



Ref. Certif. No.

SG PSB-OF-01174

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

SYSTEME CEI D'ACCEPTATION MUTUELLE DE
CERTIFICATS D'ESSAIS DES EQUIPEMENTS
ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product
Produit

Projectors
(DLP Projector)

Name and address of the applicant
Nom et adresse du demandeur

Delta Electronics, Inc.
3, Tungyuan Road, Chungli Industrial Zone,
32063 Taoyuan County, TAIWAN

Name and address of the manufacturer
Nom et adresse du fabricant

NEC Display Solutions, Ltd
4-28, Mita 1-chome, Minato-ku,, Tokyo,, 108-0073 JAPAN

Name and address of the factory
Nom et adresse de l'usine

Delta Video Display System (Wujiang) Limited
1688, JiangXing E.Rd., Wujiang Economic, 215200 Development Zone,
Wujiang City, JiangSu,, PEOPLE'S REPUBLIC OF CHINA

Ratings and principal characteristics
Valeurs nominales et caractéristiques principales

Rated voltage:	200-240 Vac
Rated current:	10.7 A
Rated frequency:	50/60 Hz
Protection class:	I

Trade mark (if any)
Marque de fabrique (si elle existe)

NEC

Model/type Ref.
Ref. de type

NP-NC170yyyy
(where "y" can be any character or
blank for marketing purpose)

Additional information (if necessary)
Information complémentaire (si nécessaire)

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 d'essais numéro
de référence qui constitue une partie de ce
certificat

TÜV SÜD PSB Pte Ltd
081-161124-000

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

Date, 2016-12-22
CBS 16 12 27738 633

Bill Lin
(Bill Lin)



TÜV SÜD PSB Pte Ltd · 1 Science Park Drive · Singapore 118221

PSB Singapore



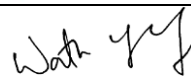
Test Report issued under the responsibility of:

NCB TÜV SÜD PSB Pte Ltd
1 Science Park Drive,
Singapore 118221



PSB Singapore

TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number.....	081-161124-000
Date of issue.....	2016-12-21
Total number of pages	115
Applicant's name	Delta Electronics, Inc.
Address.....	3, Tungyuan Road, Chungli Industrial Zone, 32063 Taoyuan County, TAIWAN
Test specification:	
Standard	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
Test procedure	CB Scheme
Non-standard test method.....	N/A
Test Report Form No.	IEC60950_1F
Test Report Form(s) Originator	SGS Fimko Ltd
Master TRF	Dated 2014-02
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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.	

Test item description		DLP Projector
Trade Mark		NEC
Manufacturer.....		See page 5 for details.
Model/Type reference		NP-NC170yyyy (where "y" can be any character or blank for marketing purpose)
Ratings		200-240 Vac, 50/60 Hz, 10.7 A
Testing procedure and testing location:		
☒	CB Testing Laboratory:	TÜV SÜD Asia Ltd. Taiwan Branch
Testing location/ address.....		7F., No.37, Sec. 2, Zhongyang S. Rd., Beitou District, Taipei City, 11270, Taiwan
☐	Associated CB Testing Laboratory:	N/A
Testing location/ address.....		N/A
Tested by (name + signature)		Mr. Owen Hsu 
Approved by (name + signature)		Mr. Watson Yang 
☐	Testing procedure: TMP/CTF Stage 1:	N/A
Testing location/ address.....		N/A
Tested by (name + signature)		
Approved by (name + signature)		
☐	Testing procedure: WMT/CTF Stage 2:	N/A
Testing location/ address.....		N/A
Tested by (name + signature)		
Witnessed by (name + signature).....		
Approved by (name + signature)		
☐	Testing procedure: SMT/CTF Stage 3 or 4:	N/A
Testing location/ address.....		N/A
Tested by (name + signature)		
Witnessed by (name + signature).....		
Approved by (name + signature)		
Supervised by (name + signature)		

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

Attachment No. 1	National and Group Differences (For IEC 60950-1 2 nd Ed.)	67 pages
Attachment No. 2	Japan Deviations	23 pages
Attachment No. 3	Marking Plate	2 pages
Attachment No. 4	Photo	12 pages

Summary of testing:
Tests performed (name of test and test clause):

All test results were found satisfactory in accordance with IEC 60950-1:2005 (2nd Edition) + A1:2009 + A2:2013 and EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013.

Testing location:

All tests as described in Test Case and Measurement Sections were performed at the laboratory described on page 2.

Summary of compliance with National Differences
List of countries addressed:

For IEC 60950-1:2005 (2nd Edition) + Am 1: 2009 + Am 2: 2013 and EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011+ A2:2013

According to CB Bulletin, the National Differences include Australia (AU), Canada (CA), China (CN), Germany (DE), Israel (IL), Korea (KR), Switzerland (CH) and United States of America (US). Group Differences (CENELEC COMMON MODIFICATIONS) as listed in the European Standard are recorded in this Report. (Attachment No. 1)

For Japan Deviations (J60950-1(H26):2012, J60950-1(H27):2014, J3000 (H25):2009)

The National Deviations include Japan (JP). (Attachment No. 2)

☒ **The product fulfils the requirements of IEC 60950-1:2005 + A1:2009 + A2:2013/**

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013

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.

**See attachment No. 3
(Total 2 pages)**

Test item particulars:	
Equipment mobility :	☐ 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 ☐ not directly connected to the mains
Operating condition :	☒ continuous ☐ rated operating / resting time:
Access location :	☒ operator accessible ☐ restricted access location
Over voltage category (OVC) :	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Mains supply tolerance (%) or absolute mains supply values :	+10%, -10%
Tested for IT power systems :	☒ Yes ☐ No
IT testing, phase-phase voltage (V) :	230V (For Norway)
Class of equipment :	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Considered current rating of protective device as part of the building installation (A) :	16A or 20A (For US)
Pollution degree (PD) :	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class :	Ordinary
Altitude during operation (m) :	Up to 5,000
Altitude of test laboratory (m) :	below 2,000
Mass of equipment (kg) :	Approx. 68

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 :** 2016-12-06**Date(s) of performance of tests :** 2016-12-06 to 2016-12-20**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.



PSB Singapore

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)..... :

Delta Video Display System (Wujiang) Limited (ID No.: 45855)
1688, JiangXing E.Rd., WuJiang Economic, 215200 Development Zone, WuJiang City, JiangSu,
PEOPLE'S REPUBLIC OF CHINA

Name and address of manufacturer (ies)..... :

NEC Display Solutions, Ltd (ID No.: 78902)
4-28, Mita 1-chome, Minato-ku, Tokyo, 108-0073 JAPAN

General product information:

The equipment is a DLP Projector classified as information technology equipment.

In models NP-NC170yyyy, where “y” can be any character or blank for marketing purpose.

All models are identical except for the model designation.

All I/O boards and I/O ports are optional used.

The Laser driver module (including laser diodes) and LEDs has been tested and complied with the requirements, according to standard IEC/EN 60825-1:2007, IEC/EN 60825-1:2014 and IEC/EN 62471-5:2015, see clause 4.3.13.5 for details.

The Liquid Cooling System Module used for laser driver module, the cooling systems are supplied by SELV voltage, connected with radiator by tubes and filled with non flammable cooling liquid. In addition, the Liquid Cooling System Module is in accordance with its specified rating subjected to the applicable tests of this standard, see clause 4.3.11 for details.

The outputs of data ports are in accordance with the Limited Power Sources (Clause 2.5). See appended table 2.5 for details.

The manufacturer specified that the equipment could be operated up to an altitude of 5,000 m (16,405 feet). The requirements according to IEC 60664-1 for clearances are considered as the altitude correction factors (1.48) specified in Table A.2.

The detachable power supply cord(s) is supplied with unit; it complies with the requirements of the destination country. The report does not verify the various cords for each of the destination countries.

The maximum ambient temperature specified by manufacturer is 40 °C.

Unless otherwise specified, all tests were performed on model NP-NC170yyyy to represent the other similar models.

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)

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

1	GENERAL		P
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1.5	Components		P
1.5.1	General	See below.	P
	Comply with IEC 60950-1 or relevant component standard	Components which were found to affect safety aspects comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards. (See appended table 1.5.1).	P
1.5.2	Evaluation and testing 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
1.5.3	Thermal controls	No thermal controls used.	N/A
1.5.4	Transformers	Transformer used is suitable for their intended application and comply with the relevant requirements of the standard.	P
1.5.5	Interconnecting cables	Interconnection o/p cable to other device is carrying only SELV voltages on an energy level below 240 VA. →Except for the insulation material, there is no further requirement to the o/p interconnection cable.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.6	Capacitors bridging insulation	X2 capacitor is according to IEC 60384-14 with 2.5 kVpk pulse test. Y2 capacitor is according to IEC 60384-14 with 5.0 kVpk pulse test. Y1 capacitor is according to IEC 60384-14 with 8.0 kVpk pulse test. Y1 type capacitor (CY5) is provided and bridge primary and secondary of PFC board. Y1 type capacitor (CY101) is provided and bridge primary and secondary of main power board. Y1 type capacitor (CY107) is provided and bridge primary and secondary of LED laser power board.	P
1.5.7	Resistors bridging insulation	See below.	P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	The IC including capacitor and bleeder resistors (R1, R3) discharge function are located after fuse, see table 1.5.1 for details.	P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No such components used.	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No such components used.	N/A
1.5.8	Components in equipment for IT power systems	Y-Cap. are all rated min. 230V and complied with IEC 60384-14, and others component in such condition has suitable voltage rating. See table 1.5.1 for details.	P

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

1.5.9	Surge suppressors	See below.	P
1.5.9.1	General	Refer to the sub clause 1.5.9.2 to 1.5.9.5.	P
1.5.9.2	Protection of VDRs	The current fuse (F100) is providing protection for AC inlet board. The current fuse (F1) is providing protection for PFC board.	P
1.5.9.3	Bridging of functional insulation by a VDR	Certified Varistor (TVR1) is used between L and N of PFC board. See appended table 1.5.1 for details.	P
1.5.9.4	Bridging of basic insulation by a VDR	The certified varistor (TVR101) is used between L and N of AC inlet board and in series with a GDT connection to earth. See appended table 1.5.1 for details.	P
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No varistor bridging supplementary, double or reinforced insulations.	N/A

1.6	Power interface		P
1.6.1	AC power distribution systems	TN / IT power system. (IT power system for Norway).	P
1.6.2	Input current	The definition for highest load according to 1.2.2.1, for this equipment is operated continuously according to the manufacturer specification. (Results see appended table 1.6.2.)	P
1.6.3	Voltage limit of hand-held equipment	This equipment is not hand-held equipment.	N/A
1.6.4	Neutral conductor	Basic insulation for rated voltage between earthed parts and primary phases.	P

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

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	See sub-clause 1.7.1.1 and 1.7.1.2.	P
1.7.1.1	Power rating marking	See below.	P
	Multiple mains supply connections.....:	Only one supply from the AC mains.	N/A
	Rated voltage(s) or voltage range(s) (V)	200-240 Vac	P
	Symbol for nature of supply, for d.c. only	Mains from AC source.	N/A
	Rated frequency or rated frequency range (Hz) ...:	50/60 Hz	P
	Rated current (mA or A)	10.7 A	P
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark	Trade mark: NEC	P
	Model identification or type reference	NP-NC170yyyy (where "y" can be any character or blank for marketing purpose)	P
	Symbol for Class II equipment only	Class I equipment.	N/A
	Other markings and symbols	Additional symbols or markings that do not give rise to misunderstanding.	P
1.7.1.3	Use of graphical symbols	Graphical symbols placed on the equipment complying with IEC 60417 or ISO 3864-2 or ISO 7000.	P
1.7.2	Safety instructions and marking	See below.	P
1.7.2.1	General	Safety instructions in English. Other languages will be provided when submitted for national approval.	P
1.7.2.2	Disconnect devices	Appliance inlet is provided as disconnect device.	P
1.7.2.3	Overcurrent protective device	No such device.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.4	IT power distribution systems	Installation instruction will be stated when equipment is intended to be used for IT power system when national approval.	P
1.7.2.5	Operator access with a tool	No operator accessible area which needs to be accessed by use of a tool.	P
1.7.2.6	Ozone	This equipment is not intended to produce the ozone.	N/A
1.7.3	Short duty cycles	This equipment is designed for continuous operation.	N/A
1.7.4	Supply voltage adjustment	No voltage/frequency setting.	N/A
	Methods and means of adjustment; reference to installation instructions	The setting of this control is obvious by inspection.	—
1.7.5	Power outlets on the equipment	No outlet provided.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Marking adjacent to fuse reads as F100 F16AH / 250V	P
1.7.7	Wiring terminals	See below.	P
1.7.7.1	Protective earthing and bonding terminals	Main earth connection for supply wiring is marked on inlet by symbol IEC 60417, No. 5019. This symbol is not used for other earth connection.	P
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment with appliance inlet is intended to connect to the detachable type power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	Mains from AC source only.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking	The marking and indication of the power switch is located on or adjacent to the switch so that indication of function is clear	P
1.7.8.2	Colours	No safety related colours of control was used in the equipment.	N/A
1.7.8.3	Symbols according to IEC 60417	Marking according to IEC 60417-1/5007 and IEC 60417-1/5008 (line/circle) provided above the power switch.	P
1.7.8.4	Markings using figures	No indicators for different positions.	N/A
1.7.9	Isolation of multiple power sources	Only one supply from the AC mains.	N/A
1.7.10	Thermostats and other regulating devices	No thermostats used.	N/A
1.7.11	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth for 15 s and then again for 15 s with the cloth soaked with Petroleum Ether. After this test there was no damage to the label. The marking on the label did not fade. There was no curling or lifting of the label edge.	P
1.7.12	Removable parts	Marking is not placed on the removable part.	P
1.7.13	Replaceable batteries	No batteries.	N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations	No restricted access location.	N/A

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

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	See below clauses for details.	P
2.1.1.1	Access to energized parts	See below.	P
	Test by inspection	Operator cannot contact with any parts with only basic insulation to ELV or hazardous voltage.	P
	Test with test finger (Figure 2A)	No access with test finger to any parts with only basic insulation to ELV or hazardous voltage.	P
	Test with test pin (Figure 2B)	The test pin cannot touch hazardous voltage through any openings or seams of the whole enclosure.	P
	Test with test probe (Figure 2C)	No TNV circuit inside the equipment.	N/A
2.1.1.2	Battery compartments	No batteries and TNV circuit inside the equipment.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N/A
2.1.1.5	Energy hazards	No energy hazard in operator access area. The connectors of the equipment only for signal i/p and o/p on a low energy level. (Refer to appended table 2.5)	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage.	N/A
2.1.1.7	Discharge of capacitors in equipment	Voltage decay measurement was conducted with an oscilloscope having an input impedance of 100 MΩ.	P
	Measured voltage (V); time-constant (s)	<1s; (See appended table 2.1.1.7).	—

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

2.1.1.8	Energy hazards – d.c. mains supply	This equipment is not intended to be connected to the d.c. 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 :	No such device.	N/A
2.1.2	Protection in service access areas	No maintenance work in operation mode necessary.	N/A
2.1.3	Protection in restricted access locations	The equipment is not intended to be used in restricted locations.	N/A

2.2	SELV circuits		P
2.2.1	General requirements	42.4 V peak or 60 VDC are not exceeded in outputs of power supply under normal operation or single fault condition.	P
2.2.2	Voltages under normal conditions (V) :	The output is not exceeded 42.4 V peak or 60 VDC.	P
2.2.3	Voltages under fault conditions (V) :	Single fault did not cause excessive voltage in accessible outputs. Limits of 71 V peak and 120 V peak were not exceed and SELV limits not for longer than 0.2 seconds. (See appended table 2.2.2 and 5.3).	P
2.2.4	Connection of SELV circuits to other circuits :	See 2.2.2 and 2.2.3. No direct connection between SELV and any primary circuits.	N/A

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

2.3	TNV circuits		N/A
2.3.1	Limits	No TNV circuit in this equipment.	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		P
2.4.1	General requirements	The limits specified in 2.4.2 are not exceeded under normal operating conditions.	P
2.4.2	Limit values	See below.	P
	Frequency (Hz)	(See appended table).	—
	Measured current (mA)	The peak drop voltage was measured with an oscilloscope at a 2 k Ω non-inductive resistor. Results see appended table 2.4.2.	—
	Measured voltage (V)	<450 V	—
	Measured circuit capacitance (nF or μ F)	$\leq 0.1\mu$ F	—
2.4.3	Connection of limited current circuits to other circuits	Output circuit as the limited current circuit connected to other circuits.	P

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

2.5	Limited power sources		P
	a) Inherently limited output		N/A
	b) Impedance limited output	Formatter board: The outputs of 3D port are limited to the values of table 2B. Relevant data ports tests evaluated in certified PCI-E card.	P
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition	Formatter board: The outputs of data port are limited to the values of table 2B in normal operation conditions and in the case of a single fault. The test was conducted with all circuits.	P
	Use of integrated circuit (IC) current limiters	Certified IC used in certified PCI-E card.	P
	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) .:	No such device.	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing	Parts of SELV circuit connected to protective earthing, when optional circuit is not connected between protective earthing and secondary functional ground, also refer to sub-clause 2.6.3.4.	P
2.6.2	Functional earthing	Secondary functional earthing is connected to metal chassis (protective bonding) that separated from primary by basic insulation or which not connected to metal chassis that separated from primary by double or reinforced insulation.	P
	Use of symbol for functional earthing:	See below.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3	Protective earthing and protective bonding conductors	See below.	P
2.6.3.1	General	Considered.	P
2.6.3.2	Size of protective earthing conductors	Appliance inlet used.	N/A
	Rated current (A), cross-sectional area (mm ²), AWG.....:	Ditto.	—
2.6.3.3	Size of protective bonding conductors	Protective bonding conductor is complied with the requirements of 2.6.3.4.	P
	Rated current (A), cross-sectional area (mm ²), AWG.....:		—
	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).....:	< 0.1 Ω , (See appended table).	P
2.6.3.5	Colour of insulation.....:	Green/Yellow wire from inlet to chassis is reliable fixed with starwasher.	P
2.6.4	Terminals	See below.	P
2.6.4.1	General	The equipment provided with an appliance inlet.	P
2.6.4.2	Protective earthing and bonding terminals	The earthing terminal in the appliance inlet is regarded as the main protective earthing terminal.	P
	Rated current (A), type, nominal thread diameter (mm).....:		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Protective earthing conductor is in appliance inlet. Green/yellow wire for protective bonding conductor from ground pin of appliance inlet to metal chassis.	P

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

2.6.5	Integrity of protective earthing	See below.	P
2.6.5.1	Interconnection of equipment	This equipment has its own earthing connection. Any other units connected via the interconnecting cable to other unit shall provide SELV only. The class of equipment is class I.	P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or fuses in earthing conductor.	P
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect protective earth without disconnecting mains; an appliance inlet is used as disconnect device.	P
2.6.5.4	Parts that can be removed by an operator	Plug or inlet, earthing connected before and disconnected after hazardous voltage. No other operator removable parts.	P
2.6.5.5	Parts removed during servicing	It is not necessary to disconnect earthing except for the removing of the earthed parts itself.	P
2.6.5.6	Corrosion resistance	All safety earthing connections in compliance with Annex J.	P
2.6.5.7	Screws for protective bonding	No self tapping screws are used.	P
2.6.5.8	Reliance on telecommunication network or cable distribution system	Not intend to connect with telecommunication network or a cable distribution system for the integrity of protective earthing.	P

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Clause	Requirement + Test	Result - Remark	Verdict

2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements	Equipment relies on 16 A or 20 A rated fuse or circuit breaker of the wall outlet installation protection of the building installation in regard to L to N short circuit. Overcurrent protection is provided by the built-in device fuse.	P
	Instructions when protection relies on building installation	English.	—
2.7.2	Faults not simulated in 5.3.7	The protection devices are well dimensioned and mounted.	P
2.7.3	Short-circuit backup protection	The equipment is considered to be pluggable equipment type A, the building installation is considered as providing short circuit protection.	P
2.7.4	Number and location of protective devices	Overcurrent protection by one built-in fuse, fault protection by fuse or circuit breaker in the phase of the building installation.	P
2.7.5	Protection by several devices	Only one fuse.	N/A
2.7.6	Warning to service personnel	No service work necessary.	N/A

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2.8	Safety interlocks		N/A
2.8.1	General principles	No safety interlock provided.	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 and 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
2.9.1	Properties of insulating materials	Electric strength test of 5.2.2 was performed after the Humidity Treatment of 2.9.2. All transformer sources have been evaluated.	P
2.9.2	Humidity conditioning	Humidity treatment performed for 120 h.	P
	Relative humidity (%), temperature (°C)	93 % R.H, 40 °C	—
2.9.3	Grade of insulation	Please refer to clause 5.2, 2.10 and 4.5.	P
2.9.4	Separation from hazardous voltages	No flash over or breakdown of insulation.	P
	Method(s) used	Method 1 and Method 3 used.	—

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2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	See 2.10.3, 2.10.4 and 2.10.5.	P
2.10.1.1	Frequency	The frequency does not exceed 30 kHz.	P
2.10.1.2	Pollution degrees	Pollution degree 2.	P
2.10.1.3	Reduced values for functional insulation	See 5.3.4.	P
2.10.1.4	Intervening unconnected conductive parts	Complied with.	P
2.10.1.5	Insulation with varying dimensions	No such insulation is provided.	N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses	Refer to 2.10.3.5	P
2.10.2	Determination of working voltage	The rms and the peak voltage were measured on the equipment. The unit was connected to a 240 V power supply and secondary ground was maintained during measurement. Results see appended table 2.10.2.	P
2.10.2.1	General	Complied.	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 below.	P
2.10.3.1	General	Annex F is considered.	P
2.10.3.2	Mains transient voltages	See below.	P
	a) AC mains supply	2500 Vpk is considered.	P
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	(See sub-clause 5.3.4).	P
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply	2500 Vpk assumed.	P
2.10.3.7	Transients from d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems	The equipment is not connected to the telecommunication networks and cable distribution systems	N/A
2.10.3.9	Measurement of transient voltage levels		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
2.10.4	Creepage distances	See below.	P
2.10.4.1	General	Considered.	P
2.10.4.2	Material group and comparative tracking index	Material group IIIb assumed.	P
	CTI tests	CTI rating for all materials of min. 100.	—
2.10.4.3	Minimum creepage distances	(See appended table 2.10.3 and 2.10.4).	P
2.10.5	Solid insulation	Complied with 2.10.5.2 to 2.10.5.14 and 5.2.	P
2.10.5.1	General	See below.	P
2.10.5.2	Distances through insulation	(See appended table 2.10.5).	—
2.10.5.3	Insulating compound as solid insulation	Complied with 2.10.5.2 and 2.10.10.	P
2.10.5.4	Semiconductor devices	See 2.10.5.3.	P
2.10.5.5	Cemented joints	See appended table 2.10.3 and 2.10.4.	P
2.10.5.6	Thin sheet material – General	Considered.	P

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2.10.5.7	Separable thin sheet material	Insulation tape providing supplementary or reinforced insulation: - used in transformer.	P
	Number of layers (pcs)..... :	See appended table C.2.	—
2.10.5.8	Non-separable thin sheet material	No such construction.	N/A
2.10.5.9	Thin sheet material – standard test procedure	Refer to clause 2.10.5.10.	N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	Electric strength test applied to each one layer.	P
	Electric strength test	See appended table 5.2	—
2.10.5.11	Insulation in wound components	Not used.	N/A
2.10.5.12	Wire in wound components	Reinforced insulation.	P
	Working voltage :	(See appended table 2.10.2).	P
	a) Basic insulation not under stress :		N/A
	b) Basic, supplementary, reinforced insulation :		N/A
	c) Compliance with Annex U :	Triple insulated wire is used in secondary winding of transformer (T1) for reinforced insulation, also see annex U and appended table 1.5.1.	P
	Two wires in contact inside wound component; angle between 45° and 90° :	Insulation tape and/or tubing provided.	—
2.10.5.13	Wire with solvent-based enamel in wound components	No such parts.	N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	Refer to 2.10.5.11.	N/A
	Working voltage :		N/A
	- Basic insulation not under stress :		N/A
	- Supplementary, reinforced insulation :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.6	Construction of printed boards	See below.	P
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 coated printed wiring 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	See appended table 2.10.3 and 2.10.4.	P
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		—
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling	Approved sources of opto couplers used. For details see table 1.5.1.	P
2.10.10	Test for Pollution Degree 1 environment and insulating compound	See above.	P
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts	Passed 2.10.10.	P

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Clause	Requirement + Test	Result - Remark	Verdict

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized wiring that is PVC insulated, rated VW-1, min. 80 °C, 300 V. Internal wiring gauge is suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges which could damage the insulation and cause hazard.	P
3.1.3	Securing of internal wiring	The wires are secured by solder pins or quick connect terminals so that a loosening of the terminal connection is unlikely.	P
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1.	P
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure	Electrical and earthing connections screwed two or more complete threads into metal.	P
3.1.7	Insulating materials in electrical connections	All current carrying and safety earthing connections are metal to metal.	P
3.1.8	Self-tapping and spaced thread screws	No self-tapping or spaced thread screws used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.1.9	Termination of conductors	Provided with an appliance inlet.	N/A
	10 N pull test		—
3.1.10	Sleeving on wiring	Sleeving on wiring reliable kept in position by cable ties or by the use of heatshrink sleeving.	P

3.2	Connection to a mains supply		P
3.2.1	Means of connection	See below.	P
3.2.1.1	Connection to an a.c. mains supply	Provided with an appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply	No connection to the 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 unit is not permanent connected equipment.	N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	The appliance inlet complies with IEC/EN 60320-1. The power cord's connector can be inserted without difficulties and does not support the unit.	P
3.2.5	Power supply cords	See below.	P
3.2.5.1	AC power supply cords	Certified power supply cord provided.	P
	Type	See table 1.5.1 for details.	—
	Rated current (A), cross-sectional area (mm ²), AWG	See table 1.5.1 for details.	—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	Appliance inlet is used.	N/A
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—

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Clause	Requirement + Test	Result - Remark	Verdict

3.2.7	Protection against mechanical damage	No parts under this unit likely to damage the power supply cord.	P
3.2.8	Cord guards	Appliance inlet is used.	N/A
	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	The equipment is not permanently connected equipment and not with ordinary non-detachable power supply cord.	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 and nominal thread diameter (mm)		—
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire	No soft soldered wires under contact pressure.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.4	Disconnection from the mains supply		P
3.4.1	General requirement	See below.	P
3.4.2	Disconnect devices	The appliance inlet is considered to be the disconnect device.	P
3.4.3	Permanently connected equipment	The unit is not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	When the disconnect device is disconnected, no remaining parts with hazardous voltage in the equipment.	P
3.4.5	Switches in flexible cords	No isolation switch provided.	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	The appliance inlet is considered to be the disconnect device.	N/A
3.4.9	Plugs as disconnect devices	The appliance inlet is considered to be the disconnect device.	N/A
3.4.10	Interconnected equipment	No interconnections using hazardous voltages.	N/A
3.4.11	Multiple power sources	Only one supply connection provided.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.5	Interconnection of equipment		P
3.5.1	General requirements	This equipment is not considered for connection to TNV.	P
3.5.2	Types of interconnection circuits..... :	Interconnection circuits of SELV through sec o/p cable. No ELV interconnection circuits.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection circuits.	N/A
3.5.4	Data ports for additional equipment	The output of data ports are comply with limited power source, refer to the clause 2.5.	P

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	This unit is of a stable mechanical construction and does not overbalance when tilted to an angle of 10° from its normal upright position.	P
	Test force (N) :	It is not floor standing equipment.	N/A

4.2	Mechanical strength		P
4.2.1	General	See below clauses.	P
	Rack-mounted equipment.	No such construction.	N/A
4.2.2	Steady force test, 10 N	10 N applied to components. No safety relevant damages after test.	P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	250 N only applied to outer enclosure. (The test was done to six surfaces of enclosure and with all enclosure materials.) No energy or other hazards after test.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.5	Impact test	500 g steel sphere ball fall, from 1.3 m height onto outer enclosure. (The test was done to six surfaces of enclosure and with all enclosure materials.) No safety relevant damages after test.	P
	Fall test	Ditto.	P
	Swing test	Ditto.	P
4.2.6	Drop test; height (mm).....:	The unit is not hand-held or direct plug-in equipment.	N/A
4.2.7	Stress relief test	After 7 h at 70.0 °C and cooling down to room temperature, no shrinkage, distortion or loosening of enclosure parts was noticeable on the equipment. The test was conducted with all enclosure materials.	P
4.2.8	Cathode ray tubes	No cathode ray tube.	N/A
	Picture tube separately certified.....:		—
4.2.9	High pressure lamps	No high pressure lamp provided.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N):	No such construction.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.3	Design and construction		P
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N)	No such handles or manual controls.	N/A
4.3.3	Adjustable controls	No control devices.	N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress. For the protection, solder pins, cable ties and heatshrink tubing are used.	P
4.3.5	Connection of plugs and sockets	No mismatching of connectors possible. Connectors complying with IEC 60083 or IEC 60320 is not be used for SELV circuit output.	N/A
4.3.6	Direct plug-in equipment	The unit is not direct plug-in equipment.	N/A
	Torque		—
	Compliance with the relevant mains plug standard		—
4.3.7	Heating elements in earthed equipment	No heating elements.	N/A
4.3.8	Batteries	Test was conducted for the rechargeable battery (RTC) which is protected by resistor.	P
	- Overcharging of a rechargeable battery	See appended table 5.3 for details.	P
	- Unintentional charging of a non-rechargeable battery	Not apply for.	N/A
	- Reverse charging of a rechargeable battery	It is to use welded design prevents reverse polarity connections in normal use. For other concerns, see appended table 5.3 for details.	P
	- Excessive discharging rate for any battery	See appended table 5.3 for details.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.9	Oil and grease	No oil or grease.	N/A
4.3.10	Dust, powders, liquids and gases	Cooling liquid used but not replenishable.	N/A
4.3.11	Containers for liquids or gases	For inside chiller: The maximum working pressure was 4 psi and test with 25 psi of the normal working pressure as declared by client. For outside chiller: The maximum working pressure was 13.5 psi and test with 67.5 psi of the normal working pressure as declared by client. The pressure recorded during the maximum working pressure measurement test at each point and no leakage occurred.	P
4.3.12	Flammable liquids	No flammable liquids in cooling system.	N/A
	Quantity of liquid (l)		—
	Flash point (°C)		—
4.3.13	Radiation; type of radiation	See below.	P
4.3.13.1	General	Refer to 4.3.13.5.	P
4.3.13.2	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	No UV radiation.	N/A
	Part, property, retention after test, flammability classification		—
4.3.13.4	Human exposure to ultraviolet (UV) radiation	No UV radiation.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.5	Lasers (including laser diodes) and LEDs	See below.	P
4.3.13.5.1	Lasers (including laser diodes)	The product (including laser diode) was evaluated according the IEC/EN 60825-1: 2007 requirements. The product (including laser diode) was evaluated according the IEC/EN 60825-1: 2014 requirements.	P
	Laser class	Laser class 4 product have affixed a warning label. (Tested by TUV SUD Report No. 611061624801) Laser class 1 product have affixed a warning label. (Tested by TUV SUD Report No. 611061629101)	—
4.3.13.5.2	Light emitting diodes (LEDs)	The product (including LEDs) was complied with the requirements of Risk Group 3 according to IEC/EN 62471-5:2015. (Tested by TUV SUD Report No. 611061624901)	P
4.3.13.6	Other types	No other type of source inside the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.4	Protection against hazardous moving parts		P
4.4.1	General	See below.	P
4.4.2	Protection in operator access areas	No hazardous moving part in access area. The fans are not in user accessible area.	P
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations	The equipment is not intended to be used in restricted locations.	P
4.4.4	Protection in service access areas	Unintentional contact to moving part is not possible during service operation.	P
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

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	Thermal requirements		P
4.5.1	General	See below.	P
4.5.2	Temperature tests	(See appended table 4.5).	P
	Normal load condition per Annex L	Maximum normal load which specified by manufacturer.	—
4.5.3	Temperature limits for materials	(See appended table 4.5).	P
4.5.4	Touch temperature limits	(See appended table 4.5).	P
4.5.5	Resistance to abnormal heat	Phenolic bobbin used in transformer.	P

4.6	Openings in enclosures		P
4.6.1	Top and side openings	See below.	P
	Dimensions (mm)	See appended table.	—
4.6.2	Bottoms of fire enclosures	No openings.	P
	Construction of the bottom, dimensions (mm) ..		—
4.6.3	Doors or covers in fire enclosures	No door or cover.	N/A
4.6.4	Openings in transportable equipment	The equipment is not transportable equipment.	N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	No barrier or screen secured with adhesive.	N/A
	Conditioning temperature (°C), time (weeks).....		—

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4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Use of materials with the required flammability classes and testing in single fault conditions.	P
	Method 1, selection and application of components wiring and materials	Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	P
	Method 2, application of all of simulated fault condition tests	Method 1 used.	N/A
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	With having the following components: - Components in primary - Components in secondary (not supplied by LPS) - Semiconductor devices, transistors, diodes, resistors, capacitors, integrated circuits, inductors - Insulated wiring The fire enclosure is required. (The metal chassis served as the fire enclosure.)	P
4.7.2.2	Parts not requiring a fire enclosure	See 4.7.2.1	N/A
4.7.3	Materials		P
4.7.3.1	General	Integrated circuits and small electrical parts mounted on a printed wiring board min. rated V-1 or better.	P
4.7.3.2	Materials for fire enclosures	See appended table 1.5.1.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.3	Materials for components and other parts outside fire enclosures	No components or parts outside fire enclosures.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are mounted on a PWB rated V-1 or better. Internal wiring is UL Recognized, rated VW-1 and strapped by individual cable ties (where needed).	P
4.7.3.5	Materials for air filter assemblies	No air filter assemblies.	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage component used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	See sub-clause 5.1.2 to 5.1.7.	P
5.1.2	Configuration of equipment under test (EUT)	The EUT has only one mains connection.	P
5.1.2.1	Single connection to an a.c. mains supply	Each piece of equipment tested separately.	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No such construction.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No such construction.	N/A
5.1.3	Test circuit	Equipment is tested using the test circuit in figure 5 A.	P
5.1.4	Application of measuring instrument	Tests are conducted using one of the measuring instruments in annex D, or any other circuit giving the same results.	P
5.1.5	Test procedure	The touch current was measured from supply to conductive parts (DC output connector) and to 10 cm by 20 cm metal foil wrapped on accessible non- conductive parts (plastic enclosure).	P
5.1.6	Test measurements	See below.	P
	Supply voltage (V)	264 Vac	—
	Measured touch current (mA)	(See appended table 5.1).	—
	Max. allowed touch current (mA)	3.5 mA (For PE). 0.25 mA (For accessible parts).	—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA) ..		—
5.1.7	Equipment with touch current exceeding 3,5 mA	Touch current does not exceed 3.5 mA.	N/A
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	The equipment is not connected to the telecommunication system and the 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		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

5.2	Electric strength		P
5.2.1	General	All tests voltages were applied for 1 minute in the chamber after the humidity test of 2.9.2 and in warm conditions after the heating test of 4.5. No isolation breakdown was observed. (Results see appended table).	P
5.2.2	Test procedure	(See appended table 5.2).	P

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	Output overload test: The most unfavorable load test. Ventilation openings blocked test. DC Fan and Motor for Shutter/Lens/phosphor/diffuser wheel locked test. After test the electric strength test was conducted. No isolation breakdown was observed. (See appended table).	P
5.3.2	Motors	Approved DC fans used.	P
5.3.3	Transformers	No high temp. of the transformer are to be observed or to be expected. (See appended table 5.3 and Annex C)	P
5.3.4	Functional insulation	Short circuit tests. Result see appended table 5.3.	P
5.3.5	Electromechanical components	No electromechanical components.	N/A
5.3.6	Audio amplifiers in ITE	No such device.	N/A
5.3.7	Simulation of faults	Results of the abnormal test see appended table.	P
5.3.8	Unattended equipment	None of them are used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.3.9	Compliance criteria for abnormal operating and fault conditions	No flame in the equipment. No molten metal was emitted. Electric strength test: Primary→SELV and Primary→earth Primary→ plastic enclosure with metal foil were passed. (See appended table).	P
5.3.9.1	During the tests	No flame in the equipment. No molten metal was emitted.	P
5.3.9.2	After the tests	Electric strength test made.	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		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	No connection to the telecommunication networks.	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		—

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Clause	Requirement + Test	Result - Remark	Verdict

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General	No connection to the 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

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)		—

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Clause	Requirement + Test	Result - Remark	Verdict

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

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		P
B.1	General requirements	See below.	P
	Position	DC Fan and Motor for Shutter/Lens/phosphor/diffuser wheel.	—
	Manufacturer	See appended table 1.5.1 for details.	—
	Type	Ditto.	—
	Rated values	Ditto.	—
B.2	Test conditions	DC Fan and Motor for Shutter/Lens/phosphor/diffuser wheel are operating at rated voltage (12 Vdc). (See appended table 5.3 for locked test.)	P
B.3	Maximum temperatures	(See appended table 5.3)	P
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days)		—
	Electric strength test: test voltage (V)		—

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

B.6	Running overload test for d.c. motors in secondary circuits	The overload condition is not possible to occur.	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	(See appended table 5.3)	P
B.7.1	General	Ditto.	P
B.7.2	Test procedure	See clause B.7.3	N/A
B.7.3	Alternative test procedure	(See appended table 5.3)	P
B.7.4	Electric strength test; test voltage (V)	(See appended table 5.2).	P
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	(See appended table 1.5.1)	—
	Manufacturer	(See appended table 1.5.1)	—
	Type	(See appended table 1.5.1)	—
	Rated values	(See appended table 1.5.1)	—
	Method of protection		—
C.1	Overload test	(See appended table 5.3)	P
C.2	Insulation	(See appended table 5.2 and C.2)	P
	Protection from displacement of windings		P

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

C.2	Safety isolation transformer		P
Construction details:			
PFC board: Transformer (T1)			
Mfr.: See table 1.5.1 for details.			
Type: See table 1.5.1 for details.			
Recurring peak voltage		628 Vpeak	
Required clearance insulation (from table 2K and 2L, pollution degree 2)			
For Reinforced		6.9 mm (4.6 mm * 1.48 = 6.808 mm)	
For Basic		3.4 mm	
Effective voltage rms		347 Vrms	
Required creepage insulation (from table 2N, pollution degree 2, material group IIIa+IIIb)			
For Reinforced		7.0 mm	
For Basic		3.5 mm	
Measured min. clearances			
prim-sec (Reinforced) (Triple insulated wire used)		16.6 mm (primary pin to secondary pin)	
sec-core (Reinforced)		15.8 mm (secondary pin to core)	
Measured min. creepages			
prim-sec (Reinforced) (Triple insulated wire used)		16.6 mm (primary pin to secondary pin)	
sec-core (Reinforced)		15.8 mm (secondary pin to core)	
Note:			
The clearance distance is complied with the requirements for use in altitude 5,000 m above the sea level, the altitude correction factor is 1.48.			

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

Construction:	
Concentric windings on bobbin with core size RM8/16.4, two layers insulation between primary and secondary windings. Triple insulation wire used in secondary winding. The core is considered as primary part. One layer of insulation tape overlapping at secondary pin side A-B. Tubing on secondary winding prevents touch within an angle of 45° to 90°. Details of triple insulated wire used, see appended table 1.5.1.	
Pin numbers	
Primary	4 – 1; 2 – 3
Secondary	A – B
Base	
Material	SUMITOMO, phenolic, Type: PM-9820, PM-9630
Thickness	0.40 mm min.
Electric strength test	
With AC 3000 V after humidity treatment	
Result	Pass

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

C.2	Safety isolation transformer		P
Construction details:			
Main power board: Transformer (T101)			
Mfr.: See table 1.5.1 for details.			
Type: See table 1.5.1 for details.			
Recurring peak voltage		424 Vpeak	
Required clearance insulation (from table 2K and 2L, pollution degree 2)			
For Reinforced		6.3 mm (4.2 mm * 1.48 = 6.216 mm)	
For Basic		3.15 mm	
Effective voltage rms		252 Vrms	
Required creepage insulation (from table 2N, pollution degree 2, material group IIIa+IIIb)			
For Reinforced		6.3 mm (Clearance distances applied as the creepage distance)	
For Basic		3.15 mm	
Measured min. clearances			
Primary – Secondary (Reinforced)		9.1 mm	
Primary –Core (Basic)		9.3 mm	
Secondary – Core (Basic)		7.3 mm	
Measured min. creepages			
Primary – Secondary (Reinforced)		9.1 mm	
Primary –Core (Basic)		9.3 mm	
Secondary – Core (Basic)		7.3 mm	
Note:			
The clearance distance is complied with the requirements for use in altitude 5,000 m above the sea level, the altitude correction factor is 1.48.			

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

Construction:	
Concentric windings on bobbin with core size EER34x34x11 (horizontal orientation type core). The insulation between primary winding and secondary winding were separated by construction of coil bobbin, thickness 0.8 mm min. The insulation between primary winding to core and secondary winding to core were separated by plastic insulation cover, thickness 0.8 mm min. (see below for plastic insulation cover details). The core is considered as floating part. One layer of insulation tape around core body. One layer of insulation tape around outer winding (either primary or secondary).	
Material of plastic insulation cover: SUMITOMO BAKELITE CO LTD., Type: PM-9820, PM-9630, V-0, thickness 0.4 mm min.	
Pin numbers	
Primary	10 – 12
Secondary	2– 4, 3 – 5
Base	
Material	SUMITOMO, Type: PM-9820, PM-9630
Thickness	0.4 mm min.
Electric strength test	
With AC 3000 V after humidity treatment	
Result	Pass

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

C.2	Safety isolation transformer		P
Construction details:			
LED laser power board: Transformer (T102)			
Mfr.: See table 1.5.1 for details.			
Type: See table 1.5.1 for details.			
Recurring peak voltage		648 Vpeak	
Required clearance insulation (from table 2K and 2L, pollution degree 2)			
For Reinforced		7.2 mm (4.8 mm * 1.48 = 7.104 mm)	
For Basic		3.6 mm	
Effective voltage rms		292 Vrms	
Required creepage insulation (from table 2N, pollution degree 2, material group IIIa+IIIb)			
For Reinforced		7.2 mm (Clearance distances applied as the creepage distance)	
For Basic		3.6 mm	
Measured min. clearances			
Primary – Secondary (Reinforced)		9.1 mm	
Primary –Core (Basic)		8.6 mm	
Secondary – Core (Basic)		8.6 mm	
Measured min. creepages			
Primary – Secondary (Reinforced)		9.1 mm	
Primary –Core (Basic)		8.6 mm	
Secondary – Core (Basic)		8.6 mm	
Note:			
The clearance distance is complied with the requirements for use in altitude 5,000 m above the sea level, the altitude correction factor is 1.48.			

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

Construction:	
Concentric windings on bobbin with core size EER39/44.4 (horizontal orientation type core). The insulation between primary winding and secondary winding were separated by construction of coil bobbin, thickness 0.8 mm min. The insulation between primary winding to core and secondary winding to core were separated by plastic insulation cover, thickness 0.8 mm min. (see below for plastic insulation cover details). The core is considered as floating part. Two layers of insulation tape around core body.	
Material of plastic insulation cover: SUMITOMO BAKELITE CO LTD., Type: PM-9820, PM-9630, V-0, thickness 0.4 mm min.	
Pin numbers	
Primary	2 – 3
Secondary	14– 12, 11 –13
Base	
Material	SUMITOMO, Type: PM-9820, PM-9630
Thickness	0.4 mm min.
Electric strength test	
With AC 3000 V after humidity treatment	
Result	Pass

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

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		N/A

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
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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

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Clause	Requirement + Test	Result - Remark	Verdict

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

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
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J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		P
	Metal(s) used	Metals which the combination electrochemical potential is less than 0.6V.	—

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		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	Maximum normal load which specified by manufacturer.	P

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Clause	Requirement + Test	Result - Remark	Verdict

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction	No phone ringing is generated in the equipment.	N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringling 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
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	Not used.	N/A
N.2	IEC 60065 impulse test generator		N/A

P	ANNEX P, NORMATIVE REFERENCES		—
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Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		P
	- Preferred climatic categories	Varistor is certified component, see appended table 1.5.1.	P
	- Maximum continuous voltage	Ditto.	P
	- Combinatio pulse current	Ditto.	P
	Body of the VDR Test according to IEC60695-11-5.....	Ditto.	P
	Body of the VDR. Flammability class of material (min V-1).....	Ditto.	P



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Clause	Requirement + Test	Result - Remark	Verdict

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Clause	Requirement + Test	Result - Remark	Verdict

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)	Not used.	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	Not used.	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 2.10.5.12)		P
		Triple insulated wire is used for transformer, see appended table 1.5.1 for details.	—

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction	See below.	P
V.2	TN power distribution systems	Single-phase TN power system considered and used for testing.	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

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Clause	Requirement + Test	Result - Remark	Verdict

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
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AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
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BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
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CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		P
CC.1	General	See below.	P
CC.2	Test program 1.....		N/A
CC.3	Test program 2.....	Used for current limiting the output of a power source in accordance with the requirements of a limited power source. See appended table 1.5.1 for details.	P
CC.4	Test program 3.....		N/A
CC.5	Compliance.....		P

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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	No such construction.	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	The equipment is not a household and home/office document/media shredders.	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

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⁾	
Power Plug (Optional)	I Sheng	SP-023, SP-022	250 Vac, 16 A	EN 60884-1, IEC 60884-1, DIN VDE 0620- 1	VDE	
Power Connector (Optional)	I-Sheng	IS-16B, IS-16	250 Vac, 16 A	EN 60320-1, VDE 0625-1	VDE	
Power Cord (Optional)	I Sheng	H05VV-F	3G,1.5 mm ²	VDE 0281	VDE	
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.						
Enclosure (mech/elec/fire)	--	--	Aluminum min. 1.5 mm	--	--	
Plastic enclosure of front, right and left sides	SABIC INNOVATIVE PLASTICS	945	5V, 120 °C, min. 3 mm thickness.	UL 94, UL 746C	UL	
	TEIJIN CHEMICALS LTD RESEARCH & DEVELOPMENT DIV	MN-3600H# (# : suffix optional)	5V, 95 °C, min. 2 mm thickness.	UL 94, UL 746C	UL	
	LG CHEMICAL LTD	GN-5001RF(T) (T: May be followed by optional suffix letter from A-Z incl., except D, F)	5V, 80°C, min. 2 mm thick.	UL 94, UL 746C	UL	
	SABIC INNOVATIVE PLASTICS	CX7720	5VB, 100 °C, min. 1.5 mm thickness.	UL 94, UL 746C	UL	
	SABIC INNOVATIVE PLASTICS JAPAN L L C	905, 915RP	5VB, min. 110 °C, min. 2.0 mm thick.	UL 94, UL 746C	UL	
	LG CHEMICAL LTD	LUPOY EF- 1006F(m), (m): May be followed by 1 or 2 suffix letters from A-Z incl., except F, FF, FH.	5VB, 115 °C, min. 1.7 mm thick.	UL 94, UL 746C	UL	

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Blue Laser diode bank (through phosphor) (15 sets)	Nichia	NUBM05-25	Max. wave length=460 nm, If:Max. 3.5 A, Max.39 V	IEC/EN 60825- 1:2007, IEC/EN 60825- 1:2014, IEC 62471- 5:2015	Tested in appliance
Red Laser diode Module (3 sets)	Mitsubish	ZA220	Max. wave length=639.1 nm Max. 16.5 A, Max. 5.6 V	IEC/EN 60825- 1:2007, IEC/EN 60825- 1:2014, IEC 62471- 5:2015	Tested in appliance
Red Laser diode Module (3 sets)	Mitsubish	ZA210	Max. wave length=642.1 nm Max. 16.5 A, Max. 5.6 V	IEC/EN 60825- 1:2007, IEC/EN 60825- 1:2014, IEC 62471- 5:2015	Tested in appliance
DC Fan 1, 2, 4, 5, 16, 17	Delta	AFB0612VHC	DC 12 V, 0.36 A, min. 24.97 CFM	UL 507, IEC 60950- 1:2005 +A1+A2:2013, EN 60950-1: 2006+A11+ A1+A12+A2:201 3	VDE, UL
DC Fan 3	Delta	BFB1012M	DC 12 V, 0.66 A, min. 24.68 CFM	UL 507, IEC 60950- 1:2005 +A1+A2:2013, EN 60950-1: 2006+A11+ A1+A12+A2:201 3	VDE, UL
DC Fan 6, 7, 8	Delta	EFB0412VHD	DC 12 V, 0.18 A, min. 9.25 CFM	UL 507, IEC 60950- 1:2005 +A1+A2:2013, EN 60950-1: 2006+A11+ A1+A12+A2:201 3	VDE, UL

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
DC Fan 9,11, 12, 13, 14	Sanyo	9GA0912P4J03	DC 12 V, 0.39 A, Max. 77.7 CFM	UL 507, IEC 60950- 1:2005 +A1+A2:2013, EN 60950-1: 2006+A11+ A1+A12+A2:201 3	TUV, UL
DC Fan 10	Delta	AFB1212HH	DC 12 V, 0.5 A, min. 75.82 CFM	UL 507, IEC 60950- 1:2005 +A1+A2:2013, EN 60950-1: 2006+A11+ A1+A12+A2:201 3	TUV, UL
DC Fan 15	Delta	EFB0512HA	DC 12 V, 0.15 A, min. 10.28 CFM	UL 507, IEC 60950- 1:2005 +A1+A2:2013, EN 60950-1: 2006+A11+ A1+A12+A2:201 3	VDE, UL
DC Motor for shutter (Optional)	Nakatsu Engineering Co., Ltd.	NS-16SG-250- 12G162	12 Vdc, max. 100mA	--	Tested in appliance
DC Motor for Lens (optional) (2sets)	Nakatsu Engineering Co., Ltd.	NS-16SG-250- 12G162	12 Vdc, max. 100mA	--	Tested in appliance
DC Motor for Lens (optional) (2sets)	Minebea Co., Ltd.	PG20L-D20- XXXX (X can be any character or blank)	12 Vdc, max. 309mA	--	Tested in appliance
DC Motor for phosphor	Nidec Corp.	28S2203080	12 Vdc, max. 350mA	--	Tested in appliance
Motor for diffuser wheel (2 sets)	Delta Electronics Inc.	PFXXXCXXXX (X can be any character or blank)	12 Vdc, 0.3 A Max., speed of rotation 10800 rpm Max.	--	Tested in appliance

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Liquid Cooling System Module					
-Radiator module	Delta	DHS-B308285 series	Aluminum	--	--
-DMD Cold Plate module	Delta	DHS-B322174 series	Aluminum	--	--
-FIP Heat Sink module	Delta	DHS-B214168 series	Aluminum	--	--
-Pump	JINGWAY Technology	DP-1200	12 Vdc, 1.8 A maximum.	--	--
Liquid Cooling System Module for outside Chiller					
-Cold Plate module	Delta	DHS-B390305 series	Aluminum	--	--
-Heat Sink module	Delta	DHS-B298102 series	Aluminum	--	--
Formatter board					
Lithium battery(B4000)	PANASONIC CORPORATION	BR2330	3 Vdc, Max. abnormal charging current min. 5 mA, Protection by Resistor (R4003)	UL 1642	UL
-PTC (F2500) for 3D connector	Littelfuse Inc.	MiniSMDC050	Max. 15 V, 0.5 A	UL 1434, EN 60730-1	UL, TUV
PCI-E card (optional)	DOLBY LABORATORIE S INC	IMS2000	--	IEC 60950-1:2005/A2:2013 (Evaluated and complied with the requirement of EN 60950-1:2006/ A2:2013) UL 60950-1	CB by UL, UL
PCB	Interchangeable	Interchangeable	V-1 or better, 105 °C	UL 796	UL

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
AC Inlet Board					
Appliance Inlet (CN101)	Rong Feng	SS-3B, SS-3A	16 A, 250 V, 70 °C	UL 817, UL 498, EN 60320-1, IEC 60320-1	UL, VDE
Power switch (SW101)	Panasonic Electric Works Co., Ltd.	Series AJ8..	16A/ min. 250 V, min. 85 °C	UL 817, UL 498, EN 61058-1, IEC 61058-1	UL, VDE
	Omron	A8WD# (# can be followed by optional suffix(es), any letter(s) and/or any number(s))	16 A, 250 V, 55 °C	UL 817, UL 498, EN 61058-1, IEC 61058-1	UL, VDE
	ALPS	SDDJF-2 or SDDJF-4	16A/ min. 250 V, min. 55 °C	UL817, UL498, EN 61058-1, IEC 61058-1	UL, VDE
	ELEKTRON COMPONENTS LTD or Arcoelectric	1350	Min. 16A/250V, min. 85 °C	UL817, UL498, EN 61058-1, IEC 61058-1	UL, ENEC
Fuse (F100)	Littelfuse	216	F16AH/250V	EN 60127-2, IEC 60127	UL, SEMKO
Y-Capacitors (CY100, CY101) (Optional)	Murata MFG Co Ltd	KX, KH	Min. 250 V ac, max. 2200 pF, min. 85 °C	IEC 60384- 14:2013 EN 60384- 14:2013	VDE
	Walsin Technology Corp.	AC, AH	Min. 250 V ac, max. 2200 pF, min. 85 °C	IEC 60384- 14:2013 EN 60384- 14:2013	VDE
	TDK CORP	CD or CS	Min. 250 V ac, max. 2200 pF, min. 85 °C	IEC 60384- 14:2013 EN 60384- 14:2013	VDE

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Inductor (FL101)	Delta	HFH-MP15184	130°C	--	--
Varistor (TVR101) (Optional)	Thinking	TVR14681, TVR14621, TVR14511, TVR14561, TVR14471	Min. 288 Vac (line-to-line) coating of the VDR, rated V-0	UL 1449 3rd IEC 61051-1, IEC 61051-2, CECC 42000, CECC 42200, CECC 42201	UL, VDE
	EPCOS OHG	S14K420, S14K420E2, SNF14K420E2	Min. 288 Vac (line-to-line) coating of the VDR, rated V-0	UL 1449 3rd IEC 61051-1, IEC 61051-2, CECC 42000, CECC 42200, CECC 42201	UL, VDE
	Nippon	TNR10SE621K	Min. 250 V, (line-to-line). Rated with V-0 minimum.	UL 1449 3rd IEC 61051-1, IEC 61051-2, CECC 42000, CECC 42200, CECC 42201	UL, VDE
Gas-tube Suppressor (G100) (Optional)	Okaya	RA-302\$ (\$:Followed by suffix M-C6 and one or two characters	Min. 250 V (line-to- Ground)	EN 60950-1, EN 61643-11	SEMKO, TUV
PFC Board					
Primary Connector(CN1)	Japan Solderless Terminal Mfg. Co., Ltd.	VH -Series	7 A, 250 V, 85°C.	EN 61984 UL 1977	TUV, UL
	JOWLE TECHNOLOGY CO LTD	A3963	7 A, 250 Vac, 100 °C	EN 61984 UL 1977	TUV, UL
	CKM ELECTRONICS CO., LTD.	3962 series	7 A, 250 Vac, 85 °C	EN 61984 UL 1977	TUV, UL
Fuse (F1)	LITTELFUSE INC	314	F25A, AC 250V	UL 248-1, UL 248-14, CSA C22.2 no. 248-1- 00, CSA C22.2 no. 248-14-00	UL, CSA
	LITTELFUSE INC	324	F25A, AC 250V	UL 248-1, UL 248-14, CSA C22.2 no. 248-1- 00, CSA C22.2 no. 248-14-00	UL, CSA

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
	COOPER BUSSMANN L L C	ABC-V	F25A, AC 250V	UL 248-1, UL 248-14, CSA C22.2 no. 248-1- 00, CSA C22.2 no. 248-14-00	UL, CSA
Varistor (TVR1) (Optional)	Thinking	TVR14471, TVR14621, TVR14511, TVR14561, TVR14681	Min. 288 Vac (line-to-line) (coating of the VDR, rated V-0)	UL 1449 3 rd IEC61051-1, IEC61051-2, CECC 42000, CECC 42200, CECC 42201	UL, VDE
	EPCOS OHG	S14K420, S14K420E2, SNF14K420E2	Min. 288 Vac (line-to-line) (coating of the VDR, rated V-0)	UL 1449 3 rd IEC61051-1, IEC61051-2, CECC 42000, CECC 42200, CECC 42201	UL, VDE
	EPCOS OHG	SIOV-S14K420, SIOV- S14K420E2K1, SIOV- SNF14K420E2	Min. 288 Vac (line-to-line) (coating of the VDR, rated V-0)	UL 1449 3 rd IEC61051-1, IEC61051-2, CECC 42000, CECC 42200, CECC 42201	UL, VDE
X-Capacitors (CX1, CX2, CX3) (Optional)	KEMET Electronics Corporation	R.46	Min. 250 V ac, CX1=max. 0.56 μF, CX2=max. 1μF, CX3= max. 0.68 μF, min. 85 °C.	IEC 60384- 14:2013 EN 60384- 14:2013	ENEC
	EUROPTRONIC (TAIWAN) INDUSTRIAL CORP	MPX	Min. 250 V ac, CX1=max. 0.56 μF, CX2=max. 1μF, CX3= max. 0.68 μF, min. 85 °C.	IEC 60384- 14:2013 EN 60384- 14:2013	VDE

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
	Hua Jung Components Co., Ltd.	MKP	Min. 250 V ac, CX1=max. 0.56 μ F, CX2=max. 1uF, CX3= max. 0.68 μ F, min. 85 °C.	IEC 60384- 14:2013 EN 60384- 14:2013	ENEC
	PILKOR ELECTRONICS CO LTD	PCX2 339	Min. 250 V ac, CX1=max. 0.56 μ F, CX2=max. 1uF, CX3= max. 0.68 μ F, min. 85 °C.	IEC 60384- 14:2013 EN 60384- 14:2013	ENEC
	EPCOS (Zhuhai FTZ) Co., Ltd.	B3292#	Min. 250 V ac, CX1=max. 0.56 μ F, CX2=max. 1uF, CX3= max. 0.68 μ F, min. 85 °C.	IEC 60384- 14:2013 EN 60384- 14:2013	VDE
	Panasonic Corporation Automotive & Ind.	ECQUL	Min. 250 V ac, CX1=max. 0.56 μ F, CX2=max. 1uF, CX3= max. 0.68 μ F, min. 85 °C.	IEC 60384- 14:2013 EN 60384- 14:2013	VDE
	Okaya Electric Industries Co., Ltd.	RE or LE	Min. 250 V ac, CX1=max. 0.56 μ F, CX2=max. 1uF, CX3= max. 0.68 μ F, min. 85 °C.	IEC 60384- 14:2013, EN 60384- 14:2013	VDE

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
	XIAMEN FARATRONIC CO LTD	MKP62	Min. 250 V ac, CX1=max. 0.56 μ F, CX2=max. 1uF, CX3= max. 0.68 μ F, min. 85 °C.	IEC 60384- 14:2013 EN 60384- 14:2013	VDE
	STRONG Components Co. LTD	MPX	Min. 250 V ac, CX1=max. 0.56 μ F, CX2=max. 1uF, CX3= max. 0.68 μ F, min. 85 °C.	IEC 60384- 14:2013 EN 60384- 14:2013	VDE
Y-Capacitors (CY1, CY2, CY3, CY4) (Optional)	Murata MFG Co Ltd	KX, KH	CY1=CY2= Min. 250 V ac, max. 2200 pF; CY3=CY4= Min. 250 V ac, max. 470 pF, min. 85 °C	IEC 60384- 14:2013 EN 60384- 14:2013	VDE
	Walsin Technology Corp.	AC, AH	CY1=CY2= Min. 250 V ac, max. 2200 pF; CY3=CY4= Min. 250 V ac, max. 470 pF, min. 85 °C	IEC 60384- 14:2013 EN 60384- 14:2013	VDE
	TDK CORP	CD or CS	CY1=CY2= Min. 250 V ac, max. 2200 pF; CY3=CY4= Min. 250 V ac, max. 470 pF, min. 85 °C	IEC 60384- 14:2013 EN 60384- 14:2013	VDE

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
	KUNSHAN WANSHEG ELECTRONICS CO.,LT	CT7	CY1=CY2=Min. 250 V ac, max. 2200 pF; CY3=CY4= Min. 250 V ac, max. 470 pF, min. 85 °C, Y1 or Y2 Type (Comply with IEC 60384- 14.)	IEC 60384- 14:2013, EN 60384- 14:2013	VDE
Line Filters (FL1, FL2)	Delta	HFV-MP14127	Min. 130 °C.	--	--
Discharge IC (IC6) (Total Series Resistance (R1 + R3) each rated max. 100 K Ohms, 1/4 W.)	ON Semiconductor	NCP4810	Maximum AC1 pin Voltage related to AC2 pin = -700V to 700 V, Idisch_min = 0.85 mA (Applicable for use to mains supply 100- 240Vac, 60-50 Hz)	IEC 60950- 1:2005 +A1:2009+A2:20 13 (Evaluated and complied with the requirement of EN 60950- 1:2006+A11: 2009+A1:2010+ A12:2011+A2:20 13)	CB by Nemko
Thermistors (NTC1)	--	--	10 Ohms at 25 °C, 8 A	--	--
Thermistors (NTC102)	--	--	10 Ohms at 25 °C, 5 A	--	--
Bridge Diode (BD1, BD2)	--	--	20~25 A, min. 600 V.	--	--
Inductor (L1)	Delta	CRV-MP14135	Min. 130 °C.	--	--
Bulk Capacitor (C1, C2, C3)	--	--	470 µF, min. 400 Vac, min. 105 °C	--	--
Transformer (T1)	Delta	MV-MP15023	Class B	--	--
-Triple insulated wire used in T1	Furukawa	TEX-E, TEX-ELZ	Class B	UL 2353 IEC 60950- 1:2005+A1+A2, EN 60950- 1:2006/ A2:2013	UL, VDE
	Totoko	TIW-2, TIW-2LZ, TIW-3, TIW-3LZ	Class B	UL 2353 IEC 60950- 1:2005+A1+A2, EN 60950- 1:2006/ A2:2013	UL, VDE

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Optical Isolators (IC11, IC12, IC13, IC14) (Optional)	Sharp Corporation	PC123	3000 Vac isolation; dti = 0.4 mm min. min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	FIMKO, VDE
	Everlight	EL816 series	3000 Vac isolation; dti = 0. 4mm min. min. 100 °C. Distance between input and output = min. 6 mm	EN 60747-5-5, IEC 60950-1, EN 60950-1	FIMKO, VDE, NEMKO, DEMKO, SEMKO
	Renesas	PS2561BL1-1	3000 Vac isolation; dti = 0.4 mm min. min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	FIMKO, SEMKO
	Vishay	VOL617A-X (X=2, 3, 4), VO617C	3000 Vac isolation; dti = 0.4 mm min. min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	VDE, FIMKO
	Toshiba Corp.	TLP781, TLP781F	3000 Vac isolation; dti = 0.4 mm min. min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	SEMKO, VDE



PSB Singapore

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
	Everlight	EL1014, EL1013	3000 Vac isolation; dti = 0.4 mm min. min. 100 °C. Distance between input and output = min. 6 mm	EN 60747-5-5, IEC 60950-1, EN 60950-1	VDE, DEMKO
	LITE-ON Technology Corp.	LTV-816	3000 Vac isolation; dti = 0.4 mm min. min. 100 °C. Distance between input and output = min. 6 mm	EN 60747-5-5, IEC 60950-1, EN 60950-1	VDE, FIMKO, DEMKO, SEMKO, NEMKO
Transistor (Q1)	--	--	2~5.5 A, min. 800 V.	--	--
Bridge Capacitor (CY5) (Optional) (Y1 Type)	Murata Mfg Co Ltd	KX	Min. 250 Vac, , max. 2200 pF, marked with Y1, min. 85 °C	IEC 60384- 14:2013, EN 60384- 14:2013	VDE
	TDK	CD	Min. 250 Vac, , max. 2200 pF, marked with Y1, min. 85 °C	IEC 60384- 14:2013, EN 60384- 14:2013	VDE
	Walsin Technology Corp.	AH	Min. 250 Vac, , max. 2200 pF, marked with Y1, min. 85 °C	IEC 60384- 14:2005, EN 60384- 14:2013	VDE
Main power board					
Fuse (F102, F103)	Littelfuse	215	T4AH/ 250V	EN 60127-1, EN 60127-2, IEC 60127-1, IEC 60127-2	UL, VDE
	CONQUER ELECTRONICS CO LTD	UDA-A	T4H/ 250V	EN 60127-1, EN 60127-2, IEC 60127-1, IEC 60127-2	UL, VDE
	Walter Electronic Co Ltd	TSC	T4AH/ 250V	EN 60127-1, EN 60127-2, IEC 60127-1, IEC 60127-2	UL, VDE
Primary Connector (CN101)	Japan Solderless Terminal Mfg. Co., Ltd.	VH -Series	7 A, 250 V, 85 °C	EN 61984, UL 1977	TUV, UL
	JOWLE TECHNOLOGY CO LTD	A3963	7 A, 250 Vac, 100°C	EN 61984, UL 1997	TUV, UL



PSB Singapore

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
	CKM ELECTRONICS CO., LTD.	3962 series	7 A, 250 Vac, 85 °C	EN 61984 UL 1977	TUV, UL
Primary connector (CN102)	Molex Inc.	5566 Series	6 A, 250 Vac or 600 Vdc	EN 61984 UL 1977	TUV, UL
	JOWLE TECHNOLOGY CO LTD	C4201, C4202	Min. 250Vac	EN 61984 UL 1977	TUV, UL
Inductor (L101)	Delta	E-7448A01	Min. 125°C.	--	--
Inductor (L102)	Delta	LFV-DS11194	Min. 130°C.	--	--
Transistor (Q101, Q102)	--	--	11~14 A, min. 600 V	--	--
Optical Isolators (U104, U105)	Everlight	EL816 series	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm	EN 60747-5-5, IEC 60950-1, EN 60950-1	FIMKO, VDE, NEMKO, DEMKO, SEMKO
	Vishay	VOL617A-X (X=2, 3, 4) , VO617C	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	VDE, FIMKO
	Renesas	PS2561BL1-1	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	FIMKO, SEMKO

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
	Toshiba Corp.	TLP781, TLP781F	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	SEMKO, VDE
	Sharp Corporation	PC123	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	FIMKO, VDE
	LITE-ON Technology Corp.	LTV-816	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm	EN 60747-5-5, IEC 60950-1, EN 60950-1	VDE, FIMKO, DEMKO, SEMKO, NEMKO
	Everlight	EL1014, EL1013	3000 Vac isolation; di = 0.4 mm min. min. 100 °C. Distance between input and output = min. 6mm	EN 60747-5-5, IEC 60950-1, EN 60950-1	VDE, DEMKO
Bridge Capacitor (CY101) (Optional)	MURATA MFG CO LTD	KX	Min. 250 V ac, max. 2200 pF, marked with Y1, min. 85 °C	IEC 60384- 14:2013, EN 60384- 14:2013	VDE
	TDK Corp	CD	Min. 250 V ac, max.2200 pF, marked with Y1, min. 85 °C	IEC 60384- 14:2013, EN 60384- 14:2013	VDE

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
	Walsin Technology Corp.	AH	Min. 250 V ac, max. 2200 pF, marked with Y1, min. 85 °C	IEC 60384- 14:2013, EN 60384- 14:2013	VDE
Transformer (T101)	Delta	MH-DS11722	Class B	--	--
LED laser power board (4 sets)	--	--	--	--	--
Primary connector (CN102)	JOWLE TECHNOLOGY CO LTD	A3963	7A, 250Va, 100 °C	EN 61984, UL 1997	TUV, UL
Inductor (L105)	Delta	E-7448A01	Min. 125°C.	--	--
Transistors (Q117, Q118)	--	--	11~14 A, min. 600 V	--	--
Photo couplers (U111, U112)	Everlight	EL816 series	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm	EN 60747-5-5, IEC 60950-1, EN 60950-1	FIMKO, VDE, NEMKO, DEMKO, SEMKO
	Vishay	VOL617A-X (X=2, 3, 4) , VO617C	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	VDE, FIMKO
	Renesas	PS2561BL1-1	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	FIMKO, SEMKO

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
	Toshiba Corp.	TLP781, TLP781F	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	SEMKO, VDE
	Sharp Corporation	PC123	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm (comply with thermal cycling test clause 2.10.11)	EN 60747-5-2, IEC 60950-1, EN 60950-1	FIMKO, VDE
	LITE-ON Technology Corp.	LTV-816	3000 Vac isolation; di = 0.4 mm min., min. 100 °C. Distance between input and output = min. 6 mm	EN 60747-5-5, IEC 60950-1, EN 60950-1	VDE, FIMKO, DEMKO, SEMKO, NEMKO
	Everlight	EL1014, EL1013	3000 Vac isolation; di = 0.4 mm min. min. 100 °C. Distance between input and output = min. 6mm	EN 60747-5-5, IEC 60950-1, EN 60950-1	VDE, DEMKO

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Transformer (T102)	Delta	MH-DS11468	Class B	--	--
Bridge Capacitors (CY107) (Optional)	TDK Corp	CD	Min. 250 V ac, max. 470 pF, marked with Y1, Comply with IEC 60384-1.	IEC 60384- 14:2013, EN 60384- 14:2013	VDE
	MURATA MFG CO LTD	KX	Min. 250 V ac, max. 470 pF, marked with Y1, Comply with IEC 60384-1.	IEC 60384- 14:2013, EN 60384- 14:2013	VDE
	Walsin Technology Corp.	AH	Min. 250 V ac, max. 470 pF, marked with Y1, Comply with IEC 60384-1.	IEC 60384- 14:2013, EN 60384- 14:2013	VDE
	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Min. 250 V ac, max. 470 pF, marked with Y1, Comply with IEC 60384-1.	IEC 60384- 14:2013, EN 60384- 14:2013	VDE
1) An asterisk indicates a mark which assures the agreed level of surveillance.					
Supplementary information:					
¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

1.6.2		TABLE: Electrical data (in normal conditions)					P
U (Vac/Hz)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
180/50	11.27	--	2038	F100	11.27	Max. Normal Load with signal from HDD (PCI-E Card IMS2000) DC fan CFM at normal speed.	
180/60	11.31	--	2041	F100	11.31		
200/50	10.11	10.7	2027	F100	10.11		
200/60	10.12	10.7	2029	F100	10.12		
240/50	8.37	10.7	2016	F100	8.37		
240/60	8.40	10.7	2018	F100	8.40		
264/50	7.61	--	2012	F100	7.61		
264/60	7.62	--	2015	F100	7.62		
180/50	11.25	--	2035	F100	11.25	Max. Normal Load with HDMI signal of PCI-E card (IMS2000) DC fan CFM at higher speed.	
180/60	11.29	--	2038	F100	11.29		
200/50	10.09	10.7	2024	F100	10.09		
200/60	10.10	10.7	2026	F100	10.10		
240/50	8.35	10.7	2013	F100	8.35		
240/60	8.38	10.7	2015	F100	8.38		
264/50	7.59	--	2009	F100	7.59		
264/60	7.60	--	2012	F100	7.60		
180/50	11.24	--	2033	F100	11.24	Max. Normal Load with With SDI A input (PCI-E Card IMS2000) DC fan CFM at higher speed.	
180/60	11.28	--	2036	F100	11.28		
200/50	10.07	10.7	2021	F100	10.07		
200/60	10.08	10.7	2024	F100	10.08		
240/50	8.32	10.7	2011	F100	8.32		
240/60	8.35	10.7	2013	F100	8.35		
264/50	7.57	--	2008	F100	7.57		
264/60	7.59	--	2009	F100	7.59		
180/50	11.24	--	2033	F100	11.24	Max. Normal Load with With SDI B input (PCI-E Card IMS2000) DC fan CFM at higher speed.	
180/60	11.27	--	2035	F100	11.27		
200/50	10.07	10.7	2021	F100	10.07		
200/60	10.08	10.7	2024	F100	10.08		
240/50	8.31	10.7	2010	F100	8.31		
240/60	8.33	10.7	2013	F100	8.33		
264/50	7.56	--	2006	F100	7.56		
264/60	7.57	--	2008	F100	7.57		

1.6.2		TABLE: Electrical data (in normal conditions)					P
U (Vac/Hz)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
180/50	11.24	--	2029	F100	11.24	Max. Normal Load with signal from HDD (PCI-E Card IMS2000) DC fan CFM at normal speed.	
180/60	11.26	--	2030	F100	11.26		
200/50	10.06	10.7	2018	F100	10.06		
200/60	10.09	10.7	2020	F100	10.09		
240/50	8.34	10.7	2007	F100	8.34		
240/60	8.35	10.7	2008	F100	8.35		
264/50	7.55	--	2000	F100	7.55		
264/60	7.56	--	2002	F100	7.56		
Supplementary information:							

2.1.1.7	TABLE: Discharge test				P
Condition	Switch Position	τ calculated (s)	τ measured (s)	comments	
Line-Neutral	On	0.44	0	Vo= 380 V 37% x Vo= 140 V Vt=1sec= 0V	
EMI Filter capacity: N/A					
Overall capacity: CX1: 0.56 μ F, CX2: 1 μ F, CX3: 0.68 μ F (PFC board)					
Discharge IC (included discharge resistor): See appended table 1.5.1 for details.					
Supplementary information: The EUT with a double pole power switch.					

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.		
PFC board				
T1, pin A / GND	38	--	--	
Main power board				
T101 pin 2 / GND	16	--	--	
T101 pin 6 / GND	17	--	--	
LED laser power board				
T102 pin 14 / GND	63	--	--	
D203 pin 1 / GND	--	58	D203	
Supplementary information:				
If the voltage exceeded 42.4 V pk or 60 V dc, the measurement was taken again after the next component in series with the secondary until the voltage measured was less than 42.4 V pk or 60 V dc.				
Each voltage measured and each component located in series directly before the measurement was noted.				

2.2.2, 2.2.3, 2.2.4	TABLE: SELV Reliability Test					P
Accessible Part (From to)	Voltage Limiting Component	Fault	Maximum Vpk/dc	Duration (ms)	result	
LED laser power board						
D203 to earth	D203	Shorted	0	--	Unit shutdown immediately	
Supplementary information: After the fault introduction, the voltage did not exceed 42.4 V pk or 60 V dc for longer than 0.2 seconds. In addition, a limit of 71 V pk or 120 V pk was not exceeded.						

2.4.2	TABLE: Limited current circuit measurement					P
Location	Voltage (V)	Current (mA)	Freq. (Hz)	Limit (mA)	Comments	
PFC board						
CY5	1.22	0.61	59.88	0.7	Bridge capacitor CY5= 2200 pF	
Main power board						
CY101	0.324	0.162	60.24	0.7	Bridge capacitor CY101= 2200 pF	
LED laser power board						
CY107	0.272	0.136	59.88	0.7	Bridge capacitor CY107= 470 pF	
Supplementary information:						
Output measured with a non-inductive resistor of 2 K Ω as load.						

2.5	TABLE: limited power sources					P
Circuit output tested: see below.						
Note: Measured Uoc (V) with all load circuits disconnected: see below.						
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
RS-232, pin 2, normal condition	1	6.5	0.02	≤ 8	0.48	≤ 100
RS-232, pin 1, 3, 4, 5, 6, 7, 8, 9, normal condition	1	0*	--	≤ 8	--	≤ 100
GP I/O, pin 1~37, normal condition	1	0*	--	≤ 8	--	≤ 100
Remote, pin 2, normal condition	1	3.3	2.2	≤ 8	6.5	≤ 100
Remote, pin 2, IC2403 pin 1-8 shorted condition	--	3.3	0	≤ 8	0	≤ 100
Remote, pin 3, normal condition	1	5	0.04	≤ 8	0.09	≤ 100
Remote, pin 1, 4, 5, normal condition	1	0*	--	≤ 8	--	≤ 100
USB, pin 1, normal condition	1	5	2	≤ 8	9.1	≤ 100
USB, pin 1, IC 2402 pin 1-6 shorted condition	1	5	2.9	≤ 8	11	≤ 100
USB, pin 2, 3, 4, normal condition	1	0*	--	≤ 8	--	≤ 100
supplementary information:						
* - Signal transmission.						

2.5	TABLE: limited power sources					P
Circuit output tested: see below.						
Note: Measured Uoc (V) with all load circuits disconnected: see below.						
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
3D, pin 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, normal condition	1	0*	--	≤ 8	--	≤ 100
3D, pin 1, normal condition	1	12	1.1	≤ 8	13.1	≤ 100
3D, pin 5, normal condition	1	6.4	0.02	≤ 8	0.1	≤ 100
LAN*2, pin 1~8, normal condition	1	0*	--	≤ 8	--	≤ 100
supplementary information:						
* - Signal transmission.						

2.6.3.4	TABLE: Ground continue test		P
Location	Resistant measured (Ω)	Comments	
The PE pin of inlet to I/O metal	0.010	Test current= 32 A, 2 min Voltage drop: 0.32 V	
The PE pin of inlet to the furthest metallic part	0.013	Test current= 32 A, 2 min Voltage drop: 0.416 V	
The PE pin of inlet to I/O metal	0.012	Test current= 40 A, 2 min Voltage drop: 0.48 V	
The PE pin of inlet to the furthest metallic part	0.015	Test current= 40 A, 2 min Voltage drop: 0.6 V	
Supplementary information:			
1) The resistance did not exceed 0.1 Ω from any accessible conductive part and earth.			
2) The voltage drop did not exceed 2.5 V from any accessible conductive part and earth.			

2.10.2	Table: Working voltage measurement			P
Location		Peak Voltage (V)	TRMS Voltage (V)	Comments
PFC board				
T1 pin 1 / pin A		480	320	--
T1 pin 1 / pin B		424	310	--
T1 pin 2 / pin A		420	170	--
T1 pin 2 / pin B		400	170	--
T1 pin 3 / pin A		344	170	--
T1 pin 3 / pin B		340	170	--
T1 pin 4 / pin A		624	344	--
T1 pin 4 / pin B		628	347	*Highest Vpk and Vrms at T1.
IC11 pin 3 / pin 1		366	188	--
IC11 pin 3 / pin 2		342	170	--
IC11 pin 4 / pin 1		348	180	--
IC11 pin 4 / pin 2		344	166	--
IC12 pin 3 / pin 1		366	180	--
IC12 pin 3 / pin 2		340	172	--
IC12 pin 4 / pin 1		344	180	--
IC12 pin 4 / pin 2		342	168	--
IC13 pin 3 / pin 1		366	182	--
IC13 pin 3 / pin 2		342	166	--
IC13 pin 4 / pin 1		348	170	--
IC13 pin 4 / pin 2		344	170	--
IC14 pin 3 / pin 1		368	182	--
IC14 pin 3 / pin 2		346	172	--
IC14 pin 4 / pin 1		348	170	--
IC14 pin 4 / pin 2		344	166	--
CY5 to earth		360	170	--
Supplementary information:				
1) Input Voltage / Frequency: 240 Vac / 60 Hz				
2) The following terminals were connected to earth: T1 pin B.				

2.10.2	Table: Working voltage measurement			P
Location		Peak Voltage (V)	TRMS Voltage (V)	Comments
Main power board				
T101 pin 10 / pin 2		400	240	--
T101 pin 10 / pin 4		384	198	--
T101 pin 10 / pin 6		416	246	--
T101 pin 12 / pin 2		368	198	--
T101 pin 12 / pin 4		424	252	*Highest Vpk and Vrms at T101.
T101 pin 12 / pin 6		350	250	--
U104 pin 1 / pin 3		354	160	--
U104 pin 1 / pin 4		354	160	--
U104 pin 2 / pin 3		354	162	--
U104 pin 2 / pin 4		364	162	--
U105 pin 1 / pin 3		356	166	--
U105 pin 1 / pin 4		354	162	--
U105 pin 2 / pin 3		356	164	--
U105 pin 2 / pin 4		356	162	--
CY101 / Earth		360	166	--
Supplementary information:				
1) Input Voltage / Frequency: 240 Vac / 60 Hz				
2) The following terminals were connected to earth: T101 pin 3 and T101 pin 3, 4.				

2.10.2	Table: Working voltage measurement			P
Location	Peak Voltage (V)	TRMS Voltage (V)	Comments	
LED laser power board				
T102 pin 2 / pin 11	432	258	--	
T102 pin 2 / pin 13	536	292	*Highest Vrms at T102.	
T102 pin 2 / pin 14	600	264	--	
T102 pin 3 / pin 11	456	220	--	
T102 pin 3 / pin 13	648	256	*Highest Vpk at T102.	
T102 pin 3 / pin 14	520	216	--	
T102 pin 5 / pin 11	320	166	--	
T102 pin 5 / pin 13	384	180	--	
T102 pin 5 / pin 14	380	180	--	
U111 pin 1 / pin 3	344	181	--	
U111 pin 1 / pin 4	352	184	--	
U111 pin 2 / pin 3	352	184	--	
U111 pin 2 / pin 4	352	184	--	
U112 pin 1 / pin 3	320	163	--	
U112 pin 1 / pin 4	320	160	--	
U112 pin 2 / pin 3	328	168	--	
U112 pin 2 / pin 4	320	162	--	
CY107 /GND	328	168	--	
Supplementary information:				

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	Dcr (mm)
Functional:						
Between Fuse two ends (F100) (On appliance Inlet board)	420	250	2.3 (1.5 * 1.48)	14.8	2.5	14.8
Fuse to Neutral trace (On appliance Inlet board)	420	250	2.3 (1.5 * 1.48)	4.0	2.5	4.0
Line to Neutral (On appliance Inlet board)	420	250	2.3 (1.5 * 1.48)	5.2	2.5	5.2
Between Fuse two ends (F1) (On PFC board)	420	250	2.3 (1.5 * 1.48)	3.7 see footnote 6)	2.5	3.7 see footnote 6)
Line to Neutral (On PFC board)	420	250	2.3 (1.5 * 1.48)	3.3 see footnote 7)	2.5	3.3 see footnote 7)
Between Fuse two ends (F102, F103) (On Main power board)	420	250	2.3 (1.5 * 1.48)	4.2	2.5	4.2
Basic/supplementary:						
All primary parts to enclosure/chassis	420	250	3.0 (2 * 1.48)	5.0 min.	3.0	5.0 min.
Line to GND (On appliance Inlet board)	420	250	3.0 (2 * 1.48)	8.6	3.0	8.6
Neutral to GND (On appliance Inlet board)	420	250	3.0 (2 * 1.48)	8.6	3.0	8.6
CY100 to GND (On appliance Inlet board)	420	250	3.0 (2 * 1.48)	7.2	3.0	7.2
CY101 to GND (On appliance Inlet board)	420	250	3.0 (2 * 1.48)	5.8	3.0	5.8
GT100 body (GDT) to GND (On appliance Inlet board)	420	250	3.0 (2 * 1.48)	3.1	3.0	3.1
GT100 body (GDT) to Metal case/chassis (On appliance Inlet board)	420	250	3.0 (2 * 1.48)	see footnote 8)	3.0	see footnote 8)
Main power board						
CN101 trace to screw (Bottom side)	420	250	3.0 (2 * 1.48)	8.7	3.0	8.7
CN102 trace to screw (Bottom side)	420	250	3.0 (2 * 1.48)	8.4	3.0	8.4
CN101 trace to screw (Top side)	420	250	3.0 (2 * 1.48)	6.6	3.0	6.6
CN102 trace to screw (Top side)	420	250	3.0 (2 * 1.48)	9.7	3.0	9.7

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	Dcr (mm)
HS101 to T101 core	420	250	3.0 (2 * 1.48)	3.8	3.0	3.8 min.
HS201 to T101 core	420	250	3.0 (2 * 1.48)	7.1	3.0	7.1 min.
PFC board						
Line trace to screw	420	250	3.0 (2 * 1.48)	6.3	3.0	6.3
CY1, CY2 trace to screw trace (Top and bottom side)	420	250	3.0 (2 * 1.48)	7.2	3.0	7.2
CY3, CY4 trace to screw trace (Top and bottom side)	420	250	3.0 (2 * 1.48)	8.4	3.0	8.4
LED laser power board						
CN102 trace (pin 4,5) to CN102 trace (pin 1,2)	420	250	3.0 (2 * 1.48)	3.0 min.	3.0	3.0 min.
CN102 trace to screw	420	250	3.0 (2 * 1.48)	16.4	3.0	16.4
R197 trace to screw	420	250	3.0 (2 * 1.48)	13.1	3.0	13.1
HS105 to T102 core	420	250	3.0 (2 * 1.48)	see footnote 9)	3.0	see footnote 9)
HS203 to T102 core	420	250	3.0 (2 * 1.48)	see footnote 9)	3.0	see footnote 9)
Reinforced:						
Main power board						
Under CY101	420	250	6.0 (4.0 * 1.48)	8.0	6.0	8.0
Under U104, U105	420	250	6.0 (4.0 * 1.48)	8.0	6.0	8.0
Under T101	424	252	6.3 (4.2 * 1.48)	16.6	6.3	16.6

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	Dcr (mm)
PFC board						
Under CY5	420	250	6.0 (4.0 * 1.48)	6.9	6.0	6.9
Under IC11, IC12, IC13, IC14	420	250	6.0 (4.0 * 1.48)	7.9	6.0	7.9
HS2 (Pri.) to CN2 connector	420	250	6.0 (4.0 * 1.48)	7.0	6.0	7.0
HS2 (Pri.) to C202	420	250	6.0 (4.0 * 1.48)	7.0	6.0	7.0
HS2 (Pri.) to L201 trace	420	250	6.0 (4.0 * 1.48)	7.0	6.0	7.0
HS2 screw (Pri.) to R217, R218 trace	420	250	6.0 (4.0 * 1.48)	6.8	6.0	6.8
HS2 screw (Pri.) to R227 trace	420	250	6.0 (4.0 * 1.48)	7.4	6.0	7.4
HS2 screw (Pri.) to C213 trace	420	250	6.0 (4.0 * 1.48)	7.4	6.0	7.4
T1 core to C201, C202	628	347	6.9 (4.6 * 1.48)	see footnote 10)	7.0	see footnote 10)
Under T1	628	347	6.9 (4.6 * 1.48)	7.0 min.	7.0	7.0 min.
LED laser power board						
Under CY107	420	250	6.0 (4.0 * 1.48)	8.3	6.0	8.3
Under U111, U112	420	250	6.0 (4.0 * 1.48)	7.6	6.0	7.6
CY107 to T102 core	420	250	6.0 (4.0 * 1.48)	see footnote 9)	6.0	see footnote 9)
C180 to T102 core	420	250	6.0 (4.0 * 1.48)	see footnote 9)	6.0	see footnote 9)
Under T102	648	292	7.2 (4.8 * 1.48)	17.6	7.2	17.6

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	Dcr (mm)	
Supplementary information:							
1) The CTI rating of PCB is material group IIIa/IIIb (Cl. 2.10.4)							
2) Separation Method between SELV and hazard circuit (Cl. 2.2.3) by double or reinforced insulation (Method 1) earthed screen (Method 2)							
3) Functional insulation shorted, see Cl. 5.3.4.							
4) The clearance distance is compiled the requirements for use in altitude 5,000 m above the sea level, the altitude correction factor is 1.48.							
5) For clearance and creepage did not describe above are larger than limit above.							
6) There is a narrow groove (L: 6.3 mm x W: 1.1 mm) under fuse (F1) (PFC board).							
7) There is a narrow groove (L: 12.3 mm x W: 1.1 mm) under Line and Neutral (PFC board).							
8) The VDR (certified component) in series with a GDT (G100) provided that complies with as below: - the electric strength test for BASIC INSULATION (see appended table 5.2 for details); and - the external CLEARANCE (4.8 mm) and CREEPAGE DISTANCE (4.8 mm) requirements for BASIC INSULATION.							
9) The transformer (T102) outer wrapped two layers insulation tape.							
10) The transformer (T1) outer wrapped one-layer insulation tape at secondary side (PFC board).							
11) Tubing components: TVR101, G100.							
12) The internal wires connected to DC fan are sleeved with tubing on whole wire.							
13) All primary and secondary wires are fixed in position reliably by soldering, cable tie and mechanical cramp terminal or glue.							

2.10.5	TABLE: Distance through insulation measurements					P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (Vac)	Required DTI (mm)	DTI (mm)	
PFC board						
Optocoupler (IC11, IC12, IC13, IC14)	420	250	3000	0.4	Min. 0.4	
Main power board						
Optocoupler (U104, U105)	420	250	3000	0.4	Min. 0.4	
LED laser power board						
Optocoupler (U111, U112)	420	250	3000	0.4	0.4	
Supplementary information:						
1) For distance through insulation, see appended table 1.5.1 for details.						
2) Test all sources of optical isolator, see appended table 1.5.1 for details.						

4.5	TABLE: Thermal requirements				P	
	Supply voltage (V) :	See below.			—	
	Ambient T _{min} (°C) :	--			—	
	Ambient T _{max} (°C) :	--			—	
Maximum measured temperature T of part/at::		T (°C)			Allowed T _{max} (°C)	
Test condition		DC fan CFM at normal speed.		DC fan CFM at higher speed.	--	
Test voltage		180 Vac	264 Vac	180 Vac	264 Vac	--
LED laser power board						
U111		50.8	50.6	50.8	50.6	100
U112		49.1	48.9	49.4	48.9	100
T102 core		47.3	47.0	47.2	47.2	110
T102 coil		47.1	47.0	47.2	47.2	110
Q117		47.0	46.8	47.0	47.0	105
L105		48.0	47.8	48.1	47.9	125
C180		47.7	47.5	47.7	47.7	105
PFC board						
CX1		42.3	42.1	42.8	42.6	85
PCB		54.9	51.9	55.0	52.2	105
U11		54.9	53.4	55.0	53.6	100
U12		52.1	50.8	52.1	51.0	100
U13		55.1	53.2	55.2	53.4	100
U14		53.7	52.4	53.7	52.5	100
FL2		61.8	54.2	62.1	54.5	130
CY5		47.6	46.8	47.7	47.1	85
FL1		61.6	53.5	61.7	53.8	130
Q1		47.2	46.5	56.2	52.3	105
F1		52.3	49.1	52.5	49.4	105
C3		51.3	49.4	51.4	49.8	105
C4		50.3	48.8	50.4	49.2	105
TVR1		50.0	48.4	50.1	48.6	105
BD1		59.4	55.1	59.6	55.5	105
L1		58.5	53.0	58.6	53.3	130
C51		48.7	47.9	48.8	48.2	105
T1 coil		57.0	54.1	57.0	54.4	110

T1 core	60.3	57.4	60.6	58.6	110
Main power board					
L101	46.6	46.5	46.8	46.8	125
L102	47.5	47.4	47.7	47.7	130
F103	49.0	48.8	49.1	49.2	105
C103	46.4	46.2	46.5	46.6	105
Q101	49.4	49.2	49.6	49.6	105
C202	46.8	46.7	47.0	47.0	105
T101 core	50.9	50.8	51.1	51.2	110
T101 coil	52.4	52.2	52.8	52.7	110
U104	46.1	46.0	46.3	46.3	100
U105	45.9	45.8	46.0	46.0	100
AC inlet board					
FL101	73.5	57.4	73.5	57.7	130
F101	52.0	48.0	52.1	48.2	105
CY101	50.5	47.2	50.5	47.5	85
F100	68.0	54.5	68.2	54.8	105
Others					
Cooling tube	43.5	43.4	43.1	43.2	90
Heat sink (ADC-403AJ)	72.9	72.6	68.4	68.0	105
L101 (Laser driver board)	83.3	82.9	77.8	77.6	105
Heat sink (Laser driver board)	73.5	73.0	68.6	68.5	105
Vent. Openings (Metal)	50.3	50.1	50.3	50.3	70
Label	40.7	40.4	41.1	40.7	60
AC Inlet	57.1	50.0	57.1	50.4	70
HDD-2 body (PCI-E Card IMS2000)	46.0	45.9	46.2	46.2	70
External Enclosure (Plastic)	50.2	46.3	51.3	46.6	95
Ambient	40.0	40.0	40.0	40.0	--
Actual ambient before shift to 40°C	29.0	29.3	28.6	28.0	--
Supplementary information:					

Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:

Test condition: Above tests were conducted with Main board and max. normal load with signal from HDD (PCI-E Card IMS2000).

The temperatures were measured by thermal couple (type K) method under worst case normal mode as described in 1.6.2 at voltage described in 1.4.5. The worst case normal mode is defined with max. load of the equipment.

With max. ambient temperature specified as 40 °C, therefore, the maximum temperature rise is calculated as follows:

Winding components:

- Class B → T_{max} = 120 °C – 10 °C = 110 °C (Transformer)

Components with:

- Max. temp. of 105 °C (PCB, Bulk capacitor)
- Max. temp. of 105 or 125 or 130 °C (Inductor, Line Filter)
- Max. temp. of 100 °C (Optical isolator)
- Max. temp. of 85 °C (X-Cap., Y-Cap.)
- Max. temp. of 90 °C (Cooling tube)
- Max. temp. of 70 °C (AC inlet)
- Max. temp. of 60 °C (label)
- When no class of insulation is given, min. insulation 105 °C assumed.

User accessible area:

- Material is plastic (95 °C)
- Material is metal (70 °C)

4.6.1 & 4.6.2	TABLE: Enclosure openings		P
Location	Size (mm)	Comments	
Top side	--	No openings.	
Front side	Numerous rectangular openings, each measured max. 42.4 mm by 7.1 mm, covering the main area of max. 134.5 mm by 188.9 mm.	No hazardous parts are located within 5° projection area.	
Left side	--	No openings.	
Right side	Numerous rectangular openings, each measured max. 394.0 mm by 4.5 mm, covering the main area of max. 394.0 mm by 140.4 mm.	No hazardous parts are located within 5° projection area.	
Rear side	Numerous square openings, each measured max. 5.9 by 5.9 mm, covering the main area of max. 91.8 mm by 91.8 mm. (near DC fan 9) Numerous square openings, each measured max. 5.9 by 5.9 mm, covering the main area of max. 123.0 mm by 123.0 mm. (near DC fan 10)	No hazardous parts are located within 5° projection area.	
Bottom side	--	No openings.	
Supplementary information: See attached photos for the details coverage areas of openings.			

5.1	TABLE: Touch current measurement		P
	Normal	The tests are repeated in reverse polarity	
Condition	Current (mA) L, N→ plastic enclosure (with metal foil)	Current (mA) L, N→ plastic enclosure (with metal foil)	Comments
System ON	0.005	0.005	With "e" closed
Condition	Current (mA) L, N→ PE (metal enclosure)	Current (mA) L, N→ PE (metal enclosure)	Comments
System ON	0.9	0.9	With "e" opened
Condition	Current (mA) L, N→ plastic enclosure (with metal foil)	Current (mA) L, N→ plastic enclosure (with metal foil)	Comments
System Off	0.005	0.005	With "e" closed
Condition	Current (mA) L, N→ PE (metal enclosure)	Current (mA) L, N→ PE (metal enclosure)	Comments
System Off	0.24	0.24	With "e" opened
Input voltage: 264 Vac			
Input frequency: 60 Hz			
Supplementary information: Overall capacity: AC Inlet Board: CY100, CY101= max. 2200 pF PFC board: CY1=CY2= max. 2200 pF CY3= CY4= max.470 pF Bridge Capacitor: CY5= max. 2200 pF Main power board: Bridge Capacitor: CY101= max. 2200 pF LED laser power board: Bridge Capacitor: CY107: max. 470 pF			

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Unit, Primary to PE		DC	2776	No
Unit, Primary to Secondary		DC	4242	No
Unit, Primary to plastic enclosure with metal foil		DC	4242	No
T1 (PFC board), Mfr. Delta, Type MV-MP15023				
Secondary winding / Core		AC	3000	No
Primary winding / Secondary winding		AC	3000	No
T101 (Main power board), Mfr. Delta, Type MH-DS11722				
Primary winding / Core		AC	1612	No
Secondary winding / Core		AC	1612	No
Primary winding / Secondary winding		AC	3000	No
T102 (LED laser power board), Mfr. Delta, Type MH-DS11468				
Primary winding / Core		AC	1963	No
Secondary winding / Core		AC	1963	No
Primary winding / Secondary winding		AC	3000	No

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Insulation tape (for T1, PFC board , T101, Main power board, T102, LED laser power board)				
Insulation tape, Mfr. 3M, Type 1351-1		AC	3000	No
Insulation tape, Mfr. 3M, Type 1350F-1		AC	3000	No
Insulation tape, Mfr. 3M, Type 1250		AC	3000	No
Insulation tape, Mfr. 3M, Type 1350F-2		AC	3000	No
Insulation tape, Mfr. 3M, Type 92		AC	3000	No
Insulation tape, Mfr. 3M, Type 1350T-3		AC	3000	No
Insulation tape, Mfr. Symbio, Type 35660Y		AC	3000	No
Insulation tape, Mfr. Jingjiang, Type CT		AC	3000	No
Insulation tape, Mfr. Teraoka, Type 560S#3		AC	3000	No
Insulation tape, Mfr. Teraoka, Type 560S #5		AC	3000	No
Insulation tape, Mfr. 3M, Type 1218		AC	3000	No
Insulation tape, Mfr. 3M, Type 1388Y-1 and 1388B-1		AC	3000	No
Insulation tape, Mfr. Symbio, Type MY9YAF		AC	3000	No
Insulating tubing on the wires between main power board and laser driver PWB				
Mfr. SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD. Type RSFR-X		AC	3000	No
Mfr. Dongguan SALIPT CO LTD, Type SALIPT S-901-300, SALIPT S-901-600		AC	3000	No
Mfr. CHANGYUAN ELECTRONICS (SHENZHEN)CO LTD, Type Changbao 102, CB-HFT, CYG-ZHP		AC	3000	No
Mfr. HAMBURG INDUSTRIES CO LTD, Type H-2		AC	3000	No
Mfr. RAYCHEM PRODUTOS IRRADIADOS LTDA, Type VERSAFIT		AC	3000	No
Mfr. LONGWELL CO, Type LHS-125FR		AC	3000	No
Mfr. Sumitomo, Type SUMITUBE F32		AC	3000	No
Mfr. Tyco, Type ZH2, Versafit V2		AC	3000	No
Supplementary information:				
(1) There was no indication of breakdown as a result of applying the test voltage to the indicated locations for 60 s.				
(2) Above tests are conducted for all sources of transformer.				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		25 °C or see below.			—
	Power source for EUT: Manufacturer, model/type, output rating		See table 1.5.1 for details.			—
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Abnormal Operation Test						
All the opening	blocked	240	2 h	F100	0.59	Unit shut down 10 minute later. Max. temperature of LED laser power board: U111: 48.7 °C; U112: 47.6 °C; T102 core: 48.1 °C; T102 coil: 47.8 °C; PFC board: U11: 58.5 °C; U12: 56.0 °C; U13: 56.0 °C; U14: 59.3 °C; T1 coil: 57.4 °C; T1 core: 60.2 °C; Main power board: T101 core: 53.8 °C; T101 coil: 52.1 °C; U104: 46.1 °C; U105: 45.5 °C. Ambient: 24.3 °C. No hazards.
Openings on left side and front side	blocked	240	2 h	F100	8.3	Unit operated normally. Max. temperature of LED laser power board: U111: 46.2 °C; U112: 44.5 °C; T102 core: 42.5 °C; T102 coil: 42.3 °C; PFC board: U11: 50.7 °C; U12: 48.4 °C; U13: 50.8 °C; U14: 50.0 °C; T1 coil: 49.9 °C; T1 core: 53.0 °C; Main power board: T101 core: 45.4 °C; T101 coil: 47.6 °C; U104: 40.9 °C; U105: 40.6 °C. Ambient: 30.3 °C. No hazards.

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Openings on rear side	Blocked	240	2.5 h	F100	0.59	Unit shut down 10 minute later. Max. temperature of LED laser power board: U111: 40.0 °C; U112: 47.0 °C; T102 core:44.0 °C; T102 coil: 46.0 °C; PFC board: U11:57.0 °C; U12:55.0 °C; U13: 56.0 °C; U14: 58.0 °C; T1 coil: 56.0 °C; T1 core: 58.0 °C; Main power board: T101 core: 52.0 °C; T101 coil:51.0 °C; U104: 45.0 °C; U105: 44.0 °C. Ambient: 24.5 °C. No hazards.
Fan 9	stalled	240	3 h	F100	0.59	Unit shutdown immediately. Max. temperature of LED laser power board: U111: 40.0 °C; U112:38.0 °C; T102 core: 38.0 °C; T102 coil: 38.0 °C; PFC board: U11: 42.0 °C; U12: 44.0 °C; U13:45.0 °C; U14:46.0 °C; T1 coil:42.0 °C; T1 core:48.0 °C; Main power board: T101 core: 46.0 °C; T101 coil:38.0 °C; U104: 36.0 °C; U105: 36.0 °C Ambient: 24.4 °C. No hazards.

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		25 °C or see below.			—
	Power source for EUT: Manufacturer, model/type, output rating		See table 1.5.1 for details.			—
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Fan 1	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 2	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 3	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 4	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 5	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 6	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 7	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 8	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 10	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 11	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 12	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 13	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 14	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 15	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Fan 16	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		25 °C or see below.			—
	Power source for EUT: Manufacturer, model/type, output rating		See table 1.5.1 for details.			—
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Fan 17	Stalled	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Lan	Removed	240	10 min	F100	0.59	Unit shutdown immediately. No hazards
Component Failure Test						
PFC board						
IC11 pin 1-2	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC11 pin 3-4	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC11 pin 3	OC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC11 pin 4	OC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC12 pin 1-2	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC12 pin 3-4	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC12 pin 3	OC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC12 pin 4	OC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC13 pin 1-2	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
IC13 pin 3-4	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
IC13 pin 3	OC	240	10 min	F100	8.2	Unit operated normally. No hazards
IC13 pin 4	OC	240	10 min	F100	8.2	Unit operated normally. No hazards
IC14 pin 1-2	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC14 pin 3-4	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Q7 (G-D)	SC	240	1 s	F100	0	Unit shut down immediately. F100 opened, Q7, ZD57, R82, R83, IC5 damaged
Q7 (G-S)	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
Q7 (S-D)	SC	240	1 s	F100	0	Unit shut down immediately. F100 opened, No hazards.
D1	SC	240	10 min	F100	v	Unit operated normally. No hazards
D104	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
D106	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
D102	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
D105	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
D54	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
D5	SC	240	1 s	F100	0	Unit shut down immediately. No hazards. F100 opened, D6, D7, Q6, R58, R79, R59, ZD56, C71 damaged
IC5 pin 1-2	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
IC5 pin 2-3	SC	240	10 min	F100	8.5	Unit display normally. Relay overreacted. No hazards. Max. temperature of PFC board: T1 coil: 49.9 °C; T1 core: 29.4 °C; IC12: 50.1 °C. Ambient: 25.5 °C.
IC5 pin 3-4	SC	240	10 min	F100	0.45	Unit shut down immediately. No hazards
IC5 pin 5-6	SC	240	10 min	F100	8.1	Unit displayed darker than normal. No hazards
IC5 pin 6-7	SC	240	10 min	F100	0.41	Unit shut down immediately. No hazards. IC5 damaged
IC5 pin 7-8	SC	240	10 min	F100	0	Unit shut down immediately. No hazards. F100 opened, Q7, R8, IC5 damaged
Q104 (C-E)	SC	240	10 min	F100	8.2	Unit operated normally. No hazards

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Q104 (C-B)	SC	240	10 min	F100	8.2	Unit shut down immediately. No hazards
Q104 (B-E)	SC	240	10 min	F100	8.2	Unit shut down immediately. No hazards
ZD51	SC	240	10 min	F100	8.2	Unit shut down immediately. No hazards
C11	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
ZD12	SC	240	10 min	F100	8.2	Unit shut down immediately. No hazards
IC1 pin 1-2	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC1 pin 2-3	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
IC1 pin 3-4	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards. Q1, R116, R117, R118, Q103, D106, R109, IC1, R111, R113 damaged
IC1 pin 5-6	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards. Q1, R118, R113, Q103, D106, R111, R109, IC1 damaged
Q1 (G-D)	SC	240	10 min	F100	0.08	Unit shut down immediately. No hazards. Q1, R110, R111, R109, R113, R116, R117, R118, Q103 damaged
Q1 (G-S)	SC	240	10 min	F100	0.08	Unit shut down immediately. No hazards
Q1 (S-D)	SC	240	10 min	F100	0.08	Unit shut down immediately. No hazards. Q1, R110, R111, R109, R113, R116, R117, R118, Q103 damaged
BD1 (+, ~)	SC	240	1 s	F100	0	Unit shut down immediately. No hazards. F100 opened.
BD1 (-, ~)	SC	240	1 s	F100	0	Unit shut down immediately. No hazards. F100 opened.
BD2 (+, ~)	SC	240	1 s	F100	0	Unit shut down immediately. No hazards. F100 opened.
BD2 (-, ~)	SC	240	1 s	F100	0	Unit shut down immediately. No hazards. F100 opened.
C2	SC	240	1 s	F100	0	Unit shut down immediately. No hazards. F100 opened.

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
FL2	SC	240	1 s	F100	0	Unit shut down immediately. No hazards. F100 opened.
CX2	SC	240	1 s	F100	0	Unit shut down immediately. No hazards. F100 opened.
Main power board						
ZD102	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards
ZD103	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards
ZD101	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards
D101	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
D102	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
ZD104	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards
U104 (1-2)	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards
D103	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
U104 (3-4)	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards
U105 (1-2)	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
U105 (3-4)	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards
Q101 (S-G)	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards
Q101 (G-D)	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards. R128, Q101 damaged.
Q101 (S-D)	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards. R128, Q101 damaged



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Q102 (S-G)	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards
Q102 (G-D)	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards. R128, Q101 damaged
Q102 (S-D)	SC	240	10 min	F100	0.2	Unit shut down immediately. No hazards. R128, Q101 damaged

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
LED laser power board						
U111 (1-2)	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
U111 (3-4)	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
U112 (1-2)	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
U112 (3-4)	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
ZD111	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
ZD112	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
D123	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
D115	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
D125	SC	240	10 min	F100	6.6	Unit operated normally. No hazards
D114	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
D121	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
ZD113	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
U111(1)	OC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
U111 (2)	OC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
U111 (3)	OC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
U111 (4)	OC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
C183	SC	240	1 s	F100	0.2	Unit shut down immediately. No hazards. R197, Q117 damaged
Q118 (D-G)	SC	240	1 s	F100	0.2	Unit shut down immediately. No hazards. R197, Q117, U110, R101 damaged.

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Q118 (D-S)	SC	240	1 s	F100	0.2	Unit shut down immediately. No hazards. R197, Q117, Q118, U110 damaged.
Q118 (S-G)	SC	240	10 min	F100	8.2	Unit operated normally. No hazards
Q117 (D-G)	SC	240	1 s	F100	0.2	Unit shut down immediately. No hazards. R197, Q117, Q118, U110 damaged.
Transformer Abnormal Operation Test						
PFC board						
T1 output pin A, After D201	o-l	240	4 h	F100	8.2	No hazards. Max. temperature of PFC board: T1 core: 88.0 °C; T1 coil: 74.0 °C; IC13: 58.0 °C; IC11: 63.0 °C; IC12: 69.0 °C; ambient: 24.4 °C.
T1 pin 1-4	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
T1 pin 2-3	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
T1 pin A-B	SC	240	10 min	F100	0.14	Unit shut down immediately. No hazards
Main power board						
T101 (2-4)	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
T101 (10-12)	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
T101 output pin 2 After D201	o-l	240	4.5 h	F100	9.2	Max. temperature of main power board: T101 core: 53.0 °C; T101 coil: 63.0 °C; U104: 42.9 °C; U105: 42.8 °C; CY101: 44.2 °C; ambient: 26.7 °C. No hazards
T101 pin 4-5	SC	240	10 min	F100	0.28	Unit shut down immediately. No hazards
LED laser power board						
T102 (2-3)	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
T102 (14-11)	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
T102 (11-13)	SC	240	10 min	F100	0.6	Unit shut down immediately. No hazards
Power Supply Output Short/Overload Test						
5V output (PFC board)	SC	240	0.5 h	F100	0.18	Unit shut down immediately. No hazards
12V output (MainPower board)	SC	240	0.5 h	F100	0.61	Unit shut down immediately. No hazards
54V output (LED laser power board)	SC	240	0.5 h	F100	0.61	Unit shut down immediately. No hazards
54V output	o-l	240	5.2 h	F100	10.37	Max. temperature of main power board: T101 core: 46.3 °C; T101 coil: 50.6 °C; U104: 38.1 °C; U105: 37.9 °C; LED Laser Power board: T101 coil: 122.0 °C; T101 core: 106.0 °C; U111: 44.7 °C; U112: 45.7 °C ambient: 30.6 °C. No hazards
OVERLOAD OF OPERATOR ACCESSIBLE CONNECTOR TEST						
Formatter board						
RS-232 (1, 3, 4, 5, 6, 7, 8, 9)	o-l	240	--	--	--	Open Circuit Voltage: 0 V. No hazards
RS-232 (2)	o-l	240	1 h	--	--	Open Circuit Voltage: 6.5 V. Maximum Available Current: 20 mA. No hazards
GP I/O (1~37)	o-l	240	--	--	--	Open Circuit Voltage: 0 V. No hazards
Remote (3)	o-l	240	1 h	--	--	Open Circuit Voltage: 5 V. Maximum Available Current: 40 mA. No hazards
Remote (2)	o-l	240	1 h	--	--	Open Circuit Voltage: 3.3V. Maximum Available Current: 2200 mA. No hazards
Remote (1, 4, 5)	o-l	240	--	--	--	Open Circuit Voltage: 0 V. No hazards

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
USB (1)	o-l	240	1 h	--	--	Open Circuit Voltage: 5 V. Maximum Available Current: 2000 mA. No hazards
USB (2, 3, 4)	o-l	240	--	--	--	Open Circuit Voltage: 0 V. No hazards
3D (2, 3, 4, 6, 7, 8, 10, 11, 12, 13, 14, 15)	o-l	240	--	--	--	Open Circuit Voltage: 0 V. No hazards
3D (1, 9)	o-l	240	1	--	--	Open Circuit Voltage: 12 V. Maximum Available Current: 1100 mA. No hazards
3D (5)	o-l	240	1 h	--	--	Open Circuit Voltage: 6.4 V. Maximum Available Current: 20 mA. No hazards
Lan*2 (1-8)	o-l	240	--	--	--	Open Circuit Voltage: 0 V. No hazards
LOCKED-ROTOR OVERLOAD TEST FOR DC MOTORS IN SECONDARY CIRCUITS						
Motor for lens (Mfr. Minebea, Type PG20L-D20-XTS1)	o-l	12	7 h	--	--	Motor surface: 39.5 °C. No hazards.
Motor for lens (Mfr. NAKATSU, Type NS-16SG-250-12G162)	o-l	12	7 h	--	--	Motor surface: 51.9 °C. No hazards.
Motor for phosphor (Mfr. Nidec, Type 28S2203080)	o-l	12	7 h	--	--	Motor surface: 27.1 °C. No hazards.
Motor for diffuser wheel (Mfr. Delta, Type PFXXXCXX XX)	o-l	12	7 h	--	--	Motor surface: 136.0 °C. No hazards.

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Lithium Battery Reverse Current Measurement Test						
Lithium Battery (B4000), Mfr. PANASONIC CORPORATION, type: BR2330 (On Formatter board)						
Normal condition	SC	240	30 min	--	--	Measured abnormal reverse current= 3.2 mA
IC4000 pin 64 to GND shorted	SC	240	30 min	--	--	Measured abnormal reverse current= 0 mA
Supplementary information						
Fault: SC = short circuit, OC = open circuit, o-l = overload						
Note: 1. While fuse opened, same results came out for all sources of fuse. 2. While fuse opened, using UL approvals fuse that have to test for ten times and have the same results. 3. While unit shutdown with some component damaged, same results were carried out for two times. 4. Depending on the construction (circuit) of the product, the output overload may be considered equivalent transformer abnormal operation test. 5. For Lithium battery (type: BR2330), max. Abnormal charging current: 5 mA minimum.						



PSB Singapore

Attachment No. 1

National and Group Differences
for
IEC 60950-1 2nd Ed. as per CB Bulletin
and
EN 60950-1:2006 + A11:2009 + A1:2010 +
A12:2011 + A2:2013

Countries Included: See overview on
following page

Attachment contains

Cover page: 1 page

National Differences: 66 pages

Total: 67 pages

Explanation for Abbreviations:

Possible Verdicts: **P** = Pass, **F** = Fail, **N/A** = Not Applicable

Remarks:

Throughout this report, a point is used as the decimal separator.



PSB Singapore

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements			
Differences according to: EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013			
Attachment Form No.: EU_GD_IEC60950_1F			
Attachment Originator: SGS Fimko Ltd			
Master Attachment: Date 2014-02			
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EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)					
Clause	Requirement + Test			Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"				P
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords				P
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2				P
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note				P

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	Replace the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	See below.	N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010	Deleted.	N/A
1.5.1 (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *	Added.	P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	The equipment is not a PORTABLE SOUND SYSTEM.	N/A



PSB Singapore

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1 (A12:2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.	Ditto.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx Protection against excessive sound pressure from personal music players		N/A
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: – is designed to allow the user to listen to recorded or broadcast sound or video; and – primarily uses headphones or earphones that can be worn in or on or around the ears; and – allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: – while the personal music player is connected to an external amplifier; or – while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: – hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	– analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		N/A
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: – equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and – a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: – the symbol of Figure 1 with a minimum height of 5 mm; and – the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.”  Figure 1 – Warning label (IEC 60417-6044) Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, 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 5.3 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;	Considered.	P
	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.		P
2.7.2	This subclause has been declared 'void'.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Deleted.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1	Replace “60245 IEC 53” by “H05 RR-F”; “60227 IEC 52” by “H03 VV-F or H03 VVH2-F”; “60227 IEC 53” by “H05 VV-F or H05 VVH2-F2”. In Table 3B, replace the first four lines by the following: Up to and including 6 0,75 ^{a)} Over 6 up to and including 10 (0,75) ^{b)} 1,0 Over 10 up to and including 16 (1,0) ^{c)} 1,5 In the conditions applicable to Table 3B delete the words “in some countries” in condition ^{a)}. In NOTE 1, applicable to Table 3B, delete the second sentence.	Replaced.	N/A
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N/A
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 1,5 to 2,5 1,5 to 4 Delete the fifth line: conductor sizes for 13 to 16 A	Deleted.	N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).		N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	No ionizing radiation.	N/A
Bibliography	Additional EN standards.		—

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—	
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ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	Compliance shall be evaluated during the national approval.	N/A
1.2.13.14 (A11:2009)	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.	No connection to the cable distribution system.	N/A
1.5.7.1 (A11:2009)	In Finland , Norway and Sweden , resistors bridging BASIC INSULATION IN CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	Compliance shall be evaluated during the national approval.	N/A
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Y-Capacitors are all rated min. 230V and complied with IEC 60384-14, and if provided, others component in such condition has suitable voltage rating.	P
1.5.9.4	In Finland , Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	No connection to the telecommunication networks.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In Finland, Norway and Sweden, 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"	Compliance shall be evaluated during the national approval.	N/A
1.7.2.1 (A11:2009)	In Norway and Sweden, the screen of the cable 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 need 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 e.g. a retailer. 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: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."		

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE In Norway, due to regulation for installations of cable distribution systems, 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): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkople utstyr – og er tilkople et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.” Translation to Swedish: ”Utrustning 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 utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”		
1.7.2.1 (A2:2013)	In Denmark, 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 Denmark shall be as follows: In Denmark: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”	No socket-outlet.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5 1.7.5 (A11:2009)	In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	No socket-outlet.	N/A
1.7.5 (A2:2013)	In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011. For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b. Justification the Heavy Current Regulations, 6c	No socket-outlet.	N/A
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No connection to the telecommunication networks.	N/A
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	No connection to the telecommunication networks.	N/A
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No connection to the telecommunication networks.	N/A
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.	Compliance shall be evaluated during the national approval.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	Compliance shall be evaluated during the national approval.	N/A
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	No connection to the telecommunication networks.	N/A
3.2.1.1	In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A	Compliance shall be evaluated during the national approval.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. 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 poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	Compliance shall be evaluated during the national approval.	N/A
3.2.1.1 (A2:2013)	In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. 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. Justification the Heavy Current Regulations, 6c	Ditto.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. 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 UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	Ditto.	N/A
3.2.1.1	In the United Kingdom, apparatus 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 and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, 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.	Ditto.	N/A
3.2.1.1	In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	Ditto.	N/A
3.2.4	In Switzerland, for requirements see 3.2.1.1 of this annex.	Compliance shall be evaluated during the national approval.	N/A
3.2.5.1	In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.	Compliance shall be evaluated during the national approval.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	In the United Kingdom, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm² to 1,5 mm² nominal cross-sectional area.	Compliance shall be evaluated during the national approval.	N/A
4.3.6	In the United Kingdom, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and 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. UK Application Note: BS 1363-1:1995+A4:2012 has now superseded the previous version (incorporating Amendments 1:1997, 2:2003 and 3:2007) which has been withdrawn. Our recommendation is for users to always identify and follow the latest version of a standard to which a dated reference is made. This is also applicable in the case of BS EN 60950-1 and users would need to refer to the latest version of BS 1363-1:1995+A4:2012 when applying BS EN 60950-1.	The unit is not direct plug-in equipment.	N/A
4.3.6	In Ireland, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	Ditto.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	Touch current does not exceed 3.5 mA.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause: 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. Alternatively for components, there is no distance through insulation requirements 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 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.	No connection to the telecommunication networks.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). 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 EN 60950-1:2006, 6.2.2.1; - 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.		
6.1.2.2	In Finland, Norway and Sweden , the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.	Ditto.	N/A
7.2	In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	No connection to the cable distribution system.	N/A
7.3 (A11:2009)	In Norway and Sweden , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.	Ditto.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

**Annex ZD
(informative)**

IEC and CENELEC code designations for flexible cords

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60277 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements
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Australia (AU)			
National standard reference.....: AS/NZS 60950.1:2015			
1.2	After definition 'PERSON, SERVICE', insert the following new definition: POTENTIAL IGNITION SOURCE..... 1.2.12.201	Considered.	P
1.2.12.201	After Clause 1.2.12.15, insert the following new clause: POTENTIAL IGNITION SOURCE Possible fault which can starts a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in CONDUCTIVE PATTERNS on PRINTED BOARDS. NOTE 1 An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE. NOTE 2 This definition is from AS/NZS 60065:2012, Clause 2.8.11.	Considered.	P
1.5.1	First paragraph, insert the following text after the words 'IEC component standard': or the relevant Australian/New Zealand Standard In the Note, insert the following text after the word 'standard': or an Australian/New Zealand Standard Second paragraph, delete the words 'without further evaluation'.	Added.	N/A

IEC60950_1F - ATTACHMENT																
Clause	Requirement + Test		Result - Remark	Verdict												
1.5.2	First paragraph, insert the following text after the word 'standard': or an Australian/New Zealand Standard First paragraph, second dash item, second line, insert the following text after the word 'standard': or an Australian/New Zealand Standard First paragraph, second dash item, last line, insert the following text after the word 'standard': or an Australian/New Zealand Standard		Added.	N/A												
1.7.1.3	Delete existing text and replace with the following: Graphical symbols placed on the equipment as a requirement of this standard, shall be in accordance with IEC 60417 or ISO 3864-2 or ISO 7000, if available. In the absence of suitable symbols, the manufacturer may design specific graphical symbols. Symbols as required by this standard placed on the equipment shall be explained in the user manual.		Replaced.	N/A												
2.9.2	Delete from second paragraph the word "designated".		Deleted.	N/A												
3.2.5.1	Second paragraph, delete the word 'designated'. Delete the first four rows and replace with the following:<table><tr><td>Over 0.2 up to and including 3</td><td>0,5^a</td><td>18 [0,8]</td></tr><tr><td>Over 3 up to and including 7,5</td><td>0,75</td><td>16 [1,3]</td></tr><tr><td>Over 7,5 up to and including 10</td><td>(0,75)^b 1,00</td><td>16 [1,3]</td></tr><tr><td>Over 10 up to and including 16</td><td>(1,0)^c 1,5</td><td>14 [2]</td></tr></table> Delete NOTE 1 and renumber existing NOTE 2 as 'NOTE'. Delete Footnote ^a and replace with the following: ^a 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).		Over 0.2 up to and including 3	0,5 ^a	18 [0,8]	Over 3 up to and including 7,5	0,75	16 [1,3]	Over 7,5 up to and including 10	(0,75) ^b 1,00	16 [1,3]	Over 10 up to and including 16	(1,0) ^c 1,5	14 [2]	Compliance shall be evaluated during the national approval.	N/A
Over 0.2 up to and including 3	0,5 ^a	18 [0,8]														
Over 3 up to and including 7,5	0,75	16 [1,3]														
Over 7,5 up to and including 10	(0,75) ^b 1,00	16 [1,3]														
Over 10 up to and including 16	(1,0) ^c 1,5	14 [2]														

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.1.201	After Clause 4.1, insert new Clause 4.1.201 as follows: Display devices used for television purposes Display devices which may be used for television purposes, with a mass of 7 kg or more, shall comply with the requirements for stability and mechanical hazards, including the additional stability requirements for television receivers, specified in AS/NZS 60065.		N/A
4.3.6	Delete the third 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.	Unit is not DIRECT PLUG-IN EQUIPMENT.	N/A
4.3.8	Eighth paragraph, insert the following new note after the first dash item: NOTE 6.201 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
4.3.8.201	After Clause 4.3.8, add the following new clause as follows: Products containing coin/button cell batteries and batteries designated R1 The requirements of AS/NZS 60065:2012 Amendment 1:2015, Clause 14.10.201 apply for this Clause.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.5.1	Delete the first paragraph and replace with the following: Except as permitted below, equipment shall be classified and labelled according to IEC 60825-1 or AS/NZS 60825.1, IEC 60825-2 or AS/NZS 60825.2 and IEC 60825-12, as applicable. Third paragraph, first sentence, after 'IEC 60825-1', insert the following text: or AS/NZS 60825.1 Fourth paragraph, after 'IEC 60825-1', insert the following text: or AS/NZS 60825.1	Replaced.	N/A
4.7	At the end of Clause 4.7, insert the following text: For alternate tests refer to Clause 4.7.201.	Refer to below.	N/A
4.7.201	After Clause 4.7.3.6, add new clauses as follows: Resistance to fire - Alternative tests		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.201.1	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 originating from inside the apparatus, 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. (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 fire from one part to another. Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5. For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5. The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. 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.	Not apply for; materials have suitable flame class including fire enclosure.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.201.2	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 sample tested was not thicker than the relevant part.	Ditto.	N/A
4.7.201.3	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 3mm of the connection. NOTE Contacts in components such as switch contacts are considered to be connections. 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 shall not be tested. The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:	Not apply for; materials have suitable flame class including fire enclosure.	N/A



IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

		Ditto.	N/A										
	<table><tr><td>Clause of AS/NZS 60695.11.5</td><td>Change</td></tr><tr><td colspan="2">9 Test procedure</td></tr><tr><td>9.2 Application of needle-flame</td><td>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.</td></tr><tr><td>9.3 Number of test specimens</td><td>Delete existing text and 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.</td></tr><tr><td>11 Evaluation of test results</td><td>Delete existing text and replace with the following: The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</td></tr></table>	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	Delete existing text and 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	Delete existing text and replace with the following: The duration of burning (t _b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		
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	Delete existing text and 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	Delete existing text and replace with the following: The duration of burning (t _b) shall not exceed 30 s. However, for printed circuit 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 sample tested was not thicker than the relevant part.												

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.201.4	Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 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 4.7.201.3. 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 4.7.201 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 4.7.201 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.	Not apply for; materials have suitable flame class including fire enclosure.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.201.5	Testing of printed boards The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. 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; - 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 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 - Base material of printed boards, on which the available apparatus 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. Compliance 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 maximise the apparent power for more than 2 min when the circuit supplied is disconnected.	Not apply for; materials have suitable flame class including fire enclosure.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.2	For Australia only, delete the first paragraph and Note, and replace with the following: In Australia only, compliance with 6.2.2 is checked by the tests of both 6.2.2.1 and 6.2.2.2.	No connection to the TELECOMMUNICATION NETWORK.	N/A
6.2.2.1	For Australia only, delete the first paragraph including the note and replace with the following: In Australia only, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator Reference 1 of Table N1. The interval between successive impulses is 60 s and the initial voltage, U_c is: (i) for 6.2.1a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment and (ii) for 6.2.1b) and 6.2.1c): 1.5 kV. NOTE 201 - The 7 kV impulse is to simulate lightning surges on typical rural and semi-rural network lines. NOTE 202 - The value of 2.5 kV for 6.2.1a) was chosen to ensure adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.	Ditto.	N/A
6.2.2.2	For Australia only, delete the second paragraph including the Note, and replace with the following: In Australia only, the a.c. test voltage is: (i) for 6.2.1a): 3 kV; and (ii) for 6.2.1b) and 6.2.1c): 1.5 kV NOTE 201 - 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 have been determined considering the low frequency induced voltages from the power supply distribution system.	Ditto.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
7.3	Add the following before the first paragraph: Equipment providing functions that fall only within the scope of AS/NZS 60065 and that incorporate a PSTN interface, are not required to comply with this Clause where the only ports provided on the equipment, in addition to a coaxial cable connection and a PSTN interface, are audio or video ports and analogue or data ports not intended to be used for telecommunications purposes.	No connection to the CABLE DISTRIBUTION SYSTEMS.	N/A
Annex P	Add the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets	Added.	P
Index	Insert the following between 'asbestos, not to be used as insulation' and 'attitude see orientation': AS/NZS 3112 4.3.6 AS/NZS 3191 3.2.5.1 (Table 3B) AS/NZS 60064 4.1.201 AS/NZS60695.2.11 4.7.201.2, 4.7.201.3 AS/NZS 60695.11.10 4.7.201.1, 4.7.201.5 AS/NZS 60695.11.5 4.7.201.3 AS/NZS 60825.14.3.13.5.1 AS/NZS 60825.2 4.3.13.5.1 Insert the following between 'positive temperature coefficient (PTC) device' and 'powder': potential ignition source 1.2.201, 4.7.201.3, 4.7.201.5	Inserted.	P

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Canada (CA)			
National standard reference.....: Amendment 2:2014 to CAN/CSA-C22.2 No 60950-1-07			
SPECIAL NATIONAL CONDITIONS The following is a summary of the key national differences based on national regulatory requirements, such as the Canadian Electrical Code (CEC) Part I and the Canadian Building Code, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations			P
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. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	See last page.	N/A
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.	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 CEC/NEC. 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.	Compliance shall be evaluated during the national approval.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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. 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 if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."	Mains supply more than one phase is not intended to use for the equipment.	N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and "Class 2" or equivalent. Marking shall be located adjacent to the terminals and shall be visible during wiring.	Ditto.	N/A
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	No such fuse.	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).	Compliance shall be evaluated during the national approval.	N/A
2.7.1	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. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	Not apply for.	N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	Compliance shall be evaluated during the national approval.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Ditto.	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 is not intended to connect to a centralized d.c. 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.	Equipment is not permanent connection type.	N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. 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. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	Compliance shall be evaluated during the national approval.	N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Equipment is not permanent connected type.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	Not considered.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	Not considered.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for Canadian/US wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	Not apply for.	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."	Compliance shall be evaluated during the national approval.	N/A
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).	No such device is used for the equipment.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No such device is used for the equipment.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	Equipment not with such battery systems.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No store device for flammable liquid.	N/A
4.3.13.5	Equipment with lasers is required to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	Not considered.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (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.	Such condition is not considered.	N/A
4.7.3.1	For computer 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) 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.	Ditto.	N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.	No ionizing radiation.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

OTHER DIFFERENCES The following key national differences are based on requirements other than national regulatory requirements			P
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 complied with relevant IEC standards for correct application and use. See table 1.5.1 in test report for details.	P
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. This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.	Not connected to the D.C. mains supply.	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 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.	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.	Not apply for.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.2	Equipment with functional earthing is required to be 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.	Compliance shall be evaluated during the national approval.	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.	Not appliance of CRT in the equipment.	N/A
4.3.2	Equipment with handles is required to comply with special loading tests.	Not apply for.	N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.	No such component.	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	Not intended to comply with such requirements.	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. 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.	No such construction.	N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	Such condition was not considered.	N/A
Annex EE	Articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.	No such construction.	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.	Not apply for.	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 is required to comply with special acoustic pressure requirements.	No connection to telecommunication and cable distribution networks and no earphone provided.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

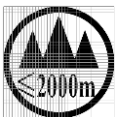
China (CN)			
National standard reference.....: GB4943.1-2011			
1.1.2	GB 4943.1-2011 applies to equipment for use at altitudes not exceeding 5000m above sea level, primarily in regions with moderate or tropical climates. Amend the third dashed paragraph of 1.1.2 as: —equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;	Added. The equipment is evaluated to be operated up to 5000 m above sea level.	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.	The equipment is intended to be used at tropical climate regions.	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.	Added. Considered.	P
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.	To be evaluated during National approval.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Considered for 220V of rated voltage and 50Hz of rated frequency.	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.	The equipment is intended to be used at altitudes exceeding 2000m and at tropical climate regions.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Amended the first paragraph as: Protection in PRIMARY CIRCUITS against over current 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.	Considered.	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 °C and a relative humidity of $(93 \pm 3)\%$. 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 $(93 \pm 3)\%$. 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.	The equipment is to be operated at tropical climatic conditions. The humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature 40 °C and a relative humidity of 93 %.	P

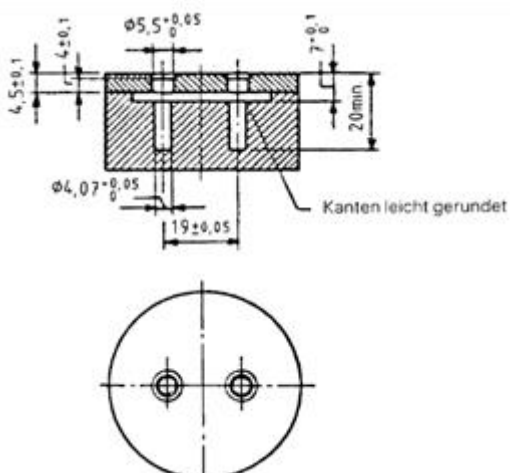
IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.1	Amend the third paragraph of Clause 2.10.3.1 to be: These requirements apply for equipment to be operated up to 2000 m above sea level. For equipment to be operated at more than 2000 m above sea level and up to 5000m 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.	The equipment is evaluated to be operated up to 5000 m above sea level.	P
2.10.3.3& 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K 、2L and 2M.	Added.	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.	Added.	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.	To be evaluated during National approval.	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 cathode ray tube provided.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Noted.	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.	Changed. (The alternative method not used.)	N/A
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.	Noted.	P

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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, therefore 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, therefore 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.	The equipment is intended to be used at altitudes exceeding 2000m and at tropical climate regions.	N/A
Annex EE (informative)	Added annex EE: Illustration relative to safety explanation in normative Chinese 、Tibetan 、Mongolian 、Zhuang Language and Uighu.	To be provided during National approval.	N/A
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.	Noted.	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.	The latest edition of the referenced document to be applied during National approval.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Quoting standards and reference documents	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; - 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 GB 4943.1-2011.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Germany (DE)			
National standard reference.....: VDE 0805-1:2011-01			
EK1-557-13 2013-07			N/A
1.5	Bei Steckernetzteilen wird der angeformte Stecker als Komponente betrachtet und in Deutschland generell nach DIN VDE 0620-1:2010 bzw. DIN VDE 0620-1:2013 und DIN VDE 0620-2-1:2013 beurteilt. Nach der Prüfung gemäß DIN VDE 0620-2-1:2013, Abschnitt 24.2 muss der Stecker noch die Prüfung entsprechend DIN VDE 0620-101:1992 Abschnitt 7 Bild 2 „Lehre für die Auswechselbarkeit“ bestehen. Es muss möglich sein, die Stecker in die Lehre ohne übermäßige Kraft so einzuführen, dass ihre Stirnfläche die Oberfläche der Lehre berührt. The moulded plug of plug-in power supplies will be considered as component and will be generally evaluated in Germany according to DIN VDE 0620-1:2010 respectively DIN VDE 0620-1:2013 and DIN VDE 0620-2-1:2013 After the test according to DIN VDE 0620-2-1:2013, sub-clause 24.2, the plug be shall still pass the test according to DIN VDE 0620-101:1992 clause 7, figure 2 “Gauge for interchangeability” It should be possible to insert the plug without applying an excessive force such that the end surface touches the surface of the gauge 	The EUT is not a DIRECT PLUG-IN EQUIPMENT.	N/A



PSB Singapore

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ProdSG			
Annex ZC 1.7.2.1	According to ProdSG, section 2, clause 4: If certain rules on the use, supplementation or maintenance of an item of technical work equipment or ready-to-use commodity must be observed in order to guarantee safety and health, instructions for use in German must be supplied when it is brought into circulation.	Compliance shall be evaluated during the national approval.	N/A



PSB Singapore

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Israel (IL)**National standard reference.....:** SI 60950 Part 1 (2012)

Additional clauses that are not referenced in the International Standard are numbered in this Standard beginning with the number 201 or beginning with the decimal number X.201.

Scope (Translation of clause 1 of the International Standard with national modifications and additions)

Note:

The national modifications and additions in this clause are brought in a different font.

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.1.1	Equipment covered by this Standard This Standard is applicable to mains-powered or battery-powered in information technology equipment, including electrical business equipment and associated equipment, with a rated voltage not exceeding 600 V. This Standard is also applicable to such information technology equipment: - designed for use as telecommunication terminal equipment and telecommunication network infrastructure equipment, regardless of the source of power; - designed and intended to be connected directly to, or used as infrastructure equipment in, a cable distribution system, regardless of the source of power; - designed to use the AC mains supply as a communication transmission medium (see clause 6, note 4 and clause 7.1, note 4). This Standard is also applicable to components and subassemblies intended for incorporation in information technology equipment. It is not expected that such components and subassemblies comply with every aspect of the Standard, provided that the complete information technology equipment, incorporating such components and subassemblies, dose comply. Note 1: Examples of aspects with which uninstalled components and subassemblies may not comply include the marking of the power rating and access to hazardous parts. Note 2: This Standard may be applied to the electronic parts of equipment even if the equipment does not wholly fall with its scope, such as large-scale air conditioning systems, fire detection systems and fire extinguishing systems. Different requirements may be necessary for some applications. This Standard specifies requirements intended to reduce risks of fire, electric shock or injury for the operator and layman who may come into contact with the equipment and, where specifically stated, for a service person. This Standard is intended to reduce such tasks with respect to installed equipment, whether it consists of a system of interconnected units or independent units, subject to installing, operating and maintaining the equipment in the manner prescribed by the manufacturer.	Considered.	P

IEC60950_1F - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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Generic product type	Specific example of generic type
Banking equipment	Monetary processing machines including automated teller (cash dispensing) machines (ATM)
Data and text processing machines and associated equipment	Data preparation equipment, data processing equipment, data storage equipment, personal computers, plotters, printers, scanners, text processing equipment, visual display units
Data network equipment	Bridges, data circuit terminating equipment (DCE), data terminal equipment (DTE), routers
Electrical and electronic retail equipment	Cash registers, point of sale terminals including associated electronic scales
Electrical and electronic office machines	Calculators, copying machines, dictation equipment, document shredding machines, duplicators, erasers, micrographic office equipment, motor-operated files, paper trimmers (punchers, cutting machines, separators) paper jogging machines, pencil sharpeners, staplers, typewriters
Other information technology equipment	Photocopying equipment, public information terminals, multimedia equipment
Postage equipment	Mail processing equipment, postage machines
Telecommunication network infrastructure equipment	Billing equipment, multiplexers, network powering equipment, network terminating , radio basestations, repeaters, transmission equipment, telecommunication switching equipment
Telecommunication terminal equipment	Facsimile equipment, key telephone systems, modems, PABXs ^(a) , pagers, telephone answering machines, telephone sets (wired and wireless)

Note 3:

The requirements of Israeli Standard SI 60065 may also be used to meet safety requirements for multimedia equipment. (See IEC Guide 12, *Guide on the safety of multimedia equipment*.)

This list is not intended to be comprehensive, and equipment that is not listed is not necessarily excluded from the scope.

Equipment complying with the relevant requirements in this Standard is considered suitable for use with process control equipment, automatic test equipment and similar systems requiring information processing facilities. However, this Standard does not include requirements for performance or functional characteristics of equipment.

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.1.2	Additional requirements Requirements additional to those specified in this Standard may be necessary for: - Equipment intended for operation in special environments (for example, extremes of temperature; excessive dust, moisture or vibration; flammable gases; and corrosive or explosive atmospheres); - Electromedical applications with physical connections to the patient; - Equipment intended to be used in vehicles, on board ships or aircraft, in tropical countries, or at altitudes greater than 2,000 m; - Equipment intended for use where ingress of water is possible; for guidance on such requirements and on relevant testing, see Annex T. Note: Attention is drawn to the fact that authorities of some countries impose additional requirements.	Considered.	P
1.1.3	Exclusions This Standard does not apply to: - power supply systems which are not an integral part of the equipment, such as motor-generator sets, battery backup systems and transformers; - building installation wiring; - devices requiring no electric power.		N/A
Details of the national modifications and additions to clauses of the International Standard			
1.6	Power interface The clause is applicable with the following addition:		N/A
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, its Regulations and updates.	Added.	N/A
1.7	Marking and instructions The clause is applicable with the following additions:		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	Power rating - Subclause 1.7.201 shall be added after the clause, as follows: 1.7.201 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 items shall be marked in the Hebrew language: - Name of the apparatus and its commercial designation; - Manufacturer's name and his address; if the equipment is imported, the importer's name and his address; - Manufacturer's registered trademark, if any; - Name of the model and serial number, if any; - Country of manufacture. The items 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.	Compliance shall be evaluated during the national approval.	N/A
1.7.2	Safety instructions and marking		N/A
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 in the Hebrew language.	Compliance shall be evaluated during the national approval.	N/A
1.201	At the end of clause 1, clause 1.201 shall be added as follows: 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%.		N/A
2	Protection from hazards The clause is applicable with the following additions:		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.4	Separation from hazardous voltages The following shall be added at the beginning of the clause: According to the Electricity Law, 1954, and the Electricity Regulations (Earthing and protection means from electricity at voltages up to 1,000 V), 1991, in Israel, seven means of protection from electricity are permitted, as follows: 1) Network system earthing – (TN-C-S, TN-S); 2) Network system earthing – (TT); 3) Network Insulation Terre – (IT); 4) Isolated transformer; 5) Safety extra low voltage; 6) Residual current circuit breaker; 7) Reinforced insulation; Double insulation	Compliance shall be evaluated during the national approval.	N/A
2.201	Clause 2.201 shall be added at the end of clause 2, as follows: Prevention of electromagnetic interference The device shall meet the requirements of the relevant part of the Israeli Standard series, SI 961. If the device contains components for prevention of electromagnetic interference, the devices shall not lower the safety level of the device, as required by this Standard.	Compliance shall be evaluated during the national approval.	N/A
3	Wiring, connections and supply The clause is applicable with the following additions:		N/A
3.2 3.2.1 3.2.1.1	Connection to a mains supply Means of connection 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 Part1.1.	Compliance shall be evaluated during the national approval.	N/A
3.2.1.2	Connection to a d.c. mains supply After the first paragraph, the following note shall be added: Note: At of the date of publication of this Standard, there is no Israeli Standard for connection accessories to d.c.	Not directly connected to the d.c. mains supply.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Annex P

Normative references

P

The annex is applicable with the following modifications and additions:

In place of some of the International Standards cited in the Standard and noted in this annex, the following Israeli Standards shall apply:

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60065: 2001	SI 60065 ^(a) – Audio, video and similar electronic apparatus safety requirements	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Standard, IEC 60065 – Edition 7.1: 2005-12.
IEC 60083	SI 32 Part 1.1 ^(a) – Plugs and socket-outlets for household and similar purposes: Plugs and socket-outlets for single phase up to 16A – General requirements	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Standard, IEC 60884-1 – Third edition: 2002-06.
IEC 60227 (all parts)	SI 60227 (all parts) – Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	The Israeli Standard series, excluding national modifications and additions noted, is identical to the Standard series, IEC 60227 (all parts).
IEC 60245 (all parts)	SI 60245 Part 1 – Rubber insulated cables - Rated voltages up to and including 450/750 V: General requirements	The Israeli Standard series, excluding national modifications and additions noted, is identical to the Standard series, IEC 60245 (all parts).
IEC 60309 (all parts) ^(b)	SI 1109 Part 1 – Plugs, socket-outlets and couplers for industrial purposes: General requirements	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Standard, IEC 60309-1 – Fourth edition: 1999-2.
	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 noted, is identical to the International Standard, IEC 60309-2 – Fourth edition: 1999-4.

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Clause	Requirement + Test	Result - Remark	Verdict

Annex P (Continued)	The referenced International Standard	The substituted Israeli Standard	Comments	P
	IEC 60317 (all parts) ^(b)	SI 1067 Part 1 – Enamelled ^(c) 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 ^(c) round copper wires	The Israeli Standard is identical to the International Electrotechnical Commission Standard, IEC 307-4: 1980-02.	
		SI 1067 Part 3 – Enamelled ^(c) round copper wires with a temperature index of 180 °C	The Israeli Standard is identical to the International Electrotechnical Commission Standard, IEC 317-8: 1980-02.	
	IEC 60320 (all parts) ^(b)	SI 60320 Part 1 – Appliance couplers for household and similar general purposes: General requirements	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Electrotechnical Commission Standard, IEC 60320-1: Second edition: 2001-06.	
		SI 60320 Part 2.1 – Appliance couplers for household and similar general purposes: Sewing machine couplers	The Israeli Standard, excluding national modifications and additions noted, 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 noted, 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 protection higher than IPXO	The Israeli Standard, excluding national modifications and additions noted, 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 1 – Automatic electrical controls for household and similar use: General requirements	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Electrotechnical Commission Standard, IEC 60730-1: Edition 3.2: 2007-03.	

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Annex P
(Continued)

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60825-1	SI 60825 Part 1 – Safety of products: Equipment classification and requirements	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Electrotechnical Commission Standard, IEC 60825-1: Second edition: 2007-03.
IEC 60947-1: 2004	SI 60947 Part 1 – Low-voltage switchgear and controlgear: General rules	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Electrotechnical Commission Standard, IEC 60947-1: Edition 5.0: 2007-06.
IEC 61058-1: 2000	SI 61058 Part 1 – Switches for appliances: General requirements	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Electrotechnical Commission Standard, IEC 61058-1: Edition 3.1: 2001.
ISO 3864 (all parts) ^(b)	SI 3864 Part 1 ^(a) – Graphic symbols -	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Organization for Standardization Standard, ISO 3864-1: First edition: 2002-05-15.
Notes: (a) The Standard is being revised. (b) In the International Standard series, there are parts not yet adopted as Israeli Standards. This table notes the relevant Israeli Standards, and in the Comments column, the corresponding parts of the International Standard series. (c) Not relevant to the translation.		

- The following shall be added to the annex:

Israeli Standards

SI 961 (all parts) - Electromagnetic compatibility

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

Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011

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IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Korea (KR)			
National standard reference.....: K 60950-1			
1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	No such construction.	N/A
8 EMC	The apparatus shall comply with the relevant CISPR standards.	Compliance shall be evaluated during the national approval.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Switzerland (CH)			
National standard reference.....: SN EN 60950-1:2006			
1.5.1	Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury. Switches containing mercury such as thermostats, relays and level controllers are not allowed.	Compliance shall be evaluated during the national approval.	N/A
1.7.13	Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries Annex 2.15 of SR 814.81 applies for batteries containing cadmium and mercury. Note: Ordinance relating to environmentally hazardous substances, SR 814.013 of 1986-06-09 is not longer in force and superseded by SR 814.81 of 2009-02-01 (ChemRRV).	Compliance shall be evaluated during the national approval.	N/A
3.2	Supply cords of portable electrical appliances having a rated current not exceeding 10 A shall be provided with a plug complying with IEC 60884-1(3.ed.) + am1, SEV 1011 and one of the following dimension sheets: - SEV 6533-2:2009 Plug type 11, L + N, 250V 10A - SEV 6534-2:2009 Plug type 12, L + N + PE, 250V 10A - SEV 6532-2:2009 Plug type 15, 3L + N + PE, 250/400V 10A Supply cords of portable electrical appliances having a rated current not exceeding 16 A shall be provided with a plug complying with IEC 60884-1(3.ed.) + am1, SEV 1011 and one of the following dimension sheets: - SEV 5933-2:2009 Plug type 21 L + N, 250 V, 16A - SEV 5934-2:2009 Plug type 23 L + N + PE, 250 V, 16A - SEV 5932-2:2009 Plug type 25 3L + N + PE, 250/400V 16A NOTE 16 A plugs are not often used in Swiss domestic installation system. See TRF template regulatory requirements Switzerland on IECEE Website R.R. TRF templates.	Compliance shall be evaluated during the national approval.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
USA (US)			
National standard reference.....: UL60950-1, Edition 2, Amendment 2			
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. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Equipment in compliance with IEC 60950-1. Overall acceptance has to be evaluated during the national approval process.	N/A
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. 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.	Compliance shall be evaluated during the national approval.	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. 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 if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."	Mains supply more than one phase is not intended to use for the equipment.	N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 shall be marked with the voltage rating and "Class 2" or equivalent. The marking shall be located adjacent to the terminals and shall be visible during wiring.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	No such fuse.	N/A
2.6	Equipment with isolated ground (earthing) receptacles are required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
2.7.1	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. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	Not apply for.	N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	Connection with mains by using approval 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.	Compliance shall be evaluated in the national approval.	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 is not intended to connect to a centralized d.c. 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.	Equipment is not permanent connection type.	N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. 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. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 & 12 of the CEC.	Compliance shall be evaluated in the national approval.	N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Equipment is not permanent connected type.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	Not apply for.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	Not considered.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	Not apply for.	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."	Compliance shall be evaluated during the national approval.	N/A
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).	No such device is used for the equipment.	N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No such device is used for the equipment.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	Equipment not with battery systems.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No store device for flammable liquid.	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).	Not considered.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (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.	Such condition is not considered.	N/A



PSB Singapore

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	For computer 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) 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.	Ditto.	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 is required to comply with the U.S. Code of Federal Regulations, 21CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

OTHER NATIONAL DIFFERENCES			P
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 (U.S. and Canadian) component or material 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 cutoffs, thermostats, (multi-layer) transformer winding wire, surge protective devices, tubing, vehicle battery adapters, wire connectors, and wire and cables.	Critical components are complied with relevant IEC standards for correct application and use. See table 1.5.1 in test report for details.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, a TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage it to include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.	Not connected to the D.C. mains supply.	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 V _{d.c.} , the max. 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.	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.	Not apply for.	N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).	Not apply for.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Compliance shall be evaluated during the national approval.	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.	Not appliance of CRT in the equipment.	N/A
4.3.2	Equipment with handles is required to comply with special loading tests.	Not apply for.	N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.	No such component.	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	Not intended to comply with such requirements.	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. 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.	No such construction.	N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No connection to the telecommunication network.	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.	No such construction.	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.	Not apply for.	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 is required to comply with special acoustic pressure requirements.	No connection to telecommunication and cable distribution networks and no earphone provided.	N/A



PSB Singapore

Note: Before placing the products in the different countries, the manufacturer must ensure that:

1. Operating Instructions, Ratings Labels and Warnings Labels written in an Accepted or Official Language of the country in question.
2. The equipment complies with the National Standards and/or Electrical Codes of the country in question.

Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
J 60950-1(H26) TEST REPORT (Deviations from IEC 60950-1:2005, second edition) Special National conditions, National deviation and other information according to MITI Ordinance No. 85. <i>Japanese unique deviations in J60950-1(H26) (=JIS C 6950-1:2012)</i>			
1.2.4.1	Replace the existing NOTE as NOTE 1, and add NOTE 2 as following: NOTE 2: Even if the equipment is designed as CLASS I EQUIPMENT, if a 2-pin plug adaptor with a protective earthing lead wire (adaptor which converts a plug for CLASS I EQUIPMENT to a 2-pin plug with no earthing contact) or a cord set having a 2-pin plug with a protective earthing lead wire is packed as accessory together with the equipment or if use of those is recommended to the users, the equipment is considered as CLASS 0I EQUIPMENT.	Added.	N/A
1.2.4.3A	Add 1.2.4.3A as following: 1.2.4.3A CLASS 0I EQUIPMENT Equipment having a mains plug without earthing contact, which protection against electric shock is achieved by: - using BASIC INSULATION; and - for the measures to connect conductive part(s) regarded as part at HAZARDIOUS VOLTAGE in the event of fault of BASIC INSULATION to PROTECTIVE EARTHING CONDUCTOR, equipping any one of the following: a) mains plug with a protective earthing lead wire, this includes the following cases: - where a 2-pin plug adaptor with a protective earthing lead wire is packed as accessory together with the equipment; or - where use of it is recommended. b) independent protective earthing terminal (see 2.6.5.8A) if the equipment uses a power supply cord of two conductors (exclude earthing conductor) NOTE - CLASS 0I EQUIPMENT may have a part constructed with DOUBLE INSULATION or REINFORCED INSULATION.	Added.	N/A

Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.2	Add the following NOTES after first paragraph: NOTE 1 TRANSPORTABLE or similar equipment that are relocated frequently for intended usage it is recommended not to design as CLASS I or CLASS 0I EQUIPMENT unless it is intended to be installed by a SERVICE PERSON or installation 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 a SERVICE PERSON or installation personnel.	Compliance shall be evaluated during the national approval.	N/A
1.5.1	Replace the first paragraph with the following: Where safety is involved, components shall comply either with the requirements of this standard, with the safety aspects of the relevant JIS component standards, or IEC component standards in case there is no applicable JIS component standard available. However, a component that falls within the scope of METI Ministerial ordinance No. 85 is properly used in accordance with its marked ratings, requirements of 1.5.4, 2.8.7 and 3.2.5 apply, and in addition, for connector of power cord set which is capable of insertion to one of appliance inlets specified in either IEC 60320-1 or JIS C 8283-1, the connector shall comply with the dimensions of the appropriate connector specified in IEC 60320-1 or JIS C 8283-1. Replace NOTE 1 with the following: NOTE 1 A JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope.	Replaced.	P

Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.2	Replace first sentence in the first dashed paragraph with the following: - a component that has been demonstrated to comply with a JIS component standard harmonized with the relevant IEC component standard, or where such JIS component standard is not available, a component that has been demonstrated to comply with the relevant IEC component standard shall be checked for correct application and use in accordance with its rating. Replace existing NOTE to NOTE 1 without modification of the sentence in the second dashed paragraph. Replace “where no relevant IEC component standard exists” to “where neither the relevant IEC component standard nor JIS standard corresponding to the relevant IEC component standard exists” in the third dashed paragraph. Add NOTE 2 as follows: NOTE 2 If an appliance inlet with a rated current of 10A, which is of STANDARD SHEET C14 specified in JIS C 8283-1, is used for equipment with a rated voltage of 125V or less; and with a rated current of exceeding 10A, refer to 1.7.5A.	Replaced.	P
1.5.9.1	Add the following at the end of NOTE 1: Gas discharge tube (GDT) may be connected to VDR in series.		N/A
1.5.9.4	Add the following at last paragraph: If a GDT complies with the requirements for FUNCTIONAL INSULATION, the GDT may be connected to a VDR bridging BASIC INSULATION in accordance with the conditions specified in this sub-clause in series.		N/A
1.7.1	Replace the existing dashed items for manufacturer's name etc. and for model identification etc. with the following respectively: - manufacturer's (or responsible business operator's) name or trade-mark or identification mark; - manufacturer's (or responsible business operator's) model identification or type reference; In the last paragraph, replace “ISO 7000 or IEC 60417” with “JIS S 0101, ISO 7000 or IEC 60417”.	Replaced. Relevant information sees marking label.	P

Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	Add the following: Instructions and the marking(s) on equipment, which related to safety, shall be made in Japanese.		N/A
1.7.5	Replace IEC 60083 with JIS C 8303 in the second paragraph.	No power outlet provided.	N/A
1.7.5A	Add the following new clause after 1.7.5 1.7.5.A Power supply cord set If an appliance inlet with a rated current of 10 A, which is of STANDARD SHEET C14 specified in JIS C 8283-1, is used for equipment with a rated voltage of 125 V or less and with a rated current of exceeding 10 A, the operating instructions shall provide the following or equivalent instruction: “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する。” For equipment with an appliance inlet, if a power supply cord set is not provided by packing together with the equipment, the operating instructions shall provide information on the applicable power supply cord set. NOTE For the combination of CLASS 0I EQUIPMENT equipped with an appliance inlet with earthing contact and a power supply cord set of two conductors (exclude earthing conductor), to pack the power supply cord set together with the equipment and to provide a sentence calling attention of the following purport in the operating instructions are recommended, because such power supply cord set is a special kind of cord set: - this is usable only for this equipment; and - to use this for other equipment is not allowed.	Not apply for. Rated current max. 10.7 A is used in equipment.	N/A
1.7.14A	Add the following new clause after 1.7.14 1.7.14A Marking for protective earthing connection for CLASS 0I EQUIPMENT CLASS 0I EQUIPMENT shall be provided with the following or equivalent instruction: - on the mains-plug or the easily visible section of equipment, the following instruction: 必ず接地接続を行って下さい。 - in the easily visible section of equipment or in the operating instructions, the following instruction: 接地接続は必ず、電源プラグを電源につなぐ前に行って下さい。 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下さい。	Added.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.14B	Add the following new clause after 1.7.14 1.7.14B Protective earth wire used for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT equipped with a separate protective earthing terminal as main protective earthing terminal, if a protective earth wire is not provided by packing together with the equipment, the operating instructions shall provide information on the applicable protective earth wire. (See 2.6.3.2.)		N/A
2.1.1.1	In b) of the fifth paragraph, replace "IEC 60083, IEC 60309, IEC 60320, IEC 60906-1 or IEC 60906-2" with "JIS C 8303, (the Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials, METI Ordinance No. 85, Clause 1 (METI Ordinance No. 34 of 2013), JIS C 8285, the IEC 60309 series of standards, the JIS C 8283 series of standards, the IEC 60320 series of standards".	Replaced.	P
2.6.3.2	Add the following: If the conductor of protective earthing lead wire or the protective earth wire of CLASS 0I EQUIPMENT is of single-core, it shall be one of the following: - annealed copper wire of 1,6 mm in diameter, or metallic wire having the same or more strength and diameter and being not easily corrosive; or - single-core cord or single-core cable (sheathed flexible cable), which have a cross-sectional area of at least 1,25 mm².	Added.	N/A
2.6.3.5	Add the following: However, this requirement does not apply to the inside conductor of power supply cord (or power supply cord set), which has been molded together with a plug and a connector and has been sheathed.		N/A
2.6.4.2	Add the following: For CLASS 0I EQUIPMENT equipped with a separate protective earthing terminal, the protective earthing terminal may be used as the main protective earthing terminal.	Replaced.	P
2.6.5.4	Replace 1st sentence with the following. "Protective earthing conductors" with "Protective earthing conductors of CLASS I EQUIPMENT".	Replaced.	P
2.6.5.6	Replace "protective earthing terminals" with "protective earthing and protective bonding terminals".		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.8A	Add the following new clause. after 2.6.5.8A 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.	Added. Compliance shall be evaluated during the national approval.	N/A
2.9.3 Table 2H	Deleted the following mark of Figure 2H: B13 e) and S2 d)		N/A
2.9.3 Figure 2H	Addition of marking for table 2H: B8, B9, B12, B13, S1		N/A
2.10.3.1	In the third paragraph, replace IEC 60664-1 with JIS C 60664-1. Replace the 8th paragraph with the following: The above minimum CLEARANCES for connectors do not apply to: - connectors that comply with JIS C 8285, the IEC 60309 series of standards, the JIS C 8283 series of standards, the IEC 60320 series of standards or JIS C 8303; and - connectors that comply with the Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials MEIT Ordinance No. 85, Clause 1 (METI Ordinance No. 34 of 2013), and comply with the dimensions specified in the JIS C 8283 series of standards, JIS C 8303 or IEC 60309-2; see also 1.5.2.	Replaced.	P
2.10.3.2	In the bottom column of Table 2J, add the following: In Japan, the MAINS TRANSIENT VOLTAGE value against the nominal AC MAINS SUPPLY voltage of 100 V is decided by applying the columns for the AC MAINS SUPPLY voltage of 150 V.	Replaced.	P
2.10.3.3	In Table 2L, add the following into the column specifying the additional CLEARANCES and at the end: For intermediate voltage values between the PEAK WORKING VOLTAGE values given in this table, linear interpolation is permitted between the nearest two points, the calculated additional minimum CLEARANCE being rounded up to the next higher 0,1 mm increment.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.4.3	Replace the 6th paragraph with the following: The above minimum CLEPAGE DISTANCES for connectors do not apply to: - connectors that comply with JIS C 8285, the IEC 60309 series of standards, the JIS C 8283 series of standards, the IEC 60320 series of standards or JIS C 8303; and - connectors that comply with the Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials METI Ordinance No. 85, Clause 1 (METI Ordinance No. 34 of 2013), and comply with the dimensions specified in the JIS C 8283 series of standards, JIS C8303 or IEC 60309-2; see also 1.5.2.		N/A
2.10.9	Replace clause which as test method of T^1 from 1.4.5 to 1.4.12.		N/A
3.2.1.1	Add the following: When equipment with an appliance inlet connects to AC mains supply, see clause 1.7.5A for the relevant mark of power supply cord set.		N/A
3.2.3	Add the following after Table 3A: Table 3A applies when cables complying JIS C 3662 or JIS C 3663 are used. In case of other cables, cable entries shall be so designed that a conduit suitable for the cable used can be fitted.	The unit is not permanent connected equipment.	N/A
3.2.4	Add the following: The equipment shall have a structure of which the soldered sections of the terminals of appliance inlet are not subjected to mechanical stress during the insertion or removal of the connector, except the case fixing the appliance inlet itself mechanically but not only by soldering.		N/A
3.2.5.1	At the end of the first dashed item, replace “; and” with “, or be a sheathed cord complying with Appendix 1 specified in the Interpretation for the Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials METI Ordinance No. 85, Clause 1 (METI Ordinance No. 34 of 2013) ; and”.	Compliance shall be evaluated during the national approval.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	In the second dashed item, replace “insulated.” with “insulated, be a cord of the following or be a sheathed cord complying with Appendix 1 specified in the Interpretation for the Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials METI Ordinance No. 85, Clause 1 (METI Ordinance No. 34 of 2013), .”		N/A
	In the third dashed item, add the following: However, the coating of the protective earth conductor inside covered with sheath (cord set) power cord integrally formed with the connector and the plug need not be a combination of green and yellow. In addition, the power cord of CLASS 0I EQUIPMENT having a protective earth conductor separately, it is not necessary to provide a protective earth conductor.		N/A
	Replace the existing fourth dashed item with the following: - if those complying with JIS C 3662-5 or JIS C 3663-4, have conductors with cross-sectional areas not less than those specified in Table 3B, and if others, comply with the relevant wiring rules. In Table 3B, replace “IEC 60320” with “the JIS C8283 series of standards or the IEC 60320 series of standards”.		N/A
3.3.4	Add the following note to Table 3D: For cables other than those complying with JIS C 3662 or JIS C 3663, 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
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 of BASIC INSULATION would be reduced to less than the values specified in 2.10.	Added. It is considered suitable mechanical connections.	P
4.3.5	In the paragraph, replace “IEC 60083 or IEC 60320” with “the JIS C 8283 series of standards, JIS C 8303 or JIS C 8358”.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict																																				
4.5.3	In the item b in Table 4B, add the following: NOTE If no data of material is available, Appendix 4, 1(1), 3 specified in the Interpretation for "the Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials METI Ordinance No. 85, Clause 1 (METI Ordinance No. 34 of 2013)" is applicable. In the item c in Table 4B, replace IEC 60085 with JIS C 4003.		N/A																																				
5.1.3	Add a note after the first paragraph as follows: NOTE In Japan, three-phase power distribution systems of delta connection are typical, therefore, in such case, test is conducted using the test circuit from IEC 60990, figure 13.	The EUT is used in single-phase power system.	N/A																																				
5.1.6	Replace Table 5A as follows		P																																				
	<table border="1"> <thead> <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> </thead> <tbody> <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>Class I equipment main protective earthing terminal</td><td>0,75</td><td>–</td></tr> <tr> <td>Class 0I equipment main protective earthing terminal</td><td>0,5</td><td>–</td></tr> <tr> <td rowspan="2">MOVABLE (other than HANDHELD, but including TRANSPORTABLE EQUIPMENT)</td><td>Class I equipment main protective earthing terminal</td><td>3,5</td><td>–</td></tr> <tr> <td>Class 0I equipment main protective earthing terminal</td><td>1,0</td><td>–</td></tr> <tr> <td rowspan="2">STATIONARY, PLUGGABLE TYPE A</td><td>Class I equipment main protective earthing terminal</td><td>3,5</td><td>–</td></tr> <tr> <td>Class 0I equipment main protective earthing terminal</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>Class I equipment main protective earthing terminal</td><td>3,5 -</td><td>- 5% of input current</td></tr> <tr> <td>Class 0I equipment main protective earthing terminal</td><td>1,0 -</td><td>- -</td></tr> </tbody> </table> ^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.			Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. ^a	Maximum PROTECTIVE CONDUCTOR CURRENT	All equipment	Accessible parts and circuits not connected to protective earth ^b	0,25	–	HAND-HELD	Class I equipment main protective earthing terminal	0,75	–	Class 0I equipment main protective earthing terminal	0,5	–	MOVABLE (other than HANDHELD, but including TRANSPORTABLE EQUIPMENT)	Class I equipment main protective earthing terminal	3,5	–	Class 0I equipment main protective earthing terminal	1,0	–	STATIONARY, PLUGGABLE TYPE A	Class I equipment main protective earthing terminal	3,5	–	Class 0I equipment main protective earthing terminal	1,0	–	All other STATIONARY EQUIPMENT – not subject to the conditions of 5.1.7 – subject to the conditions of 5.1.7	Class I equipment main protective earthing terminal	3,5 -	- 5% of input current	Class 0I equipment main protective earthing terminal	1,0 -	- -
Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. ^a	Maximum PROTECTIVE CONDUCTOR CURRENT																																				
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All other STATIONARY EQUIPMENT – not subject to the conditions of 5.1.7 – subject to the conditions of 5.1.7	Class I equipment main protective earthing terminal	3,5 -	- 5% of input current																																				
	Class 0I equipment main protective earthing terminal	1,0 -	- -																																				
6	Add following in the end of NOTE 1: For suitable additional measures, see Annex JB.	Replaced.	N/A																																				

Attachment No. 2

PSB Singapore

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Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1	Add the following: NOTE 3 For example, the highest nominal voltage is 230 V in Europe and 120 V in North America.		N/A
Annex G.6	Replace the existing 8th paragraph with the following: The above minimum CLEARANCES for connectors do not apply to: - connectors that comply with JIS C 8285, the IEC 60309 series of standards, the JIS C 8283 series of standards, the IEC 60320 series of standards or JIS C 8303; and - connectors that with the Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials (METI Ordinance No. 34 of 2013) and comply with the dimensions specified in the JIS C 8283 series of standards, JIS C 8303 or IEC 60309-2; see also 1.5.2.		N/A
Annex M	In M.1, replace the existing paragraph with the following: One of the two methods specified in this annex shall be applied. NOTE Method A specified in the annex is typical of analogue telephone network in Europe and Method B of those in North America.		N/A
Annex P	Replace the existing Annex P with the following:		N/A
	Annex P (normative) Normative references The following reference documents are indispensable for the application of this standard. If the date of the reference document is given, only that edition applies, and any newer edition and subsequent amendments do not apply. If the date of the reference document is not given, the latest edition including the amendments applies. Further information on the reference documents, including how to obtain copies, can be found on the following internet sites: http://www.jisc.go.jp/ http://www.iec.ch http://www.iso.org http://www.itu.int JIS B 0205-2, ISO general purpose metric screw threads - Part2: General plan NOTE Corresponding IS: ISO 261, ISO general purpose metric screw threads—General plan (IDT) JIS B 0205-3, ISO general purpose metric screw threads - Part3 : Selected sizes for screws, bolts and nuts NOTE Corresponding IS: ISO 262 · ISO general purpose metric screw threads - Selected sizes for screws, bolts and nuts (IDT) JIS C 0448, Coding of indicating devices and actuators by colours and supplementary means NOTE Corresponding IS: IEC 60073, Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicator devices and actuators (IDT) JIS C 2134, Method for the determination of the proof and the comparative tracking indices of solid insulating materials NOTE Corresponding IS: IEC 60112, Method for the determination of the proof and the comparative tracking indices of insulating materials (IDT) JIS C 3215 (all parts), Specifications for particular types of winding wires NOTE Corresponding IS: IEC 60317 (all parts), Specifications for particular types of winding wires (IDT) JIS C 3661-1:1998, Electrical test methods for electric cables - Part 1: Electrical tests for cables, cords and wires for voltages up to and including 450/750V NOTE Corresponding IS: IEC 60885-1:1987, Electrical test methods for electric cables. Part 1: Electrical tests for cables, cords and wires for voltages up to and including 450/750 V (IDT) JIS C 3662 (all parts), Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V - Part 1 : General requirements NOTE Corresponding IS: IEC 60227 (all parts), Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V (MOD) JIS C 3663 (all parts), Rubber insulated cables - Rated voltages up to and including 450/750 V NOTE Corresponding IS: IEC 60245 (all parts), Rubber insulated cables - Rated voltages up to and including 450/750 V (MOD) JIS C 4003, Electrical insulation-Thermal evaluation and designation NOTE Corresponding IS: IEC 60085:2004, Electrical insulation - Thermal classification (MOD)		



PSB Singapore

Attachment No. 2

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Clause	Requirement + Test	Result - Remark	Verdict

	JIS C 4526-1:2005, Switches for appliances - Part 1: General requirements NOTE Corresponding IS: IEC 61058-1:2000, Switches for appliances - Part 1: General requirements (MOD) JIS C 5101-14:2009, Fixed capacitors for use in electronic equipment - Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains NOTE Corresponding IS: IEC 60384-14:2005, Fixed capacitors for use in electronic equipment - Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (IDT) JIS C 6065:2007 and Amendment 1:2009, Audio, video and similar electronic apparatus - Safety requirements NOTE Corresponding IS: IEC 60065:2001, Audio, video and similar electronic apparatus - Safety requirements and Amendment 1:2005 (MOD) JIS C 6802, Safety of laser products JIS C 6803, Safety of laser products-Safety of optical fiber communication systems JIS C 6804, Safety of laser products-Safety of free space optical communication systems used for transmission of information NOTE Corresponding IS: IEC 60825-12, Safety of laser products - Part 12: Safety of free space optical communication systems used for transmission of information (IDT) JIS C 8201-1:2007, Low-voltage switchgear and controlgear-Part 1: General rules NOTE Corresponding IS: IEC 60947-1:2004, Low-voltage switchgear and controlgear - Part 1: General rules (MOD) JIS C 8283 (all parts), Appliance couplers for household and similar general purposes NOTE Corresponding IS: IEC 60320 (all parts), Appliances couplers for household and similar general purposes (MOD) JIS C 8285, Plugs, socket-outlets and couplers for industrial purposes NOTE Corresponding IS: IEC 60309-1, Plugs, socket-outlets and couplers for industrial purposes - Part 1: General requirements (MOD) JIS C 8303, Plugs and receptacles for domestic and similar general use JIS C 8358:1994, Appliance couplers for domestic and similar use JIS C 9730-1:2010, Automatic electrical controls for household and similar use - Part 1:General requirements NOTE Corresponding IS: IEC 60730-1:1999, Automatic electrical controls for household and similar use - Part 1: General requirements and Amendment 1:2003 (MOD) JIS C 60068-2-78, Environmental testing - Test Cab:Damp heat,steady state NOTE Corresponding IS: IEC 60068-2-78, Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state (IDT) JIS C 60364-1:2006, Low-voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definitions NOTE Corresponding IS: IEC 60364-1:2001, Electrical installations of buildings - Part 1: Fundamental principles, assessment of general characteristics, definitions (IDT) JIS C 60664-1:2009, Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests NOTE Corresponding IS: IEC 60664-1:1992, Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests, Amendment 1:2000 and Amendment 2:2002 (IDT) JIS C 60695-2-11, Fire hazard testing - Glow-wire flammability test method for end-products NOTE Corresponding IS: IEC 60695-2-11, Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (IDT) JIS C 60695-2-20, Fire hazard testing – Part 2 : Glowing /Hot wire based test methods – Section 20 : Hot-wire coil ignitability test on materials NOTE Corresponding IS: IEC/TS 60695-2-20, Fire hazard testing - Part 2-20: Glowing/hot wire based test methods - Hot-wire coil ignitability - Apparatus test method and guidance (IDT) JIS C 3661-1:1998, Electrical test methods for electric cables - Part 1: Electrical tests for cables, cords and wires for voltages up to and including 450/750V NOTE Corresponding IS: IEC 60885-1:1987, Electrical test methods for electric cables. Part 1: Electrical tests for cables, cords and wires for voltages up to and including 450/750 V (IDT) JIS C 3662 (all parts), Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V - Part 1: General requirements NOTE Corresponding IS: IEC 60227 (all parts), Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V (MOD) JIS C 3663 (all parts), Rubber insulated cables - Rated voltages up to and including 450/750 V NOTE Corresponding IS: IEC 60245 (all parts), Rubber insulated cables - Rated voltages up to and including 450/750 V (MOD) JIS C 4003, Electrical insulation-Thermal evaluation and designation NOTE Corresponding IS: IEC 60085:2004, Electrical insulation - Thermal classification (MOD) JIS C 4526-1:2005, Switches for appliances - Part 1: General requirements NOTE Corresponding IS: IEC 61058-1:2000, Switches for appliances - Part 1: General requirements (MOD) JIS C 5101-14:2009, Fixed capacitors for use in electronic equipment - Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains NOTE Corresponding IS: IEC 60384-14:2005, Fixed capacitors for use in electronic equipment - Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (IDT) JIS C 6065:2007 and Amendment 1:2009, Audio, video and similar electronic apparatus - Safety requirements NOTE Corresponding IS: IEC 60065:2001, Audio, video and similar electronic apparatus - Safety requirements and Amendment 1:2005 (MOD) JIS C 6802, Safety of laser products		
	JIS C 6803, Safety of laser products-Safety of optical fiber communication systems JIS C 6804, Safety of laser products-Safety of free space optical communication systems used for transmission of information NOTE Corresponding IS: IEC 60825-12, Safety of laser products - Part 12: Safety of free space optical communication systems used for transmission of information (IDT) JIS C 8201-1:2007, Low-voltage switchgear and controlgear-Part 1: General rules NOTE Corresponding IS: IEC 60947-1:2004, Low-voltage switchgear and controlgear - Part 1: General rules (MOD) JIS C 8283 (all parts), Appliance couplers for household and similar general purposes NOTE Corresponding IS: IEC 60320 (all parts), Appliances couplers for household and similar general purposes (MOD) JIS C 8285, Plugs, socket-outlets and couplers for industrial purposes NOTE Corresponding IS: IEC 60309-1, Plugs, socket-outlets and couplers for industrial purposes - Part 1: General requirements (MOD) JIS C 8303, Plugs and receptacles for domestic and similar general use JIS C 8358:1994, Appliance couplers for domestic and similar use JIS C 9730-1:2010, Automatic electrical controls for household and similar use - Part 1:General requirements NOTE Corresponding IS: IEC 60730-1:1999, Automatic electrical controls for household and similar use - Part 1: General requirements and Amendment 1:2003 (MOD) JIS C 60068-2-78, Environmental testing - Test Cab:Damp heat,steady state NOTE Corresponding IS: IEC 60068-2-78, Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state (IDT) JIS C 60364-1:2006, Low-voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definitions NOTE Corresponding IS: IEC 60364-1:2001, Electrical installations of buildings - Part 1: Fundamental principles, assessment of general characteristics, definitions (IDT) JIS C 60664-1:2009, Insulation coordination for equipment within low-voltage systems - Part 1: Principles,requirements and tests NOTE Corresponding IS: IEC 60664-1:1992, Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests, Amendment 1:2000 and Amendment 2:2002 (IDT)		

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	JIS C 60695-2-11, Fire hazard testing - Glow-wire flammability test method for end-products NOTE Corresponding IS: IEC 60695-2-11, Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (IDT) JIS C 60695-2-20, Fire hazard testing - Part 2 : Glowing /Hot wire based test methods - Section 20 : Hot-wire coil ignitability test on materials NOTE Corresponding IS: IEC/TS 60695-2-20, Fire hazard testing - Part 2-20: Glowing/hot wire based test methods - Hot-wire coil ignitability - Apparatus test method and guidance (IDT) JIS C 60695-10-2, Fire hazard testing-Part 10-2: Abnormal heat-Ball pressure test NOTE Corresponding IS: IEC 60695-10-2, Fire hazard testing - Part 10-2: Abnormal heat - Ball pressure test (IDT) JIS C 60695-11-5:2007, Fire hazard testing-Part 11-5:Test flames-Needle-flame test method - Apparatus, confirmatory test arrangement and guidance NOTE Corresponding IS: IEC 60695-11-5:2004, Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance (IDT) JIS C 60695-11-10, Fire hazard testing-Part 11-10:Test flames - 50 W horizontal and vertical flame test methods NOTE Corresponding IS: IEC 60695-11-10, Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods (IDT) JIS C 60695-11-20, Fire hazard testing-Part 11-20: Test flames - 500 W flame test methods NOTE Corresponding IS: IEC 60695-11-20, Fire hazard testing - Part 11-20: Test flames - 500 W flame test methods (IDT) JIS K 7110, Plastics - Determinaion of Izod impact strength NOTE Corresponding IS: ISO 180, Plastics - Determination of Izod impact strength (MOD) JIS K 7111 (all parts), Plastics-Determination of Charpy impact properties - Part 1: Non-instrumented impact test NOTE Corresponding IS: ISO 179 (all parts), Plastics - Determination of Charpy impact properties (MOD) JIS K 7127, Plastics - Determination of tensile properties - Part 3 : Test conditions for films and sheets NOTE Corresponding IS: ISO 527-3, Plastics - Determination of tensile properties - Part 3: Test conditions for films and sheets (IDT) JIS K 7160, Plastics - Determination of tensile-impact strength NOTE Corresponding IS: ISO 8256, Plastics - Determination of tensile-impact strength (IDT) JIS K 7161, Plastics - Determination of tensile properties - Part 1 : General principles NOTE Corresponding IS: ISO 527-1, Plastics - Determination of tensile properties - Part 1: General principles (IDT) JIS K 7162, Plastics - Determination of tensile properties - Part 2 : Test conditions for moulding and extrusion plastics NOTE Corresponding IS: ISO 527-2, Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics (IDT) JIS K 7164, Plastics - Determination of tensile properties - Test conditions for isotropic and orthotropic fibre-reinforced plastic composites NOTE Corresponding IS: ISO 527-4, Plastics - Determination of tensile properties - Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites (MOD) JIS K 7165, Plastics-Determination of tensile properties-Part 5: Test conditions for unidirectional fibre-reinforced plastic composites NOTE Corresponding IS: ISO 527-5, Plastics - Determination of tensile properties - Part 5: Test conditions for unidirectional fibre-reinforced plastic composites (MOD) JIS K 7171, Plastics - Determination of flexural properties NOTE Corresponding IS: ISO 178, Plastics - Determination of flexural properties (IDT) JIS K 7241, Cellular plastics-Determination of horizontal burning characteristics of small specimens subjected to a small flame NOTE Corresponding IS: ISO 9772, Cellular plastics - Determination of horizontal burning characteristics of small specimens subjected to a small flame (IDT) JIS K 7341, Plastics-Determination of burning behaviour of thin flexible vertical specimens in contact with a small flame ignition source NOTE Corresponding IS: ISO 9773, Plastics - Determination of burning behaviour of thin flexible vertical specimens in contact with a small-flame ignition source (IDT) JIS K 7350-1, Plastics - Methods of exposure to laboratory light sources - Part 1: General guidance NOTE Corresponding IS: ISO 4892-1, Plastics - Methods of exposure to laboratory light sources - Part 1: General guidance (IDT) JIS K 7350-2, Plastics - Methods of exposure to laboratory light sources - Part 2 : Xenon-arc lamps NOTE Corresponding IS: ISO 4892-2, Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps (MOD) JIS K 7350-4, Plastics - Methods of exposure to laboratory light sources - Part 4: Open-flame carbon-arc lamps NOTE Corresponding IS: ISO 4892-4, Plastics - Methods of exposure to laboratory light sources - Part 4: Open-flame carbon-arc lamps (MOD) JIS S 0101:2000, Graphical warning symbols for consumers TS C 60695-11-3, Fire hazard testing - Part 11-3: Test flames - 500 W flames - Apparatus and confirmational test methods NOTE Corresponding IS: IEC 60695-11-3, Fire hazard testing - Part 11-3: Test flames - 500 W flames - Apparatus and confirmational test methods (IDT) TS C 60695-11-4, Fire hazard testing - Part 11-4: Test flames - 50 W flames - Apparatus and confirmational test methods NOTE Corresponding IS: IEC 60695-11-4, Fire hazard testing - Part 11-4: Test flames - 50 W flames - Apparatus and confirmational test methods (IDT) IEC 60216-4-1, Electrical insulating materials - Thermal endurance properties - Part 4-1: Ageing ovens - Singlechamber ovens IEC 60309 (all parts), Plugs, socket-outlets and couplers for industrial purposes IEC 60317 (all parts), Specifications for particular types of winding wires IEC 60317-43, Specifications for particular types of winding wires - Part 43: Aromatic polyimide tape wrapped round copper wire, class 240 IEC 60320 (all parts), Appliance couplers for household and similar general purposes IEC 60417-DB:2002, Graphical symbols for use on equipment (For DB, see the online database of the IEC.) IEC 60747-5-5, Semiconductor devices - Discrete devices - Part 5-5: Optoelectronic devices - Photocouplers IEC 60825-1, Safety of laser products - Part 1: Equipment classification and requirements IEC 60825-2, Safety of laser products - Part 2: Safety of optical fibre communication systems (OFCS) IEC/TR 60825-9, Safety of laser products - Part 9: Compilation of maximum permissible exposure to incoherent optical radiation IEC 60851-3:1996, Winding wires - Test methods - Part 3: Mechanical properties and Amendment 1:1997 IEC 60851-5:1996, Winding wires - Test methods - Part 5: Electrical properties, Amendment 1:1997 and Amendment 2:2004 IEC 60851-6:1996, Methods of test for winding wires - Part 6: Thermal properties IEC 60947-1:2004, Low-voltage switchgear and controlgear - Part 1: General rules IEC 60990:1999, Methods of measurement of touch current and protective conductor current IEC 61051-2, Varistors for use in electronic equipment - Part 2: Sectional specification for surge suppression varistors ISO 180, Plastics - Determination of Izod impact strength ISO 4892-1, Plastics - Methods of exposure to laboratory light sources - Part 1: General guidance ISO 7000-DB:2004, Graphical symbols for use on equipment - Index and synopsis (For DB, see the online database of the IEC.)		
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Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	ISO 8256, Plastics - Determination of tensile-impact strength		
	ITU-T Recommendation K.44, Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents - Basic Recommendation		
Annex U.2.4	Replace the existing NOTE as NOTE1, add NOTE 2 as follows: NOTE 2 by taking into account environmental impact, "(for example, 1.1.1-trichloroethane)" described in the corresponding IEC standard was deleted.		N/A
Annex V.1	Replace "In 3.1.2 of IEC 60364-1" with "312 of JIS C 60364-1".		N/A
Annex W.1	Replace second and third sentence in the first paragraph with the following: This distinction between earthed and unearthed (floating) circuit is not the same as between CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and CLASS II EQUIPMENT. Floating circuits can exist in CLASS I EQUIPMENT or CLASS 0I EQUIPMENT and earthed circuits in CLASS II EQUIPMENT.	Compliance shall be evaluated during the national approval.	N/A
Annex AA	Replace figure AA.3 which correct the position of insulating metal sheet.		N/A
Annex JA	Add a new annex JA with the following contents. Annex JA (normative) Requirements for document shredding machines (see 1.7, 2.8.3, 3.4 and 4.4) Introduction This annex specifies the safety requirements for document shredding machines, except those of STATIONARY EQUIPMENT used by connecting directly to 3-phase AC MAINS SUPPLY of a voltage not the than 200V. Document shredding machines shall comply with the requirements of this annex in addition to other requirements specified in this standard, except those of STATIONARY EQUIPMENT used by connecting directly to three-phase AC MAINS SUPPLY of a voltage not less than 200V.	Not Document shredding machines.	N/A

Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
JA.1	Markings and instructions In the easily visible part near to the slot for documents, by a method of clearly legible and permanent and by using easily understandable terms, document shredding machines shall have markings of the symbol specified in 6.2.1 (general cautions) of JIS S 0101:2000, Graphical warning symbols for consumers, and also the following precautions for use: - that use by an infants/children may cause a hazard of injury etc.; - that a hand can be drawn into the mechanical section for shredding when touching the document-slot; - that clothing can be drawn into the mechanical section for shredding when touching the document-slot; - that hairs can be drawn into the mechanical section for shredding when touching the document-slot; - in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas.		N/A
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 necessary, by a test with the test finger, Figure JA.1		N/A
JA.3	Disconnect switch 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.		N/A

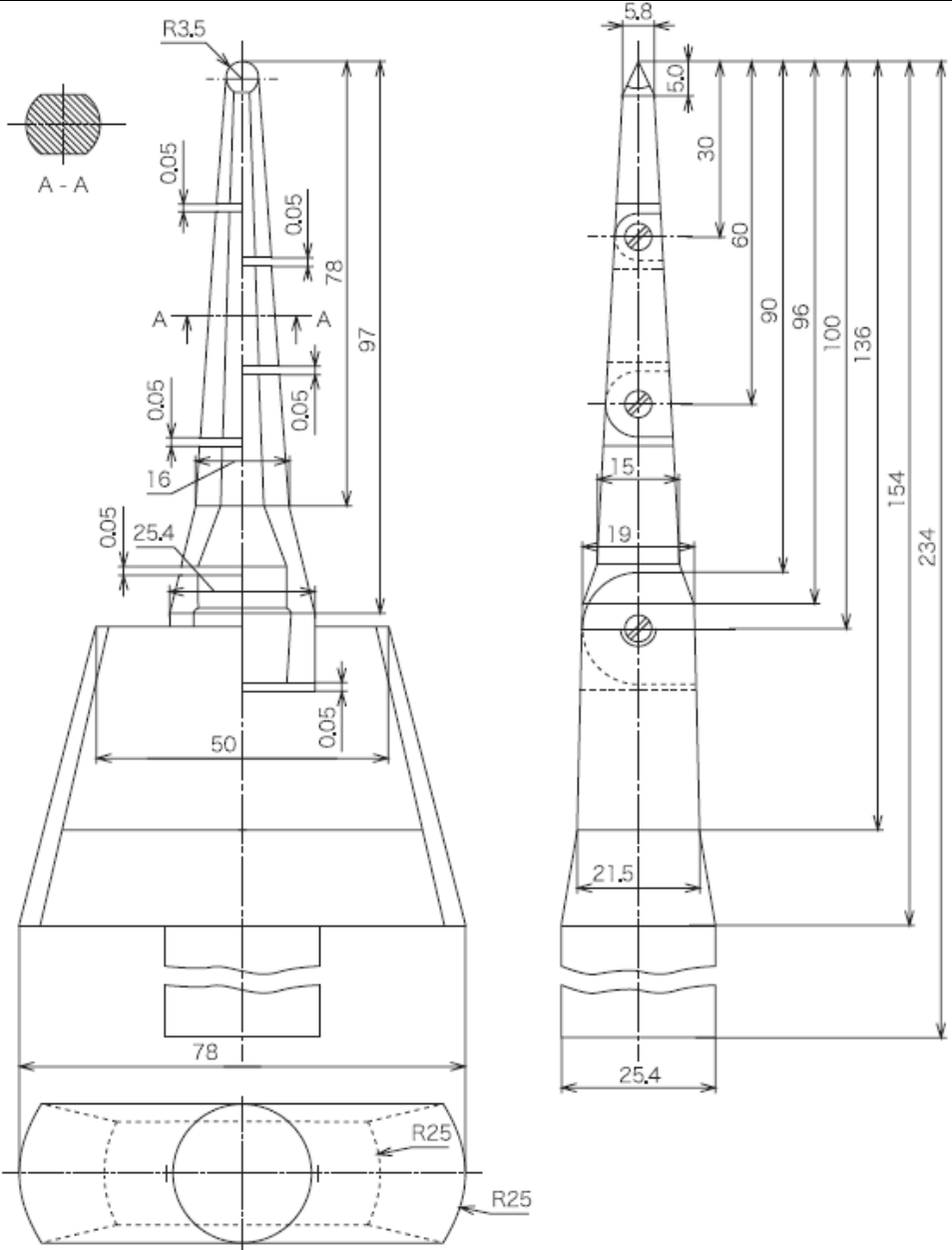
Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
JA.4	Protection in operator access area 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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IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

 Figure JA.1 Test finger			N/A
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Attachment No. 2

IEC60950_1F - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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N/A

Rounded to allow rotation of $1/4$ about hinge pin (screw) in one direction

Details of the tip of wedge

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

The thickness of the probe varies linearly, except changing the slope at the respective points shown in the table. The allowable dimensional tolerance of the probe shall be $\pm 0,127$ mm.

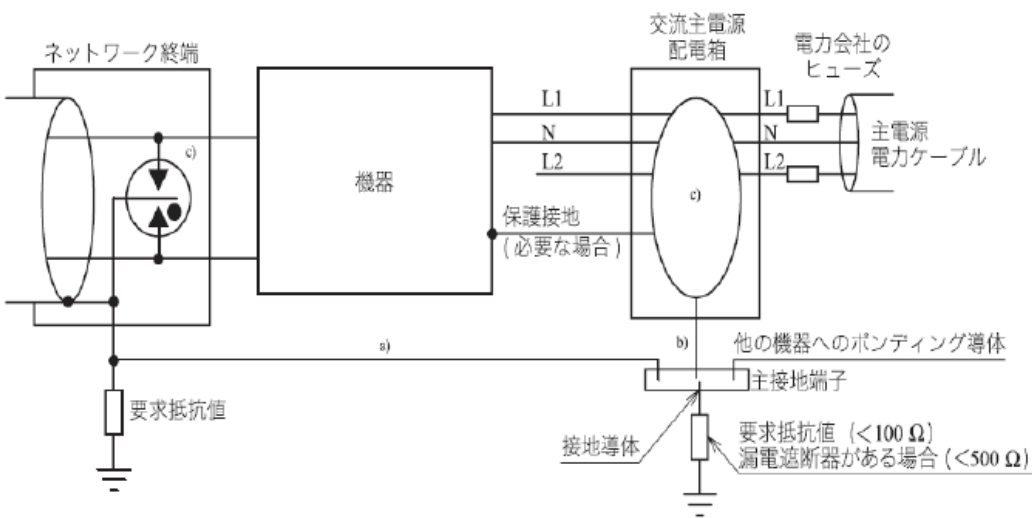
Figure JA.2 Wedge-probe.

Figure JA.2 Wedge-probe.

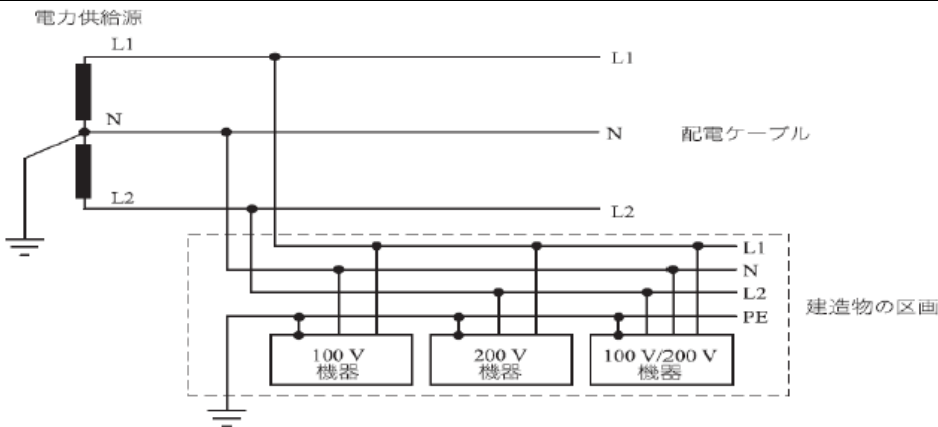
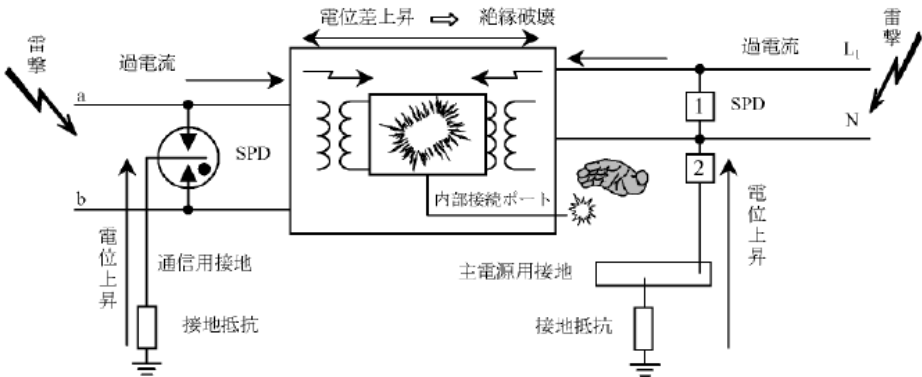
Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex JB	Add Annex JB as follows: Annex JB (informative) Current conditions Installation environment on overvoltages and overcurrents, and the measures (see NOTE 1 in Clause 6) Introduction This standard is based on "ITU-T Recommendation K.11:1993" to stipulate requirement for equipment on a premise to install in the environment where appropriate measures were taken for so that overvoltage more than peak 1.5kV does not hang to the apparatus. But in Japan due to environment is difficult to integrate with "ITU-T Recommendation K.11:1993", in here explain for desirable environment and show actions to be taken how to make a desirable setting environment.	Added.	—
JB.1	A desirable setting environment When lead electric wires in building for any kind service of metal wire, for overvoltage restraint and overcurrent restraint, it is desirable that be close to each other including grounding conductor. It is important to make it close each other especially the lead in point of power line, communication line and grounding conductor. In that case, attention is necessary for electromagnetic induction where occurred between a communication line and the power line which are not covered. It is desirable that set up main grounding terminal which close to lead in point of power line and communication line in building as much as possible. Due to minimize the surge current in building for all shielding conductor of cable which lead in building, it shall connected directly with main grounding terminal in lead in point via surge protection device (SPD) e.g. arrester and so on. It shall be considered corrosion measures in joint if necessary. It is desirable that SPD which set on communication line is close to lead in point toward the building as much as possible. Furthermore set the SPD near the main power line, and it may make the distance from SPD to a grounding conductor as short as possible. It is effective if use a short grounding conductor with low impedance for that decrease surge voltage between electric power system protection conductor and the communication line.		N/A

Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Desirable setting environment for TT electric power system is as figure JB.1. Established SPD as that excessive potential difference does not occur between communication side and the electricity side, and recommend that ground wire of both are connected with a short conductor. Concerning the detail for recommend setting environment, see ITU-T Recommendation K.11:1993, K.21:1996, K.27:1996, K.31:1993 and K.66:2004.		N/A
	 Note: a) All bonding line to a main grounding terminal makes it as short as possible (Less than 1.5m in the place that danger of direct lightning is high). b) The connected line which from SPD to main grounding terminal is as short as possible (less 1.5m). c) Setting for SPD (omitted the detail). All SPD connected line is short as possible (less 0.5m). Figure JB.1 – Sample of desirable setting for TT electric power system of single phase three-wire type + neutral line (From ITU-T Recommendation K.66:2004)		N/A
JB.2	Situation and countermeasure of setting environment for overvoltage and overcurrent In Japan, TT type often adopted for electric power system. Typical example is as figure JB.2. For this TT type, on condition that it shall be an electric power system which does not wired with grounding conductor except neutral line, and it shall be connected with grounding terminal which have an electrically independent different from this grounding terminal of neutral line by user for equipment which need to connect with ground.		N/A

Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	 Grounded electric wire and grounded equipment in particularly Figure JB.2 – Example of three-wire type TT electric power system		
	But as thing are stand, there are a lot of cases that an outlet is not prepared with the grounding terminal which is appropriate in the setting place of the equipment. On the other hand, grounding resistance value of SPD where set at lead-in point of communication line sometime is not enough low, it make that dielectric breakdown was occurred due to the voltage that a thunder surge current evoked for grounding resistance which flow into the communication line and drift to the ground through SPD. The same result is expected that grounding resistance value is not enough low too if set SPD on electric power system. This status is as figure JB.3. As figure JB.1, it can decrease effectively by connecting both with the conductor of the low resistance value when excessive potential difference occurred in internal equipment.		N/A
	 Figure JB.3 - Insufficient grounding and setting environment of bonding (From ITU-T Recommendation K.66:2004)		
	It is desirable that provide the information for set environment which appropriate measures were given based on ITU-T Recommendation K.11:1993 when perform design and sale network connected equipment.		N/A

Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
J 60950-1(H27) TEST REPORT (Deviations from IEC 60950-1:2005+A1:2009) Special National conditions, National deviation and other information according to METI Ordinance No. 85. <i>Japanese unique deviations</i> in J60950-1(H27) (=JIS C 6950-1:2014)			
1.7	Add the following at last paragraph: JA.1: Warning to the shredder JA.3: Disconnected from the power supply of shredder	Added.	N/A
1.7.1.1	In the last paragraph, replace "ISO 7000 or IEC 60417" with "JIS S 0101, ISO 7000 or IEC 60417".	Replaced.	P
1.7.1.2	Replace the existing dashed items for manufacturer's name etc. and for model identification etc. with the following respectively: - manufacturer's (or responsible business operator's) name or trade-mark or identification mark; - manufacturer's (or responsible business operator's) model identification or type reference;	Replaced. Relevant information sees marking label.	P
2.1.1.7	In the last paragraph, delete the under line of "Up to 25pF".	Delete.	N/A
2.6.5.6	In the first paragraph, delete the underline of "Protective bonding terminal and".	Delete.	N/A
2.10.3.3 Table 2L	In the bottom column of Table 2L, delete the underline of fourth paragraph.	Delete.	N/A
4.4.2	Add the following sentence after first paragraph: Household and home/office document/media shredders shall comply with Annex JA.	Added.	N/A
Annex BB	Delete		N/A
CC.2	Replace second dash and fifth dash with the following: - 10 000 cycles of turning enable on and off with a ferrite core inductor having (0.35 ± 0.1) mH inductance at 1 kHz and $\geq 1 \Omega$ d.c. resistance connected in the output circuit; - 10 000 cycles of turning the input pin on and off with a ferrite core inductor having (0.35 ± 0.1) mH inductance at 1kHz and $\geq 1 \Omega$ d.c. resistance connected to the input supply and return while keeping enable active and shorting the output;	Replaced.	N/A

Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
CC.3	Add following "Note" in the end of paragraph: A fuse that complies with IEC 60127-2 should be used for fast-blow fuse.	Added.	N/A
Annex EE	Delete. Replace with Annex JA. Delete the requirements in this annex of corresponding international standard and replace the requirements in this annex with Annex JA .	Delete.	N/A

APPENDIX	Appendix 12 J3000 (H25) Special National conditions, National deviation and other information according to MITI Ordinance No. 85.		--
1	General requirement When equipment provides with appliance inlet complying with JIS C 8283-1(2008), soldered parts of appliance inlet is not applied by force during insert or removal of connector. This is not applied when inlet body is fixed itself and not fixed by solder.	Inlet is fixed by adequate mechanical construction, not rely on soldering.	P
2	Requirement for equipment	See below.	N/A
2.1	Heater Appliances When diode is used in parallel at the power sources for adjustment of power consumption, the equipment shall remain safe for operation under open condition of one diode.	Not apply for.	N/A
	The current rating of one diode shall be more than main current. The diodes connected in parallel are same type.		N/A
	The heating test specified by clause 11 of JIS C 9335-1(2003) and a specified in applicable individual requirements under open condition of one diode of parallel shall comply with the requirements.		N/A
2.2	Electronic heater with glowing heating elements	Not electric stove.	N/A
	Surface treatment by paint or adhesive on protective frame or protective mesh shall not be used.		N/A
	Caution marking like below shall be on -easily visible place of the equipment or -Instruction manual 「注意 当該機器から、使用初期段階で揮発性有機化合物及びカルボニル化合物が最も放散するおそれがあるため、その際には十分換気を行うこと。」		N/A

Attachment No. 2

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3	Components used in equipment	No relevant equipment or component.	N/A
3.1	Motor capacitors used in ventilating fan, electric fan, air conditioner electric washing machine, refrigerator or electric freezer shall be comply with - capacitors with protective elements or protective mechanism complying with JIS C 4908(2007) - P2 capacitor complying with IEC 60252-1(2001) Capacitor complying with below is acceptable enclosed by metal or ceramic		N/A
	Enclosed by metal or ceramic		N/A
	No non-metallic materials within 50 mm from capacitor surface		N/A
	Non-metallic material with 50 mm from capacitor surface comply with needle frame test of JIS 9335-1(2003), Annex E		N/A
	Non-metallic material with 50 mm from capacitor surface comply with V-1 test of JIS C 60965-11-10(2006)		N/A
3.2	Plug directly inserted to outlet used refrigerator or electric freezer. Shall comply with - Face contact with outlet shall have CTI with more than 400 according to JIS C 2134(2007) or - Supporting material of blades shall comply with glow wire test by temperature of 750°C according to JIS C 60695-2-11(2004) or JIS C 60695-2-12(2004). Materials having glow wire frame temperature of 775°C are acceptable.		N/A

Attachment No. 3

Page 1 of 2



PSB Singapore

NEC

MODEL No. NP-NC170yyyy

200-240V ~ 50/60Hz 10.7A

3264634500 XX XX

NEC Display Solutions, Ltd.
 4-28, Mita 1-chome, Minato-ku, Tokyo, Japan
 Made in China.
 THIS CABINET IS CONSTRUCTED OF METAL(AL) and PLASTIC(PC/ABS)

제품명: 프로젝터
 모델명: NP-NC1700L
 제조/국가: 델타 비디오 디스플레이 시스템 (우장) 리미티드 / 중국

입력전력: AC110-240V~, 50/60Hz, 10.8A
 생산일: 일련번호에 표기
 인증 서비스 센터 전화 번호: 080-022-1155 (호성ITX주식회사)
 *본 라벨과 전화번호는 국내 규정 내에서 적절한 목적으로만 사용되어야 합니다.

Tegangan dan Frekuensi: 200-240V~ 50/60Hz Produksi China

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.

Contact address for EMEA
NEC Display Solutions Europe GmbH
 Landshuter Allee 12-14 80637 Munich, Germany

警告

イ。通風孔をふさがないでください。
 内部温度の上昇を招き故障の原因になります。
 ロ。温度の高い場所や湿気の多い場所での使用はさけてください。

注意

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

警告

高圧注意

サービスマン以外の方はトップカバーをあけないでください。内部には高電圧部分が多くあり、万一さわると危険です。

CAUTION

: TO PREVENT ELECTRIC SHOCK, DO NOT OPEN TOP COVER.
 NO USER-SERVICEABLE PARTS INSIDE.

ATTENTION

: AFIN DE PREVENIR UN CHOC ELECTRIQUE NE PAS ENLEVER LE COUVERCLE S'ADRESSER A UN REPARATEUR COMPETENT

HINWEIS

: Zur Vermeidung eines elektrischen Schlages, öffnen Sie das Gehäuse nicht selbst. In diesem Gerät sind keine Teile enthalten, die vom Nutzer gewartet werden können.

ВНИМАНИЕ

: ВО ИЗБЕЖАНИЕ УДАРА ЭЛЕКТРИЧЕСКИМ ТОКОМ НЕ ОТКРЫВАЙТЕ ВЕРХНЮЮ КРЫШКУ. ВНУТРИ НЕТ ДЕТАЛЕЙ, ОБСЛУЖИВАЕМЫХ ПОЛЬЗОВАТЕЛЕМ.

주의

: 전기충격 방지를 위해 캐니닛을 열지 마십시오. 내부에는 사용자를 위한 서비스가능 부품이 들어있지 않습니다.

WARNING

: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

AVERTISSEMENT

: POUR EVITER UN FEU OU UN RISQUE D'ELECTROCUTION NE PAS EXPOSER CET ENSEMBLE A LA PLUIE OU A L'HUMIDITE.

This product complies with performance standards for laser products under 21 CFR Part 1040 except with respect to those characteristics authorized by Variance Number 2015-V-3435 effective on April 7 2016.
 No direct exposure to beam shall be permitted.
 Not for household use.

"The above labels are drafts of artwork for marking plate pending approval by National Certification Bodies and they shall not be affixed to products prior to such an approval".

081-161124-000

Attachment No. 3

Page 2 of 2



PSB Singapore



RISK GROUP 3
WARNING!
DO NOT LOOK INTO THE BEAM.
NO DIRECT EYE EXPOSURE TO THE BEAM IS PERMITTED.
HAZARD DISTANCE : REFER TO THE MANUAL

GROUPE DE RISQUE 3
AVERTISSEMENT !
NE PAS REGARDER DIRECTEMENT DANS LE FAISCEAU.
L'EXPOSITION DIRECTE DES YEUX AU FAISCEAU EST INTERDITE.
DISTANCE À RISQUE : SE REPORTER AU MANUEL

RISIKOGRUPPE 3
WARNUNG!
SCHAUEN SIE NICHT IN DEN STRAHL.
DIREKTER AUGENKONTAKT MIT DEM STRAHL IST NICHT ERLAUBT.
SICHERHEITSABSTAND: SIEHE HANDBUCH

ГРУППА РИСКА 3
ПРЕДУПРЕЖДЕНИЕ!
НЕ СМОТРИТЕ НА ЛУЧ.
ЗАПРЕЩАЕТСЯ ЛЮБОЕ ПРЯМОЕ ВОЗДЕЙСТВИЕ ЛУЧА НА ГЛАЗА.
ОПАСНОЕ РАССТОЯНИЕ: СМ. РУКОВОДСТВО ПО ЭКСПЛУАТАЦИИ

リスクグループ 3
警告!
ビームを見ないこと。
目へのビームの直接被ばくを禁止する。
障害距離: 取扱説明書を参照

위험 그룹 3
경고!
빔을 눈으로 보지 마십시오.
빔을 직접 눈에 노출하는 것은 허용되지 않습니다.
위험 거리: 설명서를 참조하십시오.

风险组别 3
警告!
请勿注视光束。
不允许将眼睛暴露于光束中。
有害距离: 请参阅手册

IEC/EN 62471-5:2015





LASER APERTURE
OUVERTURE DU LASER

For North America

LASER RADIATION
AVOID EYE OR SKIN EXPOSURE TO DIRECT OR
SCATTERED RADIATION

RED	Max. 890 mW	LD, CW 636-642 nm
BLUE	Max. 800 mW	LD, CW 450-460 nm

CLASS 4 LASER PRODUCT
RAYONNEMENT LASER
ÉVITEZ D'EXPOSER LES YEUX OU LA PEAU AUX
RAYONNEMENTS DIRECTS OU DIFFUSÉS

ROUGE	Max. 890 mW	LD, CW 636-642 nm
BLEU	Max. 800 mW	LD, CW 450-460 nm

PRODUIT LASER DE CLASSE 4
IEC 60825-1:2007



LASER
1



レーザー
クラス 1



第 1 类
激光

JIS C 6802: 2014

IEC/EN 60825-1:2014



"The above labels are drafts of artwork for marking plate pending approval by National Certification Bodies and they shall not be affixed to products prior to such an approval".

081-161124-000

Attachment No. 4

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PSB Singapore

Type Designation: NP-NC170yyyy

Report Number: 081-161124-000

Overall View



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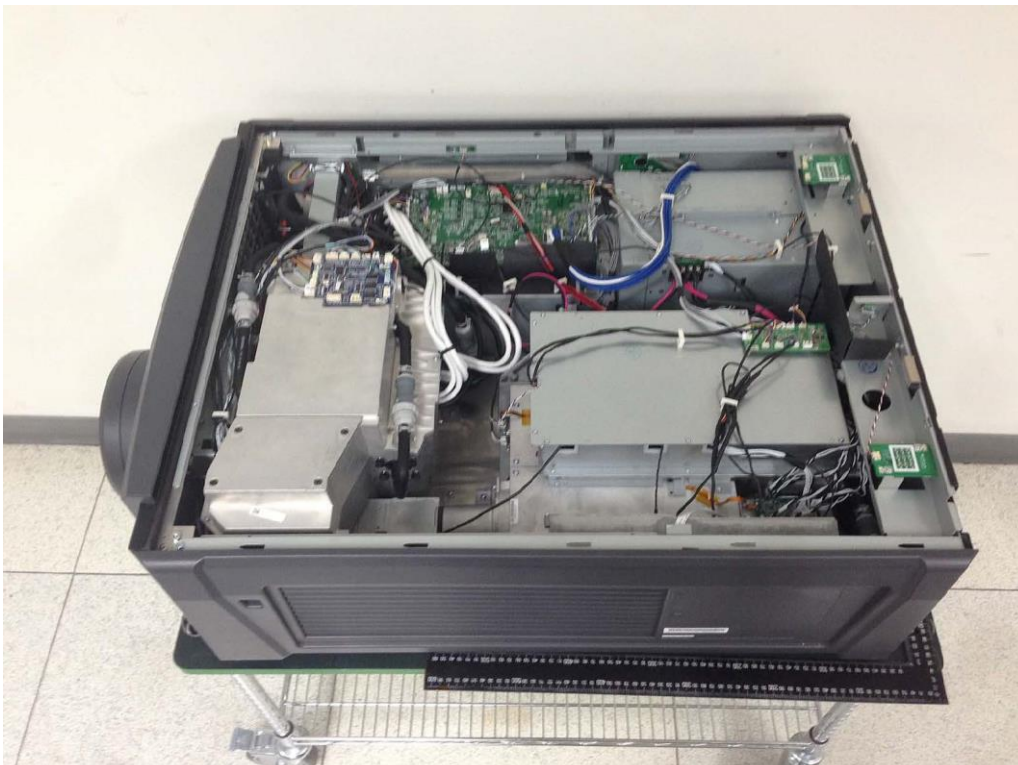
PSB Singapore

Type Designation: NP-NC170yyyy

Report Number: 081-161124-000



Internal View



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PSB Singapore

Type Designation: NP-NC170yyyy

Report Number: 081-161124-000

I/O connector



I/O with optional PCI-E card



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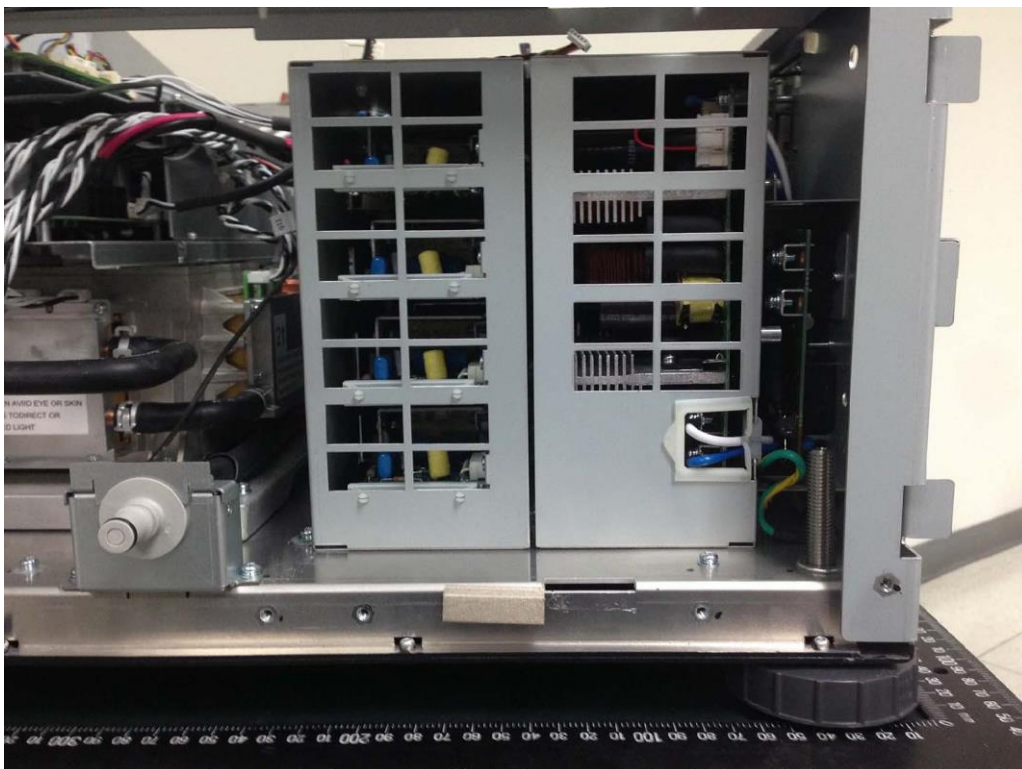
Type Designation: NP-NC170yyyy

Report Number: 081-161124-000

Without top cover



Power board location



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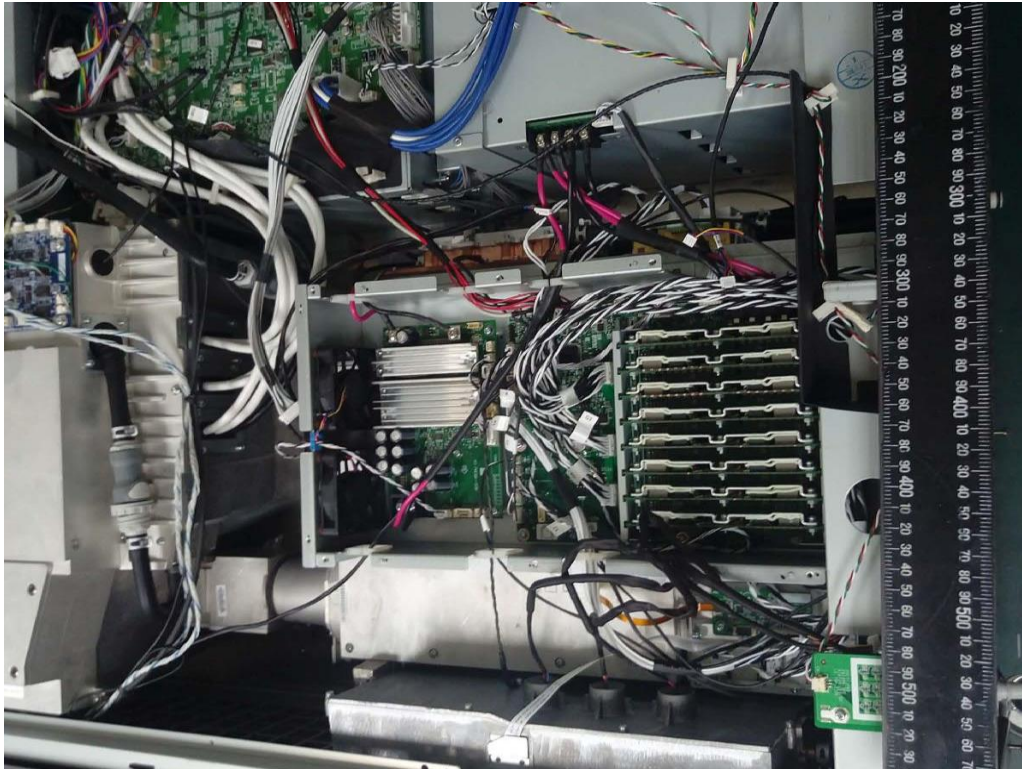


PSB Singapore

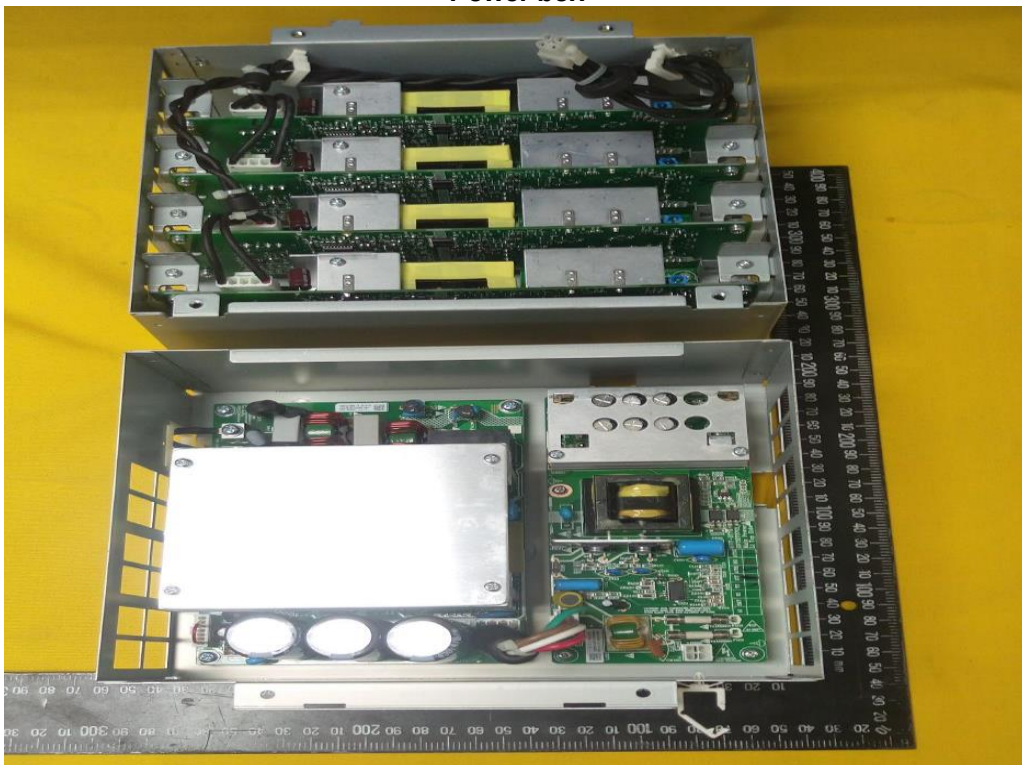
Type Designation: NP-NC170yyyy

Report Number: 081-161124-000

Laser driver board



Power box



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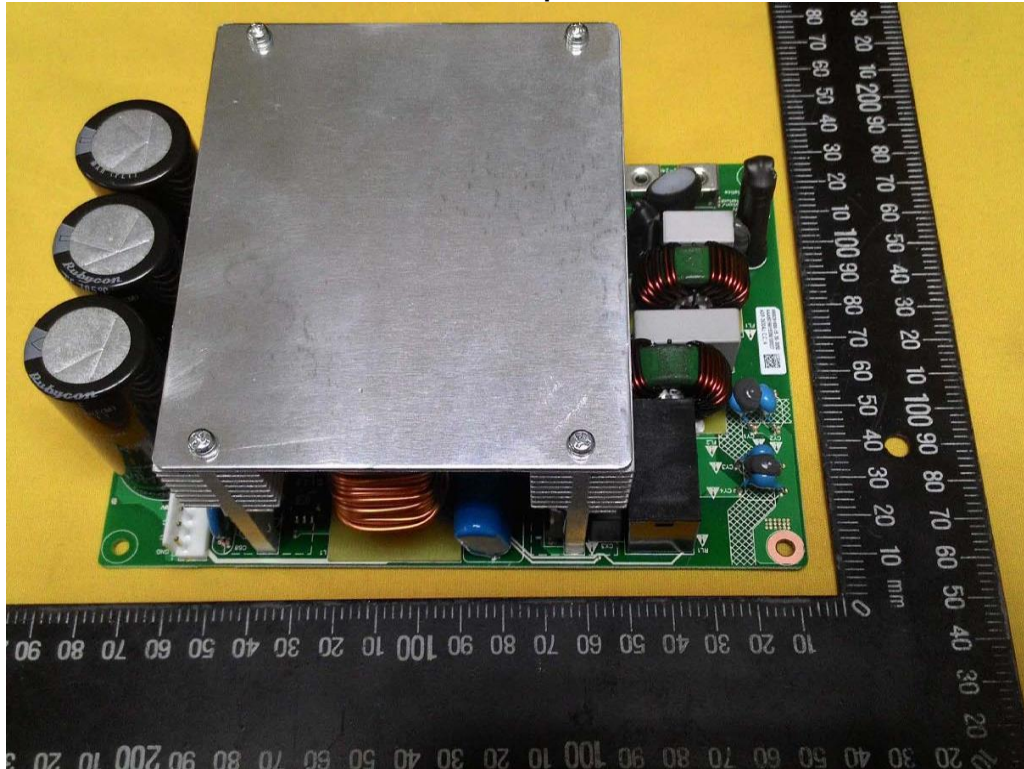


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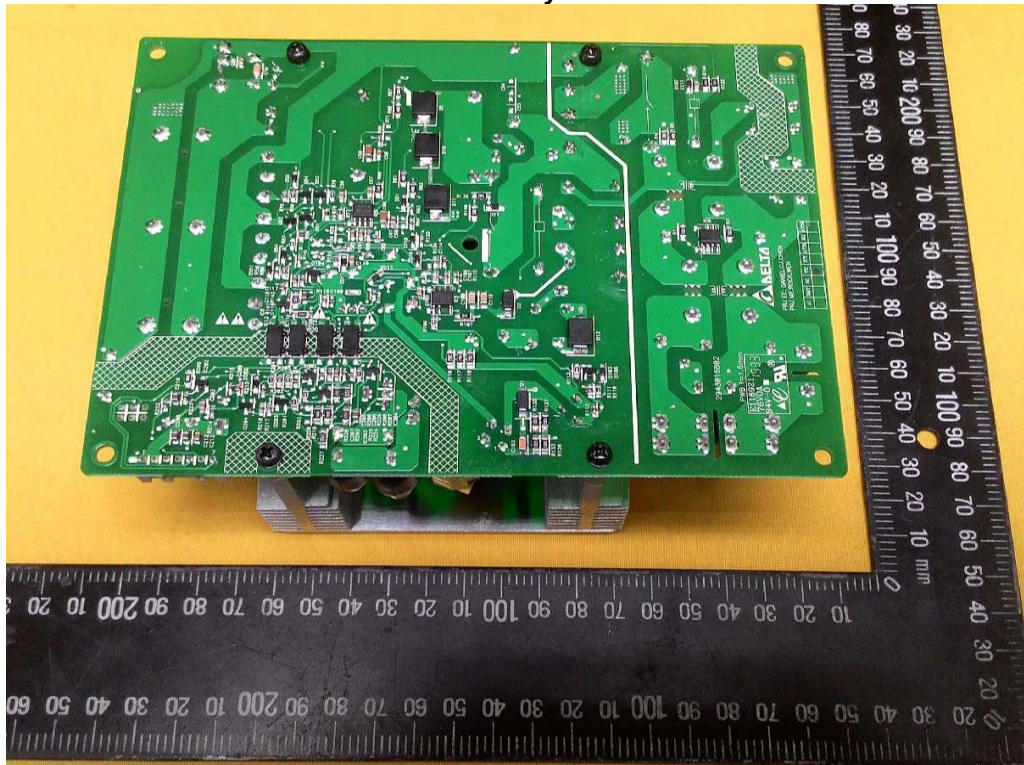
Type Designation: NP-NC170yyyy

Report Number: 081-161124-000

PFC board-component side



PFC board-layout side



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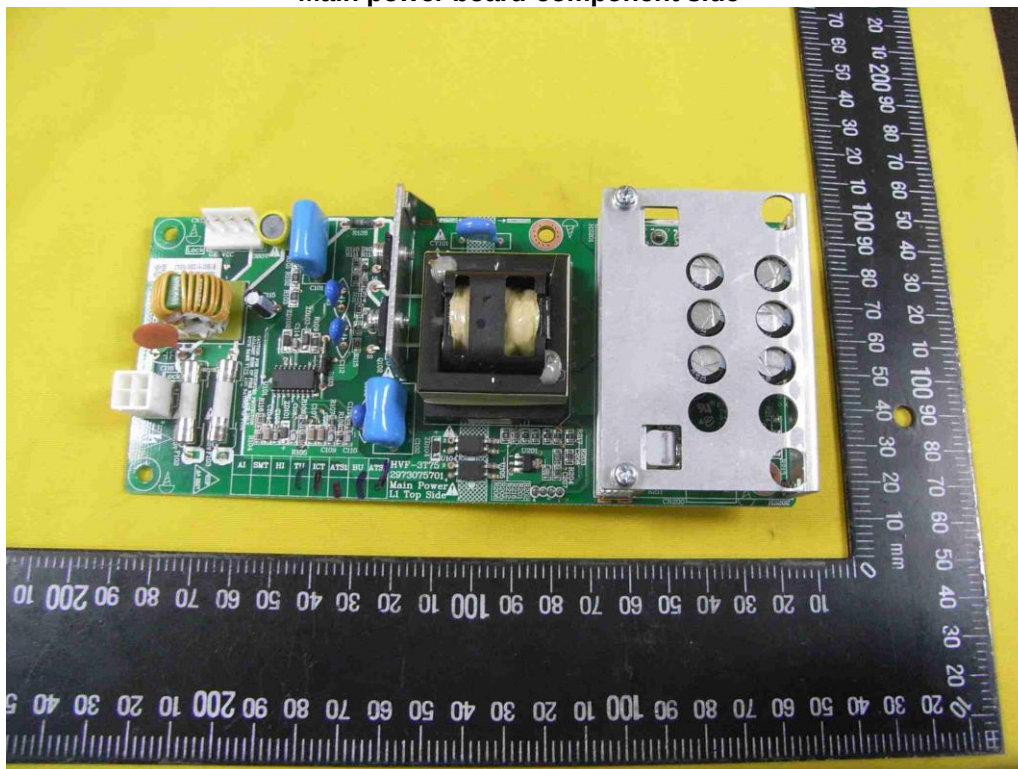


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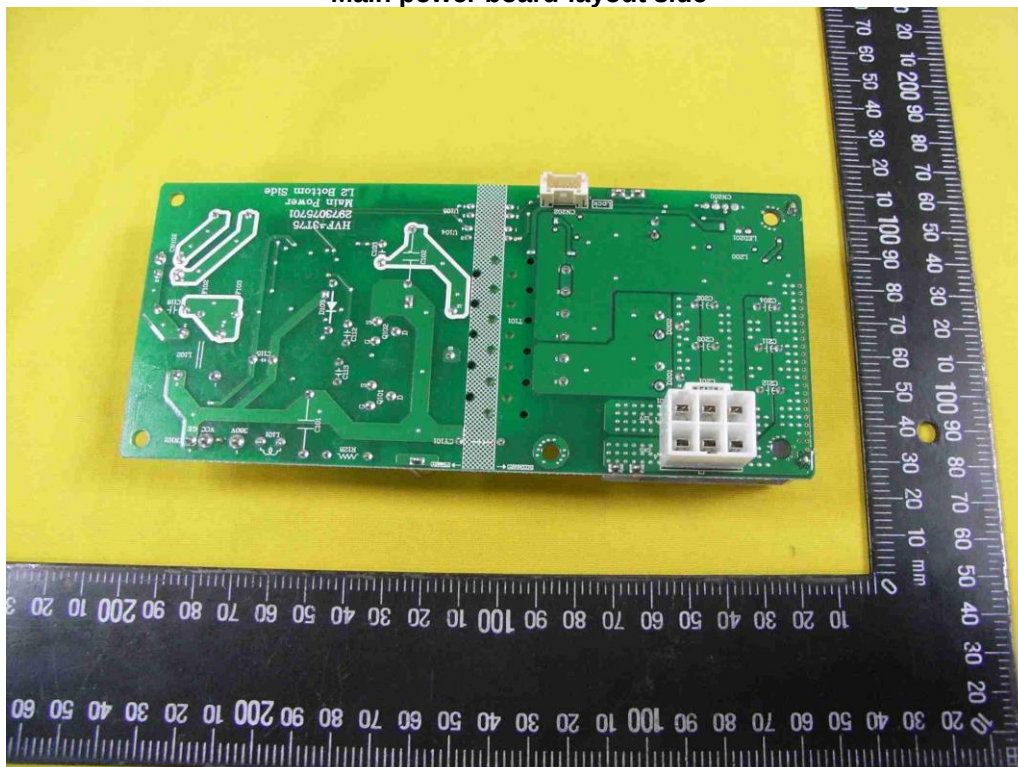
Type Designation: NP-NC170yyyy

Report Number: 081-161124-000

Main power board-component side



Main power board-layout side



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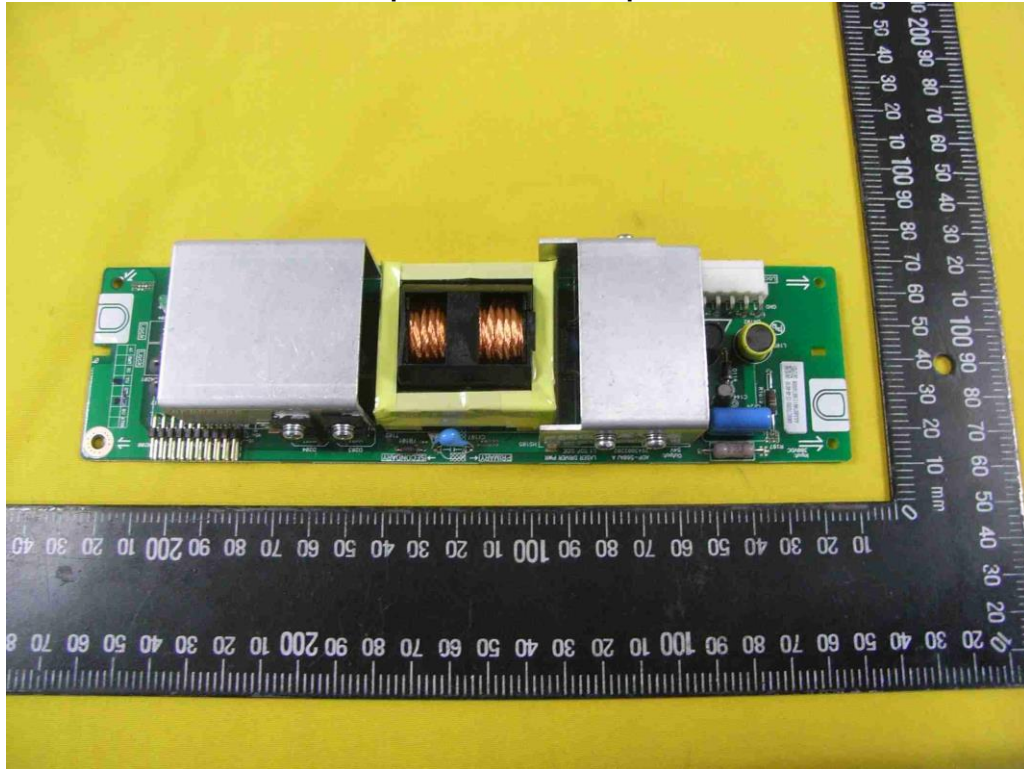


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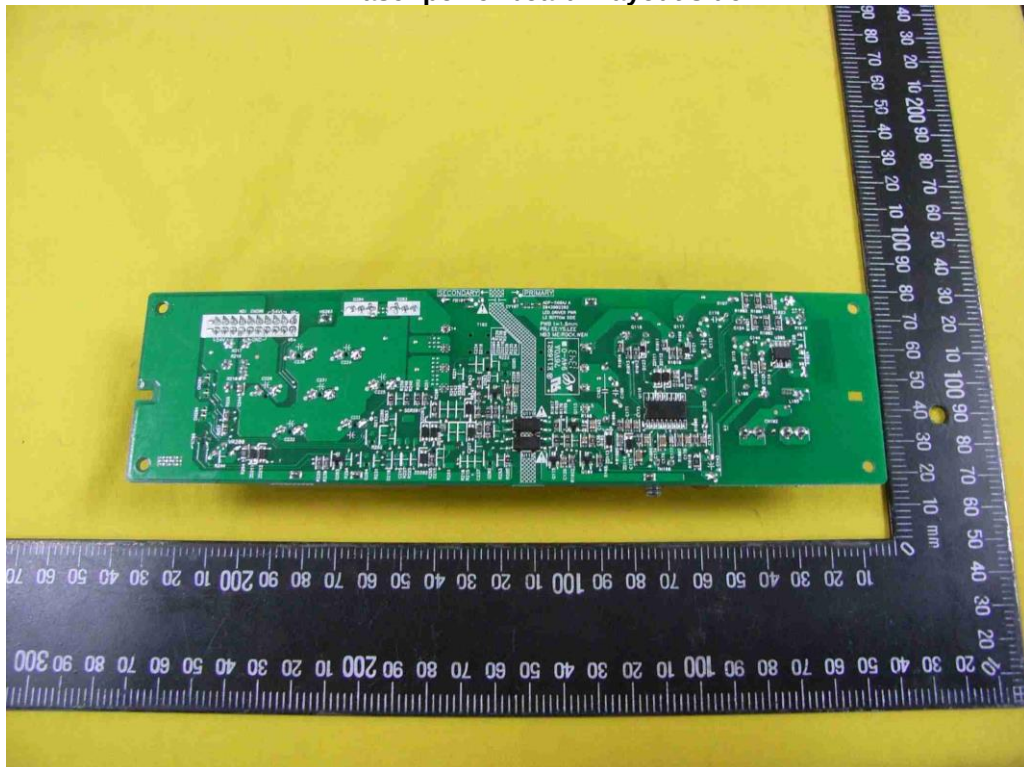
Type Designation: NP-NC170yyyy

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LED laser power board - component side



LED laser power board - layout side



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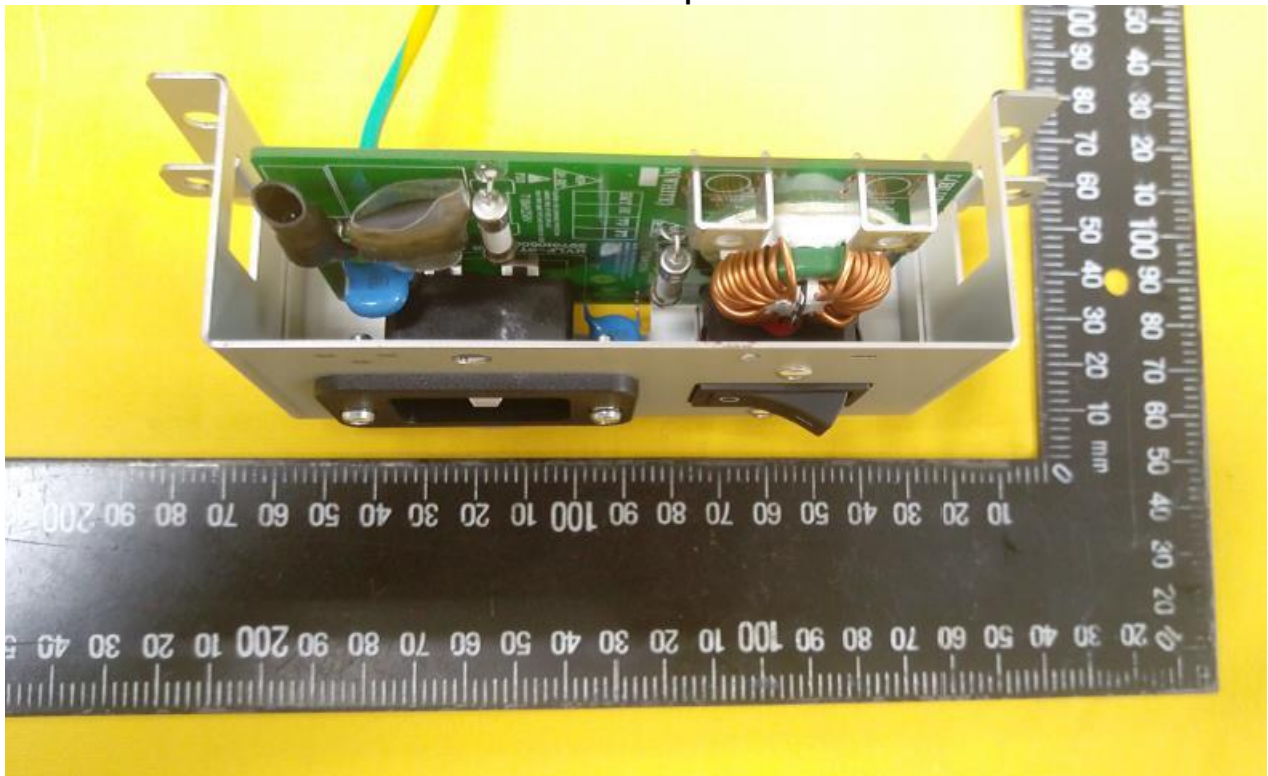


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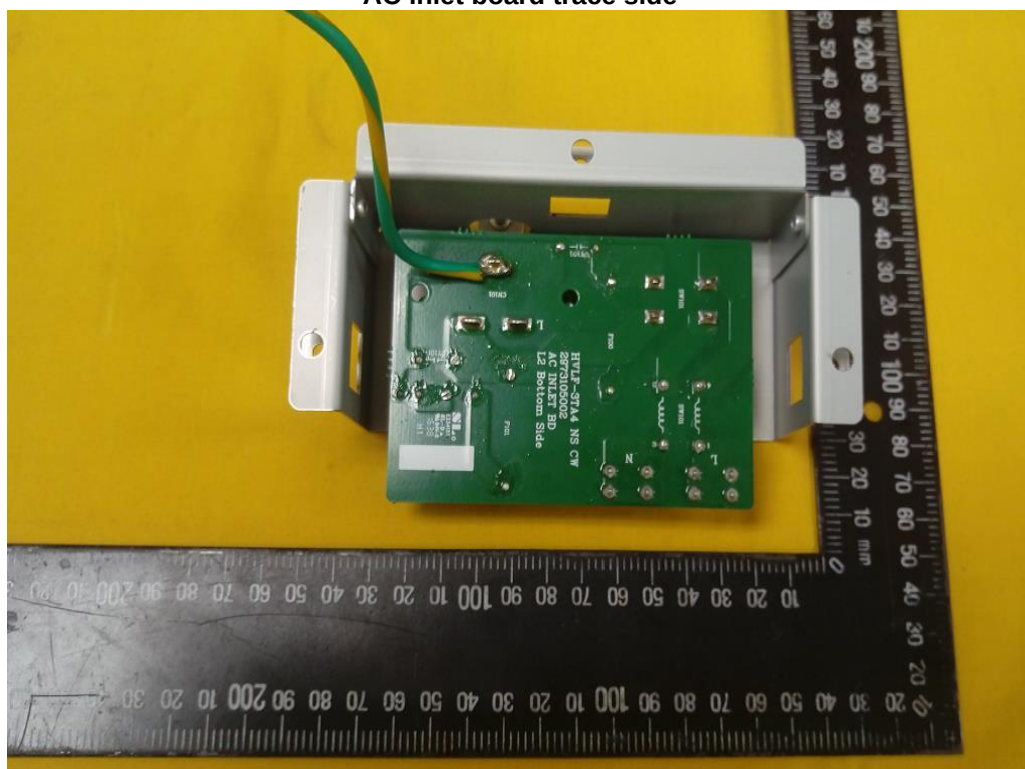
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AC inlet board-component side



AC inlet board trace side



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Formatter board



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Optional PCI-E card-Top



Optional PCI-E card-bottom



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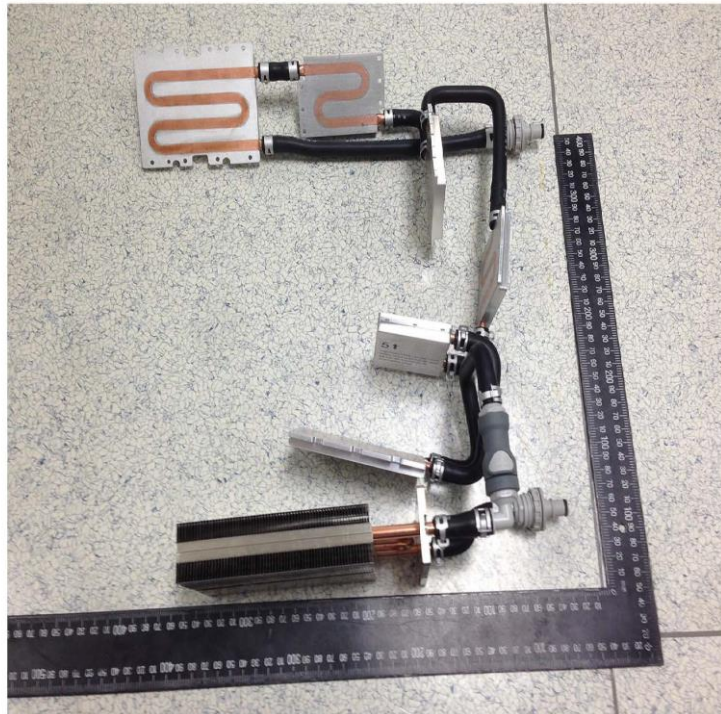


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Type Designation: NP-NC170yyyy

Report Number: 081-161124-000

Liquid Cooling System Module for outside chiller



Liquid Cooling System Module for inside chiller

