
3. Cada equipamento deve incluir uma licença específica de software dedicado para:		
• Controle: Funções de bloqueio e desbloqueio remoto.		
• Inventário: Gestão detalhada de hardware e software do equipamento.		
• Rastreabilidade: Recursos de geolocalização integrados.		

4. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;		
5. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;		
6. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;		
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela **CONTRATANTE**, conforme especificado no Termo de Referência.		
15. COMPATIBILIDADE		
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado. 1. A comprovação da compatibilidade será efetuada pela apresentação do documento *Hardware Compatibility Test Report* emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;		
2. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;		
3. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional.		
16. OUTROS REQUISITOS		
1. Todas as partes do equipamento (gabinete, base, teclado e mouse) devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;		
2. O equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
3. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação, unidade de armazenamento, mouse e teclado, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;		
4. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;		
5. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
6. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		
7. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
8. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;		
9. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou		

comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;		
10. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;		
11. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional. 1. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;		
12. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);		
13. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica. 1. A comprovação deverá ser apresentada junto com a proposta;		
14. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;		
15. **Garantia de 60 (sessenta) meses on-site**, para todos os itens que compõe a solução, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.		
SUBITEM 1.2: "MONITOR AUXILIAR 23,5 POL WIDESCREEN"		
1. TELA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 23,5 polegadas widescreen, no mínimo;		
3. Resolução mínima de 1920x1080 a 60Hz, 16 milhões de cores;		
4. Deve possuir brilho mínimo de 250 cd/m² e contraste de 1000:1;		
5. Ângulo de visão mínimo de 170° horizontal e vertical;		
6. Deve possuir controle digital de brilho, contraste e posicionamentos vertical e horizontal;		
7. Deve apresentar ajustes mínimos de altura de 15 cm e funcionalidade de rotação Pivot de 90°.		
2. INTERFACES		
1. Possuir ao menos 2 (duas) portas de entrada de vídeo;		
2. Não importando os tipos de portas de entrada, deve acompanhar cabos que permitam conectar o monitor a equipamentos com portas de tipo HDMI 1.4 e DisplayPort; 1. Serão aceitos adaptadores, em adicional aos cabos originais, para contemplar a possibilidade de conexão às portas solicitadas no item acima.		
1. O equipamento deve possuir interface de montagem no padrão VESA 100 x 100mm;		
2. O acessório deve possibilitar minimamente os seguintes movimentos do monitor: 1. Rotação de 90º; 2. Elevação de 10cm; 3. Panorâmica de 90º; 4. Inclinação de -5º a 20º;		
4. OUTROS REQUISITOS		
1. Cor deve ser predominantemente a mesma da cor ofertada no item 1 "**MICROCOMPUTADOR All in One modular**";		
2. Possuir certificação de segurança UL ou IEC 60950;		
3. Possuir certificação de economia de energia EPA Energy Star, TCO 5.0 ou similar;		

4. Deve aceitar tensões de 110 e 220 Volts de forma automática;	☐	
5. Deve acompanhar cabo de alimentação original do fabricante com conector de tomada elétrica no padrão brasileiro (NBR 14136:2002);	☐	
6. O equipamento deverá vir acondicionado em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;	☐	
7. Os equipamentos não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS - Restriction of Certain Hazardous Substances;	☐	

3. Conclusão

O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica **OPINA** pela aceitabilidade do produto ofertado.

É o parecer.

Manaus, 2 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados

Documento assinado eletronicamente por **Waleska Gracieme Andrade Marques de Oliveira**, **Agente Técnico - Analista de Banco de Dados**, em 02/07/2025, às 11:34, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Francisco Elvislânio Pereira**, **Agente de Apoio - Administrativo**, em 02/07/2025, às 11:34, conforme art. 1º, III, "b", da Lei 11.419/2006.

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Torino Informática Ltda.
CNPJ 03.619.767/0005-15
I.E. 083.327.90-8
tanabe@grupotorino.com.br

Serra, 30 de Junho de 2025

À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP
ABERTURA: 29/06/2025 ÀS 10H00MIN.

PROPOSTA DE PREÇO

PREZADOS SENHORES:

TENDO EXAMINADO MINUCIOSAMENTE AS NORMAS ESPECÍFICAS DO PROCESSO LICITATÓRIO ACIMA TENDO COMO OBJETO A *AQUISIÇÃO DE EQUIPAMENTOS DE INFORMATICA* E APÓS TERMOS TOMADO CONHECIMENTO DE TODAS AS CONDIÇÕES LÁ ESTABELECIDAS, PASSAMOS A FORMULAR A SEGUINTE PROPOSTA:

1. PROPOSMOS FORNECER, SOB NOSSA INTEGRAL RESPONSABILIDADE, OS EQUIPAMENTOS, OBJETO DO REFERIDO CERTAME, CONFORME A TABELA ABAIXO:

ITEM	ESPECIFICAÇÃO	QUANT	MARCA	VALOR UNITÁRIO	VALOR TOTAL
Lote 02	COMPUTADOR TIPO 2 "WORKSTATION COM MONITOR" **WORKSTATION HP Z2 G9 TOWER** PROCESSADOR I7-14700 - VPRO MEMÓRIA 32(2X16) DDR5 ECC HD SSD 512 NVME HD SATA 1TB WIFI6 SD CARD PLACA DE VIDEO RTX A1000 8GB FONTE 700W WINDOWS 11 PROFESSIONAL SOFTWARE ABSOLUTO GARANTIA 5 ANOS TECLADO E MOUSE HP **MONITOR AUXILIAR 01** Monitor Philips 27" Hello Webcam 5MP Noise Cancelling USB-C 100W 27B1U5601H GARANTIA 5 ANOS **MONITOR AUXILIAR 02** Monitor AOC 27" FHD IPS com base ajustável e HUB USB B2B 27P2Q GARANTIA 5 ANOS	50	HP Z2 G9 TOWER WORKSTATION	**R$ 20.280,00** (VINTE MIL E DUZENTOS E OITENTA REAIS)	**R$ 1.014.000,00** (UM MILHAO E QUATORZE MIL REAIS)
				TOTAL DA	**R$ 1.014.000,00**

PROPOSTA	(UM MILHAO E QUATORZE MIL REAIS)

2. ***O VALOR TOTAL DA PROPOSTA É R$ R$ 1.014.000,00 (UM MILHAO E QUATORZE MIL REAIS)***
3. NOS PREÇOS INDICADOS ACIMA ESTÃO INCLUÍDOS, ALÉM DO FORNECIMENTO DO PRODUTO, TODOS OS DEMAIS CUSTOS COM SALÁRIOS, BENEFÍCIOS, ENCARGOS, TRIBUTOS, FRETE, GARANTIA E DEMAIS CONTRIBUIÇÕES PERTINENTES.
4. DECLARAMOS QUE CONHECEMOS A LEGISLAÇÃO DE REGÊNCIA DESTA LICITAÇÃO E QUE OS SERVIÇOS SERÃO PRESTADOS DE ACORDO COM AS CONDIÇÕES ESTABELECIDAS NESTE EDITAL, O QUE CONHECEMOS E ACEITAMOS EM TODOS OS SEUS TERMOS, INCLUSIVE QUANTO AO PAGAMENTO E OUTROS.
5. DECLARAMOS, TAMBÉM, QUE NENHUM DIREITO A INDENIZAÇÃO OU REEMBOLSO DE QUAISQUER DESPESAS NOS SERÁ DEVIDO, CASO A NOSSA PROPOSTA NÃO SEJA ACEITA PELA **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS** SEJA QUAL FOR O MOTIVO.
6. A PRESENTE PROPOSTA É VALIDA POR **90 (NOVENTA) DIAS**, A CONTAR DA DATA ESTABELECIDA PARA A SUA ABERTURA.
7. OS PAGAMENTOS SERÃO REALIZADOS EM ATÉ **20 (VINTE)** DIAS E CREDITADOS A **CONTA CORRENTE Nº 7105-6**, **AGÊNCIA Nº 2414-7** NO **BANCO DO BRASIL S/A, CÓDIGO 001.**
8. O PROCURADO DA EMPRESA, CUJO CNPJ É 03.619.767/0005-15, QUE ASSINARÁ A ATA DE REGISTRO DE PREÇO OU CONTRATO, É O **SR. RODRIGO DO AMARAL RISSIO** PORTADOR DO **CPF 220.807.218-95** E **RG 27.954.969-6 SSP/SP;**
9. GARANTIA: **60 (SESSENTA) MESES** ONSITE PARA O EQUIPAMENTO**,** CONFORME EDITAL;
10. VALORES EXPRESSOS EM REAIS
11. PRAZO DE ENTREGA: CONFORME EDITAL ATÉ **90 (NOVENTA) DIAS,** APÓS A DATA DE ASSINATURA DO CONTRATO E/OU RECEBIMENTO DO EMPENHO;
12. ENVIO DO MATERIAL VIA TERRESTRE/RODOVIÁRIO;
13.

DADOS DOS SOCIOS:

RODRIGO DO AMARAL RISSIO
RG 27.954.969-6 SSP/SP
CPF 220.807.218-95
DENISE DO AMARAL RISSIO
RG 6.438.259 SSP/SP
CPF 246.137.578-00

DADOS DA LICITANTE / CONTRATAÇÃO:

TORINO INFORMATICA LTDA
CNPJ 03.619.767/0005-15
IE: 083.327.90-8
IM: 4675890
AV. 600, SN – QUADRA 15 – MODULO 10 – SETOR INDUSTRIAL – TIMS
SERRA – ES – CEP 29.161-419

DADOS PARA CONTATO / INFORMAÇÕES:

TORINO INFORMATICA LTDA
CNPJ: 03.619.767/0001-91
IE: 669.369.347-110
IM: 114.058
RUA RITA DE CARVALHO MONTEIRO, 120 – RETIRO SÃO JOÃO
SOROCABA – SP – CEP 18085-750
CONTATO: MARCELLO TANABE
TEL/FAX: (15) 3238-9520 OU 99148-9313
EMAIL: tanabe@grupotorino.com.br

DATASHEET EQUIPAMENTO / DRIVERS:

https://h20195.www2.hp.com/v2/getpdf.aspx/c08109687.pdf
https://support.hp.com/br-pt/drivers/hp-z2-tower-g9-workstation-desktop-pc/2100987204

DADOS PARA SUPORTE TÉCNICO:

https://chamados.grupotorino.com.br
suporte@grupotorino.com.br
0800-201-5666

RODRIGO DO AMARAL RISSIO:22080721895

Assinado de forma digital por RODRIGO DO AMARAL RISSIO:22080721895
Dados: 2025.07.01 16:04:23 -03'00'

TORINO INFORMÁTICA LTDA
CNPJ: 03.619.767/0005-15
RODRIGO DO AMARAL RISSIO
RG: 27.954.969-6 SSP/SP
CPF: 220.807.218-95

Overview

HP Z2 G9 Tower Workstation Desktop PC

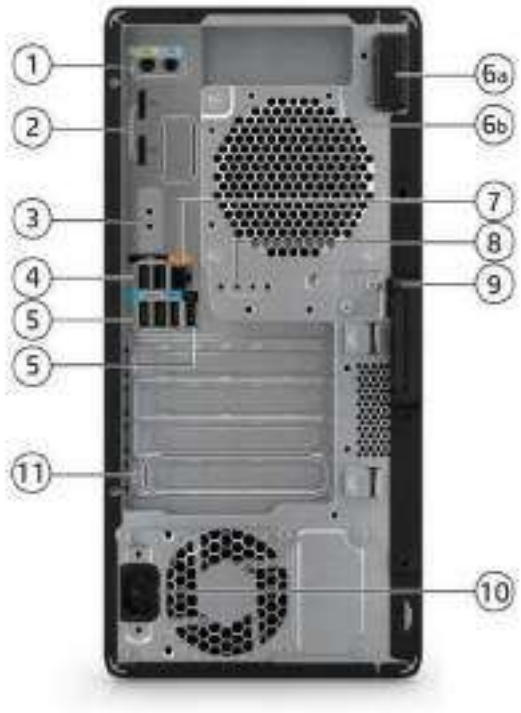


front

1. HDD Activity LED
2. Power button
3. Universal audio jack (with CTIA & OMTP headset support)
4. (2) USB-A 10Gbps ports (1 charge port supports up to 5V/2.1A)
5. (2) USB-A 10Gbps rate ports
6. (1) USB-C® 20Gbps port (optional, charge supports up to 5V/3A)
7. SD card reader 4.0 (optional)
8. Slim ODD bay
9. External 5.25" bay

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1325

Overview



rear

1. (1) Audio Line-in jack
   (1) Audio Line-out jack
2. (2) DisplayPort 1.4 ports
3. Flex I/O module: choose one from the following:
   (1) DisplayPort 1.4, (1) HDMI 2.0b, (1) VGA, (1) Dual USB-A 5Gbps port, (1) USB-C® 10Gbps port (Power Delivery 15W, Alt Mode DisplayPort), (1) 2nd 1 GbE LAN, (1) Thunderbolt 3 with USB-C® / USB4 40Gbps * (cabled to PCIe AIC**) (1) 1Gbps Fiber LC NIC
4. (2) Hi-Speed USB-A 480Mbps port
5. (2) USB-A 10Gbps ports
   (1) USB-A 5Gbps port
   (1) Hi-Speed USB-A 480Mbps port
6. (1) WLAN Antenna (optional)
   a. Internal
   b. External
7. (1) 1Gb LAN
8. 2nd serial port (optional)
9. Hood lock (optional)
10. Power connector

*Maximum speed requires DisplayPort™ and PCIe aggregation.
**Thunderbolt support only in PCI-E slot4.
NOTE: Onboard Display support DP1.4/HBR2. Flex I/O module Display support DP1.4/HBR3. Resolution all support up to 5120x3200 24bpp @60Hz.

Form Factor Tower

Operating Systems Preinstalled:

- Windows 11 Pro - HP recommends Windows 11 Pro[2]
- Windows 11 Home - HP recommends Windows 11 Pro[2]
- Linux®-ready[5]
- Ubuntu®[4,5]

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1326

- Intel 12th generation processors will support and preinstall Ubuntu 20.02 and 20.04.
- Intel 13th generation processors support and preinstall Ubuntu 22.04 LTS

Web-supported only:

- Windows 10 Enterprise 64[2]

Supported Version:

- HP tested Windows 10, versions 20H2, 21H1, 21H2 and 22H2 on this platform. For testing information on newer versions of Windows 10, please see: https://support.hp.com/document/c05195282.
- Red Hat® Enterprise Linux® Workstation 8[6]
- SUSE Linux® Enterprise Desktop 15[6]
- Ubuntu®[4,5]
  - Intel 12th generation processors will support and preinstall Ubuntu 20.02 and 20.04.
  - Intel 13th generation processors support and preinstall Ubuntu 22.04 LTS

[2] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.
[4] Not all features are available in all editions or versions of Ubuntu. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS to take full advantage of Ubuntu functionality. Ubuntu may be automatically updated. ISP fees may apply and additional requirements may apply over time for updates.
[5]A certified preloaded version of Ubuntu® 20.04 LTS is available from HP for this platform. Not all features are available in all editions or versions of Ubuntu. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS to take full advantage of Ubuntu functionality. Ubuntu may be automatically updated. ISP fees may apply, and additional requirements may apply over time for upgrades.
[6]For detailed OS/hardware support information for Linux, see:
http://www.hp.com/support/linux_hardware_matrix

NOTE: Your product does not support Windows 8 or Windows 7. In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel® and AMD® 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on http://www.support.hp.com. A full list of HP products and the Windows 10 versions tested is available on the HP support website. https://support.hp.com/us-en/document/c05195282

Processors Overview[1,3,4,5]

Intel 14th Generation Processors:

Intel® Core™ i5-14400 with Intel UHD Graphics (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.5 GHz E-core Max Turbo frequency, up to 4.7 GHz P-core Max Turbo frequency, 20 MB L3 cache, 6 P-cores and 4 E-cores, 16 threads)

Intel® Core™ i5-14500 with Intel UHD Graphics (1.9 GHz E-core base frequency, 2.6 GHz P-core base frequency, up to 3.7 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i5-14600 with Intel UHD Graphics (2.0 GHz E-core base frequency, 2.7 GHz P-core base frequency, up to 3.9 GHz E-core Max Turbo frequency, up to 5.2 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

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Intel® Core™ i5-14600K with Intel UHD Graphics (2.6 GHz E-core base frequency, 3.5 GHz P-core base frequency, up to 4.2 GHz E-Core Max Turbo frequency, up to 5.3 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i7-14700 with Intel UHD Graphics (1.5 GHz E-core base frequency, 2.1 GHz P-core base frequency, up to 4.2 GHz E-core Max Turbo frequency, up to 5.3 GHz P-core Max Turbo frequency, 33 MB L3 cache, 8 P-cores and 12 E-cores, 28 threads)

Intel® Core™ i7-14700K (3.4GHz P-Core base frequency, 2.5GHz E-Core base frequency, up to 4.3GHz E-Core Max Turbo frequency, up to 5.5 GHz P-core Max Turbo frequency, 33MB L3 cache, 8 P-cores and 12 E-cores, 28 threads)

Intel® Core™ i9-14900 (2GHz P-Core base frequency, 1.5GHz E-Core base frequency, up to 4.3GHz E-Core Max Turbo frequency, up to 5.4 GHz P-core Max Turbo frequency, 36MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)

Intel® Core™ i9-14900K (3.2GHz P-Core base frequency, 2.4GHz E-Core base frequency, up to 4.4GHz E-Core Max Turbo frequency, up to 5.6 GHz P-core Max Turbo frequency, 36MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)

Intel 13th Generation Processors:

Intel® Core™ i5-13400 (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.3 GHz E-core Max Turbo frequency, up to 4.6 GHz P-core Max Turbo frequency, 20 MB L3 cache, 6 P-cores and 4 E-cores, 16 threads)

Intel® Core™ i5-13500 (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.5 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i5-13600 (2.0 GHz E-core base frequency, 2.7 GHz P-core base frequency, up to 3.7 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i5-13600K (2.6 GHz E-core base frequency, 3.5 GHz P-core base frequency, up to 3.9 GHz E-core Max Turbo frequency, up to 5.1 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i7-13700 (1.5 GHz E-core base frequency, 2.1 GHz P-core base frequency, up to 4.1 GHz E-core Max Turbo frequency, up to 5.1 GHz P-core Max Turbo frequency, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads)

Intel® Core™ i7-13700K (2.5 GHz E-core base frequency, 3.4 GHz P-core base frequency, up to 4.2 GHz E-core Max Turbo frequency, up to 5.3 GHz P-core Max Turbo frequency, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads)

Intel® Core™ i9-13900 (1.5 GHz E-core base frequency, 2.0 GHz P-core base frequency, up to 4.2 GHz E-core Max Turbo frequency, up to 5.2 GHz P-core Max Turbo frequency, 36 MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)

Intel® Core™ i9-13900K (2.2 GHz E-core base frequency, 3.0 GHz P-core base frequency, up to 4.3 GHz E-core Max Turbo frequency, up to 5.4 GHz P-core Max Turbo frequency, 36 MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)

Intel 12th Generation Processors:

Intel® Core™ i9-12900 with Intel® UHD Graphics (1.8 GHz E-core base frequency, 2.4 GHz P-core base frequency, up to 3.8 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, up to 5.1 GHz with Intel® Turbo Boost Technology, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads)

Intel® Core™ i7-12700 with Intel® UHD Graphics (1.6 GHz E-core base frequency, 2.1 GHz P-core base frequency, up to 3.6 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, up to 4.9 GHz with Intel® Turbo Boost Technology, 25 MB L3 cache, 8 P-cores and 4 E-cores, 20 threads)

Intel® Core™ i5-12500 with Intel® UHD Graphics (3.0 GHz P-core base frequency, up to 4.6 GHz P-core Max Turbo frequency, 18 MB L3 cache, 6 P-cores, 12 threads)

Intel® Core™ i3-12100 with Intel® UHD Graphics (3.3 GHz P-core base frequency, up to 4.3 GHz P-core Max Turbo frequency, 12 MB L3 cache, 4 P-cores, 8 threads)

[1] Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.

[3] Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost for more information.

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[4] Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro

[5] Memory will run at 4400 speed (MT/s) in 2DPC within 1DIMM population; memory will run at 4000 speed (MT/s) in 2DPC within 2DIMM of 1 Rank population and memory will run at 3600 speed (MT/s) in 2DPC within 2DIMM of 2 Rank population

Color	Black
Convertibility	No
Expansion Slots (see system board section for more details)	Slot 1: PCIe Gen5 x16 Slot 2: PCIe Gen3 x1 - with x4 open end Connector Slot 3: PCIe Gen3 x4 - with x16 Connector Slot 4: PCIe Gen3 x4 with open end connector
Expansion Bays (see storage section for more details)	(2) Internal 3.5" bays (1) External 5.25" bay (1) Internal 2.5" bay (for SSD only) (1) Dedicated 9.5mm slim optical disk drive bay
Front I/O	(2) USB-A 10Gbps ports (1 charge port supports up to 5V/2.1A), (2) USB-A 10Gbps ports, (1) USB-C 20Gbps eport (charge supports up to 5V/3A, optional), (1) SD card reader (optional), (1) universal audio jack
Internal I/O [5]	(1) Hi-Speed USB 480Mbps header for SD card reader (1) serial port available with header (1) serial and PS/2 available with header
Rear I/O	(2) DisplayPort 1.4 ports, (1) Audio Line out, (1) Audio Line in, (1) 1GbE LAN, (3) Hi-Speed USB 480Mbps ports, (2) USB-A 10Gbps ports, (1) USB-A 5Gbps port, (1) serial (optional), (1) Flex I/O port (VGA, HDMI 2.0b, DisplayPort 1.4, USB-C® 10Gbps port (Power Delivery 15W, Alt Mode Display Port), (1) Dual USB-A 5Gbps port, (1) 2nd 1GbE LAN, (1) Thunderbolt 3 with USB4 USB-C® 40Gbps (cabled to PCIe AIC)*, (1) 1Gbps Fiber LC NIC
Optional I/O	Flex IO* – choose one of the following options: (1) DisplayPort™ 1.4 port, (1) HDMI 2.0b, (1) VGA,(1) 2nd 1GbE LAN, (1) 1Gbps Fiber LC NIC, (1) Dual USB-A 5Gbpsport ,(1) USB -C® 10Gbps port (15W USB Power Delivery, Alt Mode DisplayPort™), (1) Thunderbolt™ 3 with USB4 USB-C® 40Gbps port (cabled to PCIe® AIC**); Front – (1) USB-C® 20Gbps port (charging), (1) SD card reader; Front – choose one of the following options: (1) USB-C ® 20Gbps (charging), (1) SD 4.0 card reader Rear –(1) serial; *About Thunderbolt compatibility, please refer to the FAQ of Thunderbolt community. https://www.thunderbolttechnology.net/tech/faq **Flex IO port and PCIe slot 4 will be occupied when Thunderbolt is installed.
Interfaces Supported	SD card reader (optional)
On-board RAID Support	SATA and NVME RAID 0 Striped Array SATA RAID and NVME RAID 1 Mirror Array

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Chassis Dimensions (H x W x D)	H: 14" [356mm] W: 6.7" [169mm] D: 15.2" [385mm]
Packaged Dimensions	H: 20.39" (518mm) W: 11.61" (295mm) D: 19.29" (490mm)
Rack Dimensions	4U
Weight	Exact weights depend upon configuration (System weight only). Starting at 6.2kg (13.7lbs.)
Temperature	Operating: 5° to 35° C (40° to 95° F) Above 1524 m (5,000 feet) altitude, the maximum operating temperature is reduced by 1° C (1.8° F) for every 305 m (1,000 feet) increase in elevation Non-operating: -40° to 60° C (-40° to 140° F) Maximum rate of change: 10°C/hr
Humidity	Operating: 8% to 85% RH, non- condensing, 35° C maximum wet bulb Non-operating: 8% to 90% relative humidity, non-condensing, 35° C maximum wet bulb
Maximum Altitude (non-pressurized)[6]	Operating (with Rotational Hard Drives): 3,048 m (10,000 feet) Operating (with only Solid-State Drives): 5,000 m (16,404 feet) Non-operating: 12,192 m (40,000 feet) Maximum operating temperature is reduced as altitude increases. See Temperature for details.
Power Supply	700W wide-ranging, active Power Factor Correction, 92% Efficiency with two 6+2 graphics power connectors. 500W wide-ranging, active Power Factor Correction, 90% Efficiency. 450W wide-ranging, active Power Factor Correction, 90% Efficiency. 350W wide-ranging, active Power Factor Correction, 92% Efficiency. **NOTE:** The Power Supply Efficiency Report for the 700W 92% Efficiency, 500W 90% Efficiency, 450W 90% Efficiency and 350W 92% Efficiency Power Supply may be found at the following links: 700W PSU: https://www.plugloadsolutions.com/80PlusPowerSuppliesDetail.aspx?id=0&type=2 500W PSU: LiteOn 500W PSU Efficiency Report Delta 500W PSU Efficiency Report 450W PSU: https://www.plugloadsolutions.com/80PlusPowerSuppliesDetail.aspx?id=0&type=2 350W PSU: AcBel 350W PSU (SFF) Efficiency Report AcBel 350W PSU (Custom) Efficiency Report Delta 350W PSU Efficiency Report
Backup Devices	For a complete listing of compatible DAT tape drives, LTO tape drives and RDX Removable Disk Backup System offerings, please visit http://www.hp.com/go/connect
Chipset	Intel® W680 chipset
Memory	4 DIMM slots supporting up to 192GB non-ECC or up to 128 GB ECC, DDR5 unbuffered DIMM memory. Max memory speed will run at 4400 MT/s based on system configuration. See Supported Components / Memory Section for details.

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Supported Components

SATA Hard Drives		Factory Configured	Option Kit	Option Kit Part Number
	1TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	W0R10AA
	2TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	2Z274AA
	4TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	K4T76AA
	8TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	2Z273AA
	12TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	5S461AA

NOTE: For internal bay install, HDD option kits require separate purchase of 6Z9U6AA HP Z2 Tower HDD Cable Kit. For external bay install, HDD options kits require separate purchase of 6Z9U6AA HP Z2 Tower HDD Cable Kit & NQ099AA HP Optical Bay HDD Mounting Bracket.

PCIe Solid State Drives				
	HP ZTurbo 512GB PCIe-Gen 4x4 TLC Z2 SSDKit	Y	Y	201G0AA/AT
	HP ZTurbo 512GB PCIe-Gen 4x4 SED Z2 SSDKit	Y	Y	201F9AA
	HP ZTurbo 1TB PCIe-Gen 4x4 TLC Z2 SSDKit	Y	Y	201F5AA/AT
	HP ZTurbo 2TB PCIe-Gen 4x4 TLC Z2 SSDKit	Y	Y	201F8AA
	Z Turbo 1TB 2280 PCIe-Gen4x4 Self Encrypted OPAL2 TLC M.2 Z2 SSD	Y	Y	223A3AA/AT
	Z Turbo 2TB 2280 PCIe-Gen4x4 Self Encrypted OPAL2 TLC M.2 Z2 SSD	Y	Y	223A4AA/AT
	256GB 2280 PCIe-4x4 NVMe Value M.2 Z2 SSD Module	Y	Y	4M9Z1AA
	512GB 2280 PCIe-4x4 NVMe Value M.2 Z2 SSD Module	Y	Y	4M9Z2AA
	1TB 2280 PCIe-4x4 NVMe Value M.2 Z2 SSD Module	Y	Y	4M9Z3AA
	Z Turbo 4TB 2280 PCIe-4x4 TLC M.2 Z2 Kit SSD	Y	Y	5S492AA
	Z Turbo 2TB PCIe-4x4 TLC SSD Module	Y	Y	38T75AA
	Z Turbo 1TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	38T76AA
	Z Turbo 1TB PCIe-4x4 TLC SSD Module	Y	Y	38T77AA
	Z Turbo 2TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	38T79AA
	Z Turbo 512GB PCIe-4x4 TLC SSD Module	Y	Y	38T80AA
	Z Turbo 512GB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	38T81AA
	Z Turbo 4TB 2280 PCIe-4x4 TLC M.2 SSD Module	Y	Y	5S496AA
	Z Turbo 4TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	5S497AA
	Z Turbo 4TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 Z2 Kit SSD	Y	Y	5S498AA

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.
NOTE: PCIe M.2 SSD Kit SKUs include a heatsink. PCIe M.2 SSD Module SKUs do not include a heatsink.

Graphics		Factory Configured	Option Kit	Option Kit Part Number	Supported # of cards	Support Notes
Graphics Cable Adapters	HP DisplayPort To HDMI True 4k Adapter	Y	Y	2JA63AA		
	HP Single miniDP-to-DP Adapter Cable	Y	Y	2MY05AA		
	HP DisplayPort To DVI-D Adapter	Y	Y	FH973AA		

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Supported Components

	HP DisplayPort To DVI Adapter (Bulk 90)	Y	Y	FH973A6		
	HP DisplayPort To VGA Adapter	Y	Y	AS615AA/AT		
	HP DisplayPort to VGA Adapter Bulk Qty.90)	Y	Y	AS615A6		
	HP DisplayPort To VGA Adapter	Y	Y	F7W97AA		
	HP USB-C to DisplayPort Adapter	Y	Y	4SH08AA		
	HP USB-C to HDMI Adapter	Y	Y	4SH07AA		
	HP USB-C to VGA Adapter	Y	Y	4SH06AA		
Entry 3D	NVIDIA® T400 4 GB Graphics[2]	Y	Y	5Z7E0AA/AT	2	1
	NVIDIA® T400E 4 GB 4mDP Graphics	Y	Y	A4HP3AA	2	1
	NVIDIA RTX A400 4 GB 4mDP Graphics	Y	Y	9U277AA	2	1
	AMD Radeon Pro WX 3200 4GB	Y	Y	6YT6*AA/ AT	1	1
	AMD Radeon RX 6400 4 GB DH DP+HDMI Graphics	N	Y	6Q3U4AA/AT	1	1
Mid-range 3D	NVIDIA® T1000 4 GB Graphics	Y	Y		2	1
	NVIDIA® T1000 8 GB Graphics	Y	Y	5Z7D8AA/AT	2	1
	NVIDIA Long-Life T1000E 8 GB 4mDP Graphics	Y	Y	6V9V4AA/AT	2	1
	NVIDIA RTX A1000 8 GB 4mDP Graphics	Y	Y	9U276AA	2	1
	NVIDIA RTX™ A2000 6 GB 4mDP Graphics*	Y	Y	340L0AA	2	
	NVIDIA RTX™ A2000 12GB Graphics*	Y	Y	5Z7D9AA/AT	2	
	NVIDIA RTX 2000 Ada 16 GB 4mDP Graphics	Y	Y	8D6B8AA	2	
	NVIDIA RTX™ A4000 16GB*	Y		20X24AA/AT	2	
	NVIDIA Long-Life RTX A4000E 16 GB 4DP Graphics*	Y	Y	6H7J7AA	1	
	NVIDIA® RTX™ 4000 Ada 20 GB 4DP Graphics*	Y	Y	8D6B7AA	2	
	NVIDIA® RTX™ A4500 20GB GDDR6 4DP Graphics	Y	Y		1	
	NVIDIA Long-Life RTX A2000E 12 GB 4mDP Graphics	Y	Y	6V9V5AA/AT	2	
	AMD Radeon™ Pro W6600 Graphics (8GB GDDR6 dedicated) *	Y	Y	340K5AA	1	
High-End 3D	AMD Radeon™ Pro W6800 Graphics (32 GB GDDR6 dedicated) *	Y	Y	340K7AA	1	
	AMD Radeon Pro W7900 48 GB 3DP+1mDP Graphics	Y	Y	8F699AA	1	
	AMD Radeon Pro W7600 8 GB Graphics*	Y		8D6B9AA	1	
	AMD Radeon Pro W7500 8 GB Graphics	Y	Y	8D6C2AA	1	
	NVIDIA RTX 4500 Ada 24 GB 4DP Graphics	Y	Y	8D6C1AA	1	
	NVIDIA® RTX™ A5000 24 GB Graphics*	Y	Y	20X23AA/AT	1	
	NVIDIA RTX 5000 Ada 32 GB 4DP Graphics	Y	Y	8D6B6AA	1	

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Supported Components

AMD Radeon™ RX 6700 XT 12GB*	Y	Y	4C203AA	1

NOTE: Z2 G9 Tower with 700W PSU can support up to a 250W professional graphics card from HP, either factory-configured or added via after-market option, and can support up to 320W total graphics power when graphics is factory-configured.
Note 1: When dual graphics is configured the 450W and 500W base units will require the AMO HP Z2 TWR Dual Front Fan Kit part number 4N007AA; One storage device configuration for higher than 75W graphics cards (T1000 and up)
* Requires 700W chassis.

Memory

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
HP 8GB (1x8GB) DDR5-4800 nECC UDIMM	Y	Y	4M9X9AA	
HP 16GB (1x16GB) DDR5-4800 nECC UDIMM	Y	Y	4M9Y0AA	
HP 16GB (1x16GB) DDR5-4800 ECC UDIMM	Y	Y	4M9Y1AA	1
HP 32GB (1x32GB) DDR5-4800 nECC UDIMM	Y	Y	4M9Y2AA	
HP 32GB (1x32GB) DDR5-4800 ECC UDIMM	Y	Y	4M9Y3AA	1
HP 48GB (1x48GB) DDR5-5600 UDIMM NECC	Y	Y	8F070AA	

NOTE 1: ECC memory is supported
GENERAL NOTE: Two channels of DDR5 memory are supported. To realize full performance at least one DIMM must be inserted into each channel.
Though the memory modules can run up to 4800MHz, the current platform will support maximum memory speed of 4400MHz.

The system speed will be determined by a number of key factors:

Module Configuration	Description of configuration	Max Memory Speed (Actual Memory speed is dependent on CPU)
Single DIMM per channel	Configurations that contain only one or two DIMM modules with DIMMs only in the black slots	4400MHz
Two single ranked DIMMs in a channel	Configurations with 3 or 4 single ranked DIMMs (8GB and 16GB) installed in a system. Memory speed may also vary depending on vendor module mix.	4000MHz
Two dual ranked DIMMs in a channel	Configurations with 3 or 4 dual ranked DIMMs (32GB) installed in a system	3600MHz

When more than one memory slot is populated, symmetric configurations are required for 2 DIMMs per channel. Mix of different part numbers or mix of single and dual ranks within a channel is not allowed.

Optical and Removable Storage

	Factory Configured	Option Kit	Option Kit Part Number
HP DX175 Removable HDD Frame/Carrier	N	Y	1ZX71AA
HP DX175 Removable HDD Spare Carrier	N	Y	1ZX72AA
HP Z2 TWR SuperMulti DVD-Writer 9.5mm Slim ODD	Y	Y	4L5K0AA
HP Z2 TWR DVD-ROM 9.5mm Slim ODD	Y	Y	4L5K1AA
HP CRU QX328 5.25 in Front Removable M.2 Frame/Carrier	Y	Y	4N011AA

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Supported Components

HP CRU Secure High Performance Storage Module with 2TB M.2 SSD	Y	Y	56Q87AA
HP CRU Secure High Performance Storage Module with 1TB M.2 SSD	Y	Y	56Q88AA
HP CRU Secure High Performance Storage Module with 512GB M.2 SSD	Y	Y	56Q89AA
HP CRU SHIPS M.2 Spare Carrier	Y	Y	633X9AA

NOTES: Duplication of copyrighted material is strictly prohibited. Actual speeds may vary. Double Layer media compatibility will widely vary with some home DVD players and DVD-ROM drives. Note that DVD-RAM cannot read or write to 2.6GB Single Sided/5.2 Double Sided-Version 1.0 Media.

4N011AA HP CRU QX328 5.25in Front Removeable Frame/Carrier requires a separate purchase of HP CRU SHIPS Storage Module(s).

HP CRU Secure High Performance Storage (SHIPS) Module Kit contains select M.2 SSD for install into a factory configured or after market option front removeable storage carrier (HP CRU QX328 Frame/Carrier).

Networking and Communications	Factory Configured	Option Kit	Option Kit Part Number
Integrated Intel® I219LM PCIe GbE Controller (Intel® vPro® with Intel® AMT 16.0)	Y	N	
HP 1GbE LAN Flex Port 2020	Y	Y	141J6AA/AT
HP Flex 1GbE Fiber LC Single Port	Y	Y	20J15AA
NVIDIA Mellanox ConnectX-6 DX Dual Port 10/25GbE SFP28 NIC[1]	Y	Y	436M8AA
HP 10GbE SFP+ SR/SW LC Fiber Optic Transceiver	Y	Y	860T8AA
HP 25GbE SFP28 LC Fiber Optic Transceiver	Y	Y	860T9AA
Intel® Ethernet I350-T4 4-Port 1Gb NIC*	N	Y	W8X25AA
Intel® X550-T2 dual-port 10GbE NIC	Y	Y	1QL46AA
Intel® Ethernet Network Adapter I225-T1	Y	Y	406L9AA
Intel® Wi-Fi 6E AX211 BT 5.3 wireless card M.2 non-vPro[1,2,**,***]	Y	N	
Allied Telesis AT-2911T/2-901 Dual Port 1GbE NIC	Y	Y	6E3Y9AA/AT
Intel® Wi-Fi 7 BE200 BT 5.4 wireless card M.2 non-vPro[1,3,***,****]	Y	N	
Intel® i225-T1 single-port 2.5 GbE NIC	Y		

[1] Intel AX211 or BE200 with Internal antenna support Wi-Fi 6
[2] Intel AX211 with external antenna support Wi-Fi 6E
[3] Intel BE200 with external antenna support Wi-Fi 6E/7
*Intel I350-T4 4-port GbE NIC is an After Market Option only.
**Wi-Fi 6E (802.11ax) requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
***Intel AX211 and BE200 must be configured at time of purchase. Not available as an After Market Option.
****Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select Intel® 14th processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported.

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Supported Components

NOTES:
The integrated network connection is required to support Intel® vPro® Technology.

If AMT is provisioned, then network teaming with the integrated LAN port is not possible.

“Gigabit” Ethernet indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/sec. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

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Supported Components

Input Devices	Factory Configured	Option Kit	Option Kit Part Number
HP USB 320K Keyboard	Y	Y	9SR37AA
HP 320M Wired Mouse	Y	Y	9VA80AA
HP Wired Desktop 320MK Mouse and Keyboard	N	Y	9SR36AA
HP 125 Wired Keyboard	Y	Y	266C9AA
HP 975 USB+BT Dual Mode Wireless	N	Y	3Z726AA
HP 655 Wireless USB BLK KBD/MSE Kit	N	Y	N/A
HP 125 Wired Mouse	Y	Y	265A9AA
HP 128 Laser Wired Mouse	Y	Y	265D9AA
HP 935 Creator Wireless Mouse	N	Y	1D0K8AA
HP 455 Programmable Wireless Keyboard	Y	Y	4R177AA
HP 455 Programmable Wireless Keyboard (Bulk Qty.12)	Y	Y	4R177A6
HP 655 Wireless Keyboard and Mouse Combo	Y	Y	4R009AA
HP 655 Wireless Keyboard and Mouse Combo (Blk Qty.10)	Y	Y	4R009A6

NOTE: Keyboard and Mouse are optional or add on features.

Flex Module (Rear IO)	Factory Configured	Option Kit	Option Kit Part Number
HP 1GbE LAN Flex Port 2020	Y	Y	141J6AA/AT
HP DP Flex Port 2020	Y	Y	141J7AA/AT
HP Dual USB-A 3.2 Gen1 Flex Port 2020	Y	Y	141J8AA/AT
HP HDMI Flex Port	Y	Y	69D47AA/AT
HP USB-C 3.2 Gen2 Alt Flex Port 2020	Y	Y	141K6AA/AT
HP VGA Flex Port 2020	Y	Y	141K7AA/AT
HP Flex 1GbE Fiber LC Single Port	Y	Y	20J15AA

Other Hardware	Factory Configured	Option Kit	Option Kit Part Number
HP Single TBT3 wType C and USB4 PCIe x4 Card	Y	N	N/A
HP Z2 Internal Serial Port and PS/2 Port	Y	Y	141K9AA/AT
HP Z2 Power Cord Kit	Y	Y	1N1D5AA
C13-C14 2.0m 15A 100-127V Countries Straight Desktop Power Cord	Y	Y	8R881AA
C13-C14 2.0m 10A 200-240V Countries Straight Desktop Power Cord	Y	Y	8R882AA
HP Z2 2nd serial port adapter	Y	Y	141K8AA/AT
HP Z2 Tower Dust Filter	Y	Y	141L2AA/AT
HP Z2 Tower Dust Filter and bezel	Y	Y	141L3AA/AT
HP PCIe x1 Parallel Port Card	Y	Y	N1M40AA
HP Z2 G9 Single Type-C SuperSpeed USB 20Gbps Front Port	Y	Y	4M9X8AA/AT
HP Z2 TWR Dual Front Fan Kit	Y	Y	4N007AA
HP Optical Bay HDD Mounting Bracket	Y	Y	NQ099AA
HP Z2 Tower HDD Cable Kit	N	Y	6Z9U6AA
HP Integrated Remote System Controller	Y	Y	7K6D9AA

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Supported Components

HP Remote System Controller Main Board Adapter	Y	Y	7K6D8AA
HP Remote System Controller	Y	Y	7K6D7AA
HP Remote System Controller for Universal KVM	N	Y	7K7N2AA

Racking and Physical Security	Factory Configured	Option Kit	Option Kit Part Number
HP Z2 Mini and Z2/Z4/Z6 TWR Depth Adjustable Fixed Rail Rack Kit	Y	Y	2A8Y5AA
HP Keyed Cable Lock	Y	Y	T1A62AA
HP Master Keyed Cable Lock 10mm	Y	Y	T1A63AA
HP Business PC Security Lock V3 Kit	Y	Y	3XJ17AA

Software	Factory Configured	Option Kit	Support Notes
HP Performance Advisor	Y	N	1
HP PC Hardware Diagnostics UEFI		N	3
HP Wolf Security	Y	N	
HP Notifications	Y	N	
HP Desktop Support Utility	Y	N	
HP Documentation	Y	N	
HP Image Assistant	N	N	
HP Support Assistant	N	N	
myHP	Y	N	
Kingsoft WPS Office	Y	N	4
My Office	Y	N	5
Adobe Substance 3D Collection Plan	N	Y	6
WSL2/Ubuntu Data Science Stack	Y	N	7
Wolf Pro Security			8
HP Manageability Integration Kit			

Notes:

1. Supports, and preinstalled with Windows 10 only. Also available as a free download from http://www.hp.com/go/performanceadvisor
2. Windows OS only
3. Not available in Russia
4. Only available in China
5. Only available in Russia
6. Not available in China
7. Optional Software
8. HP Wolf Pro Security Edition is available preloaded on select SKUs, and, depending on the HP product purchased, includes a license with a term length communicated to you at purchase and in your order confirmation email. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish_3875769-3873014-16 as that EULA is modified by the following: 7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition is effective upon 4 months after the date the HP Product was shipped by HP and will continue for the term communicated to you at purchase and in your order confirmation email (“Initial Term”). At the end of the Initial

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Supported Components

Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support. Notwithstanding the foregoing, the license shall expire no later than one year after the fixed term of the subject license ends.

Operating Systems

Windows 11 Pro – HP recommends Windows 11 Pro[2]

Windows 11 Home – HP recommends Windows 11 Pro[2]

Linux®-ready[5]

Ubuntu®[4,5]

- Intel 12th generation processors will support and preinstall Ubuntu 20.02 and 20.04.
- Intel 13th generation processors support and preinstall Ubuntu 22.04 LTS

[2] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.

[4] Not all features are available in all editions or versions of Ubuntu. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS to take full advantage of Ubuntu functionality. Ubuntu may be automatically updated. ISP fees may apply and additional requirements may apply over time for updates.

[5]For detailed Linux® OS/hardware support information, see: http://www.hp.com/support/linux_hardware_matrix

NOTE: Your product does not support Windows 8 or Windows 7. In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel® and AMD® 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on http://www.support.hp.com. A full list of HP products and the Windows 10 versions tested is available on the HP support website. https://support.hp.com/us-en/document/c05195282

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HP BIOS

Additional HP BIOS Features:

- Power-On password – Helps prevent an unauthorized user from powering on the system.
- Administrator password – Also known as the BIOS Setup password, this helps prevent unauthorized changes to the system configuration. If the administrator password is not known, the BIOS cannot be updated and changes cannot be made to BIOS settings using BIOS Setup or under the OS.
- S4/S5 Maximum Power Savings setting supports EU Lot6 requirement and allows the computer to power down below 0.5W in S4/S5 (when turned off). When S4/S5 Maximum Power Savings feature is enabled below features are turned off:
  - -Power to expansion connectors / slots
  - -Most Wake events other than power buttons and WOL(Wake on LAN supported by embedded Lan controller under S4/S5 Maximum Power Saving Enabled)
  - -USB charging ports

HP Sure Start Gen7 Start

- BIOS Integrity checking – Sure Start protection ensures that only trusted BIOS code is executed and not rootkits, viruses and malware. Verification is done upon boot up, shutdown and while the system is on.
- Sure Start is set by default to automatically repair the BIOS if corrupted or compromised but is policy driven for better manageability. Start is set by default to automatically repair the BIOS if corrupted or compromised but is policy driven for better manageability.
- Protecting beyond BIOS – Integrity checking and repair is extended to other data that should be protected such as network configuration parameters, platform specific information (i.e. system IDs), secure boot credentials, and other code the system needs to boot.
- Audit enabled – System Audit via Sure Start Event Logs capture data such as incident, repair date and time for troubleshooting and investigating

NOTE: HP Sure Start Gen7 is available on HP Workstation products equipped with Intel® 12th generation processors.

HP Performance Control Modes

HP Z Desktop Workstations offers Performance Control Modes in the F10 BIOS menu. Z2 G9 offers Quiet Mode, Performance Mode and High-Performance Mode. HP recommends using High Performance Mode unless you have concerns about acoustics in an open office environment. Customers can get up to 41% performance improvements using High Performance Mode over Performance Mode*. High Performance Mode is configured as default from the factory.

How to Set HP Performance Control Modes in HP F10 BIOS Menu

In the F10 BIOS Menu, the setting titled “Performance Control” is adjustable to High Performance Mode, Performance Mode or Quiet Mode. These modes are choice points for performance and acoustic trade-offs based on user needs or recommended balanced conditions in performance and noise optimization.

At startup, push the F10 key while system is booting to get to the BIOS Menu.
Go to → Advanced -> System Options ->scroll down and choose “Performance Control”

Set the Performance Mode you desire and then go back to Main->Save Changes and Exit -> Yes
The machine will restart in the mode you’ve chosen.

How to change Performance Modes in HP Performance Advisor software?

Select BIOS Settings -> Advanced -> System Options -> Performance Controls

The machine will restart in the mode you’ve chosen.

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You can change these modes anytime you prefer to prioritize acoustics (Quiet Mode), want a balance between performance and acoustics (Performance Mode) or prefer to prioritize performance (High Performance Mode).

For more information on performance control modes, please see the white paper called, HP Performance Control Modes for Z Desktop Workstations.

*Compared to Performance Mode. Performance improvement based on Z2 Tower G9 with 64GB of memory, 1TB NVMe, Windows 11 22H2 OS, RTX A4000, i7-14700 CPU using Blender OpenData CPU Render and Arnold 2023 CPU multi-core benchmarking.

SOFTWARE COMPONENTS AND APPLICATIONS WITH WINDOWS

Software
HP Support Assistant [14]
HP Image Assistant
HP Desktop Support Utility
HP Documentation
HP Notifications
HP PC Hardware Diagnostics UEFI
HP PC Hardware Diagnostics Windows
HP Performance Advisor[1]
myHP
WSL/Ubuntu Data Science Stack
HP Privacy Settings
Touchpoint Customizer for Commercial

Manageability Features
HP Driver Packs[2]
HP UWP Pack
HP System Software Manager (SSM)
HP Manageability Integration Kit Gen4[3]
HP Client Catalog (download)
HP Image Assistant (download)
HP Cloud Recovery
HP Client Management Script Library (download)
HP BIOSphere Gen6 [13]
HP BIOS Configuration Utility (download)

Client Security Software
HP Client Security Suite Gen7[4] including: (including Credential Manager, HP Password Manager[6], HP Spare Key)
HP Power On Authentication
Microsoft Defender[7]

Security Management
HP Secure Erase [16]
HP Wolf Pro Security Edition (optional) [18]
HP Wolf Security for Business[22] Includes:
HP Sure Click[11]
HP Sure Sense[12]
HP Sure Run Gen5[9]
HP Sure Recover Gen4 [10]
HP Sure Start Gen7[8]

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Supported Components

HP Tamper Lock
HP Sure Admin [17]
HP Client Security Manager Gen 7[4]
Hood Sensor Optional Kit

[1] HP Performance Advisor Software - –P Performance Advisor is ready to help you get the most out of your HP Workstation from day one—and every day after. Learn more or download at: http://hp.com/PerformanceAdvisor

[2] HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.

[3] HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html

[4] HP Client Security Manager Gen7 requires Windows and is available on the select HP PCs.

[6] HP Password Manager requires Internet Explorer or Chrome or FireFox. Some websites and applications may not be supported. User may need to enable or allow the add-on / extension in the internet browser.

[7] Microsoft Defender Opt in and internet connection required for updates.

[8] HP Sure Start Gen 7 is available on select HP PCs and workstations. See product specifications for availability.

[9] HP Sure Run Gen5 is available on select Windows 11 based HP Pro, Elite and Workstation PCs with select Intel® or AMD processors

[10] HP Sure Recover Gen4 is available on select HP PCs and requires Windows 10 and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module

[11] HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.
[12] HP Sure Sense requires Windows 11 Pro or Enterprise and supports Microsoft Internet Explorer, Google Chrome™, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode, when Microsoft Office or Adobe Acrobat are installed.
[13] HP BIOSphere Gen6 features may vary depending on the platform and configurations.
[14] HP Support Assistant requires Windows and Internet access.
[16] Secure Erase - –or the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 “C“ear” ”anitation method. HP Secure Erase does not support platforms with Intel® Optane.
[17] HP Sure Admin requires Windows 11, HP BIOS, HP Manageability Integration Kit from http://www.hp.com/go/clientmanagement and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.
[18] HP Wolf Pro Security Edition is available preloaded on select SKUs, and, depending on the HP product purchased, includes a license with a term length communicated to you at purchase and in your order confirmation email. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish_3875769-3873014-16 as that EULA is modified by the following: 7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition is effective upon 4 months after the date the HP Product was shipped by HP and will continue for the term communicated to you at purchase and in your order confirmation email (“Initial Term”). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support. Notwithstanding the foregoing, the license shall expire no later than one year after the fixed term of the subject license ends.
[22] HP Wolf Security for Business requires Windows 10 or higher, includes various HP security features and is available on HP Pro, Elite, RPOS and Workstation products. See product details for included security features

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System Board

System Board Form Factor	Customized PCB 36.056 x 25.130 mm (14.197 x 9.894 inch)
Processor Socket	Single LGA-1700
CPU Bus Speed	DMI Gen4
Chipset	Intel® PCH W680
Super I/O Controller	Nuvoton SIO21
Memory Expansion Slots	4 DDR5 memory slots
Memory Type Supported	DDR5, UDIMM (Unbuffered), ECC& non-ECC
Memory Modes	Non-Interleaved for single channel. Interleaved when both channels are populated.
Memory Speed Supported	3600MT/s to 4400MT/s DDR5, dependent on memory configuration[1]

[1]Though the memory modules can run up to 4800MHz, the current platform will only be able to support the maximum memory speed of 4400MHz.

The system speed will be determined by a number of key factors:

Module Configuration	Description of configuration	Max Memory Speed (Actual Memory speed is dependent on CPU)
Single DIMM per channel	Configurations that contain only one or two DIMM modules with DIMMs only in the black slots	4400MHz
Two single ranked DIMMs in a channel	Configurations with 3 or 4 single ranked DIMMs (8GB and 16GB) installed in a system	4000MHz
Two dual ranked DIMMs in a channel	Configurations with 3 or 4 dual ranked DIMMs (32GB) installed in a system	3600MHz

Memory Protection	ECC available on data
Maximum Memory	192GB
Memory Configuration (Supported)	8GB, 16GB, 32GB and 48GB non-ECC, 16GB and 32GB ECC unbuffered DIMMs are supported. ECC and non-ECC memory DIMMs cannot be mixed in the same system
PCI Express Connectors	(1) PCI Express Gen5 slot x16 mechanical/ x16 electrical (full height, full length) (1) PCI Express Gen3 slot x4 mechanical/ x1 electrical (full height, full length, open-ended) (1) PCI Express Gen3 slot x16 mechanical/ x4 electrical (full height, full length) (1) PCI Express Gen3 slot x4 mechanical/ x4 electrical (full height, full length, open-ended) (1) M.2 2280 Storage (PCIe Gen4 x4) (1) M.2 2280 Storage (PCIe Gen4 x4) (1) M.2 2280 Storage (PCIe Gen4 x4) (1) M.2 2230 WLAN (PCIe Gen3 x1+ Intel CNVi) **NOTE:** The PCIe Gen5 x16 slot has validated and passed PCI-SIG electrical compliance test ONLY. HP does not guarantee and support any PCIe Gen5 cards available -in the open market. May or may not see performance reduced when device MRRS (Maximum Read Request Size) is 512Bytes and above. To reach highest Gen5 PCIe performance, Use the top bin DRAM module (e.g. 4400) to minimize the impact.
Supported Interfaces	**SATA** — Integrated (4) Serial ATA interfaces (6Gb/s SATA). RAID 0 and 1 supported. Factory integrated RAID for Microsoft Windows only. **Integrated Graphics** — Intel® UHD Graphics 730 (on Core i5-12400/i3-12300/i3-12100) processors); Intel® UHD Graphics 770 (on 13th and 14th gen Core i5/i7/i9 processors);

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System Technical Specifications

		Based on Unified Memory Architecture (UMA) - – region of system memory is reserved and dedicated to the graphics display. Support for Microsoft DirectX 12, OpenGL 4.6 and OpenCL 3.0 on Intel® UHD Graphics 730/770; Based on Unified Memory Architecture (UMA) - – region of system memory is reserved and dedicated to the graphics display. 2 DP 1.4 graphics ports integrated in motherboard; Supports up to three simultaneous displays across DisplayPort*/HDMI*/DVI outputs. Max. resolution supported on onboard DP 1.4/HBR2 ports: 4096x2304 @ 60Hz, 24bpp Max. resolution supported on FlexIO DP 1.4/HBR3 port: 5120x3200 @60Hz, 24bpp
	Network Controller	Integrated Ethernet PHY Connection I219LM. Management capabilities: WOL, PXE 2.1 and AMT 16
	Serial	1 internal header (requires optional Serial Port and PS/2 Combo Kit with PCIe bracket)
	2nd Serial	1 internal header(requires optional Serial Port Adapter Kit)
USB Connector(s)	**Front**	2 Type-A SuperSpeed USB 10Gbps signaling rate port (charge supports up to 5V/2.1A); 2 Type-A SuperSpeed USB 10Gbps signaling rate port; 1 Type-C® SuperSpeed USB 20Gbps signaling rate port (optional, charge supports up to 5V/3A)
	Rear	3 High-speed USB 480Mbps signaling rate port; 1 Type-A SuperSpeed USB 5Gbps signaling rate port; 2 Type-A SuperSpeed USB 10Gbps signaling rate port; Flex I/O option: 1 SuperSpeed USB Type-C® 10Gbps signaling rate (Power Delivery 15W, Alt Mode DisplayPort); 1 Dual SuperSpeed USB Type-A 5Gbps signaling rate
	Internal	1 High-speed USB 480Mbps signaling rate header for SD Card Reader
HD Integrated Audio	Realtek ALC3205-VA2-CG, 2.0W internal mono speaker	
Flash ROM	Yes	
CPU Fan Header	Yes	
Memory Fan Header	None	
Chassis Fan Header	1 Rear System Chassis Fan Header, 1 Graphic chassis Fan Header.	
Front PCI Fan Header	None	
Front Control Panel/Speaker Header	Yes	
CMOS Battery Holder - – ithium	Yes	
Integrated Trusted Platform Module	Integrated TPM 2.0 (Infineon SLB9672) Convertible to FIPS 140-2 Certified mode through firmware v15.21	
Power Supply Headers	Yes	
Power Switch, Power LED & Hard Drive LED Header	Yes	
Clear Password Jumper	None	

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System Technical Specifications

Keyboard/Mouse USB or PS/2 (option)

Power Supply 700W EPA92, 500W EPA90, 450W EPA90 and 350W EPA92

[1]Maximum memory capacities assume 64-bit operating systems, such as Genuine Windows® 10 Professional 64 bit, Red Hat Linux 64-bit. 32-bit Windows Operating Systems support up to 4 GB.
[2]M.2 storage supports compatible devices up to 80mm

PROCESSORS

Name	Ghz P-Core Base Frequency	Ghz E-Core Base Frequency	Up to X P-Core Max Turbo Freq	Up to x GHz E-Core Max Turbo Frequency	L3 Cache (MB)	P-Cores	E-Cores	Total Cores	Processor Threads	Memory Speed (MT/s) (DDR5)[4]	ECC Memory Supported[5]	Integrated Graphics	Featuring Intel® vPro® Technology[3]	TDP (W)	Max Turbo Frequency (GHz)
Intel 14th Generation Processors															
Intel® Core™ i9-14900K	3.2	2.40	5.6	4.4	36	8	16	24	32	5600	Y	Intel® UHD Graphics 770	Y	125	6
Intel® Core™ i9-14900	2	1.50	5.4	4.3	36	8	16	24	32	5600	Y	Intel® UHD Graphics 770	Y	65	5.8
Intel® Core™ i7-14700K	3.4	2.50	5.5	4.3	33	8	12	20	28	5600	Y	Intel® UHD Graphics 770	Y	125	5.6
Intel® Core™ i7-14700	2.1	1.50	5.3	4.2	33	8	12	20	28	5600	Y	Intel® UHD Graphics 770	Y	65	5.4
Intel® Core™ i5-14600K	3.5	2.60	5.3	4.2	24	6	8	14	20	5600	Y	Intel® UHD Graphics 770	Y	65	5.3
Intel® Core™ i5-14600	2.7	2.00	5.2	3.9	24	6	8	14	20	5600	Y	Intel® UHD Graphics 770	Y	65	5.2
Intel® Core™ i5-14500	2.6	1.80	5	3.7	24	6	8	14	20	4800	Y	Intel® UHD Graphics 770	Y	65	5.0
Intel® Core™ i5-14400	2.5	1.80	4.7	3.5	20	6	4	20	16	4800	N	Intel® UHD Graphics 730	N/A	65	4.7
Intel 13th Generation Processors															
Intel® Core™ i9-13900K	3	2.20	5.4	4.3	36	8	16	24	32	5600	Y	Intel® UHD Graphics 770	Y	125	5.8
Intel® Core™ i9-13900	2	1.50	5.2	4.2	36	8	16	24	32	5600	Y	Intel® UHD Graphics 770	Y	65	5.6
Intel® Core™ i7-13700K	3.4	2.50	5.3	4.2	30	8	8	16	24	5600	Y	Intel® UHD Graphics 770	Y	125	5.8
Intel® Core™ i7-13700	2.1	1.50	5.1	4.10	30	8	8	16	24	5600	Y	Intel® UHD Graphics 770	Y	65	5.2
Intel® Core™ i5-13600K	3.5	2.60	5.1	3.9	24	6	8	14	20	5600	Y	Intel® UHD Graphics 770	Y	65	5.1
Intel® Core™ i5-13600	2.7	2.00	5.0	3.7	24	6	8	14	20	4800	Y	Intel® UHD Graphics 770	Y	65	5.0
Intel® Core™ i5-13500	2.5	1.80	4.8	3.5	24	6	8	14	20	4800	Y	Intel® UHD Graphics 770	Y	65	4.8
Intel® Core™ i5-13400	2.5	1.80	4.6	3.3	20	6	4	10	16	4800	N	Intel® UHD Graphics 730	N/A	65	4.6
Intel 12th Generation Processors															
Intel® Core™ i9-12900	5	1.8	5.0	3.8	30	8	8	16	24	4800	Y	Intel® UHD Graphics 770	Y	65	5.1

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System Technical Specifications

Intel® Core™ i7-12700	2.1	1.6	4.8	3.6	25	8	4	12	20	4800	Y	Intel® UHD Graphics 770	Y	65	4.9
Intel® Core™ i5-12600	3.3	N/A	4.8	N/A	18	6	0	6	12	4800	Y	Intel® UHD Graphics 770	Y	65	4.8
Intel® Core™ i3-12100	3.3	N/A	4.3	N/A	12	4	0	4	8	4800	N	Intel® UHD Graphics 730	N/A	60	4.3

[1] Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.

[3] Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost for more information.

[4] Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd Party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro

[5] Memory will run at 4400 speed (MT/s) in 2DPC within 1DIMM population; memory will run at 4000 speed (MT/s) in 2DPC within 2DIMM of 1 Rank population and memory will run at 3600 speed (MT/s) in 2DPC within 2DIMM of 2 Rank population

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System Technical Specifications

System Configurations							
Example Configuration #1	**Processor Info**	Core i5-12500,6C 3.0G 65W					
	Memory Info	2 x 8G DDR5 4800 UDIMM NECC					
	Graphics Info	NVIDIA T400 4GB					
	Disks/Optical/Floppy	512GB SSD Z Turbo					
	PSU	350W					
	Other	NA					
Energy Consumption (Watts)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows long Idle (S0)	17.866		17.912		17.804	
	Windows short Idle (S0)	18.926		19.024		18.883	
	Windows Busy Typ (S0)	160.167		155.973		161.10	
	Windows Busy Max (S0)	192.557		187.067		193.063	
	Sleep (S3)	1.367	1.259	1.401	1.367	1.259	1.401
	Off (S5)	0.555	0.552	0.561	0.555	0.552	0.561
	Zero Power Mode (EuP)	0.171		0.173		0.168	

Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows Idle (S0)	60.959		61.116		60.747	
	Windows short Idle (S0)	64.576		64.91		64.429	
	Windows Busy Typ (S0)	546.489		532.181		549.707	
	Windows Busy Max (S0)	657.003		638.271		658.732	
	Sleep (S3)	4.664	4.296	4.78	4.664	4.296	4.78
	Off (S5)	1.894	1.883	1.914	1.894	1.883	1.914
	Zero Power Mode (EuP)	0.583		0.59		0.573	
Example Configuration #2	**Processor Info**	Core i7-12700,12C 2.1G 65W					
	Memory Info	2 x 16G DDR5 4800 UDIMM NECC					
	Graphics Info	NVIDIA T1000 8GB					
	Disks/Optical/Floppy	512GB SSD Z Turbo					
	PSU	450W					
	Other	NA					
Energy Consumption (Watts)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows long Idle (S0)	20.169		20.335		20.087	
	Windows short Idle (S0)	21.222		21.547		21.195	
	Windows Busy Typ (S0)	119.48		117.953		120.406	
	Windows Busy Max (S0)	157.13		155.03		157.833	
	Sleep (S3)	1.575	1.461	1.582	1.575	1.461	1.582
	Off (S5)	0.944	0.941	0.952	0.944	0.941	0.952
	Zero Power Mode (EuP)	0.204		0.207		0.202	

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System Technical Specifications

Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows Idle (S0)	68.817		69.383		68.537	
	Windows short Idle (S0)	72.409		73.518		72.317	
	Windows Busy Typ (S0)	407.666		402.457		410.824	
	Windows Busy Max (S0)	536.128		528.962		538.527	
	Sleep (S3)	5.374	4.985	5.398	5.374	4.985	5.398
	Off (S5)	3.221	3.211	3.248	3.221	3.211	3.248
	Zero Power Mode (EuP)	0.696		0.706		0.689	
Example Configuration #3	**Processor Info**	Core i9-12900,16C 2.4G 65W					
	Memory Info	2 x 16G DDR5 4800 UDIMM ECC					
	Graphics Info	NVIDIA RTX A2000					
	Disks/Optical/Floppy	512GB SSD Z Turbo					
	PSU	450W					
	Other	NA					
Energy Consumption (Watts)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows long Idle (S0)	22.555		23.324		22.484	
	Windows short Idle (S0)	23.414		24.656		23.397	
	Windows Busy Typ (S0)	159.883		156.853		161.463	
	Windows Busy Max (S0)	189.99		185.89		190.127	
	Sleep (S3)	1.585	1.492	1.694	1.585	1.492	1.694
	Off (S5)	0.952	0.95	1.083	0.952	0.95	1.083
	Zero Power Mode (EuP)	0.21		0.217		0.198	

Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows Idle (S0)	76.958		79.581		76.715	
	Windows short Idle (S0)	79.889		84.126		79.831	
	Windows Busy Typ (S0)	545.522		535.184		550.913	
	Windows Busy Max (S0)	648.246		634.257		648.712	
	Sleep (S3)	5.408	5.091	5.78	5.408	5.091	5.78
	Off (S5)	3.248	3.241	3.695	3.248	3.241	3.695
	Zero Power Mode (EuP)	0.717		0.74		0.676	

NOTE: The Power Supply Efficiency report may be found at the following links:
https://www.plugloadsolutions.com/80PlusPowerSuppliesDetail.aspx?id=0&type=2

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System Technical Specifications

Operating Voltage Range	90-269 VAC
Rated Voltage Range	100-240 VAC
Rated Line Frequency	50-60 Hz
Operating Line Frequency Range	47-63 Hz
Rated Input Current	8.2A @ 100-240V
Heat Dissipation	Typical: 1598.101 btu/hr (402.984 kcal/hr) Maximum: 1619.608 btu/hr (408.407 kcal/hr)
ENERGY STAR® certified (Config Dependent)	Yes
CECP Compliant @ 220V	Yes
FEMP Standby Power Compliant	Yes, with Wake-on-LAN disabled: <1W in S4/S5 - –ower Off
Built-in Self Test (BIST) **LED**	Yes
Surge Tolerant Full Ranging Power Supply (withstands power surges up to 2000V)	Yes
Hood Lock Header	Yes
ErP Lot 6- Tier 1 Compliance @ 230V (<1W in S5 - –ower Off)	Yes
ErP Lot 6- Tier 2 Compliance @ 230V (<0.5W in S5 - –ower Off)	Yes

Declared Noise Emissions (Entry-level, Mid-level, and High-end configurations; tested on floor)			
System Configuration (Mid-level)	**Processor Info**	Intel® CPU Core i9-12900 16C LGA 2.40G 30 MB 65W ECC (Intel - –lder Lake-S)	
	Memory Info	4* 32GB 4800 SK hynix memory	
	Graphics Info	NVIDIA® RTX A5000	
	Disks/Optical	3*2TB Samsung M.2 SSD; 2*WD 2TB 7200RPM SATA HDD	
	Power Supply	Chicony 700W EPA92	
Declared Noise Emissions		**Sound Power** (LWAd, bels)	**Deskside Sound Pressure** (LpAm, decibels)
	Idle	3.59	18.5
	Hard drive Operating (Drive Random Seek)	3.82	20.1
	Hard drive Operating (Active mode)	3.97	23.6
System Configuration (High-end)	**Processor Info**	Intel® Core i9-12900K 16C 3.20G LGA 30 MB 125W ECC (Intel - –lder Lake-S)	
	Memory Info	4* 32GB 4800 SK hynix memory	
	Graphics Info	NVIDIA® RTX A5000	
	Disks/Optical	3*2TB Samsung M.2 SSD; 2*WD 2TB 7200RPM SATA HDD	
	Power Supply	Chicony 700W EPA92	

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System Technical Specifications

Declared Noise Emissions		**Sound Power** (LWAd, bels)	**Deskside Sound Pressure** (LpAm, decibels)
	Idle	3.58	18.2
	Hard drive Operating (Drive Random Seek)	3.78	20
	Hard drive Operating (Active mode)	4.05	20.9

Environmental Requirements	**Temperature**	Operating: 5° to 35° C (40° to 95° F) Non-operating: -40° to 60° C (-40° to 140° F) Maximum rate of change: 10°C/hr
	Humidity	Operating: 8% to 85% RH, non- condensing, 35° C maximum wet bulb Non-operating: 8% to 90% relative humidity, non-condensing, 35° C maximum wet bulb
	Maximum Altitude	Operating (with Rotational Hard Drives): 3,048 m (10,000 feet) Operating (with only Solid-State Drives): 5,000 m (16,404 feet) Non-operating: 12,192 m (40,000 feet) Maximum operating temperature is reduced as altitude increases. See Cooling for details.
	Dynamic	Shock Operating: ½-sine: 40g, 2-3ms (~62 cm/sec) Non-operating: ½-sine: 160 cm/s, 2-3ms (~105g) square: 422 cm/s, 20g Vibration Operating random: 0.5g (rms), 5-300 Hz, up to 0.0025g²/Hz Non-operating random: 2.0g (rms), 5-500 Hz, up to 0.0150 g²/Hz
	Cooling	Above 1524 m (5,000 feet) altitude, the maximum operating temperature is reduced by 1° C (1.8° F) for every 305 m (1,000 feet) increase in elevation, up to 3048 m (10,000 feet)
	NOTE:	System enduring or operating beyond the environmental requirement range is not recommended and may compromise system reliability permanently.

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System Technical Specifications

Physical Security and Serviceability

Access Panel	Tool-less Includes support information
Optical Drive	Tool-less, except for Screw-In carrier
Hard Drives	Tool-less, except for 2.5” ”bay
Expansion Cards	Tool-less
Processor Socket	Tool-less, except for the processor heatsink
Blue User Touch Points	Yes, on tool-less internal chassis mechanisms
Color-coordinated Cables and Connectors	Yes
Memory	Tool-less
System Board	Screw-In
Padlock Support	Yes (optional): Locks side cover and secures chassis from theft 0.22-in diameter padlock loop at rear of system
Cable Lock Support	Yes, Kensington Cable Lock (optional): Locks side cover and secures chassis from theft 3 mm x 7 mm slot at rear of system
Universal Chassis Clamp Lock Support	Yes (optional): Locks side cover and locks cables to chassis. Secures chassis from theft and allows multiple units to be chained together when used with optional cable Threaded feature at rear of system
Solenoid Lock and Hood Sensor	Yes (optional) The Solenoid Hood Lock eliminates the need for a physical key by making the chassis lockable through software and a password. You can also lock and unlock the chassis remotely over the network. The Sensor Kit detects when the access panel has been removed.
Rear Port Control Cover	No
CPUs and Heatsinks	A T-15 Torx or flat blade screwdriver is needed to remove the CPU heatsink before the CPU can be removed. CPU removal is tool-less
Internal Speaker	Yes
Power Supply Fans	70mm x 70mm x 25mm 4-wire PWM (non-serviceable)
Access Panel Key Lock	No
Integrated Chassis Handles	Rear Recessed Handle
Power Supply	Requires T15 Torx or flat blade screwdriver
PCI Card Retention	Yes, rear (all), middle (optional), front (full-length cards with extender)

Service, Support, and Warranty

On-site Warranty and Service[1]: Three-years, limited warranty and service offering delivers on-site, next business-day[2] service for parts and labor and includes free telephone support[3] 8am - –pm. Global coverage[2] ensures that any product purchased in one country and transferred to another, non-restricted country will remain fully covered under the original warranty and service offering. 24/7 operation will not void the HP warranty. Storage devices are not covered under warranty for 24/7 operation except for Enterprise class HDDs.

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply.
NOTE 2: On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.
NOTE 3: Technical telephone support applies only to HP-configured, HP and HP-qualified, third-party hardware and software. Toll-free calling and 24x7 support service may not be available in some countries.
HP Care Pack Services extend service contracts beyond the standard warranties. Service starts from date of hardware purchase. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at:

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System Technical Specifications

http://www.hp.com/go/lookuptool. Service levels and response times for HP Care Packs may vary depending on your geographic location.

Certification and Compliance

Environmental Sustainability questions concerning:

- Ecolabels (EPEAT, TCO, etc.)
- ENERGY STAR, California Energy Commission (CEC)
- Compliance with Environmental legislation (EU ErP, China CECP, EU RoHS and other countries)
- Supply Chain Social Environmental Responsibility (SER) (conflict minerals; human rights, etc.)
- Product specific environmental features (material content, packaging content, recycled content, etc.)
- China Energy Label (CEL)
-

Please contact sustainability@hp.com

For country specific Regulatory Compliance approval documents or Regulatory and Safety questions concerning:

- Declarations of Conformity (for self-service, go to https://www.hp.com/uk-en/certifications/technical/regulations-certificates.html?jumpid=ex_r135_uk/en/any/corp/hpuk-mu_chev/certificates)
- GS Certificates
- Product Safety Certificates (UL, CB, BIS, etc.)
- EMC Certificates, Declarations of Conformity, or Certificates of Conformity (CE, FCC, ICES, etc.)
- CCC Certificates
- Ergonomics
-

Please contact techregshelp@hp.com

BIOS

BIOS 64-bit Services	BIOS supports 64-bit Operating systems only.
PCI 3.0 Support	Full BIOS support for PCI Express through industry standard interfaces.
ATAPI	ATAPI Removable Media Device BIOS Specification Version 1.0.
BBS	BIOS Boot Specification v1.01.(Not support)
WMI Support	WMI is Microsoft's'implementation of Web-Based Enterprise Management (WBEM) for Windows. WMI is fully compliant with the Distributed Management Task Force (DMTF) Common Information Model (CIM) and WBEM specifications.
BIOS Boot Spec 1.01+	Provides more control over how and from what devices the workstation will boot.(Not Support)
BIOS Power On	Users can define a specific date and time for the system to power on.
ROM Based Computer Setup Utility (F10)	Review and customize system configuration settings controlled by the BIOS.
System/Emergency ROM Flash Recovery with Video	Recovers system BIOS in corrupted Flash ROM.
Replicated Setup	Saves BIOS settings to USB flash device in human readable file (HpSetup.txt). BiosConfigurationUtility.exe utility can then replicate these settings on machines being deployed without entering Computer Configuration Utility (F10 Setup).
SMBIOS	System Management BIOS 3.4, for system management information.
Boot Control	Disables the ability to boot from removable media on supported devices.
Memory Change Alert	Alerts management console if memory is removed or changed.
Thermal Alert	Monitors the temperature state within the chassis. Three modes: • NORMAL - –ormal temperature ranges. • ALERTED - –xcessive temperatures are detected. Raises a flag so action can be taken to avoid

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System Technical Specifications

	shutdown or provide for a smoother system shutdown. • SHUTDOWN - –xcessive temperatures are encountered. Automatically shuts down the computer without warning before hardware component damage occurs.
Remote ROM Flash	Provides secure, fail-safe ROM image management from a central network console.
ACPI (Advanced Configuration and Power Management Interface)	Allows the system to enter and resume from low power modes (sleep states). Enables an operating system to control system power consumption based on the dynamic workload. Makes it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system. Supports ACPI 6.0 for full compatibility with 64-bit operating systems.
Ownership Tag	A user-defined string stored in non-volatile memory that is displayed in the BIOS splash screen.
Remote Wakeup/Remote Shutdown	System administrators can power on, restart, and power off a client computer from a remote location.
Instantly Available PC (Suspend to RAM - –CPI sleep state S3)	Allows for very low power consumption with quick resume time.
Remote System Installation via F12 (PXE 2.1) (Remote Boot from Server)	Allows a new or existing system to boot over the network and download software, including the operating system.
ROM revision levels	Reports the system BIOS revision level in Computer Configuration Utility (F10 Setup). Version is available through an industry standard interface (SMBIOS and WMI) so that management SW applications can use and report this information.
System board revision level	Allows management SW to read revision level of the system board. Revision level is digitally encoded into the HW and cannot be modified.
Start-up Diagnostics (Power-on Self-Test)	Assesses system health at boot time with selectable levels of testing.
Auto Setup when new hardware installed	System automatically detects addition of new hardware.
Keyboard-less Operation	The system can be booted without a keyboard.
Localized ROM Setup	Common BIOS image supports System Configuration Utility (F10 Setup) menus in 15 languages with local keyboard mappings.
Asset Tag	The user or MIS to set a unique tag string in non-volatile memory.
Per-slot Control	Allows I/O slot parameters (option ROM enable/disable, bus latency) to be configured individually.
Adaptive Cooling	Control parameters are set according to detected hardware configuration for optimal acoustics.
Pre-boot Diagnostics	(Pre-video) critical errors are reported via beeps and blinks on the power LED.
UEFI Specification Revision	2.7B
ACPI	Advanced Configuration and Power Management Interface, Version 6.0
ATA (IDE)	AT Attachment 6 with Packet Interface (ATA/ATAPI-6), Revision 3b
CD Boot	“E“ Torito” ”ootable CD-ROM Format Specification Version 1.0
EDD	Enhanced Disk Drive Specification Version 1.1 BIOS Enhanced Disk Drive Specification Version 3.0(Not support)
EHCI	Enhanced Host Controller Interface for Universal Serial Bus, Revision 1.0
PCI	PCI Local Bus Specification, Revision 2.3 PCI Power Management Specification, Revision 1.1 PCI Firmware Specification, Revision 3.0, Draft .7
PCI Express	PCI Express Base Specification, Revision 2.0 PCI Express Base Specification, Revision 3.0 PCI Express Base Specification, Revision 4.0 PCI Express Base Specification, Revision 5.0 Ready
PMM	POST Memory Manager Specification, Version 1.01

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System Technical Specifications

SATA	Serial ATA Specification, Revision 1.0a Serial ATA 3 Gb/s: Serial ATA Specification, Revision 2.5 Serial ATA 6 Gb/s: Serial ATA Specification, Revision 3.0
SPD	JEDEC JESD300-5
TPM	Trusted Computing Group TPM Specification Version 2.0 (Infineon SLB 9670). Common Criteria EAL4+ certified. FIPS 140-2 Certification TCG TPM Certified products list: http://www.trustedcomputinggroup.org/certification/tpm-certified-products/
UHCI	Universal Host Controller Interface Design Guide, Revision 1.1
USB	Universal Serial Bus Revision 1.1 Specification Universal Serial Bus Revision 2.0 Specification Universal Serial Bus Revision 3.1 Specification Universal Serial Bus Revision 3.2 Specification
SMBIOS	System Management BIOS Reference Specification, Version 3.4 External BIOS simulator found at: http://csrsml.itcs.hp.com/

Social and Environmental Responsibility

Eco-Label Certifications & Declarations

This product is low halogen except for configurations that include HP Z Turbo Quad Pro PCIe TLC SSD, CRU QX 428 & QX448 removable storage frames, ConnectX-6 DX Amphenol 10 & 25 Gb Transceivers, Broadcom 5720-2P NIC Card, power cords, cables, and peripherals. Service parts obtained after purchase may not be Low Halogen.

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- IT ECO declaration
- US ENERGY STAR®
- US Federal Energy Management Program (FEMP)
- EPEAT® Gold with Climate+ registered. See www.epeat.net for registration status and tier levels by country
- TCO Certified configurations available
- China Energy Conservation Program (CECP)
- China State Environmental Protection Administration (SEPA)
- Taiwan Green Mark
- Korea Eco-label
- Japan PC Green label*

Sustainable Impact Specifications

- Product Carbon Footprint (hp.com)
- Ocean-bound plastic in System FAN, CPU FAN and Speaker
- 50% post-consumer recycled plastic
- Low halogen PCAs
- Outside Box and corrugated cushions are 100% sustainably sourced and recyclable
- Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable
- 10% ITE-derived closed loop plastic
- Bulk packaging available
- Contains recycled metal
- 80 Plus® Gold power supplies available

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.

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System Technical Specifications

Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Sort idle)	34.16 W	34.01 W	34.39 W
Normal Operation (Long idle)	32.77 W	32.74 W	33.15 W
Sleep	2.57 W	2.54 W	2.57 W
Off	0.67 W	0.68 W	0.67 W

NOTE:
Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family . HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	116.8 BTU/hr	116.3 BTU/hr	117.6 BTU/hr
Normal Operation (Long idle)	112.1 BTU/hr	112 BTU/hr	113.4 BTU/hr
Sleep	8.8 BTU/hr	8.7 BTU/hr	8.8 BTU/hr
Off	2.3 BTU/hr	2.3 BTU/hr	2.3 BTU/hr

***NOTE:** Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the

Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product is 94.8% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	1214 g
	PAPER/Molded Pulp	890 g
Internal:	PLASTIC/Polyethylene low density - – DPE	40 g

The plastic packaging material contains at least 0.0% recycled content.

The corrugated paper packaging materials contains at least 62.5% recycled content.

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System Technical Specifications

RoHS Compliance

HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.

We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.

We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve.

To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Bis(2-Ethylhexyl) phthalate (DEHP)
- Benzyl butyl phthalate (BBP)
- Dibutyl phthalate (DBP)
- Diisobutyl phthalate (DIBP)
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

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System Technical Specifications

Packaging Usage

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

End-of-life Management and Recycling

HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

HP, Inc. Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report
http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html
Eco-label certifications
http://www8.hp.com/us/en/hp-information/environment/ecolabels.html
ISO 14001 certificates:
http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842
and
http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

footnotes

- Percentage of ocean-bound plastic contained in each component varies by product
- Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.
- External power supplies, WWAN modules, power cords, cables and peripherals excluded.
- 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.
- Fiber cushions made from 100% recycled wood fiber and organic materials.

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Technical Specifications - Hard Drives

SATA Hard Drives for HP Workstations	**500GB SATA 7200 rpm 6Gb/s 3.5" "DD**	**Capacity**	500GB	
"		**Protocol**	SATA	
		Controller	AHCI	
		Height	1 in; 2.54 cm	
		Width	**Media Diameter**	3.5 in; 8.9 cm
			Physical Size	4 in; 10.17 cm
		Interface	Serial ATA (6.0Gb/s), NCQ enabled	
		Synchronous Transfer Rate (Maximum)	Up to 600MB/s *	
		Buffer	32MB	
		Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	2 ms *
			Average	11 ms *
			Full Stroke	21 ms *
		Rotational Speed	7,200 rpm	
		Logical Blocks	976,773,168	
		Operating Temperature	41° to 131° F (5° to 55° C)	

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

	1TB SATA 7200 rpm 6Gb/s 3.5" "DD	**Capacity**	1TB	
		Protocol	SATA	
"		**Controller**	AHCI	
		Height	1 in; 2.54 cm	
		Width	**Media Diameter**	3.5 in; 8.9 cm
			Physical Size	4 in; 10.17 cm
		Interface	Serial ATA (6.0Gb/s), NCQ enabled	
		Synchronous Transfer Rate (Maximum)	Up to 600 MB/s *	
		Buffer	64MB	
		Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	2 ms *
			Average	11 ms *
			Full Stroke	21 ms *
		Rotational Speed	7,200 rpm	
		Logical Blocks	1,953,525,168	
		Operating Temperature	41° to 131° F (5° to 55° C)	

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

	2TB SATA 7200 rpm 6Gb/s 3.5" "DD	**Capacity**	2TB	
		Protocol	SATA	
"		**Controller**	AHCI	
		Annualized Failure Rate (based on Rated POH)	<0.62%	
		Height	1 in; 2.54 cm	
		Width	**Media Diameter**	3.5 in; 8.9 cm

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Technical Specifications - Hard Drives

		Physical Size	4 in; 10.17 cm
	Interface	Serial ATA (6.0 Gb/s), NCQ Enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s *	
	Buffer	64MB	
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	2.0 ms *
		Average	11 ms *
		Full Stroke	21 ms *
	Rotational Speed	7,200 rpm	
	Logical Blocks	3,907,029,168	
	Operating Temperature	41° to 131° F (5° to 55° C)	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

1TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	**Capacity**	1TB	
	Height	1 in; 2.54 cm	
	Protocol	SATA	
	Controller	AHCI	
	Reliability	2.0M hours	
	Rated Power On Hours	8760/yr	
	Annualized Failure Rate (based on Rated POH)	<0.62%	
	Width	**Media Diameter**	3.5 in; 8.9 cm
		Physical Size	4 in; 10.17 cm
	Interface	Serial ATA (6.0 Gb/s), NCQ Enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s *	
"	**Buffer**	128MB	
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	0.32ms*
		Average	7.45ms*
		Full Stroke	14.2ms*
	Rotational Speed	7,200 rpm	
	Operating Temperature	41° to 140° F (5° to 60° C)	
	Performance	**Sequential Read**	up to 226MB/s*
		Sequential Write	up to 226MB/s*
	Enterprise Class Features	High Reliability	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

2TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	**Capacity**	2TB
	Protocol	SATA
	Controller	AHCI
"	**Reliability (MTBF)**	2.0M hours
	Rated Power On Hours	8760/yr

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Technical Specifications - Hard Drives

	Annualized Failure Rate (based on Rated POH)	<0.62%	
	Rated for 24/7/365 Operation		
	Physical Size (Height)	1 in; 2.54 cm	
	Physical Size (Width)	4 in; 10.17 cm	
	Media Diameter	3.5 in; 8.9 cm	
	Interface	Serial ATA (6Gb/s), NCQ enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
	Buffer	128MB	
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	0.7ms*
		Average	8.5ms*
		Full Stroke	15.7ms*
	Rotational Speed	7,200 rpm	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Performance	**Sequential Read**	up to 226MB/s*
		Sequential Write	up to 226MB/s*
	Enterprise Class Features	High Reliability	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

4TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	**Capacity**	4TB	
	Protocol	SATA	
	Controller	AHCI	
	Reliability	2.0M hours	
	Rated Power On Hours	8760/yr	
	Annualized Failure Rate (based on Rated POH)	<0.62%	
	Rated for 24/7/365 Operation		
	Physical Size (Height)	1 in; 2.54 cm	
	Physical Size (Width)	4 in; 10.17 cm	
	Media Diameter	3.5 in; 8.9 cm	
	Physical Size	4 in; 10.17 cm	
"	**Interface**	Serial ATA (6Gb/s), NCQ enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
	Buffer	256MB	
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	0.7ms*
		Average	8.5ms*
		Full Stroke	15.7ms*
	Rotational Speed	7,200 rpm	
	Operating Temperature	41° to 131° F (5° to 55° C)	

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Technical Specifications - Hard Drives

	Performance	**Sequential Read**	up to 226MB/s*
		Sequential Write	up to 226MB/s*
	Enterprise Class Features	High Reliability	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

8TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	**Capacity**	8TB	
	Protocol	SATA	
	Controller	AHCI	
	Reliability	2.0M hours	
	Width	**Media Diameter**	3.5 in; 8.9 cm
		Physical Size	4 in; 10.17 cm
	Interface	Serial ATA (6Gb/s), NCQ enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
	Buffer	256MB	
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	0.7ms*
		Average	8.5ms*
		Full Stroke	15.7ms*
	Rotational Speed	7,200 rpm	
	Operating Temperature	41° to 140° F (5° to 60° C)	
	Performance	**Sequential Read**	up to 226MB/s*
		Sequential Write	up to 226MB/s*
	Enterprise Class Features	High Reliability	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

500GB SATA 7.2K SED 2.5" "DD	**Capacity**	500GB	
	Protocol	SATA	
	Height	0.275 in; 0.7 cm	
	Width	Media Diameter	2.5 in; 6.36 cm
		Physical Size	2.75 in; 6.99 cm
	Interface	Serial ATA (6.0Gb/s), NCQ enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
	Buffer	64MB	
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	1ms*
		Average	4.2ms*
		Full Stroke	25ms (Typical)*
	Rotational Speed	7,200 rpm	
	Operating Temperature	32° to 131° F (0° to 60° C)	
	Self-Encrypting Drive Support	Yes	

"

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Technical Specifications - Hard Drives

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIE-4X4 512GB TLC PCIe SSD (Z2G9)	**Capacity**	512GB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	150TBW (TB Written)	
	Reliability (MTBF)	1.5M hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6400MB/s*
		Sequential Write	3400MB/s*
		Random Read	600K IOPS*
		Random Write	600K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIE-4X4 1TB TLC PCIe SSD (Z2G9)	**Capacity**	1TB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	300TBW (TB Written)	
	Reliability	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*
		Sequential Write	5000MB/s*
		Random Read	800K IOPS*
		Random Write	800K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIE-4X4 2TB TLC PCIe SSD (Z2G9)	**Capacity**	2TB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	500TBW (TB Written)
	Reliability	1.5M Hours
	Interface	PCI Express 4.0 x4 electrical

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	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*
		Sequential Write	5000MB/s*
		Random Read	800K IOPS*
		Random Write	800K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIE-4X4 4TB TLC PCIe SSD	**Capacity**	4TB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	600TBW (TB Written)	
	Reliability (MTBF)	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*
		Sequential Write	5000MB/s*
		Random Read	700K IOPS*
		Random Write	700K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIE Gen4x4 4TB TLC PCIe SED OPAL2	**Capacity**	4TB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	600TBW (TB Written)	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*
		Sequential Write	5000MB/s*
		Random Read	700K IOPS*
		Random Write	700K IOPS*
	Self-Encrypting Drive Support	OPAL2	

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv 512GB	**Capacity**	512GB
	Protocol	PCIe

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Technical Specifications - Hard Drives

TLC PCIe SED OPAL2 (Z2G9)	**Form Factor**	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	150TBW (TB Written)	
	Reliability	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6400MB/s*
		Sequential Write	3400MB/s*
		Random Read	600K IOPS*
		Random Write	600K IOPS*
	Self-Encrypting Drive Support	OPAL2	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv 1TB TLC PCIe SED OPAL2 (Z2G9)	**Capacity**	1TB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	300TBW (TB Written)	
	Reliability	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*
		Sequential Write	5000MB/s*
		Random Read	800K IOPS*
		Random Write	800K IOPS*
	Self-Encrypting Drive Support	OPAL2	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv 2TB TLC PCIe SED OPAL2 (Z2G9)	**Capacity**	2TB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	500TBW (TB Written)	
	Reliability	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*

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		Sequential Write	5000MB/s*
		Random Read	800K IOPS*
		Random Write	800K IOPS*
	Self-Encrypting Drive Support	OPAL2	

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

256GB 2280 PCIe-4x4 Value M.2 SSD	**Capacity**	256GB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	150TBW (TB Written)	
	Reliability	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 158° F (0° to 70° C)	
	Performance	**Sequential Read**	3100MB/s*
		Sequential Write	1400MB/s*
		Random Read	200K IOPS*
		Random Write	400K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

512GB 2280 PCIe-4x4 Value M.2 SSD	**Capacity**	512GB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	300TBW (TB Written)	
	Reliability	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 158° F (0° to 70° C)	
	Performance	**Sequential Read**	3400MB/s*
		Sequential Write	2500MB/s*
		Random Read	380K IOPS*
		Random Write	430K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

1TB 2280 PCIe-4x4 Value M.2 SSD	**Capacity**	1TB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe

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Technical Specifications - Hard Drives

NAND Type	3D TLC	
Endurance	400TBW (TB Written)	
Reliability	1.5M Hours	
Interface	PCI Express 4.0 x4 electrical	
Operating Temperature	32° to 158° F (0° to 70° C)	
Performance	**Sequential Read**	3400MB/s*
	Sequential Write	2500MB/s*
	Random Read	500K IOPS*
	Random Write	440K IOPS*

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

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Technical Specifications - Graphics

AMD Radeon™ Pro W6600 8GB Graphics	**Form Factor**	Single slot, full-height, 9.5” length
	Graphics Controller	Navi23 architecture Power: 122 Watts Cooling Solution: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x8
	Memory	8GB GDDR6 Memory Memory Bandwidth: 224 GB/s Memory Interface: 128 bit
	Connectors	4x DisplayPort™ 1.4 with DSC - HDR Ready - Supports Multi-Stream Transport (MST)
	Max simultaneous displays	@ 60Hz with HDR Enabled 4x @ 3840x2160px (4K) 4x @ 5120x2880px (5K) 1x @ 7680x4320px (8K)
	Shading Architecture	DirectX 12 Shader Model 6.5
	Supported Graphics APIs	DirectX®12 Ultimate OpenGL® 4.6 OpenCL™ 2.1 Vulkan™ 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
AMD Radeon™ Pro W6800 32GB Graphics	**Form Factor**	Double slot, full-height, 10.5” length
	Graphics Controller	Navi21 architecture Power: 261 Watts Cooling Solution: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	8GB GDDR6 Memory Memory Bandwidth: 512 GB/s Memory Interface: 256 bit
	Connectors	6x Mini-DisplayPort™ 1.4 with DSC - HDR Ready - Supports Multi-Stream Transport (MST)
	Max simultaneous displays	@ 60Hz with HDR Enabled 6x @ 3840x2160px (4K) 6x @ 5120x2880px (5K) 2x @ 7680x4320px (8K)
	Shading Architecture	DirectX 12 Shader Model 6.5
	Supported Graphics APIs	DirectX®12 Ultimate OpenGL® 4.6 OpenCL™ 2.1 Vulkan™ 1.2

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Technical Specifications - Graphics

NVIDIA® T400 4GB Graphics	**Form Factor**	Single Slot, Low Profile (2.7" H x 6.1" L)
	Graphics Controller	Turing architecture Max Power: 30 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	4GB GDDR6 Memory Memory Bandwidth: 80 GB/s Memory Interface: 64 bit
	Connectors	3x mDP (Mini DisplayPort™) 1.4 Connectors
	Max simultaneous displays	- 3x 3840 x 2160 @ 120Hz - 3x 5120 x 2880 @ 60Hz - supports Multi-Stream Transport (MST)
	Shading Architecture	DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® T600 4GB Graphics*	**Form Factor**	Single Slot, Low Profile (2.7" H x 6.1" L)
	Graphics Controller	Turing architecture Max Power: 40 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	4GB GDDR6 Memory Memory Bandwidth: 160 GB/s Memory Interface: 128 bit
	Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors
	Max simultaneous displays	- 4x 3840 x 2160 @ 120Hz - 4x 5120 x 2880 @ 60Hz - 2x 7680 x 4320 @ 60Hz - supports Multi-Stream Transport (MST)
	Shading Architecture	DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)

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		HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
		*May go End of Life in late 2022
AMD® Radeon™ RX 6400 4GB Graphics	**Form Factor**	Single slot, Low Profile (2.8" H x 6.3" L) Weight: 155g
	Graphics Controller	Radeon™ RX 6400 Max Power: 53W Cooling Solution: Active axial fan Architecture: RDNA™ 2
	Bus Type	PCI Express x4 Gen4
	Memory	Size: 4GB GDDR6 Interface: 64-bit Bandwidth: up to 128 GB/s
	Connectors	DP (DisplayPort™) 1.4 + HDMI 2.1
	Max simultaneous displays	- up to 4x 5120 x 2880 x 24 bpp @ 60Hz
	Shading Architecture	Microsoft DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL® 4.6 DirectX® 12 Ultimate Vulkan™ 1.1 API support includes: OpenCL™ 2.2
	Available Graphics Drivers	Microsoft Windows 10 64-bit, Windows 11 64-bit HP qualified drivers may be preloaded or the latest prosumer graphics drivers are available from the AMD.com
	Notes	This is a Prosumer or Consumer graphics card, and not a Professional graphics card. As such, it does not have formal professional application validation, but is intended per AMD to function properly for game development, real-time engine, and many prosumer application workloads. Customers using Prosumer or Consumer graphic cards with axial fan cooling solutions are likely to experience higher acoustics in comparison with Professional graphic cards that use blower fan cooling.
NVIDIA® T1000 4GB Graphics	**Form Factor**	Single Slot, Low Profile (2.7" H x 6.1" L)
	Graphics Controller	Turing architecture Max Power: 50 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	4GB GDDR6 Memory Memory Bandwidth: 160 GB/s Memory Interface: 128 bit
	Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors

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Technical Specifications - Graphics

	Max simultaneous displays	- 4x 3840 x 2160 @ 120Hz - 4x 5120 x 2880 @ 60Hz - 2x 7680 x 4320 @ 60Hz - supports Multi-Stream Transport (MST)
	Shading Architecture	DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® T1000 8GB Graphics	**Form Factor**	Single Slot, Low Profile (2.7” H x 6.1” L)
	Graphics Controller	Turing architecture Max Power: 50 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	8GB GDDR6 Memory Memory Bandwidth: 160 GB/s Memory Interface: 128 bit
	Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors
	Max simultaneous displays	- 4x 3840 x 2160 @ 120Hz - 4x 5120 x 2880 @ 60Hz - 2x 7680 x 4320 @ 60Hz - supports Multi-Stream Transport (MST)
	Shading Architecture	DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® RTX 2000 Ada	**Form Factor**	Half Height Dual Slot (2.7" Height x 6.7" Length)
	Max Power Consumption	70W

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Technical Specifications - Graphics

	GPU Memory	16GB GDDR6 Memory Bandwidth: 224 GB/s Memory Width: 128-bit
	Connectors	4x Mini DisplayPort 1.4a
	Maximum Resolution	4x 4096 x 2160 @ 120 Hz 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz
	Bus Type	PCI Exress 4.0 x8
	Avaliable Drivers	Windows 10 Windows 11
NVIDIA® RTX™ A2000 12GB Graphics	**Form Factor**	Low-Profile Double Slot (2.7” H x 6.1” L)
	Graphics Controller	Ampere architecture Power: 70 Watts Cooling: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	12GB GDDR6 memory Memory Bandwidth: 288 GB/s Memory Interface: 192 bit Support Error-correcting code (ECC)
	Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors
	Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz
	Shading Architecture	Shader Model 6.5
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® RTX 4000 Ada	**Form Factor**	Full-Height Single Slot (4.4” Height x 11.5” Length)
	Max Power Consumption	130W
	GPU Memory	20GB GDDR6 Memory Bandwidth: 360 GB/s Memory Width: 160-bit
	Connectors	4x DisplayPort 1.4a Requires: 1x 16-pin CEM 5 power connector (adapter may be needed)
	Maximum Resolution	4x @ 4096 x 2160 @ 120Hz 4x @ 5120 x 2880 @ 60Hz 2x @ 7680 x 4320 @ 60Hz

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Technical Specifications - Graphics

	Bus Type	PCI Exress 4.0 x16
	Avaliable Drivers	Windows 10 Windows 11
NVIDIA® RTX™ A4000 16GB Graphics	**Form Factor**	Full Height Single Slot (9.5” Length)
	Graphics Controller	Ampere architecture Power: 140 Watts Cooling: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	16GB GDDR6 memory Memory Bandwidth: 448 GB/s Memory Interface: 256 bit Support Error-correcting code (ECC)
	Connectors	4x DP 1.4 Connectors
	Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz, 2x 7680 x 4320 @ 60 Hz
	Shading Architecture	Shader Model 6.5
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® RTX™ A4500 20GB Graphics	**Form Factor**	Full Height Double Slot (10.5” Length)
	Graphics Controller	Ampere architecture Power: 200 Watts Cooling: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	20GB GDDR6 memory Memory Bandwidth: 640 GB/s Memory Interface: 320 bit Support Error-correcting code (ECC)
	Connectors	4x DP 1.4 Connectors
	Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz, 2x 7680 x 4320 @ 60 Hz
	Shading Architecture	Shader Model 6.5
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2

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Technical Specifications - Graphics

		API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® RTX™ A5000 24GB Graphics	**Form Factor**	Full Height Double Slot (10.5" Length)
	Graphics Controller	Ampere architecture Power: 230 Watts Cooling: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	24GB GDDR6 memory Memory Bandwidth: 768 GB/s Memory Interface: 384 bit Support Error-correcting code (ECC)
	Connectors	4x DP 1.4 Connectors
	Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz, 2x 7680 x 4320 @ 60 Hz
	Shading Architecture	Shader Model 6.5
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
AMD® Radeon™ Pro W7600 8GB	**Form Factor**	Full-Height Single Slot (4.38" "eight x 9.5" "ength)
	Max Power Consumption	130W
	GPU Memory	8GB GDDR6 Memory Bandwidth: 288 GB/s Memory Width: 128-bit
	Connectors	4x DP 2.1 Requires : 1x 6-pin PCIe Aux Power
	Maximum Resolution	4x @ 3840x2160 (4K) 4x @ 5120x2880 (5K) 2x @ 7680x4320 (8K)
	Bus Type	PCI Express 4.0 x8

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Technical Specifications - Graphics

	Available Graphics Drivers	Windows 10 Windows 11
	Form Factor	Full-Height Single Slot (4.38" ”eight x 8.5" ”ength)
MD® Radeon™ Pro W7500 8GB	**Max Power Consumption**	70W
	GPU Memory	8 GB GDDR6 Memory Bandwidth: 173 GB/s Memory Width: 128-bit
	Connectors	4x DP 2.1
	Maximum Resolution	4x @ 3840x2160 (4K) 4x @ 5120x2880 (5K) 2x @ 7680x4320 (8K)
	Bus Type	PCI Express 4.0 x8
	Available Graphics Drivers	Windows 10 Windows 11
AMD Radeon™ RX 6700 XT	**Form Factor**	Dual slot, Full Length (254mm L x 38mm W x 108.65mm H)
	Graphics Controller	AMD Radeon™ RX 6700 XT Graphics GPU: 2560 Navi2 Stream Processors Memory: 12GB GDDR6 Power: 230 Watts, Standard graphics 8pin + 6pin auxiliary power Cooling: Active, Dual Axial fan
	Bus Type	PCI Express 4.0 x16
	Connectors	3DP 1.4 + HDMI 2.1 Outputs
	Maximum Resolution	DisplayPort™ 1.4 with DSC: - up to 4x 5210 x 3200 x 24 bpp @ 60Hz, uncompressed - up to 7680 x 4320, compressed Display Outputs 3 DP + 1 HMDI
	Shading Architecture	Microsoft DirectX 12 Shader Model 6.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Feature Level 12_1 Vulkan 1.1 OpenCL 2.2
	Available Graphics Drivers	Windows 11 Linux® 64-bit (selected distributions) Typically, latest drivers will be available from amd.com

Notes: This is a Prosumer or Consumer graphics card, and not a Professional graphics card. As such, it does not have formal professional application validation, but is intended per AMD to function properly for game development, real-time engine, and many prosumer application workloads. Customers using Prosumer or Consumer graphic cards are likely to experience higher acoustics in comparison with Professional graphic cards. The higher acoustics observed with non-professional graphics is expected, as HP Workstations' designs do not have control in this area.

HP 9.5mm Slim DVD Writer	**Description**	9.5mm height, tray-load
	Mounting Orientation	Either horizontal or vertical
	Interface Type	SATA/ATAPI
	Dimensions (WxHxD)	128 x 9.5 x 127mm
	Supported Media Types	DVD+R DVD+RW

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Technical Specifications - Graphics

	DVD+R DL DVD-R DL DVD-R DVD-RW CD-R CD-RW	
Disc Capacity	**DVD-ROM**	8.5 GB DL or 4.7 GB standard
Access Times	**Full Stroke DVD**	< 200 ms (seek)
	Full Stroke CD	< 200 ms (seek)
Maximum Data Transfer Rates	**CD ROM Read**	CD-ROM, CD-R Up to 24X CD-RW Up to 24X
	DVD ROM Read	DVD+RW Up to 8X DVD-RW Up to 8X DVD+R DL Up to 8X DVD-R DL Up to 8X DVD-ROM Up to 8X DVD-ROM DL Up to 8X DVD+R Up to 8X DVD-R Up to 8X
Power	**Source**	SATA DC power receptacle
	DC Power Requirements	5 VDC ± 5%-100 mV ripple p-p
	DC Current	5 VDC -< 800 mA typical, <1600 mA maximum
Operating Environmental (all conditions non-condensing)	**Temperature**	41° to 122° F (5° to 50° C)
	Relative Humidity	10% to 80%
	Maximum Wet Bulb Temperature	84° F (29° C)
Operating Systems Supported	Windows 11, Windows 10, Windows 7 Professional 64-bit, Windows Vista Business 64*, Windows 2000. Linux®.	
Kit Contents	HP SATA DVD Writer drive, installation guide.	
Approvals	USB-IF, WHQL, Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0, Compliant Intel Front Panel I/O Connectivity Design Guide V. 1.3, FCC, CE, BSMI, C-Tick, VCCI, MIC, cUL, TUVT	

NOTE: Actual speeds may vary. No support for DVD-RAM (DVD Writer). Does not permit copying of commercially available DVD movies or other copyright protected materials. Intended for creation and storage of your original material and other lawful uses. Double Layer discs can store more data than single layer discs. However, double-layer discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.

HP 9.5mm Slim DVD-ROM Drive	**Description**	9.5mm height, tray-load	
	Mounting Orientation	Either horizontal or vertical	
	Interface Type	SATA / ATAPI	
	Dimensions (WxHxD)	128 x 9.5 x 127mm	
	Disc Capacity	**DVD-ROM**	Single layer: Up to 4.7 GB Double layer: Up to 8.5 GB

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Access Times	**DVD-ROM Single Layer**	< 110 ms (typical)
	CD-ROM Mode 1	< 110 ms (typical)
	Full Stroke DVD	< 230 ms (typical)
	Full Stroke CD	< 220 ms (typical)
Power	**Source**	SATA DC power receptacle
	DC Power Requirements	5 VDC ± 5%-100 mV ripple p-p
	DC Current	5 VDC – <800mA typical, < 1600 mA maximum
Operating Environmental (all conditions non-condensing)	**Temperature**	41° to 122° F (5° to 50° C)
	Relative Humidity	10% to 80%
	Maximum Wet Bulb Temperature	84° F (29° C)
Operating Systems Supported	Windows 11, Windows 10, Windows 7 Professional 64-bit, Windows Vista Business 64*, Windows 2000. Linux®.	
Kit Contents	9.5mm Slim DVD-ROM Drive, slim SATA data/power cable, installation guide	
Approvals	USB-IF, WHQL, Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0, Compliant Intel Front Panel I/O Connectivity Design Guide V. 1.3, FCC, CE, BSMI, C-Tick, VCCI, MIC, cUL, TUVT	

NOTE: Actual speeds may vary. No support for DVD-RAM (DVD Writer). Does not permit copying of commercially available DVD movies or other copyright protected materials. Intended for creation and storage of your original material and other lawful uses. Double Layer discs can store more data than single layer discs. However, double-layer discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.

HP SD Media Card Reader

Description

USB3.0-SD4.0

NOTE: actual throughput is USB2.0.

Interface Type

- Support USB 2.0 LPM function
- Support USB 3.0 U1/U2/U3 Power saving mode
- Support USB 3.0 LTM function.

Dimensions (WxHxD) Dedicated slot in front bezel (orderable option)

Supported Media Types

i. Secure Digital Card (SD)
ii. Secure Digital Support up to 2TB
iii. Secure Digital HC (SDHC)
iv. Secure Digital XC (SDXC)
v. Support SD USH50 mode
vi. miniSD *1
vii. miniSDHC*1
viii. MicroSD*1
ix. MicroSDHC*1
x. MicroSDXC*1

NOTE: "*1" means Adapter Needed

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Technical Specifications - Graphics

Operating Systems Supported	No driver is required for this device. Native support is provided by the operating system. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.microsoft.com. See http://www.microsoft.com/windows/windows-7/ for details.

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Technical Specifications - Networking and Communications

Integrated Intel® I219LM PCIe GbE Controller (Intel® vPro® with Intel® AMT 16.0[1])	**Connector**	RJ-45
	Cabling	Twisted pair up to 100m
	Controller	Intel® I219LM GbE platform LAN connect networking controller
	Memory	3 KB Tx and 3KB Rx FIFO packet buffer memory
	Data Rates Supported	10/100/1000 Mbps
	Compliance	802.1as/1588, 802.1p, 802.1Q, 802.3, 802.3ab, 802.3az, 802.3i, 802.3u, 802.3z
	Bus Architecture	PCI Express and SMBus
	Data Transfer Mode	PCIe-based interface for active state operation (S0 state) and SMBus for host and management traffic (Sx low power state)
	Power Requirement	Requires 3.3V (integrated regulators for core Vdc)
	Boot ROM Support	Yes
	Network Transfer Mode	Full-duplex; Half-duplex
	Network Transfer Rate	10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps
	Management Capabilities	vPro®, WOL, auto MDI crossover, PXE, Muti-port teaming, RSS, ACPI, Advanced cable diagnostic, loopback modes, AMT 16.0 support, Circuit Breaker, VLAN, Multicast Listener Discovery (MLD)

[1]Requires activation and a system with a corporate network connection, an Intel® AMT enabled chipset, and network hardware and software. For notebooks, Intel AMT may be unavailable or limited over a host OS-based VPN, when connecting wirelessly, on battery power, sleeping, hibernating, or powered off. Results dependent upon hardware, setup, and configuration. For more information, visit: https://www.intel.com/content/www/us/en/architecture-and-technology/intel-active-management-technology.html

HP 1-Port 1GbE Flex IO NIC	**Connector**	RJ-45
	Cabling	1GbE over Category 5e (or better) up to 100m
	Controller	Realtek RTL8153
	Data Rates Supported	10/100/1000 Mbps
	Compliance	802.3 (LAN) 802.3u (100BASE-TX) 802.3ab (1000BASE-T) 802.3x (Ethernet Flow Control) 802.1Q (Virtual LAN) 802.3az (Energy Efficient Ethernet)
	Bus Architecture	USB
	Power Requirement	Requires 3.3V (integrated regulators for core Vdc)
	Boot ROM Support	Yes
	Network Transfer Mode	Full-duplex; Half-duplex
	Network Transfer Rate	10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps

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Technical Specifications - Networking and Communications

		100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	1.5 in x 1.5 in. x 0.75 in (3.81 cm x 3.81 cm x 1.9 cm)
	Operating System Driver Support	Windows 11 64-bit Windows 10 64-bit Linux®

Intel® X550-T2 2-Port 10GbE NIC	**Connector**	Dual-port RJ-45
	Cabling	10GbE: Cat6a (or better) up to 100m 5GbE and below: Cat5e (or better) up to 100m
	Controller	Intel® Ethernet Controller X550
	Network Transfer Rates Supported	10GbE, 5GbE, 2.5GbE, 1GbE, 100MbE
	Data Path Width	PCIe Gen3x4
	Power Requirement	11.2W (typical) 13.0 (Maximum)
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	5.1 x 2.7 in (without brackets)
	Operating System Driver Support	Windows 11 64-Bit Windows 10 64-bit Linux®
	Kit Contents	• Intel® X550-T2 2-Port 10GbE NIC with standard height bracket attached • Low-profile bracket • Product Literature

NVIDIA Mellanox ConnectX-6 DX Dual Port 10/25GbE SFP28 NIC	**Connector**	Dual-port SFP28
	Cabling	Transceiver with Multi-Mode Fiber OM3 or OM4)
	Controller	ConnectX-6 Dx
	Network Transfer Rates Supported	1/10/25 GbE
	Data Path Width	PCIe Gen4x8
	Power Requirement	19.74W Maximum power available through SFP28 port: 2.5W (each port)
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	6.22in. x 2.67in (158mm x 68mm)
	Operating System Driver	Windows 11 64-Bit Windows 10 64-bit Linux®
	Kit Contents	• NVIDIA Mellanox ConnectX-6 SFP28 25GbE NIC with standard height bracket attached • Low-profile bracket • Product Literature

NOTE: The NVIDIA Mellanox ConnectX-6 DX network adapter requires either a PCIeG4 x4 or PCIeG4 x8 slot (electrical connection) to have full performance with two 25GbE SFP28 transceivers installed in the network adapter. When the network adapter is installed in a PCIeG3 x4 slot, the performance will

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Technical Specifications - Networking and Communications

		be limited when installing two 25GbE SFP28 transceivers or installing a 25GbE SFP28 transceiver plus a 10GbE SFP+ transceiver
Intel® I350-T4 4-Port 1GbE NIC	**Connector**	4 RJ-45
	Cabling	Cat5e (or better) up to 100m
	Controller	Intel® Ethernet I350 Controller
	Network Transfer Rates Supported	1GbE, 100MbE, 10MbE
	Data Path Width	PCIe Gen2.1x4
	Power Requirement	5W (typical)
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	2.75 x 5.5 inches (without brackets)
	Operating System Driver Support	Windows 11 Windows 10 Linux®
	Kit Contents	• Intel® I350-T4 4-Port 1GbE NIC with standard height bracket attached • Low-profile bracket • Product Literature
HP Flex 1GbE Fiber LC Single Port	**Connector**	Fiber
	Cabling	1GbE over Category OM1 (or better) up to 100m
	Controller	Microchip LAN7801
	Data Rates Supported	100/1000 Mbps
	Compliance	IEEE 802.1p priority encoding/tagging (QoS, CoS) IEEE 802.1q VLAN tagging IEEE 802.3x flow control
	Bus Architecture	USB
	Power Requirement	Requires 3.3V (integrated regulators for core Vdc)
	Boot ROM Support	Yes
	Network Transfer Mode	Full-duplex; Half-duplex
	Network Transfer Rate	100BASE-X (half-duplex) 100 Mbps 1000BASE-X (half-duplex) 1000 Mbps 1000BASE-X (full-duplex) 2000 Mbps
	Operating Temperature	32° to 158° F (0°C to 70°C)
	calvin	1.5 in x 1.7 in. x 0.75 in (3.84 cm x 4.3 cm x 1.9 cm)
	Operating System Driver Support	Windows 11 64-Bit Windows 10 64-bit Linux®
Intel® I225-T1 1-Port 2.5GbE NIC	**Connector**	RJ-45
	Cabling	Cat5e (or better) up to 85m
	Controller	Intel® Ethernet I225 Controller
	Network Transfer Rates Supported	2.5GbE, 1GbE, 100MbE, 10MbE

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Technical Specifications - Networking and Communications

	Data Path Width	PCIe Gen3.1x1
	Power Requirement	1.9W (typical)
	Operating Temperature	32° to 158° F (0°C to 70°C)
	Dimensions (HxW)	2.7 in x 2.57 in. (68.7mm x 65.3mm)
	Operating System Driver	Windows 11 64-Bit Windows 10 64-bit Linux®
	Kit Contents	• Intel® I225-T1 1-Port 2.5GbE NIC with standard height bracket attached Low-profile bracket • Product Literature

Intel® Wi-Fi 6E* AX211 802.11ax, BT 5.3, M.2 With Internal Antenna	**WLAN Standards**	802.11abgn+acR2+axR2(Pre-Standard) MIMO 2x2 High performance, low power dual band Pre-Standard-802.11ax R2 2x2, both with 160MHz channel support – Wi-Fi 6E
	Antenna	2x2 Dual-Band (internal)
	Bluetooth Standards	5.2
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2 CNVio2
	Dimensions	M.2 2230
	Kit Contents	Not Available

NOTE: The AX211 with internal antenna only support WIFI 6
*Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.

Intel® Wi-Fi 6E* AX211 802.11ax, BT 5.3, M.2 With External Antenna	**WLAN Standards**	802.11abgn+acR2+axR2(Pre-Standard) MIMO 2x2 High performance, low power dual band Pre-Standard-802.11ax R2 2x2, both with 160MHz channel support – Wi-Fi 6E
	Antenna	2x2 Dual-Band (External)
	Bluetooth Standards	5.2
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2 CNVio2
	Dimensions	M.2 2230
	Kit Contents	ANTENNA, External, Dipole, WLAN, WIFI 6E

NOTE: The AX211 with external antenna support WIFI 6E
*Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.

Intel® Wi-Fi 7 BE200	**WLAN Standards**	802.11abgn+acR2+axR2+be+dehikrv
	Antenna	2x2 Dual-Band (External)
	Bluetooth Standards	5.4
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2: PCIe, USB
	Dimensions	M.2 2230
	Kit Contents	ANTENNA, External, Dipole, WLAN, WIFI 7

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Technical Specifications - Networking and Communications

NOTE: Not available with 12th Gen Intel ADL processors; Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select Intel® processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported.

Intel® Wi-Fi 7 BE200 802.11be, BT 5.4, M.2 With Internal Antenna	**WLAN Standards**	802.11 a/b/g/n/ac/axR2/be MIMO 2x2 High performance, low power dual band 802.11be 2x2, Both 320MHz/160MHz Channel support - Wi-Fi 6E/7
	Antenna	2x2 Dual-Band (internal)
	Bluetooth Standards	5.4
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2: PCIe
	Dimensions	M.2 2230
	Kit Contents	Not Available

NOTE: Not available with 12th/13th Gen Intel ADL/RPL processors
The BE200 with internal antenna only supports Wi-Fi 6

Intel® Wi-Fi 7 BE200 802.11be, BT 5.4, M.2 With External Antenna	**WLAN Standards**	802.11 a/b/g/n/ac/axR2/be MIMO 2x2 High performance, low power dual band 802.11be 2x2, Both 320MHz/160MHz Channel support - Wi-Fi 6E/7
	Antenna	2x2 Dual-Band (External)
	Bluetooth Standards	5.4
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2: PCIe
	Dimensions	M.2 2230
	Kit Contents	ANTENNA, External, Dipole, WLAN, Wi-Fi 7

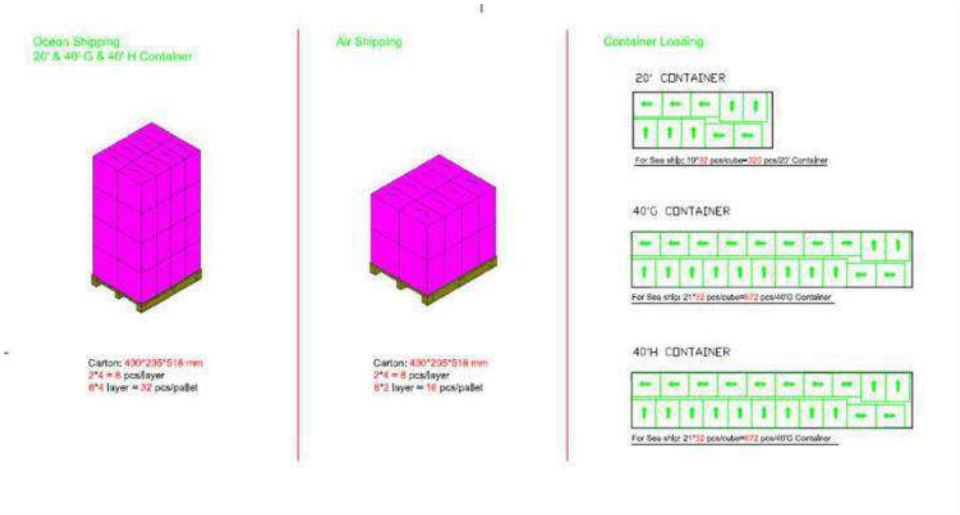
NOTE: Not available with 12th/13th Gen Intel ADL/RPL processors; Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select Intel® 14th processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported.

Palletization

Ocean Shipping uses a 20’ x 40’ x 40’ (490mm x 295mm x 518mm) container with 4 layers; 2x4=8 pieces per layer for a total of 32 pieces per pallet
Air shipping uses 490mm x 295mm x 518mm carton with 2 layers; 2x4=8 pieces per layer for a total of 16 pieces per pallet.

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Technical Specifications - Networking and Communications



Date of change:	Version History:		Description of change:
March 8, 2022	From v1 to v2	Changed	Format
March 16, 2022	From v2 to v3	Changed	Social and Environmental Responsibility section
May 6, 2022	From v3 to v4	Changed	Processors, Graphics, Networking and Communications sections
June 1, 2022	From v4 to v5	Changed	Operating Systems and SATA Hard Drives sections
June 15, 2022	From v5 to v6	Changed	Networking and Communications section
July 1, 2022	From v6 to v7	Changed	Graphics section
July 8, 2022	From v7 to v8	Changed	System Board section
August 1, 2022	From v8 to v9	Changed	SATA Hard Drives, Other Hardware sections
August 4, 2022	From v9 to v10	Changed	Format
September 1, 2022	From v10 to v11	Changed	Storage / Hard Drives, Graphics, Optical and Removable Storage Networking and Communications sections
October 1, 2022	From v11 to v12	Changed	Graphics, Networking and Communications sections
November 1, 2022	From v12 to v13	Changed	Graphics Adapters section
February 6, 2023	From v13 to v14	Changed	Processors section
March 1, 2023	From v14 to v15	Changed	Manageability section
March 30, 2023	From v15 to v16	Changed	Processors section
April 25, 2023	From v16 to v17	Changed	Power Supply, Social and Environmental Responsibility sections
May 1, 2023	From v17 to v18	Changed	Other Hardware section
June 1, 2023	From v18 to v19	Changed	Graphics, Social and Environmental Responsibility, Palletization sections
July 1, 2023	From v19 to v20	Changed	Networking and Communications, Other Hardware, HP BIOS sections
July 5, 2023	From v20 to v21	Changed	System Board section
August 1, 2023	From v21 to v22	Changed	Social and Environmental Responsibility section
August 1, 2023	From v22 to v23	Changed	ENVIRONMENTAL DATA section
September 15, 2023	From v23 to v24	Changed	Networking and Communications
October 1, 2023	From v24 to v25	Changed	Graphics, Input Devices sections
November 1, 2023	From v25 to v26	Changed	Graphics, Input Devices sections
December 1, 2023	From v26 to v27	Changed	Graphics, Other Hardware, Social and Environmental Responsibility sections
December 11, 2023	From v27 to v28	Changed	Optical and Removable Storage section
December 21, 2023	From v28 to v29	Changed	Graphics section
February 1, 2024	From v29 to v30	Changed	Social and Environmental Responsibility section
March 1, 2024	From v30 to v31	Changed	Graphics, System Configurations, Declared Noise Emissions and Networking and Communications sections
March 12, 2024	From v31 to v32	Changed	Processors section
April 1, 2024	From v32 to v33	Changed	Graphics and Other Hardware sections

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Technical Specifications - Networking and Communications

May 1, 2024	From v33 to v34	Changed	Graphics, Social and Environmental Responsibility sections
June 1, 2024	From v34 to v35	Changed	Storage section
July 1, 2024	From v35 to v36	Changed	Graphics, Memory, Networking and Communications sections
July 18, 2024	From v36 to v37	Changed	Software section
August 1, 2024	From v37 to v38	Changed	Graphics, Memory sections
August 1, 2024	From v38 to v39	Changed	Graphics section
September 24, 2024	From v39 to v40	Changed	Humidity, HP SD Media Card Reader sections
October 8, 2024	From v40 to v41	Changed	Format
October 31, 2024	From v41 to v42	Changed	Memory section
November 21, 2024	From v42 to v43	Changed	Format
January 2, 2025	From v43 to v44	Changed	Networking and Communications section

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Alameda Xingu, n.º 350, 8º andar
Alphaville Industrial, Barueri/SP
CEP: 06455-030
Brasil

declaração

Barueri, 10 de junho de 2025

Ao/À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

Assunto:
PREGÃO ELETRONICO 94010/2025-CPL/MP/PGJ SRP

BDI 22631

A empresa **Torino Informática Ltda**, inscrita no CNPJ **03.619.767/0001-91** sediada na RUA RITA DE CARVALHO MONTEIRO, 120, RETIRO SÃO JOÃO, SOROCABA, SP - CEP 18085-750 com filial inscrita no CNPJ **03.619.767/0005-15** situada a Avenida 600, s/n, Quadra 15, Módulo 10, Setor Industrial, TIMS, Serra, ES, CEP 29161-419, é um **PARCEIRO AUTORIZADO HP, PARA COMPRA DIRETA DE PRODUTOS DA HP**, estando apto a comercializar as linhas de produtos HP de nossa fabricação descritas abaixo.

Declaramos ainda que a TORINO INFORMÁTICA LTDA. é o parceiro de serviços do programa AMPLIFY, autorizado a prestar serviço de assistência técnica dos produtos que comercializa no telefone 0800 201-5666.

Produtos:

B20A5LS#AK4 – HP Elite Mini 800 G9 – Garantia padrão do fabricante
67V68AV#TMP – Z2 Tower G9 – Garantia padrão do fabricante
9Z0P1AV#TMP – EliteBook 640 G11 – Garantia padrão do fabricante
9A816AV#TMP – ZBook Power 16 inch G11 – Garantia padrão do fabricante

Declaramos ainda que, o produto **B20A5LS#AK4** – HP Elite Mini 800 G9:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;

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- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc.;
- Possui BIOS implementada em "flash ROM" atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão mínimo ACPI 6.0. E também compatível com os padrões: DMI, SNMP, WMI, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o preto ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;

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- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e front bezel de ABS
- O equipamento pode funcionar na posição horizontal ou vertical.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11 conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada, com suporte a múltiplos monitores (mínimo de 2) onde para maiores quantidades estará descrito na proposta comercial emitida pela CONTRATADA. Os monitores podem operar simultaneamente, de forma estendida ou espelhada
- Possui controladora de vídeo integrada com capacidade de alocar no mínimo 1.5GB de memória de vídeo, compartilhada de forma dinâmica com a memória RAM. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);
- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada desde que a CONTRATADA incluía este item na proposta comercial. Esta placa wireless tem suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP, desde que a CONTRATADA inclua este item na proposta comercial. Teclado HP com com todos os caracteres da língua portuguesa incluindo Ç, com teclado numérico embutido, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock” e “num lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado. Possui sistema de proteção contra derramamento acidental de pequenas quantidades de líquidos. Possui sistema para ajuste de inclinação e cabo USB de no mínimo 1.5m. Não possui teclas dedicadas de funções multimedia, desligar, hibernar ou standby.
- Possui mouse óptico da HP, desde que a CONTRATADA incluía este item na proposta comercial. Mouse HP com conector USB, cabo com comprimento mínimo de 1.8m, com resolução de 1000dpi, com 03 botões (esquerdo, direito e central próprio para rolagem (scrol)), formato ergonômico e de conformação ambidestra;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);

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- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui pagina na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, para o monitor, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **67V68AV#TMP** – Z2 Tower G9:

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- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará

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as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;

- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e função de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo SCCM, Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: portugues, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;
- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão minimo ACPI 6.0, E também compatível com os padrões: DMI, SNMP, WMI e SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;

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- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;

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- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o preto ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e front bezel de ABS
- O equipamento pode funcionar na posição horizontal ou vertical.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11 conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de desktop de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada desde que a CONTRATADA incluía este item na proposta comercial. Esta placa wireless tem suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP, desde que a CONTRATADA inclua este item na proposta comercial. Teclado HP com com todos os caracteres da língua portuguesa incluindo Ç, com teclado numérico embutido, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock” e “num lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado. Possui sistema de proteção contra derramamento acidental de

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pequenas quantidades de líquidos. Possui sistema para ajuste de inclinação e cabo USB de no mínimo 1.5m. Não possui teclas dedicadas de funções multimedia, desligar, hibernar ou standby.

- Possui mouse óptico da HP, desde que a CONTRATADA incluía este item na proposta comercial. Mouse HP com conector USB, cabo com comprimento mínimo de 1.8m, com resolução de 1000dpi, com 03 botões (esquerdo, direito e central próprio para rolagem (scrol)), formato ergonômico e de conformação ambidestra;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento total de no minimo 1.5m;
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui pagina na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, para o monitor, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;

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- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **9Z0P1AV#TMP** – EliteBook 640 G11:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional, tamanho da tela do notebook e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 digitos, todos gravados em memória não volátil e sendo estas capituraveis por aplicações de inventario como por exemplo SCCM, Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso Hp Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;
- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB, webcam, microfone, WiFi;
- Possui BIOS com possibilidade de configuração de senhas de Setup para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão mínimo ACPI 6.0. E também compatível com os padrões: DMI, SNMP, WMI, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);

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- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mae, portas USB e vídeo). Acessivel via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referencia ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo a prata ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica de alumínio e dobradiças em liga metálica para maior resistência.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11, conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de notebook de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como musicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada, com suporte a até 03 monitores simultaneamente (terceiro monitor através da porta USB tipo C), de forma estendida ou espelhada, com capacidade de alocar

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no mínimo 1.5GB de memória de vídeo, compartilhada de forma dinâmica com a memória RAM. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);

- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada, com suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP integrado, com todos os caracteres da língua portuguesa incluindo ç, com 83 teclas, com teclado numérico embutido na fileira superior, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado e com sistema de proteção contra derramamento acidental de líquidos;
- Possui dispositivo apontador integrado, do tipo “touchpad”, integrado no gabinete, com dois botões integrados e uma área para a função “scroll” (botão de rolagem), com suporte a múltiplos gestos tais como pinça e zoom;
- Fonte externo com ajuste automático 100~240v (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui página na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalaçao;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário

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comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);

- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **9A816AV#TMP** – ZBook Power 16 inch G11:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional, tamanho e especificação da tela do notebook e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação mínima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo Microsoft End Point manager, SCCM, Landesk, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;

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- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB, webcam, microfone, WiFi;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão ACPI 6.0. E também compatível com os padrões: DMI, SNMP, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o prata ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e dobradiças em liga metálica para maior resistência.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11, conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de notebook de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;

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- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada ou dedicada conforme descrito na proposta comercial da CONTRATADA, com suporte a até 03 monitores simultaneamente (terceiro monitor através da porta USB tipo C), de forma estendida ou espelhada. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);
- Possui interface de comunicação wireless integrada, com suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP integrado, com todos os caracteres da língua portuguesa incluindo ç, com 83 teclas, com teclado numérico embutido na fileira superior, com teclas Windows Logo (acesso ao menu iniciar) e Aplicação (acesso ao menu de atalhos, equivalente ao botão direito do mouse), com LEDs indicativos de “caps lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado e com sistema de proteção contra derramamento acidental de líquidos;
- Possui dispositivo apontador integrado, do tipo “touchpad”, integrado no gabinete, com dois botões integrados e uma área para a função “scroll” (botão de rolagem), com suporte a múltiplos gestos tais como pinça e zoom;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);
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Esta declaração é válida por 30 (trinta) dias corridos, a contar da data de sua emissão.

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Beaverton, Oregon 97003

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Fax: +1.503.644.6708 (tel:+1.503.644.6708)
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TECHNICAL WHITEPAPER

HP WOLF SECURITY

HP Secure Erase for SSDs & HDDs

Safely and effectively erase sensitive data



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HP Secure Erase is a critical resource for IT

IT administrators are tasked with protecting sensitive data on business PCs, even after devices are recycled, disposed of, or reprovisioned. HP Secure Erase[1] makes it easy to sanitize local magnetic hard disk drives (HDDs) or solid-state drives (SSDs) to industry standards before disposal or recycling.

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Local storage sanitation—an important last step in the PC lifecycle

In an environment where sensitive user information is under attack at every stage of the system lifecycle, ensuring that data can be securely erased from a data storage device is paramount. Information can be vulnerable if left on a storage drive when a system is recycled, disposed of, or reprovisioned for another user. Properly sanitizing storage drives according to industry standards is a critical step in the PC lifecycle.

In addition to meeting industry standards for data erasure in standard magnetic hard disk drives (HDDs), HP has taken the additional step of extending HP Secure Erase to also support industry-standard Solid State Drives (SSDs). HP Secure Erase is a standard feature in all HP business notebooks, supporting the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. Manufacturers of industry standard SSDs approved for use in HP business notebook products have verified that running HP Secure Erase on their SSDs fully removes all user data so that it cannot be recovered.

Erasing SSDs vs. HDDs

Using HP Secure Erase on standard HDDs, data is overwritten using a data-removal algorithm that writes multiple patterns on every sector, cluster, and bit of the hard drive. This process is documented in the Department of Defense (DOD) 5220.22-M Chapter 8 specification.[2] This overwrite-based process is only effective on standard HDDs. Writing a predetermined data pattern to a NAND flash-based SSD does not result in an empty drive. Instead it results in a drive full of data that must be erased before new user data can be written, which massively shortens the service life.

INDUSTRY-STANDARD DISK SANITATION

To securely erase all user data from an SSD and restore the drive to a fresh-out-of-box (FOB) performance state, the National Institute of Standards Technology (NIST) supports the following commands that meet the minimum guideline for media sanitization of SSDs (NIST SP800- 88 Rev.[1]).

Block Erase is a function enabled only in SATA SSDs, using the ATA command BLOCK ERASE EXT. Block Erase will instruct the SSD controller to apply an erase voltage to all NAND cells of the device (including any cells which form blocks that have been retired, re-allocated, involved in garbage collection or

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over-provisioning, or are part of a reserved pool of spare blocks). This functionality provides a very fast, complete and robust erasure of the SSD.

Crypto Erase is a function enabled only in SATA SSDs. Using the ATA command CRYPTO SCRAMBLE EXT, this function removes the encryption key effectively making it impossible to reconstruct any of the data on the storage device. Crypto Scramble is implemented on both HDD and SSD SED devices.

Block Erase and Crypto Erase Sanitize Operation is a function enabled only in PCIe NVMe SSDs. NVMe does not follow conventional ATA feature sets. Instead, NVMe devices support a sanitization function, inside their FORMAT NVM command structure that includes BLOCK ERASE SANITIZE and CRYPTO ERASE SANITIZE operation. So, by setting some specific bits in this command structure, a function similar to Secure Erase can be carried out.

WHAT DATA IS NOT ERASED?

After deploying HP Secure Erase on an SSD, all data in the user space is completely and irretrievably erased, and every block in the user space is ready to accept new host-written data, which moves the drive to its highest performance state (FOB).

However, some data must be left in place, including data required for normal drive operation: SSD firmware copies that reside in the NAND, all SMART data, and retired NAND block mapping tables.

CONCLUSION

Writing or overwriting data to drive is the accepted practice of securely eliminating data from an HDD. However, in the case of NAND flash-based SSDs, overwriting is redundant, unnecessary, and a potentially insecure method of eliminating data.

By using HP Secure Erase, users can ensure that SSDs are completely sanitized and meet the minimum industry standards. HP Secure Erase is easily enabled through the standard F10 BIOS setup process on most HP business PCs.

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[1] For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 “Clear” sanitation method. Secure Erase does not support platforms with Intel® Optane™. HP Secure Erase does not support platforms with Intel® Optane.

[2] Specification 5220.22-M no longer exists. The DoD has subsequently decided that secure information must be destroyed to remain secure. The NIST guidelines restate in clear terms that a two-person rule (read human verification) shall be implemented but did not establish guidelines on the method of sanitization (it could be a single wipe with dual human verification, or a single destruction with the same).

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WHITEPAPER

HP WOLF SECURITY

HP Sure Start



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HP Sure Start

Going beyond system BIOS protection,

HP Sure Start Gen7 protects against firmware attacks and/or accidental corruption for the majority of boot-critical system firmware.

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Introduction

HP Sure Start is a comprehensive security and advanced resilience firmware solution. Going well beyond system BIOS protection, HP Sure Start protects against firmware attacks and/or accidental corruption for the majority of boot-critical system firmware.

With little or no interruption to user productivity, HP Sure Start can automatically detect, stop, and recover from attacks or corruption without IT intervention. Every time the PC powers on, HP Sure Start automatically validates the integrity of the firmware to help ensure that the PC is safeguarded from malicious attacks. Once the Operating System is running on the PC, runtime intrusion detection constantly monitors memory. In the case of an attack, the PC can self-heal using an isolated "golden copy" of the firmware in minutes.

Why is firmware protection important?

As our world becomes more connected, cyber-attacks are targeting client device firmware and hardware with increasing frequency and sophistication. Tools and techniques to attack firmware were once theoretical and thought only to be available to nation-states. Such tools and techniques have since been shown to not only exist, but to be readily available in the public domain.

The critical device firmware (HP BIOS, HP Endpoint Security Controller firmware, Intel Management Engine Firmware, AMD Security Processor Firmware, etc.) is an attractive target for attackers because of the potential advantages a successful breach could provide:

Persistence: Firmware resides in a nonvolatile memory on the circuit board and can't be removed simply by erasing the hard drive.

Control: Firmware executes at the highest privilege level—outside of the OS domain— which enables the possibility of OS-independent malware.

Stealth: Firmware occupies a region of memory that is completely inaccessible to the operating system and system software; since it can't be scanned by antivirus it may never be detected.

Difficulty of recovery: All these aspects make it extremely difficult to recover from this type of infection without resorting to a service event that includes a system board replacement.

The ideal solution to protect devices against this type of attack is designed from the hardware up, using “cyber resiliency” principles. These principles acknowledge that it is extremely difficult, if not impossible, to foresee and prevent every possible attack. The ideal solution not only provides enhanced protection of the firmware, but also includes a hardware rooted ability to both detect a successful attack and recover from it.

HP Sure Start provides superb firmware protection

HP Sure Start is HP’s unique and groundbreaking approach to provide advanced firmware protection and resiliency to HP PCs. It uses hardware enforcement via the HP Endpoint Security Controller (HP ESC) to provide protection of the BIOS and other critical platform firmware that reaches well beyond the industry standard and ensures that the system will only boot Genuine HP BIOS and other critical firmware. Additionally, if HP Sure Start detects tampering with BIOS, other critical firmware, or runtime System Management Mode (SMM) BIOS code, it can recover using a protected backup copy.

Summary of HP Sure Start features:

HP platform firmware authenticity enforcement and tamper protection
HP Endpoint Security Controller hardware enforcement of the system boot, so only authentic and unmodified critical firmware and HP BIOS are loaded.

Firmware health monitoring and compliance
Logging of firmware health-related events via isolated HP Endpoint Security Controller; presents the platform firmware state along with any anomalies that could indicate thwarted attacks.

Self-healing
Automatic repair of HP BIOS and other critical firmware corruption, using the HP Endpoint Security Controller isolated backup copy of HP BIOS and other critical firmware.

BIOS setting protection
Extension of the HP Endpoint Security Controller protection of the BIOS code to include HP ESC backup and integrity-checking of all user or admin- configured BIOS settings.



Runtime Intrusion Detection
Ongoing monitoring of critical BIOS code in runtime memory (SMM) while the OS is running.

Secure boot keys protection
Significantly enhanced protection of databases and keys stored by the BIOS that are critical to the integrity of the OS secure boot feature versus standard UEFI BIOS implementation.

Protected storage
Strong cryptographic methods to store BIOS settings, user credentials, and other settings in the HP Endpoint Security Controller hardware to provide integrity protection, tamper detection, and confidentially protection for that data.

Intel® Management Engine firmware protection
Full backup, integrity monitoring, and recovery services for Intel Management Engine firmware and critical data. Fully compliant with all NIST 800-193 resilience requirements.

AMD Secure Processor firmware protection
Full backup, integrity monitoring, and recovery services for AMD Secure Processor firmware and critical data. Fully compliant with all NIST 800-193 resilience requirements.

Manageability
Administrator management of HP Sure Start capabilities with the Manageability Integration Kit (MIK) plug-in for Microsoft® System Center Configuration Manager (SCCM).

Direct Memory Access (DMA) Protection
Utilizes the I/O Memory Management Unit (IOMMU) to provide hardware protection against attacks to system memory via DMA capable thunderbolt devices. Also enables support for Microsoft. "Kernel DMA Protection for Thunderbolt™ 3" (Win10 RS4 and forward). HP Sure Start Gen6+ also extends support for protection against DMA attacks beyond external thunderbolt devices to include DMA attacks via internal slots.

For a summary of capabilities added in each generation of HP Sure Start, see Appendix A.

Third-party security certification

The HP Endpoint Security Controller hardware used in HP Sure Start has undergone third- party security assessment and has been certified to provide hardware enforcement so that only authorized firmware can start on the target PC.[1]

Assurance that a security solution works as stated is a critical piece of any purchase decision related to security products. And because a reputation for quality can only go so far, HP has exposed the HP Endpoint Security Controller inner workings for review and testing by an independent and accredited laboratory to validate that it works as claimed per publicly available criteria, methodology, and processes.

Cyber-resilient design

Not only does HP Sure Start provide enhanced BIOS protection beyond the industry standard approach, but it is designed from the hardware up to provide unmatched platform cyber-resilience to ensure critical device firmware recovery even in the event of a breach or destructive attack.

All HP Sure Start Gen6+ systems include the ability to recover from a completely erased system flash. The system flash contains the majority of the boot critical firmware elements that are required to boot the system and have reasonable functionality. Those boot critical elements include system BIOS, HP Endpoint Controller firmware, video BIOS, Intel Descriptor Region firmware, AMD Secure Processor firmware, and Intel Management Engine firmware. If any one of these firmware elements in the system flash becomes corrupted in a manner that renders that subsystem non-functional, the system will be unable to boot. With an HP Sure Start Gen5+ system, all these components are restored from the HP Sure Start private flash in order to ensure that the system does not become non-operational due to firmware attack or corruption.

HP business PCs with HP Sure Start exceed the National Institute of Standards and Technology (NIST) Platform Firmware Resiliency guidelines (Special Publication 800- 193) for host processor boot firmware and other critical platform device firmware, as discussed in Appendix C. NIST SP 800-193 is one of the leading public sector efforts to formalize requirements for cyber-resilient platforms. For more details about HP Sure Start and NIST 800-193, see Appendix C.

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HP Sure Start – Supported models

HP introduced Sure Start in 2013. Since that time, HP has enhanced Sure Start and expanded the number of products that include it. HP Sure Start is available on many HP business PCs, including Pro and Elite, platforms, Workstations, Thin Clients, and Point of Sale Systems (RPOS). HP Sure Start is available on both Intel and AMD platform in this lineup.

Architectural overview and capabilities

HP Sure Start consists of two major architectural components:

- HP Endpoint Security Controller running HP Sure Start firmware
- HP Sure Start BIOS working in conjunction with the HP Endpoint Security Controller hardware and firmware.

Firmware integrity verification - The core of HP Sure Start

The HP Endpoint Security Controller (HP ESC) is the first device in the system to execute firmware when the system powers on, active well before the system boots. The HP ESC activities include, but are not limited to, monitoring the system power button and power sequencing, then start of the host CPU execution when the user presses the power button.

When power is first applied to the platform (before the system is turned on), the HP ESC validates that its own firmware is authentic HP code before loading and executing the code. The HP ESC hardware uses industry-standard, strong cryptographic methods to perform the integrity verification. The method employs a 2048-bit HP RSA public key contained within internal permanent read-only memory. Therefore, the HP ESC is the built-in hardware-based Root of Trust (RoT) for the platform, used to validate its firmware and the HP BIOS before they are executed. This hardware Root of Trust protects against firmware replacement attacks regardless of their deployment method and serves as the foundation upon which HP platform security is built.

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Figure 1:
Firmware integrity verification process

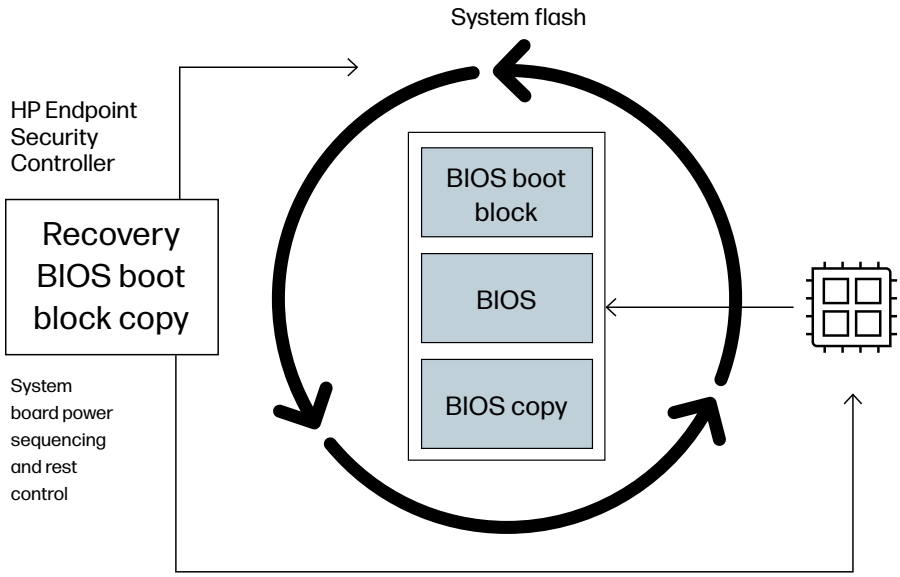


Figure 1 illustrates the firmware integrity verification process. Once the HP ESC authenticates and starts executing the HP Sure Start firmware, that firmware uses the same strong cryptographic operations to verify the integrity of the system flash BIOS boot block. If a single bit is invalid, the HP ESC replaces the system flash contents with its own copy of the HP BIOS boot block that is stored within an isolated nonvolatile memory (NVM) dedicated to the HP ESC.

The HP Sure Start design ensures that all the firmware and BIOS code running on both the HP ESC and the host CPU is the code HP intended to be on the device.*

The system flash BIOS boot block is the foundation of the HP BIOS. The HP ESC hardware ensures that the BIOS boot block is the first code that the CPU executes after a reset. Once the HP ESC determines that the BIOS boot block contains authentic HP code, it allows the CPU to begin executing code and the system to boot as it normally would.

The HP ESC also checks the integrity of the system flash boot block code each time the system is turned off or put into a hibernate or sleep mode. Since the CPU is powered off in each of these states and the CPU is therefore required to re-execute BIOS boot block code to resume, it is crucial to re-verify the integrity of the BIOS boot block each time before the CPU starts at power-on to check for tampering.

Additionally, for HP Intel models, HP Sure Start checks the integrity of the system flash BIOS boot block every 15 minutes while the system is running[2].

* Note:
The system flash boot block integrity checking, and any needed recovery performed by the HP ESC, take place while the host CPU is off. Therefore, from a user point of view, the entire operation takes place when the system is still off, in sleep mode, or hibernate mode.

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Machine-unique data integrity

The HP ESC and BIOS work together to provide advanced protection of factory-configured critical variables unique to each machine that are intended to be constant over the life of any specific platform. In the factory, a backup copy of this variable data is saved in the HP ESC nonvolatile memory store. The backup is made available to the HP Sure Start BIOS component on a read-only basis to perform integrity checking of the data on every boot. If any setting in the shared flash is different from the factory settings, the HP Sure Start BIOS components will automatically restore the data in the System Flash from the backup copy provided by the HP ESC.

Descriptor region

For HP Intel models, HP Sure Start protects the descriptor region of the system flash. Unique to Intel architecture, the descriptor region contains critical configuration parameters that are sampled by the Intel Core™ logic at reset and used thereafter to configure the Core logic. The descriptor region also includes partitioning information for the system flash that is used by the Intel Core logic to determine where the BIOS region resides within the flash and therefore where their CPU retrieves code for execution from reset. HP Sure Start monitors the integrity of this region and recovers it to the intended configuration in the event of tampering or corruption.

Network controller protection

In addition, for HP Intel models, HP Sure Start protects the network controller (NIC) settings contained with the system flash. Some HP customers have use cases that require legitimate changes to factory configured NIC settings. Therefore, HP Sure Start does not prevent changes to NIC settings by default. Instead, HP Sure Start provides a feature that, when enabled, warns the user that NIC settings have changed. In addition, HP Sure Start provides a method to restore the NIC settings to factory values. Protected settings include the MAC address, the Pre-boot Execution Environment (PXE) settings, and the remote initial program load (RPL). This restoration is possible via a read-only backup copy protected by the HP ESC.

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BIOS setting protection

As previously described, HP Sure Start verifies the integrity and authenticity of the HP BIOS code. Since this code is static after it is created by HP, digital signatures can be used to confirm both attributes of the code. The dynamic and user-configurable nature of BIOS settings, however, create additional challenges to protecting those settings. Digital signatures cannot be generated by HP and used by the HP Sure Start ESC hardware to verify those settings.

HP Sure Start BIOS setting protection provides the capability to configure the system so the HP ESC hardware is used to back up and check the integrity of all the BIOS settings preferred by the user.

When this feature is enabled on the platform, all policy settings used by BIOS are subsequently backed up and an integrity check is performed on each boot to ensure that none of the BIOS policy settings have been modified. If a change is detected, the system uses the backup from the HP Sure Start-protected storage to automatically revert to the user-defined setting.

The HP Sure Start BIOS setting protection feature generates events to the HP Sure Start ESC hardware when an attempt to modify the BIOS settings is detected. The event is logged in the HP Sure Start audit log, and the local user will receive a notification from BIOS during boot.

HP SureStart - Protected storage

Protected storage rooted in the HP Endpoint Security Controller hardware provides the highest level of protection for BIOS/firmware data and settings protected by HP Sure Start. HP Sure Start-protected storage is designed to provide confidentiality, integrity, and tamper detection even if an attacker disassembles the system and establishes a direct connection to the nonvolatile storage device on the circuit board.

Data integrity

The integrity of the dynamic data stored in nonvolatile memory by firmware and used to control the state of various capabilities is critical to the security posture of the overall platform. Dynamic data includes all BIOS settings that can be modified by the end user or administrator of the device. Examples include (but are not limited to) boot options such as the secure boot feature, BIOS administrator password and related policies, Trusted Platform Module–state control, and HP Sure Start policy settings.

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Any successful attack that bypasses the existing access restrictions designed to prevent unauthorized modifications to these settings could defeat the platform security. As an example, consider a scenario where an attacker makes an unauthorized modification to the secure boot state to disable it without being detected. In this scenario, the platform would boot the attacker's root kit before the OS starts, without the user's knowledge.

Industry-standard Unified Extensible Firmware Interface (UEFI) BIOS does implement access restrictions that should prevent unauthorized modifications to these variables, and HP implements these just like the rest of the PC industry. However, given the risks a breach of these mechanisms poses to the platform, HP Sure Start provides secondary defenses that are stronger than the baseline industry standard.

BIOS settings and other dynamic data used by firmware to control the state that is protected by HP Sure Start are stored in the isolated nonvolatile memory of the HP Endpoint Security Controller that is not directly accessible to software running on the host CPU.

Additionally, the HP ESC creates and appends unique integrity measurements each time a data element is stored in this nonvolatile memory store. The integrity measurements are based on a strong cryptographic algorithm (hashed-based message authentication code utilizing SHA-256 hashing) that is rooted to a secret contained within the HP ESC. The secret is unique to each HP ESC, such that each controller generates a unique integrity measurement given an identical element. When the data element is read back from the nonvolatile memory, the HP ESC recalculates the integrity measurement for that data element and compares it to the integrity measurement that is appended to the data. Any unauthorized changes to the data in the nonvolatile memory store result in a mis-compare. Using this approach, the HP ESC can detect tampering with data elements stored in the nonvolatile memory store.

Data confidentiality

For many of the data elements stored by the platform, maintaining confidentiality is critical. Examples include BIOS administrator password hashes, user credentials, and secrets optionally stored by firmware on behalf of the user for firmware-based features such as HP Sure Run and HP Sure Recovery.

Protection of these secrets is challenging when industry-standard UEFI BIOS approaches are used, since the nonvolatile storage is typically readable by software running on the host processor. HP Sure Start–protected storage is intended to provide much greater protection of this confidential data than a standard UEFI BIOS implementation.

In addition to a separate isolated storage, HP Sure Start leverages the Advanced Encryption Standard (AES) hardware block contained within the HP ESC to perform AES-256 encryption on all confidential data elements stored in the HP Sure Start nonvolatile memory, in addition to the data integrity measurements for those elements. The encryption key used is unique to each HP ESC and never leaves that controller, so data encrypted by any individual HP ESC component can only be decrypted by that same HP ESC.

Secure boot keys protection

Compared to the industry-standard UEFI secure boot implementation, HP Sure Start provides enhanced protection of the UEFI secure boot key databases that are stored by the firmware. These variables are critical to proper operation of the UEFI secure boot feature that verifies integrity and authenticity of the OS bootloader before allowing it to start at boot.

HP Sure Start protects UEFI secure boot key databases by maintaining a master copy in HP Sure Start–protected storage.

Any authorized modifications to the UEFI standard secure boot key databases by the OS during runtime are tracked by HP Sure Start and applied to the master copy by the HP ESC. HP Sure Start then uses the master copy in HP Sure Start– protected storage to identify and reject any unauthorized changes to the UEFI standard secure boot keys databases.

This capability, enabled by default, covers the following databases:

- Signature database (db)
- Revoked signatures database (dbx)
- Key Enrollment Key (KEK)
- Platform Key (PEK) updated dynamically at runtime by the OS

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Runtime Intrusion Detection (RTID)

On each boot, the BIOS code starts execution from flash memory at a fixed address. This is known as the BIOS boot code and provides capabilities needed before the OS starts. However, a portion of BIOS remains in DRAM that is needed to provide advanced power- management features, OS services, and other OS-independent functions while the OS is running. This BIOS code, referred to as System Management Mode (SMM) code, resides in a special area within the DRAM that is hidden from the OS. We also refer to this code as "runtime" BIOS code in the context of HP Sure Start's Runtime Intrusion Detection feature. (For more details on SMM and how it works, please see Appendix B.)

The integrity of SMM code is critical to the client device security posture. HP Sure Start checks to make sure HP SMM BIOS code is intact at OS start. By adding new protection capabilities and/or providing a means to detect any attack to that code, Runtime Intrusion Detection provides mechanisms to ensure that the SMM BIOS code remains intact while the OS is running.

Figure 2

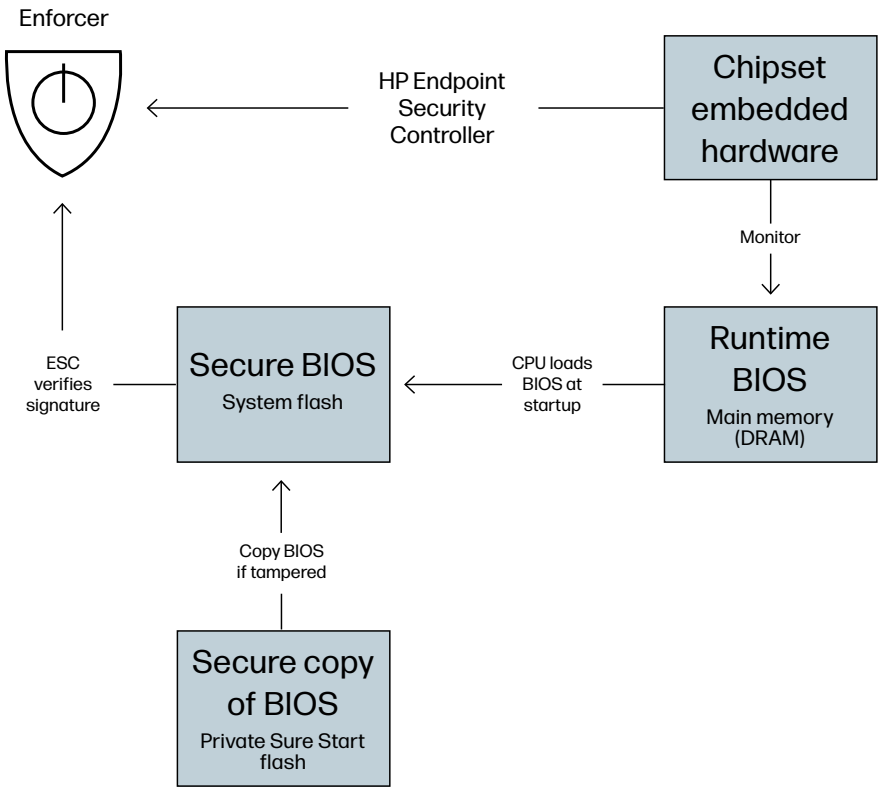


Figure 2:
Runtime Intrusion Detection uses specialized hardware embedded within the platform chipset to monitor SMM code for any changes.

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Runtime Intrusion Detection architecture

The RTID feature utilizes specialized hardware in the platform chipset to detect anomalies in the Runtime HP SMM BIOS. Detection of any anomalies results in a notification to the HP Endpoint Security Controller, which can take the configured policy action independent of the CPU.

Intel® Management Engine firmware protection

All HP Sure Start Gen6+ systems include the ability to fully recover from corrupted Intel Management Engine firmware and/or critical data associated with the Intel Management Engine subsystem.

In those systems that include support for HP Sure Recover with Embedded Reimaging, HP Sure Start Gen6+ is able to recover the entire Intel Management Firmware using a copy of Intel Management engine firmware stored on the Embedded Reimaging device on the system board with no additional dependencies.

On HP Sure Start Gen6+ systems that do not support Embedded Reimaging, HP Sure Start uses a copy of the Intel Management firmware that is included on the system EFI partition on the primary mass storage device for full recovery.

In the event that the Intel Management Engine firmware update has been removed from the EFI partition, HP Sure Start Gen6+ will only perform a partial recovery of the Intel Management Engine firmware and/or critical data from the HP Sure Start private flash that will enable the system to operate with reasonable functionality. In order to fully restore all functionality provided the Intel Management Engine Firmware, it will be necessary to apply an update to the intel Management Firmware Engine firmware which will restore the full recovery image to the EFI partition.

Customers that deploy their own OS images need to take some additional steps to ensure that HP Sure Start Gen6+ can fully recover the Intel Management Engine Firmware with complete autonomy. Those steps include creating a system EFI partition that is at least 360MB, and applying an HP Intel Management Engine firmware update package.

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AMD® Secure Processor protection

All HP Sure Start Gen6+ systems include the ability to fully recover from corrupted AMD Secure Processor firmware and/or critical data associated with the AMD Secure Processor subsystem.

HP Sure Start Gen6+ is able to recover the entire AMD Secure Processor subsystem using a copy of AMD Secure Processor firmware stored within the HP Endpoint Security Controller isolated non-volatile memory with no additional dependencies.

Smart Flash

HP Sure Start Gen6+ adds Smart Flash technology which can dramatically reduce the time required for firmware updates and Sure Start firmware recovery operations. With Smart Flash, the HP Endpoint Security Controller will only modify those portions of the flash are corrupted (recovery) or changed (update) for both the HP Endpoint Security Controller backup copies of firmware and the primary copies of firmware in the primary flash.update package.

HP Endpoint Security Controller runtime intrusion detection

Starting from HP Sure Start Gen6+, the HP Endpoint Security Controller firmware utilizes a hardware Memory Protection Unit within the HP Endpoint Security Controller to detect, block, and log an event in the event of any unauthorized attempt to modify the run-time HP Endpoint Security Controller run-time code or critical data.

FIPS 140-3 Certification

FIPS (Federal Information Processing Standards Publication 140-3, is a standard developed by the National Institute of Standards and Technology (NIST) and defines the security requirements for cryptographic modules used in various IT products. HP's ESC, beginning with Sure Start Gen 7, has received level 1 certification (FIPS 140-3 Certificate), which ensures that the cryptography used in these modules provides a secure environment for the processing of sensitive information.

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SPI Host Interface Monitoring

The HP ESC now integrates SPI (Serial Peripheral Interface) Protocol Analyzer hardware, which enables HP Sure Start Gen7 to protect the system against malicious/unauthorized activity on the SPI bus. The SPI bus is the interface between the CPU and system flash memory holding the system firmware and settings (such as HP UEFI BIOS, Intel CSME firmware, AMD Security Processor firmware, and more). The HP ESC SPI protocol analyzer is also connected to this SPI bus and configured by HP Sure Start to monitor and analyze the SPI bus traffic in real time to identify and block malicious transactions to the SPI flash.

User notifications, event logging, and policy management

HP Sure Start end user notifications

Under normal operating conditions, HP Sure Start is invisible to the user. When HP Sure Start identifies a problem, recovery operations are automatic, using the default settings with no end user or IT interaction usually required.

Users may see runtime notifications in the event of a BIOS integrity problem detected via the HP Sure Start Dynamic Protection or the Runtime Intrusion Detection features while the OS is running[2]. If any significant event is detected or action is taken, HP Sure Start displays a warning message via Windows® notifications on the next boot. HP Notifications Software is required to enable the viewing of these Windows notifications.

HP Sure Start event logging

The HP Endpoint Security Controller records critical events related to the firmware/BIOS code and data monitored by HP Sure Start. These events are stored within the Sure Start nonvolatile memory store. When HP Notifications software is installed, the events are copied from the HP ESC to the Windows Event Viewer[3] to facilitate access to these events by the local user as well as the customer's preferred manageability agent.

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The following events trigger the HP Notifications Software to gather all events from the HP Sure Start subsystem and ensure that the Windows Event Viewer is updated with any events that are not already recorded there:

- Windows Boot
- Windows Resume from Sleep/Hibernate
- HP Sure Start with dynamic protection runtime event notifications
- HP Sure Start Runtime Intrusion Detection (RTID)

HP Notifications Software populates HP Sure Start events into a unique "HP Sure Start" application event log. Only HP Sure Start events will be included in this log. The Windows Event Viewer path to the HP Sure Start events is the following: System Tools/Event Viewer/ Applications and Services Logs/HP Sure Start.

The Windows Event Viewer level categories related to HP Sure Start events are defined in Table 1. The events are populated into Windows Event Viewer in the order that they were generated by HP Sure Start. The oldest event in the HP Sure Start subsystem is added to the Windows Event Viewer first and the most recent event is added last.

The timestamp for each Windows Event Viewer entry is the time it was added to that log, NOT the time the event occurred. Each Sure Start Windows Event Viewer entry includes detailed data within the event details, which includes the timestamp of the actual occurrence.

Note: Events are persistent in the HP Endpoint Security Controller even after being copied to the Windows Event Viewer. If the Windows Event Viewer is cleared, the HP Notifications Software application will replace all HP Sure Start entries on the next event that triggers it to check for HP Sure Start event logs.

Table 1:
Types of HP Sure Start Windows Event Viewer events protection and resiliency

Event Level	Definition
Info	Events that are expected to occur during the normal course of operation (e.g., updating the BIOS).
Warning	Unexpected events that have occurred but were fully recovered from by HP Sure Start and no user/admin action is required for the platform to be fully operational. These events are anomalous operations that the user/admin may want to investigate further, especially if there is a trend of these events across multiple machines.
Error	Events that require the admin/HP service to act on the platforms to fully recover.

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HP Sure Start provides superb firmware protection

Out of the box, the HP system BIOS enables and optimizes HP Sure Start policies for the typical user. Since HP Sure Start is enabled by default, the typical user is protected by HP Sure Start without having to modify the settings. For advanced users, the system BIOS provides some control of HP Sure Start behavior, using policy settings in the (F10) BIOS Setup. Unless otherwise noted, these settings and functions are located under Security/BIOS Sure Start.

Note: Policies are stored within the HP ESC nonvolatile memory that is not directly accessible by the host CPU; therefore, a reboot is required before any Sure Start settings take effect.

The following HP Sure Start settings and functions are available:

- Verify Boot Block on Every Boot
- BIOS Data Recovery Policy
- Network Controller Configuration Restore (Intel only)
- Prompt on Network Controller Configuration Change (Intel only)
- Dynamic Runtime Scanning of Boot Block (Intel only)
- HP Sure Start BIOS Setting Protection
- HP Sure Start Secure Boot Keys Protection
- Enhanced HP Firmware Runtime Intrusion Prevention and Detection (Intel only)
- HP Firmware Runtime Intrusion Detection (AMD only)
- HP Sure Start Security Event Policy
- HP Sure Start Security Event Boot Notification
- Lock BIOS Version
- Save/Restore MBR of System Hard Drive
- Save/Restore GPT of System Hard Drive
- Boot Sector (MBR/GPT) Recovery Policy
- DMA Protection
- DMA Pre-boot Protection

Verify Boot Block on Every Boot

HP Sure Start always verifies the integrity of the system flash BIOS boot block before resuming from sleep, hibernate, or power-off. When set to enable, HP Sure Start will also verify the integrity of the boot block on each warm boot (Windows restart). The trade-off to consider is faster restart time versus more security. The default setting of this feature is set to “Disable”.



BIOS Data Recovery Policy

When set to Automatic, HP Sure Start automatically repairs the BIOS or the Machine Unique Data when necessary. When set to Manual, HP Sure Start requires a special key sequence to proceed with the repair. In the case of an issue with the boot block code, the system will refuse to boot, and a unique blink sequence will flash on the system LED. The system LED that lights may vary by platform and by instance. In the case of an issue with the Machine Unique Data, the system will display a message on the screen. The key sequence required, and the blink sequence displayed, vary depending whether the system is a notebook, a desktop, or a tablet. Manual mode is useful to users who can perform forensics on the system flash contents before repair. Typical users are not encouraged to use manual mode. The default setting of this feature is set to “Automatic”.

Network Controller Configuration Restore (Intel only)

When selected, HP Sure Start immediately restores the network controller configuration to factory defaults.

Prompt on Network Controller Configuration Change (Intel only)

HP provides a factory-defined network controller configuration which includes the MAC address. When this setting is set to enable, the system monitors the state of the network controller configuration and prompts the user in the event of a change from the factory-configured state. The default setting of this feature is set to “Disable”.

Dynamic Runtime Scanning of Boot Block (Intel only)

When in the default setting of enable, HP Sure Start periodically checks the integrity of the BIOS boot block while the OS is running. When in the disable setting, HP Sure Start only checks the integrity before a boot or resume from sleep or hibernate.

HP Sure Start BIOS Setting Protection

The BIOS setting protection policy is disabled by default. To enable the feature, the owner/administrator of the client device should first configure all BIOS policies to the preferred setting. The owner/administrator also must configure a BIOS setup administrator password.

Once that is completed, the BIOS setting protection policy should be changed to “Enable.” At this point, a backup copy of all BIOS settings is created in the HP Sure Start–protected storage. Going forward, none of the BIOS settings can be modified locally or remotely. On each boot, the BIOS policy settings are verified to be in the desired state, and if there is any discrepancy, the BIOS settings are restored from the HP Sure Start–protected storage.

To modify a BIOS setting, the BIOS administrator password must be provided and BIOS setting protection subsequently disabled, at which point changes can be made to the BIOS settings.

HP Sure Start Secure Boot Keys Protection

With this setting at the factory default of enable, HP Sure Start provides enhanced protection of the secure boot databases and keys used by BIOS to verify the integrity and authenticity of the OS bootloader before launching it at boot. When set to “Disable”, only standard UEFI secure boot variable protection is used, and no backup copy is kept by the HP Sure Start subsystem.

HP Firmware Runtime Intrusion Prevention and Detection (RTID)

The RTID feature is enabled by default for all platforms shipped from the HP factory. There is no need for the end customer/administrator to enable or otherwise deploy the feature to take advantage of HP Sure Start RTID. The RTID feature can be optionally be set to “Disable” by the platform owner/ administrator.

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HP Sure Start Security Event Policy

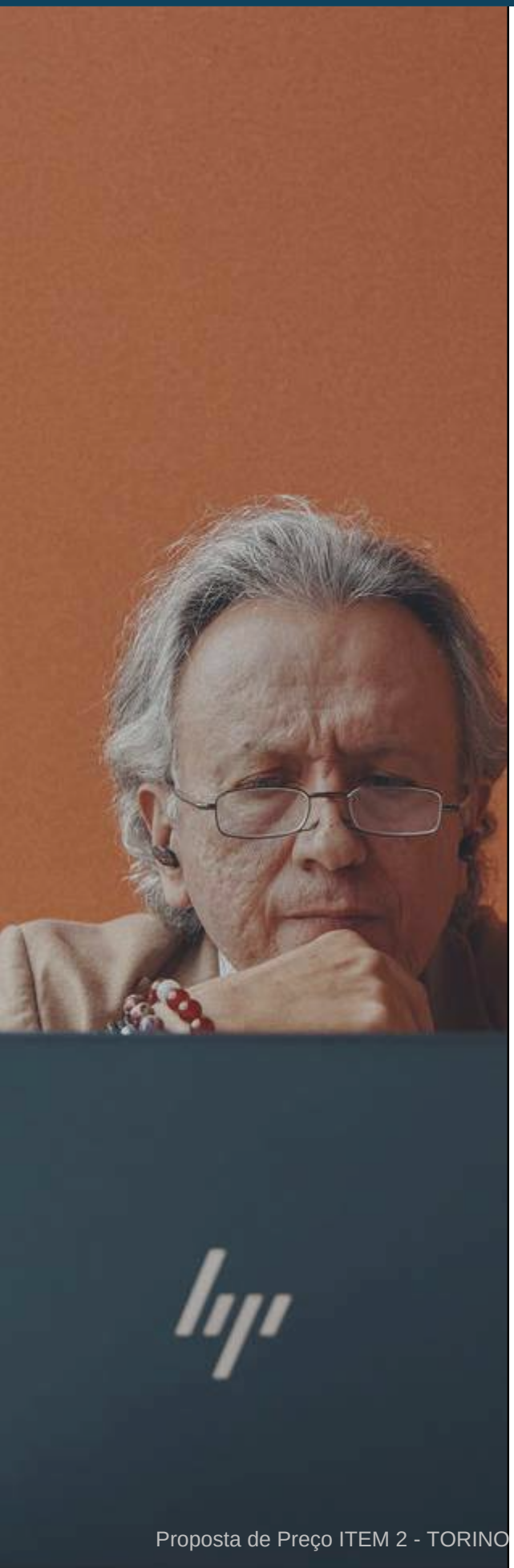
This BIOS policy setting controls what action is taken when HP Sure Start detects an attack or attempted attack while the OS is running. There are three possible configurations for this policy:

- Log event only: When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer[4].
- Log event and notify user: This is the default setting. When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer. Additionally, the user is notified within Windows that the event occurred[5].
- Log event and power off system: When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer. Additionally, the user is notified within Windows that the event occurred, and that system shutdown is imminent.

HP Sure Start Security Event Boot Notification

This BIOS policy setting controls whether HP Sure Start warnings and error messages that are displayed when the system is booted require the local user to acknowledge the error before the boot continues. With the default Require Acknowledgement setting, the system halts with the error message displayed. The local user must press a key to continue the boot. If changed to Time out after 15 seconds, the message is displayed, but the boot process continues automatically after the message is displayed for 15 seconds.

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Lock BIOS Version

In the (F10) BIOS setup, this feature is located in Main/Update System BIOS.

When set to “Disable”, you can update the BIOS using any supported process. When the HP ESC detects a valid boot block update in the system flash, it updates the backup copy of the boot block.

When set to “Enable”, all HP BIOS update tools refuse to update the BIOS. In addition, HP Sure Start protects the BIOS from attempts to change the BIOS version by removing the system flash via an unauthorized method. The HP ESC records the locked-down version of BIOS. When the HP ESC detects that the BIOS in the system flash changed, the HP ESC overwrites the BIOS boot block with the HP ESC copy of the boot block. The HP ESC copy of the boot block executes and recovers the remainder of the correct version of the BIOS. The default setting of this feature is “Disabled”.

Save/Restore MBR of System Hard Drive and Save/Restore GPT of System Hard Drive

In the (F10) BIOS setup, this feature is located in Security/Hard Drive Utilities. Only one of these capabilities is available, depending on the partition type of the primary drive (GPT or MBR), as detected by HP Sure Start.

When set to “Enable”, HP Sure Start maintains a protected backup copy of the MBR/GPT partition table from the primary drive and compares the backup copy to the primary on each boot. If a difference is detected, the user is prompted and can choose to recover from the backup to the original state, or to update the protected backup copy with the changes. The Boot Sector (MBR/GPT) Recovery Policy can optionally be used to remove the user decision for the action taken in the event of a discrepancy found by HP Sure Start.

When set to “Disable” (default), no MBR/GPT protection is provided by HP Sure Start.

Boot Sector (MBR/GPT) Recovery Policy

When set to Local User Control (default) the user is prompted for the action to take when HP Sure Start detects a change in the MBR/GPT partition table. When set to Recover in the event of corruption, HP Sure Start automatically restores the MBR/GPT to the saved state any time differences are encountered.

DMA Protection

When set to "Enable" (default), HP firmware configures the IO Memory Management Unit (IOMMU) to block DMA (Direct Memory Access) by peripheral devices per the Pre- Boot DMA Protection setting while in the BIOS pre-boot environment. The BIOS will also configure the system appropriately to enable Microsoft Kernel DMA protection for Thunderbolt 3 which takes over management of the IOMMU at OS start time to provide the same protections from DMA attacks in the OS environment.

Pre-boot DMA Protection

When set to "All PCI-e Devices", HP firmware configures the IO Memory Management Unit (IOMMU) to block DMA (Direct Memory Access) by peripheral devices per the Pre-Boot DMA Protection setting while in the BIOS pre-boot environment. Available options and defaults vary as shown in the table below.

Table 2:
Pre-boot DMA protection options and defaults

Notebook with Thunderbolt support	Notebook without Thunderbolt support	Desktop with Thunderbolt support	Desktop without Thunderbolt support
Thunderbolt Only	Disabled	Thunderbolt Only	Disabled
All PCI-e devices (Default) (Recommended)	All PCI-e devices (Default) (Recommended)	All PCI-e devices (Recommended)	All PCI-e devices (Recommended)
-	-	All PCI-e devices (Default)	All PCI-e devices (Default)

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Remote management of HP Sure Start policy controls

Out of the box, HP Sure Start policies are optimized for the typical user. Since HP Sure Start is enabled by default, there is no need for the remote administrator to take any action to enable ("deploy") HP Sure Start. If a remote administrator wants to modify HP Sure Start policy settings, the same Windows Management Instrumentation (WMI) APIs or HP BIOS Configuration Utility scripts that are used to manage other platform BIOS policies can be used to manage HP Sure Start policies. In addition, administrators can remotely manage HP Sure Start capabilities with the Manageability Integration Kit (MIK) plug-in for Microsoft System Center Configuration Manager (SCCM).

Also, administrators can remotely manage HP Sure Start capabilities and view HP Sure Start events with the Manageability Integration Kit (MIK) plug-in for Microsoft System Center Configuration Manager (SCCM).

Conclusion

HP Sure Start delivers these key benefits:

- Uninterrupted productivity: HP Sure Start maintains business continuity in the event of an attack or accidental corruption by eliminating downtime waiting for an IT/Service event.
- Lower cost: HP Sure Start's ability to recover automatically reduces calls to the IT Help Desk and enhances productivity, which ultimately helps lower the maintenance cost for the platform.
- Peace of mind: HP Sure Start has multiple security features that run across a wide variety of software and hardware platforms.

Protect critical BIOS firmware from malware with the industry-leading firmware intrusion detection and automatic repair offered by HP Sure Start, available on many HP business PCs, including Pro and Elite platforms, Workstations, Thin Clients, and Retail Point of Sale (RPOS) PCs.

Learn more hp.com/go/computersecurity
Links to technical content support.hp.com/us-en/topic/goIT

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Appendix A - Sure Start, Gen by Gen

HP introduced Sure Start in 2014. Since that time, HP has enhanced Sure Start and expanded the number of products that use it. The table below provides a summary of the capabilities that were added with each generation.

Table 3:
Sure Start, Gen by Gen

Generation	Release Date	Capabilities Added
HP Sure Start	2013	▪ Firmware and BIOS authenticity enforcement, with the ability to self-heal ▪ Firmware monitoring and compliance
HP Sure Start with Dynamic Protection	2015	▪ Windows Event Viewer support ▪ Dynamic Protection (for select Intel products)
HP Sure Start Gen3 (select intel products)[6]	2017	▪ Runtime Intrusion Detection ▪ BIOS setting protection ▪ Manageability Integration Kit (MIK) plug-in for Microsoft SCCM
HP Sure Start Gen4[7]	2018	▪ Protected storage—strong cryptographic methods to store BIOS settings, user credentials, and other settings in the HP Endpoint Security Controller hardware to provide integrity protection, tamper detection, and confidentiality protection for that data ▪ Secure boot database protection—enhanced protection of databases and keys stored by BIOS that are critical to the integrity of the OS secure boot feature versus standard UEFI BIOS implementation ▪ On Intel platforms, enhanced protection and recovery of the Intel Management Engine Firmware for any failures that occur across updates or failure of main Intel ME firmware ▪ Third-party security certification of HP Endpoint Security Controller—testing by an independent and accredited laboratory to validate that the HP ESC hardware core functionality works as claimed per publicly available criteria, methodology, and processes[1] ▪ HP business PCs with HP Sure Start exceed the NIST Platform Firmware Resiliency guidelines (Special Publication 800-193) for host processor boot firmware and other critical platform device firmware, as discussed in Appendix C.
HP Sure Start Gen5[8]	2019	▪ Full back-up, integrity monitoring, and recovery services for of Intel Manageability Engine firmware including main firmware and boot critical portions of code and data. ▪ DMA Protection for attacks via Thunderbolt devices
HP Sure Start Gen6[9]	2020	▪ Smart flash ▪ Enhanced DMA protection for attacks via internal devices slots ▪ HP Endpoint Security Controller run-time Intrusion detection ▪ AMD Secure Processor firmware protection
HP Sure Start Gen7[10]	2023	▪ FIPS 140-3 Certification ▪ SPI Host Interface monitoring

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Appendix B

System Management Mode (SMM) Overview

System Management Mode (SMM) is an industry-standard approach used for PC advanced power-management features and other OS-independent functions while the OS is running. While the SMM term and implementation is specific to x86 architectures, many modern computing architectures use a similar architectural concept.

SMM is configured by the BIOS at boot time. The SMM code is populated into the main (DRAM) memory. Then BIOS uses special (lockable) configuration registers within the chipset to block access to this area when the microprocessor is not executing in an SMM context. At runtime, entry into SMM mode is event-driven. The chipset is programmed to recognize many types of events and timeouts. When such an event occurs, the chipset hardware asserts the System Management Interrupt (SMI) input pin. At the next instruction boundary, the microprocessor saves its entire state and enters SMM.

As the microprocessor enters SMM, it asserts a hardware output pin, SMI Active (SMIACT). This pin serves notice to the chipset hardware that the microprocessor is entering SMM. An SMI can be asserted at any time, during any process operating mode, except from within SMM itself. The chipset hardware recognizes the SMIACT signal and redirects all subsequent memory cycles to a protected area of memory (sometimes referred to as the SMRAM area), reserved specifically for SMM. Immediately after receiving the SMI input and asserting the SMIACT output, the microprocessor begins to save its entire internal state to this protected memory area.

After the microprocessor state has been stored to SMRAM memory, the special SMM handler code that also resides in SMRAM (placed there by system BIOS at boot time) begins to execute in a special SMM operation mode. While operating in this mode, most hardware and memory isolation mechanisms are suspended, and the microprocessor can access virtually all resources in the platform to enable it to perform required tasks. The SMM code completes the required task, and then it's time to return the microprocessor to the previous operating mode. At that point, the SMM code executes the Return from System Management Mode (RSM) instruction to exit SMM. The RSM instruction causes the microprocessor to restore its previous internal state data from the copy saved in SMRAM upon SMM entry. Upon completion of RSM, the entire microprocessor state has been restored to the state just prior to the SMI event, and the previous program (OS, applications, hypervisor, etc.) resumes execution right where it left off.

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Appendix C

NIST SP 800-193: Platform Firmware Resiliency Guidelines

Released in May 2018, the NIST SP 800-193: Platform Firmware Resiliency Guidelines describe guidelines for security mechanisms to protect platform firmware against unauthorized changes, detect unauthorized changes that occur, and recover from these unauthorized changes.

These guidelines outline three different resiliency properties:

1. Protected: meets all Protection and Secure Update requirements
2. Recoverable: meets all Detection and Recovery requirements
3. Resilient: meets all Protection, Detection, and Recovery requirements

Of these three properties, Resilient is the strongest, providing the most benefit to HP Customers.

HP Sure Start Gen3+ meet and exceed all Resilient guidelines in NIST SP 800-193 for host processor boot firmware, also known as the UEFI BIOS. Further, HP Sure Start Gen3 and subsequent generations progressively expand the number of other firmware based Critical Platform Device Firmware that are protected per NIST 800-193 requirements, as shown in Table 3.

Prior NIST guidelines for BIOS security

NIST SP 800-193 goes beyond NIST SP 800-147, which only addressed protection and the secure update of the platform's UEFI BIOS. All generations of HP Sure Start along with all generations of HP BIOSphere support NIST SP 800-147.

NIST SP 800-193 also goes beyond NIST SP 800-155, which outlined security components and guidelines to establish a secure BIOS integrity measurement and reporting chain. Likewise, all generations of HP Sure Start along with all generations of HP BIOSphere support NIST SP 800-155.

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NIST SP 800-193 Critical Platform Devices in HP Commercial PCs

NIST SP 800-193 acknowledges that the definition of Critical Platform Devices can vary. Critical Platform Devices are defined in section 3.2 (Resiliency Properties):

"For a platform as a whole to claim resiliency to destructive attacks, the set of platform devices necessary to minimally restore operation of the system, and sufficient to restore reasonable functionality, should themselves be resilient. We call this set of devices critical platform devices. The particular resiliency properties may vary from platform-to-platform."

For that reason, it is important to define this set of devices and applicable firmware for HP Commercial PCs. NIST SP 800-193 provides a reference platform architecture in Section 2 along with a list of devices which are "often critical to the normal and secure operation of a platform." The table below provides a mapping to each of those devices/subsystems to the applicable firmware components in the HP Commercial Notebook PCs.

Note that each customer environment should be evaluated to determine whether there are additional peripheral devices that are critical to restore reasonable functionality specific to the customer's deployment.

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Table 4:
Critical Platform Device Firmware Protected by HP Sure Start or other technology.

NIST SP 800-193 Platform Architecture Reference	HP Commercial PC critical platform device firmware	Protected by
1. Embedded Controller (EC)/ Super I/O (SIO) 4. Host Processor 6. Graphics Processing Unit (GPU) when implemented as Unified Memory Architecture (UMA) 8A. Host Controller (HC) for mass storage device 10. Host Processor Boot Firmware 11. Platform Runtime Firmware 12. Power Supply 14. Fans	HP ESC firmware HP UEFI BIOS firmware	HP Sure Start Gen3+
2. Trusted Platform Module (TPM)	Discrete TPM component firmware[1]	TPM
3. Baseboard Management Controller (BMC)/ Management Engine (ME)	Intel Management Engine firmware or AMD Secure Processor firmware	HP Sure Start Gen5+ HP Sure Start Gen6+
5. Network Interface Controller (NIC)	Intel integrated GbE NIC firmware[2]	HP Sure Start Gen3+
7. Serial Peripheral Interface (SPI) Flash	Intel Descriptor firmware	HP Sure Start Gen3+
8A. Hard Disk Drive (HDD)/Solid State Drive (SSD)	HDD/SSD firmware[3]	N/A[4]
9. Embedded MultiMediaCard (eMMC) / Universal Flash Storage (UFS)	N/A[4]	N/A[4]
13. Glue Logic (CPLD's, FPGA's)	N/A[4]	N/A[4]

1. This component is not critical to boot of the platform.
2. This component is not critical to minimally restore operation of the system but is required to establish Ethernet connectivity in environments where that connectivity is deemed critical to platform resiliency.
3. Mass storage devices are outside the scope of this document. Resiliency capabilities vary by storage supplier and by storage device. Not all suppliers or devices currently meet all Resiliency requirements in 800-193.
4. No devices of this type are included.

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Acronyms

- BIOS
  Basic Input/Output System (aka host processor boot firmware)
- CPU
  Central processing unit
- ESC
  HP Endpoint Security Controller
- Gen3+
  Applies to HP Sure Start Gen3, Gen4, Gen5, Gen6, and Gen7
- Gen4+
  Applies HP Sure Start Gen4, Gen5, Gen6, and Gen7
- Gen5+
  Applies HP Sure Start Gen5, Gen6, and Gen7
- Gen6+
  Applies only to HP Sure Start Gen6, and Gen7
- HMAC
  Hash-based message authentication code
- HW
  Hardware
- OS
  Operating system
- POST
  Power-On Self-Test
- RoT
  Root of Trust (defined in NIST SP 800-193)
- RTD
  Root of Trust for Detection (defined in NIST SP 800-193)
- RTRec
  Root of Trust for Recovery (defined in NIST SP 800-193)
- SMM
  System Management Mode
- UEFI
  Unified Extensible Firmware Interface

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Table 5:
Required functions for Host Processor Boot Firmware.

The table below provides a summary of each function described by NIST SP 800-193.

NIST SP 800-193	HP Sure Start	
Roots of Trust (Section 4.1)	Meets all Resiliency Requirements	▪ Gen3+ uses a hardware-based RoT (the HP ESC) with immutable boot firmware, which cryptographically verifies subsequent firmware before launching it, creating a Chain of Trust. ▪ Gen3+ includes a key store and approved digital signing algorithms based on FIPS 186-4 to verify the digital signature of firmware update images. ▪ Gen3+ uses authenticated update, detection, and recovery mechanisms, which are anchored in Gen3+'s HW-based RoT.
Protection and Update of Mutable Code (Section 4.2.1)	Meets all Resiliency Requirements	▪ Gen3+ uses an authenticated update mechanism anchored in Gen3+'s ▪ HW-based RoT. ▪ Firmware update images are digitally signed by HP's code signing service (HP Secure Sign) and verified by Gen3+ prior to updating. ▪ Gen3+ integrity protects the HP ESC and UEFI flash regions, so that only its authenticated update mechanism or a secure local update through physical presence can modify those flash regions. ▪ Gen3+ has no known authenticated update bypass mechanisms and contains the ability to prevent rollback to earlier authentic firmware images with known security vulnerabilities.
Protection of Immutable Code (Section 4.2.2)	Meets all Resiliency Requirements	▪ Gen3+ uses a hardware-based RoT (the HP ESC) with immutable boot firmware.
Runtime Protection of Critical Platform FW (Section 4.2.3)	Meets all Resiliency Requirements	Critical Platform Firmware executing in volatile storage (RAM) runs and: ▪ Ceases its operation prior to the loading of system software. That is, it runs during POST and stops before the OS is loaded. ▪ is protected from system software using SMM protections enforced by the CPU.
Protection of Critical Data (Section 4.2.4)	Meets all Resiliency Requirements	▪ Gen4+ Critical Data, such as Secure Boot authenticated variables, are only modifiable through defined APIs provided by device firmware. These APIs employ a mechanism to authenticate that the data is originating from an authorized source before applying the change. ▪ Gen4+ Critical Data, such as per-platform unique factory configuration settings, are only modifiable through defined APIs provided by device firmware. These APIs employ a mechanism to authenticate that the request is originating from an authorized HP service provider before they allow the change. ▪ Gen4+ Critical Data, such as BIOS settings that can be configured in the field, are only modifiable through defined APIs. These APIs are accessed only via a system administrator who has configured the BIOS administrator password. ▪ Gen3+ factory default settings, which are not per- platform-specific, employ the same protection as the code. This includes integrity and authenticity verification via digital signature. These setting updates are controlled and protected in the same manner as the firmware.

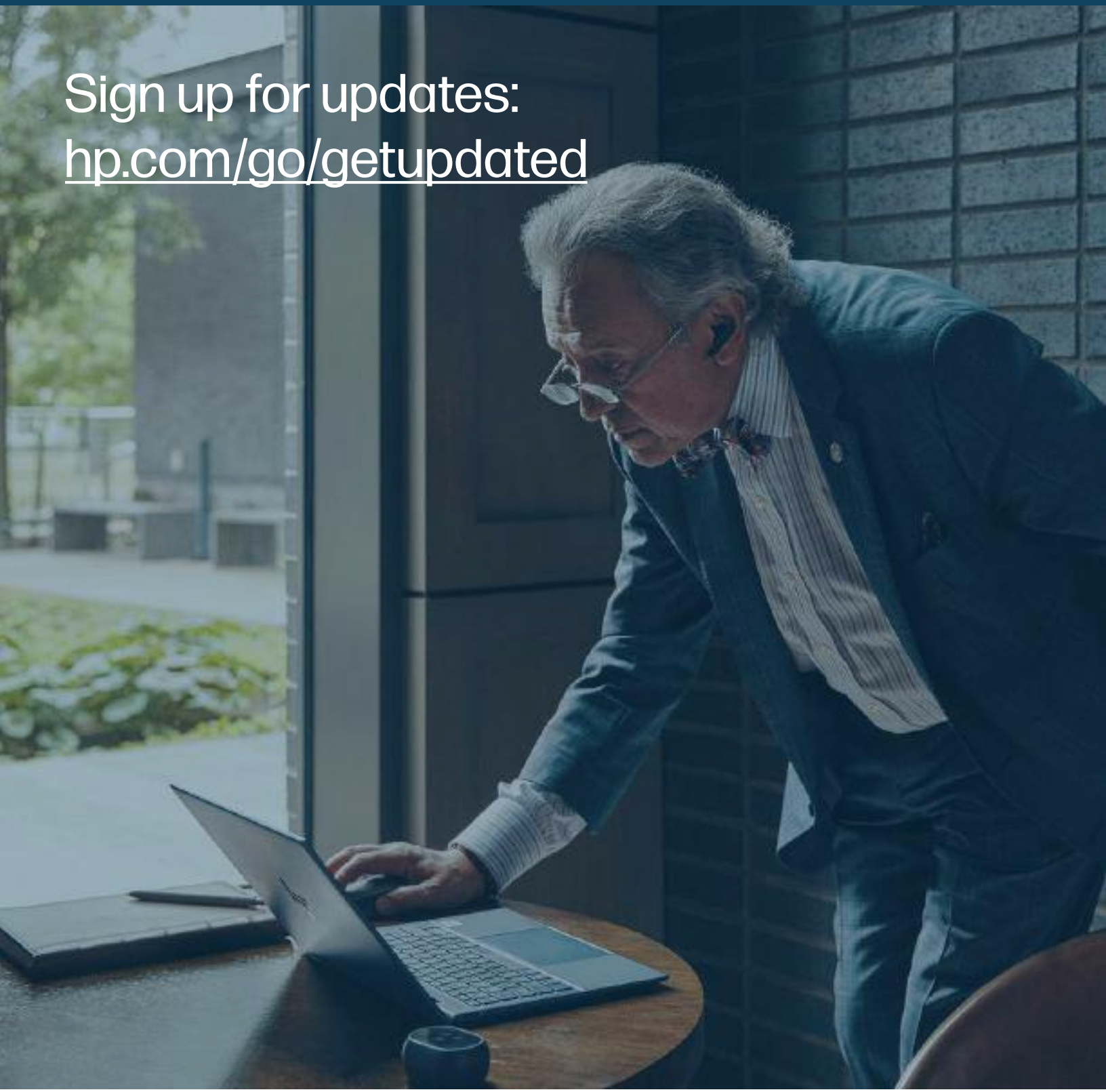
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NIST SP 800-193	HP Sure Start	
Detection of Corrupted Code (Section 4.3.1)	Meets all Resiliency Requirements	▪ A successful attack on the platform firmware will not impact Gen3+'s RTD. The RTD is maintained in a private flash area inaccessible to the system software that might compromise the platform firmware. ▪ Firmware code is validated by Gen3+'s RTD using approved digital signature algorithms and cryptographic hashes.
Detection of Corrupted Critical Data (Section 4.3.2)	Meets all Resiliency Requirements	▪ A successful attack on the Active Critical Data will not impact Gen3+'s RTD. The RTD is maintained in a private flash area inaccessible to the system software that might compromise Active Critical Data. ▪ Gen3+ can save and validate critical data through use of digest hashes prior to using that critical data, and Gen3+ can initiate a recovery of the critical data if corruption is detected.
Recovery of Mutable Code (Section 4.4.1)	Meets all Resiliency Requirements	▪ Gen3+'s ESC implements the recovery capability. ▪ A successful attack on the platform firmware will not impact Gen3+'s RTRec. The RTRec is maintained in a private flash area inaccessible to the system software that might compromise the platform firmware. ▪ Gen3+'s RTRec has access to a locally stored copy of the platform's UEFI image in its private flash area, which is inaccessible to (protected from) system software. ▪ Gen3+ can update the locally stored authentic UEFI image in its private flash area through an Authenticated Update mechanism.
Recovery of Critial Data (Section 4.4.2)	Meets all Resiliency Requirements	▪ Gen3+'s ESC implements the recovery capability. ▪ A successful attack on Active Critical Data will not impact Gen3+'s RTRec. The RTRec is maintained in a private flash area inaccessible to the system software that might compromise Active Critical Data. ▪ Gen3+ can recover critical data back to factory defaults including per-platform-specific data that is backed up in isolated & protected storage. ▪ Gen3+ can recover non-per-platform-specific defaults from the backup BIOS image stored in isolated and protected storage. ▪ Gen3+ does not use policies included as part of Critical Data to restore critical data.
Logging and notification	Exceeds all Resiliency Requirements	▪ Gen3+ will notify user of corruption and log the event. ▪ Gen3+'s detection mechanism is capable of logging events when corruption ▪ is detected Gen3+ will notify user of a recovery event and log the event. ▪ Gen3+'s detection mechanism is capable of logging events when a recovery action has taken place.
Policy-based controls	Exceeds all Resiliency Requirements	▪ Gen3+'s detection mechanism has policies which control the action taken by the Runtime Detection.



NIST SP 800-193	HP Sure Start	
Automatic or manual recovery options	Exceeds all Resiliency Requirements	▪ Gen3+ Runtime Detection can initiate a recovery process automatically or after notification of detection corruptions to the user. ▪ Gen3+ can automatically perform its recovery operations without user interaction or it may require user approval, dependent on policy setting. ▪ Gen3+ gains approval from the user before replacing the current Critical Data, based on recovery policy setting. ▪ Gen3+ can recover Critical Data back to a last-known good state. ▪ Gen3+ gains approval from the user before replacing the current Critical Data, based on recovery policy setting.
Local or remote IT Recovery	Exceeds all Resiliency Requirements	▪ Gen3+ can automatically perform its recovery operations without user interaction or may require user approval, dependent on policy setting.
Rollback pre-vention	Exceeds all Resiliency Requirements	▪ Gen3+ and the UEFI boot block both have controls in place to protect against recovery to an earlier firmware version with security weaknesses.
Runtime intru-sion detection	Exceeds all Resiliency Requirements	▪ NIST SP 800-193 is silent on what happens to firmware once it is loaded from nonvolatile storage (flash) into volatile storage (RAM) for execution. Gen3+ provides runtime intrusion detection of UEFI SMM code loaded into SMM RAM.
Physical attack detection	Additional Functionality not required in NISTSP800-193	▪ Gen4+ provides protection against physical attacks to the protected backup copy of dynamic critical data. ▪ AES encryption is used on a per-component unique key to provide confidentiality of private data. In addition, HMAC integrity measurements provide tamper prevention/detection of those keys.

1. The HP Sure Start controller hardware has been certified per the CSPN certification framework.
2. HP Sure Start with Dynamic Protection is available on HP Elite products equipped with 6th generation Intel Core processors and higher.
3. HP Sure Start end user notifications and pushing of HP Sure Start events to OS event viewer support is limited to Windows Operating system. These features are not supported in Linux.
4. HP Notification Software must be installed to view HP Sure Start events in the Windows Event Viewer.
5. HP Notification Software must be installed to receive notifications.
6. HP Sure Start Gen3 is available on HP Elite products equipped with Intel 7th generation processors.
7. HP Sure Start Gen4 is available on HP Elite and HP Pro 600 products equipped with 8th generation Intel or AMD processors.
8. HP Sure Start Gen5 is available on select HP PCs with Intel processors. See product specifications for availability.
9. HP Sure Start Gen6 is available on select HP PCs.
10. HP Sure Start Gen7 is available on select HP PCs.



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4AA7-6645ENW, January 2024

ENERGY STAR CERTIFIED
Computers

HP - HP Z2 Tower G9 Workstation Desktop PC ENERGY STAR : Z2 Tower G9 Workstation Desktop PC

Specifications

ENERGY STAR Unique ID:	2390561
Brand Name:	HP
Model Name:	HP Z2 Tower G9 Workstation Desktop PC ENERGY STAR
Model Number:	Z2 Tower G9 Workstation Desktop PC
Type:	Workstation
Workstations: Processor Brand:	Intel
Workstations: Processor Name:	i9-12900K
Workstations: Operating System Name:	Windows 11
Workstations: Base Processor Speed Per Core (GHz):	3.2
Workstations: System Memory (GB):	128
Workstations: Hard Drives (count):	1
Workstations: Off Mode (watts):	0.7
Workstations: Sleep Mode (watts):	2.6
Workstations: Long Idle (watts):	32.8
Workstations: Short Idle (watts):	34.2
Workstations: Weighted Power of Model (watts):	19.4
Sleep Mode Default Time Upon Shipment (min.):	20
Display Sleep Mode Default Time Upon Shipment (min.):	10
WOL (Wake on LAN) From Sleep:	Shipped Enabled Under All Conditions
Will the Speed of Any Active 1 GB/s or Higher Ethernet Network Links be Reduced to Less Than 1 GB/s When Transitioning to Sleep or Off Mode?:	Yes
Ethernet Capability:	Yes
Date Available On Market:	2022-02-28
Date Certified:	2022-01-17
Markets:	United States, Switzerland, Taiwan, Japan, Canada
ENERGY STAR Certified:	Yes

Captured On:
01/09/2025

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Ericsson AB (http://www.ericsson.com)

Google LLC (http://www.google.com)

H3C (http://www.h3c.com)

HP, Inc (http://www.hp.com/)

Huawei (http://www.huawei.com/)

IBM (http://www-03.ibm.com/systems/power/)

IEIT SYSTEMS Co., Ltd (https://zh.ieisystem.com/)

Microsoft Corporation (http://www.microsoft.com)

MULTILASER INDUSTRIAL S/A (https://www.multilaser.com.br/)

NVIDIA Corporation (http://www.nvidia.com)

Supermicro (http://www.supermicro.com)

xFusion Digital Technologies Co., Ltd. (http://www.xfusion.com)

Participation

American Megatrends, Inc. (http://www.ami.com)

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ASPEED Technology Inc (https://www.aspeedtech.com/)

Atos (https://atos.net/)

Celestica (https://www.celestica.com/)

Code Construct (https://codeconstruct.com.au)

CoreWeave (https://www.coreweave.com/)

Cornelis Networks, Inc. (http://www.cornelisnetworks.com)

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Qualcomm Inc

Quanta Computer Inc (http://www.quantatw.com/)

Rambus Inc. (https://www.rambus.com)

Realtek Semiconductor (http://www.realtek.com.tw)

Samsung (https://semiconductor.samsung.com/)

Seagate Technology (http://www.seagate.com/)

Solidigm (https://www.solidigm.com/)

Synopsys (http://www.synopsys.com)

Vertiv (http://www.avocent.com)

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ASHRAE (https://www.ashrae.org/home)

Broadband Forum (BBF) (https://www.broadband-forum.org/)

China Communications Standards Association (http://www.ccsa.org/cn/english)

China Electronics Standardization Institute (CESI) (http://www.en.cesi.cn/)

CXL Consortium (https://www.computeexpresslink.org/)

ETSI-NFV (http://portal.etsi.org/portal/server.pt/community/NFV/367)

HDBaseT (https://hdbaset.org/)

MIPI Alliance (https://www.mipi.org/)

NVM Express (http://nvmexpress.org/)

OMG-Cloud Working Group (http://www.cloud-council.org)

Open Compute Project (OCP) (http://www.opencompute.org/)

Open Data Center Committee (ODCC) (http://www.opendatacenter.cn/)

Open Fabrics Alliance (OFA) (https://www.openfabrics.org/)

Open Grid Forum (http://ogf.org)

OpenInfra Foundation (https://openinfra.dev/)

PCI Industrial Computer Manufacturer Group (PICMG) (https://www.picmg.org/)

PCI-SIG (https://pcisig.com/)

SNIA (http://www.snia.org/)

TeleManagement Forum (http://www.tmforum.org/)

The Green Grid (http://www.thegreengrid.org)

The Open Group (http://www.opengroup.org)

Unified Extensible Firmware Interface (http://www.uefi.org/)

Universal Chiplet Interconnect Express (UCIe) (https://www.uciexpress.org/)

Academic Alliance

"Gheorghe Asachi" Technical University of Iaşi (http://www.tuiasi.ro/en/)

Arizona State University (https://www.asu.edu/)

Athens University of Economics and Business (https://www.aueb.gr/en)

Dongguk University (http://www.dongguk.edu)

Federal Institute of Technology of Espirito Santo (https://www.ufes.br/)

George Mason University (http://c4i.gmu.edu)

Hungarian Academy Of Sciences Institute For Computer Science And Control (https://sztaki.hu/en)

Indian Institute of Technology Roorkee (https://www.iitr.ac.in/)

Institute of Information Security (IISEC) (https://www2.iisec.ac.jp/english/)

Kasetsart University (https://www.ku.ac.th/th)

Logitrain (https://logitrain.edu.au)

Marshall University (http://www.marshall.edu)

National Technical University of Athens (http://www.ntua.gr/)

Paul Sabatier University (https://www.univ-tlse3.fr/)

Research Center on Scientific and Technical Information (CERIST) (http://www.cerist.dz/index.php/en/)

Ruprecht-Karls-University Heidelberg (https://www.uni-heidelberg.de/en)

Shanghai Jiao Tong University (http://en.sjtu.edu.cn/)

Swami Rama Himalayan University (http://www.srhu.edu.in/)

Technische Universitaet Dresden (https://tu-dresden.de/)

Texas Tech University (http://www.ttu.edu/)

Universidade de Sao Paulo (https://www5.usp.br)

University of California (https://www.universityofcalifornia.edu/)

University of New Hampshire (http://unh.edu)

University of Pisa - Italy (https://www.unipi.it/)

University of Seville (https://www.us.es/)

University of Sydney (https://www.sydney.edu.au/)

University of Western Ontario (https://www.uwo.ca/)

University of Wuerzburg (https://www.uni-wuerzburg.de/startseite/)

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Extreme System Design Co.

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Microsoft

Hardware certification report **Approved**

Private product ID:	**14583652101653309**
Shared product ID:	**401304713**
Submission ID:	**1152921505696194241**
Submission date:	**4/18/2023**
Completion date:	**4/18/2023**
Company:	**HP Inc.**
Product name:	**HP Z2 Tower G9 Workstation Desktop PC**
Category:	**System**
Product type:	**Desktop**
Qualification level:	**Certified for Microsoft Windows 11 Client family version 22H2, x64**
Marketing name:	**HP Z2 Tower G9 Workstation Desktop PC**

Microsoft Certified

Your submission was sent successfully!

HP Z2 G9 Tower Workstation (Core i7-12700K)

Desktop system certified with Ubuntu

Release

- ### Ubuntu 20.04 LTS 64 Bit

  Pre-installed in some regions with a custom Ubuntu image that takes advantage of the system's hardware features and may include additional software. Standard images of Ubuntu may not work well, or at all.

  #### Kernel

  This system was tested with 20.04 LTS, running the 5.14.0-1018-oem kernel.

  #### BIOS

  HP: U50 Ver. 01.01.00 (UEFI)

  #### Hardware

Network	Intel Corp. I210 Gigabit Network Connection Ethernet Server Adapter I210-T1 pci (8086:1533 103c:0003) Intel Corp. Ethernet Connection (17) I219-LM pci (8086:1a1c 103c:895c)
Processor	Intel Corp. 12th Gen Intel(R) Core(TM) i7-12700K
Video	nVidia GA102GL [RTX A5000] pci (10de:2231 103c:147e)
Wireless	Intel Corp. Alder Lake-S PCH CNVi WiFi Wi-Fi 6 AX201 160MHz pci (8086:7af0 8086:0094)

Hardware details ›

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Components certified with this system

Component	14.04 ESM	16.04 LTS	18.04 LTS	20.04 LTS	Comments
HP RTX A4000					
HP RTX A4500					

- Supported
- ✔[3] May require 3rd-party driver
- In progress

Issues? Let us know

If there is an issue with the information for this system, please let us know <https://answers.launchpad.net/ubuntu-certification/+addquestion?field.title=Feedback on the HP Z2 G9 Tower Workstation (Core i7-12700K) (202112-29792)> .

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HP's Compliance with Restriction of Hazardous Substances (RoHS) Legislation in the EU and other jurisdictions

(Rev 14c September 2019)

HP Inc
1501 Page Mill Road
Palo Alto, CA 94304-1112
www.hp.com

HP is committed to compliance with all applicable laws and regulations, including material restriction requirements under the European Union Recast RoHS Directive 2011/65/EU, otherwise known as EU RoHS 2, as amended by Directive 2015/863/EU and RoHS legislation in other jurisdictions such as China's Management Methods for Restricted Use of Hazardous Substances in Electrical and Electronic Products, otherwise known as China RoHS, and the materials restriction requirements of India's E-Waste Management Rules, 2016.

HP believes that legislation, like EU RoHS 2, plays an important role in promoting industry-wide transition to restrict substances of concern. In general, the restriction of any substance should take into account the following key items:

- Global harmonization of the legislation content and implementation requirements
- Substance risk assessment, including a clear understanding of the environmental impacts of alternative substances
- Clear identification of what substances (vs. broad classes or categories) are to be restricted
- Clear identification of when alternative technologies are proven and readily available
- Appropriate lead time to allow the industry to transition
- Substances that are not used or found in final products should not be included in the restrictions
- Material application exemptions should be allowed for the use of restricted substances in applications where current substitution is not technically feasible
- Inclusion of maximum concentration values setting de minimis levels below which the relevant substances may be present

HP believes other substances should be considered for inclusion in future RoHS legislation. This includes the restriction of polyvinyl chloride (PVC) and brominated flame retardants (BFRs) from electrical and electronic products (EEE). HP believes PVC and BFRs should be the focus for the restriction of chlorine (Cl) and bromine (Br) from electrical and electronic products, where technically feasible. HP's reasons for focusing on PVC and BFRs are:

- PVC and BFRs cover 99% of the uses for Cl and Br in electronics;
- Given the high percentage usage, these substances have the highest impact;
- Restriction of these substances where technically feasible would substantially accomplish the goal to eliminate Cl and Br from electronic products

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In order to make these material transitions in all the many types of products in the industry, HP believes restriction under RoHS legislation is possible. However, some critical issues would need to be overcome or addressed by specific exemptions, including technical issues for certain applications, availability of environmentally preferable alternatives, and ability to maintain high recycled content as substances are restricted.

Our continued voluntary goal is to apply the EU RoHS 2 substance and exemption requirements outside the EEA (and other countries that are tracking EU compliance dates) on a worldwide basis within 6 months of each of the EU's various legal compliance dates for virtually all HP branded new products in the scope of EU RoHS 2, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

HP began proactively eliminating substances of concern in the early 1990s. The HP Materials and Chemical Management Policy guides how we specify materials and chemicals for use in products, packaging, and manufacturing processes. For key milestones see our Green Chemistry Timeline.

In early 2003, a company-wide RoHS team was formed to manage all aspects of HP's global response to RoHS legislation around the world. HP's initiative to address RoHS legislation is part of the company's Design for Sustainability program, which includes advancing materials innovation to improve environmental and human health impacts. For more information, see the materials innovation section of HP's Sustainable Impact Report.

HP continues to plan for further "RoHS like" legislations in other jurisdictions and will meet any additional requirements that arise. HP complies with the requirements of all the RoHS legislations currently in effect (including those specifically listed under Compliance Status below). HP's Compliance Verification is based on our risk analysis of restricted substances entering the supply chain and includes technical documentation outlined in the European Union's EN 50581:2012 standard and the International IEC 63000:2018 standard.

More detailed information can be found at: Sustainable Impact at HP

Sustainability Impact Report
Sustainable Design
Compliance Verification
General Specifications for the Environment
Eco Declarations

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HP's Compliance Status to EXISTING RoHS Legislation:

Europe, Middle East and Africa

European Union and European Economic Area
- HP products [1] comply with EU Directive 2011/65/EU of 8 June 2011 as amended by EU Directive 2015/863 of 31 March 2015 and including amendments to the exemptions in Annex III.

Switzerland
- HP products [1] comply with the Swiss Ordinance on the Reduction of Risks relating to the Use of Certain Particularly Dangerous Substances, Preparations and Articles, otherwise known as the Swiss Chemical Risk Reduction Ordinance, ORRChem, as of May 18, 2005 (as amended)

Ukraine
- HP products [1] comply with the substance restrictions in Ukraine's "Technical Regulation on Restriction of the use of certain hazardous substances in electrical and electronic equipment, approved by Decree of the Cabinet of Ministers of Ukraine dated 10 March, 2017 No. 139", otherwise known as Ukraine RoHS which came into effect on 22 September 2017 and repealed Technical Regulation on the restriction of the use of certain hazardous substances in electrical and electronic equipment, approved by Decree of the Cabinet of Ministers of Ukraine dated December 3, 2008 No. 1057.

Serbia
- HP products [1] comply with Serbia's WEEE and RoHS "Regulations on the List of Electrical and Electronic Products, Measures Banning and Restricting the Recovery of Electrical and Electronic Equipment Containing Hazardous Materials, and the Methods and Procedures for Managing Waste from Electrical and Electronic Products" that entered into force on January 4, 2011. RoHS restrictions apply to equipment placed on the market on or after July 1, 2011.

Turkey
- HP products [1] comply with Turkey's "Regulation on Waste Electronic and Electrical Equipment" (WEEE) which came into effect on May 22, 2012 and incorporates the rules for the Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment", otherwise known as Turkey RoHS.

Bosnia-Herzegovina
- HP products [1] comply with Bosnia-Herzegovina's "Regulation of Restrictions of Use of Certain Dangerous Substances in Electrical and Electronic Equipment (RoHS Regulation 50/15) was published in Official Gazette of Republic of Srpska 50/15", otherwise known as Bosnia-Herzegovina RoHS which came into effect on June 1, 2016.

UAE
- HP products [1] comply with UAE's "Cabinet Decision No. 10/2017 to control hazardous materials in electrical and electronic devices (RoHS) OG No. 614 of 27.04.2017 (officially published and came to power on 16.05.2017)", otherwise known as UAE RoHS which came into effect on January 1, 2018.

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Asia

China

- HP products [1] comply with China's, "Management Methods for Restricted Use of Hazardous Substances in Electrical and Electronic Products", otherwise known as China RoHS which came into effect on July 1, 2016. And comply with "Catalog of Electrical and Electronic Products that have met the standard in Limited Use of Hazardous Substances (Batch one) which comes into effect on Nov 1, 2019.

India

- HP products [1] comply with the material restrictions of India's legislation "E-waste Management Rules, 2016", otherwise known as India RoHS which came into effect on October 1, 2016.

Korea

- HP products [1] comply with Korea's legislation "The Act on Resource Circulation of Electrical and Electronic Equipment and Vehicles", otherwise known as Korea's RoHS which came into effect on January 1, 2008. You can find HP's Korean RoHS declarations at: http://www8.hp.com/us/en/hp-information/environment/msds-specs-more.html.

Vietnam

- HP products [1] comply with Vietnam's legislation "Circular 30/2011/TT-BCT: Temporarily regulating the permitted limits for a number of hazardous substances in electric and electronic products", otherwise known as Vietnam RoHS which came into effect on December 1, 2012. You can find HP's Vietnam RoHS declarations at: http://www8.hp.com/us/en/hp-information/environment/msds-specs-more.html

Japan

- HP products [1] comply with the labeling requirements set out in Japan's "The Marking of Presence of the Specific Chemical Substances for Electrical and Electronic Equipment" (JIS-C-0950), otherwise known as J-MOSS which came into effect on July 1, 2006. You can find HP's J-MOSS declarations at http://www8.hp.com/us/en/hp-information/environment/msds-specs-more.html

Singapore

- HP products [1] comply with Singapore's "Environment Protection and Management Act (Chapter 94A) Environmental Protection and Management Act (Amendment of Second Schedule) Order 2016", otherwise known as Singapore RoHS which came into effect on June 1, 2017.

Taiwan BSMI

- HP products [1] comply with Taiwan's "CNS 15663 Guidance to reduction of the restricted chemical substances in electrical and electronic equipment released by Bureau of Standards, Metrology and Inspection (BSMI), MOEA through notification dated 29 December 2015 added the requirement for RoHS labelling to BSMI certification requirement." Otherwise known as Taiwan BSMI RoHS which came into effect as of July 1, 2017.

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Americas

California

- HP products [1] comply with California's, "Electronic Waste Recycling Act of 2003 (Senate Bill 20) substance restrictions", otherwise known as California RoHS which came into effect on January 1, 2007.

New Jersey

- HP products [1] comply with New Jersey's "Electronic Waste Recycling Act" (Senate Bill 2144), otherwise known as New Jersey RoHS which came into effect on 1 January 2011.

Worldwide

- HP continues to achieve its internal voluntary goal to meet the substance restrictions of the EU RoHS legislation on a worldwide basis, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive), for virtually all HP branded products in scope of EU Directive 2011/65/EU as amended.

Notes:
[1] HP products that are both in scope and put on the market in the given jurisdiction.

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Annex B2 - Product environmental attributes
Computers and computer monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under P15.

Brand *	***HP***	Logo
Company name *	***HP***	
Contact information * e-mail address	***HP Sustainability and Compliance Center*** ***sustainability@hp.com***	
Internet site *	***http://www.hp.com/hpinfo/globalcitizenship/environment/***	
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	***Workstation***
Commercial name *	***HP Z2 Tower G9 Workstation Desktop PC***
Model number *	***Z2 Tower G9***
Issue date *	***2/21/2022***
Intended market *	☒ **Global** ☒ **Europe** ☐ **Asia, Pacific & Japan** ☐ **Americas** ☐ **Other**
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2
Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:
P4.1 – P4.3 Consumable materials
P9.1 TEC and Print speed
P10.2 - P10.3 Chemical emissions from printing products
P11.1 - P11.3 Consumable materials for printing products.

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Model number *	***Z2 Tower G9***	**Logo**	
Issue date *	***2/21/2022***		

Product environmental attributes - Legal requirements		**Requirement met**		
Item		Yes	No	n.a.
P1	**Hazardous substances and preparations**			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	☒	☐	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 μg/cm²/week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): REACH Article 33 Declarations (hp.com)	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☒	☐	☐
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☒	☐	☐
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☐	☐	☒
P2.4*	Documentation includes the number of cycles the (secondary) battery can withstand. (See legal reference)	☒	☐	☐
P2.5*	When internal batteries of a notebook computer cannot be “accessed and replaced by a nonprofessional user”, the related text is present and legible on the external packaging (see legal reference)	☒	☐	☐
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): http://www8.hp.com/uk/en/certifications/technical/regulations-certificates.html sustainability@hp.com	☒	☐	☐
P3.2*	The product complies with the applicable Eco design requirements for energy-related products, (see legal reference). Required information is; ☐ given in item P15 or added to this document, ☒ available at (add URL): https://h22235.www2.hp.com/hpinfo/globalcitizenship/environment/productdata/europeErPLot3desktop-pc.html	☒ ☒	☐ ☐	☐ ☐
P5	**Product packaging**			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	☒	☐	☐
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (see legal reference).	☒	☐	☐

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating “Yes” means that the product is compliant with the mandatory requirements.

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Model number *	*Z2 Tower G9*	**Logo**	
Issue date *	*2/21/2022*		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P7	**Design** **Disassembly, recycling**			
P7.1*	Parts that have to be treated separately are easily separable	☒	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating.	☒	☐	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	☒	☐	☐
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	☒	☐	☐
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	☒	☐	☐
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	☒	☐	☐
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	☒	☐	☐
P7.8*	Upgrading can be done using commonly available tools	☒	☐	☐
P7.9	Spare parts are available after end of production for: **5** years			☐
P7.10	Service is available after end of production for: **5** years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***steel*** Material type: Material type:			
P7.12	Insulation materials of external electrical cables are PVC free.	☐	☒	☐
P7.13	Insulation materials of internal electrical cables are PVC free.	☒	☐	☐
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	☒	☐	☐
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all ☐ PCBs > 25 g ☒ are low halogen as defined in IEC 61249-2-21. (See [5]NOTE B2)	☒	☐	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking: ***>PBT+PET-GF30FR(40)<***	☒	☐	☐
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): TBBPA (additive) ☐, TBBPA (reactive) ☐ (See NOTE B3), Other; chemical name: , CAS #: Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4: ***>PBT+PET-GF30FR(40)<***	☐ ☒	☐ ☐	☐ ☐
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: " Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4: ***>PBT+PET-GF30FR(40)<***	☐ ☒	☐ ☐	☐ ☐
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; and Hazard statements: The source(s) for these classifications is/are found at (add URL(s)): ***http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database*** (See note B5)	☐	☐	☒

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1471

Model number *	*Z2 Tower G9*	Logo
Issue date *	*2/21/2022*	

Product environmental attributes - Market requirements (continued)		Requirement met		
Item		Yes	No	n.a.
	Material and substance requirements (continued)			
P7.20*	Postconsumer recycled plastic material content is used in the product (See NOTE B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***49.66*%**. or b) The weight of recycled material is g.	☐	☐	☐
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is %. or b) The weight of the biobased plastic material is g.	☐	☒	☐
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp. If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg	☐	☐	☒
P7.23*	If product includes an integral display, the total mercury content in the integrated display: mg	☐	☐	☒
P8	**Batteries**			
P8.1*	Battery chemical composition: ***lithium/manganese dioxide***			☐
P9	**Energy consumption (See NOTE B8)**			
P9.1	For the product the following power levels or energy consumptions are reported:			

Energy mode *	Power level at **100** V AC	Power level at **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method *	
EPS No-load (External power supply / charger plugged in the wall outlet but disconnected from the product.)				***EPS Energy Test Report***	
PTEC * Typical Energy Consumption	***19.63*** W	***19.48*** W	***19.41*** W	***EnergyStar@ Program Requirements for Computer***	☐
ETEC * Annual Energy Consumption	kWh/year	kWh/year	kWh/year	***EnergyStar@ Program Requirements for Computer***	☒
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * :				***EnergyStar@ Program Requirements for Computer***	☒
Display resolution * : megapixels				***EnergyStar@ Program Requirements for Computer***	☒
Default time to enter energy save mode: minutes				***EnergyStar@ Program Requirements for Computer***	☒

P9.2*	Information about the energy save function is provided with the product.	☒	☐	☐
P9.3	Energy efficiency class (monitors only):			☒

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available;

see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

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Model number *	***Z2 Tower G9***	**Logo**	
Issue date *	***2/21/2022***		

Product environmental attributes - Market requirements (continued)				**Requirement met**		
Item				Yes	No	n.a.
P10	**Emissions**					
	Noise emission – Declared according to ISO 9296 (See NOTE **B9**)					
P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)			
	Idle	* ***Fans on***	* ***3.6***			☐
	Operation	* ***Fans on, HDD spinning***	* ***4.1***			☐
	Other mode					
	Measured according to: ☒ ISO 7779 ☒ ECMA-74 ☐ Other (only if not covered by ECMA-74)					
	Electromagnetic emissions					
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):			☐	☐	☐
P12	**Ergonomics for computing products**					
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.			☐	☐	☒
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.			☒	☐	☐
P13	**Packaging and documentation**					
P13.1*	Product packaging material type(s): ***PAPER/Corrugated*** weight (kg): ***1.214*** Product packaging material type(s): ***PAPER/Molded Pulp*** weight (kg): ***0.890*** Product packaging material type(s): ***PLASTIC/Polyethylene low density - LDPE*** weight (kg): ***0.040***					
P13.2*	Product plastic primary packaging is free from PVC.			☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***63*** %					☐
P13.4*	Specify media for user and product documentation (tick box): Electronic ☐, Paper ☐, Other ☒ "available on hp.com"					☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify: Totally chlorine-free Elemental chlorine-free Processed chlorine-free			☒ ☒ ☐ ☐	☐	
P14	**Voluntary programs**					
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Criteria version: ***8.0*** Date: ***02/21/2022*** Product category: ***Workstation*** Eco-label: ***TCO*** Criteria version: ***9.0*** Date: ***02/21/2022*** Product category: ***Workstation*** Eco-label: ***EPEAT*** Criteria version: ***IEEE 1680.1*** Date: ***02/21/2022*** Product category: ***Workstation***					
P15	**Additional information (See NOTE B10)**					
P9	***Energy consumption of computer products; description of the tested product configuration:***					
All Sections	***1. Product environmental information contained in this declaration is valid as of the date the declaration is published. Changes to external standards referenced in the IT Eco-Declaration may invalidate some information contained in this declaration over***					
P1	***1. This product does not include DEHP, BBP, DIBP, or DBP.***					

NOTE B9 A Guidance document on Acoustic Noise is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

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P7 ***Product Upgradability and Reparability***

The following table is provided in accordance with IEEE 1680.1-2018[6] criterion 4.4.2.5.

feature	Available [1]	Repairable [2]	Replaceable [3]	Upgradeable [4]
processor	Y	Y	Y	Y
main memory	Y	Y	Y	Y
mass storage (internal)	Y	Y	Y	Y
wireless networking	Y	Y	Y	Y
integrated graphics	Y	Y	N	N
discrete graphics	Y	Y	Y	Y
display panel	N	N/A	N/A	N/A
integrated keyboard	N	N/A	N/A	N/A
batteries	Y	Y	Y	Y
power supply	Y	Y	Y	Y
fan assemblies	Y	Y	Y	Y
speaker(s) (internal)	Y	Y	Y	Y
camera	N	N/A	N/A	N/A
touchpad	N	N/A	N/A	N/A
I/O connectors and external power connector	Y	Y	Y	Y
readers [5]	Y	Y	Y	Y

Table notes:
[1] Y* = feature is available, but may not be included in every configuration
[2] Product can be repaired (returned to fully functional state) if feature fails.
[3] Feature can be replaced using only commonly available tools without soldering or de-soldering. Y* = replacement may require replacing an assembly to which the feature is attached.
[4] Base feature may be upgraded by replacing it with a higher performance module or by expanding capacity through use of expansion slots. NOTE: This evaluation does not
account for situations in which the initial configuration purchased is already maximized. Contact HP Sales or an HP authorized reseller to determine the availability of upgrade parts and method to obtain them in your geography.
[5] This feature category includes readers such as fingerprint readers, smart card readers, and other read-only devices, but excludes read/write devices.

P9 ***1. European Union Commission Regulation 1275/2008- Energy Efficiency Information:***

Mode / Condition	Power Consumption in Watts at 230 VAC Input Voltage	Default Time to Mode / Conditi (if applicable)
Off Mode (if applicable)	***0.273***	Not Applicable
Standby Mode (if applicable)	Not Applicable	Not Applicable
Network Standby / Sleep / Long Idle Mode if all wired network ports are connected and all wireless network ports are activated (if applicable)	***N/A***	***N/A***
Network Standby / Sleep / Long Idle Mode (if applicable)	***N/A***	***N/A***

2.European Union Commission Regulation 1275/2008- Wireless Network Instructions:

Where applicable, activate and deactivate a wireless network using the instructions provided in the product user guide or the operating system. Information is also available at www.hp.com/support.

P10 Sound Pressure Level

Noise emission – Declared according to ISO 9296 (See NOTE [B9])

P10.1	Mode	Mode description	Statistical upper limit A-weighted sound pressure level, $L_{pA,m}$ (dB)
	Idle	* ***Fans on***	* ***18.2***
	Operation	* ***Fans on, HDD spinning***	* ***20.9***
	Other mode		
	Measured according to: ☒ ISO 7779 ☒ ECMA-74 ☐ ***Other*** ***(only if not covered by ECMA-74)***		

6 IEEE Standard for Environmental and Social Responsibility Assessment of Computers and Displays

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1474

Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive)* * Specific exemptions apply for certain products and applications.	P1.1, P3.1
Regulation (EC) 1907/2006 (REACH Regulation), annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2006/66/EC (Battery and accumulators Directive), as amended.* * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2,3, P8.1
Directive 2014/35/EU (Low Voltage Directive)	P3.1
Directive 2014/30/EU (EMC Directive)	P3.1
Directive 2014/53/EU (RE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Commission Regulation (EC) No 278/2009 of 6 April 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power demand and average active efficiency of external power supplies	P3.1, P3.2, P9.1
COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers	P2.4, P2.5, P3.1, P3.2, P7.23, P9.1
Regulation（EC）No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive) Implementing Regulation (EU) 2019/290 establishing the format for registration and reporting of producers of electrical and electronic equipment to the register. Commission Implementing Regulation 2017/699 establishing a common methodology for the calculation of the weight of electrical and electronic equipment (EEE) placed on the national market in each Member State and a common methodology for the calculation of the quantity of waste electrical and electronic equipment (WEEE) generated by weight in each Member State.	P6.1

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1475

DECLARATION OF CONFORMITY
according to ISO/IEC 17050-1 and EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350- R3 Original/en

Manufacturer's Name: **HP Inc.**

Manufacturer's Address: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

declare, under its sole responsibility that the product

Product Name and Model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Regulatory Model Number:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Product Options: **Please See ANNEX I**

conforms to the following Product Specifications and Regulations:

Safety
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Spectrum
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ecodesign
Regulation (EU) No. 617/2013
EN 62623:2013
Regulation (EC) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

The product herewith complies with the requirements of the Radio Equipment Directive 2014/53/EU, the Ecodesign Directive 2009/125/EC, the RoHS Directive 2011/65/EU and carries the CE-marking accordingly.

US ONLY: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Additional Information:

1) **This product is assigned a Regulatory Model Number which stays with the regulatory aspects of the design. The Regulatory Model Number is the main product identifier in the regulatory documentation and test reports, this number should not be confused with the marketing name or the product numbers.**
2) **The Notified Body TIMCO Engineering, Inc. with number 1177 issued the EU-type examination certificate with ID: E1177-211569 according to Annex III, for the essential requirement of article 3.2 of the RED Directive**
3) **This product was tested in a typical HP environment.**

Palo Alto, CA
23-08-2022

Gilles Soulard
HP Inc.
1501 Page Mill Road, Palo Alto, CA
Gilles Soulard, Manager
Product Compliance Center

Gilles Soulard, Manager
Product Compliance Center

Local contact for regulatory topics only:

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
http://www.hp.eu/certificates

Click here to go to the translation(s)

DECLARATION OF CONFORMITY
according to ISO/IEC 17050-1 and EN 17050-1

ANNEX I

Regulatory Model Number: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

DESCRIPTION:*	OPTION RMN:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Where X represents any alpha numeric character.**

KONFORMITÄTSERKLÄRUNG
nach ISO / IEC 17050-1 und EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Übersetzung/de

Herstellername: HP Inc.
Adresse des Herstellers: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

erklärt, dass das Produkt

Produktname und Modell:[2)] HP Z2 Tower G9 Workstation Desktop PC
Regulatorische Model Nummer:[1)] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Produktoptionen: Siehe Anhang I

entspricht den folgenden Produktspezifikationen und Vorschriften:

Sicherheit:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMV
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Frequenzspektrum
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Öko-Design
Verordnung (EG) Nr. 617/2013
EN 62623:2013
Verordnung (EG) Nr. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Das Produkt erfüllt die Anforderungen der RED-Richtlinie 2014/53/UE, die Ökodesign-Richtlinie 2009/125/EG, die RoHS-Richtlinie 2011/65/EU und trägt das CE-Kennzeichnung entsprechend.

NUR FÜR USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Zusätzliche Information:

1) **Für die regulatorischen Aspekte zum Design wurde diesem Produkt eine Regulatorische Model Nummer zugeordnet. Zur Produktidentifizierung in der regulatorischen Dokumentation und den Prüfberichten wird diese Regulatorische Model Nummer verwendet und sollte nicht zu Verwechslungen von Marketingnamen oder Produktnummern führen.**
2) **Die notifizierte Stelle TIMCO Engineering, Inc. mit Kennnummer 1177 hat eine Konformitätsprüfung (nach Anhang III, wegen fehlender harmonisierter Normen) durchgeführt und die folgende EU-Baumusterprüfbescheinigung ausgestellt: E1177-211569**
3) **Dieses Produkt wurde in einer typischen HP Konfiguration getestet.**

Palo Alto, CA
23-08-2022

überprüfen Sie die Unterschrift auf der ursprünglichen Erklärung beigefügt
Gilles Soulard, Manager
Product Compliance Center

Lokale Ansprechpartner für Richtlinien und Bestimmungen:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

KONFORMITÄTSERKLÄRUNG

nach ISO / IEC 17050-1 und EN 17050-1

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

KONFORMITÄTSERKLÄRUNG
nach ISO / IEC 17050-1 und EN 17050-1

ANHANG I

Regulatorische Model Nummer (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONEN

BESCHREIBUNG:*	RMN OPTION:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Wo X steht für eine beliebige alphanumerische Zeichen.**

DÉCLARATION DE CONFORMITÉ

selon la norme ISO / IEC 17050-1 et EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Traduction/fr

Nom du fabricant: HP Inc.
Adresse du fabricant: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

déclare que le produit

Nom du produit et le modèle:[2] HP Z2 Tower G9 Workstation Desktop PC
Numéro de modèle réglementaire:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Options du produit: Voir l'annexe I

est conforme aux normes et règlements de produit suivantes:

Sécurité:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Spectre radioélectrique
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

écoconception
Règlement (CE) n ° 617/2013
EN 62623:2013
Règlement (UE) n ° 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Ce produit est conforme aux exigences de la directive RED 2014/53/UE, la directive sur l'écoconception 2009/125/CE, la directive RoHS 2011/65/UE et porte la marque CE.

SEULEMENT POUR LES ETATS-UNIS: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informations complémentaires:

1) **A ce produit est assigné un numéro de modèle réglementaire qui reste avec les aspects réglementaires de la conception. Le numéro de modèle réglementaire est le principal identificateur de produit dans la documentation réglementaire et les rapports d'essais, ce nombre ne doit pas être confondu avec le nom commercial ou les numéros de produit.**
2) **L'organisme notifié TIMCO Engineering, Inc. avec numéro 1177 a réalisé une évaluation de la conformité (conformément à l'Annexe III, à cause de manque de normes harmonisées) et a délivré le certificat d'examen UE de type: E1177-211569**
3) **Ce produit a été testé dans un environnement typique HP en conjonction avec un système hôte HP.**

Palo Alto, CA
23-08-2022

vérifier la signature sur la déclaration d'origine annexé
Gilles Soulard, Manager
Product Compliance Center

Contact local pour les réglementations uniquement:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

DÉCLARATION DE CONFORMITÉ

selon la norme ISO / IEC 17050-1 et EN 17050-1

www.hp.eu/certificates

DÉCLARATION DE CONFORMITÉ
selon la norme ISO / IEC 17050-1 et EN 17050-1

ANNEXE I

Numéro de modèle réglementaire (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

DESCRIPTION:*	RMN OPTION:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Où X représente n'importe quel caractère alphanumérique.**

DICHIARAZIONE DI CONFORMITA'

secondo la norma ISO / IEC 17050-1 e EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Traduzione/it

Nome del Fornitore: **HP Inc.**

Indirizzo del Fornitore: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

dichiara che il prodotto

Nome del prodotto e modello:[2)] **HP Z2 Tower G9 Workstation Desktop PC**

Numero di modello normativo:[1)] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**

Opzioni del prodotto: **Vedere Allegato I**

è conforme alle seguenti specifiche e regolamenti di prodotto:

Sicurezza

- EN 62479:2010
- EN 62311:2008
- IEC 60950-1:2005 +A1:2009 +A2:2013
- IEC 62368-1:2018
- EN IEC 62368-1:2020 +A11:2020
- EN 50663:2017
- EN 50665:2017

EMC

- EN 55032:2015+A11:2020 Class B
- EN 55035:2017+A11:2020
- EN IEC 61000-3-2:2019
- EN 61000-3-3:2013 +A1:2019
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4
- ICES-003, Issue 7
- FCC CFR 47 Part 15

Spettro Radio

- EN 300 328 V2.2.2
- EN 301 893 V2.1.1
- EN 300 440 V2.1.1
- EN 303 417 V1.1.1
- EN 303 687 V0.0.13

Ecodesign

- Regolamento (UE) No. 617/2013
  - EN 62623:2013
- Regolamento (CE) No. 1275/2008
  - EN 50564:2011
  - IEC 62301:2011

RoHS

- EN IEC 63000:2018

Questo prodotto è conforme ai requisiti della direttiva RED 2014/53/UE, la direttiva sulla Progettazione Ecocompatibile 2009/125/CE, la direttiva RoHS 2011/65/UE e porta il marchio CE.

SOLO PER GLI USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informazioni aggiuntive:

1) **A questo prodotto è assegnato un Numero di modello normativo (RMN) che rimane con gli aspetti normativi della progettazione. Il numero di modello normativo è l'identificativo principale del prodotto nella documentazione normativa e rapporti di prova, questo numero non deve essere confuso con il nome commerciale o il numero di prodotto.**
2) **L'organismo notificato TIMCO Engineering, Inc. con numero 1177 ha effettuato una valutazione di conformità (secondo l'Allegato III, because of missing harmonized standards) e rilasciato il certificato di esame UE del tipo: E1177-211569**
3) **Questo prodotto è stato testato in un tipico ambiente HP.**

Palo Alto, CA
23-08-2022

controllare la firma sulla dichiarazione originale allegata
Gilles Soulard, Manager
Product Compliance Center

Contatto locale solo per informazioni sulla conformità al marchio CE:

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**

DICHIARAZIONE DI CONFORMITA'

secondo la norma ISO / IEC 17050-1 e EN 17050-1

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

DICHIARAZIONE DI CONFORMITA'
secondo la norma ISO / IEC 17050-1 e EN 17050-1

ALLEGATO I

Numero di modello normativo (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPZIONI

DESCRIZIONE:*	RMN OPZIONE:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Dove X rappresenta qualsiasi carattere alfanumerico.**

DECLARACIÓN DE CONFORMIDAD

según la norma ISO / IEC 17050-1 y EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Traducción/es

Nombre del fabricante: HP Inc.
Dirección del fabricante: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

declara que el producto

Nombre del producto y modelo:[2] HP Z2 Tower G9 Workstation Desktop PC
Número de modelo reglamentario:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Opciones del producto: Ver Anexo I

cumple con las siguientes especificaciones y normas de productos:

Seguridad:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Espectro radioeléctrico
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Diseño ecológico
Reglamento (CE) n º 617/2013
EN 62623:2013
Reglamento (CE) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Este producto cumple con los requisitos de la directiva RED 2014/53/UE, la Directiva sobre diseño ecológico 2009/125/CE, la Directiva RoHS 2011/65/UE y lleva la marca CE.

SÓLO PARA EE.UU.: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Información Adicional:

1) **A este producto se asigna un número de modelo regulatorio que cumple con los aspectos regulatorios del diseño. El número de modelo normativo es el identificador principal del producto en la documentación reglamentaria e informes de ensayo, este número no se debe confundir con el nombre comercial o los números del producto.**
2) **El organismo notificado TIMCO Engineering, Inc. con número 1177 ha efectuado una evaluación de la conformidad (de acuerdo con el anexo III, debido a que faltan normas armonizadas) y expedido el certificado de examen UE de tipo: E1177-211569**
3) **Este producto se ha probado en un entorno típico de HP.**

Palo Alto, CA
23-08-2022

comprobar la firma de la primera declaración anexa
Gilles Soulard, Manager
Product Compliance Center

Contacto local únicamente para temas de normativa:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

DECLARACIÓN DE CONFORMIDAD

según la norma ISO / IEC 17050-1 y EN 17050-1

www.hp.eu/certificates

DECLARACIÓN DE CONFORMIDAD
según la norma ISO / IEC 17050-1 y EN 17050-1

ANEXO I

Número de modelo reglamentario (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPCIONES

DESCRIPCIÓN:*	RMN OPCIÓN:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Donde X representa cualquier carácter alfanumérico.**

DEKLARACJA ZGODNOŚCI
zgodnie z normą ISO / IEC 17050-1 i EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Tłumaczenie/pl

Nazwa producenta: HP Inc.
Adres producenta: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

oświadcza, że produkt

Nazwa produktu i modelu:[2] HP Z2 Tower G9 Workstation Desktop PC
Numer modelu:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Opcje produktu: Patrz załącznik I

jest zgodny z następującymi specyfikacjami produktu i rozporządzeń:

Bezpieczeństwo:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Widmo radiowe
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekoprojektu
Rozporządzenie (WE) nr 617/2013
EN 62623:2013
Rozporządzenie (WE) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Niniejszy produkt jest zgodny z wymaganiami Dyrektywa RED 2014/53/WE, Dyrektywa w sprawie ekoprojektu 2009/125/WE, Dyrektywa RoHS 2011/65/WE i posiada odpowiednio oznakowanie CE.

TYLKO DLA USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatkowe informacje:

1) **Produkt ten został przypisany numer modelu z aspektów regulacyjnych projekt. Numer modelu jest głównym identyfikatorem produktu w dokumentacji normatywnej i raporty z badań, liczba ta nie powinna być mylona z nazwą handlową lub też liczby produktów.**
2) **Jednostka notyfikowana TIMCO Engineering, Inc. z numer 1177 przeprowadziła ewaluacja zgodności (zgodnie z załącznikiem III, ze względu na brak norm zharmonizowanych) i wydała certyfikat badania typu UE: E1177-211569**
3) **Produkt był testowany w typowym środowisku HP, w połączeniu z systemem gospodarza HP.**

Palo Alto, CA
23-08-2022

sprawdzić podpis na oryginale deklaracji załączonej
Gilles Soulard, Manager
Product Compliance Center

Lokalny kontakt na temat przepisów:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates

DEKLARACJA ZGODNOŚCI

zgodnie z normą ISO / IEC 17050-1 i EN 17050-1

DEKLARACJA ZGODNOŚCI
zgodnie z normą ISO / IEC 17050-1 i EN 17050-1

ZAŁĄCZNIK I

Numer modelu (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPCJE

OPIS:*	RMN OPCJA:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** W przypadku, gdy X oznacza dowolny alfa cyfrę.**

DECLARATIE DE CONFORMITATE

în conformitate cu ISO / IEC 17050-1 și EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Traducere/ro

producătorului Nume: HP Inc.

Adresa producătorului: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

declară că produsul

Nume produs și model:[2)] HP Z2 Tower G9 Workstation Desktop PC

Numărul de model de reglementare:[1)] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

Opțiuni de produse: A se vedea anexa I

în conformitate cu următoarele specificații și regulamentelor de produse:

Siguranță:
- EN 62479:2010
- EN 62311:2008
- IEC 60950-1:2005 +A1:2009 +A2:2013
- IEC 62368-1:2018
- EN IEC 62368-1:2020 +A11:2020
- EN 50663:2017
- EN 50665:2017

EMC
- EN 55032:2015+A11:2020 Class B
- EN 55035:2017+A11:2020
- EN IEC 61000-3-2:2019
- EN 61000-3-3:2013 +A1:2019
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4
- ICES-003, Issue 7
- FCC CFR 47 Part 15

Spectrului de frecvențe radio
- EN 300 328 V2.2.2
- EN 301 893 V2.1.1
- EN 300 440 V2.1.1
- EN 303 417 V1.1.1
- EN 303 687 V0.0.13

ecodesign
- Regulamentul (CE) nr 617/2013
  - EN 62623:2013
- Regulamentul (CE) nr 1275/2008
  - EN 50564:2011
  - IEC 62301:2011

RoHS
- EN IEC 63000:2018

Produsul prezentat aici, corespunde cu cerintele Directiva RED 2014/53/UE, Directiva privind proiectarea ecologică 2009/125/CE, la Directiva RoHS 2011/65/UE și poartă marcajul CE în consecință.

NUMAI PENTRU STATELE UNITE ALE AMERICII: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informații suplimentare:

1) **Acest produs este atribuit un număr de model de reglementare care rămâne cu aspectele de reglementare ale proiectare. Numărul de model de reglementare este identificatorul principal produs în documentația de reglementare și rapoarte de încercare, acest număr nu trebuie confundat cu numele de marketing sau umerele de produs.**
2) **Organismul notificat TIMCO Engineering, Inc. cu număr 1177 a efectuat o evaluare a conformității (în conformitate cu anexa III, din cauza lipsei de standarde armonizate) și a emis certificatul de examinare UE de tip: E1177-211569**
3) **Acest produs a fost testat într-un mediu tipic HP împreună cu un sistem gazdă HP.**

Palo Alto, CA
23-08-2022

verifica semnătura de pe declarația inițială anexat
Gilles Soulard, Manager
Product Compliance Center

Local de contact pentru subiecte de reglementare numai:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

DECLARATIE DE CONFORMITATE

în conformitate cu ISO / IEC 17050-1 și EN 17050-1

www.hp.eu/certificates

DECLARATIE DE CONFORMITATE
în conformitate cu ISO / IEC 17050-1 și EN 17050-1

ANEXA I

Numărul de model de reglementare (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPȚIUNI

DESCRIERE:*	RMN OPȚIUNE:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** În cazul în care X reprezintă orice caracter alfanumeric.**

CONFORMITEITSVERKLARING
volgens ISO / IEC 17050-1 en EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Vertaling/nl

Naam van de fabrikant: **HP Inc.**
Adres van de fabrikant: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

verklaart, dat het product

Naam van het product en model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Regulatory Model Number:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Product opties: **Zie bijlage I**

voldoet aan de volgende productspecificaties en wetgeving:

Veiligheid:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radiospectrum
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ecodesign
Verordening (EG) nr. 617/2013
EN 62623:2013
Verordening (EG) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Het product voldoet aan de eisen van de RED-Richtlijn 2014/53/EU, de Ökodesign-Richtlijn 2009/125/EG, de RoHS-Richtlijn 2011/65/EU en draagt het k CE-keurmer.

ALLEEN VOOR DE VS: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Extra informatie:

1) **Dit product is voorzien van een wettelijk modelnummer die blijft bij de regelgevende aspecten van de ontwerp. Het voorgeschreven modelnummer is het belangrijkste product-id in de regelgeving documentatie en testrapporten, moet dit nummer niet verwarren met de merknaam of de productnummers.**
2) **De aangemelde instantie TIMCO Engineering, Inc. met nummer 1177 heeft een compliance assessment (overeenkomstig Bijlage III, vanwege het ontbreken van geharmoniseerde normen) uitgevoerd en het certificaat van EU-typeonderzoek E1177-211569 afgegeven.**
3) **Dit product werd getest in het HP-omgeving in combinatie met een HP hostsysteem.**

Palo Alto, CA
23-08-2022

controleren van een handtekening op het oorspronkelijke verklaring gehecht
Gilles Soulard, Manager
Product Compliance Center

Lokale contactpersoon voor mbtvoorschriften:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

CONFORMITEITSVERKLARING

volgens ISO / IEC 17050-1 en EN 17050-1

www.hp.eu/certificates

CONFORMITEITSVERKLARING
volgens ISO / IEC 17050-1 en EN 17050-1

BIJLAGE I

Regulatory Model Number (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIES

BESCHRIJVING:*	RMN OPTIE:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Waar X staat voor elke alfanumerieke tekens.**

MEGFELELŐSÉGI NYILATKOZAT
az ISO / IEC 17050-1 és EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Fordítás/hu

A gyártó neve: **HP Inc.**
Gyártó címe: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

kijelenti, hogy a termék

A termék neve és a modell:[2)] **HP Z2 Tower G9 Workstation Desktop PC**
Szabályozási Modell száma:[1)] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Termék opciók: **Lásd az I. melléklet**

megfelel az alábbi termék dokumentáció és rendeletek:

Biztonság:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Rádióspektrumügyek
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Környezetbarát tervezési
Regulation (EC) No. 617/2013
EN 62623:2013
Rendelet (EC) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

A termék eleget tesz az RED 2014/53/EU irányelv, a környezetbarát tervezésről szóló 2009/125/EK irányelv, az RoHS 2011/65/EU irányelv viseli a CE jelzést viseli.

CSAK AZ EGYESÜLT ÁLLAMOK: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

További információ:

1) **Ez a termék tartozik egy hatósági azonosítási típusszám ami marad szabályozási szempontból a design. A szabályozási modellszámmal a fő termék azonosítóját a szabályozási dokumentációban és vizsgálati jelentések, ez a szám nem keverendő össze a kereskedelmi névvel vagy a termék számokat.**
2) **A(z) TIMCO Engineering, Inc. bejelentett szervezet, számmal 1177 adott esetben elvégezte a megfelelőség értékelésére (melléklet szerinti III, hiánya miatt a harmonizált szabványok) hiánya miatt a harmonizált szabványok E1177-211569**
3) **Ez a termék tesztelése egy tipikus HP környezetben együtt egy HP gazda rendszert.**

Palo Alto, CA
23-08-2022

ellenőrzi az aláírást az eredeti nyilatkozatot mellékelt
Gilles Soulard, Manager
Product Compliance Center

Helyi kapcsolattartó a jogi tudnivalókkal:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

MEGFELELŐSÉGI NYILATKOZAT

az ISO / IEC 17050-1 és EN 17050-1

MEGFELELŐSÉGI NYILATKOZAT
az ISO / IEC 17050-1 és EN 17050-1

I. MELLÉKLET

Szabályozási Modell száma (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPCIÓK

LEÍRÁS:*	RMN OPCIÓ:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Ha X jelentése bármilyen alfanumerikus karaktert.**

DECLARAÇÃO DE CONFORMIDADE
de acordo com a ISO / IEC 17050-1 e EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Tradução/pt

Nome do fabricante: **HP Inc.**
Endereço do fabricante: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

declara, que o produto

Nome do produto e modelo:[2)] **HP Z2 Tower G9 Workstation Desktop PC**
Número de Modelo de Regulamentação:[1)]FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Opções do produto: **Ver anexo I**

está em conformidade com as seguintes especificações e regulamentos do produto:

Segurança:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Espectro de radiofrequências
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ecodesign
Regulamento (CE) n º 617/2013
EN 62623:2013
Regulamento (CE) n º 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

O produto está em conformidade com os requisitos da a Directiva RED 2014/53/UE, a Directiva Ecodesign 2009/125/CE, a Directiva RoHS 2011/65/UE e leva a marca CE de acordo.

SOMENTE PARA OS EUA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informações adicionais:

1) **Este produto recebeu um Número de modelo de regulamentação que fica com os aspectos regulatórios do design. O Número de Modelo de Regulamentação é o identificador principal do produto na documentação regulamentar e relatórios de ensaio, este número não deve ser confundido com o nome comercial ou os números dos produtos.**
2) **O organismo notificado: TIMCO Engineering, Inc. com número 1177 efetuou uma avaliação de conformidade (de acordo com o anexo III, por falta de normas harmonizadas) e emitiu o certificado de exame UE de tipo: E1177-211569**
3) **Este produto foi testado em um ambiente típico de HP.**

Palo Alto, CA
23-08-2022

verificar a assinatura na declaração original anexado
Gilles Soulard, Manager
Product Compliance Center

O contato local para tópicos regulamentares apenas:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**

DECLARAÇÃO DE CONFORMIDADE

de acordo com a ISO / IEC 17050-1 e EN 17050-1

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

DECLARAÇÃO DE CONFORMIDADE
de acordo com a ISO / IEC 17050-1 e EN 17050-1

ANEXO I

Número de Modelo de Regulamentação (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPÇÕES

DESCRIÇÃO:*	RMN OPÇÃO:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Onde X representa qualquer caractere alfanumérico.**

ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ

σύμφωνα με το πρότυπο ISO / IEC 17050-1 και EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Μετάφραση/el

Όνομα κατασκευαστή: **HP Inc.**
Διεύθυνση του κατασκευαστή: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

δηλώνει ότι το προϊόν

Όνομα προϊόντος και μοντέλου:[2)] HP Z2 Tower G9 Workstation Desktop PC
Αριθμός Μοντέλο κατά τους κανονισμούς:[1)]FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Επιλογές Προϊόντος: **Βλέπε παράρτημα I**

συμμορφώνεται προς τις εξής προδιαγραφές και κανονισμοί:

Ασφάλεια:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

ραδιοφάσματος
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

οικολογικού σχεδιασμού
Ο κανονισμός (ΕΚ) αριθ. 617/2013
EN 62623:2013
Κανονισμός (ΕΚ) αριθ 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Το παρόν προϊόν συμμορφώνεται με τις απαιτήσεις του η Οδηγία RED 2014/53/ΕΕ, η Οδηγία για τον οικολογικό σχεδιασμό 2009/125/ΕΚ, η Οδηγία RoHS 2011/65/ΕΕ και φέρει τη σήμανση CE.

Μόνο για τις ΗΠΑ: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Πρόσθετες πληροφορίες:

1) **Αυτό το προϊόν έχει εκχωρηθεί ένας ρυθμιστικός αριθμός μοντέλου που μένει με τις ρυθμιστικές πτυχές των σχεδιασμό. Ο αριθμός Ρυθμιστική μοντέλου είναι το κύριο αναγνωριστικό του προϊόντος με την κανονιστική τεκμηρίωση και εκθέσεις δοκιμών, ο αριθμός αυτός δεν πρέπει να συγχέεται με την εμπορική ονομασία ή τους αριθμούς προϊόντος.**
2) **Ο κοινοποιημένος οργανισμός TIMCO Engineering, Inc. με αριθμός 1177 πραγματοποίησε αξιολόγηση της συμμόρφωσης (σύμφωνα με το παράρτημα III, λόγω της λείπουν εναρμονισμένων προτύπων) και εξέδωσε το πιστοποιητικό εξέτασης τύπου ΕΕ: E1177-211569**
3) **Αυτό το προϊόν έχει δοκιμαστεί σε ένα τυπικό περιβάλλον HP.**

Palo Alto, CA
23-08-2022

ελέγξτε την υπογραφή για την αρχική δήλωση που προσαρτάται
Gilles Soulard, Manager
Product Compliance Center

Τοπική επαφής για θέματα κανονισμών μόνο:

ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ

σύμφωνα με το πρότυπο ISO / IEC 17050-1 και EN 17050-1

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ
σύμφωνα με το πρότυπο ISO / IEC 17050-1 και EN 17050-1

ΤΟ ΠΑΡΆΡΤΗΜΑ I

Αριθμός Μοντέλο κατά τους κανονισμούς (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

ΕΠΙΛΟΓΕΣ

ΠΕΡΙΓΡΑΦΗ:*	RMN ΕΠΙΛΟΓΉ:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Σε περίπτωση που το X αντιπροσωπεύει οποιοδήποτε αλφαριθμητικό χαρακτήρα.**

FÖRKLARING OM ÖVERENSSTÄMMELSE
i enlighet med ISO / IEC 17050-1 och EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Översättning/sv

Tillverkarens namn: **HP Inc.**
Tillverkarens adress: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

förklarar att produkten

Namn och modell:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Regleringsmodellnummer:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Produktalternativ: **Se bilaga I**

överensstämmer med följande produktspecifikationer och förordningar:

Säkerhet:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Rádiového spektra
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ekodesign
Förordning (EG) nr 617/2013
EN 62623:2013
Förordning (EG) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Produkten uppfyller därmed kraven i Direktivet RED 2014/53/UE, Ekodesigndirektivet 2009/125/CE, RoHS-direktivet 2011/65/UE och är CE-märkning i enlighet därmed.

ENDAST FÖR USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ytterligare information:

1) **Den här produkten har tilldelats ett kontrollmodellnummer som stannar med de regulatoriska aspekterna av design. Kontrollmodellnumret är den viktigaste produktbeteckning i lagstiftnings dokumentation och provningsrapporter, detta nummer ska inte förväxlas med produktnamn eller produktnummer.**
2) **Det anmälda organet TIMCO Engineering, Inc. med nummer 1177 har utfört en bedömning av överensstämmelse (enligt bilaga III, på grund av saknade harmoniserade standarder) och utfärdat EU-typprovningsintyg: E1177-211569**
3) **Produkten testades i en typisk HP-miljö tillsammans med en HP-värdsystem.**

Palo Alto, CA
23-08-2022

kontrollera signaturen på den ursprungliga deklarationen som bifogas
Gilles Soulard, Manager
Product Compliance Center

Lokal kontakt bara för regleringsärenden:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

FÖRKLARING OM ÖVERENSSTÄMMELSE

i enlighet med ISO / IEC 17050-1 och EN 17050-1

www.hp.eu/certificates

FÖRKLARING OM ÖVERENSSTÄMMELSE
i enlighet med ISO / IEC 17050-1 och EN 17050-1

BILAGA I

Regleringsmodellnummer (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

ALTERNATIV

BESKRIVNING:*	RMN ALTERNATIV:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Där X representerar någon alfanumeriska tecken.**

PROHLÁŠENÍ O SHODĚ

podle normy ISO / IEC 17050-1 a ČSN EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Překlad/cs

Jméno výrobce: **HP Inc.**

Adresa výrobce: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

prohlašuje, že výrobek

Název produktu a model:[2] **HP Z2 Tower G9 Workstation Desktop PC**

Regulační číslo modelu:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**

Možnosti výrobku: **Viz příloha I**

vyhovuje následujícím specifikacím a nařízení produktu:

Bezpečnost:
- EN 62479:2010
- EN 62311:2008
- IEC 60950-1:2005 +A1:2009 +A2:2013
- IEC 62368-1:2018
- EN IEC 62368-1:2020 +A11:2020
- EN 50663:2017
- EN 50665:2017

EMC
- EN 55032:2015+A11:2020 Class B
- EN 55035:2017+A11:2020
- EN IEC 61000-3-2:2019
- EN 61000-3-3:2013 +A1:2019
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4
- ICES-003, Issue 7
- FCC CFR 47 Part 15

Rádiové spektrum
- EN 300 328 V2.2.2
- EN 301 893 V2.1.1
- EN 300 440 V2.1.1
- EN 303 417 V1.1.1
- EN 303 687 V0.0.13

ekodesignu
- Nařízení (ES) č. 617/2013
  - EN 62623:2013
- Nařízení Rady (ES) č 1275/2008
  - EN 50564:2011
  - IEC 62301:2011

RoHS
- EN IEC 63000:2018

Tento výrobek splňuje požadavky Směrnice RED 2014/53/UE, Směrnice o ekodesignu 2009/125/CE, Směrnice RoHS 2011/65/UE a nese označení CE v souladu s CE.

POUZE PRO USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Další informace:

1) **Tento produkt je přiděleno regulatorní číslo modelu, který zůstává s regulačními aspekty konstrukce. Počet Regulační model je hlavním identifikátorem produktu v regulační dokumentaci a protokoly o zkouškách, toto číslo by nemělo být zaměňováno s marketingovým názvem nebo čísla produktu.**
2) **Oznámený subjekt TIMCO Engineering, Inc. s číslo 1177 provedl posouzení shody (Podle přílohy III, z důvodu chybějící harmonizované normy) a vydal certifikát EU přezkoušení typu: E1177-211569**
3) **Tento výrobek byl testován v typické prostředí HP ve spolupráci s hostitelským systémem HP.**

Palo Alto, CA
23-08-2022

zkontrolovat podpis na původní prohlášení připojeném
Gilles Soulard, Manager
Product Compliance Center

Lokální kontakt pro informace pouze o směrnicích:

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

PROHLÁŠENÍ O SHODĚ

podle normy ISO / IEC 17050-1 a ČSN EN 17050-1

PROHLÁŠENÍ O SHODĚ
podle normy ISO / IEC 17050-1 a ČSN EN 17050-1

PŘÍLOHA I

Regulační číslo modelu (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

VOLBY

POPIS:*	RMN VOLBA:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Tam, kde X představuje libovolný alfanumerický znak.**

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ

в съответствие с ISO / IEC 17050-1 и EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Превод/bg

Наименование на производителя: HP Inc.
Производителя Адрес: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

заявява, че продуктът

Име на продукта и модел:[2] HP Z2 Tower G9 Workstation Desktop PC
Нормативен номер на модела:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Опции на продукта: Виж приложение I

съответства на следните спецификации на продукта и регламенти:

Безопасност:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Радиочестотният спектър
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

екодизайна
Регламент (ЕО) No 617/2013
EN 62623:2013
Регламент (ЕС) № 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Този апарат в съответствие с изискванията на Директивата RED 2014/53/ЕС, Директивата за екодизайна 2009/125/ОТ, Директивата RoHS 2011/65/ЕС и носи маркировката съответно CE.

САМО ЗА САЩ: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Допълнителна информация:

1) **Този продукт има нормативен номер на модела, който остава с регулаторните аспекти на дизайн. Номер на Нормативен модел е идентификатора основен продукт в нормативната документация и протоколи от изпитвания, този брой не трябва да се бърка с пазарното име или номера на продукта.**
2) **Нотифицираният орган TIMCO Engineering, Inc. с номер 1177 е извършена оценка на съответствието (съгласно приложение III, поради липсващи хармонизирани стандарти) и издаде сертификата за ЕС изследване на типа: E1177-211569**
3) **Този продукт е изпробван в типична HP среда във връзка с хост система HP.**

Palo Alto, CA
23-08-2022

проверка на подписа върху оригинала на декларацията, приложена
Gilles Soulard, Manager
Product Compliance Center

Local контакт за регулаторни теми само:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ

в съответствие с ISO / IEC 17050-1 и EN 17050-1

www.hp.eu/certificates

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ
в съответствие с ISO / IEC 17050-1 и EN 17050-1

ПРИЛОЖЕНИЕ I

Нормативен номер на модела (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

ОПИСАНИЕ:*	RMN ОПЦИЯ:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Когато X представлява всяка алфа цифров знак.**

VYHLÁSENIE O ZHODE

podľa normy ISO / IEC 17050-1 a STN EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Preklad/sk

Meno výrobcu: HP Inc.

adresa výrobcu: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

prehlasuje, že výrobok

Názov produktu a model:[2] HP Z2 Tower G9 Workstation Desktop PC

Regulačné číslo modelu:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

Možnosti výrobku: Pozri prílohu I

spĺňa nasledujúce špecifikácie a nariadenia produktu:

Bezpečnosť:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Rádiové spektrum
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ekodizajne
Nariadenie (ES) č 617/2013
EN 62623:2013
Nariadenie Rady (ES) č 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Tento výrobok spĺňa požiadavky Smernice RED 2014/53/UE, Smernice o ekodizajne 2009/125/CE, Smernice RoHS 2011/65/UE a nesie označenie CE v súlade s CE.

LEN PRE USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ďalšie informácie:

1) **Tento produkt je pridelené regulačné číslo modelu, ktorý zostáva s regulačnými aspektmi konštrukcie. Počet Regulačný model je hlavným identifikátorom produktu v regulačnej dokumentácii a protokoly o skúškach, toto číslo by sa nemalo zamieňať s marketingovým názvom alebo s výrobnými číslami.**
2) **Notifikovaný orgán TIMCO Engineering, Inc. s číslo 1177 vykonal posúdenie zhody (Podľa prílohy III, z dôvodu chýbajúcej harmonizované normy) a vydal certifikát EÚ skúšky typu: E1177-211569**
3) **Tento výrobok bol testovaný v typickej prostredí HP v spolupráci s hostiteľským systémom HP .**

Palo Alto, CA
23-08-2022

skontrolovať podpis na pôvodnú vyhlásení pripojenom
Gilles Soulard, Manager
Product Compliance Center

Lokálne kontakt pre informácie iba o smerniciach:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates

VYHLÁSENIE O ZHODE

podľa normy ISO / IEC 17050-1 a STN EN 17050-1

VYHLÁSENIE O ZHODE
podľa normy ISO / IEC 17050-1 a STN EN 17050-1

PRÍLOHA I

Regulačné číslo modelu (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

VOĽBY

OPIS:*	RMN VOĽBA:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Tam, kde X predstavuje ľubovoľný alfanumerický znak.**

OVERENSSTEMMELSESERKLÆRING
i henhold til ISO / IEC 17050-1 og EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Oversættelse/da

Producentens navn: **HP Inc.**
Producentens adresse: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

erklærer, at produktet

Produktnavn og Model:[2)] **HP Z2 Tower G9 Workstation Desktop PC**
Lovpligtigt modelnummer:[1)] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Produkt Valg: **Se bilag I**

opfylder følgende produktspecifikationer og forordninger:

Sikkerhed:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radiofrekvenser
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

miljøvenligt design
Forordning (EF) nr. 617/2013
EN 62623:2013
Forordning (EF) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Produktet overholder kravene iRED-direktivet 2014/53/EU, direktivet om miljøvenligt design 2009/125/EC, RoHS-direktivet 2011/65/EU og bærer CE-mærket i overensstemmelse hermed.

KUN FOR USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Yderligere information:

1) **Dette produkt er tildelt et lovpligtigt modelnummer, som forbliver de lovgivningsmæssige aspekter af den design. Det lovpligtige modelnummer er det vigtigste produkt-id i den lovgivningsmæssige dokumentation og testrapporter, bør dette antal ikke forveksles med navn markedsføringen eller varenumre.**
2) **Det bemyndigede organ TIMCO Engineering, Inc. med nummer 1177 har foretaget en vurdering af overholdelsen (i henhold til bilag III, på grund af manglende harmoniserede standarder) og udstedt EU-typeafprøvningsattest: E1177-211569**
3) **Dette produkt blev testet i en typisk HP-miljø i forbindelse med en HP host system.**

Palo Alto, CA
23-08-2022

kontrollere signaturen på den oprindelige erklæring, der er knyttet
Gilles Soulard, Manager
Product Compliance Center

Lokal kontaktperson for regulative emner:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

OVERENSSTEMMELSESERKLÆRING

i henhold til ISO / IEC 17050-1 og EN 17050-1

www.hp.eu/certificates

OVERENSSTEMMELSESERKLÆRING
i henhold til ISO / IEC 17050-1 og EN 17050-1

BILAG I

Lovpligtigt modelnummer (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

MULIGHEDER

BESKRIVELSE:*	RMN OPTION:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Hvor X betegner en hvilken som helst alfanumerisk tegn.**

VAATIMUSTENMUKAISUUSVAKUUTUS
ISO / IEC 17050-1: n ja EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Käännös/fi

Valmistajan nimi: **HP Inc.**
Valmistajan osoite: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

ilmoittaa, että tuote

Tuotteen nimi ja malli:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Säädösmallinumero:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Tuotevaihtoehdot: **Katso liite I**

täyttää seuraavat tuotevaatimukset ja asetukset:

Turvallisuus:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radiotaajuuksien
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ecodesign
Asetuksen (EY) N: o 617/2013
EN 62623:2013
Asetuksen (EY) N: o 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Tuote täyttää vaatimukset RED-direktiivin 2014/53/EU, Ekologista suunnittelua koskevan direktiivin 2009/125/EY, RoHS-direktiivin 2011/65/EU ja siinä on vastaava CE-merkintä.

VAIN USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Lisätiedot:

1) **Tämä tuote on annettu virallinen numero, joka pysyy hallinnolliset näkökohdat suunnittelu. Säädöksiä koskeva mallinumero on tärkein tuotteen tunniste sääntely asiakirjat ja testausselosteet, tätä numeroa ei pidä sekoittaa tuotteen nimeen tai tuotteen numeroita.**
2) **Ilmoitettu laitos TIMCO Engineering, Inc. numero 1177 suoritti vaatimustenmukaisuuden arviointia (mukaan liitteen III, johtua puuttuvista yhdenmukaistetut standardit) ja antoi EU-tyyppitarkastustodistuksen: E1177-211569**
3) **Tämä tuote testattu tyypillisessä HP ympäristöministeriö yhdessä HP isäntä järjestelmä.**

Palo Alto, CA
23-08-2022

Tarkista allekirjoitus alkuperäisen ilmoituksen liitteenä
Gilles Soulard, Manager
Product Compliance Center

Paikallinen yhteyshenkilö säännöksistä antavat:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
www.hp.eu/certificates

VAATIMUSTENMUKAISUUSVAKUUTUS

ISO / IEC 17050-1: n ja EN 17050-1

VAATIMUSTENMUKAISUUSVAKUUTUS
ISO / IEC 17050-1: n ja EN 17050-1

LIITE I

Säädösmallinumero (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

KUVAUS:*	RMN VAIHTOEHTO:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Jos X on mikä tahansa aakkosnumeerinen merkki.**

ATITIKTIES DEKLARACIJA
pagal ISO / IEC 17050-1 ir EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Vertimas/lt

Gamintojo pavadinimas: **HP Inc.**
Gamintojo adresas: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

pareiškia, kad produktas

Produkto pavadinimas ir modelis:[2)] **HP Z2 Tower G9 Workstation Desktop PC**
Normatyvinis modelio numeris:[1)] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Prekės pasirinkimai: **Žiūrėti I priedą**

atitinka šias produkto specifikacijas ir reglamentų:

Sauga:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMS
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radijo dažnių spektras
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekologinio
Reglamentas (EB) Nr 617/2013
EN 62623:2013
Reglamentas (EB) Nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Šis gaminys atitinka reikalavimus, RED direktyva 2014/53/ES, Ekologinio projektavimo direktyva 2009/125/EB, RoHS direktyva 2011/65/ES ir yra pažymėtas CE ženklu atitinkamai.

TIK JAV: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Papildoma informacija:

1) **Šis produktas pažymėtas normatyviniu modelio numeriu, kuris lieka su reglamentavimo aspektų dizainas. Normatyvinis modelio numeris yra pagrindinė produkto identifikatorius reguliavimo dokumentus ir bandymų ataskaitos, šis skaičius neturėtų būti painiojamas su prekės pavadinimu arba gaminio numeriais.**
2) **Notifikuotoji įstaiga TIMCO Engineering, Inc. numeris 1177 atlikti atitikties įvertinimas (pagal III priedą, nes trūksta darniuosius standartus) ir išdavė ES tipo tyrimo sertifikatą: E1177-211569**
3) **Ši prekė buvo išbandytas standartinės HP aplinkoje kartu su HP priimančioji sistema.**

Palo Alto, CA
23-08-2022

patikrinti parašą, pridėto pradinio deklaracijos
Gilles Soulard, Manager
Product Compliance Center

Vietinis kontaktas normatyviniais klausimais tik:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
www.hp.eu/certificates

ATITIKTIES DEKLARACIJA
pagal ISO / IEC 17050-1 ir EN 17050-1

I PRIEDAS

Normatyvinis modelio numeris (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

GALIMYBĖS

APRAŠYMAS:*	RMN PASIRINKIMAS:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Jeigu X žymi bet alfa skaitinė charakterį.**

SAMSVARSERKLÆRING
i henhold til ISO / IEC 17050-1 og EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Oversettelse/no

Produsentens navn: **HP Inc.**
Produsentens adresse: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

erklærer at dette produktet

Produktnavn og modell:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Forskriftsmessig modellnummer:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Produktvalg: **Se vedlegg I**

er i samsvar med følgende produktspesifikasjoner og forskrift:

Sikkerhet:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radio spektrum
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

økodesign
Forordning (EF) nr.. 617/2013
EN 62623:2013
Forordning (EF) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Produktet er i samsvar med kravene i RED-direktiv 2014/53/EU, den økodesign direktiv 2009/125/EF, RoHS-direktiv 2011/65/EU og bærer derfor CE-merket.

BARE FOR USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tilleggsinformasjon:

1) **Dette produktet er tildelt et modellnummer som holder med de regulatoriske aspekter av design. Forskriftsmodellnummeret er den viktigste produkt-ID i regulatoriske dokumentasjon og testrapporter, bør dette nummeret ikke forveksles med markedsføringsnavnet eller produktnumrene.**
2) **Det tekniske kontrollorganet TIMCO Engineering, Inc. med nummer 1177 har foretatt en vurdering av etterlevelse (i samsvar med vedlegg III, på grunn av mangel av harmoniserte standarder) og utstedte EU-typeprøvingssertifikatet: E1177-211569**
3) **Produktet ble testet i et typisk miljø HP i forbindelse med en HP-vertssystemet.**

Palo Alto, CA
23-08-2022

sjekk signaturen på originalerklæringen annektert
Gilles Soulard, Manager
Product Compliance Center

Lokal kontakt for spørsmål om forskrifter:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

SAMSVARSERKLÆRING

i henhold til ISO / IEC 17050-1 og EN 17050-1

SAMSVARSERKLÆRING
i henhold til ISO / IEC 17050-1 og EN 17050-1

VEDLEGG I

Forskriftsmessig modellnummer (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

ALTERNATIVER

BESKRIVELSE:*	RMN OPSJON:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Hvor X representerer en hvilken som helst alfa-numeriske karakteren.**

IZJAVA O SKLADNOSTI

v skladu z ISO / IEC 17050-1 in EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Prevajanje/sl

Ime proizvajalca: HP Inc.

Naslov proizvajalca: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

izjavlja, da izdelek

Ime izdelka in model:[2)] HP Z2 Tower G9 Workstation Desktop PC

Upravna številka modela:[1)] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

Možnosti izdelka: Glej Prilogo I

v skladu z naslednjimi specifikacijami in predpisi o izdelku:

Siguranţă:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radijski spekter
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

okoljsko primerni zasnovi
Regulamentul (CE) nr 617/2013
EN 62623:2013
Regulamentul (CE) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Izdelek je skladen z zahtevami Direktiva RED 2014/53/EU, Direktiva o okoljsko primerni zasnovi 2009/125/ES, Direktiva RoHS 2011/65/EU in nosi oznako CE v skladu s tem.

SAMO ZA ZDA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatne informacije:

1) **Ta izdelek je dodeljena upravna številka modela, ki ostane pri regulativnih vidikih zasnova. Število Regulativni model je glavni identifikator izdelka v regulativnem dokumentacije in poročila o preskusih, to število ne sme zamenjevati s tržnim imenom ali številkami izdelka.**
2) **Priglašeni organ TIMCO Engineering, Inc. s številko 1177 izvedel oceno skladnosti (v skladu s Prilogo III, zaradi manjkajočih usklajenih standardov) in izdal certifikat o EU-pregledu tipa: E1177-211569**
3) **Acest produs fost testat intr-un Mediu tipic HP împreună cu un sistem Gazda HP.**

Palo Alto, CA
23-08-2022

verifica semnătura de pe declaraţia iniţială anexat
Gilles Soulard, Manager
Product Compliance Center

Lokalni kontakt za upravnimi temami:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates

IZJAVA O SKLADNOSTI

v skladu z ISO / IEC 17050-1 in EN 17050-1

IZJAVA O SKLADNOSTI
v skladu z ISO / IEC 17050-1 in EN 17050-1

PRILOGA I

Upravna številka modela (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

MOŽNOSTI

OPIS:*	RMN MOŽNOST:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Če je X predstavlja nobene alfa numerični znak.**

VASTAVUSDEKLARATSIOON
vastavalt ISO / IEC 17050-1 ja EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Tõlkimine/et

Tootja nimi: **HP Inc.**
Tootja aadress: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

kinnitab, et toode

Toote nimi ja mudel:[2)] **HP Z2 Tower G9 Workstation Desktop PC**
Normatiivne mudelinumber:[1)] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Toote lisaseadmed: **Vt lisa I**

vastab järgmistele tootespetsifikatsioonidele ja määrused:

Ohutus:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Raadiospektri
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ökodisaini
Määruse (EÜ) nr 617/2013
EN 62623:2013
Määruse (EÜ) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Käesolev toode vastab nõuetele RED direktiivi 2014/53/EL, Ökodisaini direktiivi 2009/125/EÜ, RoHS direktiivi 2011/65/EL ning kannab CE-märgistusega.

AINULT USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Lisainfo:

1) **See toode on määratud normatiivne mudelinumber mis jääb regulatiivsed aspektid disain. Normatiivne mudelinumber on peamine toode tunnuse reguleerivad dokumendid ja katseprotokollid, see number ei tohiks segamini ajada toote nime või toode numbrid.**
2) **Teavitatud asutus TIMCO Engineering, Inc. tag number 1177 teostatud vastavushindamise (III lisa kohaselt, sest puuduvad harmoneeritud standardid) ja andis välja ELi tüübihindamistõendi: E1177-211569**
3) **See toode on testitud tüüpiliste HP keskkonnas koos HP vastuvõtva süsteemi .**

Palo Alto, CA
23-08-2022

kontrollida allkirja esialgse deklaratsiooni lisatud
Gilles Soulard, Manager
Product Compliance Center

Kohalik kontakt Ainult normatiivsete küsimuste korral:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
www.hp.eu/certificates

VASTAVUSDEKLARATSIOON

vastavalt ISO / IEC 17050-1 ja EN 17050-1

VASTAVUSDEKLARATSIOON
vastavalt ISO / IEC 17050-1 ja EN 17050-1

I LISA

Normatiivne mudelinumber (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

KIRJELDUS:*	RMN VALIK:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Kui X on ükskõik tähtnumbriline märk.**

IZJAVA O SUKLADNOSTI
u skladu s ISO / IEC 17050-1 i EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Prijevod/hr

Naziv proizvođača: **HP Inc.**
Proizvođača adresa: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

izjavljuje da je proizvod

Naziv proizvoda i Model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Broj modela prema propisima:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Mogućnosti proizvoda: **Vidi Prilog I**

sukladan sljedećim specifikacijama proizvoda i propisa:

Sigurnost:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radio spektar
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekološki dizajn
Uredba (EZ) br 617/2013
EN 62623:2013
Uredba (EZ) br 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Navedeni proizvod sukladan sa zahtjevima RED Direktivom 2014/53/EU, Ekološki dizajn Direktivom 2009/125/EC, RoHS Direktivom 2011/65/EU i nosi CE oznaka u skladu s tim.

SAMO ZA SAD: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatne informacije:

1) **Ovaj proizvod je dodijeljen broj modela prema propisima koji ostaje s regulatornim aspektima Dizajn. Broj modela prema propisima je glavni identifikator proizvod u regulatornom dokumentacije i izvješća o ispitivanju, ovaj broj ne treba brkati s marketinškim nazivom ili brojeve proizvoda.**
2) **Prijavljeno tijelo TIMCO Engineering, Inc. s brojem 1177 provelo je procjeni usklađenosti (prema Prilog III, jer nedostaje usklađene standarde) i izdalo potvrdu o EU ispitivanju tipa: E1177-211569**
3) **Ovaj proizvod je ispitan u tipičnoj HP okoliš u suradnji s HP-host sustava.**

Palo Alto, CA
23-08-2022

provjeriti potpis na izvorne izjave priložen
Gilles Soulard, Manager
Product Compliance Center

Lokalno kontakt za pravna pitanja samo:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
www.hp.eu/certificates

IZJAVA O SUKLADNOSTI

u skladu s ISO / IEC 17050-1 i EN 17050-1

IZJAVA O SUKLADNOSTI
u skladu s ISO / IEC 17050-1 i EN 17050-1

PRILOG I.

Broj modela prema propisima (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPCIJE

OPIS:*	RMN OPCIJA:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Gdje X predstavlja nikakvu alfa numeričku karakter.**

ATBILSTĪBAS DEKLARĀCIJA
saskaņā ar ISO / IEC 17050-1 un EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Tulkojums/lv

Ražotāja nosaukums: HP Inc.
Ražotāja adrese: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

paziņo, ka produkts

Produkta nosaukums un modelis:[2] HP Z2 Tower G9 Workstation Desktop PC
Regulējošais modeļa numurs:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Izstrādājuma iespējas: Féach pielikums I

atbilst šādām iekārtas specifikācijām un regulām:

Sábháilteacht:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radiofrekvenču spektrs
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ekodizains
Rialachán (CE) Uimh 617/2013
EN 62623:2013
Rialachán (CE) Uimh 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Produkts ar šo atbilst prasībām RED direktīva 2014/53/ES, Ekodizaina direktīva 2009/125/EK, RoHS direktīva 2011/65/ES un veic CE marķējums atbilstoši.

TIKAI ASV: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Papildus informācija:

1) **Šis produkts ir piešķirts regulējošais modeļa numurs, kas paliek ar normatīvajiem aspektiem dizainu. Regulējošais modeļa numurs ir galvenais produkts identifikators pārvaldes dokumentācijā un testēšanas pārskati, šis skaits nedrīkst sajaukt ar mārketinga nosaukumu vai produktu numuriem.**
2) **Paziņotā struktūra TIMCO Engineering, Inc. ar numurs 1177 ir veikusi atbilstības novērtēšana (saskaņā ar III pielikumu, jo trūkst saskaņotus standartus) un izdevusi ES tipa pārbaudes sertifikātu: E1177-211569**
3) **Rinneadh tástáil ar táirge SEO i dtimpeallacht HP tipiciúil i gcomhar le CORAS óstach HP.**

Palo Alto, CA
23-08-2022

seiceáil par síniú ar dearbhú bunaidh i gceangal
Gilles Soulard, Manager
Product Compliance Center

Vietējā kontaktpersona jautājumos par reglamentāciju tikai:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
www.hp.eu/certificates

ATBILSTĪBAS DEKLARĀCIJA
saskaņā ar ISO / IEC 17050-1 un EN 17050-1

I PIELIKUMS

Regulējošais modeļa numurs (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

RISINĀJUMI

APRAKSTS:*	RMN IZVĒLE:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Kur X apzīmē jebkuru burtu ciparu raksturs.**

LEYFISYFIRLÝSING
samkvæmt ISO / IEC 17050-1 og EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Þýðing/is

Framleiðanda Heiti: **HP Inc.**
Heimilisfang framleiðanda: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

því yfir, að varan

Nafn vöru og Model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Regulatory Model Number:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Valmöguleikar vöru: **Sjá viðauka I**

í samræmi við eftirfarandi forskriftir vara og reglugerðir:

Öryggi:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Tíðniróf
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

visthönnun
Reglugerð (EB) nr. 617/2013
EN 62623:2013
Reglugerð (EB) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Varan hér með í samræmi við kröfur RED tilskipun 2014/53/EU, Tilskipun um vistvæna hönnun 2009/125/EB, RoHS tilskipun 2011/65/EU og ber CE-merkið í samræmi.

AÐEINS FYRIR BANDARÍKIN: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Viðbótarupplýsingar:

1) **Þessi vara er úthlutað Regulatory tegundarnúmer sem dvelst hjá reglugerðum þætti í hönnun. The Regulatory Model Number er helsta vara auðkenni í reglugerðum skjöl og prófunarskýrslur, þetta númer ætti ekki að rugla saman við nafn markaðssetningu eða vörunúmerum.**
2) **Tilkynnta aðilans TIMCO Engineering, Inc. með númer 1177 flutt farið mat (samkvæmt viðauka III, vegna vantar samhæfðir staðlar) og gaf út ESB-gerðarprófunarvottorðinu: E1177-211569**
3) **Þessi vara var prófað í dæmigerðum HP umhverfi í tengslum við HP móti kerfinu.**

Palo Alto, CA
23-08-2022

athuga undirskrift á upprunalegu yfirlýsingu fylgir
Gilles Soulard, Manager
Product Compliance Center

Upplýsingaskrifstofa fyrir reglusetningu efni eingöngu:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
www.hp.eu/certificates

LEYFISYFIRLÝSING
samkvæmt ISO / IEC 17050-1 og EN 17050-1

LEYFISYFIRLÝSING
samkvæmt ISO / IEC 17050-1 og EN 17050-1

VIÐAUKA I

Regulatory Model Number (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

LÝSING:*	RMN VALKOSTUR:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Þar sem X táknar allir alfa tölugildi karakter.**

DIKJARAZZJONI TA 'KONFORMITÀ
skond ISO / IEC 17050-1 u EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Traduzzjoni/mt

Isem tal-manifattur: HP Inc.
Indirizz tal-manifattur: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

jiddikjara, li l-prodott

Isem tal-prodott u Mudell:[2] HP Z2 Tower G9 Workstation Desktop PC
Mudell regolatorju Numru:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Għażliet tal-prodott: Ara l-Anness I

jikkonforma mal-Prodott Speċifikazzjonijiet li ġejjin u Regolamenti:

Sigurtà:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Ispettru tar-radju
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekodisinn
Ir-Regolament (KE) Nru 617/2013
EN 62623:2013
Regolament (KE) Nru 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Il-prodott hawnhekk jikkonforma mar-rekwiżiti tal-Direttiva RED 2014/53/UE, Direttiva tal-Ekodisinn 2009/125/KE, Direttiva RoHS 2011/65/UE u jkollu l-marka CE kif xieraq

BISS GĦALL-ISTATI UNITI: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informazzjoni addizzjonali:

1) **Dan il-prodott huwa assenjat għal mudell regolatorju Numru li jibqa 'mal-aspetti regolatorji ta' l- disinn. Il-Numru tal-Mudell regolatorja hija l-identifikatur tal-prodott ewlieni fid-dokumentazzjoni regolatorju u rapporti tat-test, dan in-numru ma għandux jiġi mfixkel ma 'isem marketing jew in-numri tal-prodott.**
2) **Il-korp notifikat TIMCO Engineering, Inc. ma in-numru 1177 wettaq valutazzjoni konformità (skond l-Anness III, minħabba nieqsa istandards armonizzati) u ħareġ iċ-ċertifikat tal-eżami tat-tip tal-UE: E1177-211569**
3) **Dan il-prodott ġie ttestjata f'ambjent HP tipiku flimkien ma 'sistema ospitanti HP.**

Palo Alto, CA
23-08-2022

jivverifika l-firma fuq id-dikjarazzjoni oriġinali annessa
Gilles Soulard, Manager
Product Compliance Center

Kuntatt lokali għal suġġetti regolatorji biss:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
www.hp.eu/certificates

DIKJARAZZJONI TA 'KONFORMITÀ
skond ISO / IEC 17050-1 u EN 17050-1

DIKJARAZZJONI TA 'KONFORMITÀ
skond ISO / IEC 17050-1 u EN 17050-1

ANNESS I

Mudell regolatorju Numru (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

GĦAŻLIET

DESKRIZZJONI:*	RMN GĦAŻLA:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Fejn X jirrappreżenta xi karattru numeriku alpha.**

UYGUNLUK BEYANI

ISO / IEC 17050-1 ve EN 17050-1 uygun olarak

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Çeviri/tr

Üretici Adı: **HP Inc.**

Üretici Adresi: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

beyan eder, ürün

Ürün Adı ve Modeli:[2] **HP Z2 Tower G9 Workstation Desktop PC**

Yasal Model Numarası:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**

Ürün Opsiyonları: **Bkz: Ek I**

aşağıdaki Ürün spesifikasyonlarına ve Yönetmeliklere uygun olduğunu beyan eder:

Güvenlik

EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC

EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Spektrum

EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekotasarım

Yönetmelik (AB) No. 617/2013
EN 62623:2013
Yönetmelik (EC) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN IEC 63000:2018

Ürün, bu belgeyle birlikte, şu şartlarına uygundur RED Direktifi 2014/53/AB, Ekotasarım Direktifi 2009/125/EC, RoHS Direktifi 2011/65/AB ve uygun CE işaretini taşır.

SADECE ABD IÇIN: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ek Bilgiler:

1) **Bu ürüne tasarım sırasında, teknik mevzutlar gözetilerek bir Yasal Model Numarası atanmıştır. Yasal Model Numarası, ana ürün için düzenleyici belgelerinde ve test raporlaronda tanımlayıcıdır. Bu numara pazarlama adı veya ürün numaraları ile karıştırılmamalıdır.**
2) **Onaylanmış Kuruluş TIMCO Engineering, Inc. numarası 1177, (uyumlaştırılmış standartların eksik olması nedeniyle Ek III'e göre) bir uygunluk değerlendirmesi gerçekleştirmiş ve E1177-211569 no'lu AB-tip inceleme sertifikası düzenlemiştir.**
3) **Bu ürün, tipik bir HP ortamında test edilmiştir .**

Palo Alto, CA
23-08-2022

imza için orginal DoC ye bakınız
Gilles Soulard, yetkili
Product Compliance Center

Sadece teknik yasal konular için kontak:

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**

UYGUNLUK BEYANI

ISO / IEC 17050-1 ve EN 17050-1 uygun olarak

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

UYGUNLUK BEYANI
ISO / IEC 17050-1 ve EN 17050-1 uygun olarak

EK I

Yasal Model Numarası (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPSİYONLAR

AÇIKLAMA:*	RMN OPSİYON:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** X herhangi bir alfabetik sayısal karakteri gösterir.**

Top of the Document

DEKLARACIJA O USAGLAŠENOSTI
prema ISO / IEC 17050-1 și EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Prevođenje/sr

Naziv proizvođača: **HP Inc.**
Adresa proizvođača: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

izjavljuju pod isključivom odgovornošću da je proizvod

Naziv proizvoda i model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Broj regulatornog modela:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Opcije: **Vidi PRILOG I**

u skladu sa sledećim specifikacijama proizvoda i propisima:

Sigurnost:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMK
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radiofrekvencijski spektar
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekodizajn
Uredba (EZ) br 617/2013
EN 62623:2013
Uredba (EZ) br 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Navedeni proizvod je u skladu sa zahtevima RED Direktive 2014/53/EU, Ekodizajn Direktive 2009/125/EC, RoHS Direktive 2011/65/EU i prema tome nosi oznaku CE.

SAMO ZA SAD: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dopunske Informacije:

1) **Ovom proizvodu je dodeljen regulatorni broj modela koji ostaje u skladu sa regulatornim aspektima dizajna. Regulatorni broj modela je glavni identifikator proizvoda u regulatornoj dokumentaciji i izveštajima o ispitivanju, ovaj broj ne treba mešati sa marketinškim nazivom ili brojevima proizvoda.**
2) **Imenovano telo TIMCO Engineering, Inc. sa brojem 1177 izvršilo je ocenjivanje usaglašenosti (prema prilogu III nedostaju harmonizovani standardi) i izdalo je EU potvrdu o ispitivanju br.ID: E1177-211569**
3) **Ovaj proizvod je testiran u tipičnom HP okruženju.**

Palo Alto, CA
23-08-2022

proverite potpis na originalnoj deklaraciji na engleskom jeziku u prilogu gore
Gilles Soulard, Manager
Product Compliance Center

Lokalni kontakt samo za regulatorne teme:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

DEKLARACIJA O USAGLAŠENOSTI

prema ISO / IEC 17050-1 și EN 17050-1

www.hp.eu/certificates

DEKLARACIJA O USAGLAŠENOSTI
prema ISO / IEC 17050-1 și EN 17050-1

PRILOG I

Broj regulatornog modela (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPCIJE

OPIS:*	RMN OPCIJE:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Gde X predstavlja bilo koji alfanumerički znak.**

DEKLARATA E KONFORMITETIT
në përputhje me ISO / IEC 17050-1 dhe EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Përkthimi/al

Emri e prodhuesit: HP Inc.
Adresa e prodhuesit: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

deklarojnë, nën përgjegjësinë e vetme që produkti

Emri dhe modeli i produktit:[2] HP Z2 Tower G9 Workstation Desktop PC
Numri i Modelit Rregullator:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Opsionet e produktit: Shih aneksin I

përputhet me specifikimet dhe rregulloret e mëposhtme të produktit:

Sigurinë e produktit:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

Përputhshmëria elektromagnetike
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Spektri i radio
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekodizajni
Rregullorja (KE) nr 617/2013
EN 62623:2013
Rregullorja (KE) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Navedeni proizvod sukladan sa zahtjevima RED Direktivom 2014/53/EU, Ekološki dizajn Direktivom 2009/125/EC, RoHS Direktivom 2011/65/EU i nosi CE oznaka u skladu s tim.

VETËM PËR SH.B.A.: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informacion shtese:

1) **Këtij produkti i është caktuar një Numër Modeli Rregullator i cili qëndron me aspektet rregullatore të modelit. Numri i Modelit Rregullator është identifikuesi kryesor i produktit në dokumentacionin rregullator dhe raportet e provave, ky numër nuk duhet të ngatërrohet me emrin e marketingut ose numrat e produkteve.**
2) **Organi i njoftuar TIMCO Engineering, Inc. numër 1177 ka kryer një vlerësim të konformitetit (sipas Aneksit III, për shkak të mungesës së standardeve të harmonizuara) dhe ka lëshuar një certifikatë të provimit të tipit BE: E1177-211569**
3) **Ky produkt u testua në një mjedis tipik HP.**

Palo Alto, CA
23-08-2022

kontrolloni nënshkrimin në deklaratën origjinale angleze të bashkangjitur më sipër
Gilles Soulard, Manager
Product Compliance Center

Kontakt lokal vetëm për tema rregullatore:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

DEKLARATA E KONFORMITETIT

në përputhje me ISO / IEC 17050-1 dhe EN 17050-1

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

DEKLARATA E KONFORMITETIT
në përputhje me ISO / IEC 17050-1 dhe EN 17050-1

ANEKSI I

Numri i Modelit Rregullator (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPSIONE

PËRSHKRIM:*	OPSIONI RMN:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Ku X paraqet ndonjë karakter alfa numerik.**

Microsoft

Hardware certification report **Approved**

Private product ID:	**14583652101653309**
Shared product ID:	**401304713**
Submission ID:	**1152921505696194241**
Submission date:	**4/18/2023**
Completion date:	**4/18/2023**
Company:	**HP Inc.**
Product name:	**HP Z2 Tower G9 Workstation Desktop PC**
Category:	**System**
Product type:	**Desktop**
Qualification level:	**Certified for Microsoft Windows 11 Client family version 22H2, x64**
Marketing name:	**HP Z2 Tower G9 Workstation Desktop PC**

Microsoft Certified

HP Z2 Tower G9 Workstation Desktop PC ENERGY STAR

Product Summary:

Product Type:	**Workstation**
Registered In:	**Brazil**
Manufacturer:	**HP**
EPEAT Tier:	**Gold**
Registration Date:	**2022-02-23**
Product Status:	**Active**
Exceptions:	**Configurations that are not ENERGY STAR qualified do not meet required criterion 4.5.1.1. Configurations that include the HP Healthcare Wired Keyboard and Mouse or the HP USB Keyboard and Mouse Healthcare Edition do not meet optional criterion 4.1.4.1**

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

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Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at **EPEAT Bronze**

Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at **EPEAT Silver**

Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at **EPEAT Gold**

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	12 / 16
4.2 Materials Selection	3 / 3
4.4 Product longevity/life-cycle extension	1 / 2
4.5 Energy Conservation	1 / 2
4.7 Packaging	2 / 2
4.8 Life cycle assessment and carbon footprint	6 / 6
4.9 Corporate Environmental Performance	9 / 9
4.10 Corporate social responsibility	4 / 6
TOTAL OPTIONAL CRITERIA SCORE:	**38 / 46**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us.

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EPEAT REGISTRY PRIVACY POLICY EPEAT REGISTRY TERMS OF USE

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Certificado de Conformidade

Certificate of Conformity

Certificado/*Certificate*
UL-BR 24.1271

Revisão / Review
00

Emissão / *Issue*
5 de setembro de 2024
September 5, 2024

Validade / *Expiration*
4 de setembro de 2027
September 4, 2027

Reconhecer que o Solicitante / *Acknowledge that the Certificate Holder*

HP BRASIL INDÚSTRIA E COMÉRCIO DE EQUIPAMENTOS ELETRÔNICS LTDA
CNPJ: 22.086.683/0001-84

avaliou o produto / *has had*

ESTAÇÃO DE TRABALHO / *WORKSTATION*

ao qual atende aos requisitos do Programa de Certificação ou Portaria / *evaluated and meets the requirements of the Certification Program or Decree*

PORTARIA NO. 304:2023 /
DECREE NO. 304/2023

e pode ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado.
and can display the Conformity Identification Seal of the Brazilian Conformity Assessment System (SBAC) on the product(s) listed in this certificate.

Rafael O. Parada
Program Owner

UL do Brasil Certificações, organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro Nº OCP-0029. /
UL do Brasil Certificações, Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register Nr OCP-0029.

Certificado de conformidade válido somente acompanhado das páginas de 1 a 44
Certificate of Conformity valid only if accompanied from pages 1 to 44

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Form-ULID-017660 – Rev. 3.0

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.1271**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de setembro de 2024 *September 6, 2024*		5 de setembro de 2027 *September 5, 2027*

Solicitante / *Certificate Holder* **(100039-522)**
HP BRASIL INDÚSTRIA E COMÉRCIO DE EQUIPAMENTOS ELETRÔNICS LTDA
ALAMEDA XINGU, 350, ANDAR 8 CONJ. 801 – ALPHAVILLE, BARUERI, SP.
CEP: 06455-030
CNPJ: 22.086.683/0001-84

Fabricante / *Manufacturer* **(100500-147)**
FLEXTRONICS INTERNATIONAL TECNOLOGIA LTDA
AVENIDA LIBERDADE, 6315
18087-170 – SOROCABA – SP – BRASIL

Modelo de Certificação / *Certification Model*
5

Norma(s) Aplicável(is) / *Applicable standards*
IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, CISPR 22:2008, CISPR 32:2012, CISPR 32:2015/COR:2016, CISPR 24:2010+ A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3:2013, IEC 61000-4-2:2008, IEC 61000-4-3:2006 +A1:2007 +A2:2010, IEC 61000-4-4:2012, IEC 61000-4-5:2014, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2004

Identificação UL / *UL Identification*
BR2357, Vol. 8, Sec. 24; Sec 32; Sec 47; Sec 48; Sec 50; Sec 52; Sec 56, Sec 60

Lote ou No. de Série / *Lot or Serial Number*
N/A

Identificação da Família/Modelo/Lote de Produto(s) Certificado(s):
Identification of the Family/Model/Lot of Certified Product(s):

Marca / *Brand Name*	**Modelo /** *Model*	**Descrição /** *Description*	**Código de Barras /** *Bar Code Number*
HP	FCLSA-1701A, FCLSA-1701B, FCLSA-1701C, FCLSA-1703A, FCLSA-1703B, TPC-F114-MT-250A, TPC-F114-MT-250C, TPC-F114-MT-500D, TPC-F114-MT-500L, TPC-F128-MT-350 / TPC-F128-MT-500E / TPC-F128-MT-500P, TPC-F138-MT-700, TPC-F138-MT-500, TPC-F138-MT-350, FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350, FCLSA-2201A, FCLSA-2201B, FCLSA-2201C, FCLSA-2203A, FCLSA-2203B	HP Z4 G4, Z8 G4, HP Z2 TOWER G4, HP Z2 TOWER G5, HP Z2 G8 TOWER WORKSTATION DESKTOP PC, HP Z2 TOWER G9 WORKSTATION DESKTOP PC, HP Z2 TOWER G9 WORKSTATION DESKTOP PCX, HP Z4 G5 Workstation Desktop PC, HP Z4 G5 Workstation, HP Z8 G5 Workstation Desktop PC, HP Z8 G5 Workstation	N/A

Informações de Ensaios / *Test Information:*

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT17011	2017-09-18
Audix Technology (Shenzhen) Co. Ltd.	ACS-E17564	2017-09-28
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT17009	2017-08-29
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT17009-01	2017-09-22
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT17009-03	2018-10-26
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT17009-04	2019-05-22
Audix Technology (Shenzhen) Co. Ltd.	ACS-E17485-1	2018-08-08
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT18009-02	2019-03-11
Audix Technology (Shenzhen) Co. Ltd.	ACS-E18098-1	2019-04-16
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT20005	2020-04-13
Audix Technology Corporation, EMC Department	EM-E200130	2020-03-23

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.1271**

Emissão / ***Issue***	**Revisão** / *Review*: **00**	**Validade** / ***Expiration***
6 de setembro de 2024 *September 6, 2024*		5 de setembro de 2027 *September 5, 2027*

Audix Technology Corporation, EMC Department	ATTCB109143	2020-12-23
Audix Technology Corporation, EMC Department	ACSCBIT20005	2020-04-13
Audix Technology Corporation, EMC Department	ACS-E20182-2	2020-12-15
IBEC	R211299	2021-09-01
IBEC	R211321	2021-08-06
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT21009	2021-12-13
Audix Technology (Shenzhen) Co. Ltd.	ACWE-RC210344	2021-12-01
Audix Technology (Shenzhen) Co. Ltd.	ATTCB111110	2022-11-24
Audix Technology (Shenzhen) Co. Ltd.	ACS-E23023	2023-02-09
Audix Technology (Shenzhen) Co. Ltd.	ATTCB111071	2022-11-24
Audix Technology (Shenzhen) Co. Ltd.	ACS-E22172-1	2023-02-09
Audix Technology (Shenzhen) Co. Ltd.	ACS-E22172	2022-09-16
IBEC	R240325	2024-04-18
IBEC	R240326	2024-05-08

Informações de Auditoria / *Audit Information:*

Local da Auditoria / *Audit Location*	**Data de Realização** / *Perform Date*
Tratamento de Reclamações *Complaint Handling*	2024-04-19
Fabricante *Manufacturer*	2024-03-27

Informações Adicionais / *Additional Information:*

100-240V~, 6A; 10A; 12A, 50-60Hz / 115-127V~ 16A; 200-240V 10A, 50-60Hz.
100-240V~, 50-60Hz, 3A
100-240V~, 50-60Hz, 4A / 6A / 8.2A / 10A
100-240V~, 8.2A, 6A, 5.5A, 4.2A, 50-60Hz

Observações / *Observations:*

1. A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da UL do Brasil Certificações previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro.
   The validity of this Certificate of Conformity is linked to the performance of maintenance assessments and treatment of possible non-conformities in accordance with the guidelines of UL do Brasil Certifications provided for in the specific Conformity Assessment Regulation. To check the updated condition of regularity of this Certificate of Conformity, the Inmetro database of certified products and services must be consulted.

2. Este certificado aplica-se aos equipamentos (produtos) idênticos ao protótipo avaliado e certificado, manufaturados na(s) unidade(s) fabril(is) mencionada (s) acima.
   This certificate applies to the products that are identical to the prototype investigated, certified and manufactured at the production site mentioned in this certificate.

3. Qualquer alteração no produto, incluindo a marcação, invalidará o presente certificado, salvo se o solicitante informar por escrito à UL do Brasil Certificações sobre esta modificação, a qual procederá à avaliação e decidirá quanto à continuidade da validade do certificado.
   Any non-authorized changes performed in the product, including marking, will invalidate this certificate. UL do Brasil Certificações must be notified about any desired change. This notification will be analyzed by UL do Brasil Certificações that will decide about certificate force.

4. Esta autorização está vinculada a um contrato e para o escopo acima citado.
   This license is related to a commercial proposal and to the scope above cited.

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.1271**

Emissão / ***Issue***
6 de setembro de 2024
September 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de setembro de 2027
September 5, 2027

Histórico de Revisões / *Revisions History:*

Revisão / *Review*	**Data** / *Date*	**Descrição da Revisão** / *Revision Description*
00	05/09/2024	Emissão Inicial com recertificação do certificado UL-BR 21.1705 / *Initial issue*
A última revisão substitui e cancela as anteriores / *The last review replaces and cancels the previous ones*		

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.1271**

Emissão / ***Issue***
6 de setembro de 2024
September 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de setembro de 2027
September 5, 2027

Anexo I / *Attachment I:*

Componente/ *Component*	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Metal	--	--	Minimum 1.0 mm thickness (Chassis dimensions approx. 17.5 in x 15.2 in x 6.65 in / 44.5 cm x 38.6 cm x 16.9 cm)	--	--
Plastic Enclosure (decorate part)	Interchange able	Interchangeable	Minimum HB.	UL94 UL 746C	UL
Ari duct (optional)	Interchange able	Interchangeable	Minimum V-2, See Diagrams ID 3-02	UL94 UL 746C	UL
Switching Power Supply	Chicony Power Technology Co., Ltd.	D15-1K0P1A	I/P: 100-127Vac, 12A, 50-60Hz; 200-240Vac,6.3A, 50-60Hz; 118Vac, 12A, 400Hz, O/P: DC V12-M0/18A, V12-M1/9A, V12-B/18A, V12-D/18A, V12-S/18A, V12-G1/18A, V12- G2/18A, V12- CPU0/18A, V12-CPU1/18A, V12- CPU2/18A, V12 CPU3/18A, 5VSB/6A V12(CPU0, CPU1, CPU2,CPU3, M0, M1, B, D, S, G1 and G2) shall not exceed 1000W. Total continuous output power 1000W max. Max. Operating altitude up to 5 000 m, Max. ambient40 °C.	IEC 60950 1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011+A2:2013. UL60950-1	CB by TUV Rheinland, (Cert. No. JPTUV-075284A1/M1. Report No.11047801003) UL(E143709)
Alternate	DELTA ELECTRO NICS INC	DPS-465AB-3XX DPS-1125BBXX DPS-1450ABXX (X can be 0- 9, A-Z or blank)	Input: 100-240V/6A; 50-60Hz; 118V/6A, 400Hz. DC Output: V12,1- CPU0/18A; V12,1- CPU2/18A; V12,1-M0/18A; V12,1-B/18A; V12,1-S/18A; 5VSB/5,5A, V12,1- CPU0 & V12,1-CPU2 & V12,1-M0 & V12,1-B & V12,1-S, TOTAL 38, 5A(465W)MAX. MAX. TOTAL OUTPUT 465W. Operating altitude up to 5 000 m, Max. ambient 50°C.	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 +A2:2013. UL60950-1	CB by UL (Demko), (Cert. No. DK-63185-UL. Report No. E131881-A2118-CB-1) UL(E131881)
Alternate	DELTA ELECTRO NICS INC	DPS-750AB-36 XX (X can be 0- 9, A-Z or blank)	Input: 100-240V ~/ 10A, 50-60Hz; 118V~/ 10A, 400 Hz. Output: Max. TOTAL OUTPUT 750W, V12- CPU0/18A;V12-CPU2/18A;V12- M0/18A;V12-B/18A;V12- S/18A;V12-D/18A; V12-G1/18A;V12- G2/18A; 5VSB/5,5A. The total current(Power) of combined V12- CPU0,V12-CPU2,V12-M0,V12- B,V12-S,V12-D,V12- G1,V12-G2 is 62,5A(750W) MAX. Operating altitude up to 5 000 m, Max. ambient 50°C.	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 +A2:2013. UL60950-1	CB by UL (Demko), (Cert. No. DK-63227-UL. Report No. E131881-4787962865. 1 (BA1)-1) UL(E131881)

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Internal Plastic Parts	Interchange able	Interchangeable	Minimum V-2 or HF-2	UL 94, UL 746C	UL
Certification Marks Label Materials (All factories)	Worldmark	3311T-E2	Used in combination with Printer/Ribbon DPW3000-140-450. Affixed to the metal surface.	UL 969, CSA C22.2 No. 15. Additionally evaluated in the end product to IEC 60950-1, 2nd Ed.Am 2	UL
Hard Disk Device (Optional) - (up to four 3.5| HDD‘s or up to four 2.5| HDD‘s if provided)	Interchange able	Interchangeable	5 Vdc / 2.0 A Max, 12 Vdc / 2.5A Max or 5Vdc/ 2.5A Max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verified by other certificate body
Solid State Drive (2.5|and/or M.2) (Optional) -(up to 4 SSD‘s and/or up to 2 M.2‘s provided if provided)	Interchange able	Interchangeable	5/12V, 2.0/2.0A or 5V, max. 3.0A	IEC 60950-1, EN 60950-1, UL 60950-1	Verified by other certificate body
Optical Drive Device (optional) (up to 2 if provided)	Interchange able	Interchangeable	5Vdc/2.5A Max.; 12Vdc/ 3.0A Max. or 5Vdc/2.5A Max. Laser Class 1. Recognized at least UL60950- 1+A1.	EN60950-1:2006+A1; IEC/EN60825-1; IEC60950-1(evaluate and complied with clause 4.2.11 of IEC609501/Am1:2009) or IEC 60950 1/A1:2009	Verified by other certificate body
Internal speaker	Interchange able	Interchangeable	4 ohm, 3 W Max	--	--
Internal Wiring	Interchange able	Interchangeable	PVC, TFE, PTFE, FEP, or neoprene insulated, or surface marked "VW-1 or FT- 1", rated minimum 300 V, 105Â° C, routed away from mechanically moving parts and does not pass over sharp edges. Wiring in LVISC may be rated min. 30 V, 80C.	UL 758, CSA C22.2 No. 210.2	UL, cUL or CSA
Connectors and Receptacles	Interchange able	Interchangeable	Connectors in low voltage secondary circuitry (SEC) (ELV, SELV)	UL 1977	UL
DC FAN (Front Chassis fan) (optional)	Foxconn Technology Co., Ltd	PVA092G12H-P29	DC 12V, 1.20A, 84.42CFM min	EN60950-1 UL 507	TUV UL
Alternate	Delta Electronics Inc	AUB0912VH	DC12V, Max. 0.60A, 62.51CFM min	EN60950-1 UL 507	VDE UL
Alternate	Interchange able	Interchangeable	DC12V, Max. 1.20A, 62.51CFM min	EN60950-1 UL 507	VDE, TUV or UL
DC FAN (CPU cooler fan)	Foxconn Technology Co., Ltd	PVA092G12S PVA092G12H-P29	DC 12V, MAX. 0.40A, 60.0CFM min 84.24CFM min	EN60950-1 UL 507	TUV UL
Alternate	Delta Electronics Inc	QUR0912VH QUR0912SJ-00	DC 12V, MAX. 0.6A, 62.50CFM min 77.00CFM min	EN60950-1 UL 507	VDE UL

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Alternate	Interchange able	Interchangeable	DC12V, Max. 0.6A, 60.0CFM min	EN60950-1 UL 507	VDE, TUV or UL
DC FAN (Front Middle Chassis fan)	Foxconn Technology Co., Ltd	PVA080G12R-P29-AE	DC12V, Max. 0.80A, 71.1CFM min	EN60950-1 UL 507	TUV UL
Alternate	Delta Electronics Inc	AUB0812SJ-00XXXXXX, X stands foe A-Z, 0-9, -or blank	DC12V, Max. 0.84A, 6 66.64CFM min	EN60950-1 UL 507	VDE UL
DC FAN (Rear chassis fan)	Foxconn Technology Co., Ltd	PVA120G12T PVA120K12P	DC 12V, 0.5A, 102.24CFM min 135.18CFM min	EN60950-1 UL 507	TUV UL
Alternate	Delta Electronics Inc	AFB1212VH	DC 12V, 0.6A max, 95.70 CFM min	EN60950-1 UL 507	VDE UL
Alternate	Interchange able	Interchangeable	DC 12V, 0.6A max, 95.70 CFM min	EN60950-1 UL 507	VDE, TUV or UL
DC FAN (Memory fan up to 2 provided - optional)	Foxconn Technology Co., Ltd	PVA060G12N PVA120G12S	DC 12V, 0.55A, 25.77 CFM min	EN60950-1 UL 507	TUV UL
Alternate	Delta Electronics Inc	AFB0612EH AUB1212H	DC 12V, 0.48A, 36.38CFM min 68.52CFM min	EN60950-1 UL 507	VDE UL
Alternate	Interchange able	Interchangeable	DC 12V, 0.55A, 25.77 CFM min	EN60950-1 UL 507	VDE, TUV or UL
Front IO Module (FIO-E) (optional)	Foxconn	FMB-1704 FMB-1705	SELV, Front IO Module (FIO-E) UL approval covers the PWB material, connector plastics, and any other plastics, and foam materials used, and the operator accessible connector overcurrent protection devices.See additional information for this item below:	UL 60950-1, 2nd Ed. CAN/CSA C22.2 No. 60950-1-07, 2nd Ed. Additionally evaluated in the end product to IEC 60950-1 2nd Ed.	UL
-PWB	Interchange able	Interchangeable	V-1 or better, Minimum 105 °C	UL796	UL
-Current Limited Power Switch (U850 for USB 3.0 port J70)	DIODES Incorporated	AP21xyz, The —x‖ in the model name can be any number from 4 to 9 (denoting active low or active high enable pin).—y‖ can be 1, 2, 5 or 6 (denoting channel switch type). -z‖ can be blank, single or multiple alphanumeric characters, not affecting safety.	2.7-5.5V, single channel switch. Cont. Current: 1.5A, Current limit (typical): 2.1A	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013. UL2367	CB by TUV Rheinland, (Cert. No. JPTUV-075284- A1/M1. Report No. 11047801003) UL
Alternate	TEXAS INSTRUMENTS INC	TPS2068C, followed by DBV, DGK or DGN may be followed by additional letters and numbers.	Input Voltage - 4.5Vdc to 5.5Vdc, Output Continuous Rating: 1.5A; Output Current Limit: 2.7 A, Ambient= -40 to 85°C	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010+ A12:2011+A2:201 UL2367	CB by UL Demko (Cert. No. US-24596- UL) UL

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-Current Limited Power Switch (U1108 for Type C port (J210), U1109 for Type C port (J211))	NXP Semiconductor Taiwan Ltd.	NX5P3290UK	Input Voltage Range: 4.0 Vdc to 5.5Vdc Current Limit Rating: 3.3 A	IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by UL Demko UL
-Poly Switch (F3 for USB 3.0 port(J71))	Littelfuse Inc	0805L150ULYR	6Vdc, 1.5A	EN 60730-1 UL 1434	TUV Rheinland, UL
Motherboard	Foxconn	FMB-1701	SELV, Motherboard UL approval covers the PWB material, lithium battery, lithium battery protect circuit, connector plastics, and any other plastics, and foam materials used, fan(s) and the operator accessible connector over current protection devices. See additional information for this item below:	UL 60950-1, 2nd Ed. CAN/CSA C22.2 No. 60950-1-07, 2nd Ed. Additionally evaluated in the end product to IEC 60950-1 2nd Ed.	UL
-RTC Battery	SHUN WO NEW POWER BATTERY TECHNOLOGY LTD	CR2032*, * - Cell model numbers maybe followed by an optional slash (/) and single or multiplealphanumeric characters which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	JHIH HONG TECHNOLOGY CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	Interchangeable	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
-Poly Switch (F1for PS2 port(J66 J67))	Littelfuse Inc	0805L110ULYR	6Vdc, 1.1A	EN 60730-1 UL 1434	TUV Rheinland,UL
Switching Power Supply (for only mother board Venti)	DELTA ELECTRONICS INC	DPS-650AB-30 XX (X can be 0-9, A-Z or blank.)	I/P: 100-240V~/10A, 50-60Hz; O/P: +12.1Vmain/18A, +12.1Vcpu1/18A, +12.1Vcpu2/18A, +12.1VG1/18A, +12.1VG2/18A, Maximum power shall not exceed 650W, Altitude during operation 5000m, maximum ambient temperature (Tma): 50 degree C.	IEC 60950-1: 2005 (Second Edition) + Am 1:2009 + Am 2:2013; EN 60950-1: 2006 +A11: 2009 + A1:2010 + A12: 2011 + A2: 2013 UL 62368-1	CB by TUV, (Cert. No. JPTUV-091004. Report No. 50180118 001) UL E131881
RTC battery (for mother board L04857- xxx (where x can be 0-9 for marketing purpose)	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	Interchangeable	CR2032	Rated 3.0V, maximum abnormal charging current 10mA.	UL1642	UL

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Alternate	Interchangeable	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Motherboard (for only Switching Power Supply DPS-650AB-30 XX (X can be 0-9, A-Z or blank.))	Foxconn	Venti	SELV, Motherboard UL approval covers the PWB material,lithium battery, lithium battery protect circuit, connector plastics, and any other plastics, and foam materials used, fan(s) and the operator accessible connector over current protection devices. See additional information for this item below:	UL 60950-1, 2nd Ed. CAN/CSA C22.2 No. 60950-1-07, 2nd Ed. Additionally evaluated in the end product to IEC 60950-1 2nd Ed.	UL
-PWB	Interchangeable	Interchangea ble	V-1 or better, Minimum 105 ⊔C	UL796	UL
-RTC Battery	SHUN WO NEW POWER BATTERY TECHNOLOG Y LTD	CR2032*, * - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	JHIH HONG TECHNOLOG Y CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	Interchangeable	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
- Poly Switch (F9 for DP port(J64), F8 for DP port(J63))	Interchangeable	Interchangea ble	Imax=40A Min. Vmax=6Vdc Min., Ih=1.10A Max. It=2.20A Max. CA1 (125 degree C Max.), CA 2, CA 3, CA 4, Tmoa=85 degree C Min.	EN 60730-1 UL 1434	TUV Rheinland, UL
- IC Current Limiter (U53 for USB Header (P26) to Front USB 3.0, U56 for Internal USB 2.0 (P150))	DIODES INC	AP2822DxyT R-G1, where x is N or blank and y is K, KA, KB or KE.	Volts: 2.7-5.5V, Cont. Current: 0.5-2.0A, Prot. Current: 1.4-3.2A, Temp Range: - 40 to 85 degree C	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL
- IC Current Limiter (U53 for USB Header (P26) to Front USB 3.0, U56 for Internal USB 2.0 (P150))	DIODES INC	AP2822DxyT R-G1, where x is N or blank and y is K, KA, KB or KE.	Volts: 2.7-5.5V, Cont. Current: 0.5-2.0A, Prot. Current: 1.4-3.2A, Temp Range: - 40 to 85 degree C	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL

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Alternate	TEXAS INSTRUMENT S INC	TPS2061C, followed by DBV, DGK or DGN may be followed by additional letters and numbers	Volts: 4.5 - 5.5 VDC, Cont. Current: 1.0A, Prot. Current: 1.9A, Temp Range: -40 to 85 degree C	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL
Alternate	UNISONIC TECHNOLOG IES CO LTD	US107XXX-AF5-R (First X=A, B, C, Second X=L or H, Third X=L or G)	Input voltage: 3.0 Vdc - 5.5 Vdc. Output current limit: 1.2 - 2.8 A	IEC62368-1 UL62368-1	CB UL
- IC Current Limiter (U51 for REAR USB3.0 x2 (J10 Bottom), U52 for LAN+ USB2.0(J9), U55 for REAR USB3.0 x2 (J10 Top), U58 for Internal USB 3.0(P152) to SD Card)	SILERGY TECHNOLOG Y	SY6288xyyyy y(x=A, B, C, D or E; yyyyy-0-9, A- Z or blank)	Volts: 2.5-5.5V, Output current limit: max. 4.43A	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL
Alternate	RICHTEK TECHNOLOG Y CORP	RT9742..G.The first dot "." can be A to Z represent output current/enabl e function. The second dot "." can be N or blank represent discharge function. The third dot "." can be J5F/J5/V represent package type.	Volts: 2.7-6.0V, Output current limit: 3A/ 2A/ 1.5A/ 1A	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL
Alternate	DIODES INC	AP22811AW 5-7, AP22811BW 5-7, AP22811AM 8-13,AP22811BM 8-13	Volts: 2.7-5.5V, Cont. Current: 2.0A, Prot. Current: 3.2A, Temp Temp Range: -40 to 85 degree C	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL
Thunderbolt 3.0 Tenor card (optional)	FOXCONN TECHNOLOG Y CO LTD	TPC-F005AO	SELV, Thunderbolt 3.0 Tenor card, UL approval covers the PWB material, connector plastics, and any other plastics, and foam materials used.	IEC 60950-1 UL60950-1	CB UL
CPU heatsink	--	--	Aluminium. See supplement 3-02 for details.	--	--
Alternate	--	--	Aluminium. See supplement 3-03 for details.	--	--
Alternate	--	--	Aluminium. See supplement 3-04 for details.	--	--
Alternate	--	--	Aluminium. See supplement 3-05 for details.	--	--

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Metal Enclosure	--	--	Min. 0.8 mm thickness	--	--

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Plastic Front Panel (decorate part)	Interchangeable	Interchangeable	Min. HB	UL94, UL 746C	UL
Dust Filter Mesh (optional)	Interchangeable	Interchangeable	HB or HBF min.	UL 94, UL 746C	UL
Internal Plastic Parts	Interchangeable	Interchangeable	Min. V-2 or HF-2	UL 94, UL 746C	UL
Switching Power Supply	Delta Electronics Inc	DPS-350AB-38 XX (X= 0-9, A-Z or blank)	AC Input: 100-240 V, 50-60 Hz, 4.0 A. DC Output: +12.1 VMAIN, 18 A, +12.1 VCPU, 18 A, +12.1 VCPU2, 18 A. MAX POWER 350 W. 50 °C. Altitude during operation 5000 m.	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009+A1: 2010 +A12:2011 + A2:2013. IEC 62368-1:2014, EN 62368-1:2014 + A11:2017 UL60950-1 UL62368-1	CB by TUV Rh, UL (E131881)
Alternate	Acbel Polytech Inc	PCK002	AC Input: 100-240 V, 50-60 Hz, 4 A. DC Output: +12.1 VMAIN, 18 A, +12.1 VCPU1, 18 A, +12.1 VCPU2, 18 A. MAXIMUM POWER SHALL NOT EXCEED 350 W. 45 °C (50 °C for UL) Altitude during operation 5000 m.	IEC 60950-1: 2005 (Second Edition) + Am 1:2009 + Am2: 2013, EN 60950-1:2006+ A11:2009 + A1:2010 + A12:2011 + A2:2013. IEC 62368-1: 2014, EN 62368-1:2014 +A11:2017 UL62368-1	CB by TUV Rh, UL (E131875)
Alternate	Lite-On Technology Corporation	PA-5501-2YXXXXX (Y= A-Z, hyphen or blank; X= A-Z, 0-9, hyphen or blank)	AC Input: 100-240 V, 50-60 Hz, 6 A. DC Output: +12.1 VMAIN, 18 A, +12.1 VCPU1, 18 A, +12.1 VCPU2, 18 A, +12.1 VG1, 18 A, +12.1 VG2, 18 A; +12.1 VMAIN & +12.1 VCPU1 & +12.1 VCPU2 & +12.1 VG1 & +12.1 VG2 Total output power can't exceed 500 W. 50 °C. Altitude during operation 5000 m.	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1: 2010 + A12:2011 + A2:2013. IEC 62368-1:2014, EN 62368-1:2014 + A11:2017 UL62368-1	CB by TUV Rh, UL (E132068)

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Alternate	Delta Electronics Inc	DPS-500AB-51 XX (X= 0-9, A-Z, blank)	AC Input: 100-240 V, 50-60 Hz, 6 A. DC Output: +12.1 VMAIN, 18 A, +12.1 VCPU1, 18 A, +12.1 VCPU2, 18 A (+12.1 VCPU1 and +12.1 VCPU2 TOTAL 320 W MAX.) +12.1 VG1, 18 A, +12.1 VG2, 18 A (+12.1 VG1 and +12.1 VG2 TOTAL 320 W MAX.) MAX POWER 500 W. 50 °C. Altitude during operation 5000 m.	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013. IEC 62368-1:2014, EN 62368-1:2014 + A11:2017 UL62368-1	CB by TUV Rh, UL (E131881)
Alternate	Chicony Power Technology Co Ltd	D19-700P1A	AC Input: 100-240 V, 50-60 Hz, 8.2 A. DC Output: +12.1 Vmain, 18 A, +12.1 Vcpu1, 18 A, +12.1 Vcpu2, 18 A, +12.1 Vg1, 18 A, +12.1 Vg2, 18 A. Total output shall not exceed 700 W. Maximum output power: 700 W. 50 °C. Altitude during operation 5000 m.	IEC 60950-1:2005 (Second Edition) + Am 1:2009+Am 2: 2013, EN 60950-1:2006+ A11:2009 + A1:2010 +A12: 2011 + A2:2013. IEC 62368-1:2014, EN 62368-1:2014 + A11:2017 UL62368-1	CB by TUV Rh, UL (E143709)
Hard Disk Drive (HDD) (optional)	Toshiba Electronic Devices & Storage Corporation	HDWL1yy (y= 11-99)	1.0 A, 3.3 Vdc, 1.0 A, 5.0 Vdc.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by CSA, TUV, UL (E145163)
Alternate	HGST Japan Ltd	H series	1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc.	IEC 60950-1: 2005+ A1+A2,EN 60950-1: 2006+ A11+A1+A12+A2, UL 60950-1 ed.2	CB by TUV Rh, UL (E182115)
Alternate	Western Digital Technologies Inc	WDUUUUZVTX-YYXXXYY series, where WD is Western Digital. May or may not be present; where UUUU may be any number or blank indicating memory capacity; Z may be any alpha character indicating memory capacity multiplier	Class III supplied by SELV. Ratings are not required and are provided for reference only. 1.5 A max., 5.0 Vdc or 1.5 A max., 5.0 Vdc, 1.0 A max., 12 Vdc.	IEC 62368: 2014, IEC 60950-1:2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E101559)

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		and physical for factor; VTX may be any alphanumeric character indicating business unit, RPM/buffer and interface; YYXXXYY may be any alphanumeric character or blank indicating SELV logic/configuration, firmware, etc. Can be 3 to 7 alphanumeric characters.			
Alternate	or equivalent	or equivalent	Ratings are not required and provided for reference only: 1.0 A max., 3.3 Vdc, 1.0 A max., 5.0 Vdc or 1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc or 1.5 A max., 5.0 Vdc.	IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1: 2005+ A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2,UL62368-1 ed.2, UL 60950-1 ed.2	Verify by other cert. body, UL
Solid State Drive (SSD) (optional)	Samsung Electronics Co Ltd	MZ-K********** (* can be 0-9, A- Z, blank, slash or dash)	4.8 A, 3.3 Vdc.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by TUV Rh, UL (E149091)
Alternate	Lite-On Technology Corporation	CA1-GDxxxxxxx (where "x" can be any alphanumeric or blank)	3.5 A, 3.3 Vdc (optional)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 60950-1 ed.2	CB by TUV Rh, UL (E205203)
Alternate	Kingston Digital International Ltd Taiwan Branch	*******SA1000*** ********* (the "*" maybe alphanumeric, capacity,character, "-" or blank)	3.0 A, 3.3 Vdc (optional)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (DEMKO), UL (E333487)
Alternate	Lite-On Technology Corporation	K2-L1xxxxxxxx ("x" can be any alphanumeric character or blank)	2.5 A, 5.0 Vdc.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 60950-1 ed.2	CB by TUV Rh, UL (E205203)
Alternate	Western Digital Technologies Inc	GRxxxyy-x (where x and y are any alphanumeric character, or blank representing non-safety critical features such as memory size)	Class III supplied by SELV. Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc.	IEC 60950-1:2005+A1+A2, EN 60950-1: 2006+ A11+A1+ A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E332258)

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Alternate	Intel Corp	SSD* (where * can be optional letters or numbers used to identify features such as memory type, size (thickness, width) and identify details not critical to the compliance of the drive)	3.3 Vdc, 5.0 Vdc and/ or 12 Vdc. (for reference only)	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E139761)
Alternate	or equivalent	or equivalent	Ratings are not required and provided for reference only: 4.8 A max., 3.3 Vdc or 2.5 A max, 5.0 Vdc or 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc or 3.3 Vdc, 5.0 Vdc and/ or 12 Vdc.	IEC 62368-1: 2014,EN 62368-1: 2014+A11, IEC 60950-1: 2005+ A1+A2, EN 60950-1:2006+ A11+A1+A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	Verify by other cert. body, UL
Optical Disk Drive (ODD) (optional)	Hitachi-LG Data Storage Inc	U9** (where first "* " can be any number 0-9 and second "*" can be any alphanumeric character, denoting board name or the change of shape not related with safety)	1.8 A, 5.0 Vdc. Laser Class 1.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, IEC 60825-1:2007, UL 60950-1 ed.2	CB by Intertek, UL (E119002)
Alternate	Philips & Lite-On Digital Solutions Corporation	DG-xx3Sxxxxx (x can be any alphanumeric character or blank)	2.0 A, 5.0 Vdc, 1.25 A, 12 Vdc. (optional) Laser Class 1.	IEC 60950-1: 2005+ A1+A2, EN 60950-1:2006+ A11+A1+A12+A2, IEC 60825-1: 2007, UL 60950-1ed.2	CB by TUV Rh, UL (E306430)
Alternate	or equivalent	or equivalent	Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc or 2.0 A max., 5.0 Vdc, 1.25 A max., 12 Vdc. Laser Class 1.	IEC 62368-1: 2014, EN 62368-1: 2014 +A11, IEC 60950-1: 2005 +A1+A2, EN 60950-1:2006 +A11+A1+A12+A2 , IEC 60825-1:2007, IEC 60825-1:2014, UL 62368-1 ed.2, UL 60950-1ed.2	Verify by other cert. body, UL
Speaker (optional)	Interchangeable	Interchangeable	4 ohm, 3 W max.	--	--
Heat sink for CPU	Interchangeable	Interchangeable	Aluminium.	--	--
CPU FAN(for Heat sink CPU type A)	HUIZHOU CITY XUNSHUO TECHNOLOGY CO LTD	DF0802512(X)UN, ((X) can beSE, B1, B2, RF, FD, PO)	DC 12V, Max. 0.60A, Min. 52.1CFM	EN62368-1 UL 507	TUV UL
Alternate	FOXCONN TECHNOLOGY CO LTD	PVA080G12Q	DC 12V, Max. 0.65A, Min. 60 CFM.	EN60950-1 UL 507	TUV UL

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Alternate	DELTA ELECTRONICS INC	AUB0812VJ-00XXXXXX (X= A-Z, 0-9, - or blank)	DC 12V, Max. 0.50A, Min. 53.05 CFM.	EN60950-1 UL 507	TUV UL
Alternate	Interchangeable	Interchangeable	DC 12V, Max. 0.65A, Min. 52.1CFM	EN60950-1 EN62368-1UL507	Verify by other cert. body, UL
CPU Fan (for Heat sink CPU type B, type C)	HUIZHOU CITY XUNSHUO TECHNOLOGY CO LTD	DF0922512(X)UN, ((X) can be SE, B1, B2, RF, FD, PO)	DC 12V, Max. 0.60A, Min. 65.8 CFM.	EN62368-1 UL 507	TUV UL
Alternate	FOXCONN TECHNOLOGY CO LTD	PVA092G12S	DC 12V, Max. 0.4A, Min. 60.0CFM.	EN60950-1 UL 507	TUV UL
Alternate	DELTA ELECTRONICS INC	AUB0912VH	DC 12V, Max. 0.60A, Min. 62.51 CFM.	EN60950-1 EN62368-1 UL 507	VDE UL
Alternate	Interchangeable	Interchangeable	DC 12V, Max. 0.60A, Min. 60.0CFM.	EN60950-1 EN62368-1 UL 507	Verify by other cert. body, UL
System fan (optional)	FOXCONN TECHNOLOGY CO LTD	PVA092G12H	DC 12V, Max. 0.4A, Min. 64.47CFM.	EN60950-1 UL 507	TUV UL
Alternate	DELTA ELECTRONICS INC	AUB0912VH	DC 12V, Max. 0.60A, Min. 62.51 CFM.	EN60950-1 EN62368-1 UL 507	VDE UL
Alternate	DELTA ELECTRONICS INC	AFB0912VH-A	DC 12V, Max. 0.60A, Min. 63.27 CFM.	EN60950-1 UL 507	VDE UL
Alternate	FOXCONN TECHNOLOGY CO LTD	PVA092G12S	DC 12V, Max. 0.4A, Min. 59.6CFM.	EN60950-1 UL 507	TUV UL
Alternate	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO LTD	EF92251BX- Q0(Z) ((Z) stands for 30 characters, each character stands for one of the following signs: 0-9, A-Z, "-", "(", ")", ".", "/" or blank.)	DC 12V, Max. 3.3W, Min. 57.0 CFM.	EN60950-1 UL 507	TUV UL
Alternate	Interchangeable	Interchangeable	DC 12V, Max. 0.60A, Min. 57.0 CFM.	EN60950-1 UL 507	Verify by other cert. body, UL
Blower fan (optional)	FOXCONN TECHNOLOGY CO LTD	PVB090G12L	DC 12V, Max. 0.88A, Min. 21.6CFM.	EN60950-1 UL 507	VDE UL
Alternate	Interchangeable	Interchangeable	DC 12V, Max. 0.88A, Min. 21.6 CFM.	EN60950-1 UL 507	Verify by other cert. body, UL
Graphics Card (optional)	NVIDIA CORP	PG150(sku510) (RTX6000)	Max. 295W, Complied with SELV and LPS requirement.	IEC 60950-1 UL 60950-1	CB by UL UL
Alternate	Interchangeable	Interchangeable	Max. 295W, Complied with SELV and LPS requirement.	IEC 60950-1 UL 60950-1	Verify by other cert. body, UL

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LAN port Card (Optional)	FOXCONN TECHNOLOGY CO LTD	TPC-F011AO	All output connector complies with limited power source (LPS)	--	--
-PWB	Interchangeable	Interchangeable	V-1 or better, Minimum 105 ⌊C	UL796	UL
General Accessory Card (Optional)	Interchangeable	Interchangeable	No laser, fans, liquid cooling, TV/cable tuners, batteries or TNV employed.	--	--
Motherboard	FOXCONN TECHNOLOGY CO LTD	FMB-2001	Motherboard UL approval covers the PWB material, lithium battery, lithium battery protect circuit, connector plastics, and any other plastics, and foam materials used, and the operator accessible connector over current protection	UL 62368-1	UL
Alternate	FOXCONN TECHNOLOGY CO LTD	FMB-2002	Motherboard UL approval covers the PWB material, lithium battery, lithium battery protect circuit, connector plastics, and any other plastics, and foam materials used, and the operator accessible connector over current protection	UL 62368-1	UL
-PWB	Interchangeable	Interchangeable	V-1 or better, Minimum 105 ⌊C	UL796	UL
-RTC Battery	SHUN WO NEW POWER BATTERY TECHNOLOGY LTD	CR2032*, * - Cell model numbers may be followed by an optional slash (/) and single or Multiple alphanumeric characters which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	JHIH HONG TECHNOLOGY CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	Interchangeable	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL

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- Poly Switch (VF1 for display port (J63), VF100 for display port (J64))	Littelfuse Inc	0805L110ULXX YYYYY (X, Y stands for A to Z, 0 to 9 or blank)	1.1 A, 6 V min.	EN 60730-1 UL 1434	TUV Rheinland, UL
Alternate	Polytronics Technology Corp	SPR-P110	1.1 A, 6 V min.	EN 60730-1 UL 1434	TUV Rheinland, UL
Alternate	Interchangeable	Interchangeable	1.1 A, 6 V min.	EN 60730-1 UL 1434	TUV Rheinland, UL
IC Current Limiter (U52 for USB 2.0x2 (J9) and Serial port + PS2 Header (P77), U53 for front USB 3.0x2 (J81), U57 for front USB 3.0 (TOP J94), U55 for Rear US 3.0x2 (BOTJ10), U51 for Rear USB 3.0x2 (TOP J10))	DIODES INC	AP22811AW5-7	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 2.0 A Output Current Limit: 3.2 A CB: Operating Temperature: -40°C~ + 85°C	IEC 60950-1 UL2367	CB UL
Alternate	JOULWATT TECHNOLOGY CO LIMITED	JW7115S-2SOTA#TRPBF	Vin: 2.7-5.5Vdc, Vout: 2.7-5.5Vdc, Iout: 2.05-2.35A	IEC 62368-1 UL62368-1	CB UL
Alternate	WILL SEMICONDUCTOR	WS4612EDx-5/TR (x can be A, B, C or D, A for EN high enable & Discharge, B for EN low enable & Discharge, C for EN high enable & no Discharge, D for EN low enable & no Discharge.)	Input Voltage Range: 2.5Vdc to 5.5Vdc, Current Limit Rating: 2.1-2.7A	IEC 62368-1 IEC 60950-1 UL62368-1	CB UL
Alternate	SILERGY TECHNOLOGY (TAIWAN) INC	SY6288xyyyyy (x=A, B, C, D or E, yyyyy=0-9, A- Z or blank)	I/P= 2.5 to 5.5 Vdc. O/P= 5.5 Vdc max, 1.6 to 4.43 A max.	IEC 60950-1 UL2367	CB UL
IC Current Limiter (U63 for USB 3.0 (BOT J94)) (Alternate)	TEXAS INSTRUMENTS INCORPORATE D	TPS2546.Additional suffixes after the model number designate the type of integrated circuit package,integrated circuit lead types or other features that are considered not to affect the functionality of the device	Ratings: (Electrical ratings is optional) Input Voltage= 4.5 to 5.5 Vdc. Output Continuou Rating= 2.5 A. Outpu Current Limit = 3.1 A. Ambient = -40 to 85 °C.	IEC 60950-1 UL2367	CB UL
Graphics Card (optional)	Nvidia Corp	PG150 (sku510), Market name: RTX 6000,Quadro RTX 6000	N/A (SELV) 295 W max., Complied with ES1 and LPS requirement.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2,UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E204896)

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alt.	Nvidia Corp	PG212, Market name: Quadro P1000	Not required. (Supplied by SELV) 50 W max., Complied with ES1 and LPS requirement.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A 12+A2,UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (DEMKO), UL (E204896)
alt.	Interchangeable	Interchangeable	295 W max., certified by UL listed accessary	IEC 62368-1: 2018,EN 62368-1: 2020+A11: 2020, UL 62368-1 ed.3	Verify by other cert. body, UL
General Accessory Card (I/O card) (optional)	interchangeable	Interchangeable	Ratings are not required and provided for reference only: 3.3 or 5 or 12 Vdc. (50 W max.)	IEC 62368-1: 2018, EN 62368-1: 2020+A11: 2020, UL 62368-1 ed.3	Verify by other cert. body, UL
HP Front Type-C SuperSpeed USB 20Gbps port (optional)	Foxconn International Inc	TPC-F014AO	Electrical ratings not Required (the equipment intended for building-in, supplied by ES1:1.8 Vdc/ 3.3 Vdc/5.0 Vdc)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (DEMKO), UL
Motherboard	Foxconn International Inc	FMB-2011	12.1 Vdc.	UL 62368-1 ed.3	UL (E93839)
RTC Battery	Shun Wo New Power Battery Technology Ltd	CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc)	Max Abnormal Charging Current 10 mA.	UL1642 ed.5	UL (MH25881)
alt.	Jhih Hong Technology Co Ltd	CR2032	Max Abnormal Charging Current 10 mA.	UL1642 ed.5	UL (MH48406)
alt.	Mitsubishi Electric Home Appliance Co Ltd	CR2032	Max Abnormal Charging Current 10 mA.	UL1642 ed.5	UL (MH21249)
alt.	Interchangeable	CR2032 series	Max Abnormal Charging Current 10 mA.	UL1642 ed.5	UL
Polyswitch (VF1, VF100 for Display)	Littelfuse Inc	0805L110ULXX YYYYY (X, Y stands for A to Z, 0 to 9 or blank)	1.1 A, 6 V min.	IEC 60730-1: 2020,EN 60730-1: 2011, Clause 15, 17	TUV/RH, UL (E183209)

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				and Annex J, UL 1434 ed.1	
alt.	Polytronics Technology Corp	SPR-P110	1.1 A, 6 V min.	IEC 60730-1: 2020,EN 60730-1: 2011, Clause 15, 17 and Annex J, UL 1434 ed.1	TUV, UL (E201431)
alt.	Interchangeable	Interchangeable	1.1 A, 6 V min.	IEC 60730-1: 2020,EN 60730-1: 2011, Clause 15, 17 and Annex J, UL 1434 ed.1	Verify by other cert. body, UL
Power Distribution Switch (U51, U53, U55, U57 for USB 3.0 and U52 for USB 2.0)	Diodes Inc	AP22811AW5-7	Input Voltage: 2.7 to 5.5 Vdc. Output= 1. Output Continuous Rating= 2.0 A. Output Current Limit= 3.2 A. Operating Temperature= -40 to + 85 °C.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A 12+A2, UL 2367 ed.1	CB by UL (US), UL (E322375)
alt.	Joulwatt Technology Co Limited	JW7115S-2SOTA#TRPBF	Vin= 2.7 to 5.5 Vdc, Vout= 2.7 to 5.5 Vdc, Iout= 2.05 to 2.35 A.	IEC 62368-1: 2014,EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (DEMKO), UL (E497605)
alt.	Will Semiconductor	WS4612EDx-5/TR (x can be A, B, C or D, A for EN high enable & Discharge, B for EN low enable & Discharge, C for EN high enable & no Discharge, D for EN low enable & no Discharge)	Ratings: (Optional) Input Voltage Range= 2.5 to 5.5 Vdc. Current Limit Rating= 2.1 to 2.7 A.	IEC 62368-1: 2014,EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (DEMKO), UL (E486497)
alt.	Silergy Corp	SY6288xyyyyy (x= A, B, C, D or E, yyyyy= 0-9, A- Z or blank)	I/P= 2.5 to 5.5 Vdc. O/P= 5.5 Vdc max, 1.6 to 4.4 A max.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A 12+A2, UL 2367 ed.1	CB by TUV Rh, UL (E491480)
Power Distribution Switch (U63 for USB 3.0)	Texas Instruments Inc	TPS2546 (additional suffixes after the model number designate the type of integrated circuit package, integrated circuit lead types or other features that are considered not to affect the functionality of the device)	Ratings: (Electrical ratings is optional) Input Voltage=4.5 to 5.5 Vdc. Output Continuous Rating= 2.5 A. Output Current Limit= 3.1 A. Ambient = -40 to 85 °C.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A 12+A2, UL 2367 ed.1	CB by UL (US), UL (E169910)

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Metal Chassis	--	--	Sheet steel or steel, thickness 0.8 mm min.	--	--
Plastic Front Panel (Construction 1)	UR Materials Industry (Shenzhen) Co Ltd	210	HB min., 60 °C min., thickness 2.5 mm min.	UL 94 ed.6 UL 746C	UL (E323548)
Plastic Front Panel (Construction 2)	--	--	Consists of three parts, see below for details.	--	--
- Dust-proof decoration (Option)	INEOS STYROLUTION GROUP GMBH	GP-22	HB min., 60 °C min., thickness 2.0 mm min.	UL 94 ed.6 UL 746C	UL (E108538)
- Dust-proof front panel (Option)	UR Materials Industry (Shenzhen) Co Ltd	210	HB min., 60 °C min., thickness 2.5 mm min.	UL 94 ed.6 UL 746C	UL (E323548)
- Dust Filter Mesh (Option)	LG CHEM LTD	HI121	HB min., 90 °C min., thickness 1.7 mm min.	UL 94 ed.6 UL 746C	UL (E67171)
alt.	NAN YA PLASTICS CORP PLASTICS 3RD DIV	6300	HB min., 90 °C min., thickness 1.7 mm min.	UL 94 ed.6 UL 746C	UL (E130155)
alt.	Interchangeable	Interchangeable	HB or HBF min	UL 94 ed.6 UL 746C	UL
Front I/O Cover on Plastic Front Panel	Interchangeable	Interchangeable	Sheet steel or steel, thickness 0.2 mm min.	--	--
Internal wiring	Interchangeable	Interchangeable	PVC, TFE, PTFE, FEP, or neoprene insulated, or surface marked “VW-1 or FT-1”, rated minimum 300 V, 105° C, routed away from mechanically moving parts and does not pass over sharp edges. Wiring in LVISC may be rated min. 30 V, 80C.	UL 758, CSA C22.2 No. 210.2	UL, cUL or CSA
Insulating Tubing/Sleeving	Interchangeable	Interchangeable	PVC, TFE, PTFE, FEP, or neoprene insulated, or surface marked “VW-1 or FT-1”, rated minimum 300 V, 105° C	UL 224	UL
External Decorate Parts	Interchangeable	Interchangeable	HB or HBF min.	UL 94 ed.6	UL
Internal Plastic Parts	Interchangeable	Interchangeable	V-2 or VTM-2 or HF-2 min.	UL 94 ed.6	UL
PCB	Interchangeable	Interchangeable	V-1 min., 105 °C min.	UL 796 ed.11	UL
Switching Power Supply	Acbel Polytech Inc	PCK002-0	AC I/P:100-240V~, 50-60Hz, 4.2A. DC O/P: +12.1VMAIN/18.0A.	UL/cUL 62368-1 Ed.3 IEC 62368-1:	CB by TUV (JPTUV-127970)

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			+12.1VCPU/18.0A. +12.1VCPU2/18.0A. MAXIMUM POWER SHALL NOT EXCEED 350W MAXIMUM POWER SHALL NOT EXCEED 350W The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C	2018 IEC 60950-1:2005+A1+A2	UL (E131875)
alt.	Delta Electronics, Inc	DPS-350AB-44 XX (X=A-Z, 0-9, or blank)	AC Input: 1-2). 100-240V~, 50-60Hz, 4.2A; DC Output: +12.1V MAIN, 18A; +12.1V CPU, 18A; +12.1V CPU2, 18A; +12.1VCPU and +12.1VCPU2 TOTAL 320.0W MAX.; TOTAL 350W MAX. The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C	IEC 62368-1: 2014 IEC 60950-1:2005+A1+A2	CB by TUV (JPTUV-104850-M2)
alt.	Delta Electronics, Inc.	1.DPS-450AB-30 XX (X = 0-9, A-Z, Blank)	1.AC I/P: 100-240 V, 5.5 A, 50-60 Hz. Class I. DC O/P: 18.0 A +12.1V MAIN, 18.0 A,+12.1V CPU. 18.0 A, +12.1VCPU2.(+12.1VCPU and +12.1VCPU2 TOTAL 320.0W MAX.) MAX POWER 450W The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C	IEC 62368-1: 2014 IEC 60950-1: 2005+A1+A2 UL 62368-1 ed.2	CB by TUV/Rh, UL (E131881)
		2.DPS-500AB-51 XX (X = 0-9, A-Z, Blank)			
			2.AC I/P:100-240 V, 6 A, 50-60 Hz. Class I. DC O/P: +12.1VMAIN, 18A;		

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			+12.1VCPU1, 18A; +12.1VCPU2, 18A; (+12.1VCPU1 and +12.1V CPU2 TOTAL 320.0W MAX.); +12.1V G1, 18A; +12.1VG2, 18A; (+12.1VG1 and +12.1VG2 TOTAL 320.0W MAX.) MAX POWER 500W The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C		
alt.	Lite-On Technology Corporation	1.PA-3451-1YXXXXX (Y = A-Z, or "-" or blank ; X can be A-Z, 0-9, "-" or blank) 2.PA-5501-2YXXXXX (Y = A-Z, or "-" or blank ; X can be A-Z, 0-9, "-" or blank)	1.Input: 100-240 VAC, 5.5A, 50-60Hz Output: +12.1VMAIN / 18A, +12.1VCPU / 18A, +12.1VCPU2 / 18A; +12.1VMAIN & +12.1VCPU & +12.1VCPU2 Total power can't exceed 450W. The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C 2.Input: 100-240 VAC, 6A, 50-60Hz Output: +12.1VMAIN / 18A, +12.1VCPU1 / 18A, +12.1VCPU2 / 18A, +12.1VG1 / 18A, +12.1VG2 / 18A; +12.1VMAIN & +12.1VCPU1 & +12.1VCPU2 &+12.1VG1 & +12.1VG2 Total output power can't exceed 500W The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C	IEC 62368-1:2014, EN 62368-1:2014 +A11, IEC 62368-1:2018, IEC 60950-1:2005+A1+A2 UL 62368-1 ed.3 UL 62368-1 ed.2	CB by TUV (JPTUV-125629) UL (E132068)

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alt.	Chicony Power Technology Co., Ltd.	D19-700P1A	I/P: 100-240Vac, 8.2A, 50-60Hz O/P: DC 18A +12.1Vmain, 18A +12.1Vcpu1, 18A +12.1V cpu2, 18A +12.1Vg1, 18A +12.1Vg2 Total output shall not exceed 700W Maximum output power: 700W The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C	UL/cUL 62368-1 EC 62368-1:2014 IEC 60950-1:2005+A1+A2	CB by TUV (JPTUV-104291-M1) UL (E132068)
Hard Disk Drive(HDD) (optional)	Western Digital Technologies Inc	WDUUUUZVTX -YYXXXYY series, where WD is Western Digital. May or may not be present; where UUUU may be any number or blank indicating memory capacity; Z may be any alpha character indicating memory capacity multiplier and physical for factor; VTX may be any alphanumeric character indicating business unit, RPM/buffer and interface; YYXXXYY may be any alphanumeric character or blank indicating SELV logic/ configurati on, firmware, etc. Can be 3 to 7 alphanumeric characters.	Class III supplied by SELV. Ratings are not required and are provided for reference only. 1.5 A max., 5.0 Vdc, 1.0 A max., 12 Vdc.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by UL (US) UL (E101559)
alt.	Toshiba Electronic Devices & Storage Corporation	HDWL1yy (y= 11-99)	1.0 A, 3.3 Vdc, 1.0 A, 5.0 Vdc.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+ A11+A1+A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by TUV UL (E145163)
alt.	HGST Japan Ltd	DH series	1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1 +A12+A2, UL 60950-1 ed.2	CB by TUV/Rh UL (E182115)

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alt.	SK Hynix Inc	HFSabcD0FEH-defgh (The suffix 'a', 'b' and 'c' denoting memory capacity can be any letter (A to Z) or number (0 to 9), 'd', 'e', 'f','g' and 'h' denoting buyer can be any letter(A to Z) or number (0 to 9))	3.3 A, 3.3 Vdc.	IEC 62368-1: 2018, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by TUV/SUD UL (E333981)
alt.	SK Hynix Inc	HFSabcd32TC H-7efgh ('a', 'b', 'c' and 'd' denoting memory capacity can be any letter (A to Z) or number (0 to 9), 'e', 'f', 'g' and 'h' denoting buyer can be any letter (A to Z) or number (0 to 9))	2.0 A, 5.0 Vdc.	IEC 62368-1: 2018, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by TUV/SUD UL (E333981)
alt.	SK Hynix Inc	HFSabcGETFEI-defgh (The suffix 'a', 'b' and 'c' denoting memory capacity can be any letter (A to Z) or number (0 to 9), 'd', 'e', 'f', 'g' and 'h' denoting buyer can be any letter (A to Z) or number (0 to 9))	2.1 A, 12 Vdc.	IEC 62368-1: 2018, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by TUV/SUD UL (E333981)
alt.	or equivalent	or equivalent	Ratings are not required and provided for reference only: 3.3 A max., 3.3 Vdc or 2.0 A max., 5.0 Vdc or 2.1 A max., 12 Vdc or 1.0 A max., 3.3 Vdc, 1.0 A max., 5.0 Vdc or 1.5 A max., 5.0 Vdc, 1.0 A max., 12 Vdc.	IEC 62368-1: 2018, IEC 62368-1:2014, EN 62368-1: 2014 +A11, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1 +A12+A2, UL 60950-1 ed.2, UL 62368-1 ed.3	Verify by other cert. body, UL
Solid State Drive (SSD) (optional)	Samsung Electronics Co Ltd	MZ-K********** (* can be 0-9, A-Z, blank, slash or dash)	4.8 A, 3.3 Vdc.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1 +A12+A2, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by TUV/Rh UL (E149091)
alt.	Solid State Storage Technology Corp	K2-L1xxxxxxxx ("x" can be any alphanumeric character or blank)	2.5 A, 5.0 Vdc.	IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1:2005+A1	CB by TUV/Rh UL (E205203)

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				+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 60950-1 ed.2, UL 62368-1 ed.3	
alt.	Solid State Storage Technology Corp	ED1-2Wxxxxxxx (where "x" can be any alphanumeric character or blank)	2.0 A, 12 Vdc (optional)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1: 2005+ A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by UL (Demko) UL (E205203)
alt.	Western Digital Corporation	GRxxxyy-x (x, y =0-9, A-Z, blank; not safety- relevant)	Class III supplied by SELV. Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc, 3.0 A max., 3.3 Vdc, 1.8 A max., 12 Vdc.	IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006 +A11+A1+A12+A2 , UL 60950-1 ed.2, UL 62368-1 ed.3	CB by UL (US) UL (E332258)
alt.	Intel Corp	SSD* (where * can be optional letters or numbers used to identify features such as memory type, size (thickness, width) and identify details not critical to the compliance of the drive)	3.3 Vdc, 5.0 Vdc and/ or 12 Vdc. (for reference only)	UL 62368-1 ed.3,	CB by UL (US) UL (E139761)
alt.	or equivalent	or equivalent	Ratings are not required and provided for reference only: 4.8 A max., 3.3 Vdc or 2.5 A max, 5.0 Vdc or 2.0 A max., 12 Vdc or 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc or 3.3 Vdc, 5.0 Vdc and/ or 12 Vdc.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005 IEC 60950-1: 2005/ A1: 2009, IEC 60950-1: 2005/ A2: 2013, UL 62368-1 ed.3	Verify by other cert. body, UL
Optical Disk Drive (ODD) (optional)	LG ELECTRONICS INC	DU9** (Where first "*" can be any number 0-9 and second "*" can be any alphanumeric character, denoting non safety related differences)	1.6 A or 1.8A, 5.0 Vdc. Laser Class 1.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1 +A12+A2, IEC 60825-1:2014, UL 60950-1 ed.2 UL 62368-1 ed.3	CB by Intertek UL (E119002)
alt.	Philips & Lite- On Digital Solutions	DG-xx3Sxxxxx (x can be any alphanumeric	2.0 A, 5.0 Vdc, 1.25 A, 12 Vdc. (optional)	IEC 62368-1: 2014, IEC 60950-1:	CB by TUV/Rh UL (E306430)

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	Corporation	character or blank)	Laser Class 1.	2005+A1+A2, EN 60950-1: 2006+A11+A1 +A12+A2, EN 60825-1:2007, UL 60950-1 ed.2 UL 62368-1 ed.3	
alt.	LG Electronics Inc	GHB** (where the "*" can be 0~9, A~Z, any alphanumeric character or blank according to design, brand, buyer, color, software or other configurations, denoting non safety related differences)	2.0 A, 5.0 Vdc, 2.5 A, 12 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by Intertek UL (E119002)
alt.	or equivalent	or equivalent	Ratings are not required and provided for reference only: 2.0 A max., 5.0 Vdc, 1.25 A max., 12 Vdc. 2.5 A max.,12 Vdc. Laser Class 1.	IEC 62368-1: 2014, IEC 62368-1:2018, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, EN 60825-1: 2007, UL 60950-1 ed.2UL 62368-1 ed.3	Verify by other cert. body, UL
Speaker (optional)	--	--	4 ohm, 3 W max.	--	--
CPU Fan (for Type-A CPU Heat sink)	Foxconn Technology Co., Ltd	PVA092G12S	0.40 A max., 12 Vdc, 70.48 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E231557)
alt.	Huizhou City Xunshuo Technology Co., Ltd	DF0922512(X)U N (above (X) may be SE,B1,B2,RF,F D,PO)	0.60 A max., 12Vdc, 80.04 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E465463)
alt.	Interchangeable	Interchangeable	0.60 A max., 12Vdc, 70.48 CFM min. Rotating speed: 4500±10% RPM max., Fan radius: 46mm max., Mass of moving parts: 34.2g max.	EN 62368-1: 2014, UL 507 ed.10	Verify by other cert. body, UL
CPU Fan (for Type-C CPU Heat sink)	Foxconn Technology Co., Ltd	PVA080G12Q	0.65 A max., 12 Vdc, 60.0 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV UL (E231557)
alt.	Delta Electronics, Inc.	AUB0812VJ-00XXXXXX (X stands for A- Z,0-9,- or blank for marketing purpose only)	0.50 A max., 12Vdc,53.05 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV UL (E132003)
alt.	Huizhou City Xunshuo Technology Co., Ltd	DF0802512(X)U N (above (X) may be SE,B1,B2,RF,F	0.60 A max., 12Vdc, 52.7 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV UL (E365488)

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		D,PO)			
alt.	Interchangeable	Interchangeable	0.65 A max.,12 Vdc, 52.7 CFM min. Rotating speed: 4500±10% RPM max, Fan radius: 40mm max, Mass of moving parts: 31.4g max	EN 62368-1: 2014, UL 507 ed.10	Verify by other cert. body, UL
CPU Fan (for Type-B CPU Heat sink)	Foxconn Technology Co., Ltd	PVA092G12S	0.40 A max., 12 Vdc, 70.48 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E231557)
alt.	Huizhou City Xunshuo Technology Co., Ltd	DF0922512(X)U N (above (X) may be SE,B1,B2,RF,F D,PO)	0.60 A max., 12Vdc, 80.04 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E365488)
alt.	Interchangeable	Interchangeable	0.60 A max., 12Vdc, 70.48 CFM min. Rotating speed: 4500±10% RPM max., Fan radius: 46mm max., Mass of moving parts: 34.2g max.	EN 62368-1: 2014, UL 507 ed.10	Verify by other cert. body, UL
Front System Fan (2 unit)(optional when graphic card＜80W)	Foxconn Technology Co., Ltd	PVA060F12Q	0.20 A max., 12 Vdc, 22.0 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E231557)
alt.	Sunonwealth Electric Machine Industry Co., Ltd	MF60201VX- 1QZ (Z) stands for 30 characters. Each character standards for one of the following signs):0-9,A- Z,(,),.,/,- or blank for marketing purpose only, no safety critical related.	0.252 A max., 12Vdc, 22.0 CFM min.	IEC/EN 61000-6-1:2019 IEC/EN 61000-6-3:2021 EN 62368-1: 2014, UL 507 ed.10	CB by TUV Rh (R 50275749), UL
alt.	Interchangeable	Interchangeable	0.252 A max., 12Vdc, 22.0 CFM min. Rotating speed: 5400±15% RPM max., Fan radius: 30mm max., Mass of moving parts: 16.9g max.	EN 62368-1: 2014, UL 507 ed.10	Verify by other cert. body, UL
Rear System fan	Sunonwealth Electric Machine Industry Co.,Ltd.	PF92251V3- 1Q07Z (Z) stands for 30 characters. Each character standards for one of the following signs):0-9,A-Z,(,),.,/,- or blank for marketing purpose only, no safety critical related.	0.56 A max., 12 Vdc, 72.0 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E77551)
alt.	Foxconn Technology Co., Ltd	PVA092G12H- P29	1.20A max., 12Vdc, 70.92 CFM min.	EN 62368-1: 2014,	CB by TUV Rh (R 50275749), UL

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				UL 507 ed.10	
alt.	Interchangeable	Interchangeable	1.20 A max., 12Vdc, 70.92 CFM min. 3900±10% RPM max., Fan radius: 41mm max., Mass of moving parts: 47.6g max.	EN 62368-1: 2014, UL 507 ed.10	Verify by other cert. body, UL
HP Z2 G9 Single Type-C SuperSpeed USB 20Gbps Front Port	Foxconn Technology Co., Ltd	FSW-F001AO	Not required. (Supplied by ES1)	UL 62368-1 ed.3	UL (E93839)
- IC Current Limiter (U7 for USB Type- C(J210))	Cypress Semiconductor Corp.	CYAC1126-40LQXI ACG1F	Input: 2.7-5.5Vdc; 4.85-5.5Vdc (VCONN) Output: 5Vdc, 3A, 15W (VBUS); 5Vdc, 200mA, 1W (VCONN) (Protective Current 4.2A, include drift)	IEC/EN 62368-1:2014 UL2367	CB by UL (US), UL(E331901)
Motherboard	Foxconn Technology Co., Ltd	FMB-2201	All output connector comply with limited power source(LPS)	UL 62368-1 ed.3	UL (E93839)
RTC Battery	Shun Wo New Power Battery Technology Ltd	CR2032* (* -Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc)	Max Abnormal Charging Current 10 mA.	UL1642 ed.6	UL (MH25881)
alt.	Jhih Hong Technology Co Ltd	CR2032	Max Abnormal Charging Current 10 mA.	UL1642 ed.6	UL (MH48406)
alt.	Double Best Co Ltd	CR2032 (j)(k) (j- These cells may have various insulating tube, ring, or tape k - These cells and batteries may come with an optional single or multiple alphanumeric suffix denoting various pin, tab, cap or wire termination types)	Max Abnormal Charging Current 10 mA.	UL1642 ed.6	UL (MH46388)
alt.	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2032	Maximum abnormal charging current 10mA, protected by diode (D4) and 1Kohm resistor (R321).	UL1642 ed.6	UL (MH21249)

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alt.	Interchangeable	CR2032 series	Max Abnormal Charging Current 10 mA.	UL1642 ed.5	UL
Power Distribution Switch (U63) for USB ports (J94 pin 10) use	TEXAS INSTRUMENTS INCORPORAT ED	TPS2546, maybe followed by Q, may be followed by RTE, may be followed by R or T, may be followed by Q1	Input Voltage : 4.5Vdc to 5.5Vdc; Cont. Current: 2.5A; Prot. Current: 3.1A.	IEC 62368-1: 2014 UL 2367 ed.2	CB by UL (US), UL (E169910)
alt.	DIODES INC	PI5USB2546ZH DEX	Input Voltage: 4.5 -5.5 Vdc Continuous Rating: 30 mA to 2.5 A Current Limit: 100 mA to 3.18 A Ambient: -40 to 85°C	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E340734)
Metal Chassis	Interchangeable	Interchangeable	Sheet steel or steel, thickness 0.91 mm min. See Enclosures- Diagrams 4-01 for details.	--	--
Power Supply Cord (optional)	Interchangeable	Interchangeable	Detachable. Types NISP-2, NISPE-2, NISPT-2, SP-2, SPE- 2, SPT-2, SP-3, SPE-3, SPT-3, SV, SVE, SVO, SVOO, SVT, SVTO, SVTOO, SJ, SJE or SJT. 240 Vac 1.5 m min. long, rated VW-1, one end with grounding type NEMA 5-15P or NEMA 6- 15P, the other end with an appliance coupler. No. 14 AWG min.	UL 817 ed.2	UL
Interconnecting Cable (optional)	Interchangeable	Interchangeable	Detachable, 3.05 m long max., 30 V min., 70 °C min., suitable for external use, jacketed, VW-1 or FT-1.	UL 758, ed.3 or UL 444, ed.5 or UL 1863 ed.4	UL
Certification Marks, Rating Label and Grounding/ Warning Label Materials	CCL Design (Suzhou) Co Ltd (Worldmark)	3311T-E2a	Used in combination with Printer/ Ribbon DPW3000-140-450. Affixed to the metal surface.	UL 969 ed.5	UL (MH20595)
alt.	Interchangeable	Interchangeable	70 °C min.	UL 969 ed.5	UL
Front Handle Cover	UR Materials Industry (Shenzhen) Co Ltd	210	HB min., 60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL (E323548)
Plastic Bezel (front)	UR Materials Industry (Shenzhen) Co Ltd	210	HB min., 60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL (E323548)
alt.	Sabic Innovative Plastics US L L C	C6200(GG)	HB min., 60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL (E121562)
alt.	Interchangeable	Interchangeable	HB min.,60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL
Blank Panel (optional, when	Sabic Innovative Plastics US L L C	925(GG)	V-2 min., 120 °C min., thickness 0.8 mm min.	UL 94 ed.6	UL (E121562)

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Removable Storage Modules, ODD not provided)					
Base Foot	Interchangeable	Interchangeable	HB min.	UL 94 ed.6	UL
Rubber Feet (on Base Foot) (optional)	Interchangeable	Interchangeable	HB or HBF min.	UL 94 ed.6	UL
PCB	Interchangeable	Interchangeable	V-1 min., 105 °C min.	UL 796 ed.11	UL
Interlock Switch	Dongguan City Rising Sun Electronics Co Ltd	MSS	5.0 A, 125 V. 3.0 A, 250 V.	EN 61058-1: 2002+A2, EN 61058-1-1: 2016, EN IEC 61058-1: 2018, UL 61058-1 ed.5	TUV, UL (E477493)
Switching Power Supply (PSU)	Lite-On Technology Corporation	PS-2771-3XXXXXX (X= 0-9, A-Z, hyphen or blank)	AC I/P: 100-240 V, 10.0 A, 50-60 Hz. DC O/P: +12 V/ 64.6 A, +12 Vsb/ 4.32 A. Total power can't exceed 775 W. Class I, 45.0 °C. Altitude during operation 5000 m.	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1:2005+A1 +A2, UL 62368-1 ed.3	CB by TUV/Rh, UL (E132068)
alt.	Lite-On Technology Corporation	PS-2521-3XXXXXX (X= 0-9, A-Z, hyphen or blank)	AC I/P: 100-240 V, 10.0 A, 50-60 Hz. DC O/P: +12 V/ 43.75 A, +12 Vsb/ 4.13 A. Total power can't exceed 525 W. Class I, 45.0 °C. Altitude during operation 5000 m.	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3	CB by TUV/Rh, UL (E132068)
alt.	Delta Electronics Inc	DPS-775AB-1 XX (X= 0-9, A-Z or blank)	AC I/P: 100-240 V, 10.0 A, 50-60 Hz. DC O/P: +12.1 V/ 64.6 A, +12 VSB/ 4.32 A Class I, 45.0 °C. Altitude during operation 5000 m.	IEC 62368-1: 2018, EN IEC 62368-1: 2020+ A11, IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3	CB by UL (Demko), UL (E131881)
alt.	Delta Electronics Inc	DPS-1125AB-5 XX (X= 0-9, A-Z or blank)	AC I/P: 100 V, 12.0 A, 50-60 Hz. DC O/P: V12,1⎓: +12 Vdc/ 93.75 A, 12VSB⎓: +12 Vdc/ 5.75A, max. total output 1125 W or AC I/P: 115-127 V, 12.0 A, 50-60 Hz. DC O/P: V12,1⎓: +12 Vdc/ 106.25 A, 12VSB⎓:	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3	CB by TUV/Rh, UL (E131881)

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			+12 Vdc/ 5.75 A, max. total output 1275 W or AC I/P: 200-240 V, 10.0 A, 50-60 Hz. DC O/P: V12,1⎓: +12 Vdc/ 120.9 A, 12VSB⎓: +12 Vdc/ 5.75 A, max. total output 1450 W. Class I, 50.0 °C. Altitude during operation 5000 m.		
Front SYS Fan (optional)	Foxconn Technology Co Ltd	PVA092G12H- P29	1.2 A max., 12 Vdc, 70.2 CFM min.	EN IEC 62368-1: 2020+A11, EN 62368-1: 2014+ A11, UL 507ed.10	TUV, UL (E231557)
alt.	HeYuan Yongjia Industry Co Ltd	AS9025V12	0.6 A max., 12 Vdc, 64.92 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)
alt.	Interchangeable	Interchangeable	1.2 A max., 12 Vdc, 64.92 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Rear SYS Fan	Foxconn Technology Co Ltd	PVA120G12U	0.75 A max., 12 Vdc, 115.2 CFM min.	EN IEC 62368-1: 2020+A11, EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	HeYuan Yongjia Industry Co Ltd	AB12025S12	0.65 A max., 12 Vdc, 115.5 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)
alt.	Interchangeable	Interchangeable	0.75 A max., 12 Vdc, 115.2 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-12005+A1 + A2, UL 507 ed.10	Verified by other certificate body, UL
Dual Memory Fan (front and rear) (optional)	Foxconn Technology Co Ltd	PVA060G12S-***-** (*=0-9 or A-Z, a-z)	2.0 A max., 12.0 Vdc, 56.1 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	HeYuan Yongjia Industry Co Ltd	FAB6025N12	1.5 A max., 12 Vdc, 52.9 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)
alt.	Interchangeable	Interchangeable	2.0 A max., 12.0 Vdc, 52.9 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Side Panel Fan (front and rear) (optional)	Foxconn Technology Co Ltd	PVA080F12T-***-** (*=0-9 or A-Z, a-z)	0.9 A max., 12 Vdc, 63.1 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	HeYuan Yongjia Industry Co Ltd	AB8020S12	1.2 A max., 12 Vdc, 60.2 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)

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alt.	Interchangeable	Interchangeable	1.2 A max., 12 Vdc, 60.2 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+ A1+A2, UL 507 ed.10	Verified by other certificate body, UL
CPU Fan (inside the CPU HS)	Foxconn Technology Co Ltd	PVA120G12V	1.2 A max., 12 V dc, 115.2 CFM min.	EN IEC 62368-1: 2020+A11, EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	HeYuan YongJia Industry Co Ltd	FABB025N12	1.2 A max., 12 V dc, 113.6 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)
alt.	Huizhou City XunShuo Technology Co Ltd	DF1082512B2F g (g - series no. g can be a-z or blank for different markets)	1.0 A max., 12 V dc, 121.77 CFM.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E465463)
alt.	Interchangeable	Interchangeable	1.2 A max., 12 Vdc, 113.6 CFM min.	IEC 62368-1: 2018, IEC 62368-1:2014, IEC 60950-1: 2005+ A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Heatsink (HS) for CPU	Interchangeable	Interchangeable	Aluminium.	--	--
Removable Storage Modules (optional)	CRU Data Security Group LLC	DX175	5.0/ 12 Vdc, 3.0/ 6.0 A (optional)	UL 62368-1 ed.2	UL (E237918)
- HDD Box Fan	Yen Sun Technology Corp	FD124015MB- N-CBH	0.12 A max., 12 Vdc, 6.6 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E187205)
Hard Disk Drive (HDD) (optional)	SK Hynix Inc	HFS3T8GD0FE I-Aabcd (a, b, c and d denoting buyer can be any letter (A to Z) or number (0 to 9))	3.3 A, 3.3 Vdc. Class III.	IEC 62368-1: 2018, UL 62368-1 ed.3	CB by TUV/SUD, UL (E333981)
alt.	SK Hynix Inc	HFS3T8G32FE H-BA10A	2.0 A, 5.0 Vdc. Class III.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by TUV/SUD, UL (E333981)
alt.	SK Hynix Inc	HFS15T3DGLX 070N	2.1 A, 12 Vdc. Class III.	IEC 62368-1: 2018, UL 62368-1 ed.3	CB by TUV/SUD, UL (E333981)
alt.	Toshiba Electronic Devices & Storage Corporation	HDWL1yy (where "xx" may be any number 00-10, "yy" may be any number 11-99)	0.5 A, 3.3 Vdc, 0.7 A, 5.0 Vdc. (optional)	IEC 62368-1: 2014, UL 62368-1 ed.2	CB by UL (JP), UL (E145163)
alt.	HGST Japan Ltd	Hww7210nnKL A3nn	1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc. Class III.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 60950-1	CB by TUV/Rh, UL (E182115)

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				ed.2	
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 3.3 A max., 3.3 Vdc or 2.0 A max., 5.0 Vdc or 2.1 A max., 12 Vdc or 0.5 A max., 3.3 Vdc, 0.7 A max., 5.0 Vdc or 1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	Verified by other certificate body, UL
Solid State Drive (SSD) (optional, alternate when HDD not provided)	Samsung Electronics Co Ltd	MZ-K********** (* can be 0-9, A-Z, blank, slash or dash)	4.8 A, 3.3 Vdc.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by TUV/Rh, UL (E149091)
alt.	Solid State Storage Technology Corp (Lite-On)	K2-L1xxxxxxxx ("x" can be any alphanumeric character or blank)	2.5 A, 5.0 Vdc. Class III.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed. 2, UL 60950-1 ed.2	CB by TUV/Rh, UL (E205203)
alt.	Solid State Storage Technology Corp	ED1-2Wxxxxxxxx (where x can be any alphanumeric character or blank)	2.0 A, 12 Vdc (optional) Class III.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2	CB by TUV/Rh, UL (E205203)
alt.	Western Digital Technologies Inc	GRxxxyy-x (where x and y are any alphanumeric character, or blank representing non-safety critical features such as memory size)	Class III supplied by SELV. Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E332258)
alt.	Intel Corp	SSD* (where * can be optional letters or numbers used to identify features such as memory type, size (thickness, width) and identify details not critical to the compliance of the drive)	3.3 Vdc, 5.0 Vdc and/ or 12 Vdc. (for reference only)	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E139761)
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 4.8 A max., 3.3 Vdc or 2.5 A max., 5.0 Vdc or 2.0 A max., 12 Vdc or 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc or	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1	Verified by other certificate body, UL

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			3.3 Vdc, 5.0 Vdc and/ or 12 Vdc.	ed.2	
Optical Disk Drive (ODD) (optional)	Hitachi-LG Data Storage Inc	DU9** (where first "*" can be any number 0-9 and second "*" can be any alphanumeric character, denoting non safety related differences)	1.8 A, 5.0 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, UL 60950-1 ed.2	CB by Intertek, UL (E119002)
alt.	Philips & Lite- On Digital Solutions Corporation	DG-xx3Sxxxxx (x can be any alphanumeric character or blank)	2.0 A, 5.0 Vdc, 1.25 A, 12 Vdc. (optional) Class III. Class 1 Laser Product.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2007, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by TUV/Rh, UL (E306430)
alt.	LG Electronics Inc	GHB** (where the "*" can be 0~9, A~Z, any alphanumeric character or blank according to design, brand, buyer, color, software or other configurations, denoting non safety related differences)	2.0 A, 5.0 Vdc, 2.5 A, 12 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by Intertek, UL (E119002)
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc or 2.0 A max., 5.0 Vdc, 2.5 A max.,12 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 62368-1:2014, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, IEC 60825-1:2007, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	Verified by other certificate body, UL
Graphics Card (GPU) (optional)	Foxconn International Inc	TPC-F004G	350 W max. Interface ports (I/O ports) complied with ES1 (SELV), LPS requirement. (UL Listed Accessory)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (Demko), UL (E93839)
alt.	NVIDIA Corp	PG192	75 W max. Interface ports (I/O ports) complied with ES1 (SELV), LPS requirement. (UL Listed Accessory)	IEC 62368-1: 2018 EN IEC 62368-1: 2020+A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E204896)
alt.	Interchangeable	Interchangeable	350 W max. Interface ports (I/O ports) complied with ES1 (SELV), LPS requirement. (UL Listed Accessory)	UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	UL
alt.	Component User	864763-001,	0.9 A, 5.0 Vdc. (optional)	IEC 62368-1:	CB by UL

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HP USB 3.0 SD4 Card RDR (optional)	Industry Co Ltd	L11328-001		2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	(Demko), UL (E500712)
Low-Voltage Solid-State Overcurrent (U850 for USB 3.0 (charge))	Diodes Incorporated	AP21xyz (The 'x' in model name may be any numeral, 4-9; 'y' may be 1, 2 5 or 6; 'z' may be any single or multiple alpha-numeric characters)	Single channel/ Dual channel: 0.5 to 1.5 A, 2.7 to 5.5 Vdc. (Supplied by external ES1 power source)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 2367 ed.2	CB by Nemko, UL (E322375)
alt.	Texas Instruments Incorporated	TPS2068x, May be followed by other characters that do not impact the safety feature of the device.	Input voltage: 4.5 to 5.5 Vdc. Output continuous rating: 1.5 A. Output current limit: 2.7 A. Maximum operational temperature: 85 °C. (optional)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 2367 ed.2	CB by UL (US), UL (E169910)
Motherboard	Foxconn International Inc	FMB-2203	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	UL 62368-1 ed.3	UL (E93839)
RTC Battery	Shenzhen Pkcell Battery Co Ltd (JHT)	CR2032	Max Abnormal Charging Current= 10.0 mA.	IEC 60086-4: 2019, UL1642 ed.6	CB by TUV/Rh, UL (MH48406)
alt.	Interchangeable	CR2032, CR-2032, CR 2032 series	Max Abnormal Charging Current= 10.0 mA.	UL1642 ed.6	UL
Thermistor (F4, F5 for USB 3.2)	Polytronics Technology Corp	SMD0805P350 SLR series	3.5 A, 6.0 Vdc min.	IEC 60730-1: 2013+A1, EN 60730-1: 2016, Clause 15, 17 and Annex J, UL 1434 ed.1	TUV, UL (E201431)
alt.	Littelfuse inc	0805L350SL series	3.5 A, 6.0 Vdc min.	IEC 60730-1: 2013+A1, EN 60730-1: 2016, Clause 15, 17 and Annex J, UL 1434 ed.1	TUV, UL (E183209)
alt.	Thinking Electronic Industrial Co Ltd	KLM2S300	3.0 A, 6.0 Vdc min.	EN 60730-1: 2011, Clause 15, 17, J15 and J17, UL 1434 ed.1	TUV, UL (E138827)
alt.	CYG Wayon Circuit Protection Co Ltd	LP-ISML350abcd (a=C, U, blank, b=S, Z, blank, c=H, blank, d=F, blank)	3.5 A, 6.0 Vdc min.	IEC 60730-1: 2013, Clauses 15, 17, J15 and J17, UL 1434 ed.1	TUV, UL (E202125)
alt.	Interchangeable	Interchangeable	3.5 A max., 6.0 Vdc min. It (Itrip) = 7.0 A.	IEC 60730-1:2013 +A11, Clause 15, 17 and Annex J, UL 1434 ed.1	Verify by other cert. body, UL
Metal Chassis	Interchangeable	Interchangeable	Sheet steel or steel, thickness 0.91 mm min.	--	--

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			See Enclosures- Diagrams 4-01 for details.		
Metal Handle (x2)	Interchangeable	Interchangeable	Metal.	--	--
Power Supply Cord (optional)	Interchangeable	Interchangeable	Detachable. Types NISP-2, NISPE-2, NISPT-2, SP-2, SPE-2, SPT-2, SP-3, SPE-3, SPT-3, SV, SVE, SVO, SVOO, SVT, SVTO, SVTOO, SJ, SJE or SJT. 240 Vac min., 1.5 m min. and 2.4 m max. long, rated VW-1, one end with grounding type NEMA 5-15P or NEMA 6-15P, the other end with an appliance coupler. No. 14 AWG min.	UL 817 ed.2	UL
Interconnecting Cable (optional)	Interchangeable	Interchangeable	Detachable, 3.05 m long max., 30 V min., 80 °C min., suitable for external use, jacketed, VW-1 or FT-1.	UL 758, ed.3 or UL 444, ed.5 or UL 1863 ed.4	UL
Certification Marks, Rating Label and Grounding/ Warning Label Materials	CCL Design (Suzhou) Co Ltd (Worldmark)	3311T-E2a	Used in combination with Printer/ Ribbon DPW3000-140-450. Affixed to the metal surface.	UL 969 ed.5	UL (MH20595)
alt.	Interchangeable	Interchangeable	70 °C min.	UL 969 ed.5	UL
Plastic Bezel/ Plastic Panel, (front, top)	UR Materials Industry (Shenzhen) Co Ltd	210	HB min., 60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL (E323548)
alt.	Ineos Styrolution Group Gmbh	GP-22	HB min., 80 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL (E108538)
alt. Plastic Bezel/ Plastic Panel, (front)	Interchangeable	Interchangeable	HB min., 60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL
Blank Panel (optional, when Removable Storage Modules, ODD not provided)	Sabic Innovative Plastics US L L C	925(GG)	V-2 min., 120 °C min., thickness 0.8 mm min.	UL 94 ed.6	UL (E121562)
PCB	Interchangeable	Interchangeable	V-1 min., 105 °C min.	UL 796 ed.11	UL
CPU Fan Duct Frame,	UR Materials Industry (Shenzhen)	Fliger 300	Plastic part (V-2 min., 60 °C min., thickness	UL 94 ed.6	UL (E323548)

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PCI Retainer Frame (internal)	Co Ltd		0.8 mm min.) with Metal part (thickness 0.6 mm)		
alt. PCI Retainer Frame (internal)	Interchangeable	Interchangeable	Plastic part (V-2 min., 60 °C min., thickness 0.8 mm min.) with Metal part (thickness 0.6 mm)	UL 94 ed.6	UL
PCI Card Guide (for Front SYS Fan - lower and middle), Front Fan Duct (for Front SYS Fan - upper), Rear Fan Duct (for Rear SYS Fan)	UR Materials Industry (Shenzhen) Co Ltd	Fliger 300	V-2 min., 60 °C min., thickness 0.8 mm min.	UL 94 ed.6	UL (E323548)
alt.	Sabic Innovative Plastics US L L C	925(GG)	V-2 min., 120 °C min., thickness 0.8 mm min.	UL 94 ed.6	UL (E121562)
Switching Power Supply (PSU)	Delta Electronics Inc	DPS-1125AB-4 XX (X=0-9, A-Z or blank)	AC I/P: 100 V, 12 A, 115-127 V, 12 A, 200-240 V, 10 A, 50-60 Hz, Class I. DC O/P: V12.1-CPU0, 18 A, V12.1-M0, 18 A, V12.1-G1, 18 A, V12.1-B, 18 A, V12.1-CPU1, 18 A, V12.1-M1, 18 A, V12.1-G2, 18 A, V12.1-S, 18 A, V12.1-CPU2, 18 A, V12.1-M2, 18 A, V12.1-G3, 18 A, V12.1-D, 18 A, V12.1-CPU3, 18 A, V12.1-M3, 18 A, V12.1-G4, 18 A, 5VSB, 15 A.100 V, 12 A, 50-60 Hz, Max. total outputs: 1125 W. 115-127 V, 12 A, 50-60 Hz, Max. total outputs: 1275 W. 200-240 V, 10 A, 50-60 Hz, Max. total outputs: 1450 W. 55 °C. Altitude during operation 5000 m.	IEC 62368-1: 2014, EN 62368-1: 2017+A11, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3	CB by UL (Demko), UL (E131881)
alt.	Delta Electronics Inc	DPS-1450AB-2 XX (X= 0-9, A-Z or blank)	AC I/P: 100 V, 16 A or 115-127 V, 16 A or 200-240 V, 10 A, 50-60 Hz, Class I. DC O/P V12.1CPU0: +12 Vdc/ 18 A, V12,1-M0: +12 Vdc/ 18 A, V12,1-G1: +12 Vdc/ 18 A, V12,1-B: +12 Vdc/ 18	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3	CB by TUV/Rh, UL (E131881)

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			A, V12,1-CPU1: +12 Vdc/ 18 A,V12,1-M1: +12 Vdc/ 18 A, V12,1-G2: +12 Vdc/ 18 A, V12,1-S: +12 Vdc/ 18 A, V12,1-CPU2: +12 Vdc/ 18 A, V12,1-M2: +12 Vdc/ 18 A, V12,1-G3: +12 Vdc/ 18 A, V12,1-D: +12 Vdc/ 18 A, V12,1-CPU3: +12 Vdc/ 18 A, V12,1-M3: +12Vdc/ 18 A, V12,1-G4: +12 Vdc/ 18 A, 5VSB: +5 Vdc/ 15 A. 100 V, 16 A, 50-60Hz, Max. total outputs: 1450 W. 115-127 V, 16 A, 50-60 Hz, Max. total outputs: 1550 W. 200-240 V,/10 A, 50-60 Hz, Max. total outputs: 1700 W. 55 °C. Altitude during operation 5000m.		
Rear SYS Fan	Foxconn Technology Co Ltd	PVA120K12P	1.30 A max., 12 Vdc, 135.18 CFM min.	EN 62368-1: 2014 + A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Sunonwealth Electric Machine Industry Co Ltd	PFC0381B1- 1QZ (Z standards for 30 characters, each character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank, for marketing purpose only, no safety critical related)	0.932 A max., 12 Vdc, 137.0 CFM min.	EN IEC 62368-1: 2020+A11, UL 507 ed.10	TUV, UL (E77551)
alt.	Interchangeable	Interchangeable	1.30 A max., 12 Vdc, 135.18 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+ A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Front SYS Fan (lower)	Foxconn Technology Co Ltd	PVA120G12S	0.30 A max., 12 Vdc, 81.90 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Sunonwealth Electric Machine Industry Co Ltd	MFC0251V1- 1Q0Z (Z standards for 30characters, each character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank, for marketing purpose only, no safety critical related)	0.25 A max., 12 Vdc, 83.0 CFM min.	EN IEC 62368-1: 2020+A11, UL 507 ed.10	TUV, UL (E77551)

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alt.	Foxconn Technology Co Ltd	PVA120G12T	0.50 A max., 12 Vdc, 102.24 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Heyuan Yongjia Industry Co Ltd	AS12025S12	0.65 A max., 12 Vdc, 109.92 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)
alt.	Interchangeable	Interchangeable	0.65 A max., 12 Vdc, 81.90 CFM min.	IEC 62368-1: 2018IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Front SYS Fan (middle)	Foxconn Technology Co Ltd	PVA080G12R	0.80 A max., 12.0 Vdc, 75.1 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Sunonwealth Electric Machine Industry Co Ltd	PF80251BX- 1QZ (Z standards for 30 characters, each character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank, for marketing purpose only, no safety critical related)	0.552 A max., 12 Vdc, 64.8 CFM min.	EN IEC 62368-1: 2020+A11, UL 507 ed.10	TUV, UL (E77551)
alt.	Interchangeable	Interchangeable	0.80 A max., 12.0 Vdc, 64.8 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Front SYS Fan (upper)	Foxconn Technology Co Ltd	PVA092G12H- P29	1.20 A max., 12 Vdc, 87.93 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Sunonwealth Electric Machine Industry Co Ltd	PF92251BX- 1QZ (Z standards for 30 characters, each character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank, for marketing purpose only, no safety critical related)	0.828 A max., 12.0 Vdc, 85.4 CFM min.	EN IEC 62368-1: 2020+A11, UL 507 ed.10	TUV, UL (E77551)
alt.	Interchangeable	Interchangeable	1.20 A max., 12 Vdc, 85.4 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+ A1+A2, UL 507 ed.10	Verified by other certificate body, UL
CPU Fan (inside the CPU HS)	Foxconn Technology Co Ltd	PVA092G12H- P29	1.20 A max., 12 Vdc, 84.42 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Foxconn	PVA120G12V	1.20 A max., 12 Vdc,	EN 62368-1:	TUV, UL

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	Technology Co Ltd		115.2 CFM min.	2014+A11, UL 507 ed.10	(E231557)
alt.	Huizhou City XunShuo Technology Co Ltd	DF1082512B2F g (g - series no. g can be a-z or blank for different markets)	1.0 A max., 12 Vdc, 121.77 CFM.	EN IEC 62368-1: 2018+A11, UL 507 ed.10	TUV, UL (E465463)
alt.	Interchangeable	Interchangeable	1.20 A max., 12 Vdc, 84.42 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Heatsink (HS) for CPU	Interchangeable	Interchangeable	Aluminium.	--	--
Removable Storage Modules (optional)	CRU Data Security Group LLC	DX175	5/12 Vdc, 3/6 A (optional)	UL 62368-1 ed.2	UL (E237918)
- HDD Box Fan	Yen Sun Technology Corp	FD124015MB- N-CBH	0.12 A max., 12 Vdc, 6.6 CFM	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E187205)
Hard Disk Drive (HDD) (optional)	SK Hynix Inc	HFS3T8GD0FE I-Aabcd (a, b, c and d denoting buyer can be any letter (A to Z) or number (0 to 9))	3.3 A, 3.3 Vdc. Class III.	IEC 62368-1: 2018, UL 62368-1 ed.3	CB by TUV/SUD, UL (E333981)
alt.	SK Hynix Inc	HFS3T8G32FE H-BA10A	2.0 A, 5.0 Vdc. Class III.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by TUV/SUD, UL (E333981)
alt.	SK Hynix Inc	HFS15T3DGLX 070N	2.1 A, 12 Vdc. Class III.	IEC 62368-1: 2018, UL 62368-1 ed.3	CB by TUV/SUD, UL (E333981)
alt.	Toshiba Electronic Devices & Storage Corporation	HDWL1yy (where "xx" may be any number 00-10, "yy" may be any number 11-99)	0.5 A, 3.3 Vdc, 0.7 A, 5.0 Vdc. (optional)	IEC 62368-1: 2014, UL 62368-1 ed.2	CB by UL (JP), UL (E145163)
alt.	HGST Japan Ltd	Hww7210nnKL A3nn	1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc. Class III.	IEC 62368-1: 2014,IEC 60950-1: 2005+A1+A2, UL 60950-1 ed.2	CB by TUV/Rh, UL (E182115)
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 3.3 A max., 3.3 Vdc or 2.0 A max., 5.0 Vdc or 2.1 A max., 12 Vdc or 0.5 A max., 3.3 Vdc, 0.7 A max., 5.0 Vdc or 1.5 A max., 5.0 Vdc,	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1	Verified by other certificate body, UL

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			2.0 A max., 12 Vdc.	ed.2	
Solid State Drive (SSD) (optional, alternate when HDD not provided)	Samsung Electronics Co Ltd	MZ-K********** (* can be 0-9, A-Z, blank, slash or dash)	4.8 A, 3.3 Vdc.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by TUV/Rh, UL (E149091)
alt.	Solid State Storage Technology Corp (Lite-On)	K2-L1xxxxxxxx ("x" can be any alphanumeric character or blank)	2.5 A, 5.0 Vdc. Class III.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed. 2, UL 60950-1ed.2	CB by TUV/Rh, UL (E205203)
alt.	Solid State Storage Technology Corp	ED1-2Wxxxxxxxx (where x can be any alphanumeric character or blank)	2.0 A, 12 Vdc (optional) Class III.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2	CB by TUV/Rh, UL (E205203)
alt.	Western Digital Technologies Inc	GRxxxyy-x (where x and y are any alphanumeric character, or blank representing non-safety critical features such as memory size)	Class III supplied by SELV. Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E332258)
alt.	Intel Corp	SSD* (where * can be optional letters or numbers used to identify features such as memory type, size (thickness, width) and identify details not critical to the compliance of the drive)	3.3 Vdc, 5.0 Vdc and/ or 12 Vdc. (for reference only)	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E139761)
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 4.8 A max., 3.3 Vdc or 2.5 A max., 5.0 Vdc or 2.0 A max., 12 Vdc or 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc or 3.3 Vdc, 5.0 Vdc and/ or 12 Vdc.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	Verified by other certificate body, UL
Optical Disk Drive (ODD) (optional)	Hitachi-LG Data Storage Inc	DU9** (Where first "*" can be any number 0-9 and second "*" can be any alphanumeric character, denoting non safety related differences)	1.8 A, 5.0 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, UL 60950-1 ed.2	CB by Intertek, UL (E119002)
alt.	Philips & Lite- On Digital Solutions	DG-xx3Sxxxxx (x can be any	2.0 A, 5.0 Vdc, 1.25 A, 12 Vdc. (optional)	IEC 62368-1: 2014, IEC 60950-1:	CB by TUV/Rh, UL (E306430)

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	Corporation	alphanumeric character or blank)	Class III. Class 1 Laser Product.	2005+A1+A2, IEC 60825-1: 2007, UL 62368-1 ed.2, UL 60950-1 ed.2	
alt.	LG Electronics Inc	GHB** (where the "*" can be 0~9, A~Z, any alphanumeric character or blank according to design, brand, buyer, color, software or other configurations, denoting non safety related differences)	2.0 A, 5.0 Vdc, 2.5 A, 12 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018 IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by Intertek, UL (E119002)
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc or 2.0 A max., 5.0 Vdc, 2.5 A max.,12 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, IEC 60825-1:2014, IEC 60825-1: 2007, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	Verified by other certificate body, UL
Graphics Card (GPU) (optional)	Foxconn International Inc	TPC-F004G	350 W max. Interface ports (I/O ports) complied with ES1 (SELV), LPS requirement. (UL Listed Accessory)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (Demko), UL (E93839)
alt.	Interchangeable	Interchangeable	350 W max. Interface ports (I/O ports) complied with ES1 (SELV), LPS requirement. (UL Listed Accessory)	UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	UL
alt. HP USB 3.0 SD4 Card RDR (optional)	Component User Industry Co Ltd	864763-001, L11328-001	0.9 A, 5.0 Vdc. (optional)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (Demko), UL (E500712)
alt. G4 Personality M.2 (optional)	Foxconn International Inc	FMB-2210	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	IEC 62368-1: 2018, EN IEC 62368-1: 2020+ A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E93839)
alt. Dual 10GbE (optional)	Foxconn International Inc	FMB-2207	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	IEC 62368-1: 2018, EN IEC 62368-1:2020 +A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E93839)

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alt. Front IO Module (FIO-E2) (optional)	Foxconn International Inc	FMB-2214	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E93839)
alt. TBT4 (Accessory Card) (optional)	Foxconn International Inc	FMB-2209	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E93839)
Motherboard	Foxconn International Inc	FMB-2205	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	UL 62368-1 ed.3	UL (E93839)
RTC Battery	Shenzhen Pkcell Battery Co Ltd (JHT)	CR2032	Max Abnormal Charging Current= 10.0 mA.	IEC 60086-4: 2019, UL1642 ed.6	CB by TUV/Rh, UL (MH48406)
alt.	Interchangeable	CR2032, CR-2032, CR 2032 series	Max Abnormal Charging Current= 10.0 mA.	UL1642 ed.6	UL
Thermistor (F2 for internal connector P24, P25) (F4, F5, F6 for USB 3.0)	Polytronics Technology Corp	SPR-P260T series	2.6 A, 6.0 Vdc min.	IEC 60730-1: 2013+A1, EN 60730-1:2016, Clause15, 17 and Annex J, UL 1434 ed.1	TUV, UL (E201431)
alt.	Littelfuse Inc	0805L260UL series	2.6 A, 6.0 Vdc min.	IEC 60730-1: 2013+A1, EN 60730-1:2016, Clause 15, 17 and Annex J, UL 1434 ed.1	TUV, UL (E183209)
alt.	Interchangeable	Interchangeable	2.6 A, 6.0 Vdc min.	IEC 60730-1: 2013+A11,Clause 15, 17 and Annex J, UL 1434 ed.1	Verify by other cert. body, UL
Low-Voltage Solid-State Overcurrent (U22 for internal connector P152)	Texas Instruments Incorporated	TPS2061x Where 'x' is C or D. May be followed by other characters that do not impact the safety feature of the device.	Ratings: (optional) Input Voltage: 4.5 to 5.5 Vdc. Output Continuous Rating: 1.0 A. Output Current Limit: 1.9 A. Maximum Operational Temperature: 85 °C.	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 2367 ed.2	CB by UL (US), UL (E169910)
alt.	Will Semiconductor	WS4612EBx- 5/TR (x can be A, B, C or D, A for EN high enable & Discharge, B for EN low enable & Discharge, C for EN high enable & no Discharge, D for EN low enable & no	Ratings: (optional) Input Voltage Range: 2.5 to 5.5 Vdc. Current Limit Rating: 1.2 to 1.6 A.	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (Demko), UL (E486497)

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		Discharge)			
alt.	Joulwatt Technology Co Limited	JW7115SA-1SOTA#TRPBF	Vin: 2.7 to 5.5 Vdc, Vout: 2.7 to 5.5 Vdc, Iout: 1.1-1.5 A. (optional)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (Demko), UL (E497605)
alt.	Anpec Electronics Corp	APL3553 followed by A, B, C or D, followed by B, C, X or CT, followed by I, followed by -TR, followed by G	Input Voltage: 2.7 to 5.5 Vdc. Maximum Output Continuous Rating: 1.0 A. Current Limit Rating: 1.9 A. Ambient: -40 to 85 °C.	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, UL 2367 ed.2	CB by UL (Demko), UL (E328191)
alt.	Diodes Incorporated	AP21xyz The 'x' in model name may be any numeral, 4-9. 'y' may be 1, 2, 5 or 6. 'z' may be any single or multiple alpha-numeric characters	Single channel / Dual channel: 0.5 to 1.5 A, 2.7 to 5.5 Vdc. (Supplied by external ES1 power source)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 2367 ed.2	CB by Nemko, UL (E322375)

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Monitor Série P

27P2Q

27”



Especificações gerais

Tela	27" Widescreen IPS
Resolução	1920 x 1080 FHD
Brilho	300 cd/m²
Contraste dinâmico	50.000.000:1
Contraste estático	1.000:1
Ângulo de visão	H: 178° | V: 178°
Taxa de atualização	75 Hz
Tempo de resposta	4 ms
Tecnologia de sincronização	Adaptive-Sync
Conexão	1x VGA | 1x DVI | 1x HDMI 1.4 (HDCP 1.4) | 1x DisplayPort 1.2 (HDCP 1.4) | 4x USB 3.2 (1x Fast Charging) | 1x USB-B (Upstream) | 1x Saída de Áudio | 1x Entrada de Áudio
Base ajustável	Altura: 150 ± 5mm | Giro: 175° ± 5° | Inclinação: -5°/35° | Pivô: -90°~90° (bidirecional)
Alto-falantes	Sim - 2 x 2W
VESA	Sim - 100 x 100 mm

Especificações da tela

Tamanho do painel	27"
Tamanho da imagem visível (diagonal)	68,47 cm
Tipo de painel	IPS
Proporção de tela	16:9
Formato de tela	Widescreen
Curvatura	Não
Iluminação do painel	W-LED
Resolução máxima	VGA/DVI: 1920 x 1080 @ 60 Hz HDMI 1.4/DP 1.2: 1920 x 1080 @ 75 Hz
Pixel Pitch	0,3114 (H) x 0,3114 mm (V)
Densidade de pixel	81,59 PPI
Tipo de tela	Antirreflexivo
Bit	6 bits + FRC
Brilho	300 cd/m²
sRGB	120,9%
Relação de contraste dinâmico	50.000.000:1
Relação de contraste estático	1.000:1
Frequência nativa do painel	75 Hz
Tempo de resposta	4 ms
Ângulo de visão	H: 178° | V: 178°
Frequência de varredura	VGA/DVI/HDMI 1.4/DP 1.2: 30-85 kHz (H) VGA/DVI/HDMI 1.4/DP 1.2: 48-75 Hz (V)
Suporte de cores	Maior que 16 milhões

Ergonomia

VESA	Sim - 100 x 100 mm
Base ajustável	Altura: 150 ± 5mm Giro: 175° ± 5° | Inclinação: -5°/35° Pivô: -90°~90° (bidirecional)

Conexões e recursos

Conectores	1x VGA | 1x DVI | 1x HDMI 1.4 (HDCP 1.4) | 1x DisplayPort 1.2 (HDCP 1.4) | 4x USB 3.2 (1x Fast Charging) | 1x USB-B (Upstream) | 1x Saída de Áudio | 1x Entrada de Áudio
Alto-falantes	Sim - 2 x 2W
HDR	HDR Mode (Simulação)
Tecnologias	Adaptive-Sync, Low Blue Mode e Flicker-free
Compatibilidade	Windows, MAC, Linux
Plug & Play	DDC/CI, Windows 10 & Windows 8/8.1, MAC OS
Controles manuais	Source+Auto; Volume+Image Ratio/ Right; Clear Vision+Clear Vision Demo/ Left; Menu; Power
Função OSD (On Screen Display)	Sim - Português e outros idiomas
Destaque	Base ajustável até 15 cm de altura | Painel IPS | HDMI e DisplayPort | HUB USB | Certificações B2B

Dimensões, peso e embalagem

Dimensões monitor com base (L x A x P)	613,6 x 394,5 ~ 544,5 x 200,1 mm
Dimensões monitor sem base (L x A x P)	613,6 x 369,5 x 51,1 mm
Dimensões embalagem (L x A x P)	690 x 595 x 160 mm
Peso sem embalagem (com base)	5,49 kg
Peso sem embalagem (sem base)	3,8 kg
Peso com embalagem	7,6 kg
Itens inclusos na embalagem	Cabo de força brasileiro NBR 14136, cabo VGA, cabo DP, cabo USB, certificado de garantia, base e monitor

Energia

Fonte	Interna - 100~240V - 50/60 Hz; 1,5 A
Consumo	Ligado: 60 Watts (máximo), Ligado: 20 Watts (típico), Stand-by < 0,5 Watt, Off < 0,3 Watt

Outros

Cor predominante do produto	Preto
Cor predominante da base	Preto
Sugestão de descrição	Monitor AOC 27" IPS Base Ajustável DP Hub USB 27P2Q
Garantia	3 anos
Código EAN	7898620271992
Classificação fiscal (NCM)	8528.52.00
CEST	21.068.00
PPB	Portaria Interministerial SEPEC/ME/ SEXEC/MCTI nº 58, de 09.10.2020
Local de fabricação	Brasil

Certificações

Normas e certificações	EPA, EPEAT, TCO, GS, ISO 9241-307, EU RoHS DOC, Embalagem com material reciclável, CB, CE, FCC, California CEC, cCSAus, Win 8/8_1, Win 10, EAC (CU), Ukraine Safety, Antirroubo Kensington, HDCP 1.4 para HDMI e DisplayPort

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DECLARATION FROM MANUFACTURER

To whom it may concern,

We declare that the product with below model no. produced by our company comply with:

European RoHS DIRECTIVE 2011/65/EU & （EU）2015/863 (on the restriction of the use of certain hazardous substances in electrical and electronic equipment) and its related exemption.

Model No: 27P2Q

Signature: Alice.Jin

Name: Alice.Jin

Title: Environmental Engineer

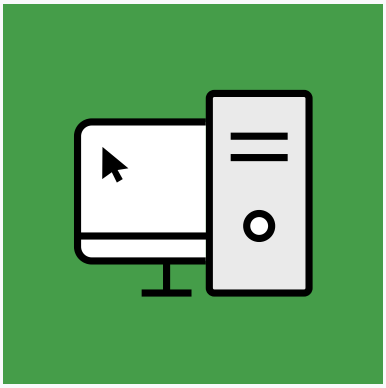
Company: TPV Electronics (Fujian) Co., Ltd.

Date: 2023/11/10

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Due to planned maintenance, the EPEAT registry is expected to be offline between 5pm ET- 5:30pm ET on 12/16/24 and 12/17/24

AOC 27P2Q



COMPUTERS & DISPLAYS

Product Summary:

Product Type:	Monitors
Registered In:	Brazil
Manufacturer:	AOC International (Europe) B.V.
EPEAT Tier:	Silver
Registration Date:	2023-08-18
Product Status:	Active
EPEAT Climate+:	Achieved 2023-10-27
Exceptions:	Disassembly instructions, exploded diagram, spare parts to avoid injury to end users.

European Article Number(s): 4038986187329

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable "required" criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at **EPEAT Bronze**	Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at **EPEAT Silver**	Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at **EPEAT Gold**

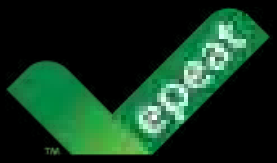
The optional criteria for this product category and optional points achieved by this product are listed below.

	Optional Criteria	Scores
+	4.1 Substance Management	12 / 16
+	4.2 Materials Selection	3 / 3
+	4.4 Product longevity/life-cycle extension	2 / 2
+	4.5 Energy Conservation	0 / 2
+	4.7 Packaging	0 / 2
+	4.8 Life cycle assessment and carbon footprint	5 / 6
+	4.9 Corporate Environmental Performance	4 / 9
+	4.10 Corporate social responsibility	6 / 6
	TOTAL OPTIONAL CRITERIA SCORE:	**32 / 46**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us.



Contact Us

+1.503.279.9383

PO Box 12149 Portland, OR 97212-0149 USA

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EPEAT Registry Privacy Policy

EPEAT Registry Terms of Use

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Certificado de Conformidade

Certificate of Conformity

Certificado/*Certificate*
UL-BR 24.0764

Revisão / Review
00

Emissão / *Issue*
6 de junho de 2024
June 6, 2024

Validade / *Expiration*
5 de junho de 2027
June 5, 2027

Reconhecer que o Solicitante / *Acknowledge that the Certificate Holder*

ENVISION INDÚSTRIA DE PRODUTOS ELETRONICOS LTDA

avaliou o produto / *has had*

MONITOR LCD / *LCD MONITOR*

ao qual atende aos requisitos do Programa de Certificação ou Portaria / *evaluated and meets the requirements of the Certification Program or Decree*

REQUISITOS DE AVALIAÇÃO DA CONFORMIDADE ANEXOS À PORTARIA INMETRO Nº 304 DE 06 DE NOVEMBRO DE 2023 /CONFORMITY ASSESSMENT REQUIREMENTS ATTACHED TO INMETRO ORDINANCE Nº 304 AS OF NOV 06, 2023

e pode ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado.
and can display the Conformity Identification Seal of the Brazilian Conformity Assessment System (SBAC) on the product(s) listed in this certificate.

Rafael Parada
Program Owner

UL do Brasil Certificações, organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro Nº OCP-0029. /
UL do Brasil Certificações, Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register Nr OCP-0029.

Certificado de conformidade válido somente acompanhado das páginas de 1 a 155
Certificate of Conformity valid only if accompanied from pages 1 to 155

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Certificado de Conformidade

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6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

Solicitante / *Certificate Holder* (1635977)
ENVISION INDúSTRIA DE PRODUTOS ELETRONICOS LTDA
Rodovia Anhanguera, km 26,5 – Armazém II, 4, 5 e 6 – Jardim Jaraguá 05275-000, SÃO PAULO, SP, Brazil
C.N.P.J.: 04.176.689/0003-22

Fabricante / *Manufacturer* (227862)
ENVISION INDúSTRIA DE PRODUTOS ELETRONICOS LTDA
Av Torquato Tapajos 2236, Flores, Manaus/AM, 69058-830, Brazil
CNPJ: 04.176.689./0001-60

Modelo de Certificação / *Certification Model*: 5

Norma(s) Aplicável(is) / *Applicable standards*: see appendix for details

Identificação UL / *UL Identification*: BR2467 / Vol.3 / Sec. 27, 28, 29, 30, 31, 32, 36, 22, 23, 24, 25, 38, 40, 41, 46, 48, 54, 56, 58, 60, 61, 62, 63, 64, 65

Lote ou No. de Série / *Lot or Serial Number*: N/A

Identificação da Família/Modelo/Lote de Produto(s) Certificado(s):
Identification of the Family/Model/Lot of Certified Product(s):

Marca / *Brand Name*	**Modelo /** *Model*	**Descrição /** *Description*	**Código de Barras /** *Bar Code Number*
AOC	236LM00014, *2470***** (refer to Appendix A)	(* = A to Z, a to z, 0 to 9, "+", "-", "/", "\" or blank. Represent different enclosure color and sales regions for marketing purpose only, no technical difference)	N/A
AOC	G2460PF, 240LM00010, G2460VQ6, 240LM00016 (refer to Appendix B)	N/A	N/A
AOC	215LM00041, *2270****** (refer to Appendix C)	(* can be 0-9, A-Z, a-z,-, \, /, + or blank for marketing purpose)	N/A
AOC	185LM000** (refer to Appendix D)	(* can be 0-9, A-Z, a-z, -, \, /, + or blank for marketing purpose.)	N/A
AOC	22B1, 22B1H, 22******** (refer to Appendix E)	(* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different enclosure colour for marketing purpose)	N/A
AOC	24B1, 24B1H, 24******** (refer to Appendix F)	(* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different enclosure colour for marketing purpose)	N/A
AOC	G2260VWQ6, 215LM00033 (refer to Appendix G)	N/A	N/A
AOC	315LM00019, AG322FCX (refer to Appendix H)	N/A	N/A
AOC	22P1, **22P1******** (refer to Appendix I)	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A
AOC	24P1, **24P1******** (refer to Appendix J)	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A
AOC	9P1, **9P1******** (refer to Appendix K)	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A
AOC	AG251********, 250LM000** (refer to Appendix L)	(The * in the model name can be 0 to 9, A to Z or blank for marketing use only.)	N/A
AOC	24G2, **24G2********, 27G2, **27G2******** (refer to Appendix M)	(* can be 0-9, A-Z, a-z, “+”, “-“, “/”, “\” or blank, Represent different enclosure color and sales region for marketing purpose.)	N/A
AOC	323FCX, 323QCX, **323******** (refer to Appendix N)	(* can be 0-9, A-Z, a-z, – , \ , / , + or blank for marketing purpose only, no technical difference.)	N/A
AOC	22P2, 22P2******** (refer to Appendix O)	(* can be 0-9, A-Z, a-z, – , \ , / , + or blank, represent different enclosure colour for marketing purpose)	N/A
AOC	27B1,27B1HM, **27B1****** (refer to Appendix P)	(The symbol “*” can be 0-9, A-Z, a-z, “+”, “-“,”/”, “\” or blank)	N/A

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AOC	U27P2, **27P2******** (refer to Appendix Q)	(The symbol "*" can be 0-9, A-Z, a-z, "+", "-","/", "\" or blank)	N/A
AOC	25G3ZM, 25G3******** (refer to Appendix R)	(* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different sales region and enclosure colour for marketing purpose.)	N/A
AOC	**24B30********, **24B35******** (refer to Appendix S)	(*=A-Z, a-z, 0-9, /, +, -, \ or blank)	N/A
AOC	27G2E1, 27G2********, C27G2********, C*27G2********, Q27G2********, U27G2******** (refer to Appendix T)	(*=A-Z, a-z, 0-9, /, +, -, \ or blank)	N/A
AOC	24B3HMF2, **24B3******* (refer to Appendix U)	(* can be 0-9, A-Z, a-z, –, \, /, + or blank for marketing purpose only, no technical difference.)	N/A
AOC	22B3HMF, 22B3********, Q22B3******** (refer to Appendix V)	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol).	N/A
AOC	22B30HM2, 22B35HM2, **22********** (refer to Appendix W)	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol)	N/A
AOC	Q27B30, 27B3650H, 27B35H, **27********** (refer to Appendix X)	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol)	N/A

Identificação da(s) Versão(ões) do(s) Modelo(s) de Produto(s) Certificado(s):
Identification of Version(s) of Certified Product(s) Model(s):

Código do Modelo / *Model Code*	**Descrição do Modelo /** *Model Description*	**Versão /** *Version*	**Código de Barras /** *Bar Code Number*
N/A	N/A	N/A	N/A

Modelo/Model: 236LM00014, *2470**

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50080822 001	2017-05-08
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-11412C077D	2017-02-27
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1412C077E	2017-04-27

Modelo/Model: G2460PF, 240LM00010, G2460VQ6, 240LM00016

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50080813 001	2017-05-04
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology (SuZhou) Co., Ltd.*	SECE1505118-A	2017-04-01
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1611C130	2016-11-28
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology Corporation Test Laboratory*	TEFD1506145-A	2016-07-25
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1611C130	2016-11-28

Modelo/Model: 215LM00041, *2270***

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50083922 001	2017-06-01
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd.*	ACS-E15423-1	2018-05-21
Relatório de ensaio emitido por / *Test report issued by* *AUDIX Technology Corporation, EMC Department*	EM-F150563A	2016-07-25

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June 6, 2024

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June 5, 2027

Modelo/Model: 185LM000**

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50080564 001	2017-05-15
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology(Suzhou) Co., Ltd.*	SECE1609083	2016-09-23
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology Corporation Test Laboratory*	TEFD1609132	2016-11-03

Modelo/Model: 22B1, 22B1H, 22*******

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117327 001	2018-01-10
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117327 002	2022-03-25
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1712C238	2018-01-10
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1712C238	2018-01-10
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1905C011E	2022-06-09

Modelo/Model: 24B1, 24B1H, 24*******

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 001	2018-01-29
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 002	2019-04-28
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 003	2021-08-19
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 004	2022-04-26
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C141	2018-01-30
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C141	2018-01-30
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C141G	2022-05-20

Modelo/Model: G2260VWQ6, 215LM00033

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50163485 001	2018-07-30
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology (Suzhou) Co., Ltd.*	SECE1709022-A	2018-05-31
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology Corporation Test Laboratory*	TEFD1709118-B	2018-05-31

Modelo/Model: 315LM00019, AG322FCX

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50134159 001	2018-03-30
Relatório de ensaio emitido por / *Test report issued by BTL Inc. (China)*	BTL-EMC-1-1607C046	2018-03-27
Relatório de ensaio emitido por / *Test report issued by BTL Inc. (Taiwan)*	BTL-FICE-1-1607C046	2016-07-26

Modelo/Model: 22P1, **22P1*******

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117328 001	2018-01-22

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Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117328 002	2018-03-06
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C204	2018-04-17
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C204	2018-04-17

Modelo/Model: 24P1, **24P1*****

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50123526 001	2018-03-15
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C227	2018-02-26
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C227	2018-02-13

Modelo/Model: 9P1, **9P1*****

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50127813 001	2018-04-02
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1802C098	2018-03-26
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1802C098	2018-03-26

Modelo/Model: AG251*****, 250LM000****

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by Nemko Shanghai Ltd. Shenzhen Branch*	373638	2019-04-24
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1904C132	2019-05-13

Modelo/Model: 24G2, **24G2*****, 27G2, **27G2********

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 001	2018-05-02
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 002	2019-06-17
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology (Suzhou) Corporation*	SECE1906151	2019-08-03
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology Corp.*	TEFD1906255	2019-08-03
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1905C010	2019-07-23
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1905C010	2019-07-23

Modelo/Model: 323FCX, 323QCX, **323*****

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50306701 001	2019-11-11
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology (Suzhou) Co., Ltd.*	SECE1910074	2019-11-01

Modelo/Model: 22P2, 22P2*****

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50349572 001	2020-03-30
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50349572 002	2020-06-04
Relatório de ensaio emitido por / *Test report issued by*	BTL-EMC-1-2001C075A	2020-06-28

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BTL INC.		
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-FICE-1-2001C075	2020-03-30

Modelo/Model: 27B1,27B1HM, **27B1*****

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	CN22Q3BH 001	2022-03-04
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	CN22Q3BH 002	2022-05-18
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd*	ACS-E22053	2022-03-25
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd*	ACS-F22047	2022-03-25
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-EMC-1-1904C077D	2022-06-06

Modelo/Model: U27P2, **27P2*******

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 001	2020-03-18
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 002	2020-08-10
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 003	2021-06-30
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 004	2022-05-05
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-EMC-1-2003C125A	2022-05-09

Modelo/Model: 25G3ZM, 25G3*******

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 001	2021-05-13
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 002	2022-02-14
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 003	2022-07-11
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc. (Dongguan)*	BTL-EMC-1-2104C184B	2023-06-12

Modelo/Model: **24B30*****, **24B35******** (refer to Appendix S)***

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230800494201	2023-09-26
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230800494201A1	2023-11-24
Relatório de ensaio emitido por / *Test report issued by* BTL Inc. (Dongguan)	BTL-EMC-1-2310C020	2023-11-02
Relatório de ensaio emitido por / *Test report issued by* BTL Inc. (Dongguan)	BTL-EMC-1-2310C020B	2024-01-05

Modelo/Model: 27G2E1, 27G2*****, C27G2********, C*27G2********, Q27G2********, U27G2***********

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES221100672801*	*2022-12-28*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES230500304601*	*2023-06-28*
Relatório de ensaio emitido por / *Test report issued by* BTL Inc. (Dongguan)	*BTL-EMC-1-2207C151B*	*2023-09-15*

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

Modelo/Model: 24B3HMF2, **24B3******

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES240100059701*	*2024-02-06*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES240100059701 (Correction 1)*	*2024-03-06*
Relatório de ensaio emitido por / *Test report issued by* Shenzhen UnionTrust Quality and Technology Co., Ltd.	*2310167389EMC-1*	*2023-11-27*
Relatório de ensaio emitido por / *Test report issued by* Shenzhen UnionTrust Quality and Technology Co., Ltd.	*2403079950EMC-1*	*2024-03-14*

Modelo/Model: 22B3HMF, 22B3*****, Q22B3**********

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES230200081401*	*2023-04-28*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES230200081401A1*	*2024-01-30*
Relatório de ensaio emitido por / *Test report issued by* Tianjin Dongdian Testing Service Co., Ltd.	*DDT-B23030305-1E04*	*2023-03-27*

Modelo/Model: 22B30HM2, 22B35HM2, **22************

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* **SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch**	**SZES231200774901**	**2024-01-04**
Relatório de ensaio emitido por / *Test report issued by* **BTL INC.**	**BTL-EMC-1-2312C138**	**2024-01-15**

Modelo/Model: Q27B30, 27B30H, 27B35H, **27************

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* **SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch**	**SZES231100735901**	**2024-01-02**
Relatório de ensaio emitido por / *Test report issued by* **BTL INC.**	**BTL-EMC-1-2401C032**	**2024-01-30**

Informações de Auditoria / *Audit Information:*

Local da Auditoria / *Audit Location*	**Data de Realização /** *Perform Date*
Fabricante / *Manufacturer:* *ENVISION INDUSTRIA DE PRODUTOS ELETRONICOS LTDA*	2024-03-12
Solicitante / Supplier: *ENVISION INDUSTRIA DE PRODUTOS ELETRONICOS LTDA*	2024-05-06

Informações Adicionais / *Additional Information: N/A*

Observações / *Observations:*

1. A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da UL do Brasil Certificações previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro.
   The validity of this Certificate of Conformity is linked to the performance of maintenance assessments and treatment of possible non-conformities in accordance with the guidelines of UL do Brasil Certifications provided for in the specific Conformity Assessment Regulation. To check the updated condition of regularity of this Certificate of Conformity, the Inmetro database of certified products and services must be consulted.

2. Este certificado aplica-se aos equipamentos (produtos) idênticos ao protótipo avaliado e certificado, manufaturados na(s) unidade(s) fabril(is) mencionada (s) acima.

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão** / *Review*: **00**	**Validade** / ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

This certificate applies to the products that are identical to the prototype investigated, certified and manufactured at the production site mentioned in this certificate.

3. Qualquer alteração no produto, incluindo a marcação, invalidará o presente certificado, salvo se o solicitante informar por escrito à UL do Brasil Certificações sobre esta modificação, a qual procederá à avaliação e decidirá quanto à continuidade da validade do certificado.
   Any non-authorized changes performed in the product, including marking, will invalidate this certificate. UL do Brasil Certificações must be notified about any desired change. This notification will be analyzed by UL do Brasil Certificações that will decide about certificate force.

4. Esta autorização está vinculada a um contrato e para o escopo acima citado.
   This license is related to a commercial proposal and to the scope above cited.

Histórico de Revisões / *Revisions History:*

Revisão / *Review*	**Data** / *Date*	**Descrição da Revisão** / *Revision Description*
00	6 de junho de 2024 June 6, 2024	**Emissão inicial com recertificação do certificado UL-BR 21.1192.** / *Initial Issue with renewall of certificate UL-BR 21.1192*
A última revisão substitui e cancela as anteriores / *The last review replaces and cancels the previous ones*		

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Anexo I / *Attachment I:*

Appendix A **(Modelo/Model: 236LM00014, *2470*****)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: AC 100-240V, 50/60 Hz, 1.5 A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32:2012 Class B, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight for 23.6 inch models	TPV	TPM236H* (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 18.6W; LED Array Voltage: 56V	--	Tested in equipment
Alt.	IVO	M236MWF* (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 17.7W; LED Array Voltage: 31.5V	--	Tested in equipment
Alt.	BOE	HM236WU*-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 18.7W; LED Array Voltage: 37.4V	--	Tested in equipment
Alt.	CHIMEI INNOLUX	M236H**-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 19.09W; LED Array Voltage: 47.6V	--	Tested in equipment
Alt.	TPV	TPM236WF*-****** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 22.4W; LED Array Voltage: 44.8V	--	Tested in equipment
Alt.	BOE	HR236WU*-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 26.7W; LED Array Voltage: 44.2V	--	Tested in equipment
Plastic Enclosure	Cheil	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670F, NH-1017T, NH-1017(+), BF-0677(+), HS-7000RA, HG-0760(+)	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)
Alt.	Grand	D-150, D-1000A	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E88637)
Alt.	Chi Mei	PA-757(+), PH-88	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E196075)
Alt.	BASF	GP-35, GP-22, 495F	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41871)
Alt.	Bayer	FR2000, FR3005	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41613)
Alt.	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GN-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF, GN-5001RFT, GN-5008HF	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E67171)
Alt.	Teijin	TN-7500, TN-7500F(#) MN-3600H, MN-3600HA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E98529, E244324)
Alt.	HINGLONG	HL-ABS-PCR85; HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
Alt.	STYRON	STYRON A-TECH 1400	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E73656)
Alt.	KingFa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, RD-900, HIPS-510(H)	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E171666)
Alt.	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E230779)
Alt.	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
Alt.	ORINKO	ABS-3070H	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)

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Metal Enclosure except for bottom side	Interchangeable	Interchangeable	Metallic, thickness 0.4 mm min.	--	--
Metal Enclosure on bottom side	Interchangeable	Interchangeable	Metallic, thickness 0.81 mm min.	--	--
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C, thickness: 1.50mm	UL 94, UL 796	UL
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
Barrier for covering opening in bottom and top of metal enclosure	Interchangeable	Interchangeable	Min. V-1 or better, min. 0.4mm thickness	UL 94	UL
Power Supply with LED driver board, type No. 715G5527 by TPV					
Appliance Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	DELIKANG/ Douling	CDJ-3 CDJ-3-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Solteam Electronics Co., Ltd.	ST-01	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	TECX	TU-301-AP, TU-301-S, TU-301-SP, TU-301-A	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Yueqing Hongchang	DB-14	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Wickmann	392, 382-series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	215 series, 677 series, 392, 382	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5 series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Fuse (F902 for L.P.S +5V)	Conquer	MET, MST, PTU	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Wickmann	392, 382-series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	215 series, 677 series, 392, 382	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5 series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Y- Capacitor (C902,C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Yinan Don	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL

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Alt.	Haohua	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Wansheng	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JY, JN	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hongming	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C900) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Yinan Don	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Haohua	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK	CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hongming	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C904) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hua Jung	MKP	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
Alt.	Faratronic	MKP62	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MPX	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MPX2	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Liow Gu	GS-L	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	EPCOS	B3292#	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Arcotronics	R.46	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC(IMQ), UL
Alt.	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko, Nemko
Alt.	Vishay Semiconductor	TCET1103	Di=0.6mm, int.cr=4.7mm, ext.cr=8.4mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Alt.	Everlight Electronics Co., Ltd.	EL817	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko, Nemko
Alt.	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko
Alt.	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL
Alt.	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Fimko, Nemko
Alt.	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Alt.	TOSHIBA	TLP781F, TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 1M ohm, min. 1/4 W (three in series, located after fuse)	--	--

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Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 600V.	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, Max. 450 V, 105 °C	--	--
Current sense resistor (R903)	Interchangeable	Interchangeable	0.39ohm, 2W	--	--
Line Choke (L901) (optional)	Dadon	73G174- 65-H	105°C	--	--
Alt.	TPV	73G174- 65-V	105°C	--	--
Alt.	Tonation	73G174- 65-YS	105°C	--	--
Alt.	YUVA	73G174- 65-N	105°C	--	--
Alt.	TDK	73G174- 65-T	105°C	--	--
Alt.	ASET	73G174- 65-X	105°C	--	--
Alt.	TaiCheng	73G174- 65-S	105°C	--	--
Alt.	Litai	73G174- 65-L	105°C	--	--
Alt.	LI SHIN	73G174- 65-LS	105°C	--	--
Transformer (T901) Alt.)	CHENPING	80GL19P-39-CP	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820; PM-9630	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	3M Symbio	44(a) 35661$	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Transformer (T901) Alt.)	YUVA	80GL19P-39-N	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Jingjang Symbio	WF(c) 35661$	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Transformer (T901) Alt.)	TPV	80GL19P-39-V	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Symbio	35661$	130°C	UL 510	UL
Insulation Tape	Symbio	35660Y*d	130°C	UL 510	UL
Transformer (T901) Alt.)	TAICHANG	80GL19P-39-S	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Jingjang	WF(c)	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Power Supply with LED driver board, type No. 715G4497 by TPV					
Appliance Inlet (CN901)	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Shenzhen Delikang	CDJ-3, CDJ-3-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Solteam Electronics Co., Ltd.	ST-01	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	TECX-UNIONS	TU-301 series	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	392, 382	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL

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Fuse (F902, F903 for L.P.S +5V, +5V1)	Conquer	MET, MST, PTU	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. Ltd and Walter Electric	2000, 2010	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	392, 382	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Y-Capacitor (C902, C903) (Y1 or Y2 type) (optional)	Haohua	CT 7	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Dongguan South Hongming	F	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN, JY	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX, KH	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK-EPC	CD, CS	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Walsin	AH, AC	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C900) (Y1 type) (optional)	Haohua	CT 7	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Dongguan South Hongming	F	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN, JY	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX, KH	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK-EPC	CD, CS	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Walsin	AH, AC	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C908) (X1 or X2 type) (optional)	Epcos Electronic Components SA	B3292#	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MKX, MPX2	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hua Jung	MKP	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
Alt.	Liow Gu Electronics Industry Co., Ltd.	GS-L	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL

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Alt.	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Xiamen Faratronic Co., Ltd.	MKP62	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Optocoupler (U902)	Everlight	EL 817 V (V=VDE option)	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.06mm, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Lite-on	LTV-817	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Sharp	PC123	Dti = 0.4mm min. Clearance/creepage between input and output = 8.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	TOSHIBA	TLP421F	Dti = 0.4mm min. Clearance/creepage between input and output = 6.5mm, 115°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	TOSHIBA	TLP781F TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Vishay Semiconductor	TCET1103	Dti = 0.4mm min. Clearance/creepage between input and output = 7.0mm, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Speaker (optional)	Interchangeable	Interchangeable	4Ω, 2.5W	--	--
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 1M , min. 1/4 W (three in series, located after fuse)	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 600V.	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, Max. 450 V, 105°C	--	--
Current sense resistor (R924)	Interchangeable	Interchangeable	0.47 , 2W	--	--
Line Choke (L901) (optional)	Yaxingdianzi	73G174-65-X	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	Dadon	73G174-65-H	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt.	Chang Chun Plastics Co., Ltd.	T375J	V-0, Phenolic, 150°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TPV	73G174-65-V	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TDK	73G174-65-T	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115, 4130	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	LI SHIN	73G174-65-L	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	YUVA	73G 174-65-N	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TAI CHANG	73G 174-65-S	120°C	--	--

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- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	LI SHIN	73G174- 65-LS	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt.	Chang Chun Plastics Co., Ltd.	T355J	V-0, Phenolic, 150°C	UL 94	UL
Alt. Line Choke (L901) (optional)	Tonation	73G174- 65-YS	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Transformer (T901)	Jiangsu Channelon Electronic Group Co., LTD	80GL22T-3-H	130°C	--	--
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Alt. Transformer (T901)	YUVA	80GL22T-3-N	130°C	--	--
- Bobbin	Chang Chun Plastics Co., Ltd.	T375J	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
Alt.	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	44(a)	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Alt. Transformer (T901)	TPV	S80GL22T-3-V	130°C	--	--
- Bobbin	Sumitomo	PM-8375	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
Alt.	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	WF	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT-280	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Switching Power Supply with LED driver board, type No. 715G6503 by TPV					
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C, thickness: 1.50mm	UL 94, UL 796	UL
Appliance Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	DELIKANG	CDJ-3, CDJ-3-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Douling	CDJ-3, CDJ-3-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	TECX	TU-301, TU-301-A TU-301-AP, TU-301-S TU-301-SP, TU-301-AL TU-301-AP-A	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Yueqing Hongchang	DB-14	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Littelfuse	392, 382-series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL

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	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000 series, 2010 series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Y- Capacitor (C902,C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Yinan Don	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	TDK	CS, CD	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Murata	KH, KX	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Success	SE, SB	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Yinan Don	CT81	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Haohua	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	TDK	CD	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Murata	KX	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	JYA-NAY	JN	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Success	SE, SB	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hongming	F	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC(IMQ), UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	IEC 60950-1	
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1M ohm, min. 1/4 W (three in series, located after fuse)	IEC 60950-1	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 500V.	IEC 60950-1	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	10-150 µF, Max. 450 V, 105 °C	IEC 60950-1	--
Line Choke (L901) (optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	--
	TPV	73G174-192-V	105°C	IEC 60950-1	--
	ASET	73G174-192-X	105°C	IEC 60950-1	--

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	TaiCheng	73G174-192-S	105°C	IEC 60950-1	--
	Litai	73G174-192-L	105°C	IEC 60950-1	--
	Darfon	73G174-192-DN	105°C	IEC 60950-1	--
	YUVA	73G174-192-N	105°C	IEC 60950-1	--
Transformer (T901) (Alt.)	Li Tai	380GL19P533L	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio 3M	35661$ 44(a)	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T901) (Used when T902 was not connected) (Alt.)	YUVA	380GL19P533N	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio 3M	35661$ 44(a)	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T901) (Used when T902 was not connected) (Alt.)	TPV	S80GL19P533V	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio SYMBIO	35661$ WF	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix B **(Modelo/Model: G2460PF, 240LM00010, G2460VQ6, 240LM00016)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60 Hz, 1.5 A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 22: 2008, CISPR 32: 2012 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3 : 2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS */ LIST OF CRITICAL COMPONENTS:*

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for constructions I, II, III, IV and VI	AUO	M240HW** (*can be 0~9, A~Z, blank for marking purpose)	24" TFT with LED backlight; Declared power consumption: 20.2W	--	Tested in equipment
	CHI MEI	M236H*-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 19.8W	--	Tested in equipment
	IVO	M236MWF* (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 17.7W	--	Tested in equipment
	BOE	HM236W**-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 18.6W	--	Tested in equipment
	TPV	TPM236** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 19.4W	--	Tested in equipment
	CHI MEI	M236H**-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 18.9W	--	Tested in equipment
	AUO	M240HTN** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 17.55W; Declared backlight voltage: max. 32.4Vdc	--	Tested in equipment
	AUO	M240HVN** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 20.62W; Declared backlight voltage: max. 46.2Vdc	--	Tested in equipment
	TPV	TPM240*** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 16.65W; Declared backlight voltage: max. 49Vdc	--	Tested in equipment
	SAMSUNG	LTM240CL** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, power consumption: 19.48W; Declared backlight voltage: max. 43.7Vdc	--	Tested in equipment
	LG Display	LM240WU* (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 16.06W; Declared backlight voltage: max. 42.9Vdc	--	Tested in equipment
	INNOLUX	M236H** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight, declared power consumption: 18.012W; Declared backlight voltage: max. 46.2Vdc	--	Tested in equipment
	SAMSUNG	LTM240CT** (* can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 19.48W; Declared backlight voltage: max. 43.7Vdc	--	Tested in equipment
	BOE	HR236WU* (* can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight, declared power consumption: 20.2W; Declared backlight voltage: 57.6Vdc	--	Tested in equipment
Plastic Enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670F, NH-1017T, NH-1017(+), BF-0677(+), HS-7000RA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)
	Grand	D-150, D-1000	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E88637)
	Chi Mei	PA-757(+), PH-88	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E196075)
	BASF	GP-35, GP-22, 495F	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41871)
	Bayer	FR2000, FR3005	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41613)
	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GN-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF, GN-5001RFT, GN-5008HF	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E67171)

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	Teijin	TN-7500, TN-7500F(#), MN-3600H, MN-3600HA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E98529, E244324)
	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
	STYRON	STYRON A-TECH 1400	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E73656)
	KingFa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(HG6), CK-100, RD-900	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E171666)
	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E230779)
Metal Enclosure	--	--	Metallic, thickness 0.61 mm min.	--	--
Metal Enclosure under supply board at horizontal position	---	--	Metal, thickness 0.81 mm min.	--	--
Metal Enclosure under supply board at vertical position	---	--	Metal, thickness 0.81mm min.	--	--
PCB	--	--	V-1 or better Min. 105°C	UL 94, UL 796	UL
Stand base	--	--	HB or better, total weight: 2.27 kg	UL 94	UL
Speaker (2 sets)(optional)	--	--	Max. 8Ω, max. 4.5W	--	--
Negative ion generator (optional)	Dong Guan Fu Fong	FIO-DC5V	I/P : 5.0 Vdc, 0.3W, 40mA O/P: -4±0.5 kVdc (at 5 Vdc)	--	--
-Transformer (T1)	Dong Guan Fu Fong	OSC-1712	105°C	--	--
- Enclosure	CHI MEI CORPORATI ON	PA-765A(+)	V-1 min, thickness 1.5 mm min.	UL 94	UL (E56070)
Negative ion generator (optional)	SHENZHEN SUNYOU	F5BS-GJ1	I/P : 4.0-6.0 Vdc O/P: -4±0.5 kVdc (at 5 Vdc)	--	--
-Transformer (T1)	SHENZHEN SUNYOU	EE16	105°C	--	--
- Enclosure	NAN YA PLASTICS CORP PLASTICS 4TH DIV	1403G6	V-0 min, thickness 0.75 mm min.	UL 94	UL (E130155)
Switching Power Supply Board 715G5361 type A:					
Appliance Inlet (CN901)	Solteam	ST-01	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40015691 UL E200241
	Zhang Jia Gang-Hua Jie	SA-4S, SB-4S-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40003610 UL E154342
	Rong Feng	SS-120, SS-7B	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40028101, UL E102641
	Delikang	CDJ-3	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40010513 UL E217394
	Delikang	CDJ-3-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40015913 UL E217394
	Inalways	0707-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010083 A1, UL E94191
	Inalways	0711-2	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010084 A1, UL E94191
	Inalways	0714	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010085 A1 UL E94191
	TECX	TU-301 series	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40025582 UL E220004
	Yueqing Hongchang	DB-14	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40028645 UL E327347
Fuse (F901 in primary)	Conquer	MET	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017157, UL E82636
	Conquer	MST	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017118, UL E82636
	Conquer	PTU	T4A, 250 Vac	IEC/EN 60127-1,	VDE 40001462,

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				IEC/EN 60127-3, UL 248-1, UL 248-14	UL E82636
	Littelfuse	382	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 400018249 UL E67006
	Littelfuse	392	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 126983 UL E67006
	Cooper Bussmann	SR-5 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE122052 UL E19180
	Cooper Bussmann	SS-5 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40015513 UL E19180
	Ever Island Electric Co., Ltd. and Walter Electric	2000 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018790 UL E220181
	Ever Island Electric Co., Ltd. and Walter Electric	2010 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018781 UL E220181
Fuse (F902, F904) (secondary for LPS) (F904 is optional)	Conquer	MET	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017155 UL E82636
	Conquer	MST	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017118 UL E82636
	Conquer	PTU	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40001462 UL E82636
	Littelfuse	382	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018250 UL E67006
	Littelfuse	392	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 126983 UL E67006
	Cooper Bussmann	SR-5 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40020046, UL E19180
	Cooper Bussmann	SS-5 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40015513 UL E19180
	Ever Island Electric Co., Ltd. and Walter Electric	2000 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018790 UL E220181
	Ever Island Electric Co., Ltd. and Walter Electric	2010 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018781 UL E220181
Y- Capacitor (C902, C903, C941) (optional) (Y1 or Y2 type)	Walsin	AH	Max. 4700pF, min. 250Vac, min. 85 °C., Y1	IEC 60384-14, UL 60384-14	VDE 40001804 UL E146544
	Walsin	AC	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40001829 UL E146544
	Samwha Capacitor Co.,Ltd.	SD	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE 40015804 UL E97754
	Haohua	CT7	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 40013601 UL E233106
	TDK-EPC	CD	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE 40029780 UL E37861
	TDK-EPC	CS	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40029781 UL E37861
	Murata	KX	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE, 40002831, UL E37921
	Murata	KH	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40002796 UL E37921
	Guangdong South Hongming Electronic	F	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40036246, UL E154899
	SUCCESS	SE	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40008996 UL E114280
	KUNSHAN WANSHENG ELECTRONI CS CO LTD	CT7	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40012143 UL E249006
	YINAN DON'S ELECTRONIC COMPONEN T CO.,LTD	CT81	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 135256 UL E145038
	Rong Feng	RF-1003	10A, 250Vac	IEC/EN 61058-1,	VDE 40030309,

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Power switch (optional)				UL 61058-1	UL (E94138)
	Solteam Electronics Co Ltd	Series MR-21	6A, 250Vac	IEC/EN 61058-1, UL 61058-1	SGS (ENEC 2009053), UL (E148157)
	Solteam Electronics Co Ltd	OR-L series	6A, 250Vac	IEC/EN 61058-1, UL 61058-1	SGS (ENEC 2014027), UL (E148157)
	Zhangjiagang Huajie Electronic Co., Ltd.	PS8	10A, 125V AC 6(4)A 250V AC	IEC/EN 61058-1, UL 61058-1	VDE 40027662, UL (E151790)
	Chily	3024	16A, 250Vac	IEC/EN 61058-1, UL61058-1	SGS (ENEC 2010034 A1), UL (E68037)
X- Capacitor (C908) (X1 or X2 type) (optional)	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40024534) UL (E183780)
	Xiamen Faratronic Co., Ltd.	MKP62	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40000358) UL (E186600)
	Hua Jung Components Co., Ltd.	MKP	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	Intertek (ENEC): 0252-5B UL (E149075)
	Europtronic	MPX	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40018238) UL (E211347)
	Europtronic	MPX2	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40025981) UL (E211347)
	Liow Gu Electronics Industry Co., Ltd.	GS-L	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40023391) UL E186321
	ARCOTRONI CS	R.46	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	IMQ (ENEC): DAT97000141 UL (E97797)
	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40026078) UL (E327138)
	Epcos Electronic Components S A	B3292#	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40005524) UL (E97863)
Thermistor (NR901)	--	--	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	--	SMD type	Three in series after fuse, each rated max. 680K ohm, min. 1/4W	--	--
Bridging Diode (BD901)	--	--	Min. 600 V, min. 2A	--	--
Ripple Capacitor (C907)	--	--	100 μ F-150 μ F, min. 450V, 105°C	--	--
Transistor (Q901)	--	--	Min. 600 V, min. 3.8A	--	--
Line Choke (L901) (optional)	Dadon	73L174-26-H	105°C	--	--
	TDK	73L174-26-T	105°C	--	--
	LI SHIN	73L174-26-LS	105°C	--	--
	TPV	73L174-26-V	105°C	--	--
Bobbin of line choke	Chang Chun	T375J, T-357	Phenolic, V-0, 150°C	UL94	UL
	Sumitomo	PM-9820, PM-8375	Phenolic, V-0, 150°C	UL94	UL
	E I DUPONT DE NEMOURS & CO INC	FR-530L	130°C	UL94	UL
Y- Capacitor (C937, C938) (optional) (Y1 or Y2 type)	Walsin	AH	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40001804) UL (E146544)
	Walsin	AC	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE (40001829) UL (E146544)
	Samwha Capacitor Co.,Ltd.	SD	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40015804) UL (E97754)
	Haohua	CT7	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE (40013601) UL (E233106)
	TDK-EPC	CD	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40029780) UL (E37861)
	TDK-EPC	CS	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE (40029781) UL (E37861)
	Murata	KX	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE, 40002831, UL E37921
	Murata	KH	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40002796 UL E37921
	Guangdong South Hongming Electronic	F	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40036246, UL E154899
	SUCCESS	SE	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40008996 UL E114280
	KUNSHAN WANSHENG	CT7	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 40012143 UL E249006

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	ELECTRONI CS CO LTD				
	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 135256 UL E145038
Current sense Resistor (R924)	--	--	Min. 0.3 ohm, 2W	--	--
Photo Coupler (IC902)	Sharp	PC123	Dti = 0.7 mm, Int. cr = 5.0 mm, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40008087, UL E64380
	Vishay Semiconductor	TCET1103	Dti = 0.6 mm, Int. cr = 4.7 mm, Ext. cr = 8.4 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40028080 UL E76222
	Everlight Electronics Co., Ltd.	EL8X7 (X=1 or 2)	Dti = 0.5 mm, Int. cr = 6.0 mm, Ext. cr = 7.7 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	SGS (FI 27474 A1), UL E214129
	Lite-On	LTV-817	Dti = 0.4 mm, Int. cr = 4.0 mm, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40015248 UL E113898
	TOSHIBA	TLP421F	Dti = 0.4 mm, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 3000 Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40010944 UL E67349
	Toshiba	TLP781, TLP781F	Dti = 0.4 mm, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 3000 Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40021173 UL E67349
	RENESAS	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di = 0.4mm, int. cr = thermal cycling 3. ext. cr = 8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40008862 UL E72422
Transformer (T901)	TPV	80GL22T-3-V 80TL22T-3-V	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-8375	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	JINGJIANG YAHUA	No.WF(c)	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	NO.CT(c)	130°C	UL510	UL
Transformer (T901)	YUVA	80GL22T-3-N 80TL22T-3-N	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
	3M	NO.44(a)	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	NO.CT(c)	130°C	UL510	UL
	SYMBIO INC	NO.35660Y*%	130°C	UL510	UL
Transformer (T901)	Li Tai	80GL22T-3-L 80TL22T-3-L	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
-Insulation tape	SYMBIO INC	NO.35660Y* d	130°C	UL510	UL
	SYMBIO INC	NO.35661$	130°C	UL510	UL
Transformer (T901)	Dadon / Jiangsu Channelon	80GL22T-3-H 80TL22T-3-H	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
-Insulation tape	SYMBIO INC	No.35660Y* (%)	130°C	UL510	UL
	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T901)	TaiChang	80GL22T-3-S 80TL22T-3-S	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	JINGJIANG YAHUA	WF	130°C	UL510	UL
	JINGJIANG YAHUA	WF310	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	1350F-1	130°C	UL510	UL
	JINGJIANG YAHUA	JY25-A	130°C	UL510	UL
Power Supply with LED driver board, type No. 715G4497 by TPV					
AC-Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250 V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	DELIKANG/ Douling	CDJ-3, CDJ-3-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL

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	TECX	TU-301-AP, TU-301-S, TU-301-SP, TU-301-A	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Yueqing Hongchang	DB-14	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	TECX	TU-301 series	10A, 250V, 70°C	IEC/ EN 60320-1	VDE
Fuse (F901)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C900, C902, C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don	CT81	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success	SE, SB	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (C908) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Hua Jung	MKP	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC (Semko), UL
	Faratronic	MKP62	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX2	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko, Nemko
	Vishay Semiconductor	TCET1103	Di=0.6mm, int.cr=4.7mm, ext.cr=8.4mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko
	Everlight Electronics Co., Ltd.	EL817	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko, Nemko
	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko
	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL
	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Fimko, Nemko
	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko

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	TOSHIBA	TLP781F, TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko
Bridging Diode (BD901)	interchangeable	interchangeable	Min. 2.0A, min. 600Vac	--	--
Ripple Capacitor (C907)	interchangeable	interchangeable	20-180µF, min. 450 V, min. 105 °C	--	--
Transistor (Q901)	interchangeable	interchangeable	Min. 600V, min. 2.0A	--	--
Thermistors (NR901) (Optional)	interchangeable	interchangeable	Min. 3Ω, Max. 5 A at 25 °C	--	--
Current sensor resistor (R924)	interchangeable	DIP type	0.47Ω, 2 W	--	--
Bleeding resistors (R900, R901, R902)	interchangeable	interchangeable	0.91MΩ, Min.1/8W	--	--
Line Choke (L901) (optional)	Dadon	73G174-65-H	105°C	--	Tested in equipment
	ASET	73G174-65-X	105°C	--	Tested in equipment
	Litai	73G174-65-L	105°C	--	Tested in equipment
	TPV	73G174-65-V	105°C	--	Tested in equipment
	Taichang	73G174-65-S	105°C	--	Tested in equipment
	YUVA	73G174-65-N	105°C	--	Tested in equipment
	DARFON	73G174-65- DN	105°C	--	Tested in equipment
	TDK	73G174-65-T	105°C	--	Tested in equipment
Transformer (T901) (Alt.)	TPV	80GL22T-3-V	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-8375	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	YUVA	80GL22T-3-N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	3M	44(a)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	DADON	80GL22T-3-H	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	TAICHANG	80GL22T-3-S	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
Margin tape	JINGJIANG JINGYI	WF310	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JIANGJING JINGYI	25-A	130°C	UL510	UL
	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
Transformer (T901) (Alt.)	CHENPING	80GL22T-3-CP	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820, PM-9630	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

Appendix C **(Modelo/Model: 215LM00041, *2270******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: AC 100-240V, 50/60Hz; 1.5A, Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013, CISPR 22:2008 (modified) Class B, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3 : 2013, IEC 61000-4-2: 2008, IEC 61000-4-3: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2005, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 21.5'' model	TPV	TPM215HW**-****** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 19.35W and backlight input voltage is 41.6V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HTN** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 15.54W and backlight input voltage is 38.4V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-*** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 16.97W and backlight input voltage is 34.65V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215WF*-**** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 16.3W and backlight input voltage is 51.2V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215WF*-**** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 14.35W and backlight input voltage is 45.0V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HR215WU*-*** (* can be 0-9, A-Z, a-z for marketing purpose)	21.5 inch TFT type, with LED back light, power consumption: 24.87W; LED Array Voltage: 41.6V.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HM215WU*-*** (* can be 0-9, A-Z, a-z for marketing purpose)	21.5 inch TFT type, with LED back light, power consumption: 17.19W; LED Array Voltage: 51.2V.	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215HT** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 15.82W; LED Array Voltage: 52.8V	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HW** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 17W; LED Array Voltage: 52.8V.	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI	M215H*-L** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 12.55W; LED Array Voltage: 41.V.	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215WF* (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.0W; LED Array Voltage: 57.6V.	IEC 60950-1	Tested in equipment
(Alternative)	CPT	CLAA215FA** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 14.6W; LED Array Voltage: 41.6V.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HT215F**-*** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.56W; LED Array Voltage: 54.4V.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	T215HVN**** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.55W; LED Array Voltage: 54.4V.	IEC 60950-1	Tested in equipment

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(Alternative)	TPV	TPM215WF* (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 14.9W; LED Array Voltage: 31.5V.	IEC 60950-1	Tested in equipment
Plastic enclosure	SAMSUNG SDI CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), GC-0750(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670(+), NH-1017(p), BF-0677(+), HS-7000(+), HG-0760(+), HR-1360(+)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Grand	D-150, D-1000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	LG	HF-350, HF-380, AF312T1, AF342T, GN-5001TF(#), GN-5001RFD, GP-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF(T)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Chi Mei	PA-757(+), PH-88	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	King Fa	5197, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(HG6), CK-100	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Bayer	FR3005	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Teijin	TN-7500(v), TN-7500F(#), MN-3600H(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	HIPS-2000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
Metal enclosure for all types	Interchangeable	Interchangeable	Metal thickness: min. 0.5mm	--	Tested in equipment
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Power supply board: 715G6503 type A					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL

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(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
Y- Capacitor (C902 and C903, Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CD	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KX	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SE, SB	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Rong guang da	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	IEC 60950-1	Tested in equipment
Bleeder Resistor (R907, R908, R909)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	IEC 60950-1	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	IEC 60950-1	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, max. 400V, 105°C	IEC 60950-1	Tested in equipment
Line Choke (L901) (Optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Prosperity Dielectrics	73G174-192-F	105°C	IEC 60950-1	Tested in equipment
(Alternative)	ASET	73G174-192-X	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Taichang	73G174-192-S	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Litai	73G174-192-L	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Darfon	73G174-192-DN	105°C	IEC 60950-1	Tested in equipment

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(Alternative)	YUVA	73G174-192-N	105°C	IEC 60950-1	Tested in equipment
Transformer (T902) (Alt.)	Channelon	380GL19P535H00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Transformer (T902) (Alt.)	YUVA	380GL19P535N00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Furukawa	TEX-E	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Power supply board: 715G6503 type B					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL

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(Alternative)	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
Y- Capacitor (C902 and C903, Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CD	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KX	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SE, SB	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Hua Jung	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Rong guang da	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	IEC 60950-1	Tested in equipment
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	IEC 60950-1	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	IEC 60950-1	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, max. 400V, 105°C	IEC 60950-1	Tested in equipment
Line Choke (L901) (Optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Prosperity Dielectrics	73G174-192-F	105°C	IEC 60950-1	Tested in equipment
(Alternative)	ASET	73G174-192-X	105°C	IEC 60950-1	Tested in equipment
(Alternative)	TaiCheng	73G174-192-S	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Litai	73G174-192-L	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Darfon	73G174-192-DN	105°C	IEC 60950-1	Tested in equipment
(Alternative)	YUVA	73G174-192-N	105°C	IEC 60950-1	Tested in equipment
Transformer (T901) (Alt.)	LFDJ	380GL19P533J00	Class B	IEC 60950-1	Tested in equipment

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
(Alternative)	Chang Chun Plastics Co., Ltd.	T357HF	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	JINGJIANG YAHUA	No.WF	130°C	UL 510	UL
(Alternative)	3M COMPANY	44(a)	130°C	UL 510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Transformer (T901) (Alt.)	YUVA	380GL19P533N00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	SYMBIO INC	No.35661$	130°C	UL510	UL
(Alternative)	3M COMPANY	44(a)	130°C	UL510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Transformer (T901) (Alt.)	TPV	S80GL19P533V00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	SYMBIO INC	No.35661$	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.WF	130°C	UL510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix D **(Modelo/Model: 185LM000**)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: 100-240Vac, 50/60 Hz, 1.5 A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32 : 2012, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 18.5 inch model	TPV	TPM185B*-****** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.4W and backlight input voltage is 35.2V in specification.	IEC 60950-1	Tested in equipment
	AUO	M185XW** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 10.2W and backlight input voltage is 36V in specification.	IEC 60950-1	Tested in equipment
	AUO	M185XTN** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 7.8W and backlight input voltage is 25.2V in specification.	IEC 60950-1	Tested in equipment
	BOE	HM185WX*-*** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 10.68W and backlight input voltage is 32V in specification.	IEC 60950-1	Tested in equipment
	CHIMEI INNOLUX	M185B**-*** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.11W and backlight input voltage is 27.2V in specification.	IEC 60950-1	Tested in equipment
	L&T	LM185WH*-**** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 12.8W and backlight input voltage is 51.2V in specification.	IEC 60950-1	Tested in equipment
	SAMSUNG	LTM185AT** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.9W and backlight input voltage is 35.2V in specification.	IEC 60950-1	Tested in equipment
	TPV	TPM185WH* (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.8W and backlight input voltage is 38.5V in specification.	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 2.0mm thickness min. 60°C	UL 94	UL

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	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	HUIZHOU WOTE	2100	HB or better, 2.0mm thickness min. 60°C	UL 94	UL

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	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	STYRON	STYRON A-TECH 1200	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
Metal enclosure (except part under power board)	Interchangeable	Interchangeable	Metallic, thickness 0.6 mm min.	--	--
Metal enclosure (under power board)	Interchangeable	Interchangeable	Metallic, thickness 0.6 mm min.	--	--
Base stand (optional)	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Power supply board: 715G5527					
AC-Inlet (CN901)	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S, SA-4S-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-3, CDJ-3-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	ST-01	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	VDE: SC04 UL: SC04-1BWW, SC04-2BTT	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Yueqing Hongchang Radio Co., Ltd	DB-14	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc.	677 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Fuse (F902) (optional)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL

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	Littelfuse, Inc.	677 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin Technology Corp.	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (X1 or X2 type) (C904) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling , ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL

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	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int. cr= thermal cycling, ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	TOSHIBA	TLP781F TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	VISHAY Semiconductor GmbH	TCET1103-3034	Di=Min. 0.4mm, int. cr=thermal cycling , ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, min. 450V, 105°C	--	--
Line Choke (L901) (optional)	Dadon	73G174- 65-H	105°C	--	--
	TPV	73G174- 65-V	105°C	--	--
	DARFON	73G174- 65-DN	105°C	--	--
	TaiChang	73G174- 65-S	105°C	--	--
	TDK	73G174- 65-T	105°C	--	--
	Litai	73G174- 65-L	105°C	--	--
	YUVA	73G174- 65-N	105°C	--	--
	ASET	73G174- 65-X	105°C	--	--
Transformer (T901) (Alt.)	YUVA	80GL19P-39-N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin Tape	SYMBIO INC	35661 (c), 35660 (a), 35660Y (e)	130°C	UL 510	UL
	3M	44 (a)	130°C	UL 510	UL
Insulation Tape	SYMBIO INC	35660Y (e)	130°C	UL 510	UL
	JINGJIANG YAHUA	CT	130°C	UL 510	UL
Transformer (T901) (Alt.)	TPV	80GL19P-39-V	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin Tape	SYMBIO INC	35661 (c), 35660 (a), 35660Y (e)	130°C	UL 510	UL
Insulation tape	JINGJIANG YAHUA	35660Y (e)	130°C	UL 510	UL
Transformer (T901) (Alt.)	TAICHANG	80GL19P-39-S	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin tape	JINGJIANG YAHUA	WF* (c)(h)	130°C	UL 510	UL
Insulation Tape	JINGJIANG YAHUA	CT	130°C	UL 510	UL
Power supply board: 715G6503					
AC-Inlet (CN901)	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S, SA-4S-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL

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	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-3, CDJ-3-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	ST-01	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	VDE: SC04 UL: SC04-1BWW, SC04-2BTT	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Yueqing Hongchang Radio Co., Ltd	DB-14	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901 in primary)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc.	677 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C903) (Y1 or Y2 type) (optional)	Walsin Technology Corp.	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Y- Capacitor (C902, C913) (Y1 type) (optional)	Walsin Technology Corp.	AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL

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	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, min. 400V, 105°C	--	--
Line Choke (L901) (optional)	Dadon	73G174-192-H	105°C	--	--
	Prosperity Dielectrics	73G174-192-F	105°C	--	--
	ASET	73G174-192-X	105°C	--	--
	TaiChang	73G174-192-S	105°C	--	--
	Litai	73G174-192-L	105°C	--	--
	Darfon	73G174-192-DN	105°C	--	--
	YUVA	73G174-192-N	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			
Transformer (T902) (Alt.)	YUVA	380GL19P535N00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			

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Transformer (T902) (Alt.)	TPV	S80GL19P535V00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Furukawa	TEX-E	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

Appendix E* (Modelo/Model: 22B1, 22B1H, 22*****)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 19VDC, 1.31A Class Ⅲ; IP20

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32 : 2015, CISPR 24:2010/A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 9.3W; LED array voltage: 31V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	SAMSUNG SDI CO LTD (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++), GC-1017(+), GC-0750(+), VE-1890(+), TN-1100(+), BF-0675(+), BF-0670(+), NH-1017SG(+), NH-1017(p), BF-0677(+), HS-7000(+), HG-0760(+), HR-1360(+)	HB or better, min. 1.6mm thickness	UL 94	UL E115797
(Alternative)	Grand	D-150, D-1000, D-1000A	HB or better, min. 1.6mm thickness	UL 94	UL E88637
(Alternative)	LG	HF350(#), HF-380(#), AF312T1, AF342T1, AF342(#), LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), SE750(#), XG568(#), XG569(#), GP-1000F(#), LUPOY GN-5001RF(T)	HB or better, min. 1.6mm thickness	UL 94	UL E67171
(Alternative)	Chi Mei	PA-757(+), PA-756S, PH-88, PC-110	HB or better, min. 1.6mm thickness	UL 94	UL E56070

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(Alternative)	King Fa	5197, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, HIPS-510 (o), CK-55111	HB or better, min. 1.6mm thickness	UL 94	UL E171666
(Alternative)	ALBIS	GP-35, GP-22, 495F	HB or better, min. 1.6mm thickness	UL 94	UL E80168
(Alternative)	Bayer	FR3000 series, FR3005 series	HB or better, min. 1.6mm thickness	UL 94	UL E41613
(Alternative)	Teijin	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better, min. 1.6mm thickness	UL 94	UL E98529
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, min. 1.6mm thickness	UL 94	UL E162447
(Alternative)	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 1.6mm thickness	UL 94	UL E230779
(Alternative)	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 1.6mm thickness	UL 94	UL E345434
(Alternative)	ORINKO	ABS-3070H	HB or better, min. 1.6mm thickness	UL 94	UL E328304
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y), YOUHO-1303B	HB or better, min. 1.6mm thickness	UL 94	UL E471190
(Alternative)	UNIC	UR-3006+	HB or better, min. 1.6mm thickness	UL 94	UL E471190
(Alternative)	SABIC	C6600	HB or better, min. 1.6mm thickness	UL 94	UL E207780
(Alternative)	WISTRON	GA35	HB or better, min. 1.6mm thickness	UL 94	UL E359575
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 1.6mm thickness	UL 94	UL E310240
(Alternative)	FORMOSA IDEMITSU PETROCHEMICAL CORP	#1900+(f2)	HB or better, min. 1.6mm thickness	UL 94	UL E238753
(Alternative)	Interchangeable	Interchangeable	HB or better, min. 1.6mm thickness	UL 94	UL
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL E108591
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
AC/DC Adapter	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	I/P: 100-240Vac, max. 1.3A, 50-60Hz; O/P: DC 19V, 1.31A, 40 °C, 5000m Comply with LPS	IEC 60950-1:2005+A1+A2; EN 60950-1:2006+A11+A1+A12+A2	NEMKO CB (Certif. No. NO83042)
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
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Appendix F **(Modelo/Model: 24B1, 24B1H, 24********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 19VDC, 1.31 A; Class Ⅲ; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32 : 2015, CISPR 24:2010/A1:2015, IEC 61000-3-2: 2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
*LCD Panel with LED backlight type (for models 24********)*	TPV	TPM236W**-********* (* can be 0~9, A~Z, "." or blank)	23.6 inch TFT LCD (power consumption: 15.9 W; LED array voltage: 57.8V)	--	Tested in equipment
	L&T	LM238***-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.1W; LED Array Voltage: 38.8V	--	Tested in equipment
	BOE	MV238***-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 16.9W; LED Array Voltage: 51.5V	--	Tested in equipment
	LG Display	LM238WF*-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 17.76W; LED Array Voltage: 58.9V	--	Tested in equipment
	TPV	TPM238WF* (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 15.11W; LED Array Voltage: 52.7V	--	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E115797)
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E88637)
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E56070)
	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E80168)
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E41613)

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	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E67171)
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529, E244324)
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E345434)
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E73656)
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E171666)
	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E230779)
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E328304)

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	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E310240)
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
	HUIZHOU WOTE	2100	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529)
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E108538)
	STYRON	STYRON A-TECH 1200	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E162447)
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E314268)
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E103670)
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E207780)
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E205938)
*Power Adapter (for models 24********)*	TPV	ADPC1925EX	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, LPS, 40˚C, Class I, altitude operating: 5000 m	IEC 60950-1: 2005+A1	CB by Nemko (certificate no. NO83042)
Alt.	L&T	STK025-19131T	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, 40˚C, Class I, 5000m Comply with SELV and L.P.S.	IEC 62368-1: 2014	CB by TUV SUD (Certificate No. SG PSB-IV-02436M1)
PCB	FUJIAN MILKY-WAY PRINTED CIRCUIT BOARD INDUSTRIAL CO LTD	MW-2, MW-CEM1	Min. V-1 or better, min. 105 °C	UL 94, UL 796	UL (E168066)
Alt.	Interchangeable	Interchangeable	Min. V-1 or better, min. 105 °C	UL 94, UL 796	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
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Appendix G **(Modelo/Model: G2260VWQ6, 215LM00033)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32: 2015, CISPR 24:2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3 : 2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 21.5'' model	L&T	BM215WF*-**** (* can be 0-9, A-Z or blank, the suffix cannot be T2BB)	21.5'' panel with LED backlight The declared power consumption in specification is 17.3W.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215WF*-T2BB (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 16.3W.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215WF****** (* can be 0-9, A-Z, "-" or blank, no technical difference)	21.5'' panel with LED backlight The declared power consumption in specification is 14.95W.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HW0* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.1W.	IEC 60950-1	Tested in equipment
(Alternative)	CHI MEI	M215H*-*** (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.28W.	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM215HW0* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.5W.	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215WF* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 16.2W.	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215HT** (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 22.26W	IEC 60950-1	Tested in equipment
Plastic enclosure	Cheil	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670(+), HS-7000(+)	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Grand	D-150, D-1000	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GP-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Chi Mei	PA-757(+), PH-88	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	King Fa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, CK-100	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Basf	GP-35, GP-22, 495F	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Bayer	FR2000, FR3005	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Teijin	TN-7500(v), TN-7500F(#)	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Haier	HRABS-RS, HRABS-HG	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Speaker (2 sets) (optional) (for 21.5 inch models only)	Interchangeable	Interchangeable	Max. 8Ω, max. 4.5 W	--	Tested in equipment
For Switching Power Supply with DC/DC converter board type: 715G4497					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1	VDE, UL

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(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
Fuse F901	Littelfuse	382, 392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Conquer	MET MST-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Walter	2000 series, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
Fuse F902 (sec. for LPS)	Littelfuse	382, 392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Conquer	MET MST-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Walter	2000 series, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
Y- Capacitor (C900, C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
X-Capacitor (C908) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	ENEC(Semko), UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.=4.0mm, ext.=8.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, int.=4.7mm, ext.=8.4mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Everlight Electronics Co., Ltd.	EL817 EL1013	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Lite-on	LTV-817	Di=0.7mm, int.=4.7mm, ext.=8.4mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	TOSHIBA	TLP421F, TLP781F, TLP781	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Max. 5A, min. 3Ω, 25°C	--	Tested in equipment
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 680KΩ, min. 1/8W	--	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2.0A, 600Vac min.	--	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	100-180µF, min. 450V, 105°C	--	Tested in equipment
Transistor (Q901)	Interchangeable	Interchangeable	Min. 600V, min. 2.0A	--	Tested in equipment
Line Choke (L901) (optional)	Dadon	73G174-65-H	105°C	--	Tested in equipment
(Alternative)	TPV	73G174-65-V	105°C	--	Tested in equipment
(Alternative)	Taichang	73G174-65-S	105°C	--	--
(Alternative)	YUVA	73G174-65-N	105°C	--	--
(Alternative)	Yaxing	73G174-65-X			

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(Alternative)	Darfon	73G174-65-DN			
Transformer (T901)	Dadon	80GL22T-3-H	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	YUVA	80GL22T-3-N	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	TPV	80GL22T-3-V	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	CHENPING	80GL22T-3-CP	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

***Appendix H* (Modelo/Model: 315LM00019, AG322FCX)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 20V d.c., 2.25 A; Class Ⅲ; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2012 Class B, CISPR 24:2010, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPT320B*-****.* (* can be 0-9, A-Z, a-z, "-" or blank)	32 inch panel with LED backlight The declared power consumption is 47.35W and backlight input voltage is 50.4V in specification.	--	Tested in equipment
Alt.	TPV	TPT315B*-****.* (* can be 0-9, A-Z, a-z, "-" or blank for marketing purpose only)	31.5 inch panel with LED backlight The declared power consumption is 35.14W and backlight input voltage is 47.6V in specification.	--	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E115797)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E88637)
Alt.	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL(E56070)
Alt.	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E80168)
Alt.	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E41613)
Alt.	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529, E244324)
Alt.	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E345434)

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Alt.	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E73656)
Alt.	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E230779)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E328304)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E310240)
Alt.	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
Alt.	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	HUIZHOU WOTE	2100	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529)

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Alt.	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E108538)
Alt.	STYRON	STYRON A-TECH 1200	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E162447)
Alt.	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E314268)
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E103670)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E207780)
Alt.	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E205938)
Alt.	CHI LIN	GA-1(aaa), GA-1535	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E177071)
AC/DC Adapter	TPV Electronics (Fujian) Co., Ltd.	ADPC2045	I/P: 100-240Vac, 1.5A, 50-60Hz; O/P: DC 20V, 2.25A; 40 °C, 5000m Comply with LPS	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013	TUV CB (Certif. No. JPTUV-064333)
Fuse F7001, F7002 (on main board 715G8722 for LPS)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix I **(Modelo/Model: 22P1, **22P1********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 12.42W; LED array voltage: 47.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Heat shrinkable tube used on metal pillar near C907	DONGGUAN SALIPT CO LTD	SALIPT S-901-600, SALIPT S-HPT-600	125°C, 600V, min. 0.4mm thickness	--	UL
Switching mode power supply board: 715G7300 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL

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(Alternative)	Littelfuse, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Europtronic	MPX, MPX2	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R931)	CAIZHI	MOF2WS	Min. 0.825Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.825Ω, 2W	--	--
Bridging Diode(BD901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor(C907)	KINGNICHI	PW2W470MLT1236DLRV	50-150μF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	50-150μF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L901) (Optional)	ASET	73G-174-192-X	105°C	--	--
(Alternative)	DADON	73G-174-192-H	105°C	--	--
(Alternative)	TAICHANG	73G-174-192-S	105°C	--	--
(Alternative)	FRONTIER	73G-174-192-F	105°C	--	--
(Alternative)	LI TAI	73G-174-192-L	105°C	--	--
(Alternative)	YUVA	73G-174-192-N	105°C	--	--
(Alternative)	DARFON	73G-174-192-DN	105°C	--	--

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Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix J **(Modelo/Model: 24P1, **24P1********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	AUO	M240UAN**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.3W; LED array voltage: 43.5V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM240*** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 16.9W; LED array voltage: 40.3V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM240**** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.9W; LED array voltage: 41.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	MV240*** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.6W; LED array voltage: 40.3V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM240***-***** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 16.65W; LED array voltage: 44.8V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM238***-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 12.1W; LED Array Voltage: 38.8V)	--	Tested in equipment
(Alternative)	BOE	MV238***-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 16.9W; LED Array Voltage: 51.5V)	--	Tested in equipment
(Alternative)	LG Display	LM238WF*-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 17.76W; LED Array Voltage: 58.9V)	--	Tested in equipment
(Alternative)	TPV	TPM238WF* (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 15.11W; LED Array Voltage: 52.7V)	--	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)(Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance

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(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance

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(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON A-TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Switching mode power supply board: 715G7610 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Primary Switch (SW901) (Optional)	Rong Feng Industrial Co., Ltd.	RF-1003	VDE: 10(4)A, 250Vac UL: 10A, 250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21 series	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21S	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	OR-L series, OR-P series	ENEC: 6A, 250Vac UL: 10A/125Vac, 6A/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-22 series	ENEC: 12(4)A, 250Vac UL: 12A,125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Chily	3024 series	VDE:16(4)A, 250Vac UL: 15A,125/250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Ningbo Yinzhou Lihe Switch Factory	RL3-4	VDE: 10(4), 250Vac UL: 16A, 125Vac	IEC/EN 61058-1, UL 1054	VDE, UL

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Fuse (F9901 in primary)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Fuse (F901 in secondary)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C9903, C9904) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9902) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Samwha	SD	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C9901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR9901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R9901, R9902, R9903)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R916)	Tzaiyuan	MOF2WS0R43JT52	Min. 0.39Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.39Ω, 2W	--	--
Bridging Diode (BD9901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--

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(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C901, C902)	RUBYCON	470PKZ002S	47-150µF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	47-150µF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L9902) (Optional)	JIANGSU CHANNELON	373G0174563H	105°C	--	--
(Alternative)	LIANFENG DONGJJIN	373G0174563J	105°C	--	--
(Alternative)	ASET	373G0174563X	105°C	--	--
(Alternative)	LIANZHEN ELECTRONICS	373G0174563Z	105°C	--	--
Transformer (T901)	PHOENIX	380GL32P547P	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150 °C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C, Class B	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T901) (Alt.)	LIANFENG DONGJIN	380GL32P547J	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150 °C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C, Class B	IEC 60950-1 UL 60950-1	VDE, UL
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix K **(Modelo/Model: 9P1, **9P1********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 100-240V~, 50/60Hz, 1.5A; Class Ⅰ; IP20

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel (for 18.5 inch models)	CHIMEI INNOLUX	M185***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 9.85W; LED array voltage: 25.6V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M185XTN**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 7.85W; LED array voltage: 21.7V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM185***-**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 6.55W; LED array voltage: 17.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)(Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance

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(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON A-TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Heat shrinkable tube (used on metal pillar near C907 on metal enclosure type A)	DONGGUAN SALIPT CO LTD	SALIPT S-901-600, SALIPT S-HPT-600	125°C, 600V, min. 0.4mm thickness	--	UL
Switching mode power supply board: 715G7300 type A by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional) (on 715G7300 type A)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional) (on 715G7300 type A)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko

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(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R931)	CAIZHI	MOF2WS	Min. 0.825Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.825Ω, 2W	--	--
Bridging Diode (BD901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C907 on 715G7300 type A)	KINGNICHI	PW2W470MLT1236DLR V	47-150µF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	50-150µF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L901) (on 715G7300 type A) (Optional)	ASET	73G-174-192-X	105°C	--	--
(Alternative)	DADON	73G-174-192-H	105°C	--	--
(Alternative)	TAICHANG	73G-174-192-S	105°C	--	--
(Alternative)	FRONTIER	73G-174-192-F	105°C	--	--
(Alternative)	LI TAI	73G-174-192-L	105°C	--	--
(Alternative)	YUVA	73G-174-192-N	105°C	--	--
(Alternative)	DARFON	73G-174-192-DN	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL

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Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

Appendix L **(Modelo/Model: AG251********, 250LM000**)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 4.5A or 3.25A, 20 Vdc, Class Ш; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015/COR1:2016 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2004, IEC 61000-4-5: 2005, IEC 61000-4-6: 2008, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
AC/DC adapter	TPV Electronics (Fujiang) Co., Ltd	ADPC2090	Input : 100-240 V~, 50-60 Hz, 1.3 A Output: 20 Vdc, 4.5 A, SELV	IEC60950-1:2005+A1:2009 + A2:2013 EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013	CB by TUV RH (17038425 001 and 17038425 002)
Plastic Enclosure	LOTTE	VH-0810(+); VH-0890(+); NH-1017(p); VE-0812(+); NH-1000T(+)(&); BF-0677(+); BF-0675(+); BF-0670(+); GC-0700(+); GC-0750(+);HS-7000(+); SD-0150(+);NE-1030(+);HR-1360(+); HG-0760(+);LX-0951(+);LX-0957(+); VE-1890K, TP-1100(+), NH-1017T NH-1017(+), NH-1000T+, BF-0670F	HB or better	UL94	UL
Alt.)	Chi Mei	PA-757(+); PH-88HT(+)	HB or better	UL94	UL
Alt.)	Grand	D-150, D-1000A	HB or better	UL94	UL
Alt.)	TEIJIN	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better	UL94	UL
Alt.)	Haier	HRABS-RS; HRABS-HG; CR-3002	HB or better	UL94	UL
Alt.)	UNIC TECHNOLOGY CORP	UR-3006+ (RXX), UR-200+	HB or better	UL94	UL
Alt.)	LG	AF312T1; GN-5001TF(#); LUPOY GN-5001RF(T); LUPOY GN-5008HF(#); HF350(#); HF380(#); SE885(#); SE750(#); XG568(#); XG569(#); HF388(#); LUPOY GP-1000; LUPOY GP-1000(m)(#); LUPOY GP-1000(#), AF-342T GN-5001TF, GN-5001RF, GP-1000L	HB or better	UL94	UL
Alt.)	TEIJIN	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better	UL94	UL

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Alt.)	KingFa	4418; HF-606; HF-626; FRABS-518; JH960 6(M); FRHIPS-960; 5197; HIPS-5197; HIPS-4418; HIPS-3399; HIPS-CM(ee); HIPS-HG(ee); HIPS-510 (o); HIPS-550; CK-61(M) (##); RS-(hh)0; HP-126; ABS-600; ABS-122; GAR-322; GAR-332; GAR-220; H12; G360; GAR-011; CK-55(M) (##); CK-58(M) (##); GAR-011C; GAR-011(ww); CK-100, FRABS-518 RD-900, RS-900, GAR-011(L85) GAR-011(L65), GAR-011(HG6) RS-300, RS-400	HB or better	UL94	UL
Alt.)	STYROLUTION	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better	UL94	UL
Alt.)	STYRON	STYRON A-TECH 1400	HB or better	UL94	UL
Alt.)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better	UL94	UL
Alt.)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better	UL94	UL
Alt.)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	HIPS-2000; ABS-3070H	HB or better	UL94	UL
Alt.)	Basf	GP-35, GP-22	HB or better	UL94	UL
Alt.)	WISTRON	GA35	HB or better	UL94	UL
Alt.)	HINGLONG	HL-ABSPCR35/65/85	HB or better	UL94	UL
Alt.)	WOTE	2100	HB or better	UL94	UL
Alt.)	GUO HENG	YOUHO(1302)(B), YOUHO(1303)(B)	HB or better	UL94	UL
Alt.)	SABIC	C6600	HB or better	UL94	UL
Alt.)	CHIMEI	PA-756S	HB or better	UL94	UL
Alt.)	COVESTRO DEUTSCHLAND AG	FR2000, FR3005	HB or better	UL94	UL
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better	UL94	UL
Alt.)	Interchangeable	Interchangeable	HB or better	UL94	UL
Stand	Interchangeable	Interchangeable	HB or better	UL94	UL
PCB	Interchangeable	Interchangeable	Min. V-1 105°C	UL796	UL
LCD panel (LED backlight)	AUO	M250HTN**.* (*can be 0~9, A~Z, blank for marking purpose)	All 25” TFT glass is minimum 0.4mm thickness	UL 60950-1 IEC60950-1	UL, Test in the equipment
Fuse (F981,F982)(Located on mainboard for LPS)	Littelfuse/ Wickmann	392, 382	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	Littelfuse	0663 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL

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Alt.)	Conquer	MET,MST	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	Suzhou Walter	2000, 2010 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix M (Modelo/Model: 24G2, **24G2******, 27G2, **27G2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016, CISPR 24:2010, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2004 / IEC 61000-4-4: 2012, IEC 61000-4-5: 2005 / IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2008, IEC 61000-4-6: 2008 / IEC 61000-4-6 : 2013, IEC 61000-4-11: 2004 / IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight (for 27.0 inch models) (Flat)	TPV	TPM270***-****.* (*can be 0-9, A-Z or blank for marketing purpose).	27.0 inch TFT curve panel (power consumption: 29.49W; LED array voltage: 44.8V)	--	Tested in equipment
LCD Panel with LED backlight (for 23.8 inch models) (Flat)	TPV	TPM238***-****.* (*can be 0-9, A-Z or blank for marketing purpose).	23.8 inch TFT curve panel (power consumption: 16.5W; LED array voltage: 54V)	--	Tested in equipment
Plastic Enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, thickness 2.0mm min.	UL 94	UL
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, thickness 2.0mm min.	UL 94	UL
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, thickness 2.0mm min.	UL 94	UL
	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, thickness 2.0mm min.	UL 94	UL
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, thickness 2.0mm min.	UL 94	UL

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	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, thickness 2.0mm min.	UL 94	UL
	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, thickness 2.0mm min.	UL 94	UL
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, thickness 2.0mm min.	UL 94	UL
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, thickness 2.0mm min.	UL 94	UL
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, thickness 2.0mm min.	UL 94	UL
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c), GA35, NC30	HB or better, thickness 2.0mm min.	UL 94	UL
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, thickness 2.0mm min.	UL 94	UL
	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, thickness 2.0mm min.	UL 94	UL
	HUIZHOU WOTE	2100	HB or better, thickness 2.0mm min.	UL 94	UL
	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, thickness 2.0mm min.	UL 94	UL

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	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, thickness 2.0mm min.	UL 94	UL
	STYRON	STYRON A-TECH 1200	HB or better, thickness 2.0mm min.	UL 94	UL
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, thickness 2.0mm min.	UL 94	UL
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, thickness 2.0mm min.	UL 94	UL
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, thickness 2.0mm min.	UL 94	UL
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, thickness 2.0mm min.	UL 94	UL
	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535	HB or better, thickness 2.0mm min.	UL 94	UL
Switching Power Supply Board 715G9611 by TPV					
AC-Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	ZhangJia Ganghuajie Electronics Co., Ltd.	SA-4S,	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	DELIKANG/ Douling	CDJ-3, CDJ-3-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	TECX	TU-301 series	10A, 250V, 70°C	IEC/ EN 60320-1	VDE
	Yueqing Hongchang	DB-14	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Fuse (F902 in secondary for L.P.S.)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	TDK	CS, CD	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL

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	Murata	KH, KX	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Matsushita	NS-A, NS-B	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	SUCCESS	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	TDK	CD	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Murata	KX	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Matsushita	NS-A	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	JYA-NAY	JN	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Hongming	F	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Yinan Don's	CT81	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	SUCCESS	SB, SE	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
X-Capacitor (C914) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Faratronic	MKP62	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	ENEC (Semko), UL
	Hua Jung	MKP	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Liow Gu	GS-L	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Arcotronics	R.46	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	ENEC(IMQ) UL
	EPCOS	B3292#	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di>0.4mm, int = thermal cycling 3. , ext.>8.0mm, 5000 Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40008087, UL E64380
	Everlight Electronics Co., Ltd.	EL817, EL817M UL : EL8X7 (X=1 or 2)	Di>0.5mm, int. cr=thermal cycling 3. , ext. cr>7.7mm, 3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 132249, UL E214129
	Vishay Semiconductor	TCET1103	Di>0.5mm, int. cr >6.0mm, ext. cr >7.7mm, 3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40028080, UL E76222
	Lite-on	LTV-817	Di > 0.6mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 4800Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40015248, UL E113898
	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di>0.4mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 5000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40008862, UL E72422
	TOSHIBA	TLP781F, TLP781	Di>0.5mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 4800Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40021173, UL E67349
	TOSHIBA	TLP421F	Di >0.4mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 5000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40010944, UL E67349
Line Choke (L901) (Optional)	CHANNELON	373G0174577H	105 °C	--	Tested in equipment
	LDFJ	373G0174577J	105 °C	--	Tested in equipment
	ASET	373G0174577X	105 °C	--	Tested in equipment
Transformer (T901)	Phoenix	380GL19P0170P	Class B	IEC/EN 60950-1	Tested in equipment

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Alt.	LIANFENG DONGJJIN	380GL19P0170J	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	TAICHANG	380GL19P0170S	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	LITAI	380GL19P0170L	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	YUVA	80GL19P-17-N	Class B	IEC/EN 60950-1	Tested in equipment
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, min. 0.45mm thick	UL94	UL
Alt.	GREAT LEOFLON INDUSTRIAL CO., LTD	TRW(B)	V-0, 150°C, min. 0.45mm thick	UL94	UL
Alt.	CHANG CHUN PLASTICS CO., LTD.	T200NA	V-0, 150°C, min. 0.45mm thick	UL94	UL
-Triple insulation wire	SUZHOU VDE YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Alt.	Cosmolink Co Ltd	TIW-M	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
-Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	CT	PET film insulating tape, 130°C	UL510	UL
Alt.	SYMBIO INC	35660Y*(%)	PET film insulating tape, 130°C	UL510	UL
-Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL224	UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix N **(Modelo/Model: 323FCX, 323QCX, **323********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM315WF* (*can be 0-9, A-Z or blank for marketing purpose).	31.5 inch TFT LCD (power consumption: 36.7W; LED array voltage: 42V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM315WQ* (*can be 0-9, A-Z or blank for marketing purpose).	31.5 inch TFT LCD (power consumption: 48.84W; LED array voltage: 42V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance

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(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065, GP-22	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON ATECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance

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(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
AC Inlet	Solteam	ST-01, SC04	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Hongchang	DB-14-4, DB-14-05	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Primary input wire (L/N)	Interchangeable	Interchangeable	Min. 20AWG, 600V, VW-1, 105°C	UL 758	UL
Earthing wire	Interchangeable	Interchangeable	Min. 18AWG, 600V, VW-1, 105°C	UL 758	UL
LED light source (on rear enclosure)	Everlight Electronics Co., Ltd.	5050 RGC+IC	DC 5V, in compliance with Exempt Group	IEC 62471:2006 EN 62471:2008	SGS (Report No. OC-2019-30025)
Fuse (F701, F702 on DC input of main board 715G9960 for L.P.S.)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Switching mode power supply board: 715GA321 by TPV					
Primary connector (CN901)	J.S.T	VH series	7 A, 250 Vac	IEC/EN 61984	VDE 40012096 Tested with appliance
(Alternative)	J.S.T	VT series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	M3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	W7913 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Pontronics	3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Jowle	A3963 series	7 A, 250 Vac	--	Tested with appliance

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Fuse (F9901)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Y- Capacitor (C9915, C9916) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9917, C9919) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9911) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C9918, C9920) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	EPCOS	B3292#	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U9102, U9401)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Discharge IC (U9104)	Leadtrend Technology Corp.	LD5760GR	IP: 100-250V~, 47-63Hz	IEC 60950-1+A1+A2	Nemko CB (Ref. Certif. No. NO84030)
Line Choke (L9901, L9902) (Optional)	CHANNELON	373G0174575H	105°C	--	--
(Alternative)	LIANZHEN	373G0174575Z	105°C	--	--
PFC Choke (L9801)	YUVA	373G0174315N	105°C	--	--
(Alternative)	ASET	373G0174315X	105°C	--	--
(Alternative)	CHENPING	373G0174315CP	105°C	--	--

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Transformer(T9102)(Alternative)	TPV	380GL32P530H	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
- Triple Wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Transformer (T9102) (Alternative)	YUVA	380GL32P530N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
- Triple Wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Bleeder Resistor (R9165)	Interchangeable	Interchangeable	Max. 10kΩ, min. 1/4W	--	--
Bridging Diode (BD9901)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C9814, C9815)	Interchangeable	Interchangeable	47μF, max. 450V, 105°C	--	--
Transistor (Q9801, Q9101, Q9102)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Thermistor (TH9903, TH9904)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Switching mode power supply board: 715GA451 by TPV					
Primary connector (CN901)	J.S.T	VH series	7 A, 250 Vac	IEC/EN 61984	VDE 40012096 Tested with appliance
(Alternative)	J.S.T	VT series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	M3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	W7913 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Pontronics	3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Jowle	A3963 series	7 A, 250 Vac	--	Tested with appliance
Fuse (F901 in primary)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL

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(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Fuse (F902 in secondary for L.P.S.)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN, JY	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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X-Capacitor (X1 or X2 type) (C914) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, FI, UL
(Alternative)	Europtronic	MPX2	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	FARAD	PXK	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901) (optional)	CHANNELON	73G174-241-H	105°C	--	--
(Alternative)	YUVA	73G174-241-N	105°C	--	--
(Alternative)	ASET	73G174-241-X	105°C	--	--
(Alternative)	CHENPING	73G174-241-CP	105°C	--	--
Transformer (T901)	Phoenix	380GL19P0170P	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	LIANFENG DONGJJIN	380GL19P0170J	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	TAICHANG	380GL19P0170S	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	LITAI	380GL19P0170L	Class B	IEC/EN 60950-1	Tested with appliance
- Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, min. 0.45mm thick	UL94	UL
(Alternative)	GREAT LEOFLON INDUSTRIAL CO., LTD	TRW(B)	V-0, 150°C, min. 0.45mm thick	UL94	UL
(Alternative)	CHANG CHUN PLASTICS CO., LTD.	T200NA	V-0, 150°C, min. 0.45mm thick	UL94	UL
- Triple insulation wire	SUZHOU VDE YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL

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(Alternative)	Cosmolink Co Ltd	TIW-M	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
- Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	CT	PET film insulating tape, 130°C	UL510	UL
(Alternative)	SYMBIO INC	35660Y*(%)	PET film insulating tape, 130°C	UL510	UL
- Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL224	UL
Thermistor (TH901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 5A	--	--
Bleeder Resistor (R916, R917, R918)	Interchangeable	Interchangeable	Max. 680kΩ, min. 1/4W	--	--
Bridging Diode (BD901, BD902)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C902, C903)	Interchangeable	Interchangeable	50-150μF, max. 450V, 105°C	--	--
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix O **(Modelo/Model: 22P2, 22P2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 12.42W; LED array voltage: 47.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for Marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	INNOLUX M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance

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(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance

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(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065, GP-22	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON ATECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
Switching mode power supply board: 715G7300 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.)	Littelfus, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
Alt.)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL

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Alt.)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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X-Capacitor (X1 or X2 type) (C901)(optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Europtronic	MPX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Europtronic	MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC, UL
Alt.)	TDK	B3292	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Farad	PXK	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Alt.)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Alt.)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Alt.)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
Alt.)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
Alt.)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
Alt.)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Alt.)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901)(Optional)	ASET	73G-174-192-X	105°C	--	--
Alt.)	DADON	73G-174-192-H	105°C	--	--
Alt.)	TAICHANG	73G-174-192-S	105°C	--	--
Alt.)	FRONTIER	73G-174-192-F	105°C	--	--
Alt.)	LI TAI	73G-174-192-L	105°C	--	--
Alt.)	YUVA	73G-174-192-N	105°C	--	--
Alt.)	DARFON	73G-174-192- DN	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL

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Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix P (Modelo/Model: 27B1,27B1HM,27B1******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 19Vdc, 1.31A, Class III, IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2012 Class B, CISPR 24:2010, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight type (for 27 inch models)	TPV	TPM270W**-******** (* can be 0~9, A~Z, "." Or blank)	27 inch TFT LCD (power consumption: 20.9 W; LED array voltage: 54V	--	Tested in equipment
(Alternative)	BOE	MV270F**-*** (* can be 0~9, A~Z, "." or blank)	27 inch TFT LCD (power consumption: 10.6 W; LED array voltage: 59V	--	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M270HGE-*** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 22.72W; LED Array Voltage: 60V	--	Tested in equipment
(Alternative)	SAMSUNG	LTM270HP** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 21.3W; LED Array Voltage: 47.0V	--	Tested in equipment
(Alternative)	LG Display	LM270WQ* (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 24.1W; LED Array Voltage: 54.7V	--	Tested in equipment
(Alternative)	INNOLUX	M270K**-*** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 27.9W; LED Array Voltage: 36.3V	--	Tested in equipment
(Alternative)	L&T	LM270W**-**** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 14.75W; LED Array Voltage: 47.3V	--	Tested in equipment
Enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E115797)
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E88637)
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E56070)
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E80168)
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E41613)

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E67171)
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529, E244324)
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E345434)
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E73656)
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E171666)
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E310240)
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
(Alternative)	HUIZHOU WOTE	2100	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529)
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E108538)
(Alternative)	STYRON	STYRON A- TECH 1200	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E162447)
(Alternative)	TOTAL PETROCHEMIC ALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E314268)

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(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E103670)
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(V S), C6600E (VS)(X)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E207780)
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E205938)
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E177071)
Power Adapter	L&T	STK025-19131T	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, 40˚C, Class I, 5000m Comply with SELV and L.P.S.	IEC 62368-1: 2014	CB by TUV SUD (Certificate No. SG PSB-IV-02436M1)
(Alternative)	TPV	ADPC1925EX	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, LPS, 40 ˚C , Class I, altitude operating: 5000 m	IEC 60950-1: 2005+A1	CB by Nemko (certificate No. NO83042)
PCB	FUJIAN MILKY-WAY PRINTED CIRCUIT BOARD INDUSTRIAL CO LTD	MW-2, MW-CEM1	Min. V-1 or better, min. 105°C	UL 94, UL 796	UL (E168066)
(Alternative)	Interchangeable	Interchangeable	Min. V-1 or better, min. 105°C	UL 94, UL 796	UL
Cord set	Interchangeable	Interchangeable	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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June 5, 2027

Appendix Q (Modelo/Model: U27P2,27P2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A, Class I, IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2); am1, am2, CISPR 22: 2008, CISPR 24: 2010 + A1: 2015, CISPR 32: 2015+A1:2019, Class B, IEC 61000-3-2: 2018, Class D, IEC 61000-3-3: 2013 + A1: 2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+ A1: 2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Componente/Component	Fabricante/ Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
LCD Panel	TPV	TPM270WF*-****** (*can be 0-9, A-Z or blank for marketing purpose).	27 inch TFT LCD (power consumption: 21.32W; LED array voltage: 51V)	IEC 60950-1	Tested in equipment
(Alternative)	PANDA	LM270**** (*can be 0-9, A-Z or blank for marketing purpose).	27 inch TFT LCD (power consumption: 27.08W; LED array voltage: 51V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL (E88637) and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL (E56070) and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL (E80168) and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL (E41613) and tested with appliance

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL (E67171) and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL (E171666) and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL (E230779) and tested with appliance

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(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL (E345434) and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL (E328304) and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL (E359575) and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL (E135175) and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL (E471190) and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL (E135175) and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL (E98529) and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL (E108538) and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	STYRON A- TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL (E162447) and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL (E314268) and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL (E103670) and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(V S), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL (E207780) and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL (E205938) and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL (E177071) and tested with appliance
Mylar sheet	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860B, KLX FRPC-1870B	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL

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(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECOC, DFR117ECOB	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	PC9842B	min. 0.4mm, thickness, min. V-1, 80°C	UL 94	UL
(Alternative)	SHENZHEN TEESUN TECHNOLOGY CO LTD	FR370, FR370F, FE383	min. 0.4mm, thickness, min. V-1, 80°C	UL 94	UL
PCB	Interchangeable	Interchangeable	Min. V-1 or better, min. 130°C	UL 94, UL 796	UL
Cord set	Interchangeable	Interchangeable	----	NBR 14136, NBR NM 60884-1	INMETRO
Switching mode power supply board: 715GB227 by TPV (to be used together with mainboard 715GA732)					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	ENEC, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D, SA-4S 9	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14 Series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Power switch (SW901) (optional)	Rong Feng Industrial Co., Ltd.	RF-1003	VDE: 10(4)A, 250Vac UL: 10A, 250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21 series	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21S	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	OR-L series, OR-P series	ENEC: 6A, 250Vac UL: 10A/125Vac, 6A/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL

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(Alternative)	Solteam Electronics Co Ltd	MR-22 series	ENEC: 12(4)A, 250Vac UL: 12A,125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Chily	3024 series	VDE:16(4)A, 250Vac UL: 15A,125/250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Ningbo Yinzhou Lihe Switch Factory	RL3-4	VDE: 10(4), 250Vac UL: 16A, 125Vac	IEC/EN 61058-1, UL 1054	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Fuse (F902) (sec. for LPS)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Conquer	MET MST-series, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C901, C902) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C903, C922) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL

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(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1 PS2561L-1 PS2561L1-1 PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901A) (Optional) (For power board 715GB227 type A)	CHANNELON	373G0174563H	105°C	--	--
(Alternative)	LDFJ	373G0174563J	105°C	--	--
(Alternative)	LZ	373G0174563Z	105°C	--	--
Line Choke (L901A) (Optional) (For power board 715GB227 type B)	JIANGSU CHANNELON	73G174-65-H	105 °C	--	--
(Alternative)	YUVA	73G174-65-N	105 °C	--	--
(Alternative)	TPV	S73G17465V	105 °C	--	--
(Alternative)	Xiamen TDK	73G174-65-T	105 °C	--	--
(Alternative)	ASET	73G174-65-X	105 °C	--	--

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(Alternative)	TAICHANG	73G174-65-S	105 °C	--	--
Transformer (T901) ((Alternative)	CHANNELON	380GL32P559H	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	CHANG CHUN	T200NA	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T901) ((Alternative)	LFDJ	380GL32P559J	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	CHANG CHUN	T200NA	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T901) ((Alternative)	PHOENIX	380GL32P559P	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9750	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	YUSHENG	TIW-B(x)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Bleeder Resistor (R901, R902, R903, R933, R934, R935)	Interchangeable	Interchangeable	Max. 1.3MΩ, min. 1/4W	--	--
Current sensor resistor (R916)	Interchangeable	Interchangeable	Min. 0.33Ω, 2W	--	--
Bridging Diode (BD901, BD902) (Optional)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C904)	Interchangeable	Interchangeable	45-150µF, max. 450V, 105°C	--	--

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix R (Modelo/Model: 25G3ZM, 25G3******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A, Class I, IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2); am1, am2, CISPR 22: 2008, CISPR 24: 2010 + A1: 2015, CISPR 32: 2015+A1:2019, Class B, IEC 61000-3-2: 2018, Class D, IEC 61000-3-3: 2013 + A1: 2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+ A1: 2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Componente/Component	Fabricante/ Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
LCD Panel	AUO	M250H****.* (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 16.82W; LED array voltage: 51.7V)	--	Tested in equipment
Alt.)	LG Display	LM245W** (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 21.8W; LED array voltage: 52.2V)	--	Tested in equipment
Alt.)	TPV	TPM245W**-****** (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 17.2W; LED array voltage: 54.0V)	--	Tested in equipment
Tube used to wrap metal chassis pillar	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750A series, HD-87	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E231325 and tested with appliance
Alt.)	SHENZHENSHI SENMUSI TECHNOLOGY CO LTD	SMS	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E477535 and tested with appliance
Switching mode power supply board: 715GC023					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC-2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004

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Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60321-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC, UL, TUV mark
Fuse (F901) on primary	Littelfuse Inc.	382	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092

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Alt.)	Walter	ICP-Series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Fuse (F902, F903) on secondary for L.P.S.	Littelfuse Inc.	382	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018250, UL E67006
Alt.)	Littelfuse Inc.	392	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017155, UL E82636
Alt.)	Conquer	MST	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40020046, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018787, UL E220181
Alt.)	Walter	2010 Serie(s)	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092

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Alt.)	Walter	ICP-Series	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280

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Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 3300pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C914) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596

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Alt.)	Europtronic	MPX	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT9700014 1, UL E97797
Alt.)	TDK	B3292	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jianghao	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123 (UL), PC123 Option Y (VDE)	Di more than 0.4mm, int = thermal cycling test, ext. more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40008087, UL E64380
Alt.)	Vishay Semiconductor	TCET1103-3034	Di more than 0.5mm, int = thermal cycling test, ext. cr more than 7.7mm, 4000Vac, 100°C.	EN 60747-5-5	VDE 40028080
Alt.)	Everlight Electronics Co., Ltd.	EL817	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 132249, UL E214129
Alt.)	Everlight Electronics Co., Ltd.	EL817M (VDE), EL817 (UL)	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5	VDE 132249, UL 214129
Alt.)	TOSHIBA	TLP781F, TLP781	Di more than 0.5mm, int. cr =thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40021173, UL E67349
Alt.)	TOSHIBA	TLP421F	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5	VDE 40010944
Alt.)	RENESAS ELECTRONICS CORPORATION	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 5000Vac, 100°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40008862, UL E72422
Alt.)	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.1mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40028391, UL E214129
Alt.)	Lite-On	LTV-817	Di more than 0.6mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 4800Vac, 115°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40015248, UL E113898
Alt.)	Interchangeable	Interchangeable	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, min. 4000Vac, min. 100°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE, UL
Line Choke (L901) (Optional)	ASET	373G0174558X	130°C	--	--
Alt.)	LIANFENG	373G0174558J	130°C	--	--

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Alt.)	Taichang	373G0174558S	130°C	--	--
Transformer (T901)	PHOENIX	380GL19P0170P	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E332529, VDE40033527
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	LIANFENG	380GL19P0170J	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	TPV	80GL19P-17-N	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	SYMBIO INC	NO. 35660Y*d	130°C	UL 510	UL E50292
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	Taichang	380GL19P0170S	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	GREAT LEOFLON INDUSTRIAL CO.□LTD	TRW(B)	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E211989, VDE 136581
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	LI TAI	380GL19P0170L	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	CHANG CHUN PLASTICS CO. LTD	200NA	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
- Insulation tape (Alt.)	SYMBIO INC	NO. 35660Y*d	130°C	UL 510	UL E50292

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-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Rating information of components which are not critical components on power board 715GC023					
P.C.B	Interchangeable	Interchangeable	V-1 or better Min. 130°C.	UL 796	UL
Current sensing Resistor (R919)	Interchangeable	Interchangeable	Min. 0.3Ω, min. 1/10W	--	--
Thermistor (TH901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Bridging Diode (BD901, BD902)	Interchangeable	Interchangeable	Min.600V, min.2.0A	--	--
Ripple Capacitor (C902, C903)	Interchangeable	Interchangeable	47-180μF, max. 450V, 105°C	--	--
Bleeder Resistor (R916, R917, R918)	Interchangeable	Interchangeable	Each Max. 680KΩ, Min.1/4W	--	--
Transistor (Q901)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix S **(Modelo/Model: **24B30********, **24B35********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 19VDC, 1.31A; Class III; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32:2015+A1:2019, CISPR 35: 2016, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 V AC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 V DC, 1,31 A, 25,0 W, Tma = 40 °C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 + A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
Alt.	Ten Pao Industrial Co., Ltd.	S025ANP1900131	input: 100-240 V AC, 50 /60 Hz, 0,6 A, Class II; Output: 19,0 V DC, 1,31 A, 25,0 W, Tma = 40 °C, Outputs comply with LPS, Altitude: 5000m	IEC 62368-1:2018	TUV Rheinland (CB Cert.: JPTUV-149645, report No.: CN23WCFE001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, Min. 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, Min. 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0mm, Min. 60 °C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 °C	ANSI/UL 94	UL (E314268)

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Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	V-2 or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee)	HB or Better, Min. thickness: 1,3 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX) (a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG(+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E345434)

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Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO13(##)(YY)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO.,LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO., LTD	Ecorex® RN - +(R #)	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#)	HB or Better, Min. thickness: 0,45 mm, 80 °C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60 °C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125 °C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, Min. 50 °C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	Min. V-1, 105 °C	UL 796	UL
LCD Panel	TPV	TPM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	TPV	TPT238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	M238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	P238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	L&T	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	LGD	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	INNOLUX	M238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	PANDA	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	BOE	MV238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	SHARP	LQ238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	SAMSUNG	LTM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	BOE	ME238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix T **(Modelo/Model: 27G2E1, 27G2********, C27G2********, C*27G2********, Q27G2********, U27G2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 oC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, Min. 60 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, Min. 60 oC	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6mm, 50 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5mm, 130 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0mm, Min. 60 oC	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 oC	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	V-2 or Better, Min. thickness: 0,75 mm, 60 oC	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##),	HB or Better, Min. thickness: 1,0 mm, 50 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee)	HB or Better, Min. thickness: 1,3 mm, 50 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E171666)

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Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60 oC	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX) (a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG(+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO13(##)(YY)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO.,LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO., LTD	Ecorex® RN - +(R #)	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E514505)

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Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#)	HB or Better, Min. thickness: 0,45 mm, 80 oC	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60 oC	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125 oC	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, Min. 50 oC	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150	HB or Better, thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better, thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 130 oC	UL 796	UL
Insulation Sheet (between power board and LCD panel or between power board and metal cover or metal enclosure to cover the openings)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 oC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 oC	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770, PC-770 A, PC-870 A, PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E254551)
Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E249605)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 oC	ANSI/UL 94	UL (E305163)

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Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 oC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1365, TS-FR1363, TS-FR1360, TS-FR1362, TS-FR160Y, TS-FR1370F, TS-FR1370, TS-FR1383, TS-FR1370-32, TS-FR1383-13	Polycarbonate, thickness: 0,40 mm min. V-0, 125 oC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 oC	ANSI/UL 94	UL (E357515)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-870BF, KLX FRPC-870BH, KLX FRPC-870BFH, KLX FRPC-83B, KLX FRPC-83, KLX FRPC-F70, KLX FRPC-700B, KLX FRPC-700BF, KLX FRPC-60, KLX FRPC-60H, KLX FRPC-63, KLX FRPC-63H, KLX FRPC-65, KLX FRPC-65H, KLX FRPC-1870B	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860, KLX FRPC-1860B, KLX FRPC-1860-83, KLX FRPC-1860-83B, KLX FRPC-1860-1, KLX FRPC-1860-NTC, KLX FRPC-1860B-NTC, KLX FRPC-1860B-3, KLX FRPC-1870B-K, KLX FRPC-1860B-HY, KLX FRPC-1860-HY, KLX FRPC-1860B-K, KLX FRPC-1860-K, KLX FRPC-1860W	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1880, KLX FRPC-1880B, KLX FRPC-1880-83, KLX FRPC-1880-83B, KLX FRPC-1880-1, KLX FRPC-1880B-1, KLX FRPC-1880-2, KLX FRPC-1880B-2, KLX FRPC-1880-3, KLX FRPC-1880B-3, KLX FRPC-1880-NTC, KLX FRPC-1880B-NTC, KLX FRPC-1880B-HY, KLX FRPC-1880-HY, KLX FRPC-1880B-K, KLX FRPC-1880-K, KLX FRPC-1860-YM, KLX FRPC-1860B-YM, KLX FRPC-1880-YM, KLX FRPC-1880B-YM, KLX FRPC-1880W, KLX FRPC-1880W-1, KLX FRPC-1860B-KS, KLX FRPC-1860-KS, KLX FRPC-1880-KS, KLX FRPC-1880B-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 125 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1890B,KLX FRPC-1890, KLX FRPC-1890-83, KLX FRPC-1890-83B, KLX FRPC-1890-1, KLX FRPC-1890B-1, KLX FRPC-1890-2, KLX FRPC-1890B-2,KLX FRPC-1890B-2, KLX FRPC-1890-3, KLX FRPC-1890B-3, KLX FRPC-1890-NTC, KLX FRPC-1890B-NTC, KLX FRPC-1890B-HY, KLX FRPC-1890-HY, KLX FRPC-1890B-K, KLX FRPC-1890-K, KLX FRPC-1890-YM, KLX FRPC-1890B-YM KLX FRPC-1890W, KLX FRPC-1890W-1, KLX FRPC-1890B-KS, KLX FRPC-1890-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 115 oC	ANSI/UL 94	UL (E315185)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E508063)
Alt.	Interchangeable	Interchangeable	Polycarbonate, thickness: 0,4 mm, min. V-0, Min. 80 oC	ANSI/UL 94	UL
LCD Panel	TPV	TPM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TPV	TPT270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	AUO	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	P270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	L&T	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LGD	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	INNOLUX	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	PANDA	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	MV270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	SHARP	LQ270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	SAMSUNG	LTM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	ME270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Adhesive for mylar sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Speaker (Optional)	Interchangeable	Interchangeable	4Ω, 2,5W *2	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
For power board 715GC023					
AC-Inlet (CN901)	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40028645) UL (E327347)
Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)

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Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	EU / UL certification mark
Fuse (F901 on primary)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	382	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018249) UL (E67006)
Alt.	Littelfuse Inc.	392	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MET	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017157) UL (E82636)
Alt.	Conquer Electronics Co., Ltd.	MST	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	Suzhou Walter Electronic Co. Ltd.	2000	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018790) UL (E56092)

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Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Fuse (F902, F903 in secondary)	Cooper Bussmann LLC	SR-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	382	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E67006)
Alt.	Littelfuse Inc.	392	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MET	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E82636)
Alt.	Conquer Electronics Co., Ltd.	MST	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	Suzhou Walter Electronic Co. Ltd.	2000	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)

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Alt.	Interchangeable	Interchangeable	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C920, C921, C944) (optional)	TDK CORPORATION	CD	Max. 1000 pF, 250 Vac, Min. 85°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 1000 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AH	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	JYA-NAY CO LTD	JN	Max. 1000 pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL (E201384)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SB	Max. 1000 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 1000 pF, Min. 250Vac, 85°C min. Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
Y-cap (C900) (optional)	TDK CORPORATION	CD	Max. 3300 pF, 250/ 400 Vac, Min. 85°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 3300 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AH	Max. 3300 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	JYA-NAY CO LTD	JN	Max. 3300 pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL (E201384)

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Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 3300 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SB	Max. 3300 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 3300 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 3300 pF, Min. 250Vac, 85°C min. Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
X- Cap. (C914) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,47µF, AC 250/275/280/300/ 305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,47µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018238) UL (E211347)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,47µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,47µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40000358) UL (E186600)
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,47µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS INDUSTRY CO LTD	GS-L	Max. 0,47µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,47µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,47µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,47µF, AC 250 / 280 / 305 V, Min.; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018690) UL (E252286)

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Alt.	Interchangeable	Interchangeable	Max. 0,47µF, 250Vac Min.; 100°C Min.	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL / EU certification mark
Optocoupler (U902)	Lite-on	LTV-817	Ext. cr ≥7,0 mm, Dti ≥ 0,4 mm, 105°	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40015248) UL (E113898)
Alt.	Sharp	PC123	Ext. cr ≥6,4 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008087) UL (E64380)
Alt.	VISHAY Semiconductor GmbH	TCET1103-3034	Ext. cr ≥ 8,4 mm, Dti ≥ 0,4 mm, 100°	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028080)
Alt.	Everlight Electronics Co., Ltd.	EL817M, EL817	Ext. cr ≥ 7,6 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (132249) UL (E214129)
Alt.	TOSHIBA CORP	TLP781, TLP781F	Ext. cr ≥ 6,5 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40021173) UL (E67349)
Alt.	TOSHIBA CORP	TLP421F, TLP421	Min. Ext. cr ≥ 7,0 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40010944) UL (E67349)
Alt.	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Min. Ext. cr ≥ 8,1 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028391) UL (E214129)
Alt.	RENESAS	PS2561DL1-1, PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Min. Ext. cr ≥ 7,1 mm, Dti ≥ 0,4 mm, 100° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008862) UL (E72422)
Alt.	Interchangeable	Interchangeable	Min. Ext. cr ≥ 6,4 mm, Dti ≥ 0,4 mm, 100° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	UL / EU certification mark
Line Choke (L901) (Optional)	ASET	373G0174558X	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LIANFENG	373G0174558J	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Transformer (T901)	PHOENIX	380GL19P0170P	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	PHOENIX	PH01024600	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	LFDJ	380GL19P0170J	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LFDJ	BCK-35-L01379	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
- Bobbin	SUMITOMO BAKELITE CO., LTD	PM-9820	V-0, 150 °C	UL 94	UL (E41429)
- Magnet Winding	PROSPERITY ELECTRIC WIRE & CABLE CO	UEW	130°C	ANSI/UL 1446	UL (E196072)
- Alt.	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B), TYA1-130(UEW/QA-B)	130 °C	ANSI/UL 1446	UL (E245514)
- Alt.	SHANDONG SAINT ELECTRIC CO LTD	*UEW/130, QA-*/130, *UEW/130 Litz, QA-*/130 Litz, MW75-C	130 °C	ANSI/UL 1446	UL (E194410)
- Alt.	GUANGZHOU WANBAO ENAMELLED WIRE CO LTD	xUEW-130, QA-x/130	130°C	ANSI/UL 1446	UL (E167402)
- Alt.	Interchangeable	Interchangeable	130°C	ANSI/UL 1446	UL
- Triple insulation wire	KBI COSMOLINK CO., LTD.	TIW-M (For VDE), TIW-M(XX) (For UL)	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (138053) UL (E213764)
- Alt.	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (For VDE), TIW-B* (For UL)	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (40033527) UL (E332529)
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)
- Alt.	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-L	PTFE, 200°C, VW-1	UL 224	UL (E180908)
Bleeding resistors (R916, R917, R918)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series,	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99693
Alt	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99692
Alt	YAGEO	RV0603, RV0805, RV1206	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of UL certificate no. DK-64853-UL
Alt	TZAIYUAN	HSMD********* SMD*********	Max. 680 kohm, 1/4 W	IEC 62368-1: 2010	CB of UL certificate no. DK-29431-A1-UL
Alt.	Tzai Yuan Enterprise Co., Ltd.	MGUL1/4Wseries	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB issued by UL (CB cert No. DK-69874-UL)

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Alt.	Interchangeable	Interchangeable	Max. 680 kohm, 1/4 W	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
For main board 715GE142					
Limited current IC (U545)	Global Mixed-mode Technology Inc.	G509H10NTP1G	DC 2,7V – 5,5V; Continuous operating current of 1,0A	IEC 62368-1:2018 EN IEC 62368-1:2020 + A11: 2020 ANSI/UL 2367	TÜV Rheinland (CB report No. CN213HMD 001; CB certificate No. JPTUV-126218) UL (E232223)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix U **(Modelo/Model: 24B3HMF2, **24B3*******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11: 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Grand	D-1000A, D-150	HB or better, min. 1.5mm thickness	UL 94	UL (E88637)
Alt.)	LG CHEM LTD	LUPOY GN- 5001TF(#), LUPOY GN-5001RF(T), LUPOY GN-5008HF(#), LUPOY GN-2101F(m)(f1), XG568(#), XG569(#), GP-1000(m)(#), SE885(#), AF365(&), AF368(#), AF358	HB or better, min. 1.5mm thickness	UL 94	UL (E67171)
Alt.)	LOTTE CHEMICAL CORPORATION	VH-0810(+), VE-1890(+), EN-1052(+), VH-0815(+), VH-0819(+), HM-1100(+), VE-0819F, NH-1017T, NH-1017SG(+), VE-0812(+), NH-1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, GC-1017(RR30), SD-0150(+), BF-0677(+), BF-0675(+), BF-0670F, GC-0700(+++)(RR28), LX-0951(+), LX-0957(+), HG-0760(+), NH-1027HF, NH-1027(+), SD-0150T, GC-1036(RR35), SC-1220R, ABF-0200E, ABF-1030NH	HB or better, min. 1.5mm thickness	UL 94	UL (E115797)

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Alt.)	KingFa	HF-606, HF-626, FRABS-518, JH960 6(M) (ccc) (##), FRHIPS-960, CK-572(M1) (##), FRABS-518C, 5197, RS-(hh)0, GAR-011C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-55(M) (##), HP-126, CK-61(M) (##), HIPS-510 (o), HIPS-550	HB or better, min. 1.5mm thickness	UL 94	UL (E171666)
Alt.)	Covestro Deutschland AG [PC Resins]	FR3005, GF9011 MF + (z), FR3050 +	HB or better, min. 1.5mm thickness	UL 94	UL (E41613)
Alt.)	TEIJIN	TN-7500(c)	HB or better, min. 1.5mm thickness	UL 94	UL (E98529)
Alt.)	TEIJIN	MN-3600H(#)	HB or better, min. 1.5mm thickness	UL 94	UL (E244324)
Alt.)	SAMYANG	TRILOY:210NHF (@), 210NHF	HB or better, min. 1.5mm thickness	UL 94	UL (E121254)
Alt.)	CHI MEI	PC-540A, PA-765A, PA-756S, PA-757(+)	HB or better, min. 1.5mm thickness	UL 94	UL (E56070)
Alt.)	ORINKO	HIPS-2230(N), ABS-3070(T), HIPS-2000, ABS-340(X), ABS900F23	HB or better, min. 1.5mm thickness	UL 94	UL (E328304)
Alt.)	SABIC	C6600	HB or better, min. 1.5mm thickness	UL 94	UL (E207780)
Alt.)	Haier	HRABS-RS, HRABS-HG	HB or better, min. 1.5mm thickness	UL 94	UL (E230779)
Alt.)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	HB or better, min. 1.5mm thickness	UL 94	UL (E103670)
Alt.)	INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED	3441, 260-XX	HB or better, min. 1.5mm thickness	UL 94	UL (E314268)
Alt.)	WISTRON	GA(M)(b)(c), NC(N)(a), GA85	HB or better, min. 1.5mm thickness	UL 94	UL (E359575)
Alt.)	HINGLONG	HL-ABS- PCR35/65/85	HB or better, min. 1.5mm thickness	UL 94	UL (E345434)
Alt.)	WOTE	2100	HB or better, min. 1.5mm thickness	UL 94	UL (E310240)
Alt.)	GUO HENG	YOUHO(#####)(Y), YOUHO13(##)(Y Y), YOUHE26(##)	HB or better, min. 1.5mm thickness	UL 94	UL (E471190)
Alt.)	UNIC	UR-3006+(RXX), UR-200+, UR-7085+(R90), UP-700+	HB or better, min. 1.5mm thickness	UL 94	UL (E135175)
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 1.5mm thickness	UL 94	UL (E205938)
Alt.)	CHI LIN	GA-1(aaa)	HB or better, min. 1.5mm thickness	UL 94	UL (E177071)
Alt.)	FUHENG	HIPS-568, FH-101, FH-102	HB or better, min. 1.5mm thickness	UL 94	UL (E234833)
Alt.)	QING DAO GON TECHNOLOGY CO.,LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or better, min. 1.5mm thickness	UL 94	UL (E330547)
Alt.)	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC2820-A	HB or better, min. 1.6mm thickness	UL 94	UL (E162823)
Alt.)	Chongqing Gengye New Materials Technology Co Ltd	Ecorex® RN - + (R #), GU-022	HB or better, min. 1.5mm thickness	UL 94	UL (E514505)
Alt.)	Interchangeable	Interchangeable	HB or better, min. 1.5mm thickness	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Base stand (optional use)	Interchangeable	Interchangeable	Metallic covered by the HB or better plastic	--	--
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 oC	UL 796	UL
Mylar sheet (Located between power supply board and panel) (between power board and metal enclosure)	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E249605)
Alt.)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E254551)
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR117ECOC, DFR117ECOB, DFR117ECO, DFR3A(d)	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E199019)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC- 1880B, KLX FRPC- 1860B, KLX FRPC- 1870B, KLX FRPC- 870B, KLX PP BK-10, KLX PP BK-10- KS	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E315185)
Alt.)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E305163)
Alt.)	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	PC9842B, PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E339070)
Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E329660)
LCD Panel	TPV	TPM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.98W; LED Array Voltage: 31.9V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	LG Display	LM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 17.76W; LED Array Voltage: 58.9V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	L&T	LM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.1W; LED Array Voltage: 38.8V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	BOE	MV238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.04W; LED Array Voltage: 46.4V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Alt.)	AUO	M238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.17W; LED Array Voltage: 44.86V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	INNOLUX	M238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.19W; LED Array Voltage: 32V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Adhesive for mylar sheet	SYMBIO	DS50-A, DS50L	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	3M	55236, 9448A, 55230, 9495MP	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	NITTO DENKO CORP	GA835	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	TESA SE	68646	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	DEXERIALS CORP	G4000	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Tube used to wrap metal chassis pillar	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750Aseries, HD-87	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E231325 and tested with appliance
Alt.)	DONGJUE SILICONE (NANJING) CO LTD	NE-Z150	V-0, 150°C, min. thickness 1.8mm	UL 94, UL746	UL E236040
Switching mode power supply board: 715GE360 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	ZHANGJIAGANG HUAJIE ELECTRONIC CO LTD	SA-4S 9, SA-4S 6, SA-4S 7, SA-4S 12	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 502938560001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 502746980001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641

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Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC-2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23, DB-14-14, DB-14-05E, DB-14-15-L-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE, ENEC, TUV, UL
Fuse (F901) on primary	Littelfuse Inc.	382	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503105510001-0004, UL E10480
Alt.)	Conquer	MET	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	CONQUER ELECTRONICS CO LTD	MST	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636

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Alt.)	Conquer	PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018787, UL E220181
Alt.)	Walter	2010	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T3.15AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 504066050001-0003, UL E56092
Alt.)	Walter	2040	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 504263560001-0002, UL E56092
Alt.)	Walter	ICP	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003

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Alt.)	Better	244	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503357640001-0003, UL E300003
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua Electronic Co.	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861

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Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua Electronic Co.	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797

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Alt.)	TDK	B3292	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder Resistor (R907, R908, R909)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06********* series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by NEMKO (CB report No. REP014995 and CB cert No. NO127737)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06********* series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by NEMKO (CB report No. REP014996 and CB cert No. NO127738)
Alt.)	Yageo Corporation	RV1206XX- 07155ML (The first X can be D,F or J. the secondary X can be R or K)	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by UL(CB report No. E491387-4787887815-1 Original, CB cert No. DK- 64853-UL)
Alt.)	Tzai Yuan Enterprise Co., Ltd.	HSMD1206*****, SMD1206*****	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by UL (CB report No. DK-88747- A1-UL)
Alt.)	Interchangeable	Interchangeable	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB
Line Choke (L901) (Optional)	TAICHANG	373G0174600S	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	LIANFENG	373G0174600J	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	CHANNELON	373G0174600H	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Transformer (T901)	CHANNELON	380GL32P760H / CLT-116004	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	CHANG CHUN PLASTICS CO.,LTD	T200HF	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	KBI COSMOLINK CO., LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256

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Transformer (T901) Alt.)	LF	380GL32P760J / BCK-30-L01625	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	CHANG CHUN PLASTICS CO.,LTD	T200HF	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	KBI COSMOLINK CO., LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	PHOENIX	380GL32P760P / PH01087700-1	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	SUMITOMO BAKELITE CO., LTD	PM-9750, PM-9823	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (UL), TIW-B (VDE)	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E332529, VDE 40033527
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256
Current sensing Resistor (R911)	Interchangeable	Interchangeable	Min. 15kΩ, min. 1/10W	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 8Ω at 25°C, max. 5A	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.500V, min.2.0A	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Ripple Capacitor (C907)	Interchangeable	Interchangeable	10-150µF, max. 450V, 105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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June 5, 2027

Appendix V **(Modelo/Model: 22B3HMF, 22B3********, Q22B3********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11: 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	CHI MEI CORPORATION	PA-757(+), PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350, HF380	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP-1000(Z), GP-1000L	HB or Better thickness: 1,5mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better thickness: 1,6mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568, XG568(#)	HB or Better thickness: 1,6mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569C, XG569(#)	HB or Better thickness: 1,5mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better thickness: 1,0mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GN-1002F(m)	HB or Better thickness: 1,5mm, 80 °C	ANSI/UL 94	UL (E67171)
Alt.	LOTTE CHEMICAL CORPORATION	SD-0150(+), BF-0677(+), BF-0675(+), GC-0700(+++), LX-0951(+), LX-0957(+), HG-0760(+), SD-0150T, ABF-0200E, NH-1027HF, NH-1027(+)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670F, BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	GC-1036, LS-1159SF, LS-1159F, NH-1036, GC-1036, ABF-1030NH, NH-1017SG(+)	V-0 or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)
Alt.	KINGFA SCI & TECH CO LTD	5197	HB or Better Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E171666)

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Alt.	KINGFA SCI & TECH CO LTD	GAR-011 C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-55111, HP-126	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	CK-61506 RS-900, RS-300, RS-400, RS-(hh)0	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	JH960 6(M), JH960 6(M) (ccc) (##), JH960-6(M) (ccc) (##), JH960 62(M4), JH960 62(M4) (ccc) (##), JH960-62(M4) (ccc) (##)	5VB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E230779)
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	V-0, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E103670)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441, 260-XX	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA1(e), GA35, NC30, GA65, GA85, GC(t) (t) – Replace the one, two, three or four numbers and/or letters to denote to serial number	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E359575)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	UNIC	UR-200+ (+: A to Z), UR-3006+(R35), UR-3006+(R90), UR-3006+(RXX) UP-700+	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E205938)
Alt.	CHI LIN TECHNOLOGY CO LTD	GA-1535 GA-1(aaa)	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E177071)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E234833)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E345434)

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Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(1302)(B), YOUHO(1303)(B), YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(#####)(Y),YOUHO(1303)(OP), YOUHO13(##)(YY) YOUHO1312B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E471190)
Alt.	Chongqing Gengye New Materials Technology Co Ltd	GU-022	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	Interchangeable	Interchangeable	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150(+)	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 °C	UL 796	UL
Insulation Sheet (between power board and LCD panel, between power board and metal cover)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 °C	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770 series PC-770, PC-770 A, PC-870 A PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E254551)
Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E249605)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1880 series	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1860B, KLX FRPC-83	Polycarbonate, thickness: 0,40 mm, V-0, 80 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1890 series	Polycarbonate, thickness: 0,4 mm min. V-0, 115 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 °C	ANSI/UL 94	UL (E315185)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E305163)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1370	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E357515)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 °C	ANSI/UL 94	UL (E508063)
Alt.	Interchangeable	Interchangeable	Polycarbonate, thickness: 0,4 mm min. V-0, Min. 80 °C	ANSI/UL 94	UL
LCD Panel	LG Display	LM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	M215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	MV215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TPV	TPM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Adhesive for mylar sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Silicone Rubber	ONGJUE SILICONE (NANJING) CO LTD	NE-Z150	Min. thickness: 1,8 mm, 150°C, V-0	UL 94	UL (E236040)
For power board model No. 715GD928:					
AC-Inlet (CN901)	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028645) UL (E327347)
Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)

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Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	EU / UL certification mark
Fuse (F901)	Cooper Bussmann LLC	SR-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	392	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MST	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C902, C903, C934) (optional)	TDK CORPORATION	CD	Max. 1000pF, 250 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40029780) UL (E37861)
Alt.	TDK CORPORATION	CS	Max. 1000pF, 250/ 300 Vac, 125 °C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40029781) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KH	Max. 1000 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40002796) UL (E37921)

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Certificado de Conformidade

Certificate of Conformity

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5 de junho de 2027
June 5, 2027

Alt.	Murata Mfg. Co., Ltd.	KX	Max. 1000 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AC	Max. 1000pF, AC 250/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40001829) UL (E146544)
Alt.	Walsin Technology Corp.	AH	Max. 1000pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40001804) UL E146544
Alt.	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 1000pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40036246) UL (E154899)
Alt.	JYA-NAY CO LTD	JY	Max. 1000pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL (E201384)
Alt.	JYA-NAY CO LTD	JN	Max. 1000pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL (E201384)
Alt.	Haohua Electronic Co.	CT7	Max. 1000pF, AC250/275/300V,125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40013601) UL (E233106)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SE	Max. 1000pF, AC 250/300 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (122995) UL (E114280)
Alt.	Success Electronics Co., Ltd.	SB	Max. 1000pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40012143) UL (E249006)
Alt.	XIAMEN WANMING ELECTRONICS CO LTD	CK	Max. 1000pF, 250/300/400/500 Vac, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	ENEC (ENEC-04533) UL (E221839)
Alt.	Interchangeable	Interchangeable	Max. 1000pF, Min. 250Vac, Min. 85 °C, Y1/Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	EU / UL certification mark

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X- Cap. (C901) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,33 µF, AC 250/275/280 /300/305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40018238) UL (E211347)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,33 µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40000358) UL (E186600)
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,33 µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS Industry Co Ltd	GS-L	Max. 0,33 µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,33 µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,33 µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,33 µF, AC 250/280/ 305V, Min. 110°C X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40018690) UL (E252286)
Alt.	Interchangeable	Interchangeable	Max. 0,33 µF, Min. 250Vac Min. 105°C, X1 or X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL / EU certification mark
Optocoupler (U902)	Lite-on	LTV-817	Ext. cr ≥7,0 mm, Dti ≥ 0,4 mm, 105°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40015248) UL (E113898)
Alt.	Sharp	PC123	Ext. cr ≥6,4 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008087) UL (E64380)
Alt.	VISHAY Semiconductor GmbH	TCET1103-3034	Ext. cr ≥ 8,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015	VDE (40028080)

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Alt.	Everlight Electronics Co., Ltd.	EL817M, EL817	Ext. cr ≥ 7,6 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (132249) UL (E214129)
Alt.	TOSHIBA CORP	TLP781, TLP781F	Ext. cr ≥ 6,5 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40021173) UL (E67349)
Alt.	TOSHIBA CORP	TLP421F, TLP421	Min. Ext. cr ≥ 7,0 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40010944) UL (E67349)
Alt.	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Min. Ext. cr ≥ 8,1 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028391) UL (E214129)
Alt.	RENESAS	PS2561DL1-1, PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Min. Ext. cr ≥ 7,1 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008862) UL (E72422)
Alt.	Interchangeable	Interchangeable	Min. Ext. cr ≥ 6,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	UL / EU certification mark
Line Choke (L901) (Optional)	LFDJ	373G0174557J	105°C	IEC/EN 62368-1	Tested With appliance
Alt.	HA	373G0174557H	105°C	IEC/EN 62368-1	Tested With appliance
Transformer (T901)	PHOENIX	380GL32P830P	Class B	IEC/EN 62368-1	Tested With appliance
Alt.	LF	380GL32P830J	Class B	IEC/EN 62368-1	Tested With appliance
Alt.	HA	380GL32P830H	Class B	IEC/EN 62368-1	Tested With appliance
- Bobbin	SUMITOMO Bakelite Co Ltd	PM-9750, PM-9823,	V-0, 150 °C	UL 94	UL (E41429)
- Alt.	CHANG CHUN Plastics Co Ltd	T200HF	V-0, 150 °C	UL 94	UL (E59481)
- Magnet Winding	NINGBO JINTIAN NEW MATERIAL CO LTD	xUEW/130, QA-x/130 (MW75-C)	130°C	ANSI/UL 1446	UL (E227047)
- Alt.	BAIYIN YIZHI CHANGTONG SUPER MICRO-WIRE CO., LTD	xUEW/130 (MW75-C)	130°C	ANSI/UL 1446	UL (E363385)
- Alt.	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155, QA-x/155	155 °C	ANSI/UL 1446	UL (E344055)
- Alt.	SHANDONG SAINT Electric Co Ltd	*UEW/130, QA-*/130, *UEW/130 Litz, QA-*/130 Litz, MW75-C	130 °C	ANSI/UL 1446	UL (E194410)
- Alt.	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B)	130 °C	ANSI/UL 1446	UL (E245514)
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B*	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (40033527) UL (E332529)
- Alt.	KBI COSMOLINK CO., LTD.	TIW-M	Reinforced insulation, 130°C	ANSI/UL 2353 IEC 62368-1: 2014	VDE (138053) UL (E213764)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING Industrial Co Ltd	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)
- Alt.	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	PTFE, 200°C, VW-1	UL 224	UL (E180908)
Bleeding resistors (R907, R908, R909)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 336992 and CB certificate No. NO99692)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 337017 and CB certificate No. NO99693)
Alt.	Yageo Corporation	RV1206 series	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by UL (CB report No. E491387-4787887815-1 and CB certificate No. DK-64853-UL)
Alt.	Tzai Yuan Enterprise Co., Ltd.	HSMD1206 series, *SMD1206 * series (The * denote the tolerance, which can be "F", "G" or "J")	Max. 620K ohm, 1/4 W	IEC 62368-1:2010	CB issued by UL (CB report No. OFF-12CA24616-A-1, OFF-12CA24616-A-1 am1 and E354677-12CA24616-A-1. CB certificate No.DK-29431-UL, DK-29431-A1-UL and DK-29431-A1-M1-UL)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06********* series	Max. 620K ohm, 1/4 W	IEC 62368-1: 2018	CB issued by NEMKO (CB report No. REP014996 and CB certificate No. NO127738)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06********* series	Max. 620K ohm, 1/4 W	IEC 62368-1: 2018	CB issued by NEMKO (CB report No. REP014995 and CB certificate No. NO127737)
Alt.	Interchangeable	Interchangeable	Max. 620K ohm, 1/4 W	IEC/EN 62368-1	CB report & certification issued by NCB

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

Appendix W (Modelo/Model: 22B30HM2, 22B35HM2, **22********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
DC Input: 19 V d.c., 1,31 A; Class III; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 VAC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 VDC, 1,31 A, Tma= 40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	(CB certificate No. NO106527; CB report No. 373441)
External power supply	Ten Pao Industrial Co., Ltd.	S025ANP1900131	Input: 100-240 VAC, 50 - 60 Hz, 0,6 A, Class II; Output: 19,0 VDC, 1,31 A, 25,0 W, Tma = 40°C, PS2, Altitude:5000m	IEC 62368-1:2018	(CB certificate No. JPTUV-149645; CB report No. CN23WCFE 001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5 mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)

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Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPSCM(ee), HIPSHG(ee)	HB or Better, Min. thickness: 1,3 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35)(a), UR-3006+(R90)(a), UR-3006+(RXX)(a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	AFE5000N, AFE5100N, 9004BKGA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG (+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50°C	ANSI/UL 94	UL (E115797)

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Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABSPCR35/ 65/85	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####) (Y), YOUHO13(##) (YY)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQIN G) NEW MATERIALS CO., LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQIN G) NEW MATERIALS CO., LTD	Ecorex® RN - + (R #)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H (#)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125°C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, 50°C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	Min. V-1, 105 °C	UL 796	UL
LCD Panel	LG Display	LM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	AUO	M215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank))	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	BOE	MV215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	TPV VISION INNOVATOR	TPM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	L&T	BM215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	CHIMEI INNOLUX	M215********** (* can be 0~9, A~Z, “.”, “-“, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	CPT	CLAA215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	L&T	LM215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix X (Modelo/Model: 27B30H, 27B35H, **27********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
DC Input: 19 V d.c., 1,31 or 2,0 A; Class III; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 VAC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 VDC, 1,31 A, Tma= 40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1938EX	Input: 100-240 VAC, 50 - 60 Hz,1,3 A, Class II; Output: 19,0 VDC, 2,0 A, Tma =40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
External power supply	Ten Pao Industrial Co., Ltd.	S025ANP1900131	Input: 100-240 VAC, 50 - 60 Hz, 0,6 A, Class II; Output: 19,0 VDC, 1,31 A, 25,0W, Tma = 40°C, PS2, Altitude:5000m	IEC 62368-1:2018	(CB certificate No. JPTUV-149645; CB report No. CN23WCFE 001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50°C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6 mm, 50°C	ANSI/UL 94	UL (E67171)

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Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5 mm, 130°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50°C	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 0,75 mm, 60°C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPSCM (ee), HIPSHG (ee)	HB or Better, Min. thickness: 1,3 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	AR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX)(a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG (+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)

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Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABSPCR35/ 65/85	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO (####) (Y), YOUHO13(##) (YY)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE (CHONG QING) NEW MATERIALS CO., LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE (CHONG QING) NEW MATERIALS CO., LTD	Ecorex® RN - + (R #)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H (#)	HB or Better, Min. thickness: 0,45 mm, 80°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125°C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, 50°C	ANSI/UL 94	UL
PCB	Interchangeable	Interchangeable	Min. V-1, 105°C	UL 796	UL
LCD Panel	L&T	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '-', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	P270**********(* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '-', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Alt.	INNOLUX	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	TPV	TPM270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	TPV	TPT270********** ** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	BOE	MV270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	BOE	ME270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SHARP	LQ270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SAMSUNG	LTM270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	LGD	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	Panda	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1764

Ref. Certif. No.

JPTUV-125241-M1

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	LCD monitor (LED Backlight)
Name and address of the applicant	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian, P.R. China
Name and address of the manufacturer	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian, P.R. China
Name and address of the factory	See additional page(s)
Ratings and principal characteristics	I/P: 100-240VAC, 50/60Hz, 1.5A or 2.0A; Class I
Trademark (if any)	AOC
Customer's Testing Facility (CTF) Stage used	CTF Stage 1
Model / Type Ref.	27E2, 27E2********, 27P2, 27P2********, Q27P2, Q27P2********, U27P2, U27P2********, U27E2********, Q27E2********, U27N3********, Q27N3********, 27N3******** (* can be 0-9, A-Z, a-z, -, \, /, + or blank)
Additional information (if necessary may also be reported on page 2)	For model differences, refer to the test report. Re-issue of JPTUV-125241 dated 16.07.2021, due to first modification.
A sample of the product was tested and found to be in conformity with	IEC 62368-1:2018 See Test Report for National Differences
As shown in the Test Report Ref. No. which forms part of this Certificate	CN21218I 002

This CB Test Certificate is issued by the National Certification Body

TÜVRheinland®

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku
Yokohama 224-0021, Japan
Phone + 81 45 914-3888
Fax + 81 45 914-3354
Mail: info@jpn.tuv.com
Web : www.tuv.com

Date: 2022-05-09

Signature:

Aegean Li

Disclaimer: This is an electronically released document. The authenticity of this certificate can be verified on the IECEE Website "http://certificates.iecee.org"

1. TPV Electronics (Fujian) Co., Ltd.
   Rongqiao Economic and
   Technological Development Zone
   Fuqing City
   Fujian, P.R. China

2. TPV Electronics (Fujian) Co., Ltd.
   Shangzheng, Yuan Hong Road
   Fuqing City
   Fujian
   P.R. China

3. TPV Electronics (Fujian) Co., Ltd.
   Optoelectronic Park,
   Rongqiao Economic and
   Technological Development Zone,
   Fuqing City, 350301 Fujian, P.R. China

4. L&T Display Technology (Fujian) Ltd.
   Optoelectronic Park, Rongqiao
   Economic and Technological
   Development Zone
   Fuqing, 350301 Fujian, P.R. China

5. TPV Display Technology (China) Co., Ltd.
   No. 106 Jinghai 3 Rd.,
   BDA
   100176 Beijing
   P.R. China

6. TPV Display Technology (Wuhan)
   Co., Ltd.
   Unique No. 11, Zhuankou Development
   District of Economic Technological
   Development Zone, 430056 Wuhan City, P.R. China

7. TPV Display Technology (Beihai)
   Co., Ltd.
   China Electronic Beihai Industry
   Park, Northeast of the Crossing
   Between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R. China

Additional information (if necessary) Report Ref. No. : CN21218I 002

Date: 2022-05-09 Signature: Aegean Li

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1766

8. Trend Smart CE Mexico S de RL de CV
   Avenida Sor Juana Ines de la Cruz
   de 19602 Nueva Tijuana,
   22435 Tijuana Baja California
   MEXICO

9. Envision Indústria de Produtos
   Eletrônicos Ltda.
   Av. Torquato Tapajós, 2236,
   Flores - CEP 69058-830 - Manaus/AM
   Brazil

10. TPV Technology (Thailand) Co., Ltd.
    No.267 Mu7,
    Tha Tum Sub- District,
    Si Maha Pho District,
    Prachin Buri Province, Thailand

11. GeneTouch Corporation
    No. 9, Neixi Rd., Luzhu Dist.,
    Taoyuan City 33852
    Taiwan

12. Dixon Technologies (India) Ltd.
    EMC-2, Shed No. 2,4,5,6 & 7, Near
    Tirupati Airport, Village Govindhavaram, Munagalapalem Post,
    Revenue Vikruthamala, Yerpedu Mandelam,
    District-Chittoor, Andhra Pradesh, 517526, India

13. Fábrica Austral de Productos Eléctricos
    S.A.
    Islas Malvinas 1180,
    Rio Grande (9420), Provincia de Tierra del Fuego,
    Antártida e Islas del Atlántico Sur, Argentina

Additional information (if necessary) Report Ref. No. : CN21218I 002

Date: 2022-05-09 Signature: Aegean Li

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1767

CERTIFICATE OF CONFORMITY

This Certificate indicates that the Applicant has satisfied the Intertek requirements for the application of the EPA ENERGY STAR Mark to the model(s) described in the Product(s) Covered section of the referenced Compliance Report when made in accordance with the conditions set forth in the Energy Efficiency Certification Agreement, the Certification Report and the Program Manual. This certificate is issued subject to the Applicant attaining, and remaining in, compliance with any separate EPA ENERGY STAR Program requirements necessary for use of the ENERGY STAR Mark. This document is the property of Intertek Testing Services and is not transferable.

Company:	Top Victory Electronics (Taiwan) Co., Ltd.	**OEM name:**	Top Victory Electronics (Taiwan) Co.,Ltd.
Address:	10F.,No.230,Liancheng Rd. Zhonghe City. Taipei Country 23553	**Address:**	10F.,No.230,Liancheng Rd. Zhonghe City. Taipei Country 23553
Country:	Taiwan	**Country:**	Taiwan
Contact:	David.Cheng	**Contact:**	David.Cheng
Phone:	+886-2-82261668-2375	**Phone:**	+886-2-82261668-2375
FAX:	+886-2-82261668-2375	**FAX:**	+886-2-82261668-2375
Email:	David.cheng@tpv-tech.com	**Email:**	David.cheng@tpv-tech.com

3rd-party Report Issuing Office: INTERTEK TESTING SERVICES LTD., SHANGHAI

Control Number: *4002603* **Authorized by:** Giovanna Daimondi

for L. Matthew Snyder, Certification Manager

This document supersedes all previous Certificate of Conformity for the noted Report Number.

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Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672
www.intertek.com

Standard(s):	ENERGY STAR® Program Requirements for Displays Version 8.0
Product:	Display (LCD Monitor)
Models:	27E2DA(27E2);27E2QAE(27E2);27P2Q(27P2);27P2C(27P2)

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1768

1.0 Reference and Address			
Report Number	200302963SHA-003	Original Issued: 16-Apr-2020	Revised: None
Standard(s)	ENERGY STAR® Program Requirements for Displays Version 8.0		
Applicant	Top Victory Electronics (Taiwan) Co.,Ltd.	Manufacturer	TPV Electronics(Fujian) Co., Ltd
Address	10F.,No.230,Liancheng Rd. Zhonghe City. Taipei Country 23553	Address	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province
Country	Taiwan	Country	P.R.China
Contact	David.Cheng	Contact	Winter.Feng
Phone	+886-2-82261668-2375	Phone	+86-591-85285555
FAX	+886-2-82261668-2375	FAX	+86-591-85285447
Email	David.cheng@tpv-tech.com	Email	winter.feng@tpv-tech.com
Manufacturer 2	TPV Display Technology (Beihai) Co.,Ltd	Manufacturer 3	TPV Display Technology (China) Co., Ltd.
Address	China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road Beihai City,Guangxi	Address	No.106 Jinghai 3 Rd., BDA, Beijing City
Country	China	Country	China
Contact	Yin Tao	Contact	Nancy.Shang
Phone	18277949678	Phone	86(10)64326699-8312
FAX	86-779-2232270	FAX	NA
Email	yin.tao@tpv-tech.com	Email	lijia.shang@tpv-tech.com
Manufacturer 4	L&T Display Technology (Fujian) Ltd.	Manufacturer 5	TPV Display Technology(Wuhan)Co.,Ltd
Address	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian	Address	Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan
Country	China	Country	China
Contact	Shan Xu	Contact	Zhe.Zhou
Phone	86(591)8651-5556	Phone	86(27)-6884 3822
FAX	86(591)8651-5556	FAX	86(27)-6884 3822
Email	shan.xu@lntdisplayfj.com	Email	zhe.zhou@tpv-tech.com

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1769

2.0 Product Description					
Product	Display (LCD Monitor)				
Brand Name	AOC				
Description	The product covered by this report is a Display (LCD Monitor)				
Models	27E2DA(27E2);27E2QAE(27E2);27P2Q(27P2);27P2C(27P2)				
Model Similarity	Model Name:27E2DA, 27E2QAE, 27P2Q,27P2C Model Number:27E2,27P2 27E2 is equipped with rotatable pivot and 27P2 without rotatable pivot. Different model name means different sales region.				
Ratings	100-240Vac,50/60Hz,1.5A				
Other Ratings	NA				
Date Available	10/25/2019	Market Availability	Yes	OEM	TPV Electronics(Fujian) Co. Ltd
Major Markets	Canada,Japan,Taiwan,United States				
Trans Type	Initial Certification: Model Meets ENERGY STAR Requirements				
Notes	NA				
Additional Model Details (Optional)	Model Name and Number	Identifying Information			
Original Certificate Actual Issued Date for Model Tested (Only Applies to Revised Reports)					NA

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1770

3.0 Product Photographs

Photo 1 - External View (front)

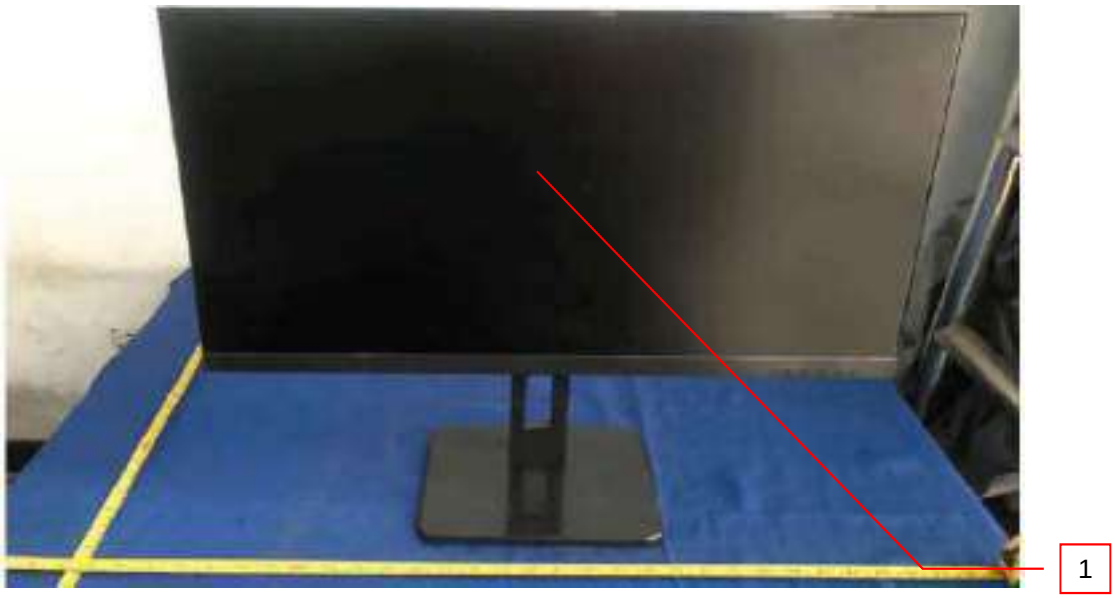


Photo 2 - External View (back)



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1771

3.0 Product Photographs

Photo 3 - Main Board (715G9494)

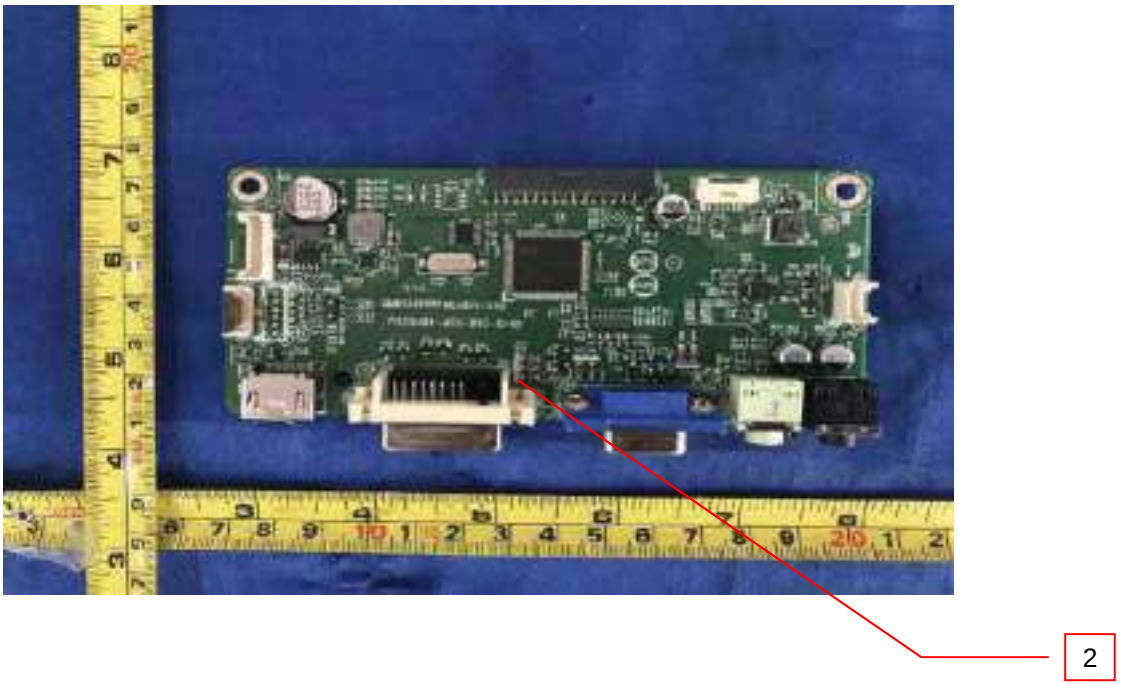
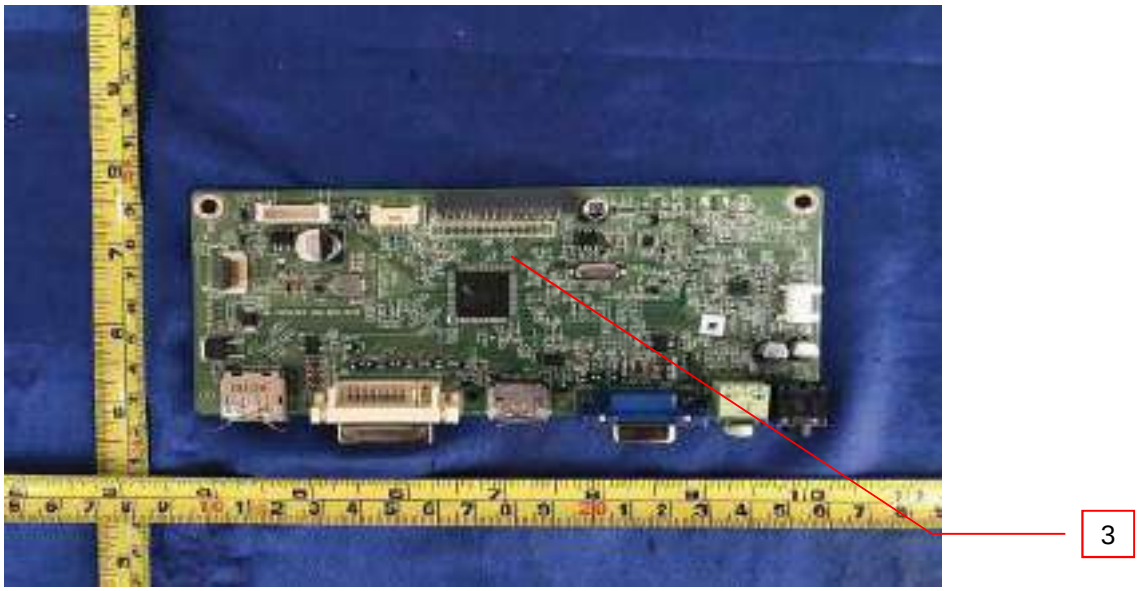


Photo 4- Main Board (715G9483)



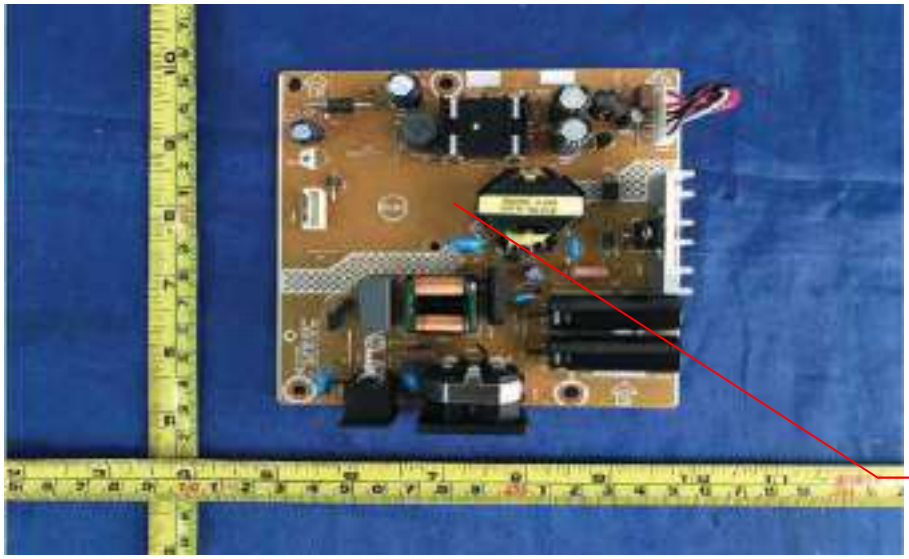
Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1772

3.0 Product Photographs

Photo 5- Main Board (715G9496)



Photo 6- Power Board (715G7610)



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4.0 Critical Components

Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity [3]
1	1	LCD panel	TPV	TPM270WF1	27 inch,TFT type,with LED backlight	NR
3	2	Main Board	TPV	715G9494	I/P: 19Vdc, 2.5A 715G9494 is tested type.	NR
4	3			715G9483		NR
5	4			715G9496		NR
6	5	Power Board	TPV	715G7610	I/P:AC100-240V,50/60Hz,1.5A; O/P:max.19Vdc,2.5A	NR

NOTES:

1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.

2) “Various“ means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.

3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates: a) Unlisted and only visual examination is necessary or b) marks are not required to be verified.

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5.0 Critical Unlisted CEC Components

Periodic Evaluation of Critical Unlisted Components by the Intertek Component Evaluation Centers (CEC) is not required under the INTERTEK ENERGY STAR Program.

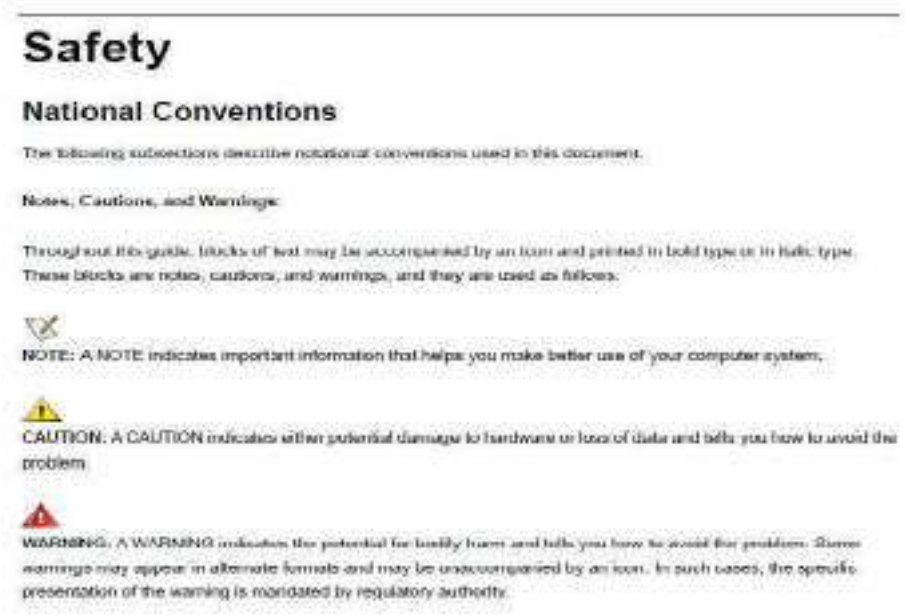
Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1775

6.0 Critical Features
Critical Features/Components - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the ENERGY STAR® Program Requirements. Listed Component - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings. Recognized Component - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability. Unlisted Component - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.
Construction Details - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.
1. Product Safety Compliance - NA
2. EMI Compliance - NA
3. Schematics - NA
4. Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. Refer to Illustration No.1-2 for details.
5. Package Markings - NA
6. Warranty Information - NA
7. Marking Label - Refer to Illustration No.3.for details.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1776

7.0 Illustrations

Illustration 1 - Installation and Safety instruction



Safety

National Conventions

The following subsections describe notational conventions used in this document.

Notes, Cautions, and Warnings

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold type or in italic type. These blocks are notes, cautions, and warnings, and they are used as follows:

NOTE: A NOTE indicates important information that helps you make better use of your computer system.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates the potential for bodily harm and tells you how to avoid the problem. Some warnings may appear in alternate formats and may be unaccompanied by an icon. In such cases, the specific presentation of the warning is mandated by regulatory authority.

4

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1777

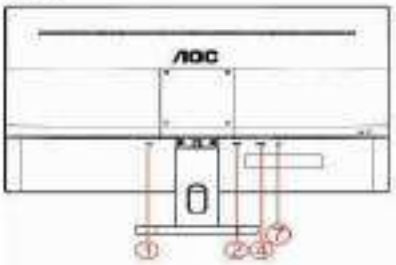
7.0 Illustrations

Illustration 2 - Installation and Safety instruction (Continued)

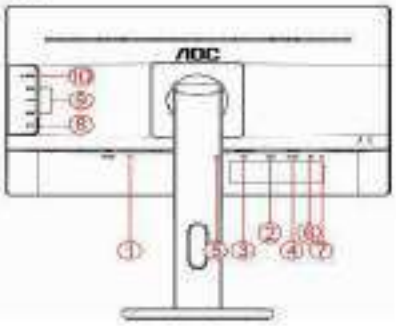
Connecting the Monitor

Cable Connections In Back of Monitor and Computer.

27E1H



27D1



1. Power
2. HDMI
3. DVI
4. Analog (D-Sub 15-Pin VGA cable)
5. DP
6. Audio in
7. Earphone out
8. USB upstream
9. USB downstream
10. USB charging

To protect equipment, always turn off the PC and LCD monitor before connecting.

1. Connect the power cable to the AC port on the back of the monitor.
2. Connect one end of the 15-pin D-Sub cable to the back of the monitor and connect the other end to the computer's D-Sub port.
3. (Optional – Requires a video card with HDMI port) - Connect one end of the HDMI cable to the back of the monitor and connect the other end to the computer's HDMI port.
4. (Optional – Requires a video card with DVI port) - Connect one end of the DVI cable to the back of the monitor and connect the other end to the computer's DVI port.
5. (Optional – Requires a video card with DP port) - Connect one end of the DP cable to the back of the monitor and connect the other end to the computer's DP port.
6. (Optional – Requires a video card with USB port) - Connect one end of the USB cable to the back of the monitor and connect the other end to the computer's USB port.
7. (Optional)Connect the audio cable to audio in port on the back of the monitor.
8. Turn on your monitor and computer.
9. Video content supporting resolution: VGA/DVI/HDMI/DP.

If your monitor displays an image, installation is complete. If it does not display an image, please refer Troubleshooting.

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7.0 Illustrations

Illustration 3 - Marking Label



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1779

8.0 Test Summary					
Evaluation Period	4/16/2020-4/16/2020			Project No.	200302963SHA
Sample Rec. Date	1-Apr-2020	Condition	Prototype	Sample ID.	0200401-87-078
Test Location	Intertek Testing Services Shanghai Limited EPA ID(1105997) Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China				
Test Procedure	Testing Lab			Test type	Qualification

Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.

The following requirements were evaluated:

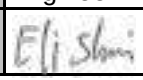
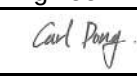
Required Submittal Information	Submittal Data
Model Name and/or Number tested	27E2DA(27E2)
Date tested	04/16/2020
Serial number of Unit tested	1 sample
ENERGY_STAR_Specification_Version*	8.0
Product_Type*	Monitor
Tiled_Display_System	
Maximum_Tiled_Configuration	
Panel_Type*	Other
Other_Panel_Type	TFT LCD
Diagonal_Screen_Size_in*	27
Screen_Area_sq_in*	311.67
Display_Contrast_Ratio*	1000
Native_Vertical_Resolution_lines*	1920
Native_Horizontal_Resolution_lines*	1080
Total_Native_Resolution_megapixels*	2.1
Native_Pixel_Density_Dp_pixels_sq_in*	6653
As_Tested_Screen_Refresh_Rate_Hz*	60
Maximum_Screen_Refresh_Rate_Hz*	60
Enhanced_Performance_Criteria*	No
Color_Gamut	
Reported_Contrast_Ratio_at_85_deg_Left_Horiz_Viewing_Angle	
Reported_Contrast_Ratio_at_85_deg_Right_Horiz_Viewing_Angle	
High_Dynamic_Range_HDR*	N/A
Other_Available_Interfaces	
Other_Features	
Signal_Interface*	HDMI 1.4
Other_Interface	
USB_C_with_Power_Delivery_Supported*	No
Maximum_Power_Delivery_W	
Other_Power_Source	
Does_Model_Have_a_Forced_Menu_at_Initial_Start_up*	No
Maximum_Measured_Luminance_cd_m_2*	327.9
Maximum_Reported_Luminance_cd_m_2*	250
As_shipped_Luminance_cd_m_2	296
As_tested_Luminance_cd_m_2*	200
On_Mode_Power_at_12_Lux_at_115_Volts_W	
On_Mode_Power_at_300_Lux_at_115_Volts_W	
Measured_On_Mode_Power_at_115_Volts_W	14.62
Reported_On_Mode_Power_at_115_Volts_W	14.62
Maximum_On_Mode_Power_Limit_for_Signage_Certification_W	
Measured_Sleep_Mode_Power_at_115_Volts_W	0.27
Reported_Sleep_Mode_Power_at_115_Volts_W	0.27
Measured_Disconnected_Sleep_Mode_Power_at_115_Volts_W	
Maximum_Sleep_Mode_Power_Limit_for_Signage_Certification_W	
Number_of_Sleep_Modes_in_Addition_to_Default_Sleep_Mode*	0
Other_Mechanism_for_Automatically_Entering_Sleep_or_Off_Mode	
Default_Delay_Time_to_Sleep_min	5

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8.0 Test Summary	
Measured_Off_Mode_Power_at_115_Volts_W	0.21
Reported_Off_Mode_Power_at_115_Volts_W	0.21
Measured_Total_Energy_Consumption_at_115_Volts_kWh	46.36
Reported_Total_Energy_Consumption_at_115_Volts_kWh	46.36
Max_Total_Energy_Consumption_Limit_for_Monitor_kWh	52.06
On_Mode_Power_at_12_Lux_at_230_Volts_W	
On_Mode_Power_at_300_Lux_at_230_Volts_W	
Measured_On_Mode_Power_at_230_Volts_W	14.51
Measured_Sleep_Mode_Power_at_230_Volts_W	0.28
Measured_Disconnected_Sleep_Mode_Power_at_230_Volts_W	
Measured_Off_Mode_Power_at_230_Volts_W	0.23
Measured_Total_Energy_Consumption_at_230_Volts_kWh	46.08
True_Power_Factor_PF_During_On_Mode_Testing_at_115_Volts_W	0.54
True_Power_Factor_PF_During_On_Mode_Testing_at_230_Volts_W	0.43
Color_Spaces_Supported*	sRGB
Available_Signal_or_Data_Interfaces*	DVI,HDMI,VGA
Model_Features*	Built-In Speakers
Features_Enabled_in_Default_On_Mode*	Built-In Speakers
Features_Enabled_in_Default_Sleep_Mode*	None
Wireless_Technologies_Supported*	None
Ethernet_Supported*	None
Power_Source*	Ac to dc internal power supply
Mechanism_for_Automatically_Entering_Sleep_or_Off_Mode*	Display Power Management Signaling
On_Mode_Power_at_12_Lux_at_100_Volts_50Hz_W	
On_Mode_Power_at_300_Lux_at_100_Volts_50Hz_W	
Measured_On_Mode_Power_at_100_Volts_50Hz_W	14.66
Measured_Sleep_Mode_Power_at_100_Volts_50Hz_W	0.27
Measured_Disconnected_Sleep_Mode_Power_at_100_Volts_50Hz_W	
Measured_Off_Mode_Power_at_100_Volts_50Hz_W	0.21
Measured_Total_Energy_Consumption_at_100_Volts_50Hz_kWh	46.48
On_Mode_Power_at_12_Lux_at_100_Volts_60Hz_W	
On_Mode_Power_at_300_Lux_at_100_Volts_60Hz_W	
Measured_On_Mode_Power_at_100_Volts_60Hz_W	14.66
Measured_Sleep_Mode_Power_at_100_Volts_60Hz_W	0.27
Measured_Disconnected_Sleep_Mode_Power_at_100_Volts_60Hz_W	
Measured_Off_Mode_Power_at_100_Volts_60Hz_W	0.21
Measured_Total_Energy_Consumption_at_100_Volts_60Hz_kWh	46.48

8.1 Signatures

A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.

Completed by:	Eli Shui	Reviewed by:	Carl Dong
Title:	Engineer	Title:	Engineer
Signature:		Signature:	

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1781

9.0 Correlation Page For Multiple Listings			
The following products, which are identical to those identified in this report except for model number and Company name.			
BASIC LISTEE	Top Victory Electronics (Taiwan) Co., Ltd.		
Address	10F.,No.230,Liancheng Rd. Zhonghe City. Taipei Country 23553		
Country	Taiwan	EPA ID	1065104
Product	Display (LCD Monitor)		
Contact	David.Cheng		
Phone	+886-2-82261668-2375		
FAX	+886-2-82261668-2375		
Email	David.cheng@tpv-tech.com		

MULTIPLE LISTEE 1	None			
Address				
Country		EPA ID		
Contact				
Phone				
FAX				
Email				
Brand Name				
Date Available		Market Availability		OEM
Major Markets				
Trans Type				
Notes				
ASSOCIATED MANUFACTURER				
Address				
Country				

MULTIPLE LISTEE 1 MODELS		BASIC LISTEE MODELS
Additional Model Details (Optional)	Model Name and Number	Identifying Information

MULTIPLE LISTEE 2	None			
Address				
Country		EPA ID		
Contact				
Phone				
FAX				
Email				
Brand Name				
Date Available		Market Availability		OEM
Major Markets				
Trans Type				
Notes				
ASSOCIATED MANUFACTURER				
Address				
Country				

MULTIPLE LISTEE 2 MODELS		BASIC LISTEE MODELS
Additional Model Details (Optional)	Model Name and Number	Identifying Information

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1782

10.0 General Information

The Applicant has agreed to produce products in accordance with the requirements of this report and to maintain compliance with all ENERGY STAR Product Specification requirements.

Changes to Product Design / Alternate Components

As part of this agreement, the Applicant also has agreed to notify Intertek and to request authorization prior to making any changes to the product (including but not limited to using alternate parts, components or materials) which may effect compliance with the ENERGY STAR Product Specification. Those parts, components or materials identified as critical have been listed in Section 4.0 of this report.

Product Surveillance

Under this Program, market surveillance is conducted on an annual basis. For each Product Type defined in the EPA ENERGY STAR Program, Intertek will select 10% of those certified products for Verification Testing in accordance with the requirements of the EPA ENERGY STAR Product Specification.

The primary source for products under Verification Testing will be the retail market. Applicants whose products are selected for Verification Testing are required to provide a list of locations where the product might be obtained. The Applicant is responsible for the cost of procurement and the Verification Tests. Should products not be readily available on the retail market, the Applicant is required to provide access to distribution warehouses to allow selection of those products. Should the product not be available on the retail market or if procurement from the retail market is not feasible, then alternate arrangements for Verification Testing will be made by the Intertek Certification Body.

As a general rule under the Verification Testing requirements, the products must achieve energy values within 5% of the required Tier Limit.

Compliance with ENERGY STAR Product Specifications under Verification Testing

Products found non-compliant with ENERGY STAR Product Specification under Verification Testing, will be reported to the EPA within 48 hours and the product removed from the ENERGY STAR Program. If it is determined during Verification Testing that changes have been made to product design or critical components, the Certification Body may increase Verification Testing frequency of those products.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation

Ship the samples to:
Intertek Testing Services Shanghai Limited
ETL Component Evaluation Center
Building No. 86, 1198 Qinzhou Road (North)
Shanghai 200233, China
Attn: Ms. Angela Han
Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

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11.0 Manufacturing and Production Tests

Manufacturing and Production tests are not required under the INTERTEK ENERGY STAR Program. However, Intertek encourages the use of such ongoing product testing to ensure compliance with the EPA ENERGY STAR Product Specifications.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1784

12.0 Revision Summary				
The following changes are in compliance with the declaration of Section 8.1:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
				None

Certificado de Conformidade
Certificate of Conformity

Certificado/Certificate
UL-BR 24.0764

Revisão/Review
04

Emissão / *Issue*
6 de junho de 2024
June 6, 2024

Validade/Expiration
5 de junho de 2027
June 5, 2027

Reconhecer que o Solicitante/Acknowledge that the Certificate Holder

ENVISION INDÚSTRIA DE PRODUTOS ELETRONICOS LTDA

avaliou o produto/has had

MONITOR LCD / *LCD MONITOR*

ao qual atende aos requisitos do Programa de Certificação/evaluated and meets the requirements of the certification program

REQUISITOS DE AVALIAÇÃO DA CONFORMIDADE ANEXOS À PORTARIA INMETRO Nº 304 DE 06 DE NOVEMBRO DE 2023 /
CONFORMITY ASSESSMENT REQUIREMENTS ATTACHED TO INMETRO ORDINANCE Nº 304 AS OF NOV 06, 2023

e pode ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado./
and can display the Conformity Identification Seal of the Brazilian Conformity Assessment System (SBAC) on the product(s) listed in this certificate.

Rafael Parada
Program Owner

UL do Brasil Certificações, organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro Nº OCP-0029./
UL do Brasil Certificações, Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register Nr OCP-0029.

Certificado de conformidade válido somente acompanhado das páginas de 1 a 211
Certificate of Conformity valid only if accompanied from pages 1 to 211

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Form-ULID-017660 – Rev. 3.0

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1786

Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão**/Review: **04**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		**5 de junho de 2027** *June 5, 2027*

Solicitante/Certificate Holder (1635977)	**ENVISION INDúSTRIA DE PRODUTOS ELETRONICOS LTDA** Rodovia Anhanguera, km 26,5 – Armazém II, 4, 5 e 6 – Jardim Jaraguá 05275-000, SÃO PAULO, SP, Brazil C.N.P.J.: 04.176.689/0003-22
Fabricante/Manufacturer (227862)	**ENVISION INDúSTRIA DE PRODUTOS ELETRONICOS LTDA** Av Torquato Tapajos 2236, Flores, Manaus/AM, 69058-830, Brazil CNPJ: 04.176.689./0001-60
Modelo de certificação/ Certification model	5
Norma(s) aplicável(is)/ Applicable standards	See appendix for detials
Identificação UL/ UL identification	BR2467 / Vol.3 / Sec. 27, 28, 29, 30, 31, 32, 36, 22, 23, 24, 25, 38, 40, 41, 46, 48, 54, 56, 58, 60, 61, 62, 63, 64, 65, 71, 72, **75**
Quantidade importada/ Quantity imported	N/A
Unidade de medida/ Measurement unit	N/A
Lote ou No. de série/ Lot or serial number	N/A
Número e data da licença de importação/Number and import license date	N/A

Identificação da família/modelo/lote de produto(s) certificado(s)/Identification of the family/model/lot of certified product(s):

Marca/ Brand name	**Modelo/** Model	**Descrição/** Description	**Código de barras/** Bar code number
AOC	236LM00014, *2470*****	(* = A to Z, a to z, 0 to 9, "+", "-", "/", "\" or blank. Represent different enclosure color and sales regions for marketing purpose only, no technical difference)	N/A
AOC	G2460PF, 240LM00010, G2460VQ6, 240LM00016	N/A	N/A
AOC	215LM00041, *2270******	(* can be 0-9, A-Z, a-z,-, \, /, + or blank for marketing purpose)	N/A
AOC	185LM000**	(* can be 0-9, A-Z, a-z, -, \, /, + or blank for marketing purpose.)	N/A
AOC	22B1, 22B1H, 22********	(* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different enclosure colour for marketing purpose)	N/A
AOC	24B1, 24B1H, 24B1XHM, 24****************	(The symbol"*" can be 0-9, AZ, a-z, "+", "-", "/", "\" or blank, which is not influencing on safety.)	N/A
AOC	G2260VWQ6, 215LM00033	N/A	N/A
AOC	315LM00019, AG322FCX	N/A	N/A
AOC	22P1, **22P1********	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A

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AOC	24P1, **24P1********	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A
AOC	9P1, **9P1********	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A
AOC	AG251********, 250LM000**	(The * in the model name can be 0 to 9, A to Z or blank for marketing use only.)	N/A
AOC	24G2, **24G2********	(The symbol "*" can be 0-9, A-Z, a-z,"+", "-", "/", "\", sign absence or blank, which is not influencing on safety.)	N/A
AOC	27G2, **27G2********	(* can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank, Represent different enclosure color and sales region for marketing purpose.)	N/A
AOC	323FCX, 323QCX, **323********	(* can be 0-9, A-Z, a-z, – , \ , / , + or blank for marketing purpose only, no technical difference.)	N/A
AOC	22P2, 22P2********	(* can be 0-9, A-Z, a-z, – , \ , / , + or blank, represent different enclosure colour for marketing purpose)	N/A
AOC	27B1,27B1HM, **27B1******	(The symbol "*" can be 0-9, A-Z, a-z, "+", "-","/", "\" or blank)	N/A
AOC	U27P2, **27P2********	(The symbol "*" can be 0-9, A-Z, a-z, "+", "-","/", "\" or blank)	N/A
AOC	25G3ZM, 25G3********	(* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different sales region and enclosure colour for marketing purpose.)	N/A
AOC	**24B30********, **24B35********	(*=A-Z, a-z, 0-9, /, +, -, \ or blank)	N/A
AOC	27G2E1, 27G2********, C27G2********, C*27G2********, Q27G2********, U27G2********	(*=A-Z, a-z, 0-9, /, +, -, \ or blank)	N/A
AOC	24B3HMF2, **24B3*******	(* can be 0-9, A-Z, a-z, –, \, /, + or blank for marketing purpose only, no technical difference.)	N/A
AOC	22B3HMF, 22B3********, Q22B3********	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol).	N/A
AOC	22B30HM2, 22B35HM2, **22**********	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol)	N/A
AOC	Q27B30, 27B350H, 27B35H, **27**********	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol)	N/A
AOC	27G4, 27G4/P, **27G4********	(*=0-9,A-Z,a-z,+, -, /, \ or blank)	N/A
AOC	24G4, 24G4/P, **24G4*******	(*=0-9,A-Z,a-z,+, -, /, \ or blank)	N/A
AOC	**24E3UM, 24E3UF, 24E3QF, 24E3**********, Q24E3**********	**(* can be 0-9, A-Z, a-z, –, \, /, + or blank for marketing purpose only, no technical difference.)**	**N/A**

Identificação da(s) versão(ões) do(s) modelo(s) de produto(s) certificado(s)/Identification of version(s) of certified product(s) model(s):

Código do modelo/ Model code	**Descrição do modelo/** Model description	**Versão/** Version	**Código de barras/** Bar code number
N/A	N/A	N/A	N/A

Informações de ensaios/Test information:

Modelo/Model: 236LM00014, *2470***

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50080822 001	**8 de maio de 2017** May 8, 2017
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-11412C077D	**27 de fevereiro de 2017** February 27, 2017

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Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1412C077E	**27 de abril de 2017** April 27, 2017

Modelo/Model: G2460PF, 240LM00010, G2460VQ6, 240LM00016

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50080813 001	**4 de maio de 2017** May 4, 2017
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology (SuZhou) Co., Ltd.*	SECE1505118-A	**1 de abril de 2017** April 1, 2017
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1611C130	**28 de novembro de 2016** November 28, 2016
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology Corporation Test Laboratory*	TEFD1506145-A	**25 de julho de 2016** July 25, 2016
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1611C130	**28 de novembro de 2016** November 28, 2016

Modelo/Model: 215LM00041, *2270****

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50083922 001	**1 de junho de 2017** June 1, 2017
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd.*	ACS-E15423-1	**21 de maio de 2018** May 21, 2018
Relatório de ensaio emitido por / *Test report issued by* *AUDIX Technology Corporation, EMC Department*	EM-F150563A	**25 de julho de 2016** July 25, 2016

Modelo/Model: 185LM000**

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50080564 001	**15 de maio de 2017** May 15, 2017
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology(Suzhou) Co., Ltd.*	SECE1609083	**23 de setembro de 2016** September 23, 2016
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology Corporation Test Laboratory*	TEFD1609132	**3 de novembro de 2016** November 4, 2016

Modelo/Model: 22B1, 22B1H, 22******

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50117327 001	**10 de janeiro de 2018** January 10, 2018
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50117327 002	**25 de março de 2022** March 25, 2022
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1712C238	**10 de janeiro de 2018** January 10, 2018
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1712C238	**10 de janeiro de 2018** January 10, 2018
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1905C011E	**9 de junho de 2022** June 9, 2022

Modelo/Model: 24B1, 24B1H, 24B1XHM, 24********

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 001	**29 de janeiro de 2018** January 29, 2018
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 002	**28 de abril de 2019** April 28, 2019

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Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 003	**19 de agosto de 2021** August 19, 2021
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 004	**26 de abril de 2022** April 26, 2022
Relatório de ensaio emitido por / *Test report issued by Intertek Testing Services Shanghai*	**240600098SHA-001**	**19 de junho de 2024** June 19, 2024
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C141	**30 de janeiro de 2018** January 30, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C141	**30 de janeiro de 2018** January 30, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C141G	**20 de maio de 2022** April 20, 2022
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	**BTL-EMC-1-1904C060F**	**12 de junho de 2024** June 12, 2024

Modelo/Model: G2260VWQ6, 215LM00033

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50163485 001	**30 de julho de 2018** July 30, 2018
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology (Suzhou) Co., Ltd.*	SECE1709022-A	**31 de maio de 2018** May 31, 2018
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology Corporation Test Laboratory*	TEFD1709118-B	**31 de maio de 2018** May 31, 2018

Modelo/Model: 315LM00019, AG322FCX

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50134159 001	**30 de março de 2018** March 30, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc. (China)*	BTL-EMC-1-1607C046	**27 de março de 2018** March 27, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc. (Taiwan)*	BTL-FICE-1-1607C046	**26 de julho de 2016** July 26, 2016

Modelo/Model: 22P1, **22P1******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117328 001	**22 de janeiro de 2018** January 22, 2018
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117328 002	**6 de março de 2018** March 6, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C204	**17 de abril de 2018** April 17, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C204	**17 de abril de 2018** April 17, 2018

Modelo/Model: 24P1, **24P1******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50123526 001	**15 de março de 2018** March 15, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C227	**26 de fevereiro de 2018** February 26, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C227	**13 de fevereiro de 2018** February 13, 2018

Modelo/Model: 9P1, **9P1******

Laboratório de ensaio/	**Relatório de ensaio/**	**Data de emissão/**

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Testing laboratory	Test report	Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50127813 001	**2 de abril de 2018** April 2, 2018
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1802C098	**26 de março de 2018** March 26, 2018
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1802C098	**26 de março de 2018** March 26, 2018

Modelo/Model: AG251******, 250LM000****

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *Nemko Shanghai Ltd. Shenzhen Branch*	373638	**24 de abril de 2019** April 24, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1904C132	**13 de maio de 2019** May 13, 2019

Modelo/Model: 24G2, **24G2******

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 001	**2 de maio de 2018** May 2, 2018
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 002	**17 de junho de 2019** June 17, 2019
Relatório de ensaio emitido por / *Test report issued by* Intertek Testing Services (Shanghai FTZ) Co., Ltd.	**240800250SHA-001**	**20 de agosto de 2024** August 20, 2024
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology (Suzhou) Corporation*	SECE1906151	**3 de agosto de 2019** August 3, 2019
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology Corp.*	TEFD1906255	**3 de agosto de 2019** August 3, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1905C010	**23 de julho de 2019** July 23, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1905C010	**23 de julho de 2019** July 23, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	**BTL-EMC-1-2104C082E**	**31 de agosto de 2023** August 23, 2023

Modelo/Model: 27G2, **27G2******

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 001	**2 de maio de 2018** May 2, 2018
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 002	**17 de junho de 2019** June 17, 2019
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology (Suzhou) Corporation*	SECE1906151	**3 de agosto de 2019** August 3, 2019
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology Corp.*	TEFD1906255	**3 de agosto de 2019** August 3, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1905C010	**23 de julho de 2019** July 23, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1905C010	**23 de julho de 2019** July 23, 2019

Modelo/Model: 323FCX, 323QCX, **323******

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50306701 001	**11 de novembro de 2019** November 11, 2019
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology (Suzhou) Co., Ltd.*	SECE1910074	**1 de novembro de 2019** November 1, 2019

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Modelo/Model: 22P2, 22P2******

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50349572 001	**30 de março de 2020** March 30, 2020
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50349572 002	**4 de junho de 2020** June 4, 2020
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-EMC-1-2001C075A	**28 de junho de 2020** June 28, 2020
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-FICE-1-2001C075	**30 de março de 2020** March 30, 2020

Modelo/Model: 27B1,27B1HM, **27B1****

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	CN22Q3BH 001	**4 de março de 2020** March 4, 2020
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	CN22Q3BH 002	**18 de maio de 2020** May 18, 2020
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd*	ACS-E22053	**25 de março de 2020** March 25, 2020
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd*	ACS-F22047	**25 de março de 2020** March 25, 2020
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-EMC-1-1904C077D	**6 de junho de 2020** June 6, 2020

Modelo/Model: U27P2, **27P2******

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 001	**18 de março de 2020** March 18, 2020
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 002	**10 de agosto de 2020** August 10, 2020
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 003	**30 de junho de 2021** June 30, 2021
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 004	**5 de maio de 2022** May 5, 2022
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-EMC-1-2003C125A	**9 de maio de 2022** May 9, 2022

Modelo/Model: 25G3ZM, 25G3******

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 001	**13 de maio de 2021** May 13, 2021
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 002	**14 de fevereiro de 2022** February 14, 2022
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 003	**11 de julho de 2022** July 11, 2022
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc. (Dongguan)*	BTL-EMC-1-2104C184B	**12 de junho de 2023** June 12, 2023

Modelo/Model: **24B30******, **24B35********

Laboratório de ensaio/ Testing laboratory	Relatório de ensaio/ Test report	Data de emissão/ Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 001	**26 de setembro de 2023** September 26, 2023

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Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 002	**24 de novembro de 2023** November 24, 2023
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 003	**2 de novembro de 2023** November 2, 2023
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc. (Dongguan)*	BTL-EMC-1-2104C184B	**5 de janeiro de 2024** January 5, 2024

Modelo/Model: 27G2E1, 27G2******, C27G2********, C*27G2********, Q27G2********, U27G2********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES221100672801	**28 de dezembro de 2022** December 28, 2022
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230500304601	**28 de junho de 2023** June 28, 2023
Relatório de ensaio emitido por / *Test report issued by* BTL Inc. (Dongguan)	BTL-EMC-1-2207C151B	**23 de setembro de 2023** September 23, 2023

Modelo/Model: 24B3HMF2, **24B3*****

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES240100059701	**6 de fevereiro de 2024** February 6, 2024
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES240100059701 (Correction 1)	**7 de março de 2024** March 6, 2024
Relatório de ensaio emitido por / *Test report issued by* Shenzhen UnionTrust Quality and Technology Co., Ltd.	2310167389EMC-1	**27 de novembro de 2023** November 27, 2023
Relatório de ensaio emitido por / *Test report issued by* Shenzhen UnionTrust Quality and Technology Co., Ltd.	2403079950EMC-1	**14 de março de 2024** March 14, 2024

Modelo/Model: 22B3HMF, 22B3******, Q22B3********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230200081401	**28 de abril de 2023** April 28, 2023
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230200081401A1	**30 de janeiro de 2024** January 30, 2024
Relatório de ensaio emitido por / *Test report issued by* Tianjin Dongdian Testing Service Co., Ltd.	DDT-B23030305-1E04	**27 de março de 2023** March 27, 2023

Modelo/Model: 22B30HM2, 22B35HM2, **22********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES231200774901	**4 de janeiro de 2024** January 4, 2024
Relatório de ensaio emitido por / *Test report issued by* BTL INC.	BTL-EMC-1-2312C138	**15 de janeiro de 2024** January 15, 2024

Modelo/Model: Q27B30, 27B30H, 27B35H, **27********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by*	SZES231100735901	**2 de janeiro de 2024** January 2, 2024

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão**/Review: **04**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		**5 de junho de 2027** *June 5, 2027*

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch		
Relatório de ensaio emitido por / *Test report issued by* BTL INC.	BTL-EMC-1-2401C032	**30 de janeiro de 2024** January 30, 2024

Modelo/Model: 27G4, 27G4/P, **27G4******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230800493401	**26 de setembro de 2023** September 26, 2023
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B23090108-2E01	**13 de setembro de 2023** September 13, 2023
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B24040810-1E01	**29 de abril de 2024** January 29, 2024
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B23090108-2E02	**13 de setembro de 2023** September 13, 2023

Modelo/Model: 24G4, 24G4/P, **24G4******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230800493901	**8 de setembro de 2023** September 8, 2023
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B23082413-1E01	**11 de setembro de 2023** September 11, 2023
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B23082413-1E02	**12 de setembro de 2023** September 12, 2023

Modelo/Model: 24E3UM, 24E3UF, 24E3QF, 24E3********, Q24E3**********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* TÜV Rheinland (Shenzhen) Co., Ltd.	CN22VYOG 001	**16 de agosto de 2022** August 16, 2022
Relatório de ensaio emitido por / *Test report issued by* TÜV Rheinland (Shenzhen) Co., Ltd.	CN22VYOG 002	**25 de maio de 2023** May 25, 2023
Relatório de ensaio emitido por / *Test report issued by* TÜV Rheinland (Shenzhen) Co., Ltd.	CN22VYOG 003	**20 de setembro de 2023** September 20, 2023
Relatório de ensaio emitido por / *Test report issued by* TÜV Rheinland (Shenzhen) Co., Ltd.	CN22VYOG 004	**5 de setembro de 2024** September 5, 2024
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B24081309-1E01	**27 de agosto de 2024** August 27, 2024
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B24081309-1E02	**27 de agosto de 2024** August 27, 2024

Informações de auditoria/Audit information:

Local da auditoria/Audit location	**Data de realização/**Perform date
Tratamento de reclamações/Complaint handling ENVISION INDUSTRIA DE PRODUTOS ELETRONICOS LTDA	**6 de maio de 2024** May 6, 2024
Fabricante/ Manufacturer ENVISION INDUSTRIA DE PRODUTOS ELETRONICOS LTDA	**12 de março de 2024** March 12, 2024

Informações adicionais/Additional information:

N/A

Observações/Observations:

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão/**Review: **04**	**Validade /** ***Expiration***
6 de junho de 2024		**5 de junho de 2027**
June 6, 2024		*June 5, 2027*

1. A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da UL do Brasil Certificações previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro./
   The validity of this Certificate of Conformity is linked to the performance of maintenance assessments and treatment of possible non-conformities in accordance with the guidelines of UL do Brasil Certifications provided for in the specific Conformity Assessment Regulation. To check the updated condition of regularity of this Certificate of Conformity, the Inmetro database of certified products and services must be consulted.

2. Este certificado aplica-se aos equipamentos (produtos) idênticos ao protótipo avaliado e certificado, manufaturados na(s) unidade(s) fabril(is) mencionada (s) acima./
   This certificate applies to the products that are identical to the prototype investigated, certified and manufactured at the production site mentioned in this certificate.

3. Qualquer alteração no produto, incluindo a marcação, invalidará o presente certificado, salvo se o solicitante informar por escrito à UL do Brasil Certificações sobre esta modificação, a qual procederá à avaliação e decidirá quanto à continuidade da validade do certificado./
   Any non-authorized changes performed in the product, including marking, will invalidate this certificate. UL do Brasil Certificações must be notified about any desired change. This notification will be analyzed by UL do Brasil Certificações that will decide about certificate force.

4. Esta autorização está vinculada a um contrato e para o escopo acima citado./
   This license is related to a commercial proposal and to the scope above cited.

Histórico de revisões/Revisions history:

Revisão/ Review	**Data/** Date	**Descrição da revisão/** Revision description
04	**1 de outubro de 2024** *October 1, 2024*	**- Adicionar modelo 24E3UM, 24E3UF, 24E3QF, 24E3****************, Q24E3**************.** *- Add model 24E3UM, 24E3UF, 24E3QF, 24E3****************, Q24E3**************.*
03	**9 de setembro de 2024** *September 9, 2024*	**Para o modelo: 24B1, 24B1H, 24B1XHM, 24**************** &** **- Alterar o modelo de 24B1, 24B1H, 24**************** para 24B1, 24B1H, 24****************** **- Alterações de componentes.** **- Alterar laboratório de testes: Intertek Testing Services Shanghai.** **Para o modelo: 24G2, **24G2********** **- Atualizar o padrão de IEC 60950 para IEC 62368.** **- Placa de alimentação de comutação tipo embutida 715G9611.** **- Placa principal embutida 715GB201 fornecida pela saída secundária da placa de alimentação mencionada acima.** **- Alterar laboratório de testes: Intertek Testing Services (Shanghai FTZ) Co., Ltd..** *For model: 24B1, 24B1H, 24B1XHM, 24**************** &* *- Change the model from 24B1, 24B1H, 24**************** to 24B1, 24B1H, 24***************** *- Components changes.* *- Change testing laboratory: Intertek Testing Services Shanghai.* *For model: 24G2, **24G2********* *- Upgrade standard from IEC 60950 to IEC 62368.* *- Building-in type switching power supply board 715G9611.* *- Building-in main board 715GB201 supplied by secondary output of power board mentioned above.* *- Change testing laboratory: Intertek Testing Services (Shanghai FTZ) Co., Ltd..*
02	**1 de julho de 2024**	**Adicionar novo modelo: 24G4, 24G4/P, **24G4**********

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão/**Review: **04**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		**5 de junho de 2027** *June 5, 2027*

	July 1, 2024	**-**Add new model: 24G4, 24G4/P, **24G4********
01	**27 de junho de 2024** *June 27, 2024*	**Adicionar novo modelo: 27G4, 27G4/P, **27G4******** *- Add new model: 27G4, 27G4/P, **27G4********
00	**6 de junho de 2024** *June 6, 2023*	**Emissão inicial com recertificação do certificado UL-BR 21.1192.** / *Initial Issue with renewall of certificate UL-BR 21.1192*
A última revisão substitui e cancela as anteriores/ The last review replaces and cancels the previous ones		

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Anexo I/Attachment I:

Appendix A **(Modelo/Model: 236LM00014, *2470*****)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: AC 100-240V, 50/60 Hz, 1.5 A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32:2012 Class B, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight for 23.6 inch models	TPV	TPM236H* (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 18.6W; LED Array Voltage: 56V	--	Tested in equipment
Alt.	IVO	M236MWF* (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 17.7W; LED Array Voltage: 31.5V	--	Tested in equipment
Alt.	BOE	HM236WU*-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 18.7W; LED Array Voltage: 37.4V	--	Tested in equipment
Alt.	CHIMEI INNOLUX	M236H**-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 19.09W; LED Array Voltage: 47.6V	--	Tested in equipment
Alt.	TPV	TPM236WF*-****** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 22.4W; LED Array Voltage: 44.8V	--	Tested in equipment
Alt.	BOE	HR236WU*-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 26.7W; LED Array Voltage: 44.2V	--	Tested in equipment
Plastic Enclosure	Cheil	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670F, NH-1017T, NH-1017(+), BF-0677(+), HS-7000RA, HG-0760(+)	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)
Alt.	Grand	D-150, D-1000A	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E88637)
Alt.	Chi Mei	PA-757(+), PH-88	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E196075)
Alt.	BASF	GP-35, GP-22, 495F	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41871)
Alt.	Bayer	FR2000, FR3005	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41613)
Alt.	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GN-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF, GN-5001RFT, GN-5008HF	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E67171)
Alt.	Teijin	TN-7500, TN-7500F(#) MN-3600H, MN-3600HA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E98529, E244324)
Alt.	HINGLONG	HL-ABS-PCR85; HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
Alt.	STYRON	STYRON A-TECH 1400	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E73656)
Alt.	KingFa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, RD-900, HIPS-510(H)	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E171666)
Alt.	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E230779)
Alt.	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
Alt.	ORINKO	ABS-3070H	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)

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Metal Enclosure except for bottom side	Interchangeable	Interchangeable	Metallic, thickness 0.4 mm min.	--	--
Metal Enclosure on bottom side	Interchangeable	Interchangeable	Metallic, thickness 0.81 mm min.	--	--
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C, thickness: 1.50mm	UL 94, UL 796	UL
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
Barrier for covering opening in bottom and top of metal enclosure	Interchangeable	Interchangeable	Min. V-1 or better, min. 0.4mm thickness	UL 94	UL
Power Supply with LED driver board, type No. 715G5527 by TPV					
Appliance Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	DELIKANG/ Douling	CDJ-3 CDJ-3-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Solteam Electronics Co., Ltd.	ST-01	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	TECX	TU-301-AP, TU-301-S, TU-301-SP, TU-301-A	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Yueqing Hongchang	DB-14	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Wickmann	392, 382-series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	215 series, 677 series, 392, 382	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5 series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Fuse (F902 for L.P.S +5V)	Conquer	MET, MST, PTU	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Wickmann	392, 382-series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	215 series, 677 series, 392, 382	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5 series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Y- Capacitor (C902,C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Yinan Don	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL

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Alt.	Haohua	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Wansheng	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JY, JN	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hongming	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C900) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Yinan Don	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Haohua	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK	CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hongming	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C904) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hua Jung	MKP	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
Alt.	Faratronic	MKP62	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MPX	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MPX2	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Liow Gu	GS-L	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	EPCOS	B3292#	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Arcotronics	R.46	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC(IMQ), UL
Alt.	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko, Nemko
Alt.	Vishay Semiconductor	TCET1103	Di=0.6mm, int.cr=4.7mm, ext.cr=8.4mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Alt.	Everlight Electronics Co., Ltd.	EL817	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko, Nemko
Alt.	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko
Alt.	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL
Alt.	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Fimko, Nemko
Alt.	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Alt.	TOSHIBA	TLP781F, TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 1M ohm, min. 1/4 W (three in series, located after fuse)	--	--

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Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 600V.	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, Max. 450 V, 105 °C	--	--
Current sense resistor (R903)	Interchangeable	Interchangeable	0.39ohm, 2W	--	--
Line Choke (L901) (optional)	Dadon	73G174- 65-H	105°C	--	--
Alt.	TPV	73G174- 65-V	105°C	--	--
Alt.	Tonation	73G174- 65-YS	105°C	--	--
Alt.	YUVA	73G174- 65-N	105°C	--	--
Alt.	TDK	73G174- 65-T	105°C	--	--
Alt.	ASET	73G174- 65-X	105°C	--	--
Alt.	TaiCheng	73G174- 65-S	105°C	--	--
Alt.	Litai	73G174- 65-L	105°C	--	--
Alt.	LI SHIN	73G174- 65-LS	105°C	--	--
Transformer (T901) Alt.)	CHENPING	80GL19P-39-CP	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820; PM-9630	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	3M Symbio	44(a) 35661$	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Transformer (T901) Alt.)	YUVA	80GL19P-39-N	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Jingjang Symbio	WF(c) 35661$	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Transformer (T901) Alt.)	TPV	80GL19P-39-V	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Symbio	35661$	130°C	UL 510	UL
Insulation Tape	Symbio	35660Y*d	130°C	UL 510	UL
Transformer (T901) Alt.)	TAICHANG	80GL19P-39-S	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Jingjang	WF(c)	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Power Supply with LED driver board, type No. 715G4497 by TPV					
Appliance Inlet (CN901)	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Shenzhen Delikang	CDJ-3, CDJ-3-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Solteam Electronics Co., Ltd.	ST-01	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	TECX-UNIONS	TU-301 series	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	392, 382	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL

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Fuse (F902, F903 for L.P.S +5V, +5V1)	Conquer	MET, MST, PTU	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. Ltd and Walter Electric	2000, 2010	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	392, 382	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Y-Capacitor (C902, C903) (Y1 or Y2 type) (optional)	Haohua	CT 7	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Dongguan South Hongming	F	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN, JY	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX, KH	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK-EPC	CD, CS	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Walsin	AH, AC	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C900) (Y1 type) (optional)	Haohua	CT 7	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Dongguan South Hongming	F	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN, JY	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX, KH	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK-EPC	CD, CS	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Walsin	AH, AC	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C908) (X1 or X2 type) (optional)	Epcos Electronic Components SA	B3292#	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MKX, MPX2	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hua Jung	MKP	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
Alt.	Liow Gu Electronics Industry Co., Ltd.	GS-L	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL

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Alt.	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Xiamen Faratronic Co., Ltd.	MKP62	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Optocoupler (U902)	Everlight	EL 817 V (V=VDE option)	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.06mm, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Lite-on	LTV-817	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Sharp	PC123	Dti = 0.4mm min. Clearance/creepage between input and output = 8.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	TOSHIBA	TLP421F	Dti = 0.4mm min. Clearance/creepage between input and output = 6.5mm, 115°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	TOSHIBA	TLP781F TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Vishay Semiconductor	TCET1103	Dti = 0.4mm min. Clearance/creepage between input and output = 7.0mm, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Speaker (optional)	Interchangeable	Interchangeable	4Ω, 2.5W	--	--
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 1M , min. 1/4 W (three in series, located after fuse)	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 600V.	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, Max. 450 V, 105°C	--	--
Current sense resistor (R924)	Interchangeable	Interchangeable	0.47 , 2W	--	--
Line Choke (L901) (optional)	Yaxingdianzi	73G174-65-X	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	Dadon	73G174-65-H	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt.	Chang Chun Plastics Co., Ltd.	T375J	V-0, Phenolic, 150°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TPV	73G174-65-V	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TDK	73G174-65-T	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115, 4130	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	LI SHIN	73G174-65-L	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	YUVA	73G 174-65-N	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TAI CHANG	73G 174-65-S	120°C	--	--

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- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	LI SHIN	73G174- 65-LS	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt.	Chang Chun Plastics Co., Ltd.	T355J	V-0, Phenolic, 150°C	UL 94	UL
Alt. Line Choke (L901) (optional)	Tonation	73G174- 65-YS	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Transformer (T901)	Jiangsu Channelon Electronic Group Co., LTD	80GL22T-3-H	130°C	--	--
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Alt. Transformer (T901)	YUVA	80GL22T-3-N	130°C	--	--
- Bobbin	Chang Chun Plastics Co., Ltd.	T375J	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
Alt.	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	44(a)	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Alt. Transformer (T901)	TPV	S80GL22T-3-V	130°C	--	--
- Bobbin	Sumitomo	PM-8375	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
Alt.	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	WF	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT-280	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Switching Power Supply with LED driver board, type No. 715G6503 by TPV					
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C, thickness: 1.50mm	UL 94, UL 796	UL
Appliance Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	DELIKANG	CDJ-3, CDJ-3-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Douling	CDJ-3, CDJ-3-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	TECX	TU-301, TU-301-A TU-301-AP, TU-301-S TU-301-SP, TU-301-AL TU-301-AP-A	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Yueqing Hongchang	DB-14	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Littelfuse	392, 382-series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL

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	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000 series, 2010 series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Y- Capacitor (C902,C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Yinan Don	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	TDK	CS, CD	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Murata	KH, KX	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Success	SE, SB	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Yinan Don	CT81	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Haohua	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	TDK	CD	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Murata	KX	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	JYA-NAY	JN	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Success	SE, SB	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hongming	F	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC(IMQ), UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	IEC 60950-1	
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1M ohm, min. 1/4 W (three in series, located after fuse)	IEC 60950-1	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 500V.	IEC 60950-1	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	10-150 µF, Max. 450 V, 105 °C	IEC 60950-1	--
Line Choke (L901) (optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	--
	TPV	73G174-192-V	105°C	IEC 60950-1	--
	ASET	73G174-192-X	105°C	IEC 60950-1	--

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	TaiCheng	73G174-192-S	105°C	IEC 60950-1	--
	Litai	73G174-192-L	105°C	IEC 60950-1	--
	Darfon	73G174-192-DN	105°C	IEC 60950-1	--
	YUVA	73G174-192-N	105°C	IEC 60950-1	--
Transformer (T901) (Alt.)	Li Tai	380GL19P533L	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio 3M	35661$ 44(a)	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T901) (Used when T902 was not connected) (Alt.)	YUVA	380GL19P533N	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio 3M	35661$ 44(a)	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T901) (Used when T902 was not connected) (Alt.)	TPV	S80GL19P533V	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio SYMBIO	35661$ WF	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix B **(Modelo/Model: G2460PF, 240LM00010, G2460VQ6, 240LM00016)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60 Hz, 1.5 A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 22: 2008, CISPR 32: 2012 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3 : 2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS */ LIST OF CRITICAL COMPONENTS:*

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for constructions I, II, III, IV and VI	AUO	M240HW** (*can be 0~9, A~Z, blank for marking purpose)	24" TFT with LED backlight; Declared power consumption: 20.2W	--	Tested in equipment
	CHI MEI	M236H*-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 19.8W	--	Tested in equipment
	IVO	M236MWF* (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 17.7W	--	Tested in equipment
	BOE	HM236W**-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 18.6W	--	Tested in equipment
	TPV	TPM236** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 19.4W	--	Tested in equipment
	CHI MEI	M236H**-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 18.9W	--	Tested in equipment
	AUO	M240HTN** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 17.55W; Declared backlight voltage: max. 32.4Vdc	--	Tested in equipment
	AUO	M240HVN** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 20.62W; Declared backlight voltage: max. 46.2Vdc	--	Tested in equipment
	TPV	TPM240*** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 16.65W; Declared backlight voltage: max. 49Vdc	--	Tested in equipment
	SAMSUNG	LTM240CL** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, power consumption: 19.48W; Declared backlight voltage: max. 43.7Vdc	--	Tested in equipment
	LG Display	LM240WU* (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 16.06W; Declared backlight voltage: max. 42.9Vdc	--	Tested in equipment
	INNOLUX	M236H** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight, declared power consumption: 18.012W; Declared backlight voltage: max. 46.2Vdc	--	Tested in equipment
	SAMSUNG	LTM240CT** (* can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 19.48W; Declared backlight voltage: max. 43.7Vdc	--	Tested in equipment
	BOE	HR236WU* (* can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight, declared power consumption: 20.2W; Declared backlight voltage: 57.6Vdc	--	Tested in equipment
Plastic Enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670F, NH-1017T, NH-1017(+), BF-0677(+), HS-7000RA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)
	Grand	D-150, D-1000	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E88637)
	Chi Mei	PA-757(+), PH-88	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E196075)
	BASF	GP-35, GP-22, 495F	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41871)
	Bayer	FR2000, FR3005	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41613)
	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GN-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF, GN-5001RFT, GN-5008HF	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E67171)

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	Teijin	TN-7500, TN-7500F(#), MN-3600H, MN-3600HA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E98529, E244324)
	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
	STYRON	STYRON A-TECH 1400	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E73656)
	KingFa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(HG6), CK-100, RD-900	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E171666)
	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E230779)
Metal Enclosure	--	--	Metallic, thickness 0.61 mm min.	--	--
Metal Enclosure under supply board at horizontal position	---	--	Metal, thickness 0.81 mm min.	--	--
Metal Enclosure under supply board at vertical position	---	--	Metal, thickness 0.81mm min.	--	--
PCB	--	--	V-1 or better Min. 105°C	UL 94, UL 796	UL
Stand base	--	--	HB or better, total weight: 2.27 kg	UL 94	UL
Speaker (2 sets)(optional)	--	--	Max. 8Ω, max. 4.5W	--	--
Negative ion generator (optional)	Dong Guan Fu Fong	FIO-DC5V	I/P : 5.0 Vdc, 0.3W, 40mA O/P: -4±0.5 kVdc (at 5 Vdc)	--	--
-Transformer (T1)	Dong Guan Fu Fong	OSC-1712	105°C	--	--
- Enclosure	CHI MEI CORPORATI ON	PA-765A(+)	V-1 min, thickness 1.5 mm min.	UL 94	UL (E56070)
Negative ion generator (optional)	SHENZHEN SUNYOU	F5BS-GJ1	I/P : 4.0-6.0 Vdc O/P: -4±0.5 kVdc (at 5 Vdc)	--	--
-Transformer (T1)	SHENZHEN SUNYOU	EE16	105°C	--	--
- Enclosure	NAN YA PLASTICS CORP PLASTICS 4TH DIV	1403G6	V-0 min, thickness 0.75 mm min.	UL 94	UL (E130155)
Switching Power Supply Board 715G5361 type A:					
Appliance Inlet (CN901)	Solteam	ST-01	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40015691 UL E200241
	Zhang Jia Gang-Hua Jie	SA-4S, SB-4S-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40003610 UL E154342
	Rong Feng	SS-120, SS-7B	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40028101, UL E102641
	Delikang	CDJ-3	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40010513 UL E217394
	Delikang	CDJ-3-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40015913 UL E217394
	Inalways	0707-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010083 A1, UL E94191
	Inalways	0711-2	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010084 A1, UL E94191
	Inalways	0714	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010085 A1 UL E94191
	TECX	TU-301 series	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40025582 UL E220004
	Yueqing Hongchang	DB-14	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40028645 UL E327347
Fuse (F901 in primary)	Conquer	MET	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017157, UL E82636
	Conquer	MST	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017118, UL E82636
	Conquer	PTU	T4A, 250 Vac	IEC/EN 60127-1,	VDE 40001462,

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				IEC/EN 60127-3, UL 248-1, UL 248-14	UL E82636
	Littelfuse	382	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 400018249 UL E67006
	Littelfuse	392	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 126983 UL E67006
	Cooper Bussmann	SR-5 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE122052 UL E19180
	Cooper Bussmann	SS-5 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40015513 UL E19180
	Ever Island Electric Co., Ltd. and Walter Electric	2000 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018790 UL E220181
	Ever Island Electric Co., Ltd. and Walter Electric	2010 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018781 UL E220181
Fuse (F902, F904) (secondary for LPS) (F904 is optional)	Conquer	MET	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017155 UL E82636
	Conquer	MST	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017118 UL E82636
	Conquer	PTU	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40001462 UL E82636
	Littelfuse	382	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018250 UL E67006
	Littelfuse	392	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 126983 UL E67006
	Cooper Bussmann	SR-5 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40020046, UL E19180
	Cooper Bussmann	SS-5 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40015513 UL E19180
	Ever Island Electric Co., Ltd. and Walter Electric	2000 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018790 UL E220181
	Ever Island Electric Co., Ltd. and Walter Electric	2010 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018781 UL E220181
Y- Capacitor (C902, C903, C941) (optional) (Y1 or Y2 type)	Walsin	AH	Max. 4700pF, min. 250Vac, min. 85 °C., Y1	IEC 60384-14, UL 60384-14	VDE 40001804 UL E146544
	Walsin	AC	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40001829 UL E146544
	Samwha Capacitor Co.,Ltd.	SD	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE 40015804 UL E97754
	Haohua	CT7	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 40013601 UL E233106
	TDK-EPC	CD	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE 40029780 UL E37861
	TDK-EPC	CS	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40029781 UL E37861
	Murata	KX	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE, 40002831, UL E37921
	Murata	KH	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40002796 UL E37921
	Guangdong South Hongming Electronic	F	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40036246, UL E154899
	SUCCESS	SE	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40008996 UL E114280
	KUNSHAN WANSHENG ELECTRONI CS CO LTD	CT7	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40012143 UL E249006
	YINAN DON'S ELECTRONIC COMPONEN T CO.,LTD	CT81	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 135256 UL E145038
	Rong Feng	RF-1003	10A, 250Vac	IEC/EN 61058-1,	VDE 40030309,

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Power switch (optional)				UL 61058-1	UL (E94138)
	Solteam Electronics Co Ltd	Series MR-21	6A, 250Vac	IEC/EN 61058-1, UL 61058-1	SGS (ENEC 2009053), UL (E148157)
	Solteam Electronics Co Ltd	OR-L series	6A, 250Vac	IEC/EN 61058-1, UL 61058-1	SGS (ENEC 2014027), UL (E148157)
	Zhangjiagang Huajie Electronic Co., Ltd.	PS8	10A, 125V AC 6(4)A 250V AC	IEC/EN 61058-1, UL 61058-1	VDE 40027662, UL (E151790)
	Chily	3024	16A, 250Vac	IEC/EN 61058-1, UL61058-1	SGS (ENEC 2010034 A1), UL (E68037)
X- Capacitor (C908) (X1 or X2 type) (optional)	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40024534) UL (E183780)
	Xiamen Faratronic Co., Ltd.	MKP62	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40000358) UL (E186600)
	Hua Jung Components Co., Ltd.	MKP	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	Intertek (ENEC): 0252-5B UL (E149075)
	Europtronic	MPX	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40018238) UL (E211347)
	Europtronic	MPX2	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40025981) UL (E211347)
	Liow Gu Electronics Industry Co., Ltd.	GS-L	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40023391) UL E186321
	ARCOTRONI CS	R.46	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	IMQ (ENEC): DAT97000141 UL (E97797)
	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40026078) UL (E327138)
	Epcos Electronic Components S A	B3292#	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40005524) UL (E97863)
Thermistor (NR901)	--	--	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	--	SMD type	Three in series after fuse, each rated max. 680K ohm, min. 1/4W	--	--
Bridging Diode (BD901)	--	--	Min. 600 V, min. 2A	--	--
Ripple Capacitor (C907)	--	--	100 μ F-150 μ F, min. 450V, 105°C	--	--
Transistor (Q901)	--	--	Min. 600 V, min. 3.8A	--	--
Line Choke (L901) (optional)	Dadon	73L174-26-H	105°C	--	--
	TDK	73L174-26-T	105°C	--	--
	LI SHIN	73L174-26-LS	105°C	--	--
	TPV	73L174-26-V	105°C	--	--
Bobbin of line choke	Chang Chun	T375J, T-357	Phenolic, V-0, 150°C	UL94	UL
	Sumitomo	PM-9820, PM-8375	Phenolic, V-0, 150°C	UL94	UL
	E I DUPONT DE NEMOURS & CO INC	FR-530L	130°C	UL94	UL
Y- Capacitor (C937, C938) (optional) (Y1 or Y2 type)	Walsin	AH	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40001804) UL (E146544)
	Walsin	AC	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE (40001829) UL (E146544)
	Samwha Capacitor Co.,Ltd.	SD	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40015804) UL (E97754)
	Haohua	CT7	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE (40013601) UL (E233106)
	TDK-EPC	CD	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40029780) UL (E37861)
	TDK-EPC	CS	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE (40029781) UL (E37861)
	Murata	KX	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE, 40002831, UL E37921
	Murata	KH	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40002796 UL E37921
	Guangdong South Hongming Electronic	F	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40036246, UL E154899
	SUCCESS	SE	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40008996 UL E114280
	KUNSHAN WANSHENG	CT7	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 40012143 UL E249006

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	ELECTRONI CS CO LTD				
	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 135256 UL E145038
Current sense Resistor (R924)	--	--	Min. 0.3 ohm, 2W	--	--
Photo Coupler (IC902)	Sharp	PC123	Dti = 0.7 mm, Int. cr = 5.0 mm, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40008087, UL E64380
	Vishay Semiconductor	TCET1103	Dti = 0.6 mm, Int. cr = 4.7 mm, Ext. cr = 8.4 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40028080 UL E76222
	Everlight Electronics Co., Ltd.	EL8X7 (X=1 or 2)	Dti = 0.5 mm, Int. cr = 6.0 mm, Ext. cr = 7.7 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	SGS (FI 27474 A1), UL E214129
	Lite-On	LTV-817	Dti = 0.4 mm, Int. cr = 4.0 mm, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40015248 UL E113898
	TOSHIBA	TLP421F	Dti = 0.4 mm, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 3000 Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40010944 UL E67349
	Toshiba	TLP781, TLP781F	Dti = 0.4 mm, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 3000 Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40021173 UL E67349
	RENESAS	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di = 0.4mm, int. cr = thermal cycling 3. ext. cr = 8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40008862 UL E72422
Transformer (T901)	TPV	80GL22T-3-V 80TL22T-3-V	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-8375	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	JINGJIANG YAHUA	No.WF(c)	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	NO.CT(c)	130°C	UL510	UL
Transformer (T901)	YUVA	80GL22T-3-N 80TL22T-3-N	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
	3M	NO.44(a)	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	NO.CT(c)	130°C	UL510	UL
	SYMBIO INC	NO.35660Y*%	130°C	UL510	UL
Transformer (T901)	Li Tai	80GL22T-3-L 80TL22T-3-L	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
-Insulation tape	SYMBIO INC	NO.35660Y* d	130°C	UL510	UL
	SYMBIO INC	NO.35661$	130°C	UL510	UL
Transformer (T901)	Dadon / Jiangsu Channelon	80GL22T-3-H 80TL22T-3-H	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
-Insulation tape	SYMBIO INC	No.35660Y* (%)	130°C	UL510	UL
	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T901)	TaiChang	80GL22T-3-S 80TL22T-3-S	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	JINGJIANG YAHUA	WF	130°C	UL510	UL
	JINGJIANG YAHUA	WF310	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	1350F-1	130°C	UL510	UL
	JINGJIANG YAHUA	JY25-A	130°C	UL510	UL
Power Supply with LED driver board, type No. 715G4497 by TPV					
AC-Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250 V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	DELIKANG/ Douling	CDJ-3, CDJ-3-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL

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	TECX	TU-301-AP, TU-301-S, TU-301-SP, TU-301-A	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Yueqing Hongchang	DB-14	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	TECX	TU-301 series	10A, 250V, 70°C	IEC/ EN 60320-1	VDE
Fuse (F901)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C900, C902, C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don	CT81	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success	SE, SB	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (C908) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Hua Jung	MKP	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC (Semko), UL
	Faratronic	MKP62	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX2	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko, Nemko
	Vishay Semiconductor	TCET1103	Di=0.6mm, int.cr=4.7mm, ext.cr=8.4mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko
	Everlight Electronics Co., Ltd.	EL817	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko, Nemko
	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko
	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL
	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Fimko, Nemko
	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko

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	TOSHIBA	TLP781F, TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko
Bridging Diode (BD901)	interchangeable	interchangeable	Min. 2.0A, min. 600Vac	--	--
Ripple Capacitor (C907)	interchangeable	interchangeable	20-180µF, min. 450 V, min. 105 °C	--	--
Transistor (Q901)	interchangeable	interchangeable	Min. 600V, min. 2.0A	--	--
Thermistors (NR901) (Optional)	interchangeable	interchangeable	Min. 3Ω, Max. 5 A at 25 °C	--	--
Current sensor resistor (R924)	interchangeable	DIP type	0.47Ω, 2 W	--	--
Bleeding resistors (R900, R901, R902)	interchangeable	interchangeable	0.91MΩ, Min.1/8W	--	--
Line Choke (L901) (optional)	Dadon	73G174-65-H	105°C	--	Tested in equipment
	ASET	73G174-65-X	105°C	--	Tested in equipment
	Litai	73G174-65-L	105°C	--	Tested in equipment
	TPV	73G174-65-V	105°C	--	Tested in equipment
	Taichang	73G174-65-S	105°C	--	Tested in equipment
	YUVA	73G174-65-N	105°C	--	Tested in equipment
	DARFON	73G174-65- DN	105°C	--	Tested in equipment
	TDK	73G174-65-T	105°C	--	Tested in equipment
Transformer (T901) (Alt.)	TPV	80GL22T-3-V	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-8375	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	YUVA	80GL22T-3-N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	3M	44(a)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	DADON	80GL22T-3-H	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	TAICHANG	80GL22T-3-S	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
Margin tape	JINGJIANG JINGYI	WF310	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JIANGJING JINGYI	25-A	130°C	UL510	UL
	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
Transformer (T901) (Alt.)	CHENPING	80GL22T-3-CP	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820, PM-9630	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão/**Review: **04**	**Validade /** ***Expiration***
6 de junho de 2024		**5 de junho de 2027**
June 6, 2024		*June 5, 2027*

Appendix C **(Modelo/Model: 215LM00041, *2270******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: AC 100-240V, 50/60Hz; 1.5A, Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013, CISPR 22:2008 (modified) Class B, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3 : 2013, IEC 61000-4-2: 2008, IEC 61000-4-3: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2005, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 21.5'' model	TPV	TPM215HW**-****** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 19.35W and backlight input voltage is 41.6V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HTN** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 15.54W and backlight input voltage is 38.4V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-*** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 16.97W and backlight input voltage is 34.65V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215WF*-**** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 16.3W and backlight input voltage is 51.2V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215WF*-**** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 14.35W and backlight input voltage is 45.0V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HR215WU*-*** (* can be 0-9, A-Z, a-z for marketing purpose)	21.5 inch TFT type, with LED back light, power consumption: 24.87W; LED Array Voltage: 41.6V.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HM215WU*-*** (* can be 0-9, A-Z, a-z for marketing purpose)	21.5 inch TFT type, with LED back light, power consumption: 17.19W; LED Array Voltage: 51.2V.	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215HT** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 15.82W; LED Array Voltage: 52.8V	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HW** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 17W; LED Array Voltage: 52.8V.	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI	M215H*-L** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 12.55W; LED Array Voltage: 41.V.	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215WF* (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.0W; LED Array Voltage: 57.6V.	IEC 60950-1	Tested in equipment
(Alternative)	CPT	CLAA215FA** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 14.6W; LED Array Voltage: 41.6V.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HT215F**-*** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.56W; LED Array Voltage: 54.4V.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	T215HVN**** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.55W; LED Array Voltage: 54.4V.	IEC 60950-1	Tested in equipment

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(Alternative)	TPV	TPM215WF* (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 14.9W; LED Array Voltage: 31.5V.	IEC 60950-1	Tested in equipment
Plastic enclosure	SAMSUNG SDI CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), GC-0750(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670(+), NH-1017(p), BF-0677(+), HS-7000(+), HG-0760(+), HR-1360(+)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Grand	D-150, D-1000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	LG	HF-350, HF-380, AF312T1, AF342T, GN-5001TF(#), GN-5001RFD, GP-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF(T)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Chi Mei	PA-757(+), PH-88	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	King Fa	5197, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(HG6), CK-100	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Bayer	FR3005	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Teijin	TN-7500(v), TN-7500F(#), MN-3600H(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	HIPS-2000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
Metal enclosure for all types	Interchangeable	Interchangeable	Metal thickness: min. 0.5mm	--	Tested in equipment
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Power supply board: 715G6503 type A					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL

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(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
Y- Capacitor (C902 and C903, Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CD	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KX	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SE, SB	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Rong guang da	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	IEC 60950-1	Tested in equipment
Bleeder Resistor (R907, R908, R909)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	IEC 60950-1	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	IEC 60950-1	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, max. 400V, 105°C	IEC 60950-1	Tested in equipment
Line Choke (L901) (Optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Prosperity Dielectrics	73G174-192-F	105°C	IEC 60950-1	Tested in equipment
(Alternative)	ASET	73G174-192-X	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Taichang	73G174-192-S	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Litai	73G174-192-L	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Darfon	73G174-192-DN	105°C	IEC 60950-1	Tested in equipment

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(Alternative)	YUVA	73G174-192-N	105°C	IEC 60950-1	Tested in equipment
Transformer (T902) (Alt.)	Channelon	380GL19P535H00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Transformer (T902) (Alt.)	YUVA	380GL19P535N00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Furukawa	TEX-E	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Power supply board: 715G6503 type B					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL

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(Alternative)	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
Y- Capacitor (C902 and C903, Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CD	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KX	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SE, SB	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Hua Jung	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Rong guang da	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	IEC 60950-1	Tested in equipment
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	IEC 60950-1	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	IEC 60950-1	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, max. 400V, 105°C	IEC 60950-1	Tested in equipment
Line Choke (L901) (Optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Prosperity Dielectrics	73G174-192-F	105°C	IEC 60950-1	Tested in equipment
(Alternative)	ASET	73G174-192-X	105°C	IEC 60950-1	Tested in equipment
(Alternative)	TaiCheng	73G174-192-S	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Litai	73G174-192-L	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Darfon	73G174-192-DN	105°C	IEC 60950-1	Tested in equipment
(Alternative)	YUVA	73G174-192-N	105°C	IEC 60950-1	Tested in equipment
Transformer (T901) (Alt.)	LFDJ	380GL19P533J00	Class B	IEC 60950-1	Tested in equipment

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
(Alternative)	Chang Chun Plastics Co., Ltd.	T357HF	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	JINGJIANG YAHUA	No.WF	130°C	UL 510	UL
(Alternative)	3M COMPANY	44(a)	130°C	UL 510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Transformer (T901) (Alt.)	YUVA	380GL19P533N00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	SYMBIO INC	No.35661$	130°C	UL510	UL
(Alternative)	3M COMPANY	44(a)	130°C	UL510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Transformer (T901) (Alt.)	TPV	S80GL19P533V00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	SYMBIO INC	No.35661$	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.WF	130°C	UL510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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6 de junho de 2024
June 6, 2024

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Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix D **(Modelo/Model: 185LM000**)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: 100-240Vac, 50/60 Hz, 1.5 A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32 : 2012, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 18.5 inch model	TPV	TPM185B*-****** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.4W and backlight input voltage is 35.2V in specification.	IEC 60950-1	Tested in equipment
	AUO	M185XW** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 10.2W and backlight input voltage is 36V in specification.	IEC 60950-1	Tested in equipment
	AUO	M185XTN** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 7.8W and backlight input voltage is 25.2V in specification.	IEC 60950-1	Tested in equipment
	BOE	HM185WX*-*** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 10.68W and backlight input voltage is 32V in specification.	IEC 60950-1	Tested in equipment
	CHIMEI INNOLUX	M185B**-*** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.11W and backlight input voltage is 27.2V in specification.	IEC 60950-1	Tested in equipment
	L&T	LM185WH*-**** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 12.8W and backlight input voltage is 51.2V in specification.	IEC 60950-1	Tested in equipment
	SAMSUNG	LTM185AT** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.9W and backlight input voltage is 35.2V in specification.	IEC 60950-1	Tested in equipment
	TPV	TPM185WH* (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.8W and backlight input voltage is 38.5V in specification.	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 2.0mm thickness min. 60°C	UL 94	UL

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	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	HUIZHOU WOTE	2100	HB or better, 2.0mm thickness min. 60°C	UL 94	UL

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	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	STYRON	STYRON A-TECH 1200	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
Metal enclosure (except part under power board)	Interchangeable	Interchangeable	Metallic, thickness 0.6 mm min.	--	--
Metal enclosure (under power board)	Interchangeable	Interchangeable	Metallic, thickness 0.6 mm min.	--	--
Base stand (optional)	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Power supply board: 715G5527					
AC-Inlet (CN901)	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S, SA-4S-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-3, CDJ-3-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	ST-01	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	VDE: SC04 UL: SC04-1BWW, SC04-2BTT	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Yueqing Hongchang Radio Co., Ltd	DB-14	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc.	677 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Fuse (F902) (optional)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL

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	Littelfuse, Inc.	677 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin Technology Corp.	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (X1 or X2 type) (C904) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling , ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL

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	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int. cr= thermal cycling, ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	TOSHIBA	TLP781F TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	VISHAY Semiconductor GmbH	TCET1103-3034	Di=Min. 0.4mm, int. cr=thermal cycling , ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, min. 450V, 105°C	--	--
Line Choke (L901) (optional)	Dadon	73G174- 65-H	105°C	--	--
	TPV	73G174- 65-V	105°C	--	--
	DARFON	73G174- 65-DN	105°C	--	--
	TaiChang	73G174- 65-S	105°C	--	--
	TDK	73G174- 65-T	105°C	--	--
	Litai	73G174- 65-L	105°C	--	--
	YUVA	73G174- 65-N	105°C	--	--
	ASET	73G174- 65-X	105°C	--	--
Transformer (T901) (Alt.)	YUVA	80GL19P-39-N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin Tape	SYMBIO INC	35661 (c), 35660 (a), 35660Y (e)	130°C	UL 510	UL
	3M	44 (a)	130°C	UL 510	UL
Insulation Tape	SYMBIO INC	35660Y (e)	130°C	UL 510	UL
	JINGJIANG YAHUA	CT	130°C	UL 510	UL
Transformer (T901) (Alt.)	TPV	80GL19P-39-V	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin Tape	SYMBIO INC	35661 (c), 35660 (a), 35660Y (e)	130°C	UL 510	UL
Insulation tape	JINGJIANG YAHUA	35660Y (e)	130°C	UL 510	UL
Transformer (T901) (Alt.)	TAICHANG	80GL19P-39-S	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin tape	JINGJIANG YAHUA	WF* (c)(h)	130°C	UL 510	UL
Insulation Tape	JINGJIANG YAHUA	CT	130°C	UL 510	UL
Power supply board: 715G6503					
AC-Inlet (CN901)	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S, SA-4S-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL

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	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-3, CDJ-3-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	ST-01	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	VDE: SC04 UL: SC04-1BWW, SC04-2BTT	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Yueqing Hongchang Radio Co., Ltd	DB-14	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901 in primary)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc.	677 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C903) (Y1 or Y2 type) (optional)	Walsin Technology Corp.	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Y- Capacitor (C902, C913) (Y1 type) (optional)	Walsin Technology Corp.	AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL

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	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, min. 400V, 105°C	--	--
Line Choke (L901) (optional)	Dadon	73G174-192-H	105°C	--	--
	Prosperity Dielectrics	73G174-192-F	105°C	--	--
	ASET	73G174-192-X	105°C	--	--
	TaiChang	73G174-192-S	105°C	--	--
	Litai	73G174-192-L	105°C	--	--
	Darfon	73G174-192-DN	105°C	--	--
	YUVA	73G174-192-N	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			
Transformer (T902) (Alt.)	YUVA	380GL19P535N00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			

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Certificado de Conformidade

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Transformer (T902) (Alt.)	TPV	S80GL19P535V00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Furukawa	TEX-E	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

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Appendix E **(Modelo/Model: 22B1, 22B1H, 22********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 19VDC, 1.31A Class Ⅲ; IP20

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32 : 2015, CISPR 24:2010/A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 9.3W; LED array voltage: 31V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	SAMSUNG SDI CO LTD (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++), GC-1017(+), GC-0750(+), VE-1890(+), TN-1100(+), BF-0675(+), BF-0670(+), NH-1017SG(+), NH-1017(p), BF-0677(+), HS-7000(+), HG-0760(+), HR-1360(+)	HB or better, min. 1.6mm thickness	UL 94	UL E115797
(Alternative)	Grand	D-150, D-1000, D-1000A	HB or better, min. 1.6mm thickness	UL 94	UL E88637
(Alternative)	LG	HF350(#), HF-380(#), AF312T1, AF342T1, AF342(#), LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), SE750(#), XG568(#), XG569(#), GP-1000F(#), LUPOY GN-5001RF(T)	HB or better, min. 1.6mm thickness	UL 94	UL E67171
(Alternative)	Chi Mei	PA-757(+), PA-756S, PH-88, PC-110	HB or better, min. 1.6mm thickness	UL 94	UL E56070

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(Alternative)	King Fa	5197, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, HIPS-510 (o), CK-55111	HB or better, min. 1.6mm thickness	UL 94	UL E171666
(Alternative)	ALBIS	GP-35, GP-22, 495F	HB or better, min. 1.6mm thickness	UL 94	UL E80168
(Alternative)	Bayer	FR3000 series, FR3005 series	HB or better, min. 1.6mm thickness	UL 94	UL E41613
(Alternative)	Teijin	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better, min. 1.6mm thickness	UL 94	UL E98529
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, min. 1.6mm thickness	UL 94	UL E162447
(Alternative)	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 1.6mm thickness	UL 94	UL E230779
(Alternative)	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 1.6mm thickness	UL 94	UL E345434
(Alternative)	ORINKO	ABS-3070H	HB or better, min. 1.6mm thickness	UL 94	UL E328304
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y), YOUHO-1303B	HB or better, min. 1.6mm thickness	UL 94	UL E471190
(Alternative)	UNIC	UR-3006+	HB or better, min. 1.6mm thickness	UL 94	UL E471190
(Alternative)	SABIC	C6600	HB or better, min. 1.6mm thickness	UL 94	UL E207780
(Alternative)	WISTRON	GA35	HB or better, min. 1.6mm thickness	UL 94	UL E359575
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 1.6mm thickness	UL 94	UL E310240
(Alternative)	FORMOSA IDEMITSU PETROCHEMICAL CORP	#1900+(f2)	HB or better, min. 1.6mm thickness	UL 94	UL E238753
(Alternative)	Interchangeable	Interchangeable	HB or better, min. 1.6mm thickness	UL 94	UL
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL E108591
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
AC/DC Adapter	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	I/P: 100-240Vac, max. 1.3A, 50-60Hz; O/P: DC 19V, 1.31A, 40 °C, 5000m Comply with LPS	IEC 60950-1:2005+A1+A2; EN 60950-1:2006+A11+A1+A12+A2	NEMKO CB (Certif. No. NO83042)
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

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Appendix F (Modelo/Model: 24B1, 24B1H, 24B1XHM, 24********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
I/P: 19VDC, 1.31 A; Class Ⅲ; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; **CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, IEC 61000-3-3:2013+AMD1:2017,** IEC 61000-4-2: 2008, **IEC 61000-4-3:2020**, IEC 61000-4-4: 2012, **IEC 61000-4-5:2014+AMD1:2017**, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, **IEC 61000-4-11:2020**

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	**TPM236**********(* can be A to Z, a to z, 0 to 9, '-', '.', ' ' sign absence or blank)**	23.6 inch TFT LCD (power consumption: 15.9 W; LED array voltage: 57.8V)	**IEC/EN 60950-1**	Tested in equipment
	L&T	**LM238**********(* can be A to Z, a to z, 0 to 9, '-', '.', ' ' sign absence or blank)**	23.8 inch TFT type, with LED back light, power consumption: 12.1W; LED Array Voltage: 38.8V	**IEC/EN 60950-1**	Tested in equipment
	BOE	**MV238**********(* can be A to Z, a to z, 0 to 9, '-', '.', ' ' sign absence or blank)**	23.8 inch TFT type, with LED back light, power consumption: 16.9W; LED Array Voltage: 51.5V	**IEC/EN 60950-1**	Tested in equipment
	LG Display	**LM238**********(* can be A to Z, a to z, 0 to 9, '-', '.', ',' sign absence or blank)**	23.8 inch TFT type, with LED back light, power consumption: 17.76W; LED Array Voltage: 58.9V	**IEC/EN 60950-1**	Tested in equipment
	TPV	**TPM238**********(* can be A to Z, a to z, 0 to 9, '-', '. ', ' ' sign absence or blank)**	23.8 inch TFT type, with LED back light, power consumption: 15.11W; LED Array Voltage: 52.7V	**IEC/EN 60950-1**	Tested in equipment
Base stand (optional)	**Interchangeable**	**Interchangeable**	**Metal or HB better**	**UL 94:1996+ Rev. 2010 IEC 60695-11-10:2013(2nd Edition)**	**UL or other EU certification**
Internal metal enclosure	**Interchangeable**	**Interchangeable**	**Metal, thickness 0.50mm**	**IEC/EN 60950-1**	**None**

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Plastic enclosure	**LOTTE CHEMICAL CORPORATION**	**VH-0810(+), VE-1890(+), EN-1052(+), VH-0815(+), VH-0819(+), HM-1100(+), VE-0819F, NH-1017T, NH-1017SG(+), VE-0812(+), NH-1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, GC-1017(RR30), SD-0150(+), BF-0677(+), BF-0675(+), BF-0670F, GC-0700(+++)(RR28), LX-0951(+), LX-0957(+), HG-0760(+), NH-1027HF, NH-1027(+), SD-0150T, GC-1036(RR35), SC-1220R, ABF-0200E, ABF-1030NH**	HB or better, **1.6**mm thickness min.	UL 94 **IEC/EN 60950-1**	UL (E115797) **and test with appliance**
	GRAND	D-1000A, D-150	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E88637) and test with appliance**
	CHI MEI CORPORATION	**PC-540A, PA-765A,** PA-756S PA-757(+), **PC-110(+)**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E56070) and test with appliance**
	COVESTRO DEUTSCHLAND AG [PC RESINS]	**FR3005, GF9011 MF +(z), FR3050 +**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E41613) and test with appliance**
	LG CHEM LTD	**LUPOY GN-5001TF(#), LUPOY GN-5001RF(T), LUPOY GN-5008HF(#), LUPOY GN-2101F(m)(f1), XG568(#), XG569(#), GP-1000(m)(#), SE885(#), AF365(&), AF368(#), AF358**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E67171) and test with appliance**

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	KINGFA	**HF-606,** **HF-626,** **FRABS-518,** **JH960 6(M) (ccc) (##),** **FRHIPS-960,** **CK-572(M1) (##),** **FRABS-518C,** **5197,** **RS-(hh)0,** **GAR-011C,** **GAR-011(L65),** **GAR-011(L85),** **GAR-011(HG6),** **CK-100,** **CK-55(M) (##),** **HP-126,** **CK-61(M) (##),** **HIPS-510 (o),** **HIPS-550**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E171666) and test with appliance**
	HAIER	HRABS-RS, HRABS-HG	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E230779) and test with appliance**
	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E345434) and test with appliance**
	ORINKO	**HIPS-2230(N),** ABS-3070H, HIPS-2000, **ABS-340(X),** **ABS900F23**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E328304) and test with appliance**
	WISTRON	GA(M)(b)(c), **NC(N)(a),** **GA85**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E359575) and test with appliance**
	UNIC	UR-3006+(RXX), UR-200+, **UR-7085+(R90),** **UP-700+**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E135175) **and test with appliance**
	GUO HENG	YOUHO(####) (Y), **YOUHO13(##)(YY),** **YOUHE26(##)**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E471190) **and test with appliance**
	WOTE	2100	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E310240) and test with appliance**
	TEIJIN	TN-7500(c)	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E98529) **and test with appliance**
	TEIJIN	**MN-3600H(#)**	**HB or better, min. 1.6mm thickness.**	**UL 94** **IEC/EN 60950-1**	**UL (E244324) and test with appliance**
	SAMYANG	**TRILOY:210NHF(@),** **210NHF**	**HB or better, min. 1.6mm thickness.**	**UL 94** **IEC/EN 60950-1**	**UL (E121254) and test with appliance**
	INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED	3441; 260-XX	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E314268) **and test with appliance**
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E103670) **and test with appliance**
	SABIC	**C6600**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E207780) **and test with appliance**
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E205938) **and test with appliance**

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Certificado de Conformidade

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	CHI LIN	**GA-1(aaa)**	**HB or better, 1.6mm thickness.**	**UL 94 IEC/EN 60950-1**	**UL (E177071) and test with appliance**
	FUHENG	**HIPS-568, FH-101, FH-102**	**HB or better, 1.6mm thickness.**	**UL 94 IEC/EN 60950-1**	**UL (E234833) and test with appliance**
	QING DAO GON TECHNOLOGY CO.,LTD.	**ABS21(xx)G-A, ABS2030A, ABS20(xx)B**	**HB or better, 1.6mm thickness.**	**UL 94 IEC/EN 60950-1**	**UL (E330547) and test with appliance**
	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	**AC2820-A**	**HB or better, 1.6mm thickness.**	**UL 94 IEC/EN 60950-1**	**UL (E162823) and test with appliance**
	Chongqing Gengye New Materials Technology Co Ltd	**Ecorex® RN - +(R #)**	**HB or better, 1.5mm thickness.**	**UL 94 IEC/EN 60950-1**	**UL (E514505) and test with appliance**
	FORMOSA IDEMITSU PETROCHEMIC AL CORP	**#1900+(f2)**	**0.36 to 1.8mm V-2; 1.9 to 6.0 mm HB**	**UL 94 IEC/EN 60950-1**	**UL E217670 and test with appliance**
Power Adapter (for models 24********)	TPV	ADPC1925EX	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, LPS, 40˚C, Class I, altitude operating: 5000 m	IEC 60950-1: 2005+A1	CB by Nemko (certificate no. NO83042)
Alt.	L&T	STK025-19131T	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, 40˚C, Class I, 5000m Comply with SELV and L.P.S.	**IEC 60950-1:2005+A1+A2**	CB by TUV SUD (Certificate No. SG PSB-**OF-03174**)
PCB	**Three Sun**	**SMS-1**	**V-0, 105℃ min.**	**UL 796 IEC/EN 60950-1**	**UL E217670 and test with appliance**
Alt.	**Interchangeable**	**Interchangeable**	**V-1 or better Min. 105℃**	**UL 796:2016 IEC 60695-11-10:2013(2nd Edition)**	**UL or other EU certification**
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

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Appendix G **(Modelo/Model: G2260VWQ6, 215LM00033)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32: 2015, CISPR 24:2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3 : 2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 21.5'' model	L&T	BM215WF*-**** (* can be 0-9, A-Z or blank, the suffix cannot be T2BB)	21.5'' panel with LED backlight The declared power consumption in specification is 17.3W.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215WF*-T2BB (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 16.3W.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215WF****** (* can be 0-9, A-Z, "-" or blank, no technical difference)	21.5'' panel with LED backlight The declared power consumption in specification is 14.95W.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HW0* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.1W.	IEC 60950-1	Tested in equipment
(Alternative)	CHI MEI	M215H*-*** (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.28W.	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM215HW0* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.5W.	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215WF* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 16.2W.	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215HT** (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 22.26W	IEC 60950-1	Tested in equipment
Plastic enclosure	Cheil	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670(+), HS-7000(+)	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Grand	D-150, D-1000	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GP-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Chi Mei	PA-757(+), PH-88	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	King Fa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, CK-100	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Basf	GP-35, GP-22, 495F	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Bayer	FR2000, FR3005	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Teijin	TN-7500(v), TN-7500F(#)	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Haier	HRABS-RS, HRABS-HG	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Speaker (2 sets) (optional) (for 21.5 inch models only)	Interchangeable	Interchangeable	Max. 8Ω, max. 4.5 W	--	Tested in equipment
For Switching Power Supply with DC/DC converter board type: 715G4497					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1	VDE, UL

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(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
Fuse F901	Littelfuse	382, 392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Conquer	MET MST-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Walter	2000 series, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
Fuse F902 (sec. for LPS)	Littelfuse	382, 392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Conquer	MET MST-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Walter	2000 series, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
Y- Capacitor (C900, C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
X-Capacitor (C908) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	ENEC(Semko), UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.=4.0mm, ext.=8.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, int.=4.7mm, ext.=8.4mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Everlight Electronics Co., Ltd.	EL817 EL1013	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Lite-on	LTV-817	Di=0.7mm, int.=4.7mm, ext.=8.4mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	TOSHIBA	TLP421F, TLP781F, TLP781	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Max. 5A, min. 3Ω, 25°C	--	Tested in equipment
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 680KΩ, min. 1/8W	--	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2.0A, 600Vac min.	--	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	100-180µF, min. 450V, 105°C	--	Tested in equipment
Transistor (Q901)	Interchangeable	Interchangeable	Min. 600V, min. 2.0A	--	Tested in equipment
Line Choke (L901) (optional)	Dadon	73G174-65-H	105°C	--	Tested in equipment
(Alternative)	TPV	73G174-65-V	105°C	--	Tested in equipment
(Alternative)	Taichang	73G174-65-S	105°C	--	--
(Alternative)	YUVA	73G174-65-N	105°C	--	--
(Alternative)	Yaxing	73G174-65-X			

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(Alternative)	Darfon	73G174-65-DN			
Transformer (T901)	Dadon	80GL22T-3-H	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	YUVA	80GL22T-3-N	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	TPV	80GL22T-3-V	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	CHENPING	80GL22T-3-CP	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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6 de junho de 2024
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5 de junho de 2027
June 5, 2027

Appendix H **(Modelo/Model: 315LM00019, AG322FCX)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 20V d.c., 2.25 A; Class Ⅲ; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2012 Class B, CISPR 24:2010, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPT320B*-****.* (* can be 0-9, A-Z, a-z, "-" or blank)	32 inch panel with LED backlight The declared power consumption is 47.35W and backlight input voltage is 50.4V in specification.	--	Tested in equipment
Alt.	TPV	TPT315B*-****.* (* can be 0-9, A-Z, a-z, "-" or blank for marketing purpose only)	31.5 inch panel with LED backlight The declared power consumption is 35.14W and backlight input voltage is 47.6V in specification.	--	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E115797)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E88637)
Alt.	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL(E56070)
Alt.	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E80168)
Alt.	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E41613)
Alt.	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529, E244324)
Alt.	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E345434)

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Alt.	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E73656)
Alt.	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E230779)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E328304)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E310240)
Alt.	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
Alt.	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	HUIZHOU WOTE	2100	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529)

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Alt.	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E108538)
Alt.	STYRON	STYRON A-TECH 1200	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E162447)
Alt.	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E314268)
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E103670)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E207780)
Alt.	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E205938)
Alt.	CHI LIN	GA-1(aaa), GA-1535	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E177071)
AC/DC Adapter	TPV Electronics (Fujian) Co., Ltd.	ADPC2045	I/P: 100-240Vac, 1.5A, 50-60Hz; O/P: DC 20V, 2.25A; 40 °C, 5000m Comply with LPS	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013	TUV CB (Certif. No. JPTUV-064333)
Fuse F7001, F7002 (on main board 715G8722 for LPS)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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6 de junho de 2024
June 6, 2024

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5 de junho de 2027
June 5, 2027

Appendix I **(Modelo/Model: 22P1, **22P1********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 12.42W; LED array voltage: 47.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Heat shrinkable tube used on metal pillar near C907	DONGGUAN SALIPT CO LTD	SALIPT S-901-600, SALIPT S-HPT-600	125°C, 600V, min. 0.4mm thickness	--	UL
Switching mode power supply board: 715G7300 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL

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(Alternative)	Littelfuse, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Europtronic	MPX, MPX2	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R931)	CAIZHI	MOF2WS	Min. 0.825Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.825Ω, 2W	--	--
Bridging Diode(BD901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor(C907)	KINGNICHI	PW2W470MLT1236DLRV	50-150μF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	50-150μF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L901) (Optional)	ASET	73G-174-192-X	105°C	--	--
(Alternative)	DADON	73G-174-192-H	105°C	--	--
(Alternative)	TAICHANG	73G-174-192-S	105°C	--	--
(Alternative)	FRONTIER	73G-174-192-F	105°C	--	--
(Alternative)	LI TAI	73G-174-192-L	105°C	--	--
(Alternative)	YUVA	73G-174-192-N	105°C	--	--
(Alternative)	DARFON	73G-174-192-DN	105°C	--	--

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Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix J **(Modelo/Model: 24P1, **24P1********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	AUO	M240UAN**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.3W; LED array voltage: 43.5V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM240*** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 16.9W; LED array voltage: 40.3V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM240**** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.9W; LED array voltage: 41.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	MV240*** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.6W; LED array voltage: 40.3V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM240***-***** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 16.65W; LED array voltage: 44.8V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM238***-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 12.1W; LED Array Voltage: 38.8V)	--	Tested in equipment
(Alternative)	BOE	MV238***-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 16.9W; LED Array Voltage: 51.5V)	--	Tested in equipment
(Alternative)	LG Display	LM238WF*-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 17.76W; LED Array Voltage: 58.9V)	--	Tested in equipment
(Alternative)	TPV	TPM238WF* (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 15.11W; LED Array Voltage: 52.7V)	--	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)(Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance

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(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance

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(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON A-TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Switching mode power supply board: 715G7610 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Primary Switch (SW901) (Optional)	Rong Feng Industrial Co., Ltd.	RF-1003	VDE: 10(4)A, 250Vac UL: 10A, 250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21 series	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21S	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	OR-L series, OR-P series	ENEC: 6A, 250Vac UL: 10A/125Vac, 6A/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-22 series	ENEC: 12(4)A, 250Vac UL: 12A,125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Chily	3024 series	VDE:16(4)A, 250Vac UL: 15A,125/250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Ningbo Yinzhou Lihe Switch Factory	RL3-4	VDE: 10(4), 250Vac UL: 16A, 125Vac	IEC/EN 61058-1, UL 1054	VDE, UL

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Fuse (F9901 in primary)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Fuse (F901 in secondary)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C9903, C9904) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9902) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Samwha	SD	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C9901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR9901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R9901, R9902, R9903)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R916)	Tzaiyuan	MOF2WS0R43JT52	Min. 0.39Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.39Ω, 2W	--	--
Bridging Diode (BD9901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--

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(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C901, C902)	RUBYCON	470PKZ002S	47-150µF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	47-150µF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L9902) (Optional)	JIANGSU CHANNELON	373G0174563H	105°C	--	--
(Alternative)	LIANFENG DONGJJIN	373G0174563J	105°C	--	--
(Alternative)	ASET	373G0174563X	105°C	--	--
(Alternative)	LIANZHEN ELECTRONICS	373G0174563Z	105°C	--	--
Transformer (T901)	PHOENIX	380GL32P547P	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150 °C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C, Class B	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T901) (Alt.)	LIANFENG DONGJIN	380GL32P547J	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150 °C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C, Class B	IEC 60950-1 UL 60950-1	VDE, UL
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix K **(Modelo/Model: 9P1, **9P1********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 100-240V~, 50/60Hz, 1.5A; Class I ; IP20

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel (for 18.5 inch models)	CHIMEI INNOLUX	M185***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 9.85W; LED array voltage: 25.6V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M185XTN**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 7.85W; LED array voltage: 21.7V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM185***-**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 6.55W; LED array voltage: 17.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)(Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance

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(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON A-TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Heat shrinkable tube (used on metal pillar near C907 on metal enclosure type A)	DONGGUAN SALIPT CO LTD	SALIPT S-901-600, SALIPT S-HPT-600	125°C, 600V, min. 0.4mm thickness	--	UL
Switching mode power supply board: 715G7300 type A by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional) (on 715G7300 type A)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional) (on 715G7300 type A)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko

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(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R931)	CAIZHI	MOF2WS	Min. 0.825Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.825Ω, 2W	--	--
Bridging Diode (BD901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C907 on 715G7300 type A)	KINGNICHI	PW2W470MLT1236DLR V	47-150µF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	50-150µF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L901) (on 715G7300 type A) (Optional)	ASET	73G-174-192-X	105°C	--	--
(Alternative)	DADON	73G-174-192-H	105°C	--	--
(Alternative)	TAICHANG	73G-174-192-S	105°C	--	--
(Alternative)	FRONTIER	73G-174-192-F	105°C	--	--
(Alternative)	LI TAI	73G-174-192-L	105°C	--	--
(Alternative)	YUVA	73G-174-192-N	105°C	--	--
(Alternative)	DARFON	73G-174-192-DN	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL

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Certificado de Conformidade

Certificate of Conformity

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Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

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Appendix L **(Modelo/Model: AG251********, 250LM000**)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 4.5A or 3.25A, 20 Vdc, Class Ш; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015/COR1:2016 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2004, IEC 61000-4-5: 2005, IEC 61000-4-6: 2008, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
AC/DC adapter	TPV Electronics (Fujiang) Co., Ltd	ADPC2090	Input : 100-240 V~, 50-60 Hz, 1.3 A Output: 20 Vdc, 4.5 A, SELV	IEC60950-1:2005+A1:2009 + A2:2013 EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013	CB by TUV RH (17038425 001 and 17038425 002)
Plastic Enclosure	LOTTE	VH-0810(+); VH-0890(+); NH-1017(p); VE-0812(+); NH-1000T(+)(&); BF-0677(+); BF-0675(+); BF-0670(+); GC-0700(+); GC-0750(+);HS-7000(+); SD-0150(+);NE-1030(+);HR-1360(+); HG-0760(+);LX-0951(+);LX-0957(+); VE-1890K, TP-1100(+), NH-1017T NH-1017(+), NH-1000T+, BF-0670F	HB or better	UL94	UL
Alt.)	Chi Mei	PA-757(+); PH-88HT(+)	HB or better	UL94	UL
Alt.)	Grand	D-150, D-1000A	HB or better	UL94	UL
Alt.)	TEIJIN	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better	UL94	UL
Alt.)	Haier	HRABS-RS; HRABS-HG; CR-3002	HB or better	UL94	UL
Alt.)	UNIC TECHNOLOGY CORP	UR-3006+ (RXX), UR-200+	HB or better	UL94	UL
Alt.)	LG	AF312T1; GN-5001TF(#); LUPOY GN-5001RF(T); LUPOY GN-5008HF(#); HF350(#); HF380(#); SE885(#); SE750(#); XG568(#); XG569(#); HF388(#); LUPOY GP-1000; LUPOY GP-1000(m)(#); LUPOY GP-1000(#), AF-342T GN-5001TF, GN-5001RF, GP-1000L	HB or better	UL94	UL
Alt.)	TEIJIN	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better	UL94	UL

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Alt.)	KingFa	4418; HF-606; HF-626; FRABS-518; JH960 6(M); FRHIPS-960; 5197; HIPS-5197; HIPS-4418; HIPS-3399; HIPS-CM(ee); HIPS-HG(ee); HIPS-510 (o); HIPS-550; CK-61(M) (##); RS-(hh)0; HP-126; ABS-600; ABS-122; GAR-322; GAR-332; GAR-220; H12; G360; GAR-011; CK-55(M) (##); CK-58(M) (##); GAR-011C; GAR-011(ww); CK-100, FRABS-518 RD-900, RS-900, GAR-011(L85) GAR-011(L65), GAR-011(HG6) RS-300, RS-400	HB or better	UL94	UL
Alt.)	STYROLUTION	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better	UL94	UL
Alt.)	STYRON	STYRON A-TECH 1400	HB or better	UL94	UL
Alt.)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better	UL94	UL
Alt.)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better	UL94	UL
Alt.)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	HIPS-2000; ABS-3070H	HB or better	UL94	UL
Alt.)	Basf	GP-35, GP-22	HB or better	UL94	UL
Alt.)	WISTRON	GA35	HB or better	UL94	UL
Alt.)	HINGLONG	HL-ABSPCR35/65/85	HB or better	UL94	UL
Alt.)	WOTE	2100	HB or better	UL94	UL
Alt.)	GUO HENG	YOUHO(1302)(B), YOUHO(1303)(B)	HB or better	UL94	UL
Alt.)	SABIC	C6600	HB or better	UL94	UL
Alt.)	CHIMEI	PA-756S	HB or better	UL94	UL
Alt.)	COVESTRO DEUTSCHLAND AG	FR2000, FR3005	HB or better	UL94	UL
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better	UL94	UL
Alt.)	Interchangeable	Interchangeable	HB or better	UL94	UL
Stand	Interchangeable	Interchangeable	HB or better	UL94	UL
PCB	Interchangeable	Interchangeable	Min. V-1 105°C	UL796	UL
LCD panel (LED backlight)	AUO	M250HTN**.* (*can be 0~9, A~Z, blank for marking purpose)	All 25" TFT glass is minimum 0.4mm thickness	UL 60950-1 IEC60950-1	UL, Test in the equipment
Fuse (F981,F982)(Located on mainboard for LPS)	Littelfuse/ Wickmann	392, 382	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	Littelfuse	0663 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL

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Alt.)	Conquer	MET,MST	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	Suzhou Walter	2000, 2010 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

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Appendix M (Modelo/Model: 24G2, **24G2******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
I/P: 100-240V ~ 50/60Hz, 1.5A, Class Ⅰ; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018; **CISPR 32:2015+AMD1:2019**, **CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, Class D**, **EN 61000-3-3:2013+A2:2021**, IEC 61000-4-2: 2008, **IEC 61000-4-3:2020** , IEC 61000-4-4: 2012, IEC 61000-4-5 : 2014+A1:2017,IEC 61000-4-6 : 2013, **IEC 61000-4-8:2009, IEC 61000-4-11:2020**

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	**TPM236********** (*can be 0-9, A-Z or blank for marketing purpose).**	**23.6 inch TFT (power consumption: 27.1W; LED array voltage: 60V)**	**IEC/EN 62368-1**	Tested in equipment
Alt.	TPV	**TPM238********** (*can be 0-9, A-Z or blank for marketing purpose).**	**23.8 inch TFT (power consumption: 16.5W; LED array voltage: 54V)**	**IEC/EN 62368-1**	Tested in equipment
Plastic Enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T (+) (&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+) (RR70), GC-1017(+) (RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG (+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E115797 and tested with appliance**
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E88637 and tested with appliance**
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E56070 and tested with appliance**
	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E80168 and tested with appliance**
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E41613 and tested with appliance**
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF (#), GN-5001RFD, LUPOY GN-5008HF (#), LUPOY GP-5008BF (#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F (#), SE750(#), LUPOY GN-5001RF(T),	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E67171 and tested with thickness appliance**

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	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM (ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E171666 and tested with appliance**
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E230779 and tested with appliance**
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E345434 and tested with appliance**
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E328304 and tested with appliance**
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c), GA35, NC30	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E359575 and tested with appliance**
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E135175 and tested with appliance**
	GUO HENG (DONGGUAN)	YOUHO (####) (Y)	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E471190 and tested with appliance**
	HUIZHOU WOTE	2100	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E310240 and tested with appliance**
	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E98529 and tested with appliance**
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E108538 and tested with appliance**
	TRINSEO EUROPE GMBH (STYRON)	STYRON A-TECH 1200	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E162447 and tested with appliance**
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E314268 and tested with appliance**
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E103670 and tested with appliance**
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E207780 and tested with appliance**
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E205938 and tested with appliance**
	CHI LIN	GA-1(aaa), GA-1535	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E177071 and tested with appliance**

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Mylar sheet	**SUZHOU OMAY OPTICAL MATERIALS CO LTD**	**SE42B, SE42B-F**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E249605 and tested with appliance**
Alt.	**SICHUAN LONGHUA FILM CO LTD**	**PC-770F, PC-770F-A, PC-770**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E254551 and tested with appliance**
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	**DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E199019 and tested with appliance**
	CHENGDU KANGLONGXIN PLASTICS CO LTD	**KLX FRPC-1860B, KLX FRPC-1870B**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 I IEC/EN 62368-1**	**UL E315185 and tested with appliance**
	CHENGDU KANGLONGXIN PLASTICS CO LTD	**KLX FRPC- 870B**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E315185 and tested with appliance**
	CHENGDU KANGLONGXIN PLASTICS CO LTD	**DFPET 6023**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E199019 and tested with appliance**
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	**DFR117EC OC, DFR117EC OB**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E199019 and tested with appliance**
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	**DFR117EC O**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E199019 and tested with appliance**
	JINGMEN GORUN TECHNOLOGY CO LTD	**HF70**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E305163 and tested with appliance**
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	**DFR3A(d)**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E199019 and tested with appliance**
	CHENGDU KANGLONGXIN PLASTICS CO LTD	**KLX PP BK- 10**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E315185 and tested with appliance**
	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	**PC9842B, PC9821B, PC9832B**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E339070 and tested with appliance**
	SHENZHEN TEESUN TECHNOLOGY CO LTD	**FR370, FR370F, FE383**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E329660 and tested with appliance**
Base stand (optional)	**LOTTE ADVANCED MATERIALS CO LTD**	**SD-0150(+)**	**HB or better, 60°C, thickness 1.4mm**	**UL 94 IEC/EN 62368-1**	**UL E115797 and test with appliance**
Alt.	**Interchangeable**	**Interchangeable**	**HB or better, 60°C, thickness 1.4mm**	**UL 94:2016 IEC 60695-11-10:2013(2nd Edition)**	**UL or other EU certification**
PCB	**Three Sun**	**SMS-1**	**V-0, 130°C**	**UL 796 IEC/EN 62368-1**	**UL E217670 and test with appliance**
Alt.	**Interchangeable**	**Interchangeable**	**V-1 or better Min. 130°C**	**UL 796:2016 IEC 60695-11-10:2013(2nd Edition)**	**UL or other EU certification**
Metal enclosure	**Interchangeable**	**Interchangeable**	**Metal thickness: min. 0.81mm**	**IEC/EN 62368-1**	**None**
Switching Power Supply Board 715G9611 by TPV					
AC-Inlet (CN901)	**Solteam**	**ST-01, SC04**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**VDE 40015691, UL E200241**
	Zhang Jia Gang-Hua Jie	**SA-4S series,**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**VDE 40003610, UL E154342**
	Rong Feng	**SS-120, SS-7B**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**VDE 40028101, UL E102641**
	Shenzhen Delikang / Douling	**CDJ-3, CDJ-3-1, CDJ-7 series**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**VDE 40010513, UL E217394**

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	Inalways	**0707-1, 0711-2, 0714**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**Nemko P03100418, UL E94191**
	TECX	**TU-301 series**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1	**VDE 40025582 UL E220004**
	Yueqing Hongchang	**DB-14-14-L, DB-14-14-15, DB-14 series**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**VDE 40028645, UL E327347**
	Solteam	**SC04**	**VDE:10A/250Vac, UL: 10A/250Vac,12A/250Vac. 70°C**	**IEC/EN 60320-1, ANSI/UL498**	**VDE 40033517, UL E200241**
	Zhang Jia Gang-Hua Jie	**SA-4D**	**10A, 250Vac, 15A, 250Vac, 70°C**	**IEC/EN 60320-1, UL498**	**TUV R 50274698 UL E154342**
Fuse **(F901) on primary circuit**	**Littelfuse Inc**	**382, 392 +**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40018249, 126983, UL E67006**
Alternative	**Littelfuse, Inc. Wickmann**	**TE5 400 series**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40026355 UL E67006**
	Conquer	**MET MST PTU**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40017155, 40017118, 40001462, UL E82636**
	Walter	**SR-5, SS-5**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40020046, 40015513, UL E19180**
	Ever Island Electric Co., Ltd. & Walter Electric	**2000, 2010 series**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40018790, 40018781 UL E220181**
	Littelfuse Inc	**877**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 0023242, UL E10480**
	Better	**932**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40033369, UL E300003**
Fuse **(F902) on secondary circuit**	**Littelfuse Inc**	**382, 392 +**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40018249, 126983, UL E67006**
Alternative	**Littelfuse, Inc. Wickmann**	**TE5 400 series**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40026355 UL E67006**
	Conquer	**MET MST PTU**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40017155, 40017118, 40001462, UL E82636**
	Walter	**SR-5, SS-5**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40020046, 40015513, UL E19180**
	Ever Island Electric Co., Ltd. & Walter Electric	**2000, 2010 series**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40018790, 40018781 UL E220181**
	Littelfuse Inc	**877**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 0023242, UL E10480**
	Better	**932**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40033369, UL E300003**
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40001804, UL E146544**
	TDK	CS, CD	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40029780, UL E37861**
	Murata	KH, KX	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40002831, UL E37921**

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	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 85°C	UL 60384-14	**UL E201384**
	Kunshan Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40012143, UL E249006**
	HAOHUA ELECTRONIC CO.	**CT7**	**Max. 1000pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40003902, UL E233106**
	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 135256, UL E145038**
	SUCCESS	SE	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40037218, UL E114280**
	SUCCESS	**SB**	**Max. 1000pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40037221, UL E114280**
	SUCCESS	**SL**	**Max. 1000pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40019465, UL E114280**
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH **series**	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40001804, UL E146544**
	TDK	CD	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40029780, UL E37861**
	Murata	KX	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40002831, UL E37921**
	JYA-NAY	JN	Max. 3300pF, 250Vac, 85°C	UL 60384-14	**UL E201384**
	Kunshan Wansheng	CT7	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40012143, UL E249006**
	HAOHUA ELECTRONIC CO.	**CT7**	**Max. 3300pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40003902, UL E233106**
	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 135256, UL E145038**
	SUCCESS	SE	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40037218, UL E114280**
	SUCCESS	**SB**	**Max. 3300pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40037221, UL E114280**
	SUCCESS	**SL**	**Max. 3300pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40019465, UL E114280**
X-Capacitor (C914) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40024534, UL E183780**
	Europtronic	MPX	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40018238, UL E211347**
	Europtronic	**MPX2**	**Max. 0.33µF, 275Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40025981, UL E211347**
	Liow Gu	GS-L	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40023391, UL E186321**
	Arcotronics (KEMET)	R.46	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**ENEC DAT97000141, UL E97797**
	EPCOS	B3292#	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40010694, UL E97863**
	Nanjing Tengen Rongguangda	MKP	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40028680, UL E200596**
	ZhuHai Sung Ho Electronics Co., Ltd.	**CMPP**	**Max. 0.33µF, 275Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40026078, UL E327138**
	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	**MKP**	**Max. 0.33µF, 275Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40028680, UL E200596**
Photo Coupler (U902)	Sharp	PC123	**Di=0.7mm, int.cr=thermal cycling 3), ext.cr=8.0mm, 4000Vac, 100°C**	**EN 60747-5-5,** UL1577	VDE 40008087, UL E64380
	Everlight Electronics Co., Ltd.	EL817, EL817M	**Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, 4000Vac, 100°C**	**EN 60747-5-5,** UL1577	VDE 132249, UL E214129
	Everlight Electronics Co., Ltd.	**EL1013**	**Di=0.4mm, int. cr=thermal cycling 3.ext. cr=8.0mm, 4000Vac, 100°C**	**EN 60747-5-5, UL1577**	**VDE 40028391 UL E214129**
	Lite-on	LTV-817	**Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, 3000Vac, 100°C**	**EN 60747-5-5,** UL1577	VDE 40015248, UL E113898
	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	**Di=0.4mm, int.cr=thermal cycling 3), ext.cr=8.0mm, 4000Vac, 100°C**	**EN 60747-5-5,** UL1577	VDE 40008862, UL E72422
	TOSHIBA	TLP781F, TLP781	**Di=0.4mm, int.cr=thermal cycling 3), ext.cr=8.0mm, 4000Vac, 100°C**	**EN 60747-5-5,** UL1577	VDE 40021173, UL E67349
	TOSHIBA	TLP421F	**Di=0.4mm, int. cr=thermal cycling3. ext. cr=8.0mm, 4000Vac, 100°C**	**EN 60747-5-5,**, UL1577	VDE 40010944, UL E67349

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Line Choke (L901) (Optional)	CHANNELON	373G0174577H	105 °C	**IEC/EN 62368-1**	Tested in equipment
	LDFJ	373G0174577J	105 °C	**IEC/EN 62368-1**	Tested in equipment
	ASET	373G0174577X	105 °C	**IEC/EN 62368-1**	Tested in equipment
Transformer (T901)	Phoenix	380GL19P0170P	Class B	**IEC/EN 62368-1**	Tested in equipment
Alt.	LIANFENG DONGJJIN	380GL19P0170J	Class B	**IEC/EN 62368-1**	Tested in equipment
Alt.	TAICHANG	380GL19P0170S	Class B	**IEC/EN 62368-1**	Tested in equipment
Alt.	LITAI	380GL19P0170L	Class B	**IEC/EN 62368-1**	Tested in equipment
Alt.	YUVA	80GL19P-17-N	Class B	**IEC/EN 62368-1**	Tested in equipment
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, min. 0.45mm thick	UL94 **IEC/EN 62368-1**	**UL E41429 and tested with appliance**
Alt.	CHANG CHUN PLASTICS CO., LTD.	T200NA	V-0, 150°C, min. 0.45mm thick	UL94 **IEC/EN 60950-1**	**UL E59481 and tested with appliance**
-Triple insulation wire	SUZHOU VDE YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	**IEC/EN 62368-1**, UL 2353	**VDE 40033527 UL E364920**
Alt.	Cosmolink Co Ltd	TIW-M	Reinforced insulation, 130°C	**IEC/EN 62368-1**, UL 2353	**VDE 138053 UL E213764**
-Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	CT	PET film insulating tape, 130°C	UL510 **IEC/EN 62368-1**	**UL E165111 and tested with appliance**
Alt.	SYMBIO INC	35660Y*(%)	PET film insulating tape, 130°C	UL510 **IEC/EN 62368-1**	**UL E50292 and tested with appliance**
-Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL224 **IEC/EN 62368-1**	**UL E156256 and tested with appliance**
Bleeder Resistor (R916, R917,R918)	**Tzai Yuan Enterprise Co., Ltd.**	**HSMD series**	**Max.680KΩ, min. 1/4W**	**IEC/EN 62368-1**	**UL CB (Report No.OFF-12CA24616-A-1)**
Alt.	**Yageo Corporation**	**RV1206 series**	**Max.680KΩ, min. 1/4W**	**IEC/EN 62368-1**	**UL CB(Report No.E491387-4787887815-1 Original)**
	Fenghua	**RVS-06 series**	**Max.680KΩ, min. 1/4W**	**IEC/EN 62368-1**	**Nemko CB (Report No.336992)**
	Fenghua	**RS-06 series**	**Max.680KΩ, min. 1/4W**	**IEC/EN 62368-1**	**Nemko CB (Report No.337017) CHI LIN**
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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6 de junho de 2024
June 6, 2024

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5 de junho de 2027
June 5, 2027

Appendix AA (Modelo/Model: 27G2, **27G2******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016, CISPR 24:2010, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2004 / IEC 61000-4-4: 2012, IEC 61000-4-5: 2005 / IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2008, IEC 61000-4-6: 2008 / IEC 61000-4-6 : 2013, IEC 61000-4-11: 2004 / IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight (for 27.0 inch models) (Flat)	TPV	TPM270***-****.* (*can be 0-9, A-Z or blank for marketing purpose).	27.0 inch TFT curve panel (power consumption: 29.49W; LED array voltage: 44.8V)	--	Tested in equipment
LCD Panel with LED backlight (for 23.8 inch models) (Flat)	TPV	TPM238***-****.* (*can be 0-9, A-Z or blank for marketing purpose).	23.8 inch TFT curve panel (power consumption: 16.5W; LED array voltage: 54V)	--	Tested in equipment
Plastic Enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, thickness 2.0mm min.	UL 94	UL
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, thickness 2.0mm min.	UL 94	UL
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, thickness 2.0mm min.	UL 94	UL
	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, thickness 2.0mm min.	UL 94	UL
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, thickness 2.0mm min.	UL 94	UL
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, thickness 2.0mm min.	UL 94	UL

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	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, thickness 2.0mm min.	UL 94	UL
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, thickness 2.0mm min.	UL 94	UL
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, thickness 2.0mm min.	UL 94	UL
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, thickness 2.0mm min.	UL 94	UL
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c), GA35, NC30	HB or better, thickness 2.0mm min.	UL 94	UL
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, thickness 2.0mm min.	UL 94	UL
	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, thickness 2.0mm min.	UL 94	UL
	HUIZHOU WOTE	2100	HB or better, thickness 2.0mm min.	UL 94	UL
	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, thickness 2.0mm min.	UL 94	UL
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, thickness 2.0mm min.	UL 94	UL
	STYRON	STYRON A-TECH 1200	HB or better, thickness 2.0mm min.	UL 94	UL
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, thickness 2.0mm min.	UL 94	UL
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, thickness 2.0mm min.	UL 94	UL
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, thickness 2.0mm min.	UL 94	UL
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, thickness 2.0mm min.	UL 94	UL
	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535	HB or better, thickness 2.0mm min.	UL 94	UL

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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June 5, 2027

Switching Power Supply Board 715G9611 by TPV					
AC-Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	ZhangJia Ganghuajie Electronics Co., Ltd.	SA-4S,	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	DELIKANG/ Douling	CDJ-3, CDJ-3-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	TECX	TU-301 series	10A, 250V, 70°C	IEC/ EN 60320-1	VDE
	Yueqing Hongchang	DB-14	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Fuse (F902 in secondary for L.P.S.)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	TDK	CS, CD	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Murata	KH, KX	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Matsushita	NS-A, NS-B	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	SUCCESS	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	TDK	CD	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Murata	KX	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL

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	Matsushita	NS-A	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	JYA-NAY	JN	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Hongming	F	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Yinan Don's	CT81	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	SUCCESS	SB, SE	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
X-Capacitor (C914) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Faratronic	MKP62	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	ENEC (Semko), UL
	Hua Jung	MKP	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Liow Gu	GS-L	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Arcotronics	R.46	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	ENEC(IMQ) UL
	EPCOS	B3292#	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di>0.4mm, int = thermal cycling 3. , ext.>8.0mm, 5000 Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40008087, UL E64380
	Everlight Electronics Co., Ltd.	EL817, EL817M UL : EL8X7 (X=1 or 2)	Di>0.5mm, int. cr=thermal cycling 3. , ext. cr>7.7mm, 3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 132249, UL E214129
	Vishay Semiconductor	TCET1103	Di>0.5mm, int. cr >6.0mm, ext. cr >7.7mm, 3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40028080, UL E76222
	Lite-on	LTV-817	Di > 0.6mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 4800Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40015248, UL E113898
	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di>0.4mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 5000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40008862, UL E72422
	TOSHIBA	TLP781F, TLP781	Di>0.5mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 4800Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40021173, UL E67349
	TOSHIBA	TLP421F	Di >0.4mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 5000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40010944, UL E67349
Line Choke (L901) (Optional)	CHANNELON	373G0174577H	105 °C	--	Tested in equipment
	LDFJ	373G0174577J	105 °C	--	Tested in equipment
	ASET	373G0174577X	105 °C	--	Tested in equipment
Transformer (T901)	Phoenix	380GL19P0170P	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	LIANFENG DONGJJIN	380GL19P0170J	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	TAICHANG	380GL19P0170S	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	LITAI	380GL19P0170L	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	YUVA	80GL19P-17-N	Class B	IEC/EN 60950-1	Tested in equipment
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, min. 0.45mm thick	UL94	UL
Alt.	GREAT LEOFLON INDUSTRIAL CO., LTD	TRW(B)	V-0, 150°C, min. 0.45mm thick	UL94	UL
Alt.	CHANG CHUN PLASTICS CO., LTD.	T200NA	V-0, 150°C, min. 0.45mm thick	UL94	UL

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

-Triple insulation wire	SUZHOU VDE YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Alt.	Cosmolink Co Ltd	TIW-M	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
-Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	CT	PET film insulating tape, 130°C	UL510	UL
Alt.	SYMBIO INC	35660Y*(%)	PET film insulating tape, 130°C	UL510	UL
-Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL224	UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix N **(Modelo/Model: 323FCX, 323QCX, **323********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM315WF* (*can be 0-9, A-Z or blank for marketing purpose).	31.5 inch TFT LCD (power consumption: 36.7W; LED array voltage: 42V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM315WQ* (*can be 0-9, A-Z or blank for marketing purpose).	31.5 inch TFT LCD (power consumption: 48.84W; LED array voltage: 42V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance

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(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065, GP-22	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON ATECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance

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(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
AC Inlet	Solteam	ST-01, SC04	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Hongchang	DB-14-4, DB-14-05	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Primary input wire (L/N)	Interchangeable	Interchangeable	Min. 20AWG, 600V, VW-1, 105°C	UL 758	UL
Earthing wire	Interchangeable	Interchangeable	Min. 18AWG, 600V, VW-1, 105°C	UL 758	UL
LED light source (on rear enclosure)	Everlight Electronics Co., Ltd.	5050 RGC+IC	DC 5V, in compliance with Exempt Group	IEC 62471:2006 EN 62471:2008	SGS (Report No. OC-2019-30025)
Fuse (F701, F702 on DC input of main board 715G9960 for L.P.S.)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Switching mode power supply board: 715GA321 by TPV					
Primary connector (CN901)	J.S.T	VH series	7 A, 250 Vac	IEC/EN 61984	VDE 40012096 Tested with appliance
(Alternative)	J.S.T	VT series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	M3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	W7913 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Pontronics	3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Jowle	A3963 series	7 A, 250 Vac	--	Tested with appliance

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Fuse (F9901)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Y- Capacitor (C9915, C9916) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9917, C9919) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9911) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C9918, C9920) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	EPCOS	B3292#	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U9102, U9401)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Discharge IC (U9104)	Leadtrend Technology Corp.	LD5760GR	IP: 100-250V~, 47-63Hz	IEC 60950-1+A1+A2	Nemko CB (Ref. Certif. No. NO84030)
Line Choke (L9901, L9902) (Optional)	CHANNELON	373G0174575H	105°C	--	--
(Alternative)	LIANZHEN	373G0174575Z	105°C	--	--
PFC Choke (L9801)	YUVA	373G0174315N	105°C	--	--
(Alternative)	ASET	373G0174315X	105°C	--	--
(Alternative)	CHENPING	373G0174315CP	105°C	--	--

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Transformer(T9102)(Alternative)	TPV	380GL32P530H	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
- Triple Wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Transformer (T9102) (Alternative)	YUVA	380GL32P530N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
- Triple Wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Bleeder Resistor (R9165)	Interchangeable	Interchangeable	Max. 10kΩ, min. 1/4W	--	--
Bridging Diode (BD9901)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C9814, C9815)	Interchangeable	Interchangeable	47µF, max. 450V, 105°C	--	--
Transistor (Q9801, Q9101, Q9102)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Thermistor (TH9903, TH9904)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Switching mode power supply board: 715GA451 by TPV					
Primary connector (CN901)	J.S.T	VH series	7 A, 250 Vac	IEC/EN 61984	VDE 40012096 Tested with appliance
(Alternative)	J.S.T	VT series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	M3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	W7913 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Pontronics	3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Jowle	A3963 series	7 A, 250 Vac	--	Tested with appliance
Fuse (F901 in primary)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL

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(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Fuse (F902 in secondary for L.P.S.)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN, JY	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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X-Capacitor (X1 or X2 type) (C914) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, FI, UL
(Alternative)	Europtronic	MPX2	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	FARAD	PXK	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901) (optional)	CHANNELON	73G174-241-H	105°C	--	--
(Alternative)	YUVA	73G174-241-N	105°C	--	--
(Alternative)	ASET	73G174-241-X	105°C	--	--
(Alternative)	CHENPING	73G174-241-CP	105°C	--	--
Transformer (T901)	Phoenix	380GL19P0170P	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	LIANFENG DONGJJIN	380GL19P0170J	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	TAICHANG	380GL19P0170S	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	LITAI	380GL19P0170L	Class B	IEC/EN 60950-1	Tested with appliance
- Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, min. 0.45mm thick	UL94	UL
(Alternative)	GREAT LEOFLON INDUSTRIAL CO., LTD	TRW(B)	V-0, 150°C, min. 0.45mm thick	UL94	UL
(Alternative)	CHANG CHUN PLASTICS CO., LTD.	T200NA	V-0, 150°C, min. 0.45mm thick	UL94	UL
- Triple insulation wire	SUZHOU VDE YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL

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(Alternative)	Cosmolink Co Ltd	TIW-M	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
- Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	CT	PET film insulating tape, 130°C	UL510	UL
(Alternative)	SYMBIO INC	35660Y*(%)	PET film insulating tape, 130°C	UL510	UL
- Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL224	UL
Thermistor (TH901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 5A	--	--
Bleeder Resistor (R916, R917, R918)	Interchangeable	Interchangeable	Max. 680kΩ, min. 1/4W	--	--
Bridging Diode (BD901, BD902)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C902, C903)	Interchangeable	Interchangeable	50-150µF, max. 450V, 105°C	--	--
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix O **(Modelo/Model: 22P2, 22P2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 12.42W; LED array voltage: 47.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for Marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	INNOLUX M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance

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(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance

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(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065, GP-22	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON ATECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
Switching mode power supply board: 715G7300 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.)	Littelfus, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
Alt.)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL

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Alt.)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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X-Capacitor (X1 or X2 type) (C901)(optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Europtronic	MPX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Europtronic	MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC, UL
Alt.)	TDK	B3292	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Farad	PXK	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Alt.)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Alt.)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Alt.)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
Alt.)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
Alt.)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
Alt.)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Alt.)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901)(Optional)	ASET	73G-174-192-X	105°C	--	--
Alt.)	DADON	73G-174-192-H	105°C	--	--
Alt.)	TAICHANG	73G-174-192-S	105°C	--	--
Alt.)	FRONTIER	73G-174-192-F	105°C	--	--
Alt.)	LI TAI	73G-174-192-L	105°C	--	--
Alt.)	YUVA	73G-174-192-N	105°C	--	--
Alt.)	DARFON	73G-174-192- DN	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL

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Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

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5 de junho de 2027
June 5, 2027

Appendix P (Modelo/Model: 27B1,27B1HM,27B1******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 19Vdc, 1.31A, Class III, IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2012 Class B, CISPR 24:2010, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight type (for 27 inch models)	TPV	TPM270W**-******** (* can be 0~9, A~Z, "." Or blank)	27 inch TFT LCD (power consumption: 20.9 W; LED array voltage: 54V	--	Tested in equipment
(Alternative)	BOE	MV270F**-*** (* can be 0~9, A~Z, "." or blank)	27 inch TFT LCD (power consumption: 10.6 W; LED array voltage: 59V	--	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M270HGE-*** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 22.72W; LED Array Voltage: 60V	--	Tested in equipment
(Alternative)	SAMSUNG	LTM270HP** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 21.3W; LED Array Voltage: 47.0V	--	Tested in equipment
(Alternative)	LG Display	LM270WQ* (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 24.1W; LED Array Voltage: 54.7V	--	Tested in equipment
(Alternative)	INNOLUX	M270K**-*** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 27.9W; LED Array Voltage: 36.3V	--	Tested in equipment
(Alternative)	L&T	LM270W**-**** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 14.75W; LED Array Voltage: 47.3V	--	Tested in equipment
Enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E115797)
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E88637)
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E56070)
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E80168)
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E41613)

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E67171)
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529, E244324)
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E345434)
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E73656)
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E171666)
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E310240)
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
(Alternative)	HUIZHOU WOTE	2100	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529)
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E108538)
(Alternative)	STYRON	STYRON A- TECH 1200	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E162447)
(Alternative)	TOTAL PETROCHEMIC ALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E314268)

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(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E103670)
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(V S), C6600E (VS)(X)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E207780)
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E205938)
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E177071)
Power Adapter	L&T	STK025-19131T	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, 40˚C, Class I, 5000m Comply with SELV and L.P.S.	IEC 62368-1: 2014	CB by TUV SUD (Certificate No. SG PSB-IV-02436M1)
(Alternative)	TPV	ADPC1925EX	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, LPS, 40 ˚C , Class I, altitude operating: 5000 m	IEC 60950-1: 2005+A1	CB by Nemko (certificate No. NO83042)
PCB	FUJIAN MILKY-WAY PRINTED CIRCUIT BOARD INDUSTRIAL CO LTD	MW-2, MW-CEM1	Min. V-1 or better, min. 105°C	UL 94, UL 796	UL (E168066)
(Alternative)	Interchangeable	Interchangeable	Min. V-1 or better, min. 105°C	UL 94, UL 796	UL
Cord set	Interchangeable	Interchangeable	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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June 6, 2024

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5 de junho de 2027
June 5, 2027

Appendix Q (Modelo/Model: U27P2,27P2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A, Class I, IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2); am1, am2, CISPR 22: 2008, CISPR 24: 2010 + A1: 2015, CISPR 32: 2015+A1:2019, Class B, IEC 61000-3-2: 2018, Class D, IEC 61000-3-3: 2013 + A1: 2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+ A1: 2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Componente/Component	Fabricante/ Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
LCD Panel	TPV	TPM270WF*-****** (*can be 0-9, A-Z or blank for marketing purpose).	27 inch TFT LCD (power consumption: 21.32W; LED array voltage: 51V)	IEC 60950-1	Tested in equipment
(Alternative)	PANDA	LM270**** (*can be 0-9, A-Z or blank for marketing purpose).	27 inch TFT LCD (power consumption: 27.08W; LED array voltage: 51V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL (E88637) and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL (E56070) and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL (E80168) and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL (E41613) and tested with appliance

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL (E67171) and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL (E171666) and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL (E230779) and tested with appliance

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(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL (E345434) and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL (E328304) and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL (E359575) and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL (E135175) and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL (E471190) and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL (E135175) and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL (E98529) and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL (E108538) and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	STYRON A- TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL (E162447) and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL (E314268) and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL (E103670) and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(V S), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL (E207780) and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL (E205938) and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL (E177071) and tested with appliance
Mylar sheet	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860B, KLX FRPC-1870B	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL

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(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECOC, DFR117ECOB	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	PC9842B	min. 0.4mm, thickness, min. V-1, 80°C	UL 94	UL
(Alternative)	SHENZHEN TEESUN TECHNOLOGY CO LTD	FR370, FR370F, FE383	min. 0.4mm, thickness, min. V-1, 80°C	UL 94	UL
PCB	Interchangeable	Interchangeable	Min. V-1 or better, min. 130°C	UL 94, UL 796	UL
Cord set	Interchangeable	Interchangeable	----	NBR 14136, NBR NM 60884-1	INMETRO
Switching mode power supply board: 715GB227 by TPV (to be used together with mainboard 715GA732)					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	ENEC, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D, SA-4S 9	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14 Series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Power switch (SW901) (optional)	Rong Feng Industrial Co., Ltd.	RF-1003	VDE: 10(4)A, 250Vac UL: 10A, 250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21 series	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21S	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	OR-L series, OR-P series	ENEC: 6A, 250Vac UL: 10A/125Vac, 6A/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL

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(Alternative)	Solteam Electronics Co Ltd	MR-22 series	ENEC: 12(4)A, 250Vac UL: 12A,125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Chily	3024 series	VDE:16(4)A, 250Vac UL: 15A,125/250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Ningbo Yinzhou Lihe Switch Factory	RL3-4	VDE: 10(4), 250Vac UL: 16A, 125Vac	IEC/EN 61058-1, UL 1054	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Fuse (F902) (sec. for LPS)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Conquer	MET MST-series, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C901, C902) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C903, C922) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL

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(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1 PS2561L-1 PS2561L1-1 PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901A) (Optional) (For power board 715GB227 type A)	CHANNELON	373G0174563H	105°C	--	--
(Alternative)	LDFJ	373G0174563J	105°C	--	--
(Alternative)	LZ	373G0174563Z	105°C	--	--
Line Choke (L901A) (Optional) (For power board 715GB227 type B)	JIANGSU CHANNELON	73G174-65-H	105 °C	--	--
(Alternative)	YUVA	73G174-65-N	105 °C	--	--
(Alternative)	TPV	S73G17465V	105 °C	--	--
(Alternative)	Xiamen TDK	73G174-65-T	105 °C	--	--
(Alternative)	ASET	73G174-65-X	105 °C	--	--

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(Alternative)	TAICHANG	73G174-65-S	105 °C	--	--
Transformer (T901) ((Alternative)	CHANNELON	380GL32P559H	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	CHANG CHUN	T200NA	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T901) ((Alternative)	LFDJ	380GL32P559J	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	CHANG CHUN	T200NA	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T901) ((Alternative)	PHOENIX	380GL32P559P	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9750	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	YUSHENG	TIW-B(x)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Bleeder Resistor (R901, R902, R903, R933, R934, R935)	Interchangeable	Interchangeable	Max. 1.3MΩ, min. 1/4W	--	--
Current sensor resistor (R916)	Interchangeable	Interchangeable	Min. 0.33Ω, 2W	--	--
Bridging Diode (BD901, BD902) (Optional)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C904)	Interchangeable	Interchangeable	45-150µF, max. 450V, 105°C	--	--

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix R (Modelo/Model: 25G3ZM, 25G3******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A, Class I, IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2); am1, am2, CISPR 22: 2008, CISPR 24: 2010 + A1: 2015, CISPR 32: 2015+A1:2019, Class B, IEC 61000-3-2: 2018, Class D, IEC 61000-3-3: 2013 + A1: 2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+ A1: 2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Componente/Component	Fabricante/ Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
LCD Panel	AUO	M250H****.* (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 16.82W; LED array voltage: 51.7V)	--	Tested in equipment
Alt.)	LG Display	LM245W** (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 21.8W; LED array voltage: 52.2V)	--	Tested in equipment
Alt.)	TPV	TPM245W**-****** (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 17.2W; LED array voltage: 54.0V)	--	Tested in equipment
Tube used to wrap metal chassis pillar	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750A series, HD-87	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E231325 and tested with appliance
Alt.)	SHENZHENSHI SENMUSI TECHNOLOGY CO LTD	SMS	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E477535 and tested with appliance
Switching mode power supply board: 715GC023					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC-2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004

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Certificado de Conformidade

Certificate of Conformity

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6 de junho de 2024
June 6, 2024

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5 de junho de 2027
June 5, 2027

Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60321-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC, UL, TUV mark
Fuse (F901) on primary	Littelfuse Inc.	382	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092

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Alt.)	Walter	ICP-Series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Fuse (F902, F903) on secondary for L.P.S.	Littelfuse Inc.	382	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018250, UL E67006
Alt.)	Littelfuse Inc.	392	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017155, UL E82636
Alt.)	Conquer	MST	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40020046, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018787, UL E220181
Alt.)	Walter	2010 Serie(s)	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092

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Alt.)	Walter	ICP-Series	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280

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Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 3300pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C914) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596

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Alt.)	Europtronic	MPX	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT9700014 1, UL E97797
Alt.)	TDK	B3292	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jianghao	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123 (UL), PC123 Option Y (VDE)	Di more than 0.4mm, int = thermal cycling test, ext. more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40008087, UL E64380
Alt.)	Vishay Semiconductor	TCET1103-3034	Di more than 0.5mm, int = thermal cycling test, ext. cr more than 7.7mm, 4000Vac, 100°C.	EN 60747-5-5	VDE 40028080
Alt.)	Everlight Electronics Co., Ltd.	EL817	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 132249, UL E214129
Alt.)	Everlight Electronics Co., Ltd.	EL817M (VDE), EL817 (UL)	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5	VDE 132249, UL 214129
Alt.)	TOSHIBA	TLP781F, TLP781	Di more than 0.5mm, int. cr =thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40021173, UL E67349
Alt.)	TOSHIBA	TLP421F	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5	VDE 40010944
Alt.)	RENESAS ELECTRONICS CORPORATION	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 5000Vac, 100°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40008862, UL E72422
Alt.)	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.1mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40028391, UL E214129
Alt.)	Lite-On	LTV-817	Di more than 0.6mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 4800Vac, 115°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40015248, UL E113898
Alt.)	Interchangeable	Interchangeable	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, min. 4000Vac, min. 100°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE, UL
Line Choke (L901) (Optional)	ASET	373G0174558X	130°C	--	--
Alt.)	LIANFENG	373G0174558J	130°C	--	--

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Alt.)	Taichang	373G0174558S	130°C	--	--
Transformer (T901)	PHOENIX	380GL19P0170P	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E332529, VDE40033527
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	LIANFENG	380GL19P0170J	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	TPV	80GL19P-17-N	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	SYMBIO INC	NO. 35660Y*d	130°C	UL 510	UL E50292
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	Taichang	380GL19P0170S	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	GREAT LEOFLON INDUSTRIAL CO.□LTD	TRW(B)	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E211989, VDE 136581
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	LI TAI	380GL19P0170L	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	CHANG CHUN PLASTICS CO. LTD	200NA	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
- Insulation tape (Alt.)	SYMBIO INC	NO. 35660Y*d	130°C	UL 510	UL E50292

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-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Rating information of components which are not critical components on power board 715GC023					
P.C.B	Interchangeable	Interchangeable	V-1 or better Min. 130°C.	UL 796	UL
Current sensing Resistor (R919)	Interchangeable	Interchangeable	Min. 0.3Ω, min. 1/10W	--	--
Thermistor (TH901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Bridging Diode (BD901, BD902)	Interchangeable	Interchangeable	Min.600V, min.2.0A	--	--
Ripple Capacitor (C902, C903)	Interchangeable	Interchangeable	47-180μF, max. 450V, 105°C	--	--
Bleeder Resistor (R916, R917, R918)	Interchangeable	Interchangeable	Each Max. 680KΩ, Min.1/4W	--	--
Transistor (Q901)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--

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Certificado de Conformidade

Certificate of Conformity

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6 de junho de 2024		**5 de junho de 2027**
June 6, 2024		*June 5, 2027*

Appendix S **(Modelo/Model: **24B30*******, **24B35********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 19VDC, 1.31A; Class III; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32:2015+A1:2019, CISPR 35: 2016, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 V AC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 V DC, 1,31 A, 25,0 W, Tma = 40 °C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 + A11:2017	(CB certificate No. NO106527; CB report No. 373441)
Alt.	Ten Pao Industrial Co., Ltd.	S025ANP1900131	input: 100-240 V AC, 50 /60 Hz, 0,6 A, Class II; Output: 19,0 V DC, 1,31 A, 25,0 W, Tma = 40 °C, Outputs comply with LPS, Altitude: 5000m	IEC 62368-1:2018	TUV Rheinland (CB Cert.: JPTUV-149645, report No.: CN23WCFE001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, Min. 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, Min. 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0mm, Min. 60 °C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 °C	ANSI/UL 94	UL (E314268)

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Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	V-2 or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee)	HB or Better, Min. thickness: 1,3 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX) (a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG(+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E345434)

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Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO13(##)(YY)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO.,LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO., LTD	Ecorex® RN - +(R #)	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#)	HB or Better, Min. thickness: 0,45 mm, 80 °C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60 °C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125 °C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, Min. 50 °C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	Min. V-1, 105 °C	UL 796	UL
LCD Panel	TPV	TPM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	TPV	TPT238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	M238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	P238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	L&T	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	LGD	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	INNOLUX	M238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	PANDA	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	BOE	MV238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	SHARP	LQ238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	SAMSUNG	LTM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	BOE	ME238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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Appendix T **(Modelo/Model: 27G2E1, 27G2********, C27G2********, C*27G2********, Q27G2********, U27G2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 oC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, Min. 60 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, Min. 60 oC	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6mm, 50 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5mm, 130 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0mm, Min. 60 oC	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 oC	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	V-2 or Better, Min. thickness: 0,75 mm, 60 oC	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##),	HB or Better, Min. thickness: 1,0 mm, 50 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee)	HB or Better, Min. thickness: 1,3 mm, 50 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E171666)

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Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60 oC	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX) (a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG(+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO13(##)(YY)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO.,LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO., LTD	Ecorex® RN - +(R #)	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E514505)

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Certificado de Conformidade

Certificate of Conformity

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June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#)	HB or Better, Min. thickness: 0,45 mm, 80 oC	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60 oC	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125 oC	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, Min. 50 oC	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150	HB or Better, thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better, thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 130 oC	UL 796	UL
Insulation Sheet (between power board and LCD panel or between power board and metal cover or metal enclosure to cover the openings)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 oC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 oC	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770, PC-770 A, PC-870 A, PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E254551)
Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E249605)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 oC	ANSI/UL 94	UL (E305163)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 oC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1365, TS-FR1363, TS-FR1360, TS-FR1362, TS-FR160Y, TS-FR1370F, TS-FR1370, TS-FR1383, TS-FR1370-32, TS-FR1383-13	Polycarbonate, thickness: 0,40 mm min. V-0, 125 oC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 oC	ANSI/UL 94	UL (E357515)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-870BF, KLX FRPC-870BH, KLX FRPC-870BFH, KLX FRPC-83B, KLX FRPC-83, KLX FRPC-F70, KLX FRPC-700B, KLX FRPC-700BF, KLX FRPC-60, KLX FRPC-60H, KLX FRPC-63, KLX FRPC-63H, KLX FRPC-65, KLX FRPC-65H, KLX FRPC-1870B	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860, KLX FRPC-1860B, KLX FRPC-1860-83, KLX FRPC-1860-83B, KLX FRPC-1860-1, KLX FRPC-1860-NTC, KLX FRPC-1860B-NTC, KLX FRPC-1860B-3, KLX FRPC-1870B-K, KLX FRPC-1860B-HY, KLX FRPC-1860-HY, KLX FRPC-1860B-K, KLX FRPC-1860-K, KLX FRPC-1860W	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1880, KLX FRPC-1880B, KLX FRPC-1880-83, KLX FRPC-1880-83B, KLX FRPC-1880-1, KLX FRPC-1880B-1, KLX FRPC-1880-2, KLX FRPC-1880B-2, KLX FRPC-1880-3, KLX FRPC-1880B-3, KLX FRPC-1880-NTC, KLX FRPC-1880B-NTC, KLX FRPC-1880B-HY, KLX FRPC-1880-HY, KLX FRPC-1880B-K, KLX FRPC-1880-K, KLX FRPC-1860-YM, KLX FRPC-1860B-YM, KLX FRPC-1880-YM, KLX FRPC-1880B-YM, KLX FRPC-1880W, KLX FRPC-1880W-1, KLX FRPC-1860B-KS, KLX FRPC-1860-KS, KLX FRPC-1880-KS, KLX FRPC-1880B-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 125 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1890B,KLX FRPC-1890, KLX FRPC-1890-83, KLX FRPC-1890-83B, KLX FRPC-1890-1, KLX FRPC-1890B-1, KLX FRPC-1890-2, KLX FRPC-1890B-2,KLX FRPC-1890B-2, KLX FRPC-1890-3, KLX FRPC-1890B-3, KLX FRPC-1890-NTC, KLX FRPC-1890B-NTC, KLX FRPC-1890B-HY, KLX FRPC-1890-HY, KLX FRPC-1890B-K, KLX FRPC-1890-K, KLX FRPC-1890-YM, KLX FRPC-1890B-YM KLX FRPC-1890W, KLX FRPC-1890W-1, KLX FRPC-1890B-KS, KLX FRPC-1890-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 115 oC	ANSI/UL 94	UL (E315185)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E508063)
Alt.	Interchangeable	Interchangeable	Polycarbonate, thickness: 0,4 mm, min. V-0, Min. 80 oC	ANSI/UL 94	UL
LCD Panel	TPV	TPM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TPV	TPT270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	AUO	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	P270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	L&T	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LGD	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	INNOLUX	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	PANDA	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	MV270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	SHARP	LQ270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	SAMSUNG	LTM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	ME270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Adhesive for mylar sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Speaker (Optional)	Interchangeable	Interchangeable	4Ω, 2,5W *2	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
For power board 715GC023					
AC-Inlet (CN901)	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40028645) UL (E327347)
Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)

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Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	EU / UL certification mark
Fuse (F901 on primary)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	382	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018249) UL (E67006)
Alt.	Littelfuse Inc.	392	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MET	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017157) UL (E82636)
Alt.	Conquer Electronics Co., Ltd.	MST	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	Suzhou Walter Electronic Co. Ltd.	2000	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018790) UL (E56092)

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Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Fuse (F902, F903 in secondary)	Cooper Bussmann LLC	SR-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	382	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E67006)
Alt.	Littelfuse Inc.	392	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MET	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E82636)
Alt.	Conquer Electronics Co., Ltd.	MST	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	Suzhou Walter Electronic Co. Ltd.	2000	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)

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Alt.	Interchangeable	Interchangeable	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C920, C921, C944) (optional)	TDK CORPORATION	CD	Max. 1000 pF, 250 Vac, Min. 85°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 1000 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AH	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	JYA-NAY CO LTD	JN	Max. 1000 pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL (E201384)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SB	Max. 1000 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 1000 pF, Min. 250Vac, 85°C min. Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
Y-cap (C900) (optional)	TDK CORPORATION	CD	Max. 3300 pF, 250/ 400 Vac, Min. 85°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 3300 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AH	Max. 3300 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	JYA-NAY CO LTD	JN	Max. 3300 pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL (E201384)

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Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 3300 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SB	Max. 3300 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 3300 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 3300 pF, Min. 250Vac, 85°C min. Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
X- Cap. (C914) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,47µF, AC 250/275/280/300/ 305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,47µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018238) UL (E211347)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,47µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,47µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40000358) UL (E186600)
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,47µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS INDUSTRY CO LTD	GS-L	Max. 0,47µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,47µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,47µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,47µF, AC 250 / 280 / 305 V, Min.; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018690) UL (E252286)

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Alt.	Interchangeable	Interchangeable	Max. 0,47µF, 250Vac Min.; 100°C Min.	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL / EU certification mark
Optocoupler (U902)	Lite-on	LTV-817	Ext. cr ≥7,0 mm, Dti ≥ 0,4 mm, 105°	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40015248) UL (E113898)
Alt.	Sharp	PC123	Ext. cr ≥6,4 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008087) UL (E64380)
Alt.	VISHAY Semiconductor GmbH	TCET1103-3034	Ext. cr ≥ 8,4 mm, Dti ≥ 0,4 mm, 100°	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028080)
Alt.	Everlight Electronics Co., Ltd.	EL817M, EL817	Ext. cr ≥ 7,6 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (132249) UL (E214129)
Alt.	TOSHIBA CORP	TLP781, TLP781F	Ext. cr ≥ 6,5 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40021173) UL (E67349)
Alt.	TOSHIBA CORP	TLP421F, TLP421	Min. Ext. cr ≥ 7,0 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40010944) UL (E67349)
Alt.	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Min. Ext. cr ≥ 8,1 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028391) UL (E214129)
Alt.	RENESAS	PS2561DL1-1, PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Min. Ext. cr ≥ 7,1 mm, Dti ≥ 0,4 mm, 100° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008862) UL (E72422)
Alt.	Interchangeable	Interchangeable	Min. Ext. cr ≥ 6,4 mm, Dti ≥ 0,4 mm, 100° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	UL / EU certification mark
Line Choke (L901) (Optional)	ASET	373G0174558X	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LIANFENG	373G0174558J	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Transformer (T901)	PHOENIX	380GL19P0170P	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	PHOENIX	PH01024600	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	LFDJ	380GL19P0170J	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LFDJ	BCK-35-L01379	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
- Bobbin	SUMITOMO BAKELITE CO., LTD	PM-9820	V-0, 150 °C	UL 94	UL (E41429)
- Magnet Winding	PROSPERITY ELECTRIC WIRE & CABLE CO	UEW	130°C	ANSI/UL 1446	UL (E196072)
- Alt.	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B), TYA1-130(UEW/QA-B)	130 °C	ANSI/UL 1446	UL (E245514)
- Alt.	SHANDONG SAINT ELECTRIC CO LTD	*UEW/130, QA-*/130, *UEW/130 Litz, QA-*/130 Litz, MW75-C	130 °C	ANSI/UL 1446	UL (E194410)
- Alt.	GUANGZHOU WANBAO ENAMELLED WIRE CO LTD	xUEW-130, QA-x/130	130°C	ANSI/UL 1446	UL (E167402)
- Alt.	Interchangeable	Interchangeable	130°C	ANSI/UL 1446	UL
- Triple insulation wire	KBI COSMOLINK CO., LTD.	TIW-M (For VDE), TIW-M(XX) (For UL)	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (138053) UL (E213764)
- Alt.	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (For VDE), TIW-B* (For UL)	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (40033527) UL (E332529)
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)
- Alt.	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-L	PTFE, 200°C, VW-1	UL 224	UL (E180908)
Bleeding resistors (R916, R917, R918)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series,	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99693
Alt	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99692
Alt	YAGEO	RV0603, RV0805, RV1206	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of UL certificate no. DK-64853-UL
Alt	TZAIYUAN	HSMD********* SMD*********	Max. 680 kohm, 1/4 W	IEC 62368-1: 2010	CB of UL certificate no. DK-29431-A1-UL
Alt.	Tzai Yuan Enterprise Co., Ltd.	MGUL1/4Wseries	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB issued by UL (CB cert No. DK-69874-UL)

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Alt.	Interchangeable	Interchangeable	Max. 680 kohm, 1/4 W	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
For main board 715GE142					
Limited current IC (U545)	Global Mixed-mode Technology Inc.	G509H10NTP1G	DC 2,7V – 5,5V; Continuous operating current of 1,0A	IEC 62368-1:2018 EN IEC 62368-1:2020 + A11: 2020 ANSI/UL 2367	TÜV Rheinland (CB report No. CN213HMD 001; CB certificate No. JPTUV-126218) UL (E232223)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
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June 5, 2027

Appendix U **(Modelo/Model: 24B3HMF2, **24B3*******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11: 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Grand	D-1000A, D-150	HB or better, min. 1.5mm thickness	UL 94	UL (E88637)
Alt.)	LG CHEM LTD	LUPOY GN- 5001TF(#), LUPOY GN-5001RF(T), LUPOY GN-5008HF(#), LUPOY GN-2101F(m)(f1), XG568(#), XG569(#), GP-1000(m)(#), SE885(#), AF365(&), AF368(#), AF358	HB or better, min. 1.5mm thickness	UL 94	UL (E67171)
Alt.)	LOTTE CHEMICAL CORPORATION	VH-0810(+), VE-1890(+), EN-1052(+), VH-0815(+), VH-0819(+), HM-1100(+), VE-0819F, NH-1017T, NH-1017SG(+), VE-0812(+), NH-1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, GC-1017(RR30), SD-0150(+), BF-0677(+), BF-0675(+), BF-0670F, GC-0700(+++)(RR28), LX-0951(+), LX-0957(+), HG-0760(+), NH-1027HF, NH-1027(+), SD-0150T, GC-1036(RR35), SC-1220R, ABF-0200E, ABF-1030NH	HB or better, min. 1.5mm thickness	UL 94	UL (E115797)

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Alt.)	KingFa	HF-606, HF-626, FRABS-518, JH960 6(M) (ccc) (##), FRHIPS-960, CK-572(M1) (##), FRABS-518C, 5197, RS-(hh)0, GAR-011C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-55(M) (##), HP-126, CK-61(M) (##), HIPS-510 (o), HIPS-550	HB or better, min. 1.5mm thickness	UL 94	UL (E171666)
Alt.)	Covestro Deutschland AG [PC Resins]	FR3005, GF9011 MF + (z), FR3050 +	HB or better, min. 1.5mm thickness	UL 94	UL (E41613)
Alt.)	TEIJIN	TN-7500(c)	HB or better, min. 1.5mm thickness	UL 94	UL (E98529)
Alt.)	TEIJIN	MN-3600H(#)	HB or better, min. 1.5mm thickness	UL 94	UL (E244324)
Alt.)	SAMYANG	TRILOY:210NHF (@), 210NHF	HB or better, min. 1.5mm thickness	UL 94	UL (E121254)
Alt.)	CHI MEI	PC-540A, PA-765A, PA-756S, PA-757(+)	HB or better, min. 1.5mm thickness	UL 94	UL (E56070)
Alt.)	ORINKO	HIPS-2230(N), ABS-3070(T), HIPS-2000, ABS-340(X), ABS900F23	HB or better, min. 1.5mm thickness	UL 94	UL (E328304)
Alt.)	SABIC	C6600	HB or better, min. 1.5mm thickness	UL 94	UL (E207780)
Alt.)	Haier	HRABS-RS, HRABS-HG	HB or better, min. 1.5mm thickness	UL 94	UL (E230779)
Alt.)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	HB or better, min. 1.5mm thickness	UL 94	UL (E103670)
Alt.)	INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED	3441, 260-XX	HB or better, min. 1.5mm thickness	UL 94	UL (E314268)
Alt.)	WISTRON	GA(M)(b)(c), NC(N)(a), GA85	HB or better, min. 1.5mm thickness	UL 94	UL (E359575)
Alt.)	HINGLONG	HL-ABS- PCR35/65/85	HB or better, min. 1.5mm thickness	UL 94	UL (E345434)
Alt.)	WOTE	2100	HB or better, min. 1.5mm thickness	UL 94	UL (E310240)
Alt.)	GUO HENG	YOUHO(#####)(Y), YOUHO13(##)(Y Y), YOUHE26(##)	HB or better, min. 1.5mm thickness	UL 94	UL (E471190)
Alt.)	UNIC	UR-3006+(RXX), UR-200+, UR-7085+(R90), UP-700+	HB or better, min. 1.5mm thickness	UL 94	UL (E135175)
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 1.5mm thickness	UL 94	UL (E205938)
Alt.)	CHI LIN	GA-1(aaa)	HB or better, min. 1.5mm thickness	UL 94	UL (E177071)
Alt.)	FUHENG	HIPS-568, FH-101, FH-102	HB or better, min. 1.5mm thickness	UL 94	UL (E234833)
Alt.)	QING DAO GON TECHNOLOGY CO.,LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or better, min. 1.5mm thickness	UL 94	UL (E330547)
Alt.)	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC2820-A	HB or better, min. 1.6mm thickness	UL 94	UL (E162823)
Alt.)	Chongqing Gengye New Materials Technology Co Ltd	Ecorex® RN - + (R #), GU-022	HB or better, min. 1.5mm thickness	UL 94	UL (E514505)
Alt.)	Interchangeable	Interchangeable	HB or better, min. 1.5mm thickness	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Base stand (optional use)	Interchangeable	Interchangeable	Metallic covered by the HB or better plastic	--	--
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 oC	UL 796	UL
Mylar sheet (Located between power supply board and panel) (between power board and metal enclosure)	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E249605)
Alt.)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E254551)
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR117ECOC, DFR117ECOB, DFR117ECO, DFR3A(d)	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E199019)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC- 1880B, KLX FRPC- 1860B, KLX FRPC- 1870B, KLX FRPC- 870B, KLX PP BK-10, KLX PP BK-10- KS	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E315185)
Alt.)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E305163)
Alt.)	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	PC9842B, PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E339070)
Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E329660)
LCD Panel	TPV	TPM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.98W; LED Array Voltage: 31.9V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	LG Display	LM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 17.76W; LED Array Voltage: 58.9V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	L&T	LM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.1W; LED Array Voltage: 38.8V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	BOE	MV238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.04W; LED Array Voltage: 46.4V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Certificado de Conformidade

Certificate of Conformity

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June 5, 2027

Alt.)	AUO	M238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.17W; LED Array Voltage: 44.86V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	INNOLUX	M238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.19W; LED Array Voltage: 32V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Adhesive for mylar sheet	SYMBIO	DS50-A, DS50L	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	3M	55236, 9448A, 55230, 9495MP	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	NITTO DENKO CORP	GA835	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	TESA SE	68646	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	DEXERIALS CORP	G4000	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Tube used to wrap metal chassis pillar	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750Aseries, HD-87	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E231325 and tested with appliance
Alt.)	DONGJUE SILICONE (NANJING) CO LTD	NE-Z150	V-0, 150°C, min. thickness 1.8mm	UL 94, UL746	UL E236040
Switching mode power supply board: 715GE360 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	ZHANGJIAGANG HUAJIE ELECTRONIC CO LTD	SA-4S 9, SA-4S 6, SA-4S 7, SA-4S 12	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 502938560001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 502746980001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641

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Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC-2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23, DB-14-14, DB-14-05E, DB-14-15-L-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE, ENEC, TUV, UL
Fuse (F901) on primary	Littelfuse Inc.	382	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503105510001-0004, UL E10480
Alt.)	Conquer	MET	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	CONQUER ELECTRONICS CO LTD	MST	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636

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Alt.)	Conquer	PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018787, UL E220181
Alt.)	Walter	2010	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T3.15AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 504066050001-0003, UL E56092
Alt.)	Walter	2040	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 504263560001-0002, UL E56092
Alt.)	Walter	ICP	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003

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Alt.)	Better	244	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503357640001-0003, UL E300003
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua Electronic Co.	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861

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Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua Electronic Co.	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797

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Alt.)	TDK	B3292	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder Resistor (R907, R908, R909)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06********* series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by NEMKO (CB report No. REP014995 and CB cert No. NO127737)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06********* series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by NEMKO (CB report No. REP014996 and CB cert No. NO127738)
Alt.)	Yageo Corporation	RV1206XX- 07155ML (The first X can be D,F or J. the secondary X can be R or K)	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by UL(CB report No. E491387-4787887815-1 Original, CB cert No. DK- 64853-UL)
Alt.)	Tzai Yuan Enterprise Co., Ltd.	HSMD1206*****, SMD1206*****	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by UL (CB report No. DK-88747- A1-UL)
Alt.)	Interchangeable	Interchangeable	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB
Line Choke (L901) (Optional)	TAICHANG	373G0174600S	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	LIANFENG	373G0174600J	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	CHANNELON	373G0174600H	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Transformer (T901)	CHANNELON	380GL32P760H / CLT-116004	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	CHANG CHUN PLASTICS CO.,LTD	T200HF	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	KBI COSMOLINK CO., LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256

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Transformer (T901) Alt.)	LF	380GL32P760J / BCK-30-L01625	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	CHANG CHUN PLASTICS CO.,LTD	T200HF	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	KBI COSMOLINK CO., LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	PHOENIX	380GL32P760P / PH01087700-1	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	SUMITOMO BAKELITE CO., LTD	PM-9750, PM-9823	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (UL), TIW-B (VDE)	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E332529, VDE 40033527
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256
Current sensing Resistor (R911)	Interchangeable	Interchangeable	Min. 15kΩ, min. 1/10W	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 8Ω at 25°C, max. 5A	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.500V, min.2.0A	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Ripple Capacitor (C907)	Interchangeable	Interchangeable	10-150µF, max. 450V, 105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Appendix V **(Modelo/Model: 22B3HMF, 22B3********, Q22B3********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11: 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	CHI MEI CORPORATION	PA-757(+), PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350, HF380	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP-1000(Z), GP-1000L	HB or Better thickness: 1,5mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better thickness: 1,6mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568, XG568(#)	HB or Better thickness: 1,6mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569C, XG569(#)	HB or Better thickness: 1,5mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better thickness: 1,0mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GN-1002F(m)	HB or Better thickness: 1,5mm, 80 °C	ANSI/UL 94	UL (E67171)
Alt.	LOTTE CHEMICAL CORPORATION	SD-0150(+), BF-0677(+), BF-0675(+), GC-0700(+++), LX-0951(+), LX-0957(+), HG-0760(+), SD-0150T, ABF-0200E, NH-1027HF, NH-1027(+)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670F, BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	GC-1036, LS-1159SF, LS-1159F, NH-1036, GC-1036, ABF-1030NH, NH-1017SG(+)	V-0 or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)
Alt.	KINGFA SCI & TECH CO LTD	5197	HB or Better Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E171666)

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Alt.	KINGFA SCI & TECH CO LTD	GAR-011 C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-55111, HP-126	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	CK-61506 RS-900, RS-300, RS-400, RS-(hh)0	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	JH960 6(M), JH960 6(M) (ccc) (##), JH960-6(M) (ccc) (##), JH960 62(M4), JH960 62(M4) (ccc) (##), JH960-62(M4) (ccc) (##)	5VB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E230779)
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	V-0, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E103670)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441, 260-XX	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA1(e), GA35, NC30, GA65, GA85, GC(t) (t) – Replace the one, two, three or four numbers and/or letters to denote to serial number	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E359575)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	UNIC	UR-200+ (+: A to Z), UR-3006+(R35), UR-3006+(R90), UR-3006+(RXX) UP-700+	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E205938)
Alt.	CHI LIN TECHNOLOGY CO LTD	GA-1535 GA-1(aaa)	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E177071)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E234833)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E345434)

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Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(1302)(B), YOUHO(1303)(B), YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(#####)(Y),YOUHO(1303)(OP), YOUHO13(##)(YY) YOUHO1312B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E471190)
Alt.	Chongqing Gengye New Materials Technology Co Ltd	GU-022	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	Interchangeable	Interchangeable	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150(+)	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 °C	UL 796	UL
Insulation Sheet (between power board and LCD panel, between power board and metal cover)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 °C	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770 series PC-770, PC-770 A, PC-870 A PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E254551)
Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E249605)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1880 series	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1860B, KLX FRPC-83	Polycarbonate, thickness: 0,40 mm, V-0, 80 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1890 series	Polycarbonate, thickness: 0,4 mm min. V-0, 115 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 °C	ANSI/UL 94	UL (E315185)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E305163)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1370	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E357515)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 °C	ANSI/UL 94	UL (E508063)
Alt.	Interchangeable	Interchangeable	Polycarbonate, thickness: 0,4 mm min. V-0, Min. 80 °C	ANSI/UL 94	UL
LCD Panel	LG Display	LM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	M215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	MV215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TPV	TPM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Adhesive for mylar sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Silicone Rubber	ONGJUE SILICONE (NANJING) CO LTD	NE-Z150	Min. thickness: 1,8 mm, 150°C, V-0	UL 94	UL (E236040)
For power board model No. 715GD928:					
AC-Inlet (CN901)	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028645) UL (E327347)
Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)

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Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	EU / UL certification mark
Fuse (F901)	Cooper Bussmann LLC	SR-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	392	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MST	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C902, C903, C934) (optional)	TDK CORPORATION	CD	Max. 1000pF, 250 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40029780) UL (E37861)
Alt.	TDK CORPORATION	CS	Max. 1000pF, 250/ 300 Vac, 125 °C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40029781) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KH	Max. 1000 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40002796) UL (E37921)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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6 de junho de 2024
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5 de junho de 2027
June 5, 2027

Alt.	Murata Mfg. Co., Ltd.	KX	Max. 1000 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AC	Max. 1000pF, AC 250/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40001829) UL (E146544)
Alt.	Walsin Technology Corp.	AH	Max. 1000pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40001804) UL E146544
Alt.	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 1000pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40036246) UL (E154899)
Alt.	JYA-NAY CO LTD	JY	Max. 1000pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL (E201384)
Alt.	JYA-NAY CO LTD	JN	Max. 1000pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL (E201384)
Alt.	Haohua Electronic Co.	CT7	Max. 1000pF, AC250/275/300V,125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40013601) UL (E233106)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SE	Max. 1000pF, AC 250/300 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (122995) UL (E114280)
Alt.	Success Electronics Co., Ltd.	SB	Max. 1000pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40012143) UL (E249006)
Alt.	XIAMEN WANMING ELECTRONICS CO LTD	CK	Max. 1000pF, 250/300/400/500 Vac, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	ENEC (ENEC-04533) UL (E221839)
Alt.	Interchangeable	Interchangeable	Max. 1000pF, Min. 250Vac, Min. 85 °C, Y1/Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	EU / UL certification mark

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X- Cap. (C901) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,33 µF, AC 250/275/280 /300/305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40018238) UL (E211347)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,33 µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40000358) UL (E186600)
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,33 µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS Industry Co Ltd	GS-L	Max. 0,33 µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,33 µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,33 µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,33 µF, AC 250/280/ 305V, Min. 110°C X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40018690) UL (E252286)
Alt.	Interchangeable	Interchangeable	Max. 0,33 µF, Min. 250Vac Min. 105°C, X1 or X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL / EU certification mark
Optocoupler (U902)	Lite-on	LTV-817	Ext. cr ≥7,0 mm, Dti ≥ 0,4 mm, 105°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40015248) UL (E113898)
Alt.	Sharp	PC123	Ext. cr ≥6,4 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008087) UL (E64380)
Alt.	VISHAY Semiconductor GmbH	TCET1103-3034	Ext. cr ≥ 8,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015	VDE (40028080)

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Alt.	Everlight Electronics Co., Ltd.	EL817M, EL817	Ext. cr ≥ 7,6 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (132249) UL (E214129)
Alt.	TOSHIBA CORP	TLP781, TLP781F	Ext. cr ≥ 6,5 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40021173) UL (E67349)
Alt.	TOSHIBA CORP	TLP421F, TLP421	Min. Ext. cr ≥ 7,0 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40010944) UL (E67349)
Alt.	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Min. Ext. cr ≥ 8,1 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028391) UL (E214129)
Alt.	RENESAS	PS2561DL1-1, PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Min. Ext. cr ≥ 7,1 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008862) UL (E72422)
Alt.	Interchangeable	Interchangeable	Min. Ext. cr ≥ 6,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	UL / EU certification mark
Line Choke (L901) (Optional)	LFDJ	373G0174557J	105°C	IEC/EN 62368-1	Tested With appliance
Alt.	HA	373G0174557H	105°C	IEC/EN 62368-1	Tested With appliance
Transformer (T901)	PHOENIX	380GL32P830P	Class B	IEC/EN 62368-1	Tested With appliance
Alt.	LF	380GL32P830J	Class B	IEC/EN 62368-1	Tested With appliance
Alt.	HA	380GL32P830H	Class B	IEC/EN 62368-1	Tested With appliance
- Bobbin	SUMITOMO Bakelite Co Ltd	PM-9750, PM-9823,	V-0, 150 °C	UL 94	UL (E41429)
- Alt.	CHANG CHUN Plastics Co Ltd	T200HF	V-0, 150 °C	UL 94	UL (E59481)
- Magnet Winding	NINGBO JINTIAN NEW MATERIAL CO LTD	xUEW/130, QA-x/130 (MW75-C)	130°C	ANSI/UL 1446	UL (E227047)
- Alt.	BAIYIN YIZHI CHANGTONG SUPER MICRO-WIRE CO., LTD	xUEW/130 (MW75-C)	130°C	ANSI/UL 1446	UL (E363385)
- Alt.	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155, QA-x/155	155 °C	ANSI/UL 1446	UL (E344055)
- Alt.	SHANDONG SAINT Electric Co Ltd	*UEW/130, QA-*/130, *UEW/130 Litz, QA-*/130 Litz, MW75-C	130 °C	ANSI/UL 1446	UL (E194410)
- Alt.	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B)	130 °C	ANSI/UL 1446	UL (E245514)
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B*	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (40033527) UL (E332529)
- Alt.	KBI COSMOLINK CO., LTD.	TIW-M	Reinforced insulation, 130°C	ANSI/UL 2353 IEC 62368-1: 2014	VDE (138053) UL (E213764)

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- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING Industrial Co Ltd	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)
- Alt.	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	PTFE, 200°C, VW-1	UL 224	UL (E180908)
Bleeding resistors (R907, R908, R909)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 336992 and CB certificate No. NO99692)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 337017 and CB certificate No. NO99693)
Alt.	Yageo Corporation	RV1206 series	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by UL (CB report No. E491387-4787887815-1 and CB certificate No. DK-64853-UL)
Alt.	Tzai Yuan Enterprise Co., Ltd.	HSMD1206 series, *SMD1206 * series (The * denote the tolerance, which can be "F", "G" or "J")	Max. 620K ohm, 1/4 W	IEC 62368-1:2010	CB issued by UL (CB report No. OFF-12CA24616-A-1, OFF-12CA24616-A-1 am1 and E354677-12CA24616-A-1. CB certificate No.DK-29431-UL, DK-29431-A1-UL and DK-29431-A1-M1-UL)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06********* series	Max. 620K ohm, 1/4 W	IEC 62368-1: 2018	CB issued by NEMKO (CB report No. REP014996 and CB certificate No. NO127738)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06********* series	Max. 620K ohm, 1/4 W	IEC 62368-1: 2018	CB issued by NEMKO (CB report No. REP014995 and CB certificate No. NO127737)
Alt.	Interchangeable	Interchangeable	Max. 620K ohm, 1/4 W	IEC/EN 62368-1	CB report & certification issued by NCB

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão/**Review: **04**	**Validade /** ***Expiration***
6 de junho de 2024		**5 de junho de 2027**
June 6, 2024		*June 5, 2027*

Appendix W (Modelo/Model: 22B30HM2, 22B35HM2, **22********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
DC Input: 19 V d.c., 1,31 A; Class III; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 VAC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 VDC, 1,31 A, Tma= 40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
External power supply	Ten Pao Industrial Co., Ltd.	S025ANP1900131	Input: 100-240 VAC, 50 - 60 Hz, 0,6 A, Class II; Output: 19,0 VDC, 1,31 A, 25,0 W, Tma = 40°C, PS2, Altitude:5000m	IEC 62368-1:2018	(CB certificate No. JPTUV-149645; CB report No. CN23WCFE 001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5 mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)

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Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPSCM(ee), HIPSHG(ee)	HB or Better, Min. thickness: 1,3 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35)(a), UR-3006+(R90)(a), UR-3006+(RXX)(a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	AFE5000N, AFE5100N, 9004BKGA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG (+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50°C	ANSI/UL 94	UL (E115797)

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Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABSPCR35/ 65/85	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####) (Y), YOUHO13(##) (YY)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQIN G) NEW MATERIALS CO., LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQIN G) NEW MATERIALS CO., LTD	Ecorex® RN - + (R #)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H (#)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125°C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, 50°C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	Min. V-1, 105 °C	UL 796	UL
LCD Panel	LG Display	LM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	AUO	M215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank))	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	BOE	MV215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	TPV VISION INNOVATOR	TPM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	L&T	BM215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	CHIMEI INNOLUX	M215********** (* can be 0~9, A~Z, “.”, “-“, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	CPT	CLAA215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	L&T	LM215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance

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Appendix X (Modelo/Model: 27B30H, 27B35H, **27********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
DC Input: 19 V d.c., 1,31 or 2,0 A; Class III; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 VAC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 VDC, 1,31 A, Tma= 40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1938EX	Input: 100-240 VAC, 50 - 60 Hz,1,3 A, Class II; Output: 19,0 VDC, 2,0 A, Tma =40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
External power supply	Ten Pao Industrial Co., Ltd.	S025ANP1900131	Input: 100-240 VAC, 50 - 60 Hz, 0,6 A, Class II; Output: 19,0 VDC, 1,31 A, 25,0W, Tma = 40°C, PS2, Altitude:5000m	IEC 62368-1:2018	(CB certificate No. JPTUV-149645; CB report No. CN23WCFE 001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50°C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6 mm, 50°C	ANSI/UL 94	UL (E67171)

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Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5 mm, 130°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50°C	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 0,75 mm, 60°C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPSCM (ee), HIPSHG (ee)	HB or Better, Min. thickness: 1,3 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	AR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX)(a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG (+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)

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Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABSPCR35/ 65/85	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO (####) (Y), YOUHO13(##) (YY)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE (CHONG QING) NEW MATERIALS CO., LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE (CHONG QING) NEW MATERIALS CO., LTD	Ecorex® RN - + (R #)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H (#)	HB or Better, Min. thickness: 0,45 mm, 80°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125°C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, 50°C	ANSI/UL 94	UL
PCB	Interchangeable	Interchangeable	Min. V-1, 105°C	UL 796	UL
LCD Panel	L&T	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '-', '\', '/', '.' , sign absence or blank)	27" with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27" with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	P270**********(* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27" with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '-', '\', '/', '.' , sign absence or blank)	27" with LED backlight	IEC/EN 62368-1	Tested with appliance

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Alt.	INNOLUX	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	TPV	TPM270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	TPV	TPT270********** ** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	BOE	MV270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	BOE	ME270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SHARP	LQ270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SAMSUNG	LTM270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	LGD	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	Panda	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance

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Appendix Y (Modelo/Model: 27G4, 27G4/P, **27G4******)**
CARACTERÍSTICAS NOMINAIS / *RATINGS:*
AC Input: 100V-240v~, 50Hz/60Hz, 1.5A; Class I; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2), am1, am2, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E328304)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	CHI MEI CORPORATION	PA-757(+), PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350, HF380	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP-1000(Z), GP-1000L	HB or Better thickness: 1,5mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better thickness: 1,6mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568, XG568(#)	HB or Better thickness: 1,6mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569C, XG569(#)	HB or Better thickness: 1,5mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better thickness: 1,0mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GN-1002F(m)	HB or Better thickness: 1,5mm, 80 °C	ANSI/UL 94	UL (E67171)
Alt.	LOTTE CHEMICAL CORPORATION	SD-0150(+), BF-0677(+), BF-0675(+), GC-0700(+++), LX-0951(+), LX-0957(+), HG-0760(+), SD-0150T, ABF-0200E, NH-1027HF, NH-1027(+)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670F, BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	GC-1036, LS-1159SF, LS-1159F, NH-1036, GC-1036, ABF-1030NH, NH-1017SG(+)	V-0 or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E115797)

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Alt.	GRAND PACIFIC PETR°C HEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)
Alt.	KINGFA SCI & TECH CO LTD	5197	HB or Better Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011 C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-55111, HP-126	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	CK-61506 RS-900, RS-300, RS-400, RS-(hh)0	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	JH960 6(M), JH960 6(M) (ccc) (##), JH960-6(M) (ccc) (##), JH960 62(M4), JH960 62(M4) (ccc) (##), JH960-62(M4) (ccc) (##)	5VB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E230779)
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	V-0, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E103670)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441, 260-XX	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA1(e), GA35, NC30, GA65, GA85, GC(t) (t) – Replace the one, two, three or four numbers and/or letters to denote to serial number	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E359575)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	UNIC	UR-200+ (+: A to Z), UR-3006+(R35), UR-3006+(R90), UR-3006+(RXX) UP-700+	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E205938)
Alt.	CHI LIN TECHNOLOGY CO LTD	GA-1535 GA-1(aaa)	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E177071)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E234833)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E330547)

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Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(1302)(B), YOUHO(1303)(B), YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(####)(Y),YOUHO(1303)(OP), YOUHO13(##)(YY) YOUHO1312B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E471190)
Alt.	Chongqing Gengye New Materials Technology Co Ltd	GU-022	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E514505)
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150(+)	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 °C	UL 796	UL
Insulation Sheet (between power board and LCD panel, between power board and metal cover)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 oC	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770 series PC-770, PC-770 A, PC-870 A PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E254551)
Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E249605)

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Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1880 series	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1860B, KLX FRPC-83	Polycarbonate, thickness: 0,40 mm, V-0, 80 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1890 series	Polycarbonate, thickness: 0,4 mm min. V-0, 115 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 °C	ANSI/UL 94	UL (E315185)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E305163)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1370	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E357515)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 °C	ANSI/UL 94	UL (E508063)
Alt.	JIANGSU JIUTONG PHOTOELECTRIC MATERIAL CO., LTD	JTZ42B	Polycarbonate, thickness: 0,4 mm min. V-0, 80 °C	ANSI/UL 94	UL (E509998)
LCD Panel	TPV	TPM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	27” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Adhesive for mylar sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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6 de junho de 2024
June 6, 2024

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June 5, 2027

Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
For power board model No. 715G7610:	--	--	--	--	--
AC-Inlet (CN9901)	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028645) UL (E327347)
Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)
Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	EU / UL certification mark

Fuse (F9901)	Cooper Bussmann LLC	SR-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	392	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MST	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Fuse (F901)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	392	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)

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Alt.	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MST	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C9903, C9904) (optional)	TDK CORPORATION	CD	Max. 470pF, 250 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	TDK CORPORATION	CS	Max. 470pF, 250/ 300 Vac, 125 °C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029781) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KH	Max. 470 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002796) UL (E37921)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 470 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AC	Max. 470pF, AC 250/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001829) UL (E146544)
Alt.	Walsin Technology Corp.	AH	Max. 470pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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6 de junho de 2024
June 6, 2024

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Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Alt.	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 470pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40036246) UL (E154899)
Alt.	JYA-NAY CO LTD	JY	Max. 470pF, AC 300 / 250 V, 125°C, Y2 type	UL1414	UL (E201384)
Alt.	JYA-NAY CO LTD	JN	Max. 470pF, AC 400 / 250 V, 125°C, Y1 type	UL1414	UL (E201384)
Alt.	Haohua Electronic Co.	CT7	Max. 470pF, AC250/275/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40013601) UL (E233106)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 470pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SE	Max. 470pF, AC 250/300 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (122995) UL (E114280)
Alt.	Success Electronics Co., Ltd.	SB	Max. 470pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 470pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 470pF, Min. 250Vac, Min. 125 °C, Y1/Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
Y-cap (C9902) (optional)	TDK CORPORATION	CD	Max. 2200pF, 250 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	TDK CORPORATION	CS	Max. 2200pF, 250/ 300 Vac, 125 °C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029781) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KH	Max. 2200 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002796) UL (E37921)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 2200 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AC	Max. 2200pF, AC 250/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001829) UL (E146544)

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Alt.	Walsin Technology Corp.	AH	Max. 2200pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 2200pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40036246) UL (E154899)
Alt.	JYA-NAY CO LTD	JY	Max. 2200pF, AC 300 / 250 V, 125°C, Y2 type	UL1414	UL (E201384)
Alt.	JYA-NAY CO LTD	JN	Max. 2200pF, AC 400 / 250 V, 125°C, Y1 type	UL1414	UL (E201384)
Alt.	Haohua Electronic Co.	CT7	Max. 2200pF, AC250/275/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40013601) UL (E233106)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 2200pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SE	Max. 2200pF, AC 250/300 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (122995) UL (E114280)
Alt.	Success Electronics Co., Ltd.	SB	Max. 2200pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 2200pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 2200pF, Min. 250Vac, Min. 125 °C, Y1/Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
X- Cap. (C9901) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,33 µF, AC 250/275/280 /300/305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018238) UL (E211347)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,33 µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40000358) UL (E186600)

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Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,33 µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS Industry Co Ltd	GS-L	Max. 0,33 µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,33 µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,33 µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,33 µF, AC 250/280/ 305V, Min. 110°C X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018690) UL (E252286)
Alt.	Interchangeable	Interchangeable	Max. 0,33 µF, Min. 250Vac Min. 105°C, X1 or X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL / EU certification mark
Optocoupler (U902)	Lite-on	LTV-817	Ext. cr ≥7,0 mm, Dti ≥ 0,4 mm, 105°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40015248) UL (E113898)
Alt.	Sharp	PC123	Ext. cr ≥6,4 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008087) UL (E64380)
Alt.	VISHAY Semiconductor GmbH	TCET1103-3034	Ext. cr ≥ 8,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015	VDE (40028080)
Alt.	Everlight Electronics Co., Ltd.	EL817M, EL817	Ext. cr ≥ 7,6 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (132249) UL (E214129)
Alt.	TOSHIBA CORP	TLP781, TLP781F	Ext. cr ≥ 6,5 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40021173) UL (E67349)
Alt.	TOSHIBA CORP	TLP421F, TLP421	Min. Ext. cr ≥ 7,0 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40010944) UL (E67349)
Alt.	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Min. Ext. cr ≥ 8,1 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028391) UL (E214129)

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Alt.	RENESAS	PS2561DL1-1, PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Min. Ext. cr ≥ 7,1 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008862) UL (E72422)
Alt.	Interchangeable	Interchangeable	Min. Ext. cr ≥ 6,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	UL / EU certification mark
Line Choke (L9902) (Optional)	HA	373G0174563H	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	LZ	373G0174563Z	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	ASET	373G0174563X	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	LFDJ	373G0174563J	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Transformer (T901)	PHOENIX	380GL32P547P 00	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	PHOENIX	BCK-30-L01004	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	LFDJ	380GL32P547J 00	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	LFDJ	PH01016700	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
- Bobbin	SUMITOMO Bakelite Co Ltd	PM-9820	V-0, 150 °C	UL 94	UL (E41429)
- Magnet Winding	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B)	130 °C	ANSI/UL 1446	UL (E245514)
- Alt.	SHANGHAI ASIA PACIFIC Electric Co Ltd	UEW, UEW-U	130 °C	ANSI/UL 1446	UL (E214423)
- Alt.	SHANDONG SAINT Electric Co Ltd	*UEW/130, QA-*/130, *UEW/130 Litz, QA-*/130 Litz, MW75-C	130 °C	ANSI/UL 1446	UL (E194410)
- Alt.	GUANGZHOU WANBAO ENAMELLED WIRE CO LTD	xUEW-130, QA-x/130	130 °C	ANSI/UL 1446	UL (E167402)
- Triple insulation wire	KBI COSMOLINK CO., LTD.	TIW-M	Reinforced insulation, 130°C	ANSI/UL 2353 IEC 62368-1: 2014	VDE (138053) UL (E213764)
- Alt.	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	ANSI/UL 2353 IEC 62368-1: 2018 EN IEC 62368-1:2020+A11:2020 EN IEC 62368-1:2020	VDE (40033527) UL (E332529)
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g), PF*(d)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING Industrial Co Ltd	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)

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Bleeding resistors (R9901, R9902, R9903)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 750K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 336992 and CB certificate No. NO99692)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 750K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 386200 and CB certificate No. NO99693)
Alt.	Yageo Corporation	RV1206 series	Max. 750K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by UL (CB report No. E491387-4787887815-1 and CB certificate No. DK-64853-UL)
Alt.	Charter Resistors (Yiyang) Company Ltd.	1210J, 1210F, 2512J, 2512F	Max. 750K ohm, 1/4 W	IEC 62368-1:2014	CB issued by UL (CB report No. ESTS-P19122518 and CB certificate No. DK-93814-UL)
Alt.	Tzai Yuan Enterprise Co., Ltd.	HSMD0805*****, HSMD1206*****, HSMD1210*****, HSMD2010***** and HSMD2512***** series SMD0805*****, SMD1206*****, SMD1210*****, SMD2010***** and SMD2512***** series	Max. 750K ohm, 1/4 W	IEC 62368-1:2018	CB issued by UL (CB report No. OFF-12CA24616-A-1, OFF-12CA24616-A-1 am1 and E354677-12CA24616-A-1. CB certificate No. DK-29431-UL, DK-29431-A1-UL and DK-29431-A1-M1-UL)
Alt.	Interchangeable	Interchangeable	Max. 750K ohm, 1/4 W	IEC/EN 62368-1	CB report & certification issued by NCB

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix Z (Modelo/Model: 24G4, 24G4/P, **24G4******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
AC Input: 100V-240v~, 50Hz/60Hz, 1.5A; Class I; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2), am1, am2, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 ºC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 ºC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 ºC	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 ºC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, Min. 60 ºC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 ºC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 ºC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, Min. 60 ºC	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6mm, 60 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6mm, 50 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5mm, 130 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0mm, Min. 60 ºC	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 ºC	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 ºC	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	V-2 or Better, Min. thickness: 0,75 mm, 60 ºC	ANSI/UL 94	UL (E207780)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
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June 6, 2024

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Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##),	HB or Better, Min. thickness: 1,0 mm, 50 ºC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60 ºC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee)	HB or Better, Min. thickness: 1,3 mm, 50 ºC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60 ºC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60 ºC	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX) (a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50 ºC	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60 ºC	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50 ºC	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG(+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50 ºC	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E330547)

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Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better, Min. thickness: 1,6 mm, 60 ºC	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO13(##)(YY)	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO.,LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO., LTD	Ecorex® RN - +(R #)	HB or Better, Min. thickness: 0,8 mm, 60 ºC	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#)	HB or Better, Min. thickness: 0,45 mm, 80 ºC	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60 ºC	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125 ºC	ANSI/UL 94	UL (E238753)
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1	Tested with appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150	HB or Better, thickness: 1,0 mm, 60 ºC	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better, thickness: 1,0 mm, 60 ºC	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 ºC	UL 796	UL
Mylar Sheet	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 ºC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 ºC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 ºC	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770, PC-770 A, PC-870 A, PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 ºC	ANSI/UL 94	UL (E254551)

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Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98	Polycarbonate, min. thickness: 0,4mm, V-0, 80 ºC	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 ºC	ANSI/UL 94	UL (E249605)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 ºC	ANSI/UL 94	UL (E305163)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 ºC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1365, TS-FR1363, TS-FR1360, TS-FR1362, TS-FR160Y, TS-FR1370F, TS-FR1370, TS-FR1383, TS-FR1370-32, TS-FR1383-13	Polycarbonate, thickness: 0,40 mm min. V-0, 125 ºC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 ºC	ANSI/UL 94	UL (E357515)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-870BF, KLX FRPC-870BH, KLX FRPC-870BFH, KLX FRPC-83B, KLX FRPC-83, KLX FRPC-F70, KLX FRPC-700B, KLX FRPC-700BF, KLX FRPC-60, KLX FRPC-60H, KLX FRPC-63, KLX FRPC-63H, KLX FRPC-65, KLX FRPC-65H, KLX FRPC-1870B	Polycarbonate, thickness: 0,4 mm min. V-0, 80 ºC	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860, KLX FRPC-1860B, KLX FRPC-1860-83, KLX FRPC-1860-83B, KLX FRPC-1860-1, KLX FRPC-1860-NTC, KLX FRPC-1860B-NTC, KLX FRPC-1860B-3, KLX FRPC-1870B-K, KLX FRPC-1860B-HY, KLX FRPC-1860-HY, KLX FRPC-1860B-K, KLX FRPC-1860-K, KLX FRPC-1860W	Polycarbonate, thickness: 0,4 mm min. V-0, 80 ºC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1880, KLX FRPC-1880B, KLX FRPC-1880-83, KLX FRPC-1880-83B, KLX FRPC-1880-1, KLX FRPC-1880B-1, KLX FRPC-1880-2, KLX FRPC-1880B-2, KLX FRPC-1880-3, KLX FRPC-1880B-3, KLX FRPC-1880-NTC, KLX FRPC-1880B-NTC, KLX FRPC-1880B-HY, KLX FRPC-1880-HY, KLX FRPC-1880B-K, KLX FRPC-1880-K, KLX FRPC-1860-YM, KLX FRPC-1860B-YM, KLX FRPC-1880-YM, KLX FRPC-1880B-YM, KLX FRPC-1880W, KLX FRPC-1880W-1, KLX FRPC-1860B-KS, KLX FRPC-1860-KS, KLX FRPC-1880-KS, KLX FRPC-1880B-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 125 ºC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 ºC	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1890B,KLX FRPC-1890, KLX FRPC-1890-83, KLX FRPC-1890-83B, KLX FRPC-1890-1, KLX FRPC-1890B-1, KLX FRPC-1890-2, KLX FRPC-1890B-2,KLX FRPC-1890B-2, KLX FRPC-1890-3, KLX FRPC-1890B-3, KLX FRPC-1890-NTC, KLX FRPC-1890B-NTC, KLX FRPC-1890B-HY, KLX FRPC-1890-HY, KLX FRPC-1890B-K, KLX FRPC-1890-K, KLX FRPC-1890-YM, KLX FRPC-1890B-YM KLX FRPC-1890W, KLX FRPC-1890W-1, KLX FRPC-1890B-KS, KLX FRPC-1890-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 115 ºC	ANSI/UL 94	UL (E315185)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 ºC	ANSI/UL 94	UL (E508063)
LCD Panel	TPV	TPM238********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8” with LED backlight	IEC 60950-1	Tested with appliance
Adhesive for mylar insulation sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Switching mode power supply board: 715GD461					

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AC-Inlet	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028645) UL (E327347)

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Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)
Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	EU / UL certification mark
Fuse (F901)	Littelfuse Inc.	392	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Littelfuse Inc.	382	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018249) UL (E67006)
Alt.	Cooper Bussmann LLC	SR-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Cooper Bussmann LLC	SS-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MST	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)

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Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	Suzhou Walter Electronic Co. Ltd.	2000	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018790) UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C902. C903) (optional)	TDK CORPORATION	CD	Max. 680 pF, 250 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	TDK CORPORATION	CS	Max. 680 pF, 250/ 300 Vac, 125 °C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029781) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KH	Max. 680 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002796) UL (E37921)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 680 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)

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Alt.	Walsin Technology Corp.	AC	Max. 680 pF, AC 250/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001829) UL (E146544)
Alt.	Walsin Technology Corp.	AH	Max. 680 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL (E146544)
Alt.	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 680 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40036246) UL (E154899)
Alt.	JYA-NAY CO LTD	JY	Max. 680 pF, AC 300 / 250 V, 125°C, Y2 type	UL1414	UL (E201384)
Alt.	JYA-NAY CO LTD	JN	Max. 680 pF, AC 400 / 250 V, 125°C, Y1 type	UL1414	UL (E201384)
Alt.	Haohua Electronic Co.	CT7	Max. 680 pF, AC250/275/300V,125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40013601) UL (E233106)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 680 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SE	Max. 680 pF, AC 250/300 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (122995) UL (E114280)
Alt.	Success Electronics Co., Ltd.	SB	Max. 680 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 680 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 680 pF, Min. 250Vac, 125 °C Y1/Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark

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Y-cap (C913) (optional)	TDK CORPORATION	CD	Max. 1000 pF, 250/ 400 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 1000 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AH	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	JYA-NAY CO LTD	JN	Max. 1000 pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	UL (E201384)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SB	Max. 1000 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 1000 pF, Min. 250Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	EU / UL certification mark
X-Cap. (C901) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,33 µF, AC 250/275/280 /300/305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018238) UL (E211347)

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Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,33 µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40000358) UL (E186600)
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,33 µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS Industry Co Ltd	GS-L	Max. 0,33 µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,33 µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,33 µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,33 µF, AC 250/280/ 305V, Min. 110°C X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018690) UL (E252286)
Alt.	Interchangeable	Interchangeable	Max. 0,33 µF, Min. 250Vac Min. 105°C, X1 or X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL / EU certification mark
Bleeding resistors (R907, R908, R909; R924, R925, R926)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	1,3MΩ, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99693
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	1,3MΩ, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99692
Alt	YAGEO	RV0603, RV0805, RV1206	1,3MΩ, 1/4 W	IEC 62368-1: 2014	CB of UL Cert. No. DK-64853-UL
Alt	TZAIYUAN	HSMD********* SMD*********	1,3MΩ, 1/4 W	IEC 62368-1: 2010	CB of UL Cert. No. DK-29431-A1-UL

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Alt.	Tzai Yuan Enterprise Co., Ltd.	MGUL1/4Wseries	1,3MΩ, 1/4 W	IEC 62368-1: 2014	CB issued by UL (CB cert No. DK-69874-UL)
Alt.	Interchangeable	Interchangeable	1,3MΩ, 1/4 W	IEC/EN 62368-1	CB report and certificates issued by National certification body
Line Choke (L901) (Optional)	HA	373G0174602H	105 °C	IEC 60950-1	Tested with appliance
Alt.	TC	373G0174602S	105 °C	IEC 60950-1	Tested with appliance
Alt	LFDJ	373G0174602J	105 °C	IEC 60950-1	Tested with appliance
Transformer (T901)	HA	380GL32P618H	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
Alt.	HA	BCK-11641-HA	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
Alt.	PHOENIX	380GL32P618P	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
Alt.	PHOENIX	PH01087700	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
Alt.	ASET	380GL32P618X	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
Alt.	ASET	31010389	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
- Bobbin	SUMITOMO Bakelite Co Ltd	PM-9750	V-0, 150 °C	UL 94	UL (E41429)
- Alt.	CHANG CHUN Plastics Co Ltd	T200HF, T200NA	V-0, 150 °C	UL 94	UL (E59481)
- Winding	Interchangeable	Interchangeable	130 °C	ANSI/UL 1446	UL
- Triple insulation wire	KBI COSMOLINK CO., LTD.	TIW-M(XX) (UL) TIW-M (VDE)	Reinforced insulation, 130°C	ANSI/UL 2353 EN 62368-1:2014/A11:2017	VDE (138053) UL (E213764)
- Alt.	SUZHOU YUSHENG ELECTRONIC CO LTD (UL) Suzhou Yusheng Electronic Co., Ltd. (VDE)	TIW-B* (UL); TIW-B (VDE)	Reinforced insulation, 130°C	ANSI/UL 2353 EN IEC 62368-1:2020+A11:2020	UL (E332529) VDE (40033527)
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING Industrial Co Ltd	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix AB (Modelo/Model: 24E3UM, 24E3UF, 24E3QF, 24E3********, Q24E3**********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
I/P: 100-240V~, 50/60Hz, 1.5A

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018, CISPR 32:2015/AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019/A1:2021, EN 61000-3-3:2013/A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014/AMD1:2017, IEC 61000-4-6:2023, IEC 61000-4-8:2009, IEC 61000-4-11:2020/COR2:2022

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight	TPV	TPM238*** (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.98W; LED Array Voltage: 31.9V	--	Tested in equipment
Alt.)	LG Display	LM238*** (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 17.76W; LED Array Voltage: 58.9V	--	Tested in equipment
Alt.)	L&T	LM238*** (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.1W; LED Array Voltage: 38.8V	--	Tested in equipment
Alt.)	BOE	MV238***.*** (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.04W; LED Array Voltage: 46.4V	--	Tested in equipment
Alt.)	AUO	M238H****.* (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.17W; LED Array Voltage: 44.86V	--	Tested in equipment
Alt.)	INNOLUX	M238***-*** (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.19W; LED Array Voltage: 32V	--	Tested in equipment
Plastic Enclosure	CHI MEI	PC-540(Y)(a), PA-765A, PA-756S, PA-757(+), PC-110(+), PC-345(+), PA-765A(+), PC-540H	HB or better, min. 1.6mm thickness	UL 94	UL (E56070)
Alt.)	ORINKO	HIPS-2230(N), ABS-3070(T), HIPS-2000, ABS-340(X), ABS900F23, ABS-3070H	HB or better, min. 1.6mm thickness	UL 94	UL (E328304)
Alt.)	LOTTE CHEMICAL CORPORATION	VH-0810(+), VE-1890(+), EN-1052(+), VH-0815(+), VH-0819(+), HM-1100(+), VE-0819F, NH-1017(p), NH-1017SG(+), VE-0812(+), NH-1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, GC-1017, SD-0150(+), BF-0677(+), BF-0675(+), BF-0670(+), GC-0700(+++), LX-0951(+), LX-0957(+), HG-0760(+), NH-1027HF, NH-1027(+), SD-0150T, GC- 1036(RR35), SC-1220R, ABF-0200E, ABF-1030NH	HB or better, min. 1.6mm thickness	UL 94	UL (E115797)

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Alt.)	Grand	D-150	HB or better, min. 1.6mm thickness	UL 94	UL (E88637)
Alt.)	Covestro Deutschland AG [PC Resins]	GF9011 MF + (z), FR3005 + BBS310, FR3005 HF + BBS910, FR3005 HF +, FR3005 HF + BBS314	HB or better, min. 1.6mm thickness	UL 94	UL (E41613)
Alt.)	TEIJIN	MN-3600H(#)	HB or better, min. 1.6mm thickness	UL 94	UL (E244324)
Alt.)	SAMYANG	TRILOY:210NH F(@), 210NHF	HB or better, min. 1.6mm thickness	UL 94	UL (E121254)
Alt.)	LG CHEM LTD	LUPOY GN- 5001TF(#), LUPOY GN- 5001RF(T), LUPOY GN- 5008HF(#), LUPOY GN-2101F(m)(f1), XG568(#), XG569(#), GP-1000(m)(#), SE885(#), AF365(&), AF368(#), AF358, HF350, SE750(#), GP-1000L, LUPOY GN5001RF(T), AF303S, AF312T, AF312T	HB or better, min. 1.6mm thickness	UL 94	UL (E67171)
Alt.)	KingFa	HF-606, HF-626, FRABS-518, JH960 6(M) (ccc) (##), FRHIPS-960, CK-572(M1) (##), FRABS-518C, 5197, RS-(hh)0, GAR-011C, CK-100, CK-55(M) (##), HP-126, CK-61(M) (##), HIPS-510 (o), HIPS-550, GAR-011(ll), ABS-660, ABS-122, H12, GAR-322, GAR-220, GAR-011, GAR-011(ww)	HB or better, min. 1.6mm thickness	UL 94	UL (E171666)
Alt.)	SABIC	C6600, C6600(GG)(X) (VS), CM4219 (gg*), CY5100 (GG), CY5005 (gg*)	HB or better, min. 1.6mm thickness	UL 94	UL (E207780)
Alt.)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, HRABS-RS HRABS-HG	HB or better, min. 1.6mm thickness	UL 94	UL (E230779)
Alt.)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	HB or better, min. 1.6mm thickness	UL 94	UL (E103670)
Alt.)	INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED	3441, 260-XX	HB or better, min. 1.6mm thickness	UL 94	UL (E314268)
Alt.)	WISTRON	GA(M)(b)(c), NC(N)(a), GA85, GA65, GA35, GC(t), GA1(e)	HB or better, min. 1.6mm thickness	UL 94	UL (E359575)
Alt.)	HINGLONG	HL-ABS- PCR35/65/85	HB or better, min. 1.6mm thickness	UL 94	UL (E345434)
Alt.)	WOTE	2100	HB or better, min. 1.6mm thickness	UL 94	UL (E310240)
Alt.)	GUO HENG	YOUHO(####)(Y), YOUHO13(##)(YY), YOUHE26(##)	HB or better, min. 1.6mm thickness	UL 94	UL (E471190)
Alt.)	UNIC	UR- 3006+(RXX), UR-200+, UR-7085+(R90), UP-700+	HB or better, min. 1.6mm thickness	UL 94	UL (E135175)
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 1.6mm thickness	UL 94	UL (E205938)
Alt.)	CHI LIN	GA-1(aaa)	HB or better, min. 1.6mm thickness	UL 94	UL (E177071)
Alt.)	FUHENG	HIPS-568, FH-101, FH-102	HB or better, min. 1.6mm thickness	UL 94	UL (E234833)
Alt.)	QING DAO GON TECHNOLOGY CO.,LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or better, min. 1.6mm thickness	UL 94	UL (E330547)
Alt.)	FORMOSA CHEMICALS &	AC2820-A	HB or better, min. 1.6mm thickness	UL 94	UL (E162823)

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	FIBRE CORP PLASTICS DIV				
Alt.)	Chongqing Gengye New Materials Technology Co Ltd	GU-022	HB or better, min. 1.6mm thickness	UL 94	UL (E514505)
Alt.)	FORMOSA IDEMITSU PETROCHEMICAL CORP	#1900+(f2)	HB or better, min. 1.6mm thickness	UL 94	UL (E238753)
Alt.)	LOTTE ADVANCED MATERIALS CO LTD	HN-1074(+), NE-1030(+)	V-0, min. 1.6mm thickness	UL 94	UL (E115797)
Alt.)	LG CHEM LTD	AF312, AF312K, AF312A, AF312AR, LUPOY GN5001RF(T), LUPOY GN- 5001RF(T), LUPOY GN- 5008HF(#)	V-0, min. 1.6mm thickness	UL 94	UL (E67171)
Alt.)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), MN-3600H(#), MN-3600V(#)	V-0, min. 1.6mm thickness	UL 94	UL (E98529)
Alt.)	GUO HENG(DONGGUAN)PLASTIC TECHNOLOGY CO LTD	YOUHE26(##)	V-0, min. 1.6mm thickness	UL 94	UL (E471190)
Alt.)	SAMYANG	210NHF(@)	V-0, min. 1.6mm thickness	UL 94	UL (E121254)
Mylar sheet	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E249605)
Alt.)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770, PC-770 A, PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E254551)
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117ECOC, DFR117ECOB	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E199019)
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	min. 0.4mm thickness, min. V-0 or better, 100°C	UL 94	UL (E199019)
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	min. 0.4mm thickness, min. V-0 or better, 110°C	UL 94	UL (E199019)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC- 1860B, KLX FRPC- 1870B, KLX FRPC- 870B, KLX FRPC-83	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E315185)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10, KLX PP BK-10- KS	min. 0.4mm thickness, min. V-0 or better, 110°C	UL 94	UL (E315185)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1880B series	min. 0.4mm thickness, min. V-0 or better, 125°C	UL 94	UL (E315185)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1890B series	min. 0.4mm thickness, min. V-0 or better, 115°C	UL 94	UL (E315185)
Alt.)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE11(#), HE32(#), HE70(x)(#), HE70, HE42, HF11, HF42, HF41	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E305163)
Alt.)	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	PC9842B, PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1, DB98HD, DB98	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E339070)

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Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F, TS-FR383H, TS-FR360H	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E329660)
Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1370	min. 0.4mm thickness, min. V-0 or better, 125°C	UL 94	UL (E329660)
Alt.)	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	min. 0.4mm thickness, min. V-0 or better, 125°C	UL 94	UL (E357515)
Adhesive for mylar sheet	SYMBIO	DS50-A, DS50L	100°C, 0.05mm Thickness	--	Tested with appliance
Alt.)	3M	55236, 9448A	100°C, 0.05mm Thickness	--	Tested with appliance
Alt.)	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10	100°C, 0.05mm Thickness	--	Tested with appliance
Tube used to wrap metal chassis pillar	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750Aseries, HD-87	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E231325 and tested with appliance
Alt.)	Dow Toray Co., Ltd	RBB-6300-50	V-0, 150°C, min. thickness 0.75mm	UL 94, UL746	UL E55519 and tested with appliance
Switching mode power supply board: 715GD270 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	ENEC16/FI/2 0/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320- 1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320- 1	SE-ENEC- 2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320- 1	UL E220004
Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60321-1, ANSI/UL60320- 1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320- 1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	ENEC, UL, TUV mark
Fuse (F901 on primary)	Littelfuse Inc.	382	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1,	TUV R 50310551 0001-0004, UL E10480

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				ANSI/UL 248-14	
Alt.)	Conquer	MET	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50371756 0001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T4AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T4AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092
Alt.)	Walter	ICP-Series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T4AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754

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Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT9700014 1, UL E97797
Alt.)	TDK	B3292	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jianghao	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder resistor (R907, R908, R909)	Tzai Yuan Enterprise Co., Ltd.	HSMD series, SMD series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E354677-4789012814-1 Original)
Alt.)	Yageo Corporation	RV1206 series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E491387-4787887815-1 Original)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO99692)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO109707)
Alt.)	Interchangeable	Interchangeable	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB

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Line Choke (L901) (Optional)	CHANNELON	373G0174602H	105°C	--	--
Alt.)	LIANFENG	373G0174602J	105°C	--	--
Alt.)	Taichang	373G0174602S	105°C	--	--
Transformer (T901)	LIANFENG	380GL32P783J	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	SUMITOMO	PM-9750	Phenolic, V-0, 150°C	UL 94	UL (E41429)
Alt.)	CHANG CHUN PLASTICS CO. LTD	T200HF	Phenolic, V-0, 150°C	UL 94	UL (E59481)
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
-Insulation Tape	JINGJIANG YAHUA	CT*(c)(g)	130°C	UL 510	UL (E165111)
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Transformer (T901) Alt.)	PHOENIX	380GL32P783P	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	SUMITOMO	PM-9750, PM-9823	Phenolic, V-0, 150°C	UL 94	UL (E41429)
-Triple insulation wire	YUSHENG	TIW-B	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E332529), VDE (40033527)
-Insulation Tape	JINGJIANG YAHUA	CT*(c)(g)	130°C	UL 510	UL (E165111)
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Transformer (T901) Alt.)	CHANNELON	380GL32P783H	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	CHANG CHUN PLASTICS CO. LTD	T200HF	Phenolic, V-0, 150°C	UL 94	UL (E59481)
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
-Insulation Tape	JINGJIANG YAHUA	CT*(c)(g)	130°C	UL 510	UL (E165111)
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Switching mode power supply board: 715GD270 Type B by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	ENEC16/FI/2 0/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VD 400105913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	SE-ENEC-2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320- 1	UL E220004

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Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320- 1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	ENEC, UL, TUV mark
Fuse (F901)	Littelfuse Inc.	382	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50371756 0001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T3.15AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092
Alt.)	Walter	ICP-Series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003

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Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.47 µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47 µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47 µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797
Alt.)	TDK	B3292	Max. 0.47 µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863

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Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47μF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jinghao	CBB62B	Max. 0.47μF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47 μF, 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder resistor (R907, R908, R909)	Tzai Yuan Enterprise Co., Ltd.	HSMD series, SMD series	Each 620KΩ Min. 1/4W	IEC 62368-1	UL CB (Report No. E354677-4789012814-1 Original)
Alt.)	Yageo Corporation	RV1206 series	Each 620KΩ Min. 1/4W	IEC 62368-1	UL CB (Report No. E491387-4787887815-1 Original)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO99692)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO109707)
Alt.)	Interchangeable	Interchangeable	Each 620KΩ Min. 1/4W	IEC 62368-1	CB
Line Choke (L901) (Optional)	CHANNELON	373G0174600H	105°C	--	--
Alt.)	LIANFENG	373G0174600J	105°C	--	--
Alt.)	Taichang	373G0174600S	105°C	--	--
Transformer (T901)	JIANGSU CHANNELON ELECTRONIC GROUP CO.,LTD.	380GL32P789H / CLT-116005	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	V-0, Phenolic, 150°C	UL 94	UL E59481
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M(XX) (UL) TIW-M (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	No.CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	HAINING LIANFENG DONGJIN ELECTRONICS CO.,LTD	380GL32P789J / BCK-30-L01702	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	V-0, Phenolic, 150°C	UL 94	UL E59481
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	No.CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TEFLON TUBING TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	PHOENIX	380GL32P789P / PH01087700-2	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9750, PM-9823	V-0, Phenolic, 150°C	UL 94	UL E41429
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (UL) TIW-B (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E332529, VDE 40033527
- Insulation tape	YAHUA	No.CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TEFLON TUBING TFL	200°C	UL 224	UL E156256
Switching mode power supply board: 715GD270 Type C by TPV					
AC-Inlet (CN901)	Solteam Incorporation	ST-01 (For ENEC) ST-01A, ST-01C (For VDE) ST-01 Series (For UL)	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)

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Alt.)	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE) SA-4S 7, SA-4S 9 (For TUV) SA-4S 6, SA-4S 12 (For UL)	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE (40003610) TUV (R50293856) UL (E154342)
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 28 SA-4S 29	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV (R50293856) UL (E154342)
Alt.)	Rong Feng Industrial Co., Ltd.	SS-7B, SS-120	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE (40028101) UL (E102641)
Alt.)	Rong Feng Industrial Co., Ltd.	SS-3B	10A/250Vac	ANSI/UL60320-1	UL (E102641)
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A/250Vac	ANSI/UL60320-1	UL (E94191)
Alt.)	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A/250Vac	ANSI/UL60320-1	UL (E220004)
Alt.)	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE (40010513) UL (E217394)
Alt.)	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3-1	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE (40015913) UL (E217394)
Alt.)	Kunshan DLK Electronics Technology Co., Ltd	CDJ-7, CDJ-7 1	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC (SE- ENEC-2001967) UL (E317189)
Alt.)	Kunshan DLK Electronics Technology Co., Ltd	DB-14 series	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE (40028645) UL (E327347)
Alt.)	Interchangeable	Interchangeable	10A, 250Vac, 15A, 250Vac,	IEC/EN 60320-1, ANSI/UL60320-1	VDE, UL
Fuse (F901)	Littelfuse Inc.	382	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50371756 0001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180

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Alt.)	Walter	2000	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E56092
Alt.)	Walter	2010 Serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E56092
Alt.)	Walter	1032ST	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092
Alt.)	Walter	ICP-Series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	XIAMEN WANMING ELECTRONICS CO LTD	CM series, SD series, CK series (for ENEC) CM, SD, CK (for UL)	Max. 1500pF, Min. 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC ENEC-02630, UL E221839
Alt.)	SICHUAN TERUIXIANG	TL series (for ENEC) TL (for UL)	Max. 1500pF, Min. 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC ENEC-02630, UL E221839
Alt.)	Sichuan Teruixiang	TRX series (for ENEC) TRX (for UL)	Max. 1500pF, Min. 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC ENEC-02084-M1 UL E315719
Alt.)	Shenzhen Teruixiang Electronic Co, Ltd. (VDE) Sichuan Teruixiang Technology International Co Ltd (UL)	TY-Series (VDE), TY (UL)	Max. 1500pF, Min. 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40031733, UL E315719
Alt.)	Interchangeable	Interchangeable	Max. 1500pF, Min. 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL

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X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47 µF, 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.47 µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47 µF, 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47 µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797
Alt.)	TDK	B3292	Max. 0.47 µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jinghao	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47 µF, 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder resistor (R907, R908, R909)	Tzai Yuan Enterprise Co., Ltd.	HSMD series, SMD series	Each 620KΩ Min. 1/4W	IEC 62368-1	UL CB (Report No. E354677-4789012814-1 Original)
Alt.)	Yageo Corporation	RV1206 series	Each 620KΩ Min. 1/4W	IEC 62368-1	UL CB (Report No. E491387-4787887815-1 Original)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO99692)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO109707)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06********* series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO127737)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06********* series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO127738)
Alt.)	Interchangeable	Interchangeable	Each 620KΩ Min. 1/4W	IEC 62368-1	CB
Line Choke (L901) (Optional)	JIANGSU CHANNELON	373G0174602H	130°C	--	--
Alt.)	HAINING LIANFENG DONGJIN ELECTRONICS CO.,LTD	373G0174602J	130°C	--	--
Alt.)	Taichang	373G0174602S	130°C	--	--
Transformer (T901)	JIANGSU CHANNELON ELECTRONIC GROUP CO.,LTD.	380GL88P084H / CLT-126057	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HA	V-0, 150°C, min. 0.45mm thickness	UL 94	UL E59481
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M(XX) (UL) TIW-M (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	LIANFENG DONGJIN	380GL88P084J / BCK-35-L026HC	Class (B)	--	Accepted by TÜV Rheinland

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- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	V-0, 150°C, min. 0.45mm thickness	UL 94	UL E59481
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M(XX) (UL) TIW-M (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TEFLON TUBING TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	PHOENIX	380GL88P084P / PH-001260003	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9750, PM-9823	V-0, 150°C, min. 0.45mm thickness	UL 94	UL E41429
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (UL) TIW-B (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E332529, VDE 40033527
- Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TEFLON TUBING TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	ASET	380GL88P084X / 3101282126	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HA	V-0, 150°C, min. 0.45mm thickness	UL 94	UL E59481
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M(XX) (UL) TIW-M (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL E156256
Switching mode power supply board: 715GE031 by TPV					
AC-Inlet (CN9001)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/ 10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC- 2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004
Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60321-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC, UL, TUV mark
Fuse (F9001 on primary)	Littelfuse Inc.	382	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1,	VDE 126983, UL E67006

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				ANSI/UL 248-14	
Alt.)	Littelfuse Inc.	443	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50371756 0001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T3.15AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092
Alt.)	Walter	ICP-Series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C9016, C9017) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006

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Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C9009) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C9014) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.22µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.22µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797
Alt.)	TDK	B3292	Max. 0.22µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jianghao	CBB62B	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Photo Coupler (U9002)	Sharp	PC123 (UL), PC123 Option Y (VDE)	Di more than 0.4mm, int = thermal cycling test, ext. more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40008087, UL E64380
Alt.)	Vishay Semiconductor	TCET1103-3034	Di more than 0.5mm, int = thermal cycling test, ext. cr more than 7.7mm, 4000Vac, 100°C.	EN 60747-5-5	VDE 40028080
Alt.)	Everlight Electronics Co., Ltd.	EL817	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 132249, UL E214129
Alt.)	Everlight Electronics Co., Ltd.	EL817M (VDE), EL817 (UL)	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5	VDE 132249, UL 214129

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Alt.)	TOSHIBA	TLP781F , TLP781	Di more than 0.5mm, int. cr =thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40021173, UL E67349
Alt.)	TOSHIBA	TLP421F	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5	VDE 40010944
Alt.)	RENESAS ELECTRONICS CORPORATION	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 5000Vac, 100°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40008862, UL E72422
Alt.)	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.1mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40028391, UL E214129
Alt.)	Lite-On	LTV-817	Di more than 0.6mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 4000Vac, 100°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40015248, UL E113898
Alt.)	Interchangeable	Interchangeable	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE, UL
Bleeder resistor (R9018, R9019, R9020)	Tzai Yuan Enterprise Co., Ltd.	HSMD series, SMD series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E354677-4789012814-1 Original)
Alt.)	Yageo Corporation	RV1206 series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E491387-4787887815-1 Original)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO99692)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO109707)
Alt.)	Interchangeable	Interchangeable	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB
Line Choke (L9002) (Optional)	CHANNELON	373G0174600H	105°C	--	--
Alt.)	LIANFENG	373G0174600J	105°C	--	--
Alt.)	Taichang	373G0174600S	105°C	--	--
Transformer (T9001)	JIANGSU CHANNELON ELECTRONIC GROUP CO.,LTD	380GL32P628H / BACK-11312-HA	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO. LTD	T200HF	Phenolic, V-0, 150°C	UL 94	UL (E59481)
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
- Insulation Tape	JINGJIANG YAHUA	NO.CT	130°C	UL 510	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Transformer (T9001) Alt.)	HAINING LIANFENG DONGJIN ELECTRONICS CO., LTD	380GL32P628J / BACK-30-L01312	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	Phenolic, V-0, 150°C	UL 94	UL (E59481)
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Transformer (T9001) Alt.)	Phoenix	380GL32P628P / PH01090100	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland

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- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	Phenolic, V-0, 150°C	UL 94	UL (E59481)
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Transformer (T9001) Alt.)	TAICHANG	380GL32P628S / BCK-EE13-06019	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO LTD	PM-9630	Phenolic, V-0, 150°C	UL 94	UL (E41429)
- Triple insulation wire	GREAT LEOFLON INDUSTRIAL CO., LTD	TRW(B)* (UL) TRW(B) VDE	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E211989), VDE (136581)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBING TFL	200°C	UL 224	UL (E156256)
Switching mode power supply board: 715G7300 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/ 10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC- 2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004
Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60321-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC, UL, TUV mark
Fuse (F901 on primary)	Littelfuse Inc.	382	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3,	VDE 40017157, UL E82636

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				ANSI/UL 248-1, ANSI/UL 248-14	
Alt.)	Conquer	MST	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50371756 0001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T3.15AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092
Alt.)	Walter	ICP-Series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038

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Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 2200pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.22µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.22µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797
Alt.)	TDK	B3292	Max. 0.22µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jianghao	CBB62B	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder resistor (R907, R908, R909)	Tzai Yuan Enterprise Co., Ltd.	HSMD series, SMD series	Each Max. 1MΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E354677-4789012814-1 Original)
Alt.)	Yageo Corporation	RV1206 series	Each Max. 1MΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E491387-4787887815-1 Original)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Each Max. 1MΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO99692)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Each Max. 1MΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO109707)
Alt.)	Interchangeable	Interchangeable	Each Max. 1MΩ, Min.1/4W	IEC 62368-1	CB
Photo Coupler (U902)	Sharp	PC123 (UL), PC123 Option Y (VDE)	Di more than 0.4mm, int = thermal cycling test, ext. more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40008087, UL E64380
Alt.)	Vishay Semiconductor	TCET1103-3034	Di more than 0.5mm, int = thermal cycling test, ext. cr more than 7.7mm, 4000Vac, 100°C.	EN 60747-5-5	VDE 40028080

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Alt.)	Everlight Electronics Co., Ltd.	EL817	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 132249, UL E214129
Alt.)	Everlight Electronics Co., Ltd.	EL817M (VDE), EL817 (UL)	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5	VDE 132249, UL 214129
Alt.)	TOSHIBA	TLP781F , TLP781	Di more than 0.5mm, int. cr =thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40021173, UL E67349
Alt.)	TOSHIBA	TLP421F	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5	VDE 40010944
Alt.)	RENESAS ELECTRONICS CORPORATION	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 5000Vac, 100°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40008862, UL E72422
Alt.)	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.1mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40028391, UL E214129
Alt.)	Lite-On	LTV-817	Di more than 0.6mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 4000Vac, 100°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40015248, UL E113898
Alt.)	Interchangeable	Interchangeable	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE, UL
Line Filter (L901 or L903)	CHANNELON	373G0174557H	105°C	--	--
Alt.)	LIANFENG DONGJJIN	373G0174557J	105°C	--	--
Transformer (T901)	Channelon	380GL19P535H / BCK-11628-HA	Class (B)	--	Accepted by TÜV Rheinland
- Bibbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150°C	UL 94	UL (E41429)
- Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
Alt.)	SYMBIO INC	No.35660Y	130°C	UL 510	UL (E50292)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBING TFL	200°C	UL 224	UL (E156256)
Transformer (T901) Alt.)	LIANFENG DONGJJIN	380GL19P535J / BCK-30-L0535H	Class (B)	--	Accepted by TÜV Rheinland
- Bibbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150°C	UL 94	UL (E41429)
- Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
Alt.)	SYMBIO INC	No.35660Y	130°C	UL 510	UL (E50292)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBING TFL	200°C	UL 224	UL (E156256)
Transformer (T901) Alt.)	PHOENIX	380GL19P535P / PH01014600	Class (B)	--	Accepted by TÜV Rheinland
- Bibbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150°C	UL 94	UL (E41429)
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E332529), VDE (40033527)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
Alt.)	SYMBIO INC	No.35660Y	130°C	UL 510	UL (E50292)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBING TFL	200°C	UL 224	UL (E156256)

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1996

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
X4 50463017

Blatt *Sheet*
0001

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue*
X.L.	02-Zhaoso-60356586 001	31.03.2020	*(day/mo/yr)*

Genehmigungsinhaber *License Holder*
TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Bildqualität
ISO 9241-307
TÜVRheinland
www.tuv.com
ID 1911221669

Geprüft nach *Tested acc. to*
ISO 9241-307:2008

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bildschirm LCD monitor (LED Backlight)

Bezeichnung (Type Designation)	: 27B2 ; 27B2******** ; 27P2 ; 27P2******** ; Q27P2 ; Q27P2******** ; U27P2 ; U27P2******** (AOC) * = 0-9, A-Z, a-z, *, -, /, \ oder (or) Leerzeichen (blank)	12
Nennspannung(Rated Voltage)	: 100-240VAC; 50/60Hz	
Nennstrom(Rated Current)	: 1.5A	
LCD-Display/LCD-Panel:	TPM270NF1 (TPV) 27 inch (68,6cm)	
Pixelfehlerklasse/Pixel Fault Class:	I	
Vorgesehener Sehabstand/Sehrichtung Design Viewing Distance/Direction	: 520mm, senk./perpendic.	
Sehrichtungsbereich/ Viewing Direction Range	: 66,8°	
Inhalt und Wahrnehmung Content and Perception	: Virtualitätsdarstellung : Artificial Information	
Farbgleichmäßigkeit/Chromaticity Uniformity - mittel/medium		

Fortsetzung Blatt (continued on page) 0002

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulations. The product
fulfills above-mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

Aegean Certification

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com
Fax: +49 221 806-3935 http://www.tuv.com/safety

Proposta de Preço PREW2-4 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1997

Anlage Fertigungsstättenliste
/Attachment List of Factories

X4 50463017 0001

1 TPV Display Technology (Wuhan)
Co., Ltd.
Unique No. 11, Zhuankou Development
District of Economic Technological
Development Zone
430056 Wuhan City
P.R. China

2 TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

3 TPV Display Technology (Beihai)
Co., Ltd.
China Electronic Beihai Industry
Park, Northeast of the Crossing
Between Taiwan Road and Jaim Road,
Beihai City
Guangxi, P.R. China

Dieser Anhang ersetzt den Vorgänger vom/
This annex replaces the previous annex dated

Datum / Date 31.03.2020

Zertifizierungsstelle
/ Certification Body

Aegean Li

Proposta de Preço HEMP 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1998

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*	Blatt *Sheet*
X4 50463017	0002

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue*
X.L.	02-Zhaoso-60356586 001	31.03.2020	*(dd/mm/yr)*

Genehmigungsinhaber *License Holder*
TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Bildqualität
ISO 9241-307

TÜVRheinland
ZERTIFIZIERT

Geprüft nach *Tested acc. to*
ISO 9241-307:2008

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bildschirm LCD monitor (LED Backlight)

Fortsetzung (continuation)

Bestandteile der Beleuchtung/Components of the illumination
max. Bildschirmbeleuchtungsstärke/
max. Screen illuminance : 200lx
Quelle mit großer, kleiner Öffnung
large, small aperture source : 200cd/m² & 2000cd/m²
Hinweis/Remark : Geprüft mit/Tested with
VESA 60Hz - 1920 X 1080, Arial Large Font 12t., 24bpp.

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements. The production is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
Tel +49 221 806-1371 e-mail cert-validity@de.tuv.com
Fax +49 221 806-3935 http://www.tuv.com/safety

Aegean Li

Proposta de Preço PREMIER FORM® INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1999

TÜV Rheinland (China) Ltd.
Member of TÜV Rheinland Group

TÜVRheinland®
Precisely Right.

TPV Electronics (Fujian) Co., Ltd.
Mr. Xinliang Wu RD-SE

Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Date : 31.03.2020
Our ref. : Zhaosc 02
Your ref.: X.L.

Ref : X4 ISO 9241-307 Zeichen

Type of Equipment : LCD monitor (LED Backlight)
Model Designation : See Certificate
Certificate No. : X4 50463017 0001
Report No. : 60356586 001

Dear Mr. Xinliang Wu,

The above specified technical equipment has been tested and found to be in accordance with the relevant requirements.

Enclosed you will find the certificate of approval.

If cancellation of the certificate is submitted by November 15 in a given year, no fee will be charged for the following year.

We appreciate your kind support and would like to offer our assistance and continuous services in the future.

Please contact our office for approval of your new products.

With kind regards,

Certification Body

Aegean Li

Enclosure

请否的环境设计满意服www.tuvdotcom.com查阅，或拨打我司客服热线800 999 3658 / 400 883 1300咨询

TÜV Rheinland (China) Ltd.
莱茵检测认证服务（中国）有限公司
No. 01(03)-08, Floor 7 and No. 01/03/08-08, Floor 11, AVIC Building, No. 10B, Central Road, East 3rd Ring Road, Chaoyang District, Beijing, P.R. China
北京市朝阳区东三环中路乙10号 艾维克大厦7层第01、03-08号，第11层第01、03/08号 邮编：100022
Tel: (86) 10 8524 2222
Fax: (86) 10 8524 2200
e-mail: info@bj.chn.tuv.com
Internet: http://www.chn.tuv.com

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2000

CERTIFICATE

TCO Certified, generation 9

for displays



Brand name: AOC
Model name: 27*2*

Certification date: 2021-12-01
Expiry date: 2023-12-01

Toward sustainable IT products
TCO Certified is the world-leading sustainability certification for IT products. It is an easy-to-use tool that helps you get environmental and social sustainability right. Criteria are mandatory, tough, and apply globally. Compliance is always independently verified.

For more information, visit tcocertified.com.

Emma Hagrot
Certification process
TCO Development

No. D921110104

This certificate confirms that a sample of the certified product, as stated herein, has been tested and approved as to its compliance with the criteria document valid at the time of the laboratory test. The certified product may, subject to the use of the unique combination of brand name, type/model name and sales name as stated in this certificate, be marked and sold with the TCO Certified label in accordance with the agreement.

Appendix to certificate No. D921110104 -1

Brand name: AOC

Model name(s):
27*2*

1st * : P or E
2nd *: E, D, Q, H or blank
Separate power supply: No



85%
Recycled plastic



5.2 kg
Total weight of product



Energy consumption
On mode: 13.6 Watt
Sleep mode: 0.3 Watt
Off mode: 0.2 Watt



Aspect ratio: 16:9
Panel size: 27 in
Min. resolution width: 1920 px
Min. resolution height: 1080 px
Type of stand: Pivot

Sales name(s):
27E2QAE, 27P2C, 27P2Q

Additional information:
For products delivered without stand; the emission criteria 4.2 and 4.3 is not covered.

Emma Hagrot
Certification process
TCO Development

Appendix to certificate No. D921110104 -1



Panels:
TPV TPM270WF1



Emma Hagrot
Certification process
TCO Development

Declaration of Conformity

We declare that products with CTNs listed in following page produced by TPV and its affiliates comply with European RoHS 2 DIRECTIVE 2011/65/EU (on the restriction of the use of certain hazardous substances in electrical and electronic equipment) with COMMISSION DELEGATED DIRECTIVE (EU) 2015/863 of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances and all its related exemptions; and Regulation (EC) No. 1907/2006 of the European Parliament and of the Council (concerning the Registratin, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, and all related regulations and annexes.

Exemption of RoHS directive used in the product: 6(c); 7(a); 7(c)-I
Covered entry no. for Resitrcted Substances of REACH: 76
Covered candidate list for Substances of Very High Concern (SVHC) of REACH: 2023.1.17

Product type: LCD Display, LCD Monitor, LCD TV, LED Display, LED TV
Brand name: PHILIPS & AOC

Best Regards.



Date: May-18’2023

PHILIPS

Monitor

27B1U5601H

27″



Especificações gerais

Tela	27" Widescreen IPS
Resolução	2560 x 1440
Brilho	350 cd/m²
Contraste dinâmico	50.000.000:1
Contraste estático	1.000:1
Ângulo de visão	H: 178° | V: 178°
Taxa de atualização	75 Hz
Tempo de resposta	4 ms
Tecnologia de sincronização	Adaptive-Sync
Alto-falantes	Sim (2 x 5W)

Especificações da tela

Tamanho do painel	27"
Tamanho da imagem visível (diagonal)	68,5 cm
Tipo de painel	IPS
Proporção de tela	16:9
Formato de tela	Widescreen
Iluminação do painel	W-LED
Resolução máxima	2560 x 1440 @ 75 Hz DP1.2: 2560 x 1440@155Hz
Pixel pitch	0,2331 (H) x 0,2331 (V) mm
Densidade de pixel	108,7 ppi
Tipo de tela	Antirreflexivo
Bit	8 bits
Brilho	350 cd/m²
sRGB	101%
Relação de contraste dinâmico	50.000.000:1
Relação de contraste estático	1.000:1
Taxa de atualização	75 Hz
Tempo de resposta	4 ms
Ângulo de visão	H: 178° | V: 178°
Frequência de varredura horizontal	30 – 114 kHz
Frequência de varredura vertical	48 – 75 Hz
Suporte de cores	Maior que 16,7 milhões

Ergonomia

VESA	Sim - 100 x 100 mm
Base ajustável	Altura: 150mm Giro: -180°/180° Inclinação: -5°/+30° Pivô: -90° ~ 90° (bidirecional)

Certificações

Normas e Certificações	EnergyStar, EPEAT, Certificação TCO Edge, ROHS, Plástico reciclado pós-consumo: 85%, Embalagem em material reciclável: 100 %, Sem mercúrio, Estrutura sem PVC/BFR,CB, Marcação CE, FCC Classe B, ICES-003, CU-EAC, TUV Ergo, TUV/GS, Certificação TUV Eye Comfort, Anti-Roubo Kensington, HDCP 2.2, HBR 3

Conexões e Recursos

Conectores	1x HDMI 1.4 (HDCP 2.2) 1x DisplayPort 1.4 (HDCP 2.2) 1x Saída DisplayPort 1x USB-C 3.2 Gen 2 (10 Gbps, Upstream, DP Alt mode, Data, PD até 100 W) 4x USB-A downstream 3.2 Gen 2 (1x Fast Charging) 1x USB-C downstream (Data, PD 15 W) 1x USB-C upstream x 1 (dados) 1x Entrada de Headset P3 (Entrada e Saída de Áudio) 1x Entrada RJ45 (Ethernet LAN up to 1 G, Wake on LAN) 1x Entrada de Sincronização (Separada)
Alto-falantes	Sim (2 x 5W)
Tecnologias	Adaptive-Sync, Low Blue Mode, Flicker-Free, PowerSensor, KVM e Multiview
Webcam	Pop-Up Windows Hello™ Webcam 5MP Noise Cancelling
Daisy Chain / MST	Daisy Chain / MST
Compatibilidade	DDC/CI, Mac OS X, sRGB, Windows 11/10/8.1/8/7
Plug & Play	DDC/CI, Mac OS X, sRGB, Windows 11/10/8.1/8/7
Função OSD (On Screen Display)	Sim - Português e outros idiomas
Destaque	Hello Webcam 5MP Noise Cancelling | QHD | USB-C Docking Station 100W | Daisy Chain MST | KVM | IPS | PowerSensor | Light Sensor | Base ajustável

Energia

Fonte	Interna - 100-240 V CA, 50-60 Hz
Consumo	Ligado: 21 W (Típico - Método de Teste EnergyStar) , Stand-by: < 0,4 W Desligado: 0 W com interruptor de CA

Dimensões, peso e embalagem

Dimensões monitor com base (L x A x P)	613 x 537 x 225 mm
Dimensões monitor sem base (L x A x P)	613 x 366 x 55 mm
Dimensões embalagem (L x A x P)	730 x 471 x 193 mm
Peso sem embalagem (com base)	7,30 kg
Peso sem embalagem (sem base)	5,54 kg
Peso com embalagem	10,88 kg
Itens inclusos na embalagem	Cabo de força brasileiro NBR 14136, cabo DP, Cabo HDMI, cabo USB, certificado de garantia, base e monitor

Outros

Cor predominante do produto	Preto
Cor predominante da base	Preto
Sugestão de descrição	Monitor Philips 27" QHD Hello Webcam 5MP Noise Cancelling USB-C 100W 27B1U5601H
Garantia	3 anos
Código EAN	8721038004373
Classificação fiscal (NCM)	8528.52.00
CEST	21.068.00
PPB	Não
Local de fabricação	China

Saiba mais em
www.audioevideo.philips

ENERGY STAR CERTIFIED

Displays

PHILIPS - 27B1U5601H : 27B1U56

Specifications

ENERGY STAR Unique ID:	2401079
Brand Name:	PHILIPS
Model Name:	27B1U5601H
Model Number:	27B1U56
Product Type:	Monitor
Panel Type:	TFT LCD
Screen Size (inches):	27.0
Screen Area (square inches):	310.47
Native Resolution (pixels):	2560 x 1440
Maximum Luminance (candelas per square meter):	300.0
Total Native Resolution (megapixels):	3.7
Model Features:	Full Network Connectivity,USB-C,Built-In Speakers
Signal or Data Interfaces:	RJ45,Display,HDMI,USB
Power Source:	Ac to dc internal power supply
Monitor Total Energy Consumption at 115 Volts (kWh/yr):	64.02
On Mode Power (watts):	20.36
Markets:	United States, Taiwan, Japan, Canada
Sleep Mode Power (watts):	0.28
Off Mode Power (watts):	0.26
ENERGY STAR Certified:	Yes
ENERGY STAR Most Efficient:	No

Additional Model Information

,27B1U5601H,

UPC Codes	609585255807

Captured On:
07/01/2025

IEC IECEE CB SCHEME		Ref. Certif. No. **SE-108911**

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	LCD Monitor
Name and address of the applicant	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, China
Name and address of the manufacturer	MMD (Shanghai) Electronics Technology Co., Ltd. Room 5060A, No. 2 Building, 555 Dongchuan Road, Minhang District, Shanghai, 200241, China
Name and address of the factory Note: *When more than one factory, please report on page 2*	See page 2
Ratings and principal characteristics	100-240V~, 50/60Hz, 2A, Class I
Trademark (if any)	PHILIPS
Customer's Testing Facility (CTF) Stage used	-
Model / Type Ref.	27B1U5601H, 27B1U56, 27B**********, 27*1**********
Additional information (if necessary may also be reported on page 2)	See page 2
A sample of the product was tested and found to be in conformity with	IEC 62368-1:2014
As shown in the Test Report Ref. No. which forms part of this Certificate	220501892SHA-001

This CB Test Certificate is issued by the National Certification Body

Intertek Semko AB
Torshamnsgatan 43
Box 1103
SE-164 22 Kista, Sweden

intertek

Signature:

Gary Hu

Date: 26 August, 2022

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2007

Factories

1. TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, China

2. TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, China

3. TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, China

4. L&T Display Technology (Fujian) Ltd
Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, China

5. TPV Display Technology (China) Co., Ltd.
No. 106 Jinghai 3 Rd., BDA Beijing City 100176, China

6. TPV Display Technology (Wuhan) Co., Ltd
Unique No.11 Zhuankou Development District of Economic Technological Development Zone, Wuhan City, China

7. TPV Display Technology (Beihai) Co., Ltd.
China Electronic Beihai Industry Park, Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi, China

8. Trend Smart CE Mexico S. DE R.L. DE C.V.
Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana, Baja California, C.P. 22435, Mexico

9. Envision Indústria de Produtos Eletrônicos Ltda.
Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM – Brasil

10. TPV Technology (Thailand) Company Limited
No.267, Mu 7, Tha Tum Sub-District, Si Maha Pho District, Prachin Buri Province, Thailand

11. GeneTouch Corporation
No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan

12. Dixon Technologies (India) Limited.
EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526, India

13. Fábrica Austral de Productos Eléctricos S.A.
Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina

Additional information

Explanation of models 27B**********, 27*1*********:
The symbol “*” can be 0-9, A-Z, a-z, “+”, “-”, “/”, “\” or blank, which is not influencing on safety.

The group and national differences for the CENELEC countries, and the national differences for USA, Canada, Australia/New Zealand and Japan have been checked.

Date: 26 August, 2022

Signature:

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2008

Test Report issued under the responsibility of:

intertek
Total Quality. Assured.

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number ..... :	220501892SHA-001
Date of issue ..... :	August 12, 2022
Total number of pages ..... :	129 pages
Name of Testing Laboratory preparing the Report ..... :	Intertek Testing Services Shanghai
Applicant's name ..... :	TPV Electronics (Fujian) Co., Ltd.
Address ..... :	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
Test specification:	
Standard ..... :	IEC 62368-1:2014
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No. ..... :	IEC62368_1D
Test Report Form(s) Originator .. :	UL(US)
Master TRF ..... :	Dated 2022-04-14

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Disclaimer: This document is controlled and has been released electronically.
Only the version on the IECEE Website is the current document version

Test Item description .....:	LCD Monitor	
Trade Mark(s) .....:	PHILIPS	
Manufacturer.....:	MMD (Shanghai) Electronics Technology Co.,Ltd. Room 5060A, No.2 Building, 555 DongChuan Road, Minhang District, Shanghai, 200241, China	
Model/Type reference .....:	27B1U5601H, 27B1U56, 27B**********, 27*1********** (The symbol "*" can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank, which is not influencing on safety.)	
Ratings .....:	100-240V~, 50/60Hz, 2A Class I	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ **CB Testing Laboratory:**	Intertek Testing Services Shanghai	
Testing location/ address .....:	Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA	
Tested by (name, function, signature) .....:	Peter Lin (Engineer)	Peter.Lin
Approved by (name, function, signature) .....:	Jacky Shu (Mandated Reviewer)	
☐ **Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :		
Tested by (name, function, signature) .....:		
Approved by (name, function, signature) .....:		
☐ **Testing procedure: CTF Stage 2:**		
Testing location/ address .....:		
Tested by (name, function, signature) .....:		
Witnessed by (name, function, signature) .....:		
Approved by (name, function, signature) .....:		
☐ **Testing procedure: CTF Stage 3 :**		
☐ **Testing procedure: CTF Stage 4:**		
Testing location/ address .....:		
Tested by (name, function, signature) .....:		
Witnessed by (name, function, signature) .....:		
Approved by (name, function, signature) .....:		
Supervised by (name, function, signature).....:		

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2010

List of Attachments (including a total number of pages in each attachment):

Page 85 – 94 : Group and national differences for the CENELEC countries

Page 95 – 101 : National differences for USA and Canada

Page 102 – 112 : National differences for Australia/New Zealand

Page 113 – 116 : National differences for Japan

Page 117 – 126 : Photos

Page 127 – 129 : Measurement Section

Summary of testing:

All tests are performed and the most disadvantageous results are recorded. We conclude that the appliances comply with this standard.

Tests performed (name of test and test clause):	**Testing location:**
5.2, Classification of electrical energy sources 5.3.2, Accessibility to electrical energy sources and safeguards (Accessibility test) 5.4.1.4, 6.3.2,9.0, B.2.6, Maximum operating temperature test (Heating test) 5.4.1.8, Determination of working voltage 5.4.8, Humidity test 5.4.9, Electric strength test 5.5.2.2, Safeguards against capacitance discharge test 5.6.6.2, Resistance of the protective bonding system (Ground continuity test) 5.7.2.2, 5.7.4, Earthed accessible conductive part test 6.2.2, Power source circuit classifications 6.3, 6.4, Simulated abnormal operating and single fault Conditions 8.6, Static stability test 8.7, Wall or ceiling mount loading test 9.2.5 Temperature measurements B.2.5, Input test B.3, Simulated abnormal operating conditions test B.4, Simulated single fault conditions test Annex F.3, Durability, legibility and permanence of markings Annex Q.1, Circuits intended for interconnection with building wiring P2.2, Safeguards against entry of foreign object P.4, Adhesive test T.2, T.3, T.5, Steady force test, 10N, 30N, 250N T.6, Enclosure impact test T.8, Stress relief test The equipment under test (EUT) fulfilled the test requirement according to the standard IEC 62368-1:2014 and EN 62368-1:2014+A11: 2017.	Intertek Testing Services Shanghai Building No.86, 1198 Qinzhou Road (North), 200233 Shanghai, China

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Summary of compliance with National Differences (List of countries addressed):

The group and national differences for the CENELEC countries have been checked.
National differences for USA, Canada, Australia/New Zealand and Japan have also been checked.

☒ **The product fulfils the requirements of** IEC 62368-1:2014 and EN 62368-1:2014+A11: 2017.

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☒ **Statement not required by the standard used for type testing**

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

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Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Note: For other models, marking plates are the same except for model name.

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TEST ITEM PARTICULARS:	
Classification of use by.....:	☒ Ordinary person ☐ Instructed person ☐ Skilled person ☒ Children likely to be present
Supply Connection .....:	☒ AC Mains ☐ DC Mains ☐ External Circuit - not Mains connected - ☐ ES1 ☐ ES2 ☐ ES3
Supply % Tolerance .....:	☒ +10%/-10% ☐ +20%/-15% ☐ +____%/ -_____% ☐ None
Supply Connection – Type .....:	☒ pluggable equipment type A - ☐ non-detachable supply cord ☒ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:_____
Considered current rating of protective device as part of building or equipment installation.....:	16A or 20A; Installation location: ☒ building; ☐ equipment
Equipment mobility.....:	☒ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in ☐ rack-mounting ☒ wall-mounted
Over voltage category (OVC) .....:	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other: _____
Class of equipment .....:	☒ Class I ☐ Class II ☐ Class III ☐ Class II with functional earthing ☐ Not classifed
Access location .....:	☐ restricted access area ☒ N/A
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient .....:	40°C
IP protection class .....:	☒ IPX0 ☐ IP___
Power Systems .....:	☒ TN ☐ TT ☐ IT - ____ V L-L; ☐ dc mains ☐ N/A
Altitude during operation (m) .....:	☐ 2000m or less ☒ 5000m
Altitude of test laboratory (m) .....:	☐ 2000m or less ☒ 50m
Mass of equipment (kg) .....:	☒ Approx:7.36kg (with pedestal), pedestal: approx. 1.76kg.

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Possible test case verdicts:	
- test case does not apply to the test object .....:	N/A
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing .....:	
Date of receipt of test item.....:	June 1, 2022
Date (s) of performance of tests .....:	June 1, 2022 ~ August 12, 2022

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

The samples submitted from for evaluation are representative of the products from each factory.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☒ **Yes** ☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.

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Name and address of factory (ies).....:	1.TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China 2.TPV Electronics (Fujian) Co., Ltd. Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.China 3.TPV Electronics (Fujian) Co., Ltd. Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, PRC 4. L&T Display Technology (Fujian) Ltd Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, PRC 5.TPV Display Technology (China) Co., Ltd No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R. China 6. TPV Display Technology (Wuhan) Co., Ltd Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.China 7. TPV Display Technology（Beihai）Co.,Ltd. China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi,P.R.China 8. TREND SMART CE MEXICO S. DE R.L. DE C.V. Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana , Baja California, C.P. 22435 Mexico 9. Envision Indústria de Produtos Eletrônicos Ltda. Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM – Brasil 10.TPV Technology (Thailand) Co., Ltd. No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand 11. GeneTouch Corporation No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan 12. Dixon Technologies (India) Ltd. EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526 India 13. Fábrica Austral de Productos Eléctricos S.A. Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina

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General product information and other remarks:
Product Description – The equipments under test (EUTs) are 27” (68.58cm) LCD monitor with LED backlight, for general office and indoor use. For the product listed in this report, the HDMI function, DP function, USB function and USB C function were treated as optional function. The EUT have the following features: 1. Building-in power supply board 715GB656. 2. The internal metal chassis is considered as fire enclosure, which is covered all parts. 3. The external plastic enclosure is regarded as mechanical and electrical enclosure, made of min. HB material. Maximum recommended ambient (Tma):40℃ In this report, the test record for the alternative component, such as T9102 has been considered the most rigorous result. BS EN 62368-1:2014+A11:2017 is also considered in this report.
Model Differences – All models are identical except for model designation.
Additional application considerations – (Considerations used to test a component or sub-assembly) – N/A

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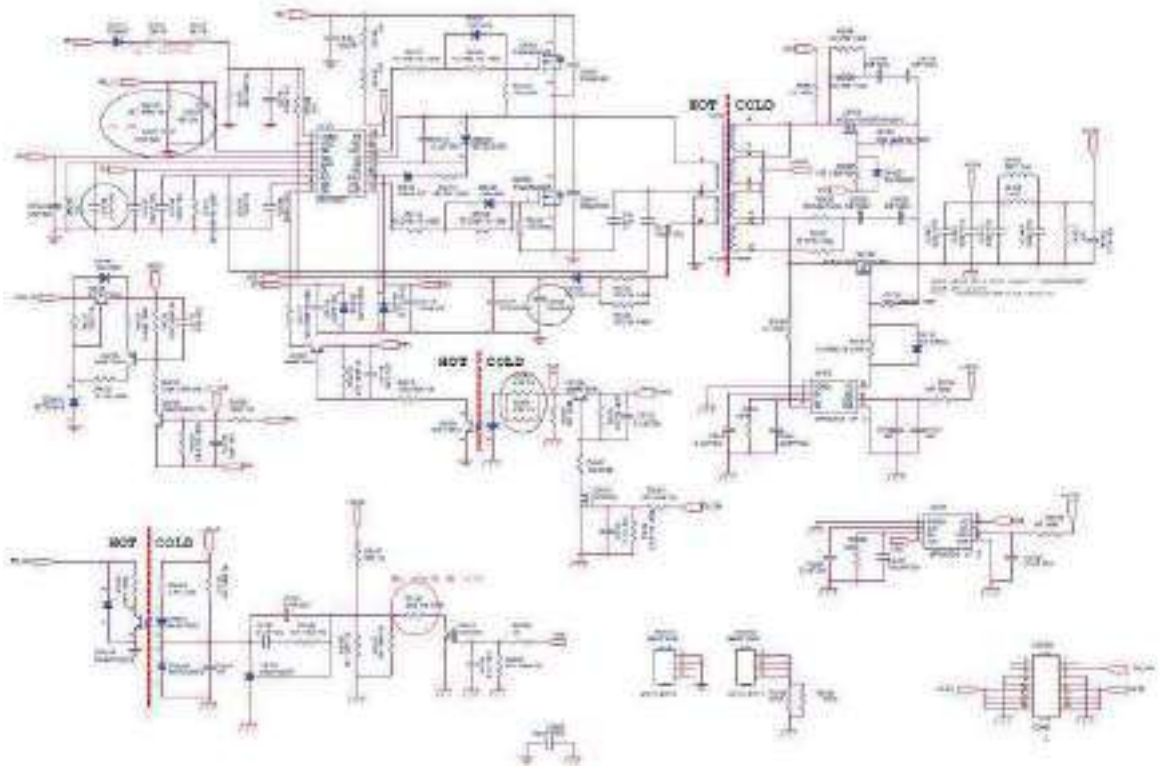
ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input ES1	
Source of electrical energy	**Corresponding classification (ES)**
L/N pin of appliance inlet	ES3
Primary circuit	ES3
DC output of power board	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
Primary circuit	PS3
DC output of power board	PS2
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	**Corresponding chemical**
--	--
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	**Corresponding classification (MS)**
Sharp edges and corners	MS1
Equipment mass	MS2
Wall mount	MS3
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	**Corresponding classification (TS)**
All accessible parts	TS1
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	**Corresponding classification (RS)**
Indicating lights	RS1

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ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below

☒ ES ☒ PS ☐ MS ☐ TS ☐ RS

See “Source of electrical energy” and “Source of power or PIS” on previous page for details.



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OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	**Possible Hazard**			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: L/N pin of appliance	--	--	Bleeding resistors Discharge IC
Ordinary	ES3: Primary circuit	Air gap	Enclosure	Transformer Y-cap Photo coupler
Ordinary	ES1: DC output of power board	--	--	--
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Combustible materials inside Primary circuit	PS3	Ignition not occur	Fire enclosure	--
Combustible materials supplied by DC output of power board	PS2	Ignition not occur	Mounted on V-1 Min. PCB	--
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
--	--	--	--	--
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Sharp edges and corners	--	--	--
Ordinary	MS2: Equipment mass	--	--	Compliance with test 8.6
Ordinary	MS3: Wall mount	--	--	Compliance with test 8.7
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced

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Ordinary	TS1: Accessible parts	--	--	--
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: Indicating lights	--	--	--
Supplementary Information:				
(1) See attached energy source diagram for additional details. (2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault				

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2.	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury.	P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests.....:	(See Annex T.4, T.5)	P
4.4.4.3	Drop tests .....:		N/A
4.4.4.4	Impact tests .....:	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:		N/A
4.4.4.6	Glass Impact tests .....:		N/A
4.4.4.7	Thermoplastic material tests.....:	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:		N/A
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions.	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to .....:	See appended table 5.4.2.2, 5.4.2.4 and 5.4.3	P
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard.....:		N/A
4.7.3	Torque (Nm) .....:		N/A
4.8	Products containing coin/button cell batteries	No lithium coin/button batteries used.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.4	Battery Compartment Mechanical Tests .....:		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....:	(See Annex P)	P
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications.....:	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	See below	P
5.2.2.2	Steady-state voltage and current.....:	See appended table 5.2)	P
5.2.2.3	Capacitance limits.....:	(See appended table 5.2)	P
5.2.2.4	Single pulse limits .....:		N/A
5.2.2.5	Limits for repetitive pulses .....:		N/A
5.2.2.6	Ringing signals .....:		N/A
5.2.2.7	Audio signals .....:		N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V.....:	Test probe V.1, V.2 applied.	P
	b) Electric strength test potential (V) .....:		N/A
	c) Air gap (mm) .....:	Complied with the minimum distance requirement. (See appended table 5.4.2.2, 5.4.2.4 and 5.4.3.)	P
5.3.2.4	Terminals for connecting stripped wire	No such terminals.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	Hygroscopic materials are not used for insulating material.	P
5.4.1.3	Humidity conditioning .....:	(See sub-clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials .....:	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree .....:	Pollution degree 2.	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Certified sources of optical isolators used.	P
5.4.1.5.3	Thermal cycling	Certified sources of optical isolators used.	P
5.4.1.6	Insulation in transformers with varying dimensions		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.1.9	Insulating surfaces	considered	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	Bobbin materials of all transformers are Phenolic that is accepted without further tests.	P
5.4.1.10.2	Vicat softening temperature..... :	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure ..... :	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage ..... :	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage ..... :	2500V	—
	b) d.c. mains transient voltage ..... :		—
	c) external circuit transient voltage..... :		—
	d) transient voltage determined by measurement ... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2.4)	P
5.4.2.5	Multiplication factors for clearances and test voltages ..... :		P
5.4.3	Creepage distances ..... :	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	IIIb	—
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation ..... :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation	Alternative by 5.4.4.4.	N/A
5.4.4.4	Solid insulation in semiconductor devices	Complies with Clause G.12.	P
5.4.4.5	Cemented joints		P
5.4.4.6	Thin sheet material	See below	P
5.4.4.6.1	General requirements	See below	P
5.4.4.6.2	Separable thin sheet material	(See appended Table 5.4.9)	P
	Number of layers (pcs) ..... :	2	P
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material ..... :	(See appended Table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz .....:	(See appended Table 5.4.4.9)	P
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ).....:		—
5.4.6	Insulation of internal wire as part of supplementary safeguard.....:		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	Complied.	P
	Relative humidity (%).....:	95	—
	Temperature (°C) .....:	40	—
	Duration (h) .....:	120	—
5.4.9	Electric strength test.....:	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test .....:		N/A
5.4.10.2.3	Steady-state test.....:		N/A
5.4.11	Insulation between external circuits and earthed circuitry .....:		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....:		—
	Nominal voltage U_{peak} (V).....:		—
	Max increase due to variation U_{sp} .....:		—
	Max increase due to ageing ΔU_{sa} .....:		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....:		—
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units		P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.1	General requirement	X-Cap. and Y-Cap. are IEC 60384-14 approval components and complied with Annex G.11.	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers		P
5.5.5	Relays		N/A
5.5.6	Resistors	(See Annex G.10)	P
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:		N/A
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors	Protective conductor served as a supplementary safeguard to prevent accessible conductive parts from exceeding ES2 limits.	P
5.6.2.1	General requirements	No switch or overcurrent protective device in protective conductor.	P
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) .....:		—
5.6.4	Requirement for protective bonding conductors	See below	P
5.6.4.1	Protective bonding conductors	Protective bonding wire complied with 5.6 and the minimum sizes in table 31.	P
	Protective bonding conductor size (mm^2). .....:	1.1	—
	Protective current rating (A) ..... :	20	—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		P
5.6.5.1	Requirement	Screws fixing earthed PCB trace to metal chassis for protective bonding. Size of screws is according with Table 32.	P
	Conductor size (mm^2), nominal thread diameter (mm). .....:	3.7 mm	P
5.6.5.2	Corrosion	Complied.	P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.6	Resistance of the protective system	See below.	P
5.6.6.1	Requirements	See below.	P
5.6.6.2	Test Method Resistance (Ω).....:	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 5 of IEC 60990 was used in determining of the limit of ES2.	P
5.7.2.1	Measurement of touch current .....:	(See appended table 5.7.4)	P
5.7.2.2	Measurement of prospective touch voltage	(See appended table 5.7.2.2, 5.7.4)	P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990: 1999 applied.	P
	System of interconnected equipment (separate connections/single connection) .....:	Single equipment.	—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....:	Single equipment.	—
5.7.4	Earthed conductive accessible parts.....:	(See appended Table 5.7.4)	P
5.7.5	Protective conductor current	Protective conductor current does not exceed the ES2 limits.	P
	Supply Voltage (V).....:	240	—
	Measured current (mA).....:	0.58	—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		-
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		-

6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.3	Power measurement for worst-case power source fault ..... :	(See appended table 6.2.2)	P
6.2.2.4	PS1 ..... :		N/A
6.2.2.5	PS2 ..... :	(See appended table 6.2.2)	P
6.2.2.6	PS3 ..... :	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS ..... :	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	The method “Control fire spread” is selected.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards	See 6.4.3.3.	N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions ..... :	(See appended table 6.4.3)	N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards ..... :	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit	Providing fire enclosure for PS3 circuit.	P
6.4.7	Separation of combustible materials from a PIS	Providing fire enclosure for PS3 circuit.	P
6.4.7.1	General ..... :	(See tables 6.2.3.1 and 6.2.3.2)	P
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier	Providing fire enclosure for PS3 circuit.	P
6.4.8	Fire enclosures and fire barriers	See below.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Metal enclosure and V-0 Mylar sheet used as fire enclosure.	N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below	P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....:	See table 6.4.8.3.3, 6.4.8.3.4 & P.2.2 for details.	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:	See above	P
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....:	No door or cover in fire enclosure	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	Metal or Min. V-0	P
6.5	Internal and external wiring		P
6.5.1	Requirements		P
6.5.2	Cross-sectional area (mm^2) .....:		—
6.5.3	Requirements for interconnection to building wiring .....:	(See Annex Q.)	N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	(See appended table Annex Q.1)	P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions ..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....:		—
7.6	Batteries.....:	(See Annex M)	N/A
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General		P
8.2	Mechanical energy source classifications	See ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE.	P
8.3	Safeguards against mechanical energy sources	See “OVERVIEW OF EMPLOYED SAFEGUARDS” table.	P
8.4	Safeguards against parts with sharp edges and corners	No sharp edges and corners in accessible area.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks .....:	(See Annex F.4 and Annex K)	N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....:		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:	(See appended table 8.5.5.2)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.6	Stability		P
8.6.1	Product classification	MS2	P
	Instructional Safeguard.....:		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force .....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		P
8.6.5	Horizontal force test (Applied Force).....:	Moved through any angle after being tilted 15°	P
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		P
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....:	See below	P
8.7.2	Direction and applied force.....:	Test 2: 54.88N plied for each point (four directions plus inward and outward). Test 3: 1.2Nm applied.	P
8.8	Handles strength	No handles.	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....:		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....:		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N) .....:		—
8.10.6	Thermoplastic temperature stability (°C).....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N* .....:		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....		N/A
	Button/Ball diameter (mm).....:		—
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	See below.	P
9.3	Safeguard against thermal energy sources	No safeguards are required for TS1.	N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard .....:		N/A
10	**RADIATION**		P
10.2	Radiation energy source classification	See below.	P
10.2.1	General classification	The following parts are considered as RS1 without tests: - Indicating lights.	P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists in the equipment:		—
	Normal, abnormal, single-fault.....:		N/A
	Instructional safeguard .....:		—
	Tool.....:		—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons.....:		N/A
10.4.1.b)	RS3 accessible to a skilled person.....:		N/A
	Personal safeguard (PPE) instructional safeguard.....:		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 . :		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions .....:	(See appended table B.3 & B.4)	N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque.....:		N/A
10.4.1.f)	UV attenuation.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.g)	Materials resistant to degradation UV .....:		N/A
10.4.1.h)	Enclosure containment of optical radiation.....:		N/A
10.4.1.i)	Exempt Group under normal operating conditions.....:		N/A
10.4.2	Instructional safeguard .....:		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment:	(See appended table B.3 & B.4)	N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards.....:		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation .....:		—
	Abnormal and single-fault condition ..... :	(See appended table B.3 & B.4)	N/A
	Maximum radiation (pA/kg)..... :		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)..... :		N/A
	Output voltage, unweighted r.m.s..... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions	See below	P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :	For internal speakers, adjusted to the maximum volume while testing.	P
B.2.3	Supply voltage and tolerances	Considered	P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... :	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	(See appended table B.3)	P
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector..... :		N/A
B.3.5	Maximum load at output terminals ..... :	(See appended table B.3)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	(See appended table B.3)	P
B.3.8	Safeguards functional during and after abnormal operating conditions	Abnormal operating condition does not lead to a single fault condition, all safeguards remain effective. After restoration of normal operating conditions, all safeguards comply with applicable requirements.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited..... :	(See appended table B.4)	P
B.4.3	Motor tests		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :	(See Clause G.5)	N/A
B.4.4	Short circuit of functional insulation	For traces before fuse, comply with the clearance/creepage for basic insulation, others are considered to perform short-circuited during the tests.	P
B.4.4.1	Short circuit of clearances for functional insulation	See above	P
B.4.4.2	Short circuit of creepage distances for functional insulation	See above	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ... :		N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) .....:		—
	Rated load impedance (Ω) .....:		—
E.2	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements		P
	Instructions – Language .....:	English.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The equipment marking is provided and is readily visible in operator access area.	P
F.3.2	Equipment identification markings	See below.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.2.1	Manufacturer identification .....:	See page 4	—
F.3.2.2	Model identification .....:	See page 2	—
F.3.3	Equipment rating markings	See below.	P
F.3.3.1	Equipment with direct connection to mains	See below.	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage.....:	See page 4	—
F.3.3.4	Rated voltage .....:	See page 4	—
F.3.3.5	Rated frequency .....:	See page 4	—
F.3.3.6	Rated current or rated power .....:	See page 4	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings..... :		N/A
F.3.5.2	Switch position identification marking ..... :		N/A
F.3.5.3	Replacement fuse identification and rating markings..... :	Primary F9901, T5AL/250V are marked adjacent to the fuse	P
F.3.5.4	Replacement battery identification marking ..... :		N/A
F.3.5.5	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment	See below	P
F.3.6.1.1	Protective earthing conductor terminal	Appliance inlet is provided. The symbol IEC 60417-5019 was located on appliance inlet.	P
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....:		—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	See below	P
F.3.10	Test for permanence of markings	Marking is durable and legible. The marking plate has no curling and is not able to be removed easily.	P
F.4	Instructions		P

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Clause	Requirement + Test	Result - Remark	Verdict
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use	Provided in user manual.	P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard	The instruction is provided in the user's manual.	N/A
	g) Protective earthing conductor current exceeding ES 2 limits	Not exceed the ES2 limits.	N/A
	h) Symbols used on equipment	Graphical symbols not used as an instructional safeguard.	N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards	No instructional safeguard is referenced in this test report.	N/A
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	**COMPONENTS**		P
G.1	**Switches**		P
G.1.1	General requirements	Use approve switch, see table 4.1.2 for detail	P
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		P
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) ..... :		—
	Single Fault Condition ..... :		—
	Test Voltage (V) and Insulation Resistance (Ω). :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:		N/A
G.4	**Connectors**		P
G.4.1	Spacings	The appliance inlet complied with IEC 60320-1.	P
G.4.2	Mains connector configuration .....:	The appliance inlet complied with IEC 60320-1.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		P
G.5	**Wound Components**		P
G.5.1	Wire insulation in wound components.....	Bobbin of T9102 used as separation for insulation between primary windings and secondary windings. Approved triple insulated wire used for winding of transformers	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		P
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....:		—
	Temperature (°C) .....:		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	Meet the requirements in G.5.3.2 and G.5.3.3.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Position.....:	T9102	—
	Method of protection .....:	Overcurrent protection.	—
G.5.3.2	Insulation	See attachment Transformer table.	N/A
	Protection from displacement of windings.....:	Displacement of windings is unlikely.	—
G.5.3.3	Overload test..... :	(See appended table B.3 & B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3 & B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Meet the requirements in G.5.3.2 and G.5.3.3.	N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements		N/A
	Position .....:		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V).....:		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....:		N/A
	Electric strength test (V) .....:		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....:		—
G.6	**Wire Insulation**		P
G.6.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements		N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm^2), (AWG)..... :		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....:		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....:		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry ..... :	(See appended table 5.4.11.1)	N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) .....:		—
	Diameter (m) .....:		—
	Temperature (°C) .....:		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....:	(See appended table B.3)	N/A
G.8.3.3	Temporary overvoltage .....:	(See appended table B.3)	N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....:		—
G.9.1 d)	IC limiter output current (max. 5A) .....:		—
G.9.1 e)	Manufacturers' defined drift .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		P
G.10.1	General requirements	Approved bleeding resistors used. (See appended table 4.1.2)	P
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		P
G.11.1	General requirements	X-Capacitors and Y-Capacitors used as safeguard and complied with IEC/EN 60384-14. (See appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units	At least 21 days at 40 ± 2°C and 93±3% RH.	P
G.11.3	Rules for selecting capacitors	The selection followed with tables G.9 and G.12.	P
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:	The optocouplers used in the equipment are complied with IEC/EN 60747-5-2 that complied with the requirements of IEC 60747-5-5. (see appended table 4.1.2)	P
	Type test voltage Vini .....:	See above.	—
	Routine test voltage, Vini,b .....:	See above.	—
G.13	**Printed boards**		P
G.13.1	General requirements	See below.	P
G.13.2	Uncoated printed boards	(see appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....:		—

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation .....:	(See appended table 5.4.4.5)	N/A
	Number of insulation layers (pcs) .....:		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements ..... :	(See G.13)	N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		P
a)	Humidity treatment in accordance with sc 5.4.8 – 120 hours	Use approve IC, see table 4.1.2 for detail	P
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:		—
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General		N/A
H.2	Method A		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....:		—
H.3.1.2	Voltage (V) .....:		—
H.3.1.3	Cadence; time (s) and voltage (V) .....:		—
H.3.1.4	Single fault current (mA):.....:		—
H.3.2	Tripping device and monitoring voltage .....:		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....:		—
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		P
	General requirements		P
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism	(See Annex G)	N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance .....:	(See appended table B.4)	N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....:		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....:		N/A
K.7.2	Overload test, Current (A) .....:		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....:	(See appended table 5.4.9)	N/A
L	**DISCONNECT DEVICES**		N/A
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance .....:		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....:		—
M.4.2.2 b)	Single faults in charging circuitry .....:		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) ..... :		N/A
M.6.2	Leakage current (mA) ..... :		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *Vz* (m^3/s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance *d* (mm) ..... :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) ..... :		N/A
N	**ELECTROCHEMICAL POTENTIALS**		P
	Metal(s) used ..... :	Pollution degree considered	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Figures O.1 to O.20 of this Annex applied..... :	Considered	—
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		P
P.1	General requirements	See below.	P
P.2.2	Safeguards against entry of foreign object	External plastic enclosure and internal metal chassis are provided as internal barrier.	P
	Location and Dimensions (mm) ..... :	See attachment: Measurement Section for the details.	—

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P.2.3	Safeguard against the consequences of entry of foreign object	See above.	P
P.2.3.1	Safeguards against the entry of a foreign object		P
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	Adhesive for mylar.	P
P.4.2 a)	Conditioning testing		P
	Tc (°C) ..... :	102	—
	Tr (°C) ..... :	100	—
	Ta (°C) ..... :	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	—
P.4.2 b)	Abrasion testing ..... :	(See G.13.6.2)	N/A
P.4.2 c)	Mechanical strength testing ..... :	(See Annex T)	N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		P
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output	(See appended table Annex Q.1)	N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		P
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method ..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
R.3	Test method Supply voltage (V) and short-circuit current (A)). .....:		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		P
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	~~Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W~~ Flammability test for fire enclosure materials of equipment with a steady-state power exceeding 4000 W		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	**MECHANICAL STRENGTH TESTS**		P
T.1	General requirements		P
T.2	Steady force test, 10 N .....:	(See appended table T.2)	P
T.3	Steady force test, 30 N .....:	(See appended table T.3)	P
T.4	Steady force test, 100 N .....:		N/A
T.5	Steady force test, 250 N .....:	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		P
T.7	Drop test .....:		N/A
T.8	Stress relief test .....:	(See appended table T.8)	P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m) .....:		—
T.10	Glass fragmentation test .....:		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....:		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	**TABLE: List of critical components**	P

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Cord set: According to the manufacturer's declaration, the unit will be supplied with a power attachment cord and plug which meet the national requirements which have been approved to relevant national and international standards.					
Power cord set (Saudi Arabia) (Optional)					
Power plug (13A)	Honglin	HL-044	13A/250V	BS 1363 SASO 2203:2018	Intertek CN-GSOG-2016011R5
Alt.	Honglin	HL-044s	13A/250V	BS 1363-1 SASO 2203:2018	Intertek CN-GSOG-20171110R2
Alt.	ASAP	A12-0136-AC2, A12-0137-AC2	13A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA181053626-M1
Alt.	SANGLE	DTII-3P-22	13A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA201159813
Alt.	I-SHENG	SP-62, SP-65	13A/250V	BS 1363 SASO 2203:2018	CVC certificate no. 2017GTC3223027128-M3(R1) CVC certificate no. RZKSA191060425-M1
Alt.	Interchangeable	Interchangeable	13A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (13A)	Volex	VSC19	13A/250V	IEC/EN 60320-1	ASTA
Alt.	Interchangeable	Interchangeable	13A/250V	IEC/EN 60320-1:2015	EU certification mark
Power plug (10A)	Fund Resources	BS-01J	10A/250V	BS1363 SASO 2203:2018	Intertek CN-GSOG-20180506
Alt.	Honglin	HL-044	10A/250V	BS 1363 SASO 2203:2018	Intertek CN-GSOG-2016011R5

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Honglin	HL-044s	10A/250V	BS 1363-1 SASO 2203:2018	Intertek CN-GSOG-20171110R2
Alt.	ASAP	A12-0136-AC2, A12-0137-AC2	10A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA181053626-M1
Alt.	SANGLE	DTII-3P-22	10A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA201159813
Alt.	I-SHENG	SP-62, SP-65	10A/250V	BS 1363 SASO 2203:2018	CVC certificate no. 2017GTC3223027128-M3(R1) CVC certificate no. RZKSA191060425-M1
Alt.	Interchangeable	Interchangeable	10A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (10A)	Honglin	HL-026, HL-029, HL-029L	10A/250V	IEC/EN 60320-1	ENEC 35-101702
Alt.	Honglin	HL-026S	10A/250V	IEC/EN 60320-1	ENEC 35-100964
Alt.	ASAP	A12-0012-AC2, A12-0056-AC2	10A/250V	IEC/EN 60320-1	VDE 40048182
Alt.	I-SHENG	IS-14	10A/250V	IEC/EN 60320-1	Intertek Licence No. 443 ENEC/FI 2017044 284423-3
Alt.	Interchangeable	Interchangeable	10A/250V	IEC/EN 60320-1:2015	EU certification mark
Power plug (7A)	Fund Resources	BS-01J	7A/250V	BS 1363 SASO 2203:2018	Intertek CN-GSOG-20180506
Alt.	Interchangeable	Interchangeable	7A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (7A)	Volex	VSC19	7A/250V	IEC/EN 60320-1	ASTA

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Interchangeable	Interchangeable	7A/250V	IEC/EN 60320-1:2015	EU certification mark
Power plug (6A)	Fund Resources	BS-01J	6A/250V	BS 1363 SASO 2203:2018	Intertek CN-GSOG-20180506
Alt.	Interchangeable	Interchangeable	6A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (6A)	Volex	VSC19	6A/250V	IEC/EN 60320-1	ASTA
Alt.	Interchangeable	Interchangeable	6A/250V	IEC/EN 60320-1:2015	EU or UK certification mark
Power plug (5A)	ASAP	A12-0136-AC2, A12-0137-AC2	5A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA181053626-M1
Alt.	Honglin	HL-044	5A/250V	BS 1363 SASO 2203:2018	Intertek CN-GSOG-2016011R5
Alt.	Honglin	HL-044s	5A/250V	BS 1363-1 SASO 2203:2018	Intertek CN-GSOG-20171110R2
Alt.	SANGLE	DTII-3P-22	5A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA201159813
Alt.	I-SHENG	SP-62, SP-65	5A/250V	BS 1363 SASO 2203:2018	CVC certificate no. 2017GTC3223027128-M3(R1) CVC certificate no. RZKSA191060425-M1
Alt.	Interchangeable	Interchangeable	5A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (5A)	Volex	VSC19	5A/250V	IEC/EN 60320-1	ASTA
Alt.	Interchangeable	Interchangeable	5A/250V	IEC/EN 60320-1:2015	EU certification mark

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Power plug (3A)	ASAP	A12-0136-AC2, A12-0137-AC2	3A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA181053626-M1
Alt.	SANGLE	DTII-3P-22	3A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA201159813
Alt.	I-SHENG	SP-62, SP-65	3A/250V	BS 1363 SASO 2203:2018	CVC certificate no. 2017GTC3223027128-M3(R1) CVC certificate no. RZKSA191060425-M1
Alt.	Interchangeable	Interchangeable	3A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (3A)	Volex	VSC19	3A/250V	IEC/EN 60320-1	ASTA
Alt.	Interchangeable	Interchangeable	3A/250V	IEC/EN 60320-1:2015	EU certification mark
Power plug (2.5A)	Volex	MP5004A, DLUK10S3, VNUK13A3, UK13A2, UK13A3, VPUK13A3	2.5A/250V	BS 1363 SASO 2203:2018	ASTA
Alt.	Interchangeable	Interchangeable	2.5A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (2.5A)	ASAP	A12-0011-AC2, A12-0055-AC2	2.5A/250V	IEC/EN 60320-1	VDE40029487
Alt.	I-SHENG	IS-033	2.5A/250V	IEC/EN 60320-1	Intertek Licence No. 736 ENEC/FI 2017007
Alt.	I-SHENG	IS-034	2.5A/250V	IEC/EN 60320-1	Intertek Licence No. 444 ENEC/FI 2016048

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Interchangeable	Interchangeable	2.5A/250V	IEC/EN 60320-1:2015	EU certification mark
Power cord	Honglin	H03VV-F, H05VV-F	3x0.75 mm² 3x0.75-1.5 mm²	EN 50525-2-11	VDE40022785
Alt.	Honglin	H03VV-F, H05VV-F	3x0.75 mm² 3x0.75-1.5 mm²	EN 50525-2-11	VDE40022785
Alt.	Fund Resources	H03VV-F, H05VV-F	3x0.5…0.75 mm² 3x0.75…2.5 mm²	EN 50525-2-11	VDE40031233
Alt.	ASAP	H03VV-F, H05VV-F	3x0.5…0.75 mm² 3x0.75…2.5 mm²	EN 50525-2-11	VDE40027103
Alt.	CHANGZHOU HONGCHANG ELECTRONICS CO LTD	H03VV-F, H05VV-F	3x0.5…0.75 mm² 3x0.75…2.5 mm²	EN 50525-2-11	VDE124978
Alt.	I-SHENG	H03VV-F, H05VV-F	3x0.5…0.75 mm² 3x0.75…2.5 mm²	EN 50525-2-11	VDE 40015762
Alt.	Interchangeable	Interchangeable	3x0.5…0.75 mm² 3x0.75…2.5 mm²	EN 50525-2-11	EU certification mark
Internal metal enclosure	Interchangeable	Interchangeable	Metal, thickness 0.8mm	IEC/EN 62368-1	None
Plastic enclosure	ORINKO	ABS-3070H, HIPS-2000, ABS-40*(*=0~10), ABS900F23	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E328304 and test with appliance
Alt.	SABIC	C6600	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E207780 and test with appliance
Alt.	Chi mei	PA-757(+), PC345(+), PA-756S	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E56070 and test with appliance
Alt.	LG	HF-350, HF-380, SE-750, XG-568, XG-569C, GP-1000L, SE885, AF-365, GN-1002F(m)	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E67171 and test with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	LOTTE CHEMICAL CORPORATION	SD-0150(+), BF-0677(+), BF-0675(+), BF-0670F, GC-0700(+), GC-0750(+), HS-7000RA, LX-0951(+), LX-0957(+), HG-0760(+), HR-1360(+), SD-0150T, ABF-0200E, NH-1027HF, NH-1027(+)	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E115797 and test with appliance
Alt.	Basf	GP-35, GP-22	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E41871 and test with appliance
Alt.	Grand	D-150	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E88637 and test with appliance
Alt.	KingFa	5197, RS-900, GAR-011 C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), RS-300, RS-400, CK-100, CK-55111, RD-900, HP-126, CK-61506	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E171666 and test with appliance
Alt.	Haier	HRABS-RS, HRABS-HG	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E230779 and test with appliance
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E103670 and test with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441, 260-XX	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E314268 and test with appliance
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA35, NC30, GA65, GA85, GC(t) (t) – Replace the one, two, three or four numbers and/or letters to denote to serial number	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E359575 and test with appliance
Alt.	WOTE	2100	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E310240 and test with appliance
Alt.	UNIC	UR-3006+, UR-200+ (+: A to Z), UP700	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E135175 and test with appliance
Alt.	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E205938 and test with appliance
Alt.	CHI LIN	GA1535	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E177071 and test with appliance
Alt.	FUHEN	FH-HIPS-568	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E234833 and test with appliance
Alt.	GON	GON ABS 2115, ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E330547 and test with appliance
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E345434 and test with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	GUO HENG	YOUHO(1302)(B), YOUHO(1303)(B), YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(1303)(OP), YOUHO(####)(Y) YOUHO-1303B, YOUHO1312B	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E471190 and test with appliance
Alt.	Chongqing Gengye New Materials Technology Co Ltd	GU-022	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E514505 and test with appliance
Alt.	Interchangeable	Interchangeable	HB or better, 60℃, thickness 1.4mm	UL 94:2016 IEC 60695-11-10:2013(2nd Edition)	EU certification mark
Base stand (optional)	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+)	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E115797 and test with appliance
Alt.	Interchangeable	Interchangeable	HB or better, 60℃, thickness 1.4mm	UL 94:2016 IEC 60695-11-10:2013(2nd Edition)	UL or other EU certification
PCB	Three Sun	SMS-1	V-0, 105℃	UL 796 IEC/EN 62368-1	UL E217670 and test with appliance
Alt.	Interchangeable	Interchangeable	V-1 or better Min. 105℃	UL 796:2016 IEC 60695-11-10:2013(2nd Edition)	UL or other EU certification
Insulation Sheet (between power board and LCD panel)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B; KLX FRPC-83; KLX FRPC-1880 series KLX FRPC-1860 series KLX FRPC-1890 series	Polycarbonate, thickness: 0.40mm min. V-0, 125℃	UL 94 IEC/EN 62368-1	UL E315185 Tested with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity 1)
Alt	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0.40mm min. V-0, 125℃	UL 94 IEC/EN 62368-1	UL E357515 Tested with appliance
Insulation Sheet (between power board and metal cover)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B; KLX FRPC-83; KLX FRPC-1880 series KLX FRPC-1860 series KLX FRPC-1890 series	Polycarbonate, thickness: 0.40mm min. V-0, 125℃	UL 94 IEC/EN 62368-1	UL E315185 Tested with appliance
Alt	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0.40mm min. V-0, 125℃	UL 94 IEC/EN 62368-1	UL E357515 Tested with appliance
Alt	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECOB, DFR700 series, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC, DX10, DFR3A(d)	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E199019 Tested with appliance
Alt	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1, DB98HD	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E339070 Tested with appliance
Alt	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B SE42B-F	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E249605 Tested with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity 1)
Alt	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1860B, KLX FRPC-83, KLX FRPC-1880 series	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E315185 Tested with appliance
Alt	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E305163 Tested with appliance
Alt	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F, TS-FR383H, TS-FR360H, TS-FR1370	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E329660 Tested with appliance
Alt	Sichuan Longhua Film Co Ltd	PC-770 series	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E254551 Tested with appliance
Adhesive (located on the metal chassis)	SYMBIO	DS50-A; DS50L	100℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL: E315185 and tested with appliance
Alt	3M CHINA CO LTD	55236; 94489A, 55230,	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL: E256906 and tested with appliance
Alt	3M CHINA CO LTD	9495MP	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL: MH26206 and tested with appliance
Alt	XIAMEN LABAO OPTICS & ELECTRONICS CO LTD	TD-10, LA9120	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL: E349099 and tested with appliance
Alt	NITTO DENKO CORP	GA835	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL:MH13557 and tested with appliance
Alt	TESA SE	68646	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL:MH25809 and tested with appliance
Alt	DEXERIALS CORP	G4000	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL:MH15431 and tested with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
LCD Panel	TPV	TPM270********** ****** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	TPV	TPT270********** ***** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	M270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	LM270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	P270********** ** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	L&T	LM270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	LGD	LM270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	INNOLUX	M270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	PANDA	LM270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	BOE	MV270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SHARP	LQ270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SAMSUNG	LTM270********** ****** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	BOE	ME270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Power Supply: power board 715GB656 by TOP Victory					
AC-Inlet (CN9901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40015691 UL E200241
Alt.	Zhang Jia Gang-Hua Jie	SA-4S	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40003610 UL E154342
Alt.	Rong Feng Industrial Co Ltd	SS-120 SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40028101 UL E102641
Alt.	DELIKANG/Douling	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40010513 UL E217394
Alt.	DELIKANG/Douling	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40015913 UL E217394
Alt.	Inalways	0707-1; 0711-2; 0714	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40007115 UL E94191
Alt.	TECX	TU-301-A; TU-301-AP; TU-301-S; TU-301-SP	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40025582 UL E220004
Alt.	Yueqing Hongchang	DB-14 series	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40028645 UL E327347
Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1	EU certification mark

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Power switch (SW9901) (optional)	Rong Feng	RF-1003	10A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	VDE 40030309 UL E94138
Alt.	Solteam Electronics Co., Ltd.	OR-L, OP-P	6A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC/FI: 2009033 UL E148157
Alt.	Solteam Electronics Co., Ltd.	MR-22 series	12A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC/FI: 2009069 A1 UL E148157
Alt.	Solteam Electronics Co., Ltd.	MR-21S	6A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC/FI: 2009069 A1 UL E148157
Alt.	YUEQING HONGCHANG RADIO CO LTD	RT -011	6A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	TUVRheinland: Certificate No:R 50421910 0001 UL E486986
Fuse (F9901)	Cooper Bussmann LLC	SR-5 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 122052 UL E19180
Alt.	Littelfuse, Inc. Wickmann	382 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40018249 UL E67006
Alt.	Littelfuse, Inc. Wickmann	392	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 126983 UL 67006
Alt.	Cooper Bussmann LLC	SS-5 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40015513 UL E19180
Alt.	Conquer	MET	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40017157 UL E82636
Alt.	Conquer	MST	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40017118 UL E82636
Alt.	Ever Island Electric Co., Ltd. and Walter Electric	2010 Serie(s)	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40009570 UL E220181
Alt.	Ever Island Electric Co., Ltd. and Walter Electric	2000	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40018790 UL E220181

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Fuse (F701, F702, F703) for LPS	Cooper Bussmann LLC	SR-5 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 122052 UL E19180
Alt.	Littelfuse, Inc. Wickmann	382 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40018249 UL E67006
Alt.	Littelfuse, Inc. Wickmann	392	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 126983 UL 67006
Alt.	Cooper Bussmann LLC	SS-5 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40015513 UL E19180
Alt.	Conquer	MET	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40017157 UL E82636
Alt.	Conquer	MST	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40017118 UL E82636
Alt.	Ever Island Electric Co., Ltd. and Walter Electric	2010 Serie(s)	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40009570 UL E220181
Alt.	Ever Island Electric Co., Ltd. and Walter Electric	2000	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40018790 UL E220181
Y-cap (C9904, C9905) (Y2 or Y1 type) (optional)	TDK	CD	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 124321 UL E37861
Alt.	TDK	CS	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 122006 UL E37861
Alt.	Murata	KH	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40002796 UL E37921
Alt.	Murata	KX	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40002831 UL E37921

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Walsin (Pan Overseas)	AC	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40001829 UL E146544
Alt.	Walsin (Pan Overseas)	AH	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40001804 UL E146544
Alt.	Hongming	F	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40036246 UL E154899
Alt.	Haohua	CT7	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40013601 UL E233106
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 135256 UL E145038
Alt.	Success Electronics Co., Ltd.	SE	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 118218 UL E114280
Alt.	Success Electronics Co., Ltd.	SB	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 121379 UL E114280
Alt.	Kunshan Wansheng	CT7	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40012143 UL E249006
Alt.	Interchangeable	Interchangeable	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14	EU certification mark
Y-cap (C9903, C9909, C9910) (Y1 type) (optional)	TDK	CD	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 124321 UL E37861
Alt.	TDK	CS	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 122006 UL E37861
Alt.	Murata	KH	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40002796 UL E37921
Alt.	Murata	KX	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40002831 UL E37921
Alt.	Walsin (Pan Overseas)	AC	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40001829 UL E146544

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Walsin (Pan Overseas)	AH	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40001804 UL E146544
Alt.	Hongming	F	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40036246 UL E154899
Alt.	Haohua	CT7	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40013601 UL E233106
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 135256 UL E145038
Alt.	Success Electronics Co., Ltd.	SE	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 118218 UL E114280
Alt.	Success Electronics Co., Ltd.	SB	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 121379 UL E114280
Alt.	Kunshan Wansheng	CT7	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40012143 UL E249006
Alt.	Interchangeable	Interchangeable	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14	EU certification mark
X- Cap. (C9901, C9902) (X2 or X1 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40015608 UL E183780
Alt.	Europtronic	MPX	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40018238 UL E211347
Alt.	Europtronic	MPX2	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40025981 UL E211347
Alt.	Xiamen Faratronic	MKP62	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40000358 UL E186662
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	ENEC V4413 UL E97797
Alt.	Liow Gu	GS-L	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 101345 UL E186321

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	EPCOS	B3292#	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40010694 UL E97863
Alt.	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40028680 UL E200596
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONIC SALES CO LTD	MKP	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40049725 UL E502081
Alt.	Interchangeable	Interchangeable	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14	EU certification mark
Photo Coupler (U9802, U9104)	Sharp	PC 123	Ext. > 8.0mm int.cr=thermal cycling 3) Di> 0.4mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 40008087 UL E64380 Nemko P09211293
Alt.	Vishay Semiconductor	TCET 1103	Ext.= 7.7mm Int.= 6.0mm Di= 0.5mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 115687 UL E76222 F1 25155
Alt.	Everlight	EL817, EL817M	Ext.= 7.7mm Int.= 6.0mm Di= 0.5mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 132249 UL E214129 Nemko P11214765/A1
Alt.	TOSHIBA	TLP781, TLP781F	Ext.> 8.0mm Int.> 5.0mm3) Di> 0.5mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 40021173 UL E67349 Semko 1020282
Alt.	TOSHIBA	TLP421F	Ext.> 8.0mm int.cr=thermal cycling 3) Di> 0.4mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 40010944 UL E67349 Semko 9910249/01

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Renesas Electronics Corporation	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Ext.> 7.0mm int.cr=thermal cycling 3) Di.> 0.4mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 40008862 UL E72422 Nemko P10212638
Alt.	Lite-on	LTV-817	Ext. cr>8.0mm, Int.cr=thermal cycling 3), Dti > 0.6 mm, AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 40015248 UL E113898
Alt.	Interchangeable	Interchangeable	Ext. cr>8.0mm, Int.cr=thermal cycling 3), Dti > 0.6 mm, AC 3000V, min. 100°C	IEC/EN 60384-14	EU certification mark
PFC choke (L9801) (Optional)	HAINING LIANFENG DONGJIN ELECTRONICS CO, LTD	373G0174A03J	105°C	IEC/EN 62368-1	Tested with appliance
Alt.	TC	373G0174A03S	105°C	IEC/EN 62368-1	Tested with appliance
Alt.	ASET	373G0174A03X	105°C	IEC/EN 62368-1	Tested with appliance
Line Choke (L9901, L9902) (Optional)	JIANGSU CHANNELON ELECTRONICS GROUP CO., LTD	73G174-272-H	105°C	IEC/EN 62368-1	Tested with appliance
Alt.	ASET ELECTRONIC TECHNOLOGY CO., LTD	73G174-272-X	105°C	IEC/EN 62368-1	Tested with appliance
Transformer (T9102)	HA	380GL32P710H	Class B	IEC/EN 62368-1	Tested with appliance
Alt.	LI TAI	380GL32P710L	Class B	IEC/EN 62368-1	Tested with appliance
Alt.	ASET	380GL32P710X	Class B	IEC/EN 62368-1	Tested with appliance
BOBBIN	CHANG CHUN PLASTICS CO.LTD	T200HF	150°C	UL 94 IEC/EN 62368-1	UL E59481 and tested with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	SUMITOMO BAKELITE CO LTD	PM-9750	150°C	UL 94 IEC/EN 62368-1	UL E41429 and tested with appliance
- Winding	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B)	130°C	UL 1446 IEC/EN 62368-1	UL E245514 and tested with appliance
Alt.	HUIZHOU HUILI INDUSTRIAL CO.,LTD	LITZW Xuew$/130,QA-x/130	130°C	UL 1446 IEC/EN 62368-1	UL E317107 and tested with appliance
Alt.	SHANGHAI ASIA PACIFIC ELECTRIC CO LTD	UEW-U	130°C	UL 1446 IEC/EN 62368-1	UL E214423 and tested with appliance
-Triple insulation wire	KBI COSMOLINK CO, LTD	TIW-M	Reinforced insulation, 130°C	UL 2353 IEC/EN 62368-1	UL E213764 and tested with appliance
-Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	PF* (b)(g) CT *(b)(g) CT-285B	PET film insulating tape, 130°C	UL 510A IEC/EN 62368-1	UL E165111 and tested with appliance
Alt.	SYMBIO INC	35661 (c), 35660Y(a)	PET film insulating tape, 130°C	UL 510A IEC/EN 62368-1	UL E50292 and tested with appliance
-Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL 224 IEC/EN 62368-1	UL E156256 and tested with appliance
Primary IC (U9901)	Power Integrations	CAP200DG CAP004DG	1000V	IEC60950-1 (ed.2); am1;am2	CB of Nemko Ref.certif. No. NO82701/A1
Bleeding resistors (R9901, R9902)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by NEMKO (CB cert No. NO99692)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by NEMKO (CB report No. 337017)

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Yageo Corporation	RV1206XX-0782K1L	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by UL(CB cert No. DK-64853-UL)
Alt.	Yageo Corporation	RV1206 series	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by UL(CB report No. E491387-4787887815-1 Original)
Alt.	Tzai Yuan Enterprise Co., Ltd.	HSMD*********, SMD*********	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by UL(CB cert No. DK-29431-A1-M1-UL)
Alt.	Tzai Yuan Enterprise Co., Ltd.	MGUL1/4W series	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by UL(CB cert No. DK-69874-UL)
Alt.	Interchangeable	Interchangeable	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	EU certification mark
Power-distribution switch (U6036)	ANPEC ELECTRONICS CORPORATION NO.6, Dusing 1st Rd., Hsinchu Science Park, Hsinchu, 30078, Taiwan	APL3556EBTI-TRG	Input Voltage: DC 2.7-5.5V Rated current: 0-3A	IEC 62368-1:2018	TUV NORD CB (Certif. No. 4478021406748-003)
DC/DC Converter (U6052)	MONOLITHIC POWER SYSTEMS 79 GREAT OAKS BLVD SAN JOSE CA 95119-1311 UNITED STATES	MP4247GQ	Ratings not required (provided for reference only). Input Voltage Range: 18 to 22 Vdc Output: 5 Vdc/3 A or 15 Vdc/3A or 20 Vdc/4.5 A (Configurable by External Resistors)	IEC 62368-1:2018	CB issued by UL (CB cert No. US-37465-UL)
Components listed below are not regarded critical components:					
Internal Speaker (two sets)	Interchangeable	Interchangeable	Each rated 8Ω, max. 6W, V-1	IEC/EN 62368-1	None

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]

Note:
1. An asterisk indicates a mark that assures the agreed level of surveillance.
2. “Di” means distance through insulation, “Int.” means internal distance of creepage and “Ext.” means external distance of creepage.
3. There is no any internal creepage distance. Test according to IEC60950-1:2001, cl. 2.10.8 (same as requirement in IEC60950-1:2005, cl. 2.10.9) has been carried out ten times for the components at 100°C / 25°C / 0°C / 25°C. Humidity treatment of 48 hours as well as electric strength tests at 3000V / 1 minute was carried out to the component after thermal cycling test.
4. All sources of photo coupler were certified according to DIN EN60747-5-2 which in compliance with the requirements and provisions of IEC 60747-5-5.
5. All sources of photo coupler were in compliance with CTL DSH 759 decision.

4.8.4, 4.8.5	**TABLE: Lithium coin/button cell batteries mechanical tests**	N/A

(The following mechanical tests are conducted in the sequence noted.)

4.8.4.2	**TABLE: Stress Relief test**	—

Part	Material	Oven Temperature (°C)	Comments

4.8.4.3	**TABLE: Battery replacement test**	—
Battery part no. .....:		—

Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
	1	
	2	
	3	
	4	
	5	
	6	
	8	
	9	
	10	

4.8.4.4	**TABLE: Drop test**	—

Impact Area	Drop Distance	Drop No.	Observations
		1	
		2	
		3	

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Clause	Requirement + Test	Result - Remark	Verdict

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests		N/A
(The following mechanical tests are conducted in the sequence noted.)			
4.8.4.5	**TABLE: Impact**		—
Impacts per surface	Surface tested	Impact energy (Nm)	Comments
4.8.4.6	**TABLE: Crush test**		—
Test position	Surface tested	Crushing Force (N)	Duration force applied (s)
Supplementary information:			

4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result		N/A
Test position	Surface tested	Force (N)	Duration force applied (s)
Supplementary information:			

5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	264V,60Hz	+19V output	Normal	18.9Vdc	-	-	ES1
			Abnormal	18.9Vdc	-	-	
			Single fault – SC/OC	18.9Vdc	-	-	
2	264V,60Hz	LED backlight	Normal	30.8Vdc	-	-	ES1
			Abnormal	30.8Vdc	-	-	
			Single fault – SC/OC	30.8Vdc	-	-	
3	264V,60Hz	All secondary port to earth	Normal	-	0.13mApk	-	ES1
			Abnormal	-	0.13mApk	-	
			Single fault – SC/OC	-	0.13mApk	-	

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4	264V,60Hz	Key button / plastic enclosure to earth	Normal	-	0.13mApk	-	ES1
			Abnormal	-	0.13mApk	-	
			Single fault – SC/OC	-	0.13mApk	-	

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
--	264V, 60Hz	C9901	Normal	470	373	ES3
			Abnormal	--	--	
			Single fault – SC/OC	--	--	
--	264V, 60Hz	C9902	Normal	470	373	ES3
			Abnormal	--	--	
			Single fault – SC/OC	--	--	

5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

Test Conditions:

Normal –

Abnormal -

Supplementary information: SC=Short Circuit, OC=Short Circuit

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**	P

TRF No. IEC62368_1D

IEC 62368-1						
Clause	Requirement + Test		Result - Remark			Verdict
	Supply voltage (V) ..... :	90	90	264	264	—
	Ambient T_{min} (°C) ..... :	26.1	40	26.1	40	—
	Ambient T_{max} (°C) ..... :	27.9	40	27.9	40	—
	Tma (°C) ..... :	40	40	40	40	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Horizontal orientation:						
CN9901 body		--	53.1	--	57.9	70
C9904 body		--	55.4	--	59.6	85
C9905 body		--	55.4	--	62.1	85
C9910 body		--	54.9	--	61.3	85
PCB near TH9901		--	66.4	--	81.7	105
C9901 body		--	57.9	--	65.2	110
L9901 coil		--	60.8	--	74.0	105
C9902 body		--	59.5	--	71.1	110
L9902coil		--	62.1	--	79.7	105
PCB near BD9901		--	64.6	--	85.0	105
L9801 coil		--	67.6	--	83.6	105
L9801 core		--	65.7	--	80.1	For ref
T9102 coil		--	78.8	--	84.0	110*
T9102 core		--	78.2	--	83.2	For ref
C9801 body		--	66.9	--	74.8	105
PCB near D9801		--	76.4	--	86.8	105
PCB near Q9101		--	79.5	--	84.8	105
C9903 body		--	63.9	--	70.9	85
U9802 body		--	77.5	--	81.8	100
U9104 body		--	78.6	--	82.7	100
PCB near Q9104		--	74.5	--	78.7	105
Insulation sheet (between power board and metal cover)		--	70.1	--	75.6	80
Insulation sheet (between power board and LCD panel)		--	74.3	--	79.7	125
Below temperatures are adjusted to ambient of 25 °C.						
Plastic enclosure outside		33.6	--	35.1	--	94
Panel surface		34.4	--	35.1	--	80
Metallic parts for accessible		37.8	--	38.4	--	70
Switch surface		32.3	--	33.8	--	48

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IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
Key surface	31.8	--	31.5	--	48
Vertical orientation, 90° clockwise					
CN9901 body	--	61.6	--	67.0	70
C9904 body	--	65.5	--	70.1	85
C9905 body	--	65.9	--	76.0	85
C9910 body	--	66.5	--	77.5	85
PCB near TH9901	--	74.9	--	87.5	105
C9901 body	--	68.0	--	76.2	110
L9901 coil	--	70.4	--	84.2	105
C9902 body	--	69.2	--	82.5	110
L9902coil	--	72.1	--	90.5	105
PCB near BD9901	--	74.9	--	96.1	105
L9801 coil	--	76.7	--	91.4	105
L9801 core	--	74.7	--	88.6	For ref
T9102 coil	--	84.7	--	86.9	110*
T9102 core	--	83.4	--	86.2	For ref
C9801 body	--	76.7	--	83.2	105
PCB near D9801	--	84.4	--	92.3	105
PCB near Q9101	--	82.2	--	84.6	105
C9903 body	--	71.3	--	74.6	85
U9802 body	--	75.1	--	76.6	100
U9104 body	--	74.6	--	76.2	100
PCB near Q9104	--	80.3	--	81.9	105
Insulation sheet (between power board and metal cover)	--	73.0	--	76.9	80
Insulation sheet (between power board and LCD panel)	--	81.3	--	84.0	125
Below temperatures are adjusted to ambient of 25 °C.					
Plastic enclosure outside	34.0	--	35.4	--	94
Panel surface	34.3	--	34.9	--	80
Metallic parts for accessible	36.7	--	37.1	--	70
Switch surface	33.9	--	34.7	--	48
Key surface	33.5	--	34.4	--	48
Vertical orientation, 90° anticlockwise					
CN9901 body	--	52.3	--	59.0	70
C9904 body	--	55.0	--	61.6	85

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C9905 body	--	53.8	--	62.1	85
C9910 body	--	52.6	--	59.4	85
PCB near TH9901	--	65.9	--	80.4	105
C9901 body	--	57.6	--	67.7	110
L9901 coil	--	60.0	--	74.2	105
C9902 body	--	58.5	--	71.8	110
L9902coil	--	60.6	--	78.6	105
PCB near BD9901	--	62.0	--	80.4	105
L9801 coil	--	64.0	--	77.4	105
L9801 core	--	62.4	--	73.3	For ref
T9102 coil	--	79.3	--	82.9	110*
T9102 core	--	75.8	--	79.7	For ref
C9801 body	--	57.6	--	61.6	105
PCB near D9801	--	69.1	--	75.3	105
PCB near Q9101	--	74.7	--	78.6	105
C9903 body	--	62.2	--	71.4	85
U9802 body	--	73.4	--	76.2	100
U9104 body	--	71.9	--	74.4	100
PCB near Q9104	--	76.3	--	80.0	105
Insulation sheet (between power board and metal cover)	--	69.1	--	73.8	80
Insulation sheet (between power board and LCD panel)	--	73.6	--	77.3	125
Below temperatures are adjusted to ambient of 25 °C.					
Plastic enclosure outside	31.8	--	33.5	--	94
Panel surface	32.9	--	33.7	--	80
Metallic parts for accessible	36.3	--	37.1	--	70
Switch surface	31.1	--	32.0	--	48
Key surface	30.5	--	30.8	--	48

Temperature T of winding:	t1 (°C)	R1 (Ω)	t2 (°C)	R2 (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
--	--	--	--	--	--	--	--

Supplementary information: * indicated thermocouple method was used to measure the winding, so the limit value reduced 10K.

Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

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5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Penetration (mm)..... :			—
Object/ Part No./Material		Manufacturer/trademark	T softening (°C)
supplementary information:			

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics		P
Allowed impression diameter (mm) ..... :		≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)
Bobbin of Transformer	--	125	1.1
Supplementary information:			

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm) [2]	Required[3] cr (mm)	cr (mm)
Functional:							
FI: Between L and N before fuse ***1)***	420	250	--	2.3	6.0	2.5	6.0
FI: Between fuse two ends 1), 3)	420	250	--	2.3	3.1	2.5	3.1
Basic / supplementary:							
BI: Line (pri.) – GND 1) , 3)	420	250	--	2.3	3.0	2.5	3.0
BI: Neutral (pri.) – GND 1) , 3)	420	250	--	2.3	3.0	2.5	3.0
BI: Components side of power board (pri.) –earthed metal chassis **2)**	432	263	--	2.3	8.0	2.7	8.0
BI: C9903 (pri.) – C9903 (PE) 1) , 3)	432	263	--	2.3	8.0	2.7	8.0
BI: C9904 (pri.) – C9904 (PE) 1) , 3)	432	263	--	2.3	8.0	2.7	8.0
BI: C9905 (pri.) – C9905 (PE) 1) , 3)	432	263	--	2.3	8.0	2.7	8.0
BI: C9909 (pri.) – C9909 (PE) 1) , 3)	432	263	--	2.3	8.0	2.7	8.0
BI: C9910 (pri.) – C9910 (PE) 1) , 3)	432	263	--	2.3	8.0	2.7	8.0
Reinforced:							
BI: Pin side of power board (pri.)	432	263	--	4.5	8.0	5.3	8.0

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– LCD panel							
RI: U9802 (pri.) – U9802 (sec.) 1)	432	263	--	4.5	8.0	5.3	8.0
RI: U9104 (pri.) – U9104 (sec.) 1)	432	263	--	4.5	8.0	5.3	8.0
RI: T9102 Pri. winding –T9102 sec winding (Reinforced)	432	263	--	4.5	9.9	5.3	9.9
RI: T9102 Pri. winding –T9102 core (Reinforced)	432	263	--	4.5	9.0	5.3	9.0
RI: Pri C9113- T9102 sec winding	432	263	--	4.5	6.5	5.3	6.5

Supplementary information:

FI: Function insulation; BI: Basic insulation; SI: Supplementary insulation; RI: Reinforced insulation

With the equipment to be operated at 5000m above sea level max. the minimum clearances is multiplied by the factor 1.48.

1) Measured on solder side.

2) Measured on component side.

3) There is a slot > 1 mm under component.

Glued component: C9801, C9815.

The CTI rating of PCB is material group IIIb (CL.2.10.4)

Note 1: Only for frequency above 30 kHz
Note 2: See table 5.4.2.4 if this is based on electric strength test
Note 3: Provide Material Group

5.4.2.3	**TABLE: Minimum Clearances distances using required withstand voltage**			**P**
	Overvoltage Category (OV):			II
	Pollution Degree:			2
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
Basic		2500	See table 5.4.2.2, 5.4.2.4 and 5.4.3	See table 5.4.2.2, 5.4.2.4 and 5.4.3
Reinforced		4000	See table 5.4.2.2, 5.4.2.4 and 5.4.3	See table 5.4.2.2, 5.4.2.4 and 5.4.3
Supplementary information:				

5.4.2.4	**TABLE: Clearances based on electric strength test**			**N/A**
Test voltage applied between:		Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No
--		--	--	--
Supplementary information:				

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5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements				P
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Bobbin of transformer	432	--	See table 4.1.2	0.4/1layer	Min. 0.45
Insulation sheet	432	--	See table 4.1.2	0.4/1layer	Min. 0.45
Supplementary information:					

5.4.9	TABLE: Electric strength tests		P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:			
Basic: Primary – PE	AC	2500	No
Reinforced:			
Reinforced: Primary – Secondary output	AC	4000V	No
Reinforced: L/N to plastic enclosure with metal foil	AC	4000V	No
Reinforced: T9102 Primary – Secondary **)	AC	4000V	No
Reinforced: T9102 Primary – Core **)	AC	4000V	No
Insulation sheet	AC	4000V	No
Supplementary information: *) For all models list in this report **) For all sources of T9102. Note: The tests mentioned above were performed after humidity test.			

5.5.2.2	TABLE: Stored discharge on capacitors				P
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
264V/50Hz	Line-Neutral	N	On	36	ES1
90V/50Hz	Line-Neutral	N	On	8	ES1

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Supplementary information:
X-capacitors installed for testing are:
- bleeding resistor rating: See table 4.1.2 for detail
- ICX:

Notes:
A. Test Location:
Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth
B. Operating condition abbreviations:
N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition

5.6.6.2	TABLE: Resistance of protective conductors and terminations			P
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
PE terminal of AC inlet to internal Metal enclosure	40	2	0.28	0.007
PE terminal of AC inlet to internal Metal enclosure	32	2	--	--
PE terminal of ac inlet to C9903	40	2	0.32	0.008
PE terminal of ac inlet to C9903	32	2	--	--
PE terminal of ac inlet to C9904	40	2	0.16	0.004
PE terminal of ac inlet to C9904	32	2	--	--
PE terminal of ac inlet to C9905	40	2	0.20	0.005
PE terminal of ac inlet to C9905	32	2	--	--
PE terminal of ac inlet to C9909	40	2	0.20	0.005
PE terminal of ac inlet to C9909	32	2	--	--
PE terminal of ac inlet to C9910	40	2	0.12	0.003
PE terminal of ac inlet to C9910	32	2	--	--
Supplementary information:				

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part	P
Supply voltage .....:		—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)
Line to earth,	1	0.58Max.
Neutral to earth,	2*	

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Line to secondary connector, Neutral to secondary connector, Line to plastic enclosure with copper foil, Neutral to plastic enclosure with copper foil	3	
	4	
	5	
	6	
	8	

Supplementary Information:

Notes:
[1] Supply voltage is the anticipated maximum Touch Voltage
[2] Earthed neutral conductor [Voltage differences less than 1% or more]
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
A	DC output of power board	Power (W) :	--	--	PS2 (See Table Annex Q.1)
		V_A (V) :	--	--	
		I_A (A) :	--	--	

Supplementary Information:
(*) Measurement taken only when limits at 3 seconds exceed PS1 limits.

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			P
Location	Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No
*	*	*	*	Yes

Supplementary information:
An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.
(*) All components located within the power board are considered as arcing PIS.

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)	P

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Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
*	*	*	*	--	Yes

Supplementary Information:

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

(*) All circuits are regarded as Resistive PIS.

8.5.5	TABLE: High Pressure Lamp		N/A
Description		Values	Energy Source Classification
Lamp type.....:			—
Manufacturer.....:			—
Cat no.....:			—
Pressure (cold) (MPa).....:			MS_
Pressure (operating) (MPa).....:			MS_
Operating time (minutes).....:			—
Explosion method .....:			—
Max particle length escaping enclosure (mm) .:			MS_
Max particle length beyond 1 m (mm).....:			MS_
Overall result .....:			
Supplementary information:			

B.2.5	TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Power board 715GB656 and main board 715GD279 (HDMI mode):								

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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90	50	1.727	—	148.5	—	F9901	1.727	Max. power output to speaker. Max.contrast 20% brightness. One USB C 1 load 5V/3A, One USB C 2 load 20V/4.8A. operated continuously.
90	60	1.728	—	148.4	—	F9901	1.728	Same as above.
100	50	1.543	2	147.5	—	F9901	1.543	Same as above.
100	60	1.551	2	147.7	—	F9901	1.551	Same as above.
240	50	0.663	2	144.4	—	F9901	0.663	Same as above.
240	60	0.670	2	144.4	—	F9901	0.670	Same as above.
264	50	0.615	—	144.2	—	F9901	0.615	Same as above.
264	60	0.622	—	144.2	—	F9901	0.622	Same as above.
Power board 715GB656 and main board 715GD279 (DP mode):								
90	50	1.715	—	147.8	—	F9901	1.715	Max. power output to speaker. Max.contrast, Max brightness. USB load 5V/5W, One USB C 1 load 5V/3A, One USB C 2 load 20V/4.0A. operated continuously.
90	60	1.722	—	147.9	—	F9901	1.722	Same as above.
100	50	1.538	2	146.8	—	F9901	1.538	Same as above.
100	60	1.540	2	146.8	—	F9901	1.540	Same as above.
240	50	0.661	2	143.9	—	F9901	0.661	Same as above.
240	60	0.668	2	143.9	—	F9901	0.668	Same as above.
264	50	0.613	—	143.6	—	F9901	0.613	Same as above.
264	60	0.621	—	143.7	—	F9901	0.621	Same as above.
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured								

B.3	TABLE: Abnormal operating condition tests	P

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Clause	Requirement + Test	Result - Remark	Verdict

Ambient temperature (°C) .....:	See below.	—
Power source for EUT: Manufacturer, model/type, output rating ..:	--	—

Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Ventilation openings	Blocked	264	4.0H	F9901	0.622	Yes	T9102Coil=71.9°C, T9102Core=70.7°C, Palstic outside=41.8°C, Panel surface=42.1°C, Metal parts for accessible =42.1°C, Switch surface=39.2°C, Key surface=33.7°C, Ambient=29.3°C.	No hazard, no extremely high temperature
T9102(After C9105)	Overload	264	4.0H	F9901	1.276	Yes	T9102Coil=121.4 °C, T9102Core=105.9 °C, Palstic outside=42.4°C, Panel surface =42.8°C, Metal parts for accessible =45.4°C, Switch surface =38.5°C, Key surface=37°C, Ambient=27.6°C.	Overload to 8.3A. No hazard, no extremely high temperature .
Fast charge	Overload	264	4.0H	F9901	0.633	Yes	T9102Coil=68.7°C, T9102Core=67.4°C, Palstic outside=36°C, Panel surface =38°C, Metal parts for accessible =42.6°C, Switch surface=32.8°C, Key surface=34.1°C, Ambient=27.7°C.	Overload to 2.3A, No hazard, no extremely high temperature .

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B.3	TABLE: Abnormal operating condition tests		P
Ambient temperature (°C) .....:		See below.	—
Power source for EUT: Manufacturer, model/type, output rating ..:		--	—

Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
USB3.0	Overload	264	4.0H	F9901	0.645	Yes	T9102Coil=69.3°C, T9102Core=67.7°C, Palstic outside=36.3°C, Panel surface =38.5°C, Metal parts for accessible =44.6°C, Switch surface =32.4°C, Key surface=34.2°C, Ambient=28°C.	Overload to 2.2A. No hazard, no extremely high temperature .
USB C 1 (15W)	Overload	264	4.0H	F9901	0.808	Yes	T9102Coil=69.1°C, T9102Core=67.4°C, Palstic outside=36.2°C, Panel surface =37.9°C, Metal parts for accessible =44°C, Switch surface =32.1°C, Key surface=34°C, Ambient=28.7°C.	Overload to 3.2A. No hazard, no extremely high temperature .
USB C 2 (96W)	Overload	264	4.0H	F9901	0.808	Yes	T9102Coil=83.4°C, T9102Core=78°C, Palstic outside=38.5°C, Panel surface =41.1°C, Metal parts for accessible =44.1°C, Switch surface =34.5°C, Key surface=33.5°C, Ambient=28.7°C,	Overload to 4.9A. No hazard, no extremely high temperature .

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Clause	Requirement + Test	Result - Remark	Verdict

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....:				See below.				—
Power source for EUT: Manufacturer, model/type, output rating ..:				--				—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.								

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Clause	Requirement + Test	Result - Remark	Verdict

B.4	TABLE: Fault condition tests							P
Ambient temperature (°C) .....:			25					—
Power source for EUT: Manufacturer, model/type, output rating .:			--					—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
BD9901 pin2-4	S-C	264	<1s	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard.
C9801	S-C	264	<1s	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard.
U9101 pin1-15	S-C	264	5 min	F9901	0.089	—	—	Unit shut down, no hazard, no extremely high temperature.
U9101 pin2-15	S-C	264	3 min	F9901	0.089	—	—	Unit shut down, no hazard, no extremely high temperature.
Q9104 pin G-S	S-C	264	3 min	F9901	0.61	—	—	As normal, no hazard, no extremely high temperature.
Q9104 pin D-S	S-C	264	3 min	F9901	0.096	—	—	Unit shut down, no hazard, no extremely high temperature.
Q9104 pin G-D	S-C	264	2 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature.
Q9103 pin G-S	S-C	264	<1S	F9901	0.61	—	—	As normal, no hazard, no extremely high temperature.
Q9103 pin D-S	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, no hazard, no extremely high temperature.
Q9103 pin G-D	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature.
U9802 pin 1-2	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature

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Clause	Requirement + Test	Result - Remark	Verdict

U9802 pin3-4	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
U9104 pin 1-2	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
U9104 pin3-4	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
Q9101 pin G-S	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
Q9101 pin D-S	S-C	264	2 min	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard
Q9101 pin G-D	S-C	264	<1S	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard
Q9102 pin G-S	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
Q9102 pin D-S	S-C	264	2 min	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard
Q9102 pin G-D	S-C	264	<1S	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard
R9813	S-C	264	2 min	F9901	0.61	—	—	As normal, no hazard, no extremely high temperature..
Q9102 pin G-S	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
Q9102 pin D-S	S-C	264	2 min	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard
Q9102 pin G-D	S-C	264	<1S	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard

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Clause	Requirement + Test	Result - Remark	Verdict

T9102 pin3-4	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
T9102 pin13-14	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
T9102 pin5-7	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
T9102 pin11-12	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
Supplementary information: S-C = Short Circuit, O-C = Open Circuit.								

Annex M.3	**TABLE: Batteries**									N/A
The tests of Annex M are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position?..... :										
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition										
Max. current during fault condition										

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		
Supplementary information:		

TRF No. IEC62368_1D

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Annex M.3	**TABLE: Batteries**									N/A
The tests of Annex M are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position?..... :										
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**				N/A
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
	Normal				
	Abnormal				
	Single fault –SC/OC				
	Normal				
	Abnormal				
	Single fault – SC/OC				
Supplementary Information:					

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
Supplementary Information:				

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**						**P**
Note: Measured UOC (V) with all load circuits disconnected:							
Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)		
			Meas.	Limit	Meas.	Limit	
Circuit output tested: +19V out of power board 715GB656							
T9102 (after C9105)	Normal condition	19.3	13.9	≤ 51.8	231.0	≤ 250	
For main board 715GD279							
CN501(HDMI) pin16 to GND	Normal condition	4.6	0	≤ 8.0	0	≤ 100	
CN501(HDMI) other pin to GND	Normal condition	0	0	≤ 8.0	0	≤ 100	
CN503 (DP) pin20 to GND	Normal condition	3.3	0.9	≤ 8.0	2.1	≤ 100	

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IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
CN503(DP) pin20 to GND	(U407 pin2-3 S-C)	4.9	0.9	≤ 8.0	3.2	≤ 100
CN504(DP) other pin to GND	Normal condition	0	0	≤ 8.0	0	≤ 100
CN6003 above (USB3.0)	Normal condition	5.1	2.3	≤ 8.0	9.3	≤ 100
CN6003 above (USB3.0)	U8929 S-C	5.1	4.1	≤ 8.0	10.6	≤ 100
CN6003 below (USB3.0)	Normal condition	5.1	2.5	≤ 8.0	9.9	≤ 100
CN6003 below (USB3.0)	U8928 S-C	5.1	4.3	≤ 8.0	10.8	≤ 100
CN6004 above (Fast charge)	Normal condition	5.1	2.5	≤ 8.0	9.7	≤ 100
CN6004 above (Fast charge)	U8933 S-C	5.1	4.3	≤ 8.0	11.0	≤ 100
CN6004 below (USB3.0)	Normal condition	5.1	2.6	≤ 8.0	10.1	≤ 100
CN6004 below (USB3.0)	U8931 S-C	5.1	4.4	≤ 8.0	11.5	≤ 100
CN552 (USB C 5V)	Normal condition	5.0	3.4	≤ 8.0	13.4	≤ 100
CN552 (USB C 5V)	R6257 S-C	5.0	3.4	≤ 8.0	13.4	≤ 100
CN551 (USB C 5V)	Normal condition	5.1	4.7	≤ 8.0	16.5	≤ 100
CN551 (USB C 7V)	Normal condition	7.2	4.7	≤ 8.0	25.6	≤ 100
CN551 (USB C 9V)	Normal condition	9.2	4.7	≤ 8.0	35.3	≤ 100

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

CN551 (USB C 10V)	Normal condition	10.2	4.7	≤ 8.0	39.9	≤ 100
CN551 (USB C 12V)	Normal condition	12.3	4.7	≤ 8.0	49.5	≤ 100
CN551 (USB C 15V)	Normal condition	15.4	4.7	≤ 8.0	63.5	≤ 100
CN551 (USB C 20V)	Normal condition	20.1	5.0	≤ 8.0	92.7	≤ 100
CN551 (USB C 20V)	R6377 S-C	20.1	5.0	≤ 8.0	92.7	≤ 100
CN551 (USB C 20V)	R6379 S-C	20.1	5.0	≤ 8.0	92.7	≤ 100
Supplementary Information: 1.S-C=short circuit 2.Fuse F1701, F702, F703 that will break the circuit within 120 s with a current equal to 210 % of the current rating. 3.USB C use approve IC, See table 4.1.2 for detail.						

T.2, T.3, T.4, T.5	TABLE: Steady force test				P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Internal components	--	--	10	5	The clearance and creepage distances do not be reduced below the required values.
External plastic enclosure	See table 4.1.2	See table 4.1.2	250	5	All safeguards remained effective.
Internal metal enclosure	See table 4.1.2	See table 4.1.2	30	5	All safeguards remained effective.
Supplementary information:					

T.6, T.9	TABLE: Impact tests			P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
External plastic enclosure	See table 4.1.2	See table 4.1.2	1300	All safeguards remained effective.

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Supplementary information:					

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
External plastic enclosure	See table 4.1.2	See table 4.1.2	70	7	All safeguards remained effective.
Supplementary information:					

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT
IEC 62368-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
(Audio/video, information and communication technology equipment - Part 1: Safety requirements)

Differences according to.....: EN 62368-1:2014+A11:2017

Attachment Form No.....: EU_GD_IEC62368_1D_II

Attachment Originator .....: Nemko AS

Master Attachment.....: Date 2021-02-04

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	CENELEC COMMON MODIFICATIONS (EN)	P
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".	-
CONTENTS	**Add** the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords	-
	Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list:	-

0.2.1	Note	1	Note 3	4.1.15	Note
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3

	For special national conditions, see Annex ZB.		-
1	**Add** the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.		-

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	**Add** the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. **mains**, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for **pluggable equipment type B** or **permanently connected equipment**, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for **pluggable equipment type A** the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		N/A
5.4.2.3.2.4	**Add** the following to the end of this subclause: The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009.		N/A
10.2.1	Add the following to [c] and [d] in table 39: For additional requirements, see 10.5.1.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	**Add** the following after the first paragraph: *For RS 1 compliance is checked by measurement under the following conditions:* *In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.* NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. *The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.* *Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.* *For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.* NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
10.6.1	**Add** the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		N/A
10.Z1	**Add** the following new subclause after 10.6.5. **10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz** The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566		N/A
G.7.1	**Add** the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Bibliography	**Add** the following standards: **Add** the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		N/A
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		P
4.1.15	**Denmark, Finland, Norway** and **Sweden** To the end of the subclause the following is added: **Class I pluggable equipment type A** intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and **accessible** parts, have a marking stating that the equipment shall be connected to an earthed **mains** socket-outlet. The marking text in the applicable countries shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.” In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		N/A
4.7.3	**United Kingdom** To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	**Denmark** After the 2nd paragraph add the following: A warning (marking **safeguard**) for high **touch current** is required if the **touch current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high touch current.	N/A
5.4.11.1 and Annex G	**Finland and Sweden** To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
5.5.2.1	**Norway** After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: Resistors used as **basic safeguard** or bridging **basic insulation** in **class I pluggable equipment type A** shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	**Denmark** **Add** to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification:* In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	**Ireland and United Kingdom** After the indent for **pluggable equipment type A**, the following is added: – the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm^2 to 1,5 mm^2 in cross-sectional area.		N/A
5.7.5	**Denmark** To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the **protective conductor current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	**Norway and Sweden** To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	**Denmark** To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A
B.3.1 and B.4	**Ireland and United Kingdom** The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of **direct plug-in equipment**, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the **direct plug-in equipment**, until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	**Denmark** To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a *Justification:* Heavy Current Regulations, Section 6c		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	**United Kingdom** To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
G.7.1	**United Kingdom** To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	**Ireland** To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	**Ireland and United Kingdom** To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm^2 is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ZC	*ANNEX ZC, NATIONAL DEVIATIONS (EN)*		N/A
10.5.2	**Germany** The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification:* German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. **NOTE** Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: http://www.ptb.de		N/A

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2102

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1

U.S.A. AND CANADA NATIONAL DIFFERENCES

(Audio/video, information and communication technology equipment – Part 1: Safety requirements)

Differences according to ..... :	CSA/UL 62368-1:2014
TRF template used:..... :	IECEE OD-2020-F3, Ed. 1.1
Attachment Form No..... :	US_CA_ND_IEC62368_1D
Attachment Originator ..... :	UL(US)
Master Attachment..... :	Dated 2021-02-04

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IEC 62368-1 - US and Canada National Differences Special National Conditions based on Regulations and Other National Differences			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	In accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1.17	*For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.*		N/A

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2103

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.	No such batteries.	N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment	Not provide in this product.	N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.		N/A
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuits within the equipment.	N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V_{peak} or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits within the equipment.	N/A
Annex M	Battery packs for stationary applications comply with special component requirements.	No such parts.	N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.	No such parts.	N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	No such parts.	N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.	No such parts.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.	No such parts.	N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	No such parts.	N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.	No such application.	N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such parts.	NA
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such parts.	N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."	Single phase only.	N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current	Not such application.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position	No such parts.	N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets, receptacles, medium-base or smaller lampholders provided.	N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).	No such parts.	N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non-interchangeable.	No such parts.	N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No such parts.	N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).	No such parts.	N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.	Not applicable for the equipment.	N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1are marked with the voltage rating and “Class 2” or equivalent; marking is located adjacent to the terminals and visible during wiring.	Not applicable for the equipment.	N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.	Not such application.	N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.	Not such application.	N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	UL approved components used. Refer to table 4.1.2 of IEC 62368-1 test report for details.	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	The equipment is not permanently connected equipment.	N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are in accordance with the NEC/CEC.	Pluggable equipment type A.	N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.	No terminals for permanent wiring.	N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).	No wire binding screws.	N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected equipment.	N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.	The equipment not connected to a centralized d.c. power system.	N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.	No TNV circuits within the equipment.	N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	No TNV circuits within the equipment.	N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1
(AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES
(**Audio/video, information and communication technology equipment**)

Differences according to ..... : AS/NZS 62368.1:2018

	National Differences		
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		-
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		-
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		-
2	*Add* the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, *Approval and test specification—Plugs and socket-outlets* -AS/NZS 3123, *Approval and test specification—Plugs, socket-outlets and couplers for general industrial application* -AS/NZS 3191, *Electric flexible cords* -AS/NZS 60065, *Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)* -AS/NZS 60320.1, *Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)* -AS/NZS 60320.2.2, *Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)* -AS/NZS 60695.2.11*, Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products* -AS/NZS 60695.11.5, *Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance* -AS/NZS 60695.11.10, *Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods* -AS/NZS 60884.1, *Plugs and socket-outlets for household and similar purposes, Part 1: General requirements* -AS/NZS 60950.1:2015, *Information technology equipment—Safety*, Part 1: *General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)*		-

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	IEC 61032:1997, *Protection of persons and equipment by enclosures—Probes for verification* -AS/NZS 61558.1:2008 (including Amendment 2:2015), *Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)* -AS/NZS 61558.2.16, *Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.*		
4.1.1	**Application of requirements and acceptance of materials, components and subassemblies** 1 *Replace* the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'. 2 *Replace* the text 'IEC 60065' with 'AS/NZS 60065'.		P
4.7	**Equipment for direct insertion into mains socket-outlets**		N/A
4.7.2	**Requirements** *Delete* the text of the second paragraph and *replace* with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.7.3	**Compliance Criteria** *Delete* the first paragraph and Note 1 and Note 2 and *replace* with the following: *Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.*		N/A
4.8	*Delete* existing clause title and *replace* with the following: **4.8 Products containing coin/button cell batteries**		N/A
4.8.1	**General** 4 Second dashed point, *delete* the text and *replace* with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, *insert* the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, *renumber* the existing Note as 'NOTE 2'. 4 Fifth dashed point, *delete* the word 'lithium'.		N/A
4.8.2	**Instructional Safeguard** First line, *delete* the word 'lithium'.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.3	**Construction** First line, after the word 'Equipment' *insert* the words 'containing one or more coin/button batteries and'		N/A
4.8.5	**Compliance criteria** *Delete* the first paragraph and *replace* with the following: *Compliance is checked by applying a force of 30 N +/-1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.*		N/A
5.4.10.2	**Test methods**		N/A
5.4.10.2.1	**General** *Delete* the first paragraph and *replace* with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.		N/A
Table 29	*Replace* the table with the following:		N/A

Parts	Impulse test		Steady state test	
	New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) [a]	2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) [b]	1.5 kV 10/700 µs [c]		1.0 kV	1.5 kV

[a] Surge suppressors shall not be removed.
[b] Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment.
[c] During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.

5.4.10.2.2	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.3	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	**Electrically-caused fire**		N/A
6.1	**General** After the first paragraph, *insert* the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202		N/A
6.6	After Clause 6.6, *add* the new Clauses 6.201 and 6.202 as follows: **6.201 External power supplies, docking stations and other similar devices** and **6.202 Resistance to fire—Alternative tests** (see special national conditions)		N/A
8.5.4	**Special categories of equipment comprising moving parts**		N/A
8.5.4.1	**Large data storage equipment** In the first dashed row and the second dashed rows *replace* 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.		N/A
8.6	**Stability of equipment**		N/A
8.6.1 and Table 36	**Requirements** 1. Table 36, *insert* Footnote c at the end of the 'Glass slide' heading, and *add* a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: [c] The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, *insert* '[201]' at the end of 'No stability requirements' 3. Table 36, ninth row, *insert* '[201]' at the end of 'No stability requirements' 4. Table 36, *add* the following new footnote: 201 MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, *delete* the words 'MS2 and MS3 television sets' and *replace* with 'MS2 and MS3 television sets and display devices'		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.1	After Clause 8.6.1 *add* the following new clauses: **8.6.1.201 Instructional safeguard for fixed-mount television sets** (see special national conditions)		N/A
Annex F **Paragraph F.3.5.1**	**Mains appliance outlet and socket-outlet markings** *Replace* 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A
Annex G **Paragraph G.4.2**	**Mains connectors** 1 In the second line *insert* 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line *insert* 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 *Add* the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		N/A
Paragraph G.5.3.1	**Transformers, General** 1 In the third dashed point *replace* 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point *replace* 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		N/A
Paragraph G.7.1	**Mains supply cords, General** In the fourth dashed paragraph, *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'		
Table G.5	**Sizes of conductors** 1 In the second row, first column, *delete* '6' and *replace* with '7.5' 2 In the second row, second column, *delete* '0,75' and *replace* with '0.75[b] 3 *Delete* Note 1. 4 *Replace* 'NOTE 2' with 'NOTE:'. 5 *Delete* the text of 'Footnote b' and *replace* with the following: [b] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm2 three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c *replace* 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex M Paragraph M.3.2	**Protection circuits for batteries provided within the equipment, Test method** After the first dashed point *add* the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A
	Special national conditions (if any)		N/A
6.201	**External power supplies, docking stations and other similar devices** For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and – of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn. NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. *Compliance shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4*		N/A
6.202	**Resistance to fire—Alternative tests**		N/A
6.202.1	**General** Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.		NA

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	b) The following parts which would contribute negligible fuel to a fire: – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.		
	Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4. For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A
6.202.2	**Testing of non-metallic materials** Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.		N/A
6.202.3	**Testing of insulating materials** Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested		N/A
	The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:		N/A

Clause of AS/NZS 60695.11.5	Change
9 Test procedure	
9.2 Application of needle-flame	*Delete* the first and second paragraphs and *replace* with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s 1 s.
9.3 Number of test specimens	*Replace* with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.
11 Evaluation of test results	*Replace* with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	boards, it shall not exceed 15 s. The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.		
6.202.4	**Testing in the event of non-extinguishing material** If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		N/A
6.202.5	**Testing of printed boards** The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source. The test is not carried out if— – the printed board does not carry any potential ignition source; – the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or – the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. *Conformance shall be determined using the smallest thickness of the material.* NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.		
6.202.6	**For open circuit voltages greater than 4 kV** Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		N/A
8.6.1.201	**8.6.1.201 Instructional safeguard for fixed-mount television sets** MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment. The elements of the instructional safeguard shall be as follows: – element 1a: not available; – element 2: 'Stability Hazard' or equivalent wording; – element 3: 'The television set may fall, causing serious personal injury or death' or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.1.202	**Restraining device** MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage. Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1

(JAPAN) NATIONAL DIFFERENCES

(Audio/video, information and communication technology equipment – Part 1: Safety requirements)

Differences according to ..... : J62368-1 (2020)

TRF template used: ..... : IECEE OD-2020-F3, Ed. 1.1

Attachment Form No..... : JP_ND_IEC62368_1D

Attachment Originator ..... : UL (JP)

Master Attachment..... : Date 2021-02-04

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	National Differences		—
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.		N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cab tire cable with 1.25 mm^2 or more cross-sectional area		N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.		N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.		N/A
6.4.3.3	A fuse complying with JIC C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”. A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		N/A
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) [b,c]		N/A
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		N/A
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.		N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A. Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics. If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.		N/A
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A
G.4.2	Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series. Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal. Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.		N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.		N/A
G.8.3.3	Withstand 1,71 × 1.1 × U_0 for 5 s.		N/A

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Photograph of the Equipment under test (EUT)

External view of EUT



External view of EUT



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External view of EUT



External view of EUT



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2126

External view of EUT



External view of EUT



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External view of EUT

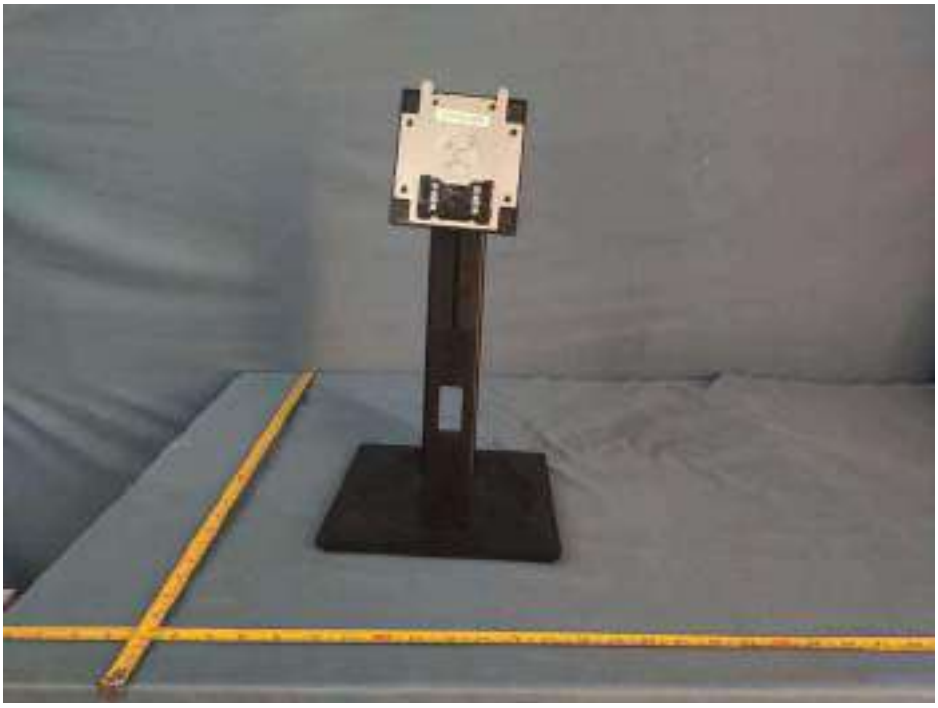


External view of EUT



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View of base stand

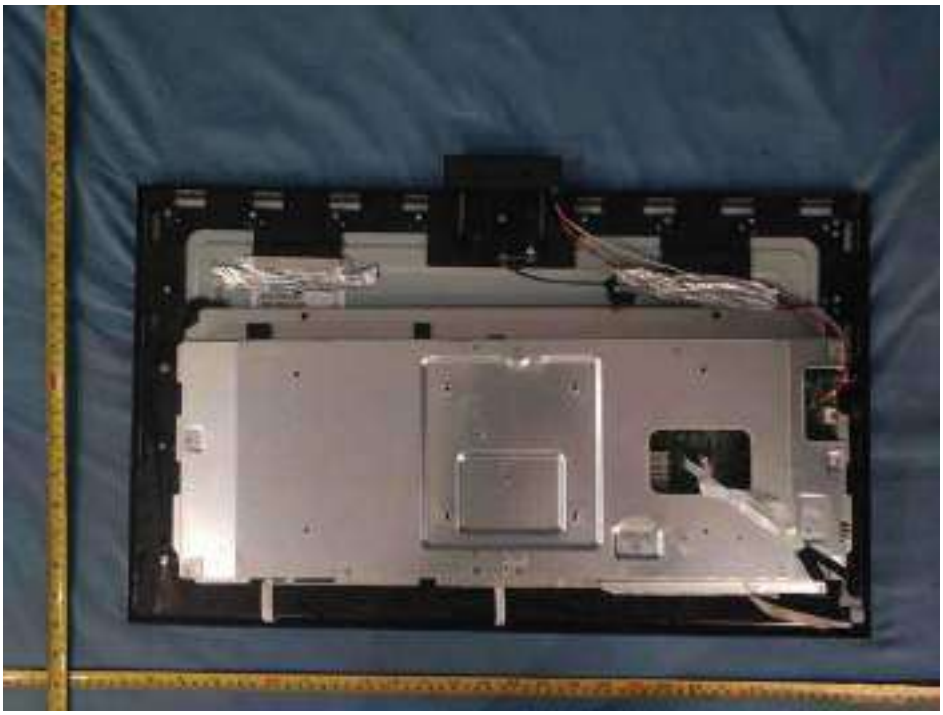


External view of EUT



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Internal view of EUT



Internal view of EUT



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2130

Internal view of EUT



Internal view of EUT

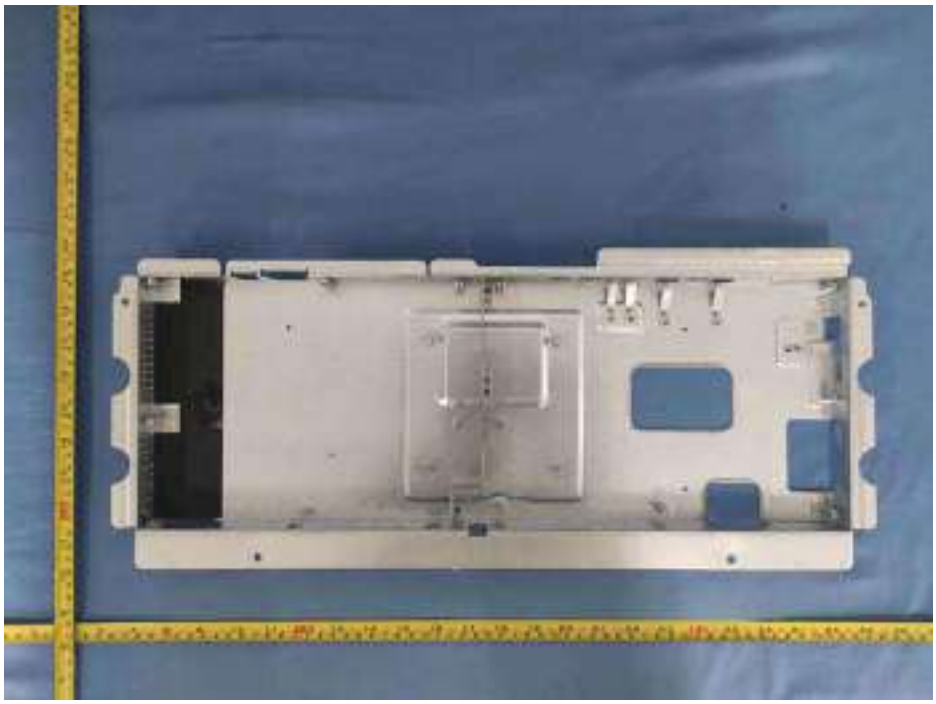


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Internal view of EUT

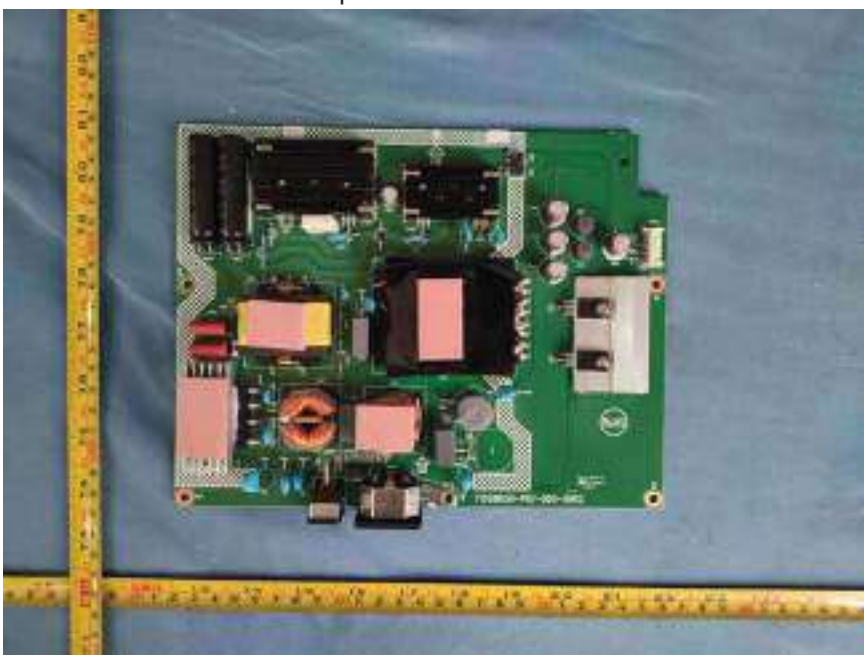


Internal view of EUT

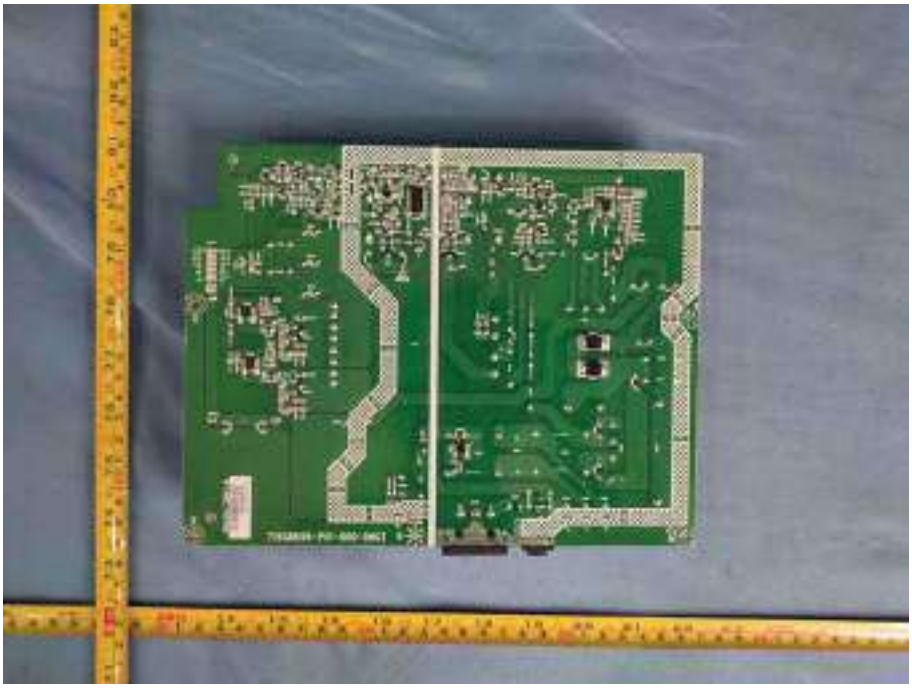


Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2132

View of power board 715GB656



View of power board 715GB656



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View of main board 715GD279



View of main board 715GD279



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Attachment: Measurement Section

6.4.8.3.3, 6.4.8.3.4 & P.2.2	**TABLE: enclosure openings**	**P**

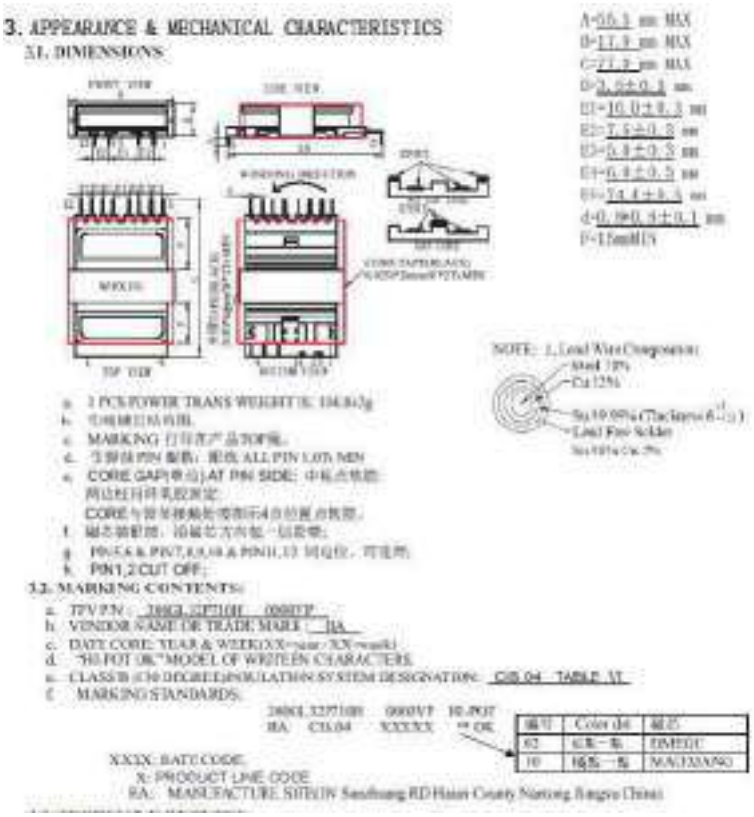
Location	Size (mm)	Comments
Metal cover (internal enclosure)		
Top	1)Φ1.7mm 2)16.1 by 13.8mm 3)40.4 by 18.2mm	1) Numerous circular openings. 2) One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard. 3) One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard.
Right side	1)Φ1.7mm 2)Φ2.0mm max	1) Numerous circular openings. 2) Two circular openings.
Left side	1) 56.3 by16.0mm 2) Φ2.4mm max 3) Φ1.7mm	1) One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard 2)Two circular openings. 3)Numerous circular openings.
Rear	1)56.3 by 33.0mm 2)40.4 by 29.0mm 3)77.7 by 49.7mm 4)Φ1.8mm max 5)Φ2.9mm max	1) One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard. 2)One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard. 3) One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard. 4) Ten circular openings 5) Eight circular openings
Bottom	Φ1.7mm	Numerous circular openings.
External enclosure		
Top	--	No opening.
Left side	--	No opening.

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Location	Size (mm)	Comments
Right side	--	No opening.
Rear	1)6.7 by 3.2mm 2)5.0 by 2.0mm	1. Numerous rectangles openings, Cover by internal metal cover 2. Numerous rectangles openings, Cover by internal metal cover
Bottom	1)22.0 by 3.0mm 2)7.9 by 2.0mm	1)Numerous rectangles openings. 2)Numerous rectangles openings.
Note(s): --		

G.5.3.2	**TABLE: Transformers**	**P**
Construction details:		
Transformer T9102 for power board 715GB656		
Mfr.: see table 4.1.2		
Type: see table 4.1.2		
Recurring peak voltage	432V	
Required clearance insulation		
For Reinforced	4.5mm	
Effective voltage rms	263V	
Required creepage insulation		
For Reinforced	5.3mm	
Measured min. clearances		
Pri. winding –sec winding (Reinforced)	9.9mm	
Pri. winding –core (Reinforced)	9.0mm	
Measured min. creepages		
Pri. winding –sec winding (Reinforced)	9.9mm	
Pri. winding –core (Reinforced)	9.0mm	

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Note: 1) All transformers have the same construction, they are identical except for manufacturer and type. 2) With the equipment to be operated at 5000m above sea level max. the minimum clearances is multiplied by the factor 1.48.	
Construction:  3. APPEARANCE & MECHANICAL CHARACTERISTICS 3.1. DIMENSIONS 3.2. MARKING CONTENTS: XXXX: DATE CODE X: PRODUCT LINE CODE HA: MANUFACTURE SITE(IN Sanzhuang RD Hsien County Nantong Jiangsu China)	
Core consider as secondary	
Pin numbers:	
Prim.	3-4; 13-14
Sec.	5-7; 6-8; 9-11; 10-12
Bobbin:	
Material	Phenolic Molding Compound (PMC) -CHANG CHUN PLASTICS CO.LTD (UL E59481). Type T200HF, rated 150°C, V-0.
Thickness	Min. 0.45mm
Electric strength test	
With DC 4000V after humidity treatment	
Result	Pass

TRF No. IEC62368_1D

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ
ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ

Заявитель Автономная некоммерческая организация «Центр экспертных программ ВОК» (АНО «ЦЭП ВОК») (уполномоченное изготовителем лицо)

место нахождения: Россия, 119618, Москва, ул. 50 лет Октября, д. 4

адрес места осуществления деятельности: Россия, 115419, г. Москва, 2-й Рощинский пр-д, д. 8, корп. 4, ОГРН 1047732007355

Телефон: +74959602015, Адрес электронной почты: cepvok@yandex.ru

в лице Директора Тавера Ефима Иосифовича, действующего на основании Устава

заявляет, что ЖК-мониторы PHILIPS модели 13B**********, 16B**********, 27B**********, 24B**********, 24E**********, 24M**********, 27E**********, 27M**********, 32E**********, 32M**********, 34E********** (где «*» = 0-9, A-Z, a-z, «+», «-», «/», «\», отсутствие символа или пробел и обозначает тип панели монитора, типы разъемов, тип базы для крепления монитора, цветовое решение, регион продаж, отличие в маркетинговых наименованиях)

Изготовитель MMD (Shanghai) Electronics Technology Co., Ltd.

место нахождения: Room 5060A, No. 2 Building, 555 Dongchuan Road. Minhang District, Shanghai, 200241 CHINA (Китай)

адреса места осуществления деятельности по изготовлению продукции: см. Приложение №1 на 1 листе

Код ТН ВЭД ЕАЭС 8528 52 100 0

Серийный выпуск

соответствует требованиям

ТР ЕАЭС 037/2016 «Об ограничении применения опасных веществ в изделиях электротехники и радиоэлектроники»

Декларация о соответствии принята на основании

1. Технических документов, содержащих доказательства соответствия продукции требованиям технического регламента:
- декларации изготовителя от 11.03.2022;
- отчёта изготовителя об оценке рисков № TPVFQ-2021-R0018 от 11.03.2022;
- отчёта (протокола) изготовителя об испытаниях составных частей, материалов и компонентов продукции / GREEN BOM от 11.03.2022.

2. Договора № 06-02/20 от 11.02.2020 между уполномоченным изготовителем лицом (заявителем) АНО «ЦЭП ВОК» и изготовителем MMD (Shanghai) Electronics Technology Co., Ltd.

Схема декларирования 1д.

Дополнительная информация

Условия хранения: при температуре от минус 20°С до плюс 60°С и относительной влажности от 5% до 90%, без конденсации.

Срок службы продукции 5 лет.

Декларация о соответствии действительна с даты регистрации по 14.03.2027 включительно

(подпись)

М.П.

Тавер Ефим Иосифович

(фамилия, имя и отчество руководителя организации-заявителя или физического лица, зарегистрированного в качестве индивидуального предпринимателя)

Регистрационный номер декларации о соответствии: ЕАЭС N RU Д-CN.PA02.B.47325/22

Дата регистрации декларации о соответствии: 15.03.2022

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ПРИЛОЖЕНИЕ № 1 лист 1
К ДЕКЛАРАЦИИ О СООТВЕТСТВИИ ЕАЭС N RU Д-CN.PA02.B.47325/22

Перечень предприятий-изготовителей продукции,
на которую распространяется действие декларации о соответствии

Полное наименование предприятия-изготовителя	Адрес (место нахождения)
1. TPV Display Technology(China) Co., Ltd.	No. 106 Jinghai 3 Rd, BDA, BeiJing City, P. R. China (Китай)
2. TPV Display Technology (Wuhan) Co., Ltd.	Unique No.11 Zhuankou Development Districtof Economic Technological Development Zone,Wuhan City, P.R. China (Китай)
3. L&T Display Technology (Fujian) Ltd.	Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, PRC (Китай)
4. TPV Display Technology (Beihai) Co., Ltd.	China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R.China (Китай)
5. TPV Electronics (Fujian) Co., Ltd.	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China (Китай)
6. MMD Monitors&Displays Nederland B.V	Prins Bernhardplein 200,1097 JB Amsterdam-The Netherlands (Нидерланды)
7. MMD (Shanghai) Electronics Technology Co.,Ltd	Room 5060A, No.2 Building 555, Dongchuan Road, Minhang District, Shanghai, 200241, China (Китай)
8. MMD (Shanghai) Electronics Trading Co., Ltd	Room 603D, No.2 Building, No. 80 MoLing Road, JingAn District, Shanghai, China (Китай)

(подпись)

М.П.

Тавер Ефим Иосифович

(фамилия, имя и отчество руководителя организации-заявителя или физического лица, зарегистрированного в качестве индивидуального предпринимателя)

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FCC SDoC TEST REPORT

Report No.: DDT-B22072002-1E02

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment under Test	:	LCD Monitor
Model No.	:	27B1U56,27B1U56******* (“*” = 0-9，A-Z，A-Z，+，-，/，\ OR BLANK)
Trade Mark	:	PHILIPS

Issued By: Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park, Development Area, Tianjin, China

Tel: +86-22-58038033, E-mail: ddt@dgddt.com, http://www.ddttest.com

REPORT

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2140

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Test Report Declare

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment Under Test	:	LCD Monitor
Model No.	:	27B1U56,27B1U56******* (“*” = 0-9，A-Z，A-Z，+，-，/，\ OR BLANK)
Trade Mark	:	PHILIPS

Test Standard Used:
ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B

We Declare:
The equipment described above is tested and assessed by Tianjin Dongdian Testing Service Co., Ltd. and in the configuration assessed the equipment complied with the standards specified above. The tested and assessed results are contained in this test report and Tianjin Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these assessments.
After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No.:	DDT-B22072002-1E02		
Date of Receipt:	Jul. 21, 2022	Date of Test:	Jul. 22, 2022 ~ Aug. 13, 2022

Prepared By:

May Zhang

May Zhang/Engineer

Approved By:

Aaron Zhang

Aaron Zhang/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Tianjin Dongdian Testing Service Co., Ltd.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

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Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Aug. 26, 2022	

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1. Summary of test results

Description of Test Item	Standard	Result
Conducted emission at AC mains terminals	ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B	PASS
Radiated emission	ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B	PASS

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2. General test information

2.1 Description of EUT

EUT* Name	:	LCD Monitor
Model Number	:	27B1U56,27B1U56******* (“*” = 0-9，A-Z，A-Z，+，-，/，\ OR BLANK)
Model Differences	:	All models difference is in sale marketing.
Test Model	:	27B1U5601H
Serial Number	:	N/A
EUT function description	:	Please refer to user manual of this device
Power supply	:	100-240V 50/60Hz
Test Voltage	:	110V 60Hz
EUT Class	:	Class B
Maximum work frequency	:	295 MHz

Note: EUT is the ab. of equipment under test.

2.2 Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
AC Cable	N/A	N/A	Length: 1.5m/1.8m, Unshielded	N/A
HDMI Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
DP Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
Type-C Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
AUDIO Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A

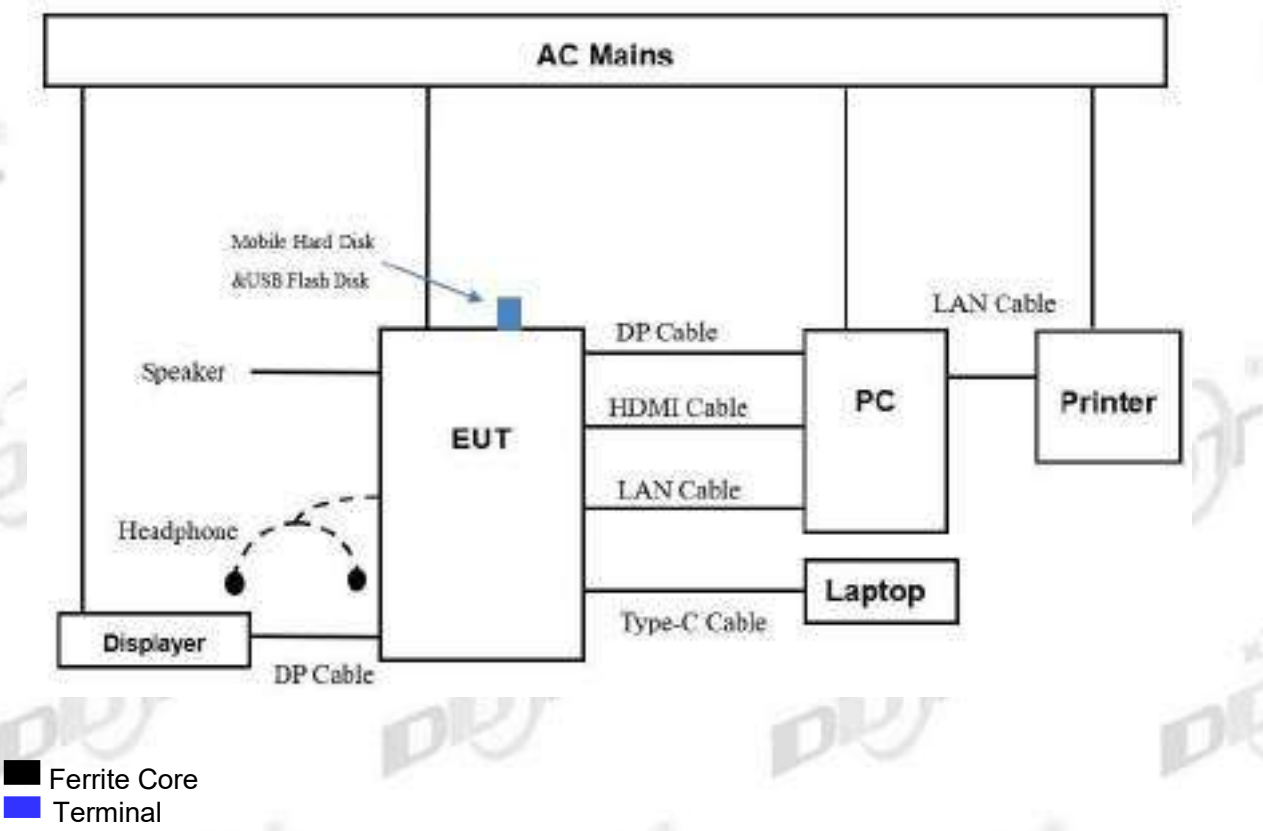
2.3 Test peripherals

Device	Manufacturer	Model No.	Serial No.	Remark
Desktop PC	HP	TPC-W058-MT	8CG0321Q58	N/A
Desktop PC	Samsung	DM700T6A-A99	JVTG98EJ2C004QX	N/A
Desktop PC	Samsung	DM700T6A-A99	JVTG98EJ2C0087L	N/A
Laptop	HP	HP ProBook 455R G6	5CD0122F5D	N/A
Laptop	LENOVO	WEI6 14 ITL	MP22HP0E	N/A
Keyboard	DELL	N/A	N/A	N/A
Mouse	DELL	N/A	N/A	N/A
Printer	SAMSUNG	CLP-365W/SEE	Z8DLBABC200070K	N/A
Headphone	N/A	N/A	N/A	N/A
Speaker	JBL	GO2+	N/A	N/A
Mobile hard disk	N/A	N/A	N/A	N/A

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USB flash disk	N/A	N/A	N/A	N/A
LAN Cable	N/A	N/A	N/A	N/A

2.4 Block diagram EUT configuration for test



Ferrite Core
Terminal

2.5 EUT operating mode(s)

Mode1: HDMI	Connect HDMI cable from PC's HDMI port to EUT's HDMI Port. Connect DP cable from EUT's DP out port to Displayer's DP Port. The test signal is scrolling 'H' with 1kHz audio playing. Connect LAN cable from PC's LAN port to EUT's LAN Port, execute ping operation from laptop to PC.
Mode2: DP	Connect DP cable from PC's DP port to EUT's DP Port. Connect DP cable from EUT's DP out port to Displayer's DP Port. The test signal is scrolling 'H' with 1kHz audio playing. Connect LAN cable from PC's LAN port to EUT's LAN Port, execute ping operation from laptop to PC.
Mode3: Type-C	Connect Type-C cable from Laptop's Type-C port to EUT's Type-C Port. The test signal is scrolling 'H' with 1kHz audio playing. Connect DP cable from EUT's DP out port to Displayer's DP Port. Connect LAN cable from PC's LAN port to EUT's LAN Port, execute ping operation from PC to laptop.

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2.6 Deviations of test standard

No Deviation.

2.7 Test laboratory

Tianjin Dongdian Testing Service Co., Ltd.
Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.
Tel: +86-22-58038033, http://www.ddttest.com, Email: ddt@dgddt.com
NVLAP (National Voluntary Laboratory Accreditation Program) CODE: 500036-0
CNAS (China National Accreditation Service for Conformity Assessment) CODE: L13402
FCC Designation Number: CN5004; FCC Test Firm Registration Number: 368676
ISED (Innovation, Science and Economic Development Canada) Company Number: 27768
Conformity Assessment Body Identifier: CN0125
VCCI Facility Registration Number: C-20089, T-20093, R-20125, G-20122

2.8 Measurement uncertainty

Test Item	**Uncertainty**
Conducted disturbance at mains terminals	3.4dB (150KHz-30MHz)
Uncertainty for Radiation Emission test (30MHz-1GHz)	5.2 dB (Antenna Polarize: H)
	5.2 dB (Antenna Polarize: V)
Uncertainty for Radiation disturbance test (1GHz to 6GHz)	5.0dB(1-6GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

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3. Conducted Emission

3.1 General information

Test date	Jul. 22, 2022	Test engineer	Sam	
Climate condition	Ambient temperature	24.1±1℃	Relative humidity	46±1%
	Atmospheric pressure	100.1±0.2 kPa		
Test place	Shield Room 2#			

3.2 Test Equipment

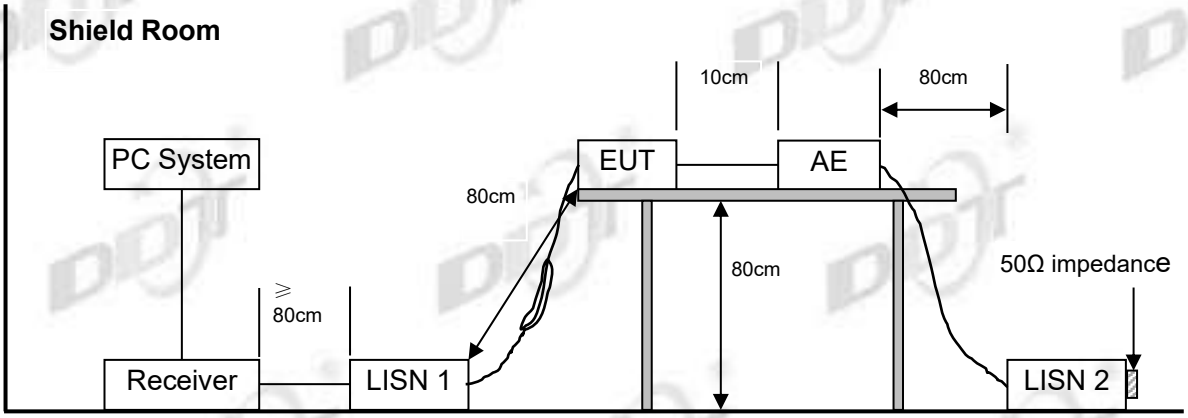
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Test Receiver	R&S	ESCI	101397	Mar. 03, 2022	1 Year
LISN 1	R&S	ENV216	101122	Mar. 23, 2022	1 Year
LISN 2	R&S	ENV216	101254	Mar. 03, 2022	1 Year
Test software	TOYO	EP5/CE	V 5.4.40	N/A	N/A

3.3 Reference Standard

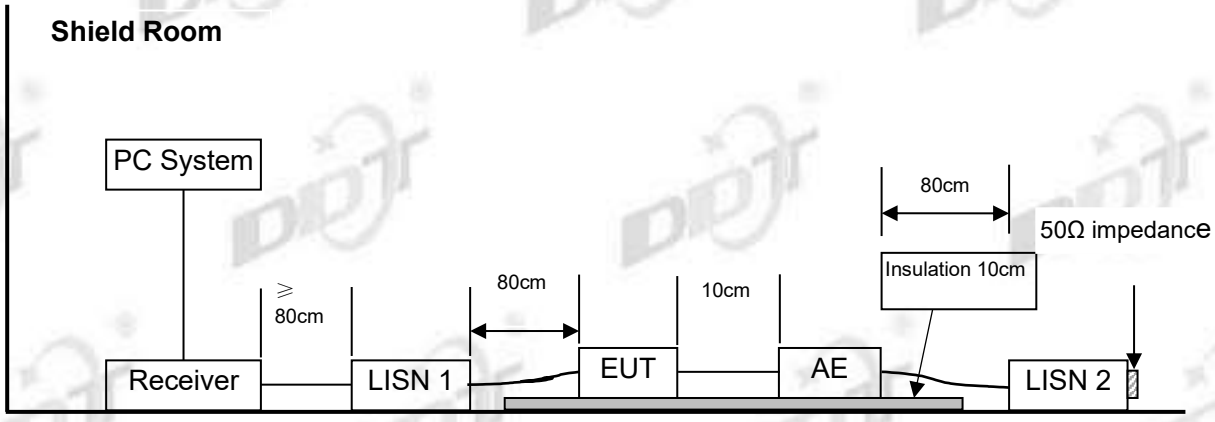
ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B

3.4 Block Diagram of Test Setup

For table-top equipment

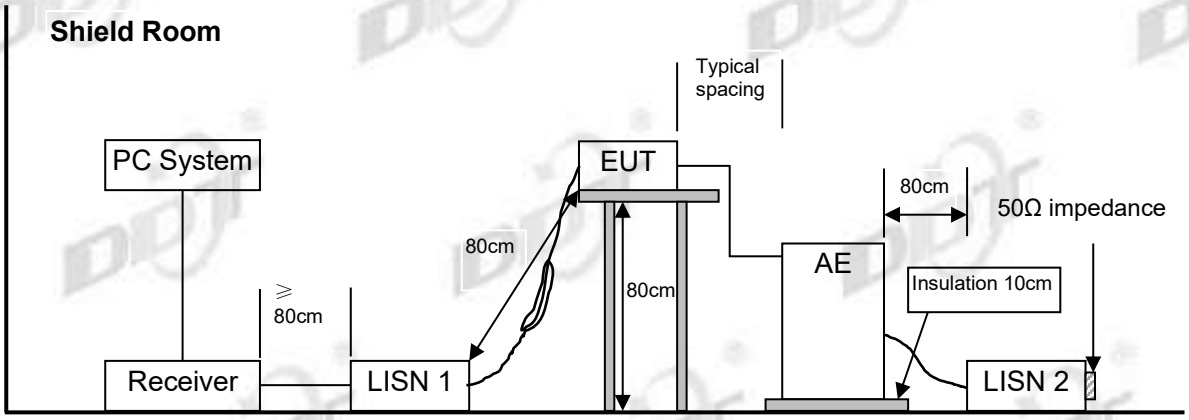


For floor standing equipment



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For combinations equipment



3.5 Limits

Class A

Frequency			Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz	~	500kHz	79	66
500kHz	~	30MHz	73	60

Class B

Frequency			Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz	~	500kHz	66 ~ 56*	56 ~ 46*
500kHz	~	5MHz	56	46
5MHz	~	30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.6 Test Procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm (table-top device)/0.1m (floor stand device) above the ground plane.
All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
All support equipment power received from a second LISN.
Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
During the above scans, the emissions were maximized by cable manipulation.
The test mode(s) described in clause 2.5 were scanned during the preliminary test.
After the preliminary scan, we found the test mode producing the highest emission level.
The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.
EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.
A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.
The test data of the worst-case condition(s) was recorded.
The bandwidth of test receiver is set at 9 KHz.

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The EUT with following test modes were pre-tested:

No.	Operation Mode	Cable Length	Resolution
1.	Mode 1 HDMI	1.8m	2560x1440@75Hz
2.		1.8m	2560x1440@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.		1.5m	2560x1440@75Hz
6.	Mode 2 DP	1.8m	2560x1440@75Hz
7. *		1.8m	2560x1440@60Hz
8.		1.8m	1920*1080@60Hz
9.		1.8m	800*600@60Hz
10.		1.5m	2560x1440@60Hz
11.	Mode 3 Type-C	1.8m	2560x1440@75Hz
12.		1.8m	2560x1440@60Hz
13.		1.8m	1920*1080@60Hz
14.		1.8m	800*600@60Hz
15.		1.5m	2560x1440@75Hz
16.	DP 2560x1440@60Hz with 1.5m power cord		
* Means the worst test mode.			

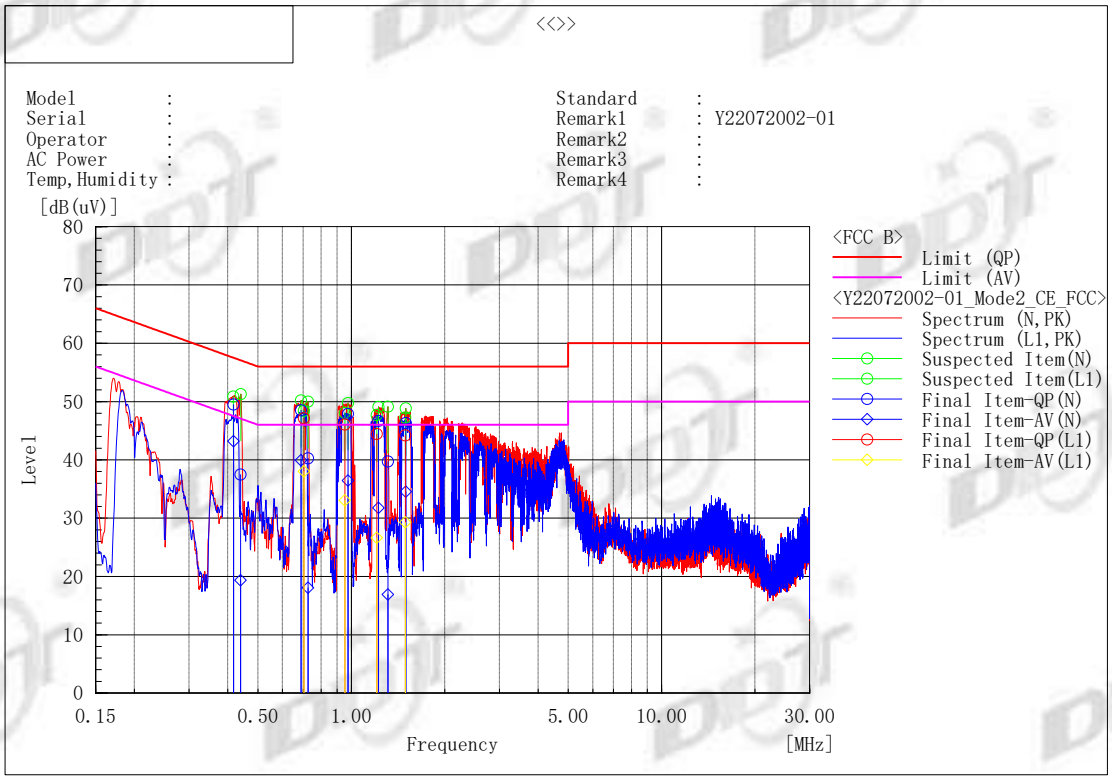
3.7 Test Result

PASS. (See below detailed test result)

Note 1: All emissions not reported below are too low against the prescribed limits.

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Operating Mode 2: DP IN



Final Result

--- N Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	0.44002	27.8	9.6	9.7	37.5	19.3	57.1	47.1	19.6	27.8
2	0.41706	39.8	33.5	9.7	49.5	43.2	57.5	47.5	8.0	4.3
3	0.68891	38.8	30.2	9.7	48.5	39.9	56.0	46.0	7.5	6.1
4	0.97634	38.2	26.7	9.7	47.9	36.4	56.0	46.0	8.1	9.6
5	1.31179	29.9	7.1	9.8	39.7	16.9	56.0	46.0	16.3	29.1
6	1.49786	36.5	24.7	9.8	46.3	34.5	56.0	46.0	9.7	11.5
7	1.22372	36.9	22.0	9.8	46.7	31.8	56.0	46.0	9.3	14.2
8	0.72524	30.5	8.4	9.7	40.2	18.1	56.0	46.0	15.8	27.9

--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	0.70337	37.4	28.3	9.7	47.1	38.0	56.0	46.0	8.9	8.0
2	0.95361	36.3	23.4	9.7	46.0	33.1	56.0	46.0	10.0	12.9
3	1.2092	34.7	16.9	9.7	44.4	26.6	56.0	46.0	11.6	19.4
4	1.494	34.5	19.6	9.7	44.2	29.3	56.0	46.0	11.8	16.7

Note1) Level (Quasi-Peak and/or C/Average) = Meter Reading + Factor
Note2) Line = Polarity of input power (Live or Neutral)
N : Abbreviation of Neutral Polarity, L1 : Abbreviation of Live Polarity,
Note3) Factor = LISN Insertion Loss + Cable Loss
Note4) Margin = Limit – Level (Quasi-Peak and/or C/Average)
Note5) C/Average : Abbreviation of CISPR Average

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4. Radiated Emissions

4.1 General information

30MHz~1000MHz

Test date	Aug. 12, 2022	Test engineer	Jason	
Climate condition	Ambient temperature	21.8±1℃	Relative humidity	47±1%
	Atmospheric pressure	100.4±0.2kPa		
Test place	10m Chamber			

Above 1GHz

Test date	Aug. 13, 2022	Test engineer	Jason	
Climate condition	Ambient temperature	22.1±1℃	Relative humidity	52±1%
	Atmospheric pressure	100.4±0.2kPa		
Test place	10m Chamber			

4.2 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	R&S	ESCI	101024	Mar. 03, 2022	1 Year
EMI Test Receiver	R&S	ESCI	101030	Mar. 29, 2022	1 Year
Bilog Antenna	TESEQ	CBL6112D	29068	Oct. 12, 2020	2 Year
Bilog Antenna	TESEQ	CBL6112D	29069	Oct. 12, 2020	2 Year
Amplifier	Sonoma	310N	300913	Feb. 15, 2022	1 Year
Amplifier	Sonoma	310N	300914	Feb. 15, 2022	1 Year
Ant Mast	Innco	MA4000	N/A	N/A	N/A
Ant Mast	Innco	MA4000	N/A	N/A	N/A
Mast Controller	Innco	CO2000	N/A	N/A	N/A
RF Selector 4CH	TOYO	NS4904N	Selector1	N/A	N/A
RF Selector 4CH	TOYO	NS4904N	Selector2	N/A	N/A
Test software	TOYO	EP5/RE	V 5.7.10	N/A	N/A
EMI Test Receiver	R&S	ESU26	100244	Mar. 03, 2022	1 Year
Double Ridged Horn Antenna	TESEQ	BHA 9118	31754	Oct. 12, 2021	2 Year
Pre-amplifier	TOYO	TPA0108-40	1409	Feb. 15, 2022	1 Year
Test software	TOYO	EP5/RE	V 5.7.10	N/A	N/A
Notes. N/A means Not applicable.					

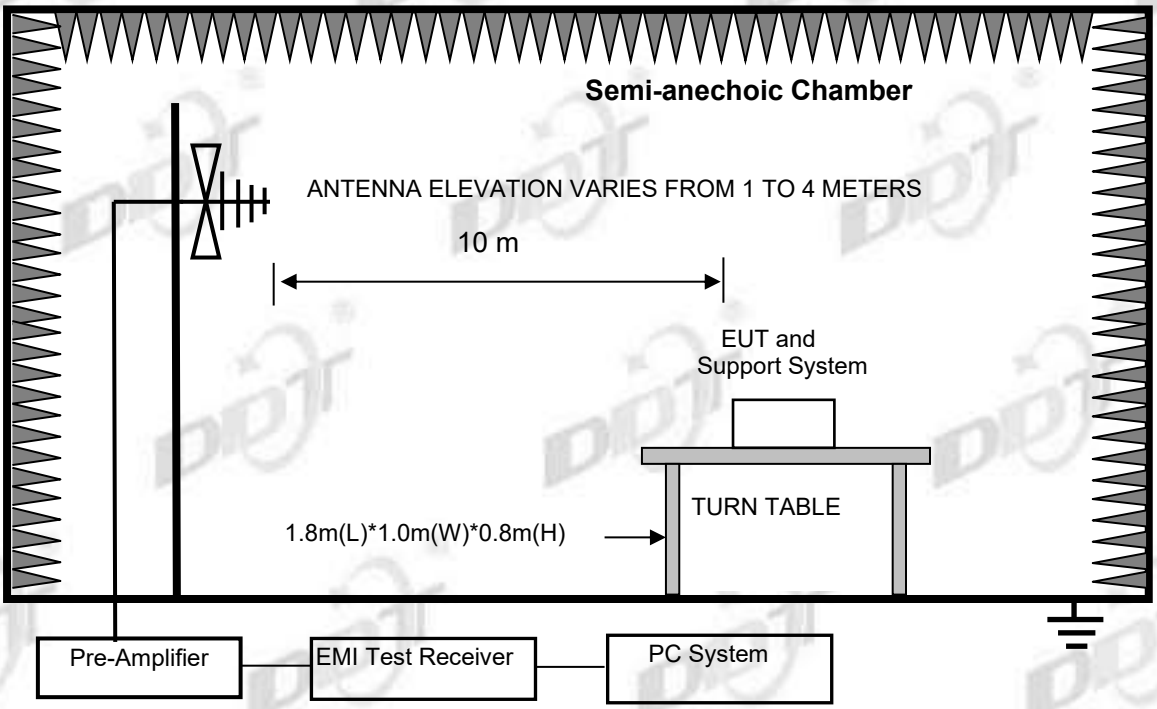
4.3 Reference Standard

ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B

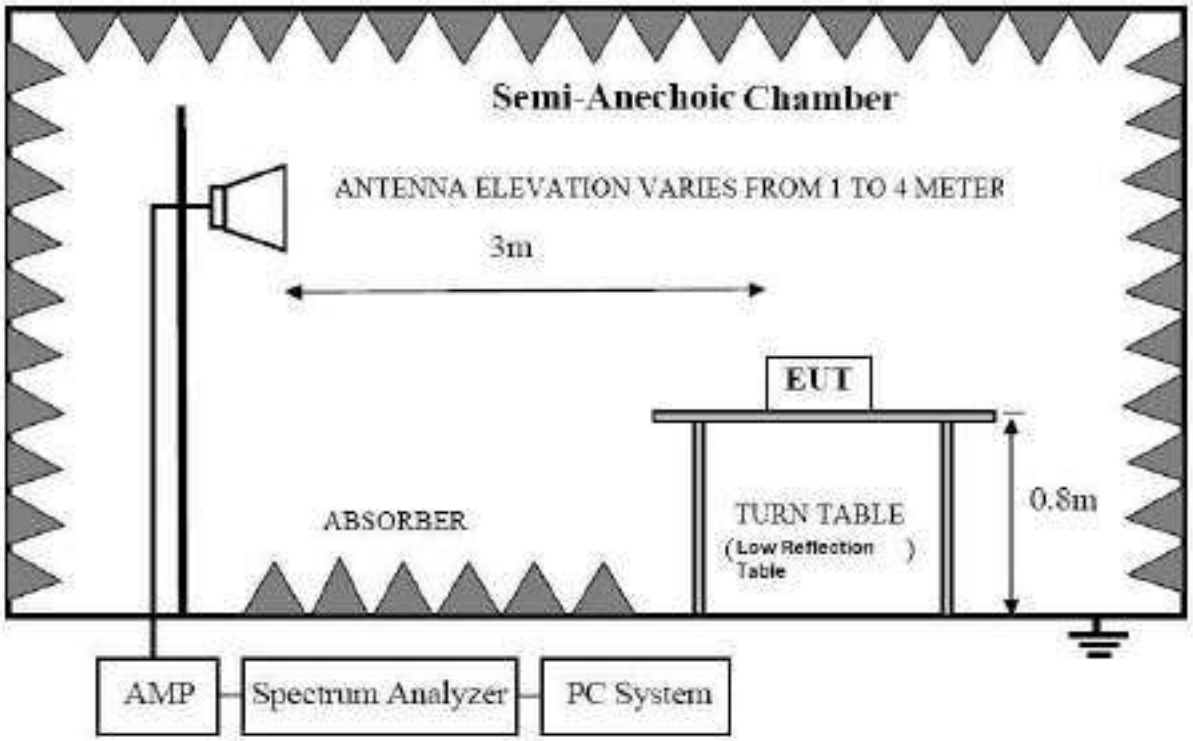
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4.4 Block diagram of test setup

Below 1GHz



Above 1GHz



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4.5 Limits

Class A

Frequency (MHz)	Distance (Meters)	Field Strengths Limits dB(μV)/m
30--88	10	39
88--216	10	43.5
216--960	10	46.5
960-1000	10	49.5
Above 1000	3	80.0(Peak), 60.0(Average)

Class B

Frequency (MHz)	Distance (Meters)	Field Strengths Limits dB(μV)/m
30--88	10	30.0
88--216	10	33.5
216--960	10	36.0
960-1000	10	44.0
Above 1000	3	74.0(Peak), 54.0(Average)

Note: (1) The smaller limit shall apply at the cross point between two frequency bands.

4.6 Test Procedure

Procedure of Preliminary Test
The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm (table-top device)/0.1m (floor stand device) above the ground plane.
Configuration EUT to simulate typical usage as described in clause 2.5 and test equipment as described in clause 4.2 of this report.
All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
Mains cables, telephone lines or other connections to auxiliary equipment located outside the test are shall drape to the floor, be fitted with ferrite clamps or ferrite tubes placed on the floor at the point where the cable reaches the floor and then routed to the place where they leave the turntable. No extension cords shall be used to mains receptacle.
The antenna was placed at 10 meters (for 30MHz – 1GHz) and 3 meters (for above 1 GHz) away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.
The Analyzer / Receiver quickly scanned from 30MHz to 1GHz and 1GHz to 6GHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
The test mode(s) described in clause 2.5 were scanned during the preliminary test:
After the preliminary scan, we found the test mode producing the highest emission level. The EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the final test.
Procedure of Final Test
EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
The Analyzer / Receiver scanned from 30MHz to 1GHz and 1GHz to 6GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and only Q.P. reading is presented.

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For emissions from 30MHz to 1GHz, Quasi-Peak values were measured with EMI Receiver and the bandwidth of Receiver is 120 KHz.
For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz
The test data of the worst-case condition(s) was recorded.

The EUT with following test modes were pre-tested:
For frequency range 30MHz ~ 1GHz:

No.	Operation Mode	Cable Length	Resolution
1.	Mode 1 HDMI	1.8m	2560x1440@75Hz
2.		1.8m	2560x1440@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.		1.5m	2560x1440@75Hz
6.	Mode 2 DP	1.8m	2560x1440@75Hz
7.		1.8m	2560x1440@60Hz
8.		1.8m	1920*1080@60Hz
9.		1.8m	800*600@60Hz
10.		1.5m	2560x1440@75Hz
11. *	Mode 3 Type-C	1.8m	2560x1440@75Hz
12.		1.8m	2560x1440@60Hz
13.		1.8m	1920*1080@60Hz
14.		1.8m	800*600@60Hz
15.		1.5m	2560x1440@75Hz
16.	Type-C 2560x1440@75Hz with 1.5m power cord		
17.	Type-C 1920*1080@60Hz with headphone		
18.	Type-C 1920*1080@60Hz without headphone		
* Means the worst test mode.			

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For frequency range above 1GHz:

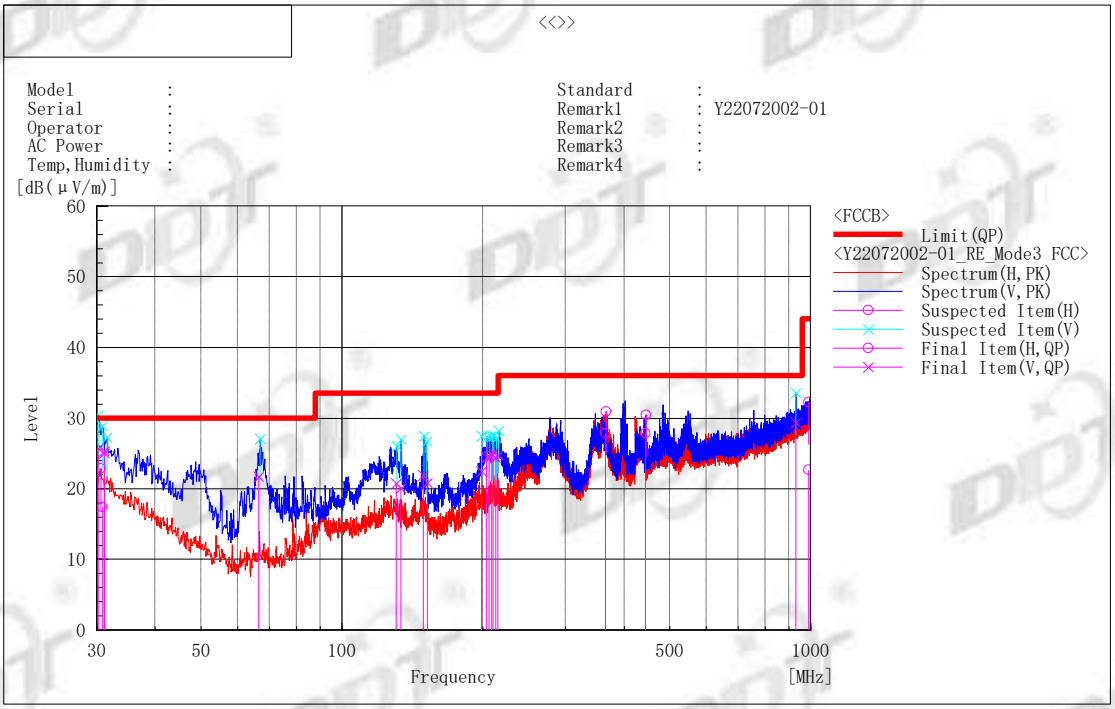
No.	Operation Mode	Cable Length	Resolution
1.	Mode 1 HDMI	1.8m	2560x1440@75Hz
2.		1.8m	2560x1440@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.		1.5m	2560x1440@60Hz
6. *	Mode 2 DP	1.8m	2560x1440@75Hz
7.		1.8m	2560x1440@60Hz
8.		1.8m	1920*1080@60Hz
9.		1.8m	800*600@60Hz
10.		1.5m	2560x1440@75Hz
11.	Mode 3 Type-C	1.8m	2560x1440@75Hz
12.		1.8m	2560x1440@60Hz
13.		1.8m	1920*1080@60Hz
14.		1.8m	800*600@60Hz
15.		1.5m	2560x1440@60Hz
16.	DP 2560x1440@75Hz with 1.5m power cord		
17.	DP 1920*1080@60Hz with headphone		
18.	DP 1920*1080@60Hz without headphone		
* Means the worst test mode.			

4.7 Test result

PASS. (See below detailed test result)
Note: All emissions not reported below are too low against the prescribed limits.

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Operating Mode 3: Type-C IN



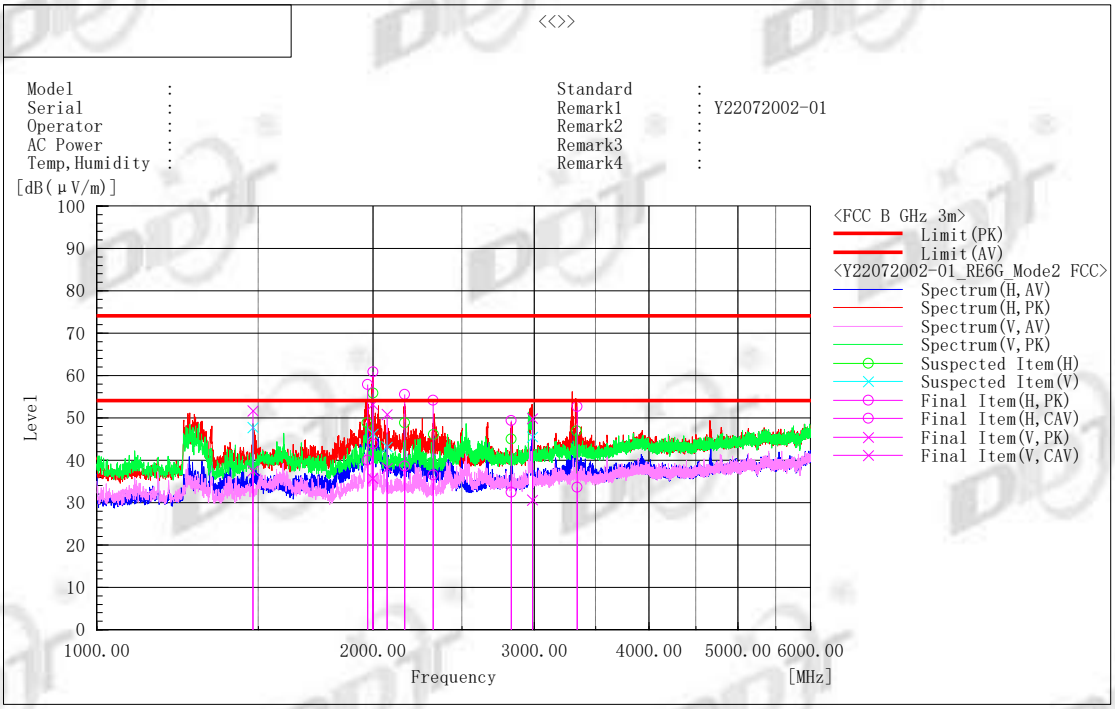
Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]	System	Remark
1	30.791	H	22.6	-5.2	17.4	30.0	12.6	158.0	142.0	1	
2	364.943	H	33.9	-6.1	27.8	36.0	8.2	263.0	131.4	1	
3	444.608	H	31.2	-3.4	27.8	36.0	8.2	215.0	180.5	1	
4	991.076	H	17.1	5.6	22.7	44.0	21.3	100.0	137.7	1	
5	30.196	V	29.5	-3.8	25.7	30.0	4.3	354.0	261.0	2	
6	31.096	V	29.6	-4.3	25.3	30.0	4.7	100.0	306.7	2	
7	31.163	V	29.4	-4.4	25.0	30.0	5.0	101.0	262.6	2	
8	66.515	V	37.7	-16.0	21.7	30.0	8.3	152.0	83.5	2	
9	130.414	V	30.6	-9.8	20.8	33.5	12.7	187.0	29.3	2	
10	133.470	V	30.0	-9.9	20.1	33.5	13.4	126.0	349.4	2	
11	148.961	V	32.7	-10.8	21.9	33.5	11.6	106.0	357.0	2	
12	152.302	V	31.8	-11.0	20.8	33.5	12.7	100.0	18.2	2	
13	198.417	V	34.4	-11.9	22.5	33.5	11.0	101.0	16.5	2	
14	203.250	V	36.2	-11.7	24.5	33.5	9.0	100.0	11.2	2	
15	205.959	V	36.3	-11.7	24.6	33.5	8.9	100.0	94.8	2	
16	208.898	V	36.8	-12.0	24.8	33.5	8.7	103.0	95.7	2	
17	210.330	V	37.2	-12.0	25.2	33.5	8.3	100.0	111.8	2	
18	212.731	V	36.3	-11.9	24.4	33.5	9.1	100.0	137.3	2	
19	215.145	V	36.6	-11.8	24.8	33.5	8.7	101.0	123.5	2	
20	930.058	V	24.6	4.8	29.4	36.0	6.6	226.0	15.2	2	

Note) Receiving antenna polarization : Horizontal and/or Vertical
Test Distance : 10 m, Antenna Height : 1 m to 4 m
Level QP (Quasi-Peak) = Reading QP + Factor (Antenna Factor + Cable Loss - Amp. Gain)
Margin QP (Quasi-Peak) = Limit – Level QP

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Operating Mode 2: DP IN



Final Result

No.	Frequency	(P)	Reading PK	Reading CAV	c.f	Result PK	Result CAV	Limit PK	Limit AV	Margin PK	Margin CAV	Height	Angle
	[MHz]		[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[°]
1	1973.473	H	72.6	54.7	-14.7	57.9	40.0	74.0	54.0	16.1	14.0	100.0	317.5
2	2000.134	H	75.5	58.5	-14.7	60.8	43.8	74.0	54.0	13.2	10.2	103.0	312.9
3	2165.305	H	69.6	52.7	-14.1	55.5	38.6	74.0	54.0	18.5	15.4	113.0	308.8
4	2327.368	H	68.6	51.0	-14.5	54.1	36.5	74.0	54.0	19.9	17.5	189.0	298.4
5	2829.076	H	62.3	45.4	-13.0	49.3	32.4	74.0	54.0	24.7	21.6	100.0	311.5
6	3337.737	H	62.8	43.7	-10.1	52.7	33.6	74.0	54.0	21.3	20.4	176.0	288.6
7	1480.026	V	68.8	54.6	-17.1	51.7	37.5	74.0	54.0	22.3	16.5	177.0	219.9
8	1999.128	V	67.9	50.4	-14.7	53.2	35.7	74.0	54.0	20.8	18.3	126.0	324.8
9	2072.012	V	65.2	52.5	-14.4	50.8	38.1	74.0	54.0	23.2	15.9	100.0	133.7
10	2984.726	V	61.9	42.6	-12.0	49.9	30.6	74.0	54.0	24.1	23.4	161.0	120.4

Note1) (P) : Abbreviation of Antenna Polarity
Note2) Reading PK / C/AV : Received raw Peak / C/Average signal
Note3) Factor = Antenna factor + Cable loss – Amplifier gain
Note4) Level PK / C/AV = Reading PK / C/AV + Factor, Real signal Peak / C/Average level
Note5) Margin PK / C/AV = Limit – Level PK / C/AV
PK : Abbreviation of Peak
C/AV : Abbreviation of CISPR Average

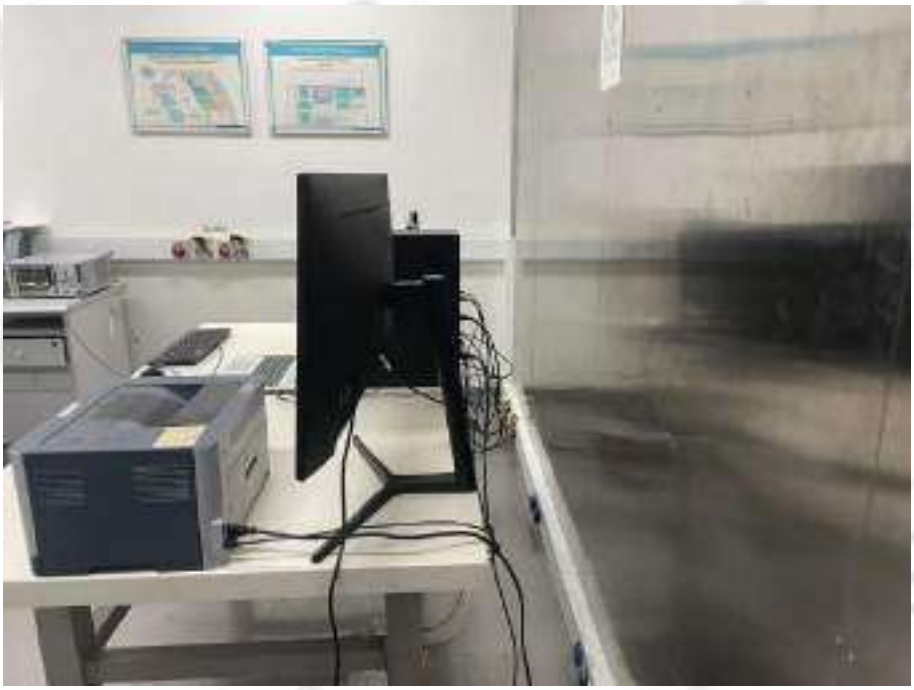
Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2158

5. Test Setup Photos

5.1 Conducted emission at the mains ports



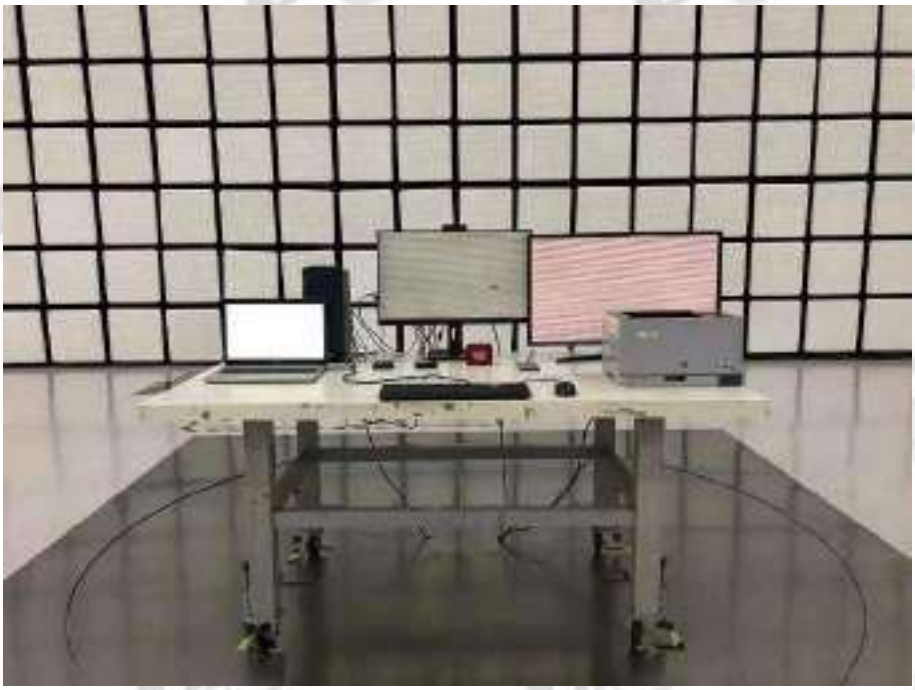
[Front]



[Rear]

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5.2 Radiated emission

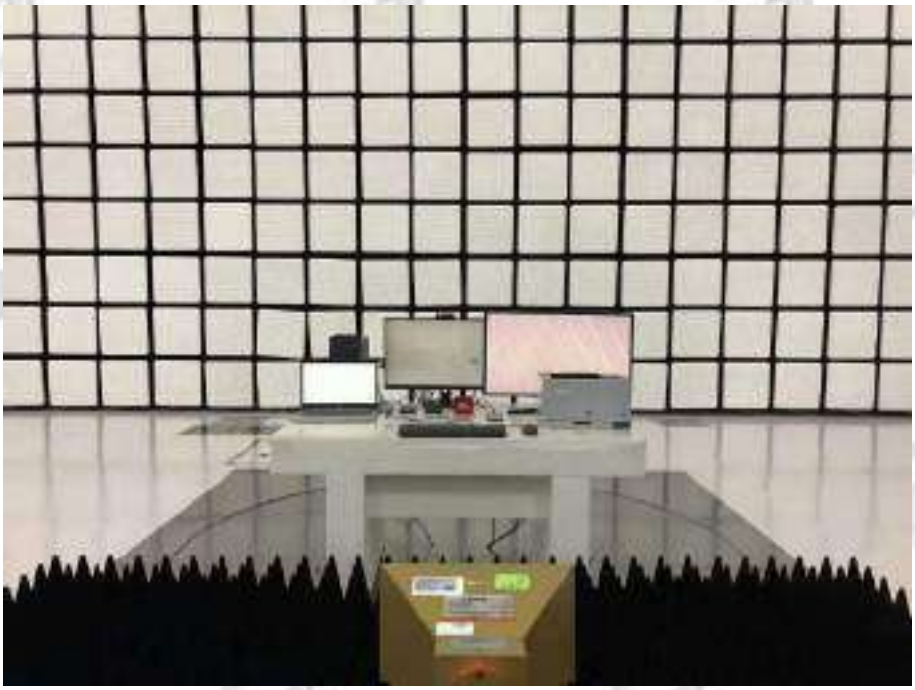


[Front]



[Rear]

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2160



[Front]



[Rear]

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Annex I

Regulatory Statement and Label Marking Advice for the FCC SDoC

1. Marking Suggested for the label:

Trade Name and model number This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2. Statement suggested for the User Manual:

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

Notes: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

Note: If shielded cables or special accessories are required for compliance, a statement must be included which instructs the user to employ them, for example, Shielded cables must be used with this unit to ensure compliance with the Class B FCC limits.

END OF REPORT

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2162

EMF ASSESSMENT REPORT

Report No.: DDT-B22072002-1E04

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment under Test	:	LCD Monitor
Model No.	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Mark	:	PHILIPS

Issued By: Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park, Development Area, Tianjin, China.

Tel: +86-22-58038033, E-mail: ddt@dgddt.com, http://www.ddttest.com

REPORT

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Assessment Report Declare

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment under Test	:	LCD Monitor
Model No.	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Mark	:	PHILIPS

Assessment Standard Used:
EN 62311:2008, EN IEC 62311:2020 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz)

We Declare:
The equipment described above is tested and assessed by Tianjin Dongdian Testing Service Co., Ltd. and in the configuration assessed the equipment complied with the standards specified above. The tested and assessed results are contained in this test report and Tianjin Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these assessments.
After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above CE standards.

Report No.:	DDT-B22072002-1E04		
Date of Receipt:	Jul. 21, 2022	Date of Test:	Jul. 21, 2022

Prepared By:

May Zhang/Engineer

Approved By:

Aaron Zhang/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Tianjin Dongdian Testing Service Co., Ltd.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2165

Revision history

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Aug. 26, 2022	

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2166

1. Summary of assessment results

Description of Assessment Item	Standard	Result
Emission of electric fields	EN 62311:2008 EN IEC 62311:2020	PASS
Emission of electromagnetic fields	EN 62311:2008 EN IEC 62311:2020	PASS

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2. General assessment information

2.1 Description of EUT

EUT* Name	:	LCD Monitor
Model Number	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Model Differences	:	All models difference is in sale marketing.
Test Model	:	27B1U5601H
Serial Number	:	N/A
EUT function description	:	Please refer to user manual of this device
Power supply	:	100~240V 50/60Hz
Maximum work frequency	:	295 MHz
Sample Type	:	Series production

Note: EUT is the ab. of equipment under test.

2.2 Port of EUT

Port	Description
☑AC mains power port	AC Main Port
☒DC network power port	N/A
☑Wired network port	One LAN port
☑Signal data/control port	One HDMI in port, One DP in port, Three Type-C in ports, One DP out port, Four USB Ports
☒Antenna port	N/A
☒Broadcast receiver tuner port	N/A
☑Audio output port	One Audio out Port, Two Speakers
☒Video output port	N/A
☒Other:	N/A
Note: "☒" means the product does not have this port, "☑" means the product has this port, N/A means not applicable	

2.3 Accessories of EUT

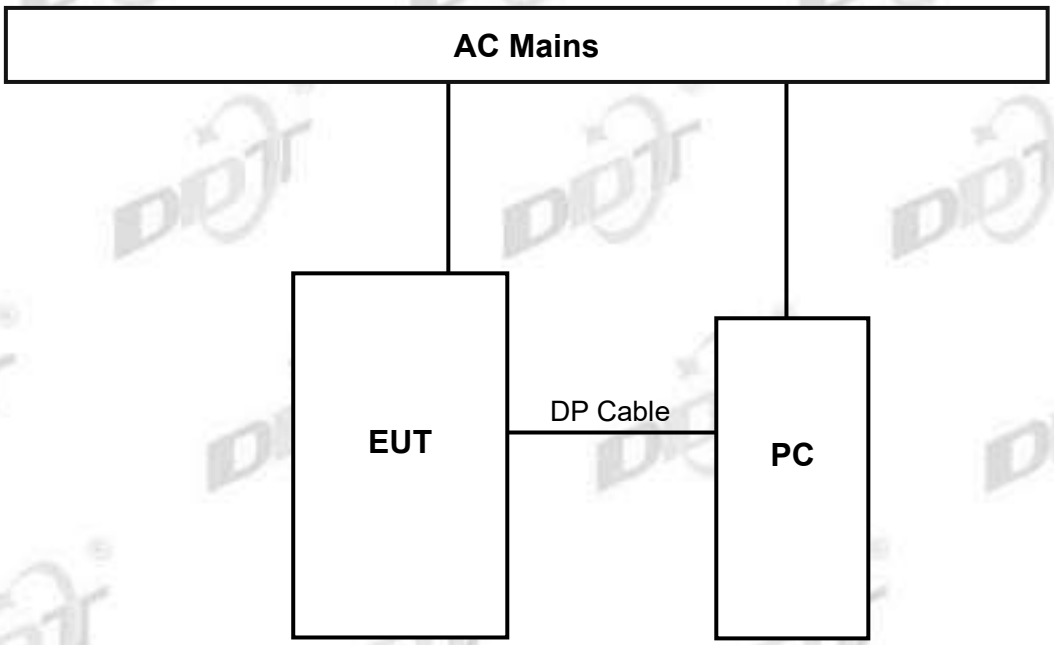
Description of Accessories	Manufacturer	Model number	Description	Remark
AC Cable	N/A	N/A	Length: 1.5m/1.8m, Unshielded	N/A
HDMI Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
DP Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
Type-C Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
AUDIO Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2168

2.4 Test peripherals

Device	Manufacturer	Model No.	Serial No.	Remark
PC	DELL	Vostro 5890	700SBD3	N/A

2.5 Block diagram EUT configuration for test



Ferrite Core
Terminal

2.6 Test mode description:

Mode 1: DP In
Connect DP cable from PC's DP port to EUT's DP Port.
The test signal is color bars with moving picture element according to ITU-R BT 471-1.
Testing resolution: 2560x1440@75Hz

2.7 Deviations of assessment standard

No Deviation.

2.8 Test laboratory

Tianjin Dongdian Testing Service Co., Ltd.
Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.
Tel: +86-22-58038033, http://www.ddttest.com, Email: ddt@dgddt.com
NVLAP (National Voluntary Laboratory Accreditation Program) CODE: 500036-0
CNAS (China National Accreditation Service for Conformity Assessment) CODE: L13402
FCC Designation Number: CN5004; FCC Test Firm Registration Number: 368676
ISED (Innovation, Science and Economic Development Canada) Company Number: 27768
Conformity Assessment Body Identifier: CN0125
VCCI Facility Registration Number: C-20089, T-20093, R-20125, G-20122

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2.9 Measurement uncertainty

Test Item	Uncertainty
Emission of electric fields	3.2 dB (100KHz-6GHz)
Emission of electromagnetic fields	3.8 dB (1Hz-400KHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

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3. EMF Assessment (B-Field and E-Field Strength)

3.1 General information

Test date	Jul. 21, 2022	**Test engineer**	May	
Climate condition	**Ambient temperature**	24.5±1℃	**Relative humidity**	45±1%
	Atmospheric pressure	100.6±0.2kPa		
Test place	3m Chamber 1#			

3.2 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Exposure Level Tester	Narda	ELT-400	M-0425	Feb. 26, 2022	1 Year
B-Field Probe	Narda	100 cm² Probe	M-0440	Feb. 26, 2022	1 Year
Exposure Level Tester	Wavecontrol	SMP2	20SN1419	Feb. 16, 2022	1 Year
E-Field Probe	Wavecontrol	WPF8	20WP041176	Feb. 16, 2022	1 Year

3.3 Reference Standard

EN 62311:2008, EN IEC 62311:2020 applies to electronic and electrical equipment for which no dedicated product
standard or product family standard regarding human exposure to electromagnetic fields applies. It covers equipment with intentional or non-intentional radiators as well as a combination thereof.

It provides assessment methods and criteria to evaluate equipment against limits on exposure of people related to electric, magnetic and electromagnetic fields.

The frequency range covered is from 0 Hz to 300 GHz.
Reference Levels
For electric, magnetic and electromagnetic fields (0Hz to 300GHz, unperturbed r.m.s. values)

Frequency range	E-field strength	H-field strength	B-field	Equivalent plane wave power density S_{eq}
	V/m	A/m	μT	W/m²
0 Hz - 1 Hz	-	$3{,}2 \times 10^4$	4×10^4	-
1 Hz - 8 Hz	10 000	$3{,}2 \times 10^4 / f^2$	$4 \times 10^4 / f^2$	-
8 Hz - 25 Hz	10 000	4 000/f	5 000/f	-
0,025 kHz - 0,8 kHz	250/f	4/f	5/f	-
0,8 kHz - 3 kHz	250/f	5	6,25	-
3 kHz - 150 kHz	87	5	6,25	-
0,15 MHz - 1 MHz	87	0,73/f	0,92/f	-
1 MHz - 10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10 MHz - 400 MHz	28	0,073	0,092	2
400 MHz - 2 000 MHz	$1{,}375\ f^{1/2}$	$0{,}003\ 7\ f^{1/2}$	$0{,}004\ 6\ f^{1/2}$	f/200
2 GHz - 300 GHz	61	0,16	0,20	10

f is as indicated in the frequency range column.

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3.4 Assessment Result

PASS. (See below detailed test result)

Y22072002-01
B-Field Result (Frequency Range: 1Hz to 400KHz)

Operation Mode	Position	Distance	B-Field Strength Level(μT)	Limit(μT)	Result
DP	Front	20cm	0.86	2.3	Pass
	Back		0.90	2.3	Pass
	Left		0.85	2.3	Pass
	Right		0.87	2.3	Pass
	Up		0.83	2.3	Pass
	Down		0.91	2.3	Pass

E-Field Strength Result (Frequency Range: 300KHz to 18GHz)

Operation Mode	Position	Distance	E-Field Strength Level(V/m)	Limit(V/m)	Result
DP	Front	20cm	0.81	28	Pass
	Back		0.83	28	Pass
	Left		0.89	28	Pass
	Right		0.82	28	Pass
	Up		0.85	28	Pass
	Down		0.92	28	Pass

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3.5 Test Photo





END OF REPORT

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2173

Certificate of Compliance

No. : DDT-Z22072002-1E01

We hereby certify that the following product has been tested by Tianjin Dongdian Testing Service Co., Ltd., with the listing standards and found in conformity with the EC Council Directive of 2014/30/EU. It is possible to use CE marking to demonstrate the conformity with this EMC Directive.

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Product	:	LCD Monitor
Model Number	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Name	:	PHILIPS
Test Standards	:	EN 55032:2015, EN 55032:2015/A11:2020, EN 55032:2015/A1:2020, CISPR 32:2015/AMD1:2019, AS/NZS CISPR 32:2015 AMD 1:2020, BS EN 55032:2015, BS EN 55032:2015+A11:2020, BS EN 55032:2015+A1:2020 EN 55035:2017, EN 55035:2017/A11:2020, CISPR 35:2016, BS EN 55035:2017, BS EN 55035:2017+A11:2020 EN 61000-3-2:2014, EN IEC 61000-3-2:2019/A1:2021, BS EN 61000-3-2:2014, BS EN IEC 61000-3-2:2019+A1:2021 EN 61000-3-3:2013, EN 61000-3-3:2013/A1:2019, EN 61000-3-3:2013/A2:2021, BS EN 61000-3-3:2013, BS EN 61000-3-3:2013+A1:2019, BS EN 61000-3-3:2013/A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014/AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020
Test Report No.	:	DDT-B22072002-1E01

CE

Authorized Sig.

Aaron Zhang

Aaron Zhang/EMC Manager

Date of Issue: Aug. 26, 2022

The statement is based on a single evaluation of one sample of mentioned products above. It does not imply an assessment of the whole production and does not permit the use of the test lab logo

Tianjin Dongdian Testing Service Co., Ltd.

Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.

Tel: +86-22-58038033, E-mail: ddt@dgddt.com, http://www.ddttest.com

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2174

Declaration of Conformity

No. : DDT-Z22072002-1E02

We hereby certify that the following product has been tested by Tianjin Dongdian Testing Service Co., Ltd. with the listing standards and the test results conformity with those standards.

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Product	:	LCD Monitor
Model Number	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Name	:	PHILIPS
Test Standards	:	ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B
Test Report No.	:	DDT-B22072002-1E02

Authorized Signer

Aaron Zhang

Aaron Zhang/EMC Manager

Date of Issue: Aug. 26, 2022

The statement is based on a single evaluation of one sample of mentioned products above. It does not imply an assessment of the whole production and does not permit the use of the test lab logo

Tianjin Dongdian Testing Service Co., Ltd.

Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.

Tel: +86-22-58038033, E-mail: ddt@dgddt.com, http://www.ddttest.com

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2175

Declaration of Conformity

No. : DDT-Z22072002-1E03

We hereby certify that the following product has been tested by Tianjin Dongdian Testing Service Co., Ltd. with the listing standards and the test results conformity with those standards.

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Product	:	LCD Monitor
Model Number	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Name	:	PHILIPS
Test Standards	:	ICES-003 Issue 7: October 2020
Test Report No.	:	DDT-B22072002-1E03

Authorized Signer:

Aaron Zhang

Aaron Zhang/EMC Manager

Date of Issue: Aug. 26, 2022

The statement is based on a single evaluation of one sample of mentioned products above. It does not imply an assessment of the whole production and does not permit the use of the test lab logo

Tianjin Dongdian Testing Service Co., Ltd.
Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.
Tel: +86-22-58038033, E-mail: ddt@dgddt.com, http://www.ddttest.com

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2176

1.0 Reference and Address			
Report Number	220801237SHA-001	Original Issued: 22-Aug-2022	Revised: None
Standard(s)	ENERGY STAR® Program Requirements for Displays Version 8.0		

Applicant	MMD- Monitors & Displays Nederland B.V.	Manufacturer 1	TPV Electronics(Fujian) Co., Ltd.
Address	Prins Bernhardplein 200,1097 JB Amsterdam	Address	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province
Country	The Nederlands	Country	China
Contact	Lissa Wang	Contact	Winter Feng
Phone	+86-021-80217644	Phone	+86-591-85285555
FAX	+86-021-80217400	FAX	+86-591-85285447
Email	lissa.wang@mmd-p.com	Email	winter.feng@tpv-tech.com

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2177

2.0 Product Description					
Product	Display (LCD Monitor)				
Brand Name	Philips				
Description	The product covered by this report is a Display (LCD Monitor)				
Models	27B1U5601H(27B1U56)				
Model Similarity	NA				
Ratings	100-240Vac 50/60Hz 2A				
Other Ratings	NA				
Date Available	08/22/2022	Market Availability	Yes	OEM	TPV Electronics(Fujian) Co. Ltd
Major Markets	Canada,Japan,Taiwan,United States				
Trans Type	Initial Certification: Model Meets ENERGY STAR Requirements				
Notes	NA				
UPC					
Reason no UPC	UPC Code Not Yet Assigned - Partner Will Provide Later				
Other reason no UPC					

Additional Model Details (Optional)	Model Name and Number	Identifying Information

Original Certificate Actual Issued Date for Model Tested (Only Applies to Revised Reports)	NA

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3.0 Product Photographs

Photo 1 - External View (front)

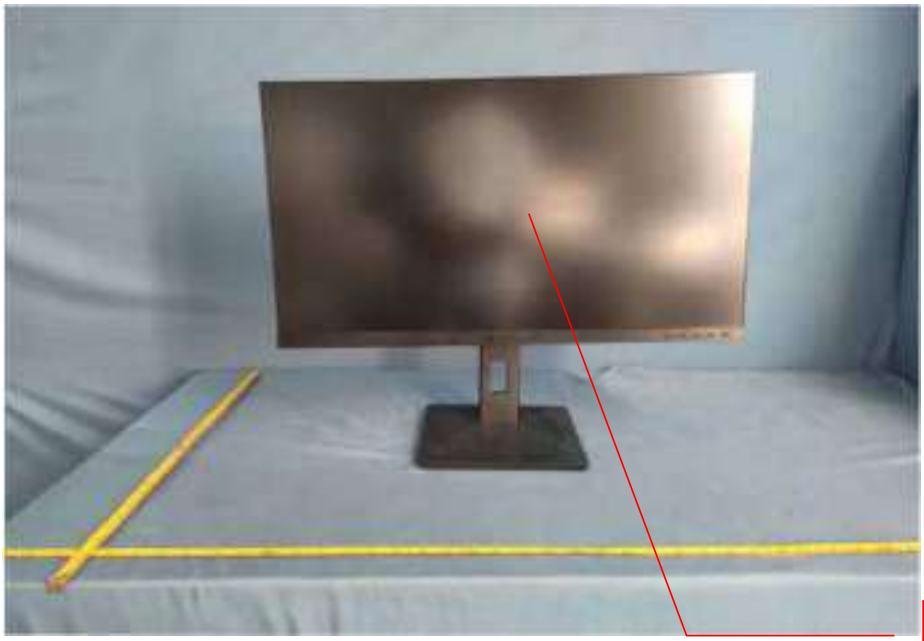
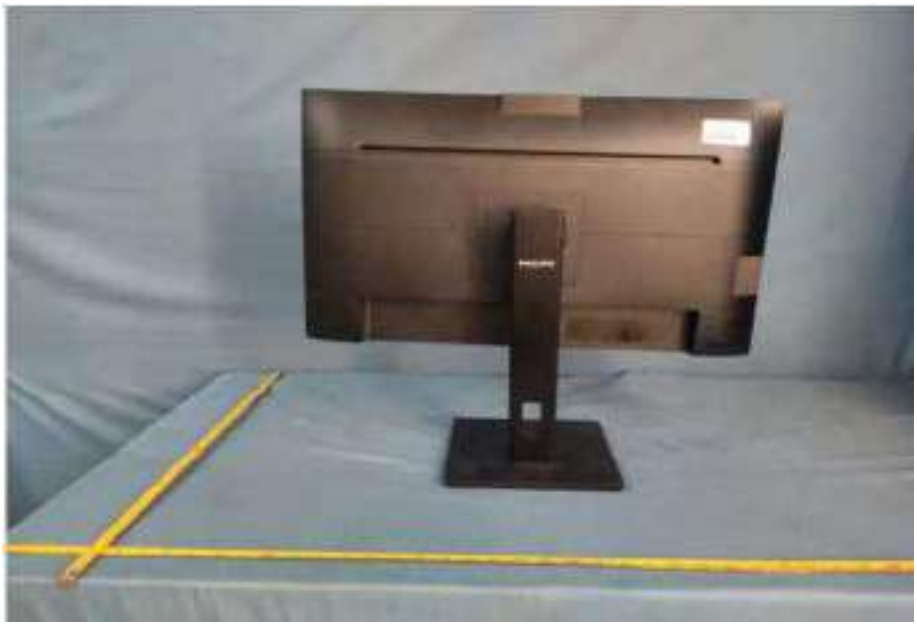


Photo 2 - External View (back)



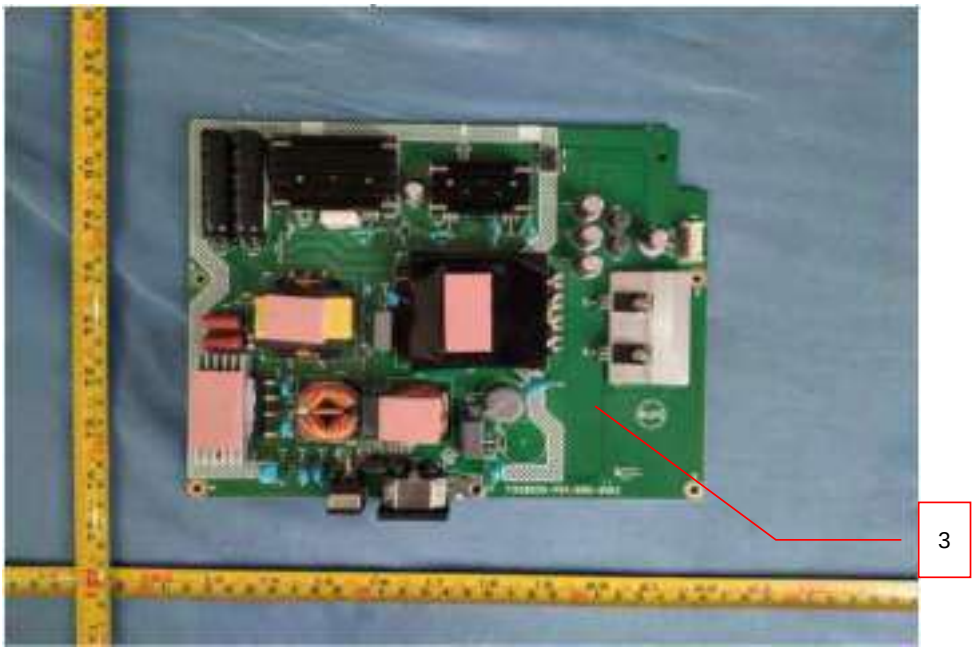
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3.0 Product Photographs

Photo 3 - Main Board



Photo 4- Power Board



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4.0 Critical Components						
Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity [3]
1	1	LCD panel	TPV	TPM270********* (* can be 0~9, A~Z, ".", "-" or blank)	27 inches, LED backlighting. TPM270WF1-KCJP02 is tested as a representation.	NR
3	2	Main Board	TPV	715GD279	I/P:19.5V/10.2A max	NR
4	3	Power Board	TPV	715GB656	I/P:100-240Vac,50/60Hz,2A O/P:19.5V/10.2A max	NR

NOTES:

1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.

2) "Various" means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.

3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates: a) Unlisted and only visual examination is necessary or b) marks are not required to be verified.

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5.0 Critical Unlisted CEC Components
Periodic Evaluation of Critical Unlisted Components by the Intertek Component Evaluation Centers (CEC) is not required under the INTERTEK ENERGY STAR Program.

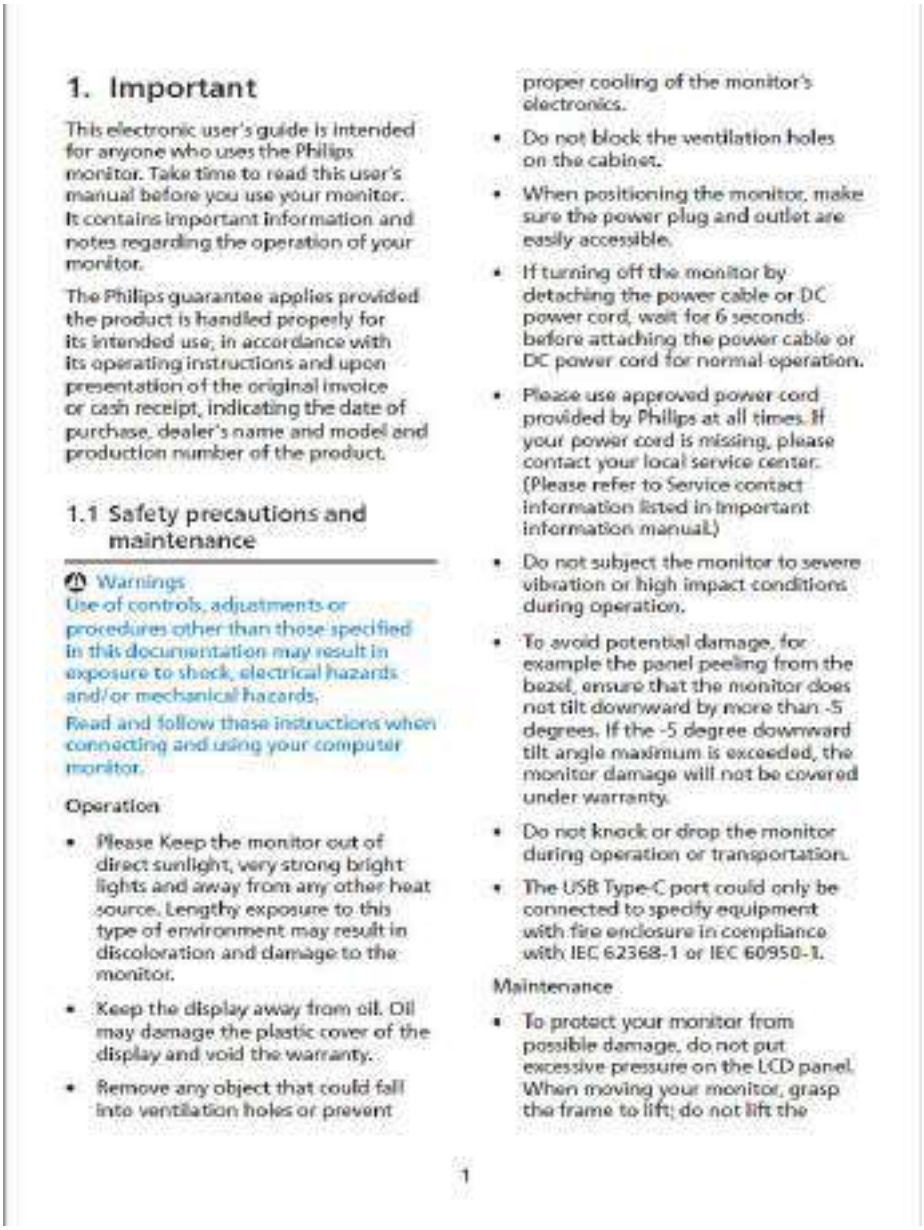
Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2182

6.0 Critical Features
Critical Features/Components - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the ENERGY STAR® Program Requirements. Listed Component - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings. Recognized Component - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability. Unlisted Component - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.
Construction Details - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.
1. Product Safety Compliance - NA
2. EMI Compliance - NA
3. Schematics - NA
4. Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. Refer to Illustration No.1-2 for details.
5. Package Markings - NA
6. Warranty Information - NA
7. Marking Label - Refer to Illustration No.3.for details.

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7.0 Illustrations

Illustration 1 - Installation and Safety instruction



1. Important

This electronic user's guide is intended for anyone who uses the Philips monitor. Take time to read this user's manual before you use your monitor. It contains important information and notes regarding the operation of your monitor.

The Philips guarantee applies provided the product is handled properly for its intended use, in accordance with its operating instructions and upon presentation of the original invoice or cash receipt, indicating the date of purchase, dealer's name and model and production number of the product.

1.1 Safety precautions and maintenance

Warnings
Use of controls, adjustments or procedures other than those specified in this documentation may result in exposure to shock, electrical hazards and/or mechanical hazards.
Read and follow these instructions when connecting and using your computer monitor.

Operation

- Please Keep the monitor out of direct sunlight, very strong bright lights and away from any other heat source. Lengthy exposure to this type of environment may result in discoloration and damage to the monitor.
- Keep the display away from oil. Oil may damage the plastic cover of the display and void the warranty.
- Remove any object that could fall into ventilation holes or prevent proper cooling of the monitor's electronics.
- Do not block the ventilation holes on the cabinet.
- When positioning the monitor, make sure the power plug and outlet are easily accessible.
- If turning off the monitor by detaching the power cable or DC power cord, wait for 6 seconds before attaching the power cable or DC power cord for normal operation.
- Please use approved power cord provided by Philips at all times. If your power cord is missing, please contact your local service center. (Please refer to Service contact information listed in Important information manual.)
- Do not subject the monitor to severe vibration or high impact conditions during operation.
- To avoid potential damage, for example the panel peeling from the bezel, ensure that the monitor does not tilt downward by more than -5 degrees. If the -5 degree downward tilt angle maximum is exceeded, the monitor damage will not be covered under warranty.
- Do not knock or drop the monitor during operation or transportation.
- The USB Type-C port could only be connected to specify equipment with fire enclosure in compliance with IEC 62368-1 or IEC 60950-1.

Maintenance

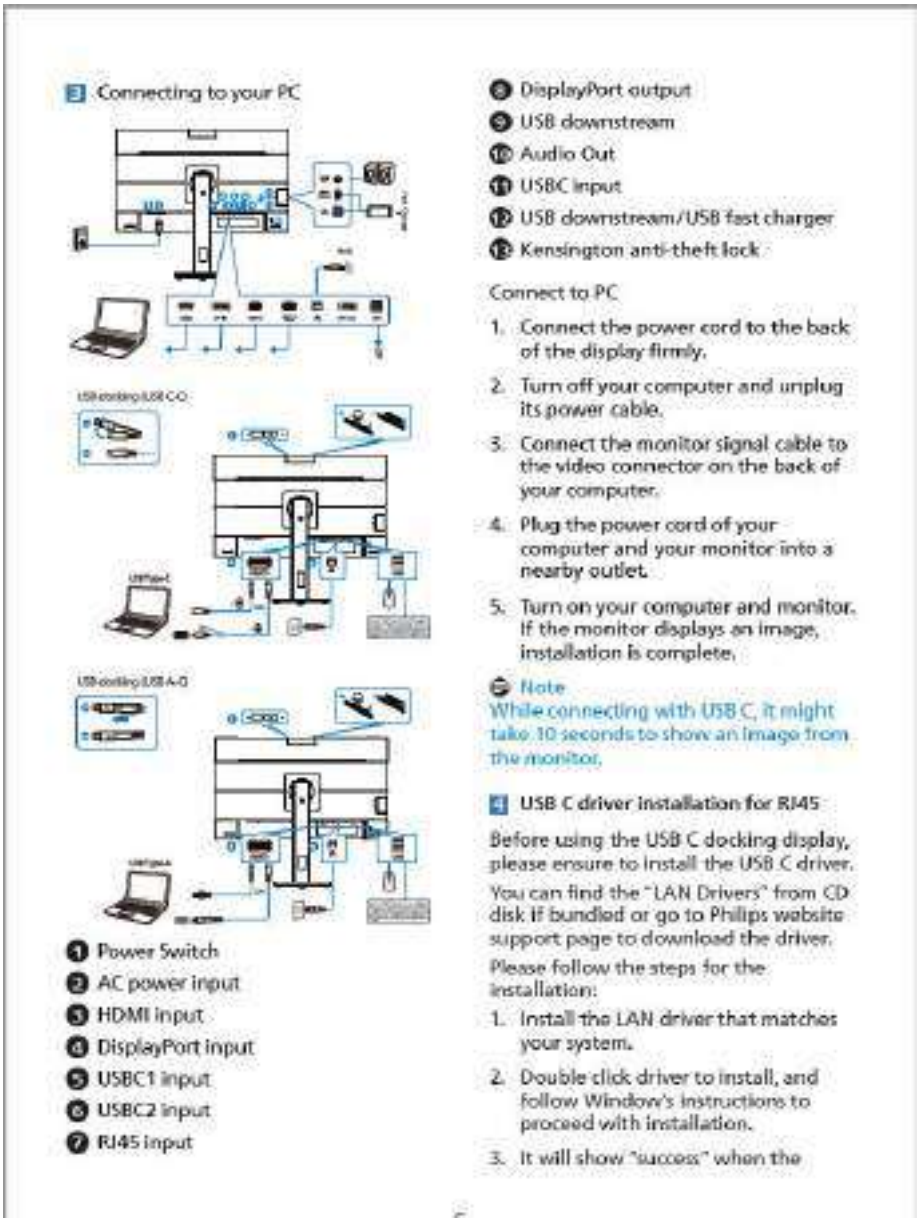
- To protect your monitor from possible damage, do not put excessive pressure on the LCD panel. When moving your monitor, grasp the frame to lift; do not lift the

1

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7.0 Illustrations

Illustration 2 - Installation and Safety instruction (Continued)



3 Connecting to your PC

1. Power Switch
2. AC power input
3. HDMI input
4. DisplayPort input
5. USBC1 input
6. USBC2 input
7. RJ45 input
8. DisplayPort output
9. USB downstream
10. Audio Out
11. USBC input
12. USB downstream/USB fast charger
13. Kensington anti-theft lock

Connect to PC

1. Connect the power cord to the back of the display firmly.
2. Turn off your computer and unplug its power cable.
3. Connect the monitor signal cable to the video connector on the back of your computer.
4. Plug the power cord of your computer and your monitor into a nearby outlet.
5. Turn on your computer and monitor. If the monitor displays an image, installation is complete.

Note
While connecting with USB C, it might take 10 seconds to show an image from the monitor.

4 USB C driver installation for RJ45

Before using the USB C docking display, please ensure to install the USB C driver.

You can find the "LAN Drivers" from CD disk if bundled or go to Philips website support page to download the driver.

Please follow the steps for the installation:

1. Install the LAN driver that matches your system.
2. Double click driver to install, and follow Window's instructions to proceed with installation.
3. It will show "success" when the

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7.0 Illustrations

Illustration 3 - Marking Label



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8.0 Test Summary					
Evaluation Period	8/22/2022-8/22/2022			Project No.	220801237SHA
Sample Rec. Date	22-Aug-2022	Condition	Prototype	Sample ID.	0220822-70-026
Test Location	Intertek Testing Services Shanghai Limited (1105997) Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China				
Test Procedure	Testing Lab			Test type	Qualification

Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.

The following requirements were evaluated:

Required Submittal Information	Submittal Data
Model Name and/or Number tested	27B1U5601H(27B1U56)
Date tested	08/22/2022
Serial number of Unit tested	1 sample
ENERGY_STAR_Specification_Version*	8.0
Product_Type*	Monitor
Tiled_Display_System	
Maximum_Tiled_Configuration	
Panel_Type*	Other
Other_Panel_Type	TFT LCD
Diagonal_Screen_Size_in*	27
Screen_Area_sq_in*	310.47
Display_Contrast_Ratio*	1000
Native_Vertical_Resolution_lines*	1440
Native_Horizontal_Resolution_lines*	2560
Total_Native_Resolution_megapixels*	3.7
Native_Pixel_Density_Dp_pixels_sq_in*	11874
As_Tested_Screen_Refresh_Rate_Hz*	60
Maximum_Screen_Refresh_Rate_Hz*	60
Enhanced_Performance_Criteria*	No
Color_Gamut	
Reported_Contrast_Ratio_at_85_deg_Left_Horiz_Viewing_Angle	
Reported_Contrast_Ratio_at_85_deg_Right_Horiz_Viewing_Angle	
High_Dynamic_Range_HDR*	N/A
Other_Available_Interfaces	
Other_Features	
Signal_Interface*	DisplayPort 1.4
Other_Interface	
USB_C_with_Power_Delivery_Supported*	Yes
Maximum_Power_Delivery_W	96
Other_Power_Source	
Does_Model_Have_a_Forced_Menu_at_Initial_Start_up*	No
Maximum_Measured_Luminance_cd_m_2*	373.2
Maximum_Reported_Luminance_cd_m_2*	300
As_shipped_Luminance_cd_m_2	259.2
As_tested_Luminance_cd_m_2*	200
On_Mode_Power_at_12_Lux_at_115_Volts_W	
On_Mode_Power_at_300_Lux_at_115_Volts_W	
Measured_On_Mode_Power_at_115_Volts_W	20.36
Reported_On_Mode_Power_at_115_Volts_W	20.36
Maximum_On_Mode_Power_Limit_for_Signage_Certification_W	
Measured_Sleep_Mode_Power_at_115_Volts_W	0.28
Reported_Sleep_Mode_Power_at_115_Volts_W	0.28
Measured_Disconnected_Sleep_Mode_Power_at_115_Volts_W	0.28
Maximum_Sleep_Mode_Power_Limit_for_Signage_Certification_W	

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8.0 Test Summary	
Number_of_Sleep_Modes_in_Addition_to_Default_Sleep_Mode*	0
Other_Mechanism_for_Automatically_Entering_Sleep_or_Off_Mode	
Default_Delay_Time_to_Sleep_min	
Measured_Off_Mode_Power_at_115_Volts_W	0.26
Reported_Off_Mode_Power_at_115_Volts_W	0.26
Measured_Total_Energy_Consumption_at_115_Volts_kWh	64.02
Reported_Total_Energy_Consumption_at_115_Volts_kWh	64.02
Max_Total_Energy_Consumption_Limit_for_Monitor_kWh	64.05
On_Mode_Power_at_12_Lux_at_230_Volts_W	
On_Mode_Power_at_300_Lux_at_230_Volts_W	
Measured_On_Mode_Power_at_230_Volts_W	20.36
Measured_Sleep_Mode_Power_at_230_Volts_W	0.28
Measured_Disconnected_Sleep_Mode_Power_at_230_Volts_W	0.28
Measured_Off_Mode_Power_at_230_Volts_W	0.26
Measured_Total_Energy_Consumption_at_230_Volts_kWh	64.02
True_Power_Factor_PF_During_On_Mode_Testing_at_115_Volts_W	0.85
True_Power_Factor_PF_During_On_Mode_Testing_at_230_Volts_W	0.53
Color_Spaces_Supported*	sRGB
Available_Signal_or_Data_Interfaces*	HDMI,Display,USB,RJ45
Model_Features*	Built-In Speakers,Full Network Connectivity,USB-C
Features_Enabled_in_Default_On_Mode*	Built-In Speakers,Full Network Connectivity
Features_Enabled_in_Default_Sleep_Mode*	None
Wireless_Technologies_Supported*	None
Ethernet_Supported*	Gigabit Ethernet (1000 Mbit/s)
Power_Source*	Ac to dc internal power supply
Mechanism_for_Automatically_Entering_Sleep_or_Off_Mode*	Display Power Management Signaling
On_Mode_Power_at_12_Lux_at_100_Volts_50Hz_W	
On_Mode_Power_at_300_Lux_at_100_Volts_50Hz_W	
Measured_On_Mode_Power_at_100_Volts_50Hz_W	20.27
Measured_Sleep_Mode_Power_at_100_Volts_50Hz_W	0.28
Measured_Disconnected_Sleep_Mode_Power_at_100_Volts_50Hz_W	0.28
Measured_Off_Mode_Power_at_100_Volts_50Hz_W	0.26
Measured_Total_Energy_Consumption_at_100_Volts_50Hz_kWh	63.75
On_Mode_Power_at_12_Lux_at_100_Volts_60Hz_W	
On_Mode_Power_at_300_Lux_at_100_Volts_60Hz_W	
Measured_On_Mode_Power_at_100_Volts_60Hz_W	20.28
Measured_Sleep_Mode_Power_at_100_Volts_60Hz_W	0.28
Measured_Disconnected_Sleep_Mode_Power_at_100_Volts_60Hz_W	0.28
Measured_Off_Mode_Power_at_100_Volts_60Hz_W	0.26
Measured_Total_Energy_Consumption_at_100_Volts_60Hz_kWh	63.79

8.1 Signatures

A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.

Completed by:	Eddie Liu	Reviewed by:	Carl Dong
Title:	Engineer	Title:	Engineer
Signature:		Signature:	

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9.0 Correlation Page For Multiple Listings			
The following products, which are identical to those identified in this report except for model number and Company name.			
BASIC LISTEE	MMD- Monitors & Displays Nederland B.V.		
Address	Prins Bernhardplein 200,1097 JB Amsterdam		
Country	The Nederlands	EPA ID	1088182
Product	Display (LCD Monitor)		
Contact	Lissa Wang		
Phone	+86-021-80217644		
FAX	+86-021-80217400		
Email	lissa.wang@mmd-p.com		

MULTIPLE LISTEE 1	None			
Address				
Country		EPA ID		
Contact				
Phone				
FAX				
Email				
Brand Name				
Date Available		Market Availability		OEM
Major Markets				
Trans Type				
Notes				
UPC				
Reason no UPC				
Other reason no UPC				
ASSOCIATED MANUFACTURER				
Address				
Country				

MULTIPLE LISTEE 1 MODELS		BASIC LISTEE MODELS
Additional Model Details (Optional)	Model Name and Number	Identifying Information

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9.0 Correlation Page For Multiple Listings

MULTIPLE LISTEE 2	None			
Address				
Country		EPA ID		
Contact				
Phone				
FAX				
Email				
Brand Name				
Date Available		Market Availability		OEM
Major Markets				
Trans Type				
Notes				
UPC				
Reason no UPC				
Other reason no UPC				
ASSOCIATED MANUFACTURER				
Address				
Country				

MULTIPLE LISTEE 2 MODELS		BASIC LISTEE MODELS
Additional Model Details (Optional)	Model Name and Number	Identifying Information

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2190

10.0 General Information

The Applicant has agreed to produce products in accordance with the requirements of this report and to maintain compliance with all ENERGY STAR Product Specification requirements.

Changes to Product Design / Alternate Components

As part of this agreement, the Applicant also has agreed to notify Intertek and to request authorization prior to making any changes to the product (including but not limited to using alternate parts, components or materials) which may effect compliance with the ENERGY STAR Product Specification. Those parts, components or materials identified as critical have been listed in Section 4.0 of this report.

Product Surveillance

Under this Program, market surveillance is conducted on an annual basis. For each Product Type defined in the EPA ENERGY STAR Program, Intertek will select 10% of those certified products for Verification Testing in accordance with the requirements of the EPA ENERGY STAR Product Specification.

The primary source for products under Verification Testing will be the retail market. Applicants whose products are selected for Verification Testing are required to provide a list of locations where the product might be obtained. The Applicant is responsible for the cost of procurement and the Verification Tests. Should products not be readily available on the retail market, the Applicant is required to provide access to distribution warehouses to allow selection of those products. Should the product not be available on the retail market or if procurement from the retail market is not feasible, then alternate arrangements for Verification Testing will be made by the Intertek Certification Body.

As a general rule under the Verification Testing requirements, the products must achieve energy values within 5% of the required Tier Limit.

Compliance with ENERGY STAR Product Specifications under Verification Testing

Products found non-compliant with ENERGY STAR Product Specification under Verification Testing, will be reported to the EPA within 48 hours and the product removed from the ENERGY STAR Program. If it is determined during Verification Testing that changes have been made to product design or critical components, the Certification Body may increase Verification Testing frequency of those products.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation

Ship the samples to:
Intertek Testing Services Shanghai Limited
ETL Component Evaluation Center
Building No. 86, 1198 Qinzhou Road (North)
Shanghai 200233, China
Attn: Ms. Angela Han
Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

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11.0 Manufacturing and Production Tests
Manufacturing and Production tests are not required under the INTERTEK ENERGY STAR Program. However, Intertek encourages the use of such ongoing product testing to ensure compliance with the EPA ENERGY STAR Product Specifications.

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12.0 Revision Summary				
The following changes are in compliance with the declaration of Section 8.1:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
				None

CERTIFICATE OF CONFORMITY

This Certificate indicates that the Applicant has satisfied the Intertek requirements for the application of the EPA ENERGY STAR Mark to the model(s) described in the Product(s) Covered section of the referenced Compliance Report when made in accordance with the conditions set forth in the Energy Efficiency Certification Agreement, the Certification Report and the Program Manual. This certificate is issued subject to the Applicant attaining, and remaining in, compliance with any separate EPA ENERGY STAR Program requirements necessary for use of the ENERGY STAR Mark. This document is the property of Intertek Testing Services and is not transferable.

Company:	MMD- Monitors & Displays Nederland B.V.	**OEM name:**	MMD- Monitors & Displays Nederland B.V.
Address:	Prins Bernhardplein 200,1097 JB Amsterdam	**Address:**	Prins Bernhardplein 200,1097 JB Amsterdam
Country:	The Nederlands	**Country:**	The Nederlands
Contact:	Lissa Wang	**Contact:**	Lissa Wang
Phone:	+86-021-80217644	**Phone:**	+86-021-80217644
FAX:	+86-021-80217400	**FAX:**	+86-021-80217400
Email:	lissa.wang@mmd-p.com	**Email:**	lissa.wang@mmd-p.com

3rd-party Report Issuing Office: INTERTEK TESTING SERVICES LTD., SHANGHAI

Control Number: *4009534* **Authorized by:**

for L. Matthew Snyder, Certification Manager

This document supersedes all previous Certificate of Conformity for the noted Report Number.

This Certificate is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to copy or distribute this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results referenced from this Certificate are relevant only to the sample tested.

Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672
www.intertek.com

Standard(s):	ENERGY STAR® Program Requirements for Displays Version 8.0
Product:	Display (LCD Monitor)
Models:	27B1U5601H(27B1U56)

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2194

Industrial Services, Mobility and Transport,
Product Safety and Quality, Education and
Consulting, IT Services and Innovation

TÜVRheinland®
Precisely Right.

TPV Electronics (Fujian) Co., Ltd.
Janet Chen
R&D Safety Dept.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Date : 19.09.2022
Our ref. : LINSTE 02
Your ref.: J.C.

Ref : S GS-Zeichen

Type of Equipment : LCD Monitor
Model Designation : See Certificate
Certificate No. : S 50558672 0001
Report No. : CN22K569 001

Dear Janet Chen,

The above specified equipment has been tested and found to be in accordance with the relevant requirements.

Please find enclosed your certificate as specified above.

If cancellation of the certificate is submitted by 15 November in a given year, no fee will be charged for the following year.

The certificate is issued with the reservation that the license holder applies all information required in § 6 of the ProdSG related to name and address of the manufacturer or his authorized representative / importer, including their respective contact addresses on the product prior to marketing of the product in the European Economic Area.
In case you have a change regarding your involved local representative for the certificate, please inform us in due time.

With kind regards,

Certification Body

Dipl.-Ing. Th. Illing

Enclosure

TÜV RHEINLAND TAIWAN LTD.

11F., No. 758, Sec. 4, Bade Rd., Songshan Dist., Taipei City 105, Taiwan, R. O. C.
Tel. (02) 2172-7000
Fax (02) 2172-1322
http://www.tuv.com

NEW TAIPEI BRANCH:
No. 458-19 & 458-19, Sec. 2, Fenliao Rd., Linkou Dist., New Taipei City 244, Taiwan, R. O. C.
Tel. (02) 2172-1000
Fax (02) 2172-1322

TAICHUNG BRANCH:
3F., No. 497, Zhongming South Rd., West Dist., Taichung City 403, Taiwan, R. O. C.
Tel. (02) 2172-7000
Fax (02) 2172-1322

KAOHSIUNG BRANCH:
27F.-3, No.80, Minzu 1st Rd., Sanmin Dist., Kaohsiung City 807, Taiwan, R. O. C.
Tel. (07) 262-6000
Fax (07) 380-0577

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2195

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*	Blatt *Sheet*	Gültig ab	*Valid from*
S 50558672	0001	19.09.2022	*(day/mo/yr)*
Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Längstens gültig bis**	*Latest expiration date*
J.C.	02-LINSTE-CN22K569 001	18.09.2027	*(day/mo/yr)*

Genehmigungsinhaber *License Holder*
TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN IEC 62368-1:2020+A11
EK1-ITB 2000:2022
EK1 527-12 Rev. 2

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product (Product Identification)*

Lizenzentgelte - Einheit *License Fee - Unit*

Bildschirm (LCD Monitor)

Bezeichnung (Type Designation)	: siehe zugehörige Zertifikate oder Folgeblätter (refer to accompanying certificates or additional sheets)	10
Nennspannung (Rated Voltage)	: 100-240VAC, 50/60Hz	
Nennstrom (Rated Current)	: 2A	
Schutzklasse (Protection Class)	: I	
Max. Umgebungstemperatur (Max. Ambient Temperature)	: 40°C	
Max. Betriebshöhe (Max. Operating Altitude)	: 5000m	

Getestete Panel ist auf Blatt 0002 gelistet.
(Tested Panel is listed on page 0002.)
Hinweis: Anforderungen der AfPS GS 2019:01 PAK Klausel 3.1 berücksichtigt.
(Remark: Requirements of AfPS GS 2019:01 PAK clause 3.1 considered.)

Fortsetzung Blatt (continued on page) 0002

10

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Produkt und Fertigungsstätte erfüllen § 20 des Produktsicherheitsgesetzes.
This certificate is based on our Testing and Certification Regulation. The provisions of §20 Product Safety Act are complied with.

TÜV Rheinland LGA Products GmbH – TÜVRheinland – Zertifizierungsstelle

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
http://www.tuv.com/safety E-mail: markcheck@tuv.com
Fax: +49 221 806-3935

Ausstellungsdatum *Date of Issue* : 19.09.2022 (day/mo/yr)

Dipl.-Ing. Th. Illing

Prepostado Preco ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2196

Anlage Fertigungsstättenliste
/Attachment List of Factories

TÜVRheinland®

§ 50558672 0001

1 TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

2 TPV Display Technology (Wuhan)
Co., Ltd.
Unique No. 11, Zhuankou Development
District of Economic Technological
Development Zone
430056 Wuhan City
P.R. China

TÜVRheinland®

TÜV Rheinland LGA Products GmbH
TÜVRheinland
Zertifizierungsstelle

Zertifizierungsstelle
/ Certification Body

Dieser Anhang ersetzt den Vorgänger vom/
This annex replaces the previous annex dated

Datum / Date 19.09.2022

Dipl.-Ing. Th. Illing

Proposta de Preço ITEM 2 - TOPINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2197

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*	Blatt *Sheet*	Gültig ab	*Valid from*
S 50558672	0002	19.09.2022	*(day/mo/yr)*

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Längstens gültig bis	*Latest expiration date*
J.C.	02-LINSTE-CN22K569 001	18.09.2027	*(day/mo/yr)*

Genehmigungsinhaber *License Holder*
TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN IEC 62368-1:2020+A11
EK1-ITB 2000:2022
EK1 527-12 Rev. 2

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bildschirm (LCD Monitor)

Fortsetzung (Continuation)
LCD-Display/LCD-Panel: TPM270WF1 (TPV)
27,0 inch (68,5cm)
Pixelfehlerklasse/Pixel Fault Class: I
Vorgesehener Sehabstand/Sehrichtung
Design Viewing Distance/Direction : 500mm, senk./perpendic.
Sehrichtungsbereich/
Viewing Direction Range : 68,8°
Inhalt und Wahrnehmung : Virtualitätsdarstellung
Content and Perception : Artificial Information

Bestandteile der Beleuchtung/Components of the illumination
max. Bildschirmbeleuchtungsstärke/
max. Screen illuminance : 2000lx
Quelle mit großer, kleiner Öffnung
large, small aperture source : 200cd/m² , 2000cd/m²

TÜV Rheinland LGA Products GmbH Zertifizierungsstelle

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Produkt und Fertigungsstätte erfüllen § 20 des Produktsicherheitsgesetzes.
This certificate is based on our Testing and Certification Regulation.
The provisions of §20 Product Safety Act are complied with.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
http://www.tuv.com/safety E-mail: markcheck@tuv.com
Fax: +49 221 806-3935

Ausstellungsdatum *Date of Issue* : 19.09.2022 (day/mo/yr)

Dipl.-Ing. Th. Illing

Proposta de Preço ITEM 2 - TOPINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2198

Industrial Services, Mobility and Transport,
Product Safety and Quality, Education and
Consulting, IT Services and Innovation

TÜVRheinland®
Precisely Right.

MMD (Shanghai) Electronics
Technology Co., Ltd.
Ms. Lissa Wang

Date : 19.09.2022
Our ref. : LINSTE 02
Your ref.: L.W.

Room 5060A.
No. 2 Building, 555 Dong Chuan Road
Min Hang District 200241 Shanghai
P.R. China

Ref : S GS-Zeichen

Type of Equipment : LCD Monitor
Model Designation : See Certificate
Certificate No. : S 50558675 0001
Report No. : CN22K569 002

Dear Ms. Lissa Wang,

The above specified equipment has been tested and found to be in accordance with the relevant requirements.

Please find enclosed your certificate as specified above.

If cancellation of the certificate is submitted by 15 November in a given year, no fee will be charged for the following year.

The certificate is issued with the reservation that the license holder applies all information required in § 6 of the ProdSG related to name and address of the manufacturer or his authorized representative / importer, including their respective contact addresses on the product prior to marketing of the product in the European Economic Area.
In case you have a change regarding your involved local representative for the certificate, please inform us in due time.

With kind regards,

Certification Body

Dipl.-Ing. Th. Illing

cc: TPV Electronics (Fujian) Co., Ltd.

Enclosure

TÜV RHEINLAND TAIWAN LTD.

11F., No. 758, Sec. 4, Bade Rd.,
Songshan Dist., Taipei City 105,
Taiwan, R. O. C.
Tel. (02) 2172-7000
Fax (02) 2172-1322
http://www.tuv.com

NEW TAIPEI BRANCH:
No. 458-18 & 458-19,
Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244,
Taiwan, R. O. C.
Tel. (02) 2172-1000
Fax (02) 2172-1322

TAICHUNG BRANCH:
3F., No. 497, Zhongming South Rd.,
West Dist., Taichung City 403,
Taiwan, R. O. C.
Tel. (02) 2172-7000
Fax (02) 2172-1322

KAOHSIUNG BRANCH:
27F.-3, No.89, Minzu 1st Rd.,
Sanmin Dist., Kaohsiung City 807,
Taiwan, R. O. C.
Tel. (07) 282-6000
Fax (07) 380-0577

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2199

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*	Blatt *Sheet*	Gültig ab	*Valid from*
S 50558675	0001	19.09.2022	*(day/mo/yr)*
Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Längstens gültig bis**	*Latest expiration date*
L.W.	02-LINSTE-CN22K569 002	18.09.2027	*(day/mo/yr)*

Genehmigungsinhaber *License Holder*
MMD (Shanghai) Electronics
Technology Co., Ltd.
Room 5060A.
No. 2 Building, 555 Dong Chuan Road
Min Hang District 200241 Shanghai
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN IEC 62368-1:2020+A11
EK1-ITB 2000:2022
EK1 527-12 Rev. 2

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product (Product Identification)*

Lizenzentgelte - Einheit *License Fee - Unit*

Bildschirm (LCD Monitor)

Bezeichnung (Type Designation)	: 27B1U5601H ; 27B1U56 ; 27B********** ; 27*1********* (PHILIPS) * = 0-9, A-Z, a-z, +, -, /, \ oder (or) Leerzeichen (blank)	10
Nennspannung (Rated Voltage)	: 100-240VAC; 50/60Hz	
Nennstrom (Rated Current)	: 2A	
Schutzklasse (Protection Class)	: I	
Max. Umgebungstemperatur (Max. Ambient Temperature)	: 40°C	
Max. Betriebshöhe (Max. Operating Altitude)	: 5000m	

Getestete Panel ist auf Blatt 0002 gelistet.
(Tested Panel is listed on page 0002.)
Hinweis: Anforderungen der AfPS GS 2019:01 PAK Klausel 3.1 berücksichtigt.
(Remark: Requirements of AfPS GS 2019:01 PAK clause 3.1 considered.)

Fortsetzung Blatt (continued on page) 0002

10

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Produkt und Fertigungsstätte erfüllen § 20 des Produktsicherheitsgesetzes.
This certificate is based on our Testing and Certification Regulation. The provisions of § 20 Product Safety Act are complied with.

TÜV Rheinland LGA Products GmbH – TÜVRheinland – Zertifizierungsstelle

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
http://www.tuv.com/safety E-mail: markcheck@tuv.com
Fax: +49 221 806-3935

Ausstellungsdatum *Date of Issue* : 19.09.2022 (day/mo/yr)

Dipl.-Ing. Th. Illing

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2200

Anlage Fertigungsstättenliste
/Attachment List of Factories

TÜVRheinland®

S 50558675 0001

1 040-0002C04379

2 040-0001163797

TÜVRheinland®

TÜV Rheinland LGA Products GmbH
TÜVRheinland
Zertifizierungsstelle

Dieser Anhang ersetzt den Vorgänger vom/
This annex replaces the previous annex dated

Datum / Date 19.09.2022

Zertifizierungsstelle
/ Certification Body

Dipl.-Ing. Th. Illing

Propriedade Procon ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2201

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*	Blatt *Sheet*	Gültig ab	*Valid from*
S 50558675	0002	19.09.2022	*(day/mo/yr)*
Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Längstens gültig bis**	*Latest expiration date*
L.W.	02-LINSTE-CN22K569 002	18.09.2027	*(day/mo/yr)*

Genehmigungsinhaber *License Holder*
MMD (Shanghai) Electronics
Technology Co., Ltd.
Room 5060A.
No. 2 Building, 555 Dong Chuan Road
Min Hang District 200241 Shanghai
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

TÜVRheinland ZERTIFIZIERT

Geprüft nach *Tested acc. to*
EN IEC 62368-1:2020+A11
EK1-ITB 2000:2022
EK1 527-12 Rev. 2

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bildschirm (LCD Monitor)

Fortsetzung (Continuation)
LCD-Display/LCD-Panel: TPM270WF1 (TPV)
27.0 inch (68.5cm)
Pixelfehlerklasse/Pixel Fault Class: I
Vorgesehener Sehabstand/Sehrichtung
Design Viewing Distance/Direction : 500mm, senk./perpendic.
Sehrichtungsbereich/
Viewing Direction Range : 68.8°
Inhalt und Wahrnehmung : Virtualitätsdarstellung
Content and Perception : Artificial Information

Bestandteile der Beleuchtung/Components of the illumination
max. Bildschirmbeleuchtungsstärke/
max. Screen illuminance : 2000lx
Quelle mit großer, kleiner Öffnung
large, small aperture source : 200cd/m² , 2000cd/m²

TÜV Rheinland LGA Products GmbH Zertifizierungsstelle

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Produkt und Fertigungsstätte erfüllen § 20 des Produktsicherheitsgesetzes.
This certificate is based on our Testing and Certification Regulation. The provisions of §20 Product Safety Act are complied with.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
http://www.tuv.com/safety E-mail: markcheck@tuv.com
Fax: +49 221 806-3935

Ausstellungsdatum *Date of Issue* : 19.09.2022 (day/mo/yr)

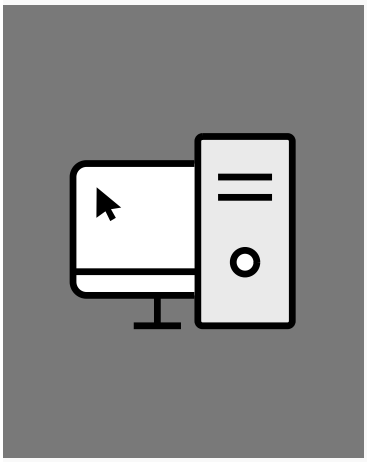
Dipl.-Ing. Th. Illing

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2202

Login

RETURN TO SEARCH

PHILIPS 27B1U5601H



COMPUTERS & DISPLAYS

Product Summary:

Product Type:	Monitors
Registered In:	Brazil
Manufacturer:	MMD Monitors and Displays Nederland B.V.
EPEAT Tier:	Gold
Registration Date:	2023-01-17
Product Status:	Active
EPEAT Climate+:	Achieved 2023-10-27
Exceptions:	Disassembly instructions, exploded diagram, spare parts to avoid injury to end users.

European Article Number(s): 8712581796501

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

Proposta de Preço ITEM 2 - TORINO INFORMÁTICA LTDA. (1661825) SEI 2025.0013177 pg. 2203

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at
EPEAT Bronze

Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at
EPEAT Silver

Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at
EPEAT Gold

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
+ **4.1 Substance Management**	**14 / 16**

Proposta de Preço ITEM 2 - TORINO INFORMÁTICA LTDA. (1661825) SEI 2025.0013177 pg. 2204

4.2 Materials Selection	3 / 3
4.4 Product longevity/life-cycle extension	2 / 2
4.5 Energy Conservation	0 / 2
4.7 Packaging	1 / 2
4.8 Life cycle assessment and carbon footprint	5 / 6
4.9 Corporate Environmental Performance	4 / 9
4.10 Corporate social responsibility	6 / 6
TOTAL OPTIONAL CRITERIA SCORE:	**35 / 46**

Please note that it is not required for a product to

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A)

Proposta de Preço ITEM 2 - TORINO INFORMÁTICA LTDA. (1661825) SEI 2025.0013177 / pg. 2205

achieve any optional points.

to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us.

Contact Us

+1.503.279.9383

PO Box 12149 Portland, OR 97212-0149 USA

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Sign up

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.0013177 pg. 2206

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

PSB Singapore

THE SINGAPORE CONSUMER PROTECTION (SAFETY REQUIREMENTS) REGISTRATION SCHEME

CERTIFICATE OF CONFORMITY (COC)

Issued to:	200822460K (UEN) Ms Valarie Seow **MMD Singapore Pte Ltd** 31 Ubi Road 1 #04-01 Singapore 408694 SINGAPORE
Date of Certification:	2022-11-15
Date of Re-certification:	-
Date of Expiry:	2025-11-14
Certificate Number:	221049-11

We certify that the following controlled goods complied with the mandatory requirements of the Singapore Consumer Protection (Safety Requirements) Registration Scheme:

Description of controlled goods:	27" LCD Monitor rated 100-240V~, 50/60Hz, 2A, Class I
Trade Name:	PHILIPS
Model Number:	27B1U56
Country where controlled goods are likely to be manufactured:	ARGENTINA/BRAZIL/CHINA/INDIA/MEXICO/ TAIWAN/THAILAND
Test report number:	220501893SHA-001
Test certificate number:	SE-108867
Testing laboratory:	Intertek Testing Services Shanghai
Tested according to:	IEC 62368-1:2018



(MENG HWEE DESMOND SOH)

TÜV SÜD PSB

Important Notice:
No controlled goods can be supplied in Singapore unless they are registered with the Safety Authority. Please access https://www.cpsaplus.gov.sg/HomePage/ for the registration procedure.

The use of this Certificate is subjected to TÜV SÜD Group Testing and Certification Regulations: www.tuvsud.com/en/-/media/de/product-service/pdf/agbs/testing-and-certification-regulations-tuev-sued-group.pdf

Persons relying on this Certificate should verify its validity by checking the e-directory: www.tuvsud.com/ps-cert.

TÜV®

Proposta de [illegible]

CERTIFICATE

FOR EUROPEAN PRODUCT SAFETY

Reference No. SE-S-2201045

LCD Monitor

Type designation:	27B1U5601H, 27B1U56, 27B**********, 27*1**********
Certificate holder:	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P. R. China
The product complies with the standard(s):	EN IEC 62368-1:2020+A11
Date of expiry:	25 August, 2027

Additional information in Appendix

Certification Body: Intertek Semko AB, Product Certification **Place:** Shanghai

Signed: **Date:** 26 August, 2022

Hyden Li

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2208

APPENDIX:

Reference No. SE-S-2201045

Technical Data:

Type designation	27B1U5601H, 27B1U56, 27B**********, 27*1********* (The symbol "*" can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank, which is not influencing on safety.)
Rated voltage (V)	100-240~
Rated current (A)	2
Frequency (Hz)	50/60
Class	I
Trademark	PHILIPS
Test Report	220501990SHA-001

Manufacturing Sites:

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P. R. China

TPV Display Technology (Wuhan) Co., Ltd
Unique No.11 Zhuankou Development District of Economic Technological Development Zone, Wuhan City, P. R. China

The instruction for use shall be written in a language acceptable according to the national regulation in the country where the product is to be used.

If the product is to be marketed in different European countries, it must be provided with a certified plug appropriate for each country.

Certification Body: Intertek Semko AB, Product Certification **Place:** Shanghai

Signed: **Date:** 26 August, 2022

Hyden Li

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2209

VERIFICATION STATEMENT
EN IEC 62368-1:2020 + A11:2020
Information technology equipment – Safety –
Part 1: General requirements

Report Reference No. ..... :	220501990SHA-001 (based on CB certif. no. SE-108867)
Tested by (+ signature) ..... :	Peter Lin .....
Approved by (+ signature) ..... :	Jacky Shu .....
Date of issue ..... :	2022-8-22
Contents ..... :	6 pages test report
Testing laboratory Name..... :	Intertek Testing Services Shanghai
Address ..... :	Building No.86, 1198 Qinzhou Road (North), 200233 Shanghai, China
Testing location ..... :	Same as above
Client Name..... :	TPV Electronics (Fujian) Co., Ltd.
Address ..... :	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
Standard..... :	EN IEC 62368-1:2020+A11:2020
Test procedure ..... :	S mark
Non-standard test method ..... :	N.A.
Test item Description ..... :	LCD Monitor
Trademark..... :	PHILIPS
Model and/or type reference..... :	27B1U5601H, 27B1U56, 27B**********, 27*1********** (The symbol "*" can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank, which is not influencing on safety.)
Rating(s)..... :	100-240V~, 50/60Hz, 2A Class I
Manufacturer … ..... :	MMD (Shanghai) Electronics Technology Co.,Ltd. Room 5060A, No.2 Building, 555 DongChuan Road, Minhang District, Shanghai, 200241, China
Factory ..... :	1. TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China 2. TPV Display Technology (Wuhan) Co., Ltd Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.China
Remarks for acceptance and review work conducted by above qualified testing laboratory	
Sample Number reviewed..... :	1 pcs

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Remark ..... :	The product and the mentioned test reports comply with Swedish standard and nationals' deviations, if any. The sample as shown in following page(s) is still corresponding with the one mentioned in CB test report. We concluded this statement verifies that above standards are fulfilled.
Test item description ..... :	No tests are needed for this product.
Statement for deviations, if any..... :	National difference for Sweden has been evaluated in CB report.

Specification and key information involved in original CB certificate and test report

Involved Ref. Certif. no ..... :	SE-108867
Issued date..... :	2022-8-22
Test item description..... :	LCD Monitor
Applicant's Name ..... :	TPV Electronics (Fujian) Co., Ltd.
Address ..... :	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
Manufacturer..... :	MMD (Shanghai) Electronics Technology Co.,Ltd. Room 5060A, No.2 Building, 555 DongChuan Road, Minhang District, Shanghai, 200241, China
Factory ..... :	1.TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China 2.TPV Electronics (Fujian) Co., Ltd. Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.China 3.TPV Electronics (Fujian) Co., Ltd. Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, PRC 4. L&T Display Technology (Fujian) Ltd Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, PRC 5.TPV Display Technology (China) Co., Ltd No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R. China 6. TPV Display Technology (Wuhan) Co., Ltd Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.China 7. TPV Display Technology（Beihai）Co.,Ltd. China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi,P.R.China 8. TREND SMART CE MEXICO S. DE R.L. DE C.V. Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana , Baja California, C.P. 22435 Mexico 9. Envision Indústria de Produtos Eletrônicos Ltda. Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM – Brasil 10.TPV Technology (Thailand) Co., Ltd. No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand 11. GeneTouch Corporation No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan 12. Dixon Technologies (India) Ltd. EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526 India 13. Fábrica Austral de Productos Eléctricos S.A. Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina

Technical data	:	100-240V~, 50/60Hz, 2A Class I
Referred standard	:	IEC 62368-1:2018 and EN IEC 62368-1:2020 + A11:2020
Model and/or type reference	:	27B1U5601H, 27B1U56, 27B**********, 27*1********** (The symbol "*" can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank, which is not influencing on safety.)
Involved test report	:	220501893SHA-001

Copy of marking plate(representative):

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)



Note: For other models, marking plates are the same except for model name.

Power cord of the EUT:

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Power plug	VOLEX	M2511	16A, 250V, DIN 49441-R2	VDE 0620-1	VDE 40029340
Alt.	Interchangeable	Interchangeable	16A, 250V, DIN 49441-R2	DIN VDE 0620-1: 2013; DIN VDE 0620-2-1: 2013	S, VDE or other EU mark
Power connector	VOLEX	V1625	10A, 250V, standard sheet C13	EN 60320-1	VDE 40030955
Alt.	Interchangeable	Interchangeable	10A, 250V, standard sheet C13	EN 60320-1:2015	S, VDE or other EU mark
Power cord	VOLEX	H03VVH2-F or H05VVH2-F	3G 0.75mm²	EN 50525-2-11	VDE 40022259
Alt.	Interchangeable	nterchangeable	3G 0.75mm²	EN 50525-2-11: 2011	S, VDE or other EU mark
Note: The power cord set (plug+cord+connector) comply with standard EN 60799.					

CERTIFICATE

TCO Certified, generation 9

for displays



Brand name: Philips
Model name: 27B*U5*

Certification date: 2022-08-30
Expiry date: 2024-08-30

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For more information, visit tcocertified.com.

Stefan Carlberg
Certification process
TCO Development

No. D922080256

This certificate confirms that a sample of the certified product, as stated herein, has been tested and approved as to its compliance with the criteria document valid at the time of the laboratory test. The certified product may, subject to the use of the unique combination of brand name, type/model name and sales name as stated in this certificate, be marked and sold with the TCO Certified label in accordance with the agreement.

Appendix to certificate No. D922080256

Brand name: Philips

Model name(s):
27B*U5*

1st * : can be 1, 2 or 3
2nd *: can be 4, 5 or 6
Separate power supply: No



83%
Recycled plastic



7.4 kg
Total weight of product



Energy consumption
On mode: 20.4 Watt
Sleep mode: 0.3 Watt
Off mode: 0.3 Watt



Aspect ratio: 16:9
Panel size: 27 in
Min. resolution width: 1920 px
Min. resolution height: 1080 px
Type of stand: Pivot

Sales name(s):
27B1U56, 27B1U5601H

Additional information:
For products delivered without stand; the emission criteria 4.2 and 4.3 is not covered.

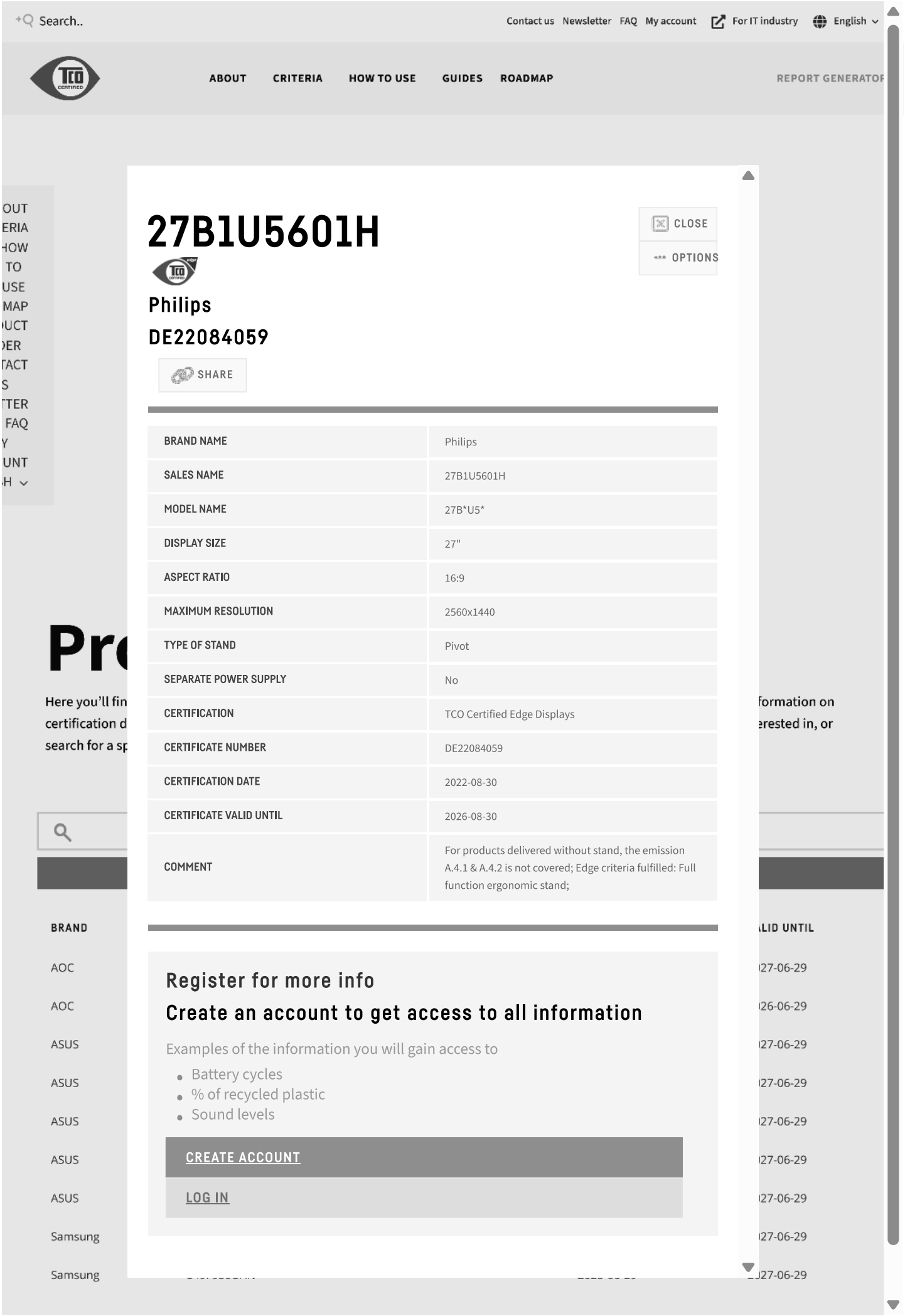
Stefan Carlberg
Certification process
TCO Development

Appendix to certificate No. D922080256



Panels:
TPV TPM270WF1-KCJP02

Stefan Carlberg
Certification process
TCO Development



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2219

BRAND	SALES NAME	CERTIFIED ON	VALID UNTIL
Samsung	S49F952UAN	2025-06-29	2027-06-29
Samsung	S49F954UAN	2025-06-29	2027-06-29
AOC	24P4U	2025-06-27	2027-06-27
AOC			026-06-27
Lenovo			026-06-27
Acer			027-06-25
Acer			027-06-25
AOC			027-06-25
AOC			026-06-25
Acer			027-06-19
Acer			026-06-19
Acer			027-06-19
Acer			026-06-19
Acer			027-06-19
Acer			026-06-19
Acer			027-06-19
Acer			026-06-19
Acer			027-06-19
Acer			026-06-19
ASUS			027-06-19
ASUS			027-06-19
ASUS			027-06-19
ASUS			027-06-19
ASUS			027-06-19
Lenovo			027-06-19
ASUS			027-06-17
ASUS			027-06-17
ASUS			027-06-17
ASUS			027-06-17
ASUS			027-06-17
ASUS			027-06-17
ASUS			027-06-17
ASUS	VP229QF-W	2025-06-17	2027-06-17

27B1U5601H

CLOSE

OPTIONS

Philips

DE22084059

SHARE

BRAND NAME	Philips
SALES NAME	27B1U5601H
MODEL NAME	27B*U5*
DISPLAY SIZE	27"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	2560x1440
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
CERTIFICATION	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084059
CERTIFICATION DATE	2022-08-30
CERTIFICATE VALID UNTIL	2026-08-30
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Full function ergonomic stand;

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT

LOG IN

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2220

BRAND	SALES NAME	CERTIFIED ON	VALID UNTIL
ASUS	VP229QFY	2025-06-17	2027-06-17
ASUS	VP229QFZ	2025-06-17	2027-06-17
DELL	Latitude 3140	2025-06-17	2027-12-04
DELL			027-12-04
DAHUA			027-06-16
DAHUA			027-06-16
DAHUA			027-06-16
DAHUA			027-06-16
DAHUA			027-06-16
HP			027-06-13
HP			027-06-13
Lenovo			027-06-13
EIZO			027-06-13
Lenovo			027-06-10
Lenovo			027-06-01
Lenovo			026-06-01
AOC			027-05-29
AOC			026-05-29
Lenovo			027-05-28
iiyama			027-05-28
Lenovo			027-05-28
Lenovo			026-05-28
Lenovo			027-05-28
Lenovo			026-05-28
Lenovo			027-05-28
Lenovo			026-05-28
Lenovo			027-05-28
Lenovo			026-05-28
Lenovo			027-05-27
Lenovo			027-05-27
Lenovo			027-05-26
Lenovo			027-05-25
Lenovo	E27Q-40	2025-05-25	2026-05-25

27B1U5601H

CLOSE

OPTIONS

Philips

DE22084059

SHARE

BRAND NAME	Philips
SALES NAME	27B1U5601H
MODEL NAME	27B*U5*
DISPLAY SIZE	27"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	2560x1440
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
CERTIFICATION	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084059
CERTIFICATION DATE	2022-08-30
CERTIFICATE VALID UNTIL	2026-08-30
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Full function ergonomic stand;

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT

LOG IN

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2221

BRAND	SALES NAME	CERTIFIED ON	VALID UNTIL
Lenovo	TS27Q-40	2025-05-25	2027-05-25
Lenovo	TS27Q-40	2025-05-25	2026-05-25
Lenovo	ThinkCentre M70q Gen 6	2025-05-22	2027-05-22
Lenovo			27-05-22
Philips			27-05-22
Philips			26-05-22
Lenovo			27-05-22
AOC			27-05-19
AOC			26-05-19
AOC			27-05-19
AOC			26-05-19
Lenovo			27-05-18
Lenovo			27-05-18
Lenovo			27-05-18
Lenovo			27-05-18
Acer			27-05-18
Acer			27-11-21
Acer			27-11-19
Acer			27-11-19
Acer			27-05-13
Philips			27-05-13
Philips			26-05-13
Philips			27-05-13
Philips			26-05-13
Lenovo			27-05-13

27B1U5601H

CLOSE

OPTIONS

Philips

DE22084059

SHARE

BRAND NAME	Philips
SALES NAME	27B1U5601H
MODEL NAME	27B*U5*
DISPLAY SIZE	27"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	2560x1440
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
CERTIFICATION	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084059
CERTIFICATION DATE	2022-08-30
CERTIFICATE VALID UNTIL	2026-08-30
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Full function ergonomic stand;

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT

LOG IN

Together t

TCO Certified is the
empowering both
Our comprehensiv
responsibility and are updated continuously to push sustainability where it

owners and verifiers

→ News

→ ISO 14024

→ For resellers and retailers

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2222

matters most. Compliance with all criteria is always independently verified for every product.
Our Roadmap for Sustainable IT is the long-term plan for addressing issues in four key areas: climate, substances, circularity and supply chain. By using TCO Certified, you join a global movement for sustainable IT.

→ Privacy and integrity policy
→ Manage cookies
→ Purchaser Advisory Forum
→ Circular Electronics Initiative

27B1U5601H

CLOSE
OPTIONS

Philips

DE22084059

SHARE

BRAND NAME	Philips
SALES NAME	27B1U5601H
MODEL NAME	27B*U5*
DISPLAY SIZE	27"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	2560x1440
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
CERTIFICATION	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084059
CERTIFICATION DATE	2022-08-30
CERTIFICATE VALID UNTIL	2026-08-30
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Full function ergonomic stand;

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT

LOG IN

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2223

Full function ergonomic stand

CERTIFICATE

TCO Certified, generation 9

for displays



Brand name: Philips
Model name: 27B*U5*

Certification date: 2022-08-30
Expiry date: 2023-08-30

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Stefan Carlberg
Certification process
TCO Development

No. DE22084059

This certificate confirms that a sample of the certified product, as stated herein, has been tested and approved as to its compliance with the criteria document valid at the time of the laboratory test. The certified product may, subject to the use of the unique combination of brand name, type/model name and sales name as stated in this certificate, be marked and sold with the TCO Certified label in accordance with the agreement.

Appendix to certificate No. DE22084059

Brand name: Philips
Model name(s):
27B*U5*

1st * : can be 1, 2 or 3
2nd *: can be 4, 5 or 6
Separate power supply: No



83%
Recycled plastic



7.4 kg
Total weight of product



Energy consumption
On mode: 20.4 Watt
Sleep mode: 0.3 Watt
Off mode: 0.3 Watt



Aspect ratio: 16:9
Panel size: 27 in
Min. resolution width: 1920 px
Min. resolution height: 1080 px
Type of stand: Pivot

Sales name(s):
27B1U56, 27B1U5601H

Additional information:
For products delivered without stand; the emission criteria 4.2 and 4.3 is not covered.

Stefan Carlberg
Certification process
TCO Development

Appendix to certificate No. DE22084059



Panels:
TPV TPM270WF1-KCJP02

Stefan Carlberg
Certification process
TCO Development

CERTIFICATE

TCO Certified, generation 9

for displays



Brand name: Philips
Model name: 27B*U5*

Certification date: 2022-08-30
Expiry date: 2025-08-30

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For more information, visit tcocertified.com.

Jarl Stephansson
Certification process
TCO Development

No. D922080256

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Appendix to certificate No. D922080256 -3

Brand name: Philips

Model name(s):
27B*U5*

Separate power supply: No



85%
Recycled plastic



7.4 kg
Total weight of product



Energy consumption
On mode: 20.4 Watt
Sleep mode: 0.3 Watt
Off mode: 0.3 Watt



Aspect ratio: 16:9
Panel size: 27 in
Min. resolution width: 2560 px
Min. resolution height: 1440 px
Type of stand: Pivot

Sales name(s):
27B1U56, 27B1U5601H

Model name type key(s)
1st * : can be 1, 2 or 3
2nd *: can be 4, 5 or 6

Additional information:
For products delivered without stand; the emission criteria 4.2 and 4.3 is not covered.

Jarl Stephansson
Certification process
TCO Development

Appendix to certificate No. D922080256 -3



Panels:
TPV TPM270WF1-KCJP02, TPV TPM270WF1-SG1G03

Jarl Stephansson
Certification process
TCO Development

- **Valid Certificate**

Certificate No. MC-V 4185933ENA

- Certificate Holder
  TPV Electronics (Fujian) Co., Ltd.

  Rongqiao Economic and Technological Development Zone
  Fujian Province
  China (Mainland)
- Certificate Number
  MC-V 4185933ENA
- Certified Product
  MONITOR LCD (LCD MONITOR)

  Model Designation:
  27B1U5601H, 27B1U56, 27B**********, 27*1**********
  ("*" puede ser 0-9, A-Z, a-z, "+","-", "/", "\" o en blanco)

- Fulfilled Standards
  IEC 62368-1:2018

  The standard(s) listed here reflect the status at the time of the release of this certificate.
- Date of Issue
  2023-02-09
- Certificate Type
  TÜV Rheinland Argentina Voluntary Conformity Mark

  The TÜV Rheinland Argentina Voluntary Conformity Mark shows the buyer, and consumer that a product has been successfully tested and certified by an impartial, independent test body of TÜV Rheinland according to the relevant specifications and that the production has been inspected.

  TÜV Rheinland links the Voluntary Conformity Mark to the general ID number 0000009000 and, if desired, with a QR code. When the certificate number, the product designation or the manufacturer name is entered on the website www.certipedia.com, the search function retrieves information on the valid certificate. This way, third parties check the legal use of the test mark or read which tests the product has undergone.

  With the online marketing service, the certificate information can be utilized as a neutral marketing tool. For this, each product tested receives its own, individual 10-digit ID number and an Internet entry with detailed information.

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2231

TPV Electronics (Fujian) Co., Ltd.

TEST REPORT

SCOPE OF WORK

South African Energy Efficiency Testing - LCD Monitor -27B1U5601H, 27B1U56, 27B**********, 27*1*********

REPORT NUMBER

220801238SHA-001

ISSUE DATE

Aug. 22, 2022

PAGES

6

DOCUMENT CONTROL NUMBER

TRF No.: TTRF-ZA-AV (1-June-2018)

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AUDIO & VIDEO EQUIPMENT TEST REPORT

Applicant:	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province P.R.China
Manufacturer	MMD (Shanghai) Electronics Technology Co., Ltd. Room 5060A, No.2 Building, 555 Dongchuan Road, Minhang District, Shanghai, 200241, P.R. China
Factory	See page 2 details
Product Name:	LCD Monitor
Brand Name:	PHILIPS
Model:	27B1U5601H, 27B1U56, 27B**********, 27*1**********
Model Similarity:	The symbol"*" can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank,, which is not influencing energy consumption for standby mode.
Rating:	100-240V~, 50/60Hz, 2A Class I
Test Standard/ Regulations:	SANS 941:2014 Edition 1.1: Energy efficiency of electrical and electronic apparatus SANS 62087-1:2017 Edition 1 / IEC 62087-1:2015 Edition 1: Audio, video, and related equipment – Determination of power consumption Part 1: General SANS 62087-3:2017 Edition 1 / IEC 62087-3:2015 Edition 1: Audio, video, and related equipment – Determination of power consumption Part 3: Television sets
Sample Received:	August 22, 2022
Test performed:	August 22, 2022
Testing location:	Intertek Testing Services Ltd., Shanghai. Building No.86, 1198 Qinzhou Road (North), 200233 Shanghai, China
Conclusion:	From the results of the testing on the submitted sample(s), we are of the opinion that the submitted sample(s) COMPLY WITH South African Energy Efficiency Regulations for audio and video equipment.
Note:	1. This report shall not be reproduced, except in full, without written approval of the laboratory. This test results relate only to the items tested. 2. The results contained in the report are for technical evaluation only and are applicable only to the specific test specimen referenced within the report. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

Prepared by:

Eddie Liu
Engineer

Approved by:

Carl Dong
Reviewer

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2233

AUDIO & VIDEO EQUIPMENT TEST REPORT

FACTORY LIST

1. TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province,
P.R.China

2. TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province,
P.R.China

3. TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,
Fujian Province,
PRC

4. L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao Economic andTechnological Development Zone, Fuqing City
Fujian Province
PRC

5. TPV Display Technology (China) Co., Ltd
No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R. China

6. TPV Display Technology (Wuhan) Co., Ltd
Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,
P.R.China

7. TPV Display Technology（Beihai）Co.,Ltd.
China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City,
Guangxi,
P.R.China

8. TREND SMART CE MEXICO S. DE R.L. DE C.V.
Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana , Baja California, C.P. 22435 Mexico

9. Envision Indústria de Produtos Eletrônicos Ltda.
Av. Torquato Tapajós, 2236, Flores – CEP 69058-830 - Manaus/AM – Brasil

10.TPV Technology (Thailand) Co., Ltd.
No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand

11.GeneTouch Corporation
No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan

12.Dixon Technologies (India) Ltd.
EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post,
Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526 India

13. Fábrica Austral de Productos Eléctricos S.A.
Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2234

AUDIO & VIDEO EQUIPMENT TEST REPORT

TEST EQUIPMENT

Equipment Name	Type	Number	Calibration Date	Due Date
Digital Power Meter	WT 310E	EC6401	July 1, 2022	June 30, 2023
AC Power Source	6430	EC3428	July 12, 2022	July 11, 2023

TEST PROCESS:

The tests are carried out in a room that has an air speed close to test sample of < 0.5m/s, the ambient temperature is maintained at 25°C and the ambient humidity is 47%. The test voltage was 230V at 50Hz.

The test sample was operated at least 1 hour immediately prior to conducting On mode power measurements. After On mode power measurement, then following the standby mode power measurement. If the power level does not drift by more than 5% from the maximum value observed,the UUT can be considered stable and then the measurements were recorded at the end of the 5 minutes period.

TEST RESULTS

Test Item	Test Result	Verdict
Standby mode power consumption:	0.28W	Pass (Required: ≤1.0W)
Note: This test result is base on 27B1U5601H and test signal interface is DisplayPort .		

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2235

AUDIO & VIDEO EQUIPMENT TEST REPORT

LABEL

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Note: All models' rating labels are in the same design except for type designation. Above labels are representing the other models.

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AUDIO & VIDEO EQUIPMENT TEST REPORT

PHOTO





Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2237

AUDIO & VIDEO EQUIPMENT TEST REPORT

PHOTO






Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 2238

DECLARAÇÕES

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:

a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;

b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo sócios, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou por afinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;

c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;

d) os documentos e declarações apresentados são fiéis e verdadeiros;

e) caso seja vencedor do certame e não cadastrado no SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DO ESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;

f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;

g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Sorocaba, 30 de junho de 2025.

RODRIGO DO AMARAL RISSIO:22080721895

Assinado de forma digital por RODRIGO DO AMARAL RISSIO:22080721895
Dados: 2025.07.01 16:05:03 -03'00'

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

Observação: A apresentação da proposta implicará a plena aceitação, por parte do licitante, das condições estabelecidas neste edital e seus anexos, bem como, todas as especificações do objeto contidas na proposta vinculam a fornecedora.

DECLARAÇÃO DE CUMPRIMENTO AO ARTIGO 7º, INCISO XXXIII

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

A empresa Torino Informática LTDA., inscrita no CNPJ sob o nº 03.619.767/0005-15, estabelecida na Rua AV 600 S/N QUADRA 15– MODULO 10 –na SERRA/ES , DECLARA para os fins de direito, na qualidade de licitante que em cumprimento ao inciso XXXIII, do artigo 7º. da Constituição Federal de que não possuímos em nosso quadro funcional pessoas menores de 18 (dezoito) anos em trabalho noturno, perigoso ou insalubre e, de menores de 16 (dezesseis) anos em qualquer trabalho, salvo na condição de aprendiz, a partir dos 14 (quatorze) anos.

Por ser expressão de verdade, firmamos o presente

.

Sorocaba, 30 de Junho de 2025.

RODRIGO DO AMARAL RISSIO:22080721895

Assinado de forma digital por RODRIGO DO AMARAL RISSIO:22080721895
Dados: 2025.07.01 16:05:17 -03'00'

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

DECLARAÇÕES COMPLEMENTARES

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:

a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;

b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo sócios, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou porafinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;

c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;

d) os documentos e declarações apresentados são fiéis e verdadeiros;

e) caso seja vencedor do certame e não cadastrado no SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DO ESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;

f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;

g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Sorocaba, 30 de junho de 2025.

RODRIGO DO AMARAL RISSIO:22080721895
Assinado de forma digital por RODRIGO DO AMARAL RISSIO:22080721895
Dados: 2025.07.01 16:05:29 -03'00'

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 235.2025.CPL.1661828.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, encaminhamos os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto às proposta de preço abaixo elencadas:

1. **E.R. SOLUCOES INFORMATICA LTDA.**, CNPJ (MF) n.º 05.778.325/0005-47, para o Item 1 (doc. 1661819 e 1661785); e

2. **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 05.778.325/0005-47, para o Item 2 (doc. 1661825); e

3. **POSITIVO TECNOLOGIA S/A (Filial)**, CNPJ (MF) n.º 81.243.735/0009-03, para o Item 3 (doc. 1661786).

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 01/07/2025, às 15:30, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1661828** e o código CRC **9BF36D7F**.

SERRA 03.07.2025

PROCURADORIA GERAL DE JUSTICA DO ESTADO DO AMAZONAS
MANAUS - AM

A/C DEPARTAMENTO DE LICITAÇÃO

REF.: Pregão Eletrônico n°94010-2025

Objeto da licitação: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e
assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de
garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça,
por um período de 12 meses.

ersolucoes.com.br | contato@ersolucoes.com.br | 16 3234-4433
Avenida Cem, S/N - Quadra 01 - Sala 01 Piso 02 CEP:
29161-384 Serra - ES

Proposta de Preço ITEM 4 - ER SOLUÇÕES DE INFORMÁTICA (1663839) SEI 2025.001317 / pg. 2244

E.R. Soluções de Informática Ltda.
CNPJ: 05.778.325/0005-47
Inscrição Estadual: 836.6381-52
Inscrição Municipal: 470931
Telefone/Fax +55 16 3234-4433
E-mail: ersolucoes@ersolucoes.com.br
End.: Av. Cem, S/N - Quadra 01 - Sala 01 - Piso 02 - CEP: 29161-384, Serra - ES

Prezados,

Vimos por meio desta, apresentar nossa proposta comercial e temos o prazer de encaminhar, para análise e apreciação, uma breve apresentação desta empresa, com o intuito de conhecerem nosso prestígio.

Desde 1997 prestando serviços em Tecnologia da Informação, a ER Soluções esteve sempre presente nos principais acontecimentos da Indústria da Informática no Brasil.

Com larga experiência varejista além da já premiada atuação no setor governamental e agora com uma ativa presença no mercado SMB regional, a E.R. Soluções obteve importantes parcerias permitindo a presença constante nos principais usuários de TI. Adquirimos competências fundamentais envolvendo as principais tecnologias e os melhores fabricantes do mercado, destacando-se Dell, Lenovo, Microsoft e VMware, entre outras parceiras.

É com este know-how que oferecemos produtos e serviços com o que há de mais moderno dentro das melhores práticas em TI, com equipes de profissionais treinados e certificados, elaborando projetos, apresentando soluções, atendendo necessidades, e prevendo demandas para os mais diversos negócios em todo o território nacional.

O documento a seguir apresenta a proposta de equipamentos, softwares e serviços para o referido pregão.

Desde já agradecemos a oportunidade de oferecer os nossos produtos e serviços, e nos colocamos à disposição para os esclarecimentos adicionais que se fizerem necessários.