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TEST REPORT

IEC 60950-1
Information technology equipment – Safety – Part 1: General requirements

Report Number. .....:	171200473SHA-001
Date of issue .....:	2019-02-21
Total number of pages.....	147
Applicant's name.....:	GLOBTEK INC
Address .....:	186 VETERANS DRIVE NORTHVALE, NJ 07647 USA
Test specification:	
Standard .....:	IEC 60950-1:2005 (Second Edition) + A1:2009 + A2:2013
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.
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Test item description .....:	ITE POWER SUPPLY
Trade Mark .....:	GlobTek, Inc. (GlobTek)
Manufacturer.....:	Same as applicant
Model/Type reference .....:	GT*41061-*** (Refer to page 7 for details.)
Ratings .....:	Input: 100-240V~, 50-60Hz, 0.6A Output: Refer to page 7 for details.

Testing procedure and testing location:			
☒	**CB Testing Laboratory:**	Intertek Testing Services Shanghai	
Testing location/ address.....:		Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA	
☐	**Associated CB Testing Laboratory:**		
Testing location/ address.....:			
Tested by (name + signature).....:		Frank Zhu (Engineer)	Frank Zhu
Approved by (name + signature).....:		Jacky Shu (Mandated Reviewer)	
☐	**Testing procedure: TMP/CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name + signature).....:			
Approved by (name + signature).....:			
☐	**Testing procedure: WMT/CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name + signature).....:			
Approved by (name + signature).....:			
☐	**Testing procedure: SMT/CTF Stage 3 or 4:**		
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name + signature).....:			
Approved by (name + signature).....:			
Supervised by (name + signature).....:			

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

Page 54-73: European group differences and national differences
Page 74-78: National differences for Canada
Page 79-84: National differences for China
Page 85: National differences for Korea
Page 86-108: National differences for Japan
Page 102-106: National differences for USA
Page 107-115: National differences for Australia and New Zealand
Page 116-140: Plug portion evaluation sheet according to EN 50075/AS/NZS 3112/NEMA 1-15P/BS1363.
Page 141: Mechanical durability test for non-standard interchangeable plug adapters according IEC 61984.
Page 142-147: Photograph

Summary of testing:

All tests are performed and the most disadvantageous results are recorded. We conclude that the appliances comply with this standard.

Tests performed (name of test and test clause):	**Testing location:**
See test report The sample tested complies with the requirements of IEC 60950-1:2005 (Second Edition) + A1:2009 + A2:2013 and EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013.	Intertek Testing Services Shanghai Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA

Summary of compliance with National Differences:

List of countries addressed:
The test report covers group- and national differences for the CENELEC countries.
The national differences for USA and Canada has been checked according to IEC 60950-1 2nd ed +Am1+Am2.
The national differences for Japan and Korea have been checked according to IEC 60950-1 2nd ed +Am1.
The national differences for Australia/New Zealand and China have been checked according to IEC 60950-1 2nd ed.
Only EU, AU, US and UK plug are tested, other plugs should be evaluated when national approval.

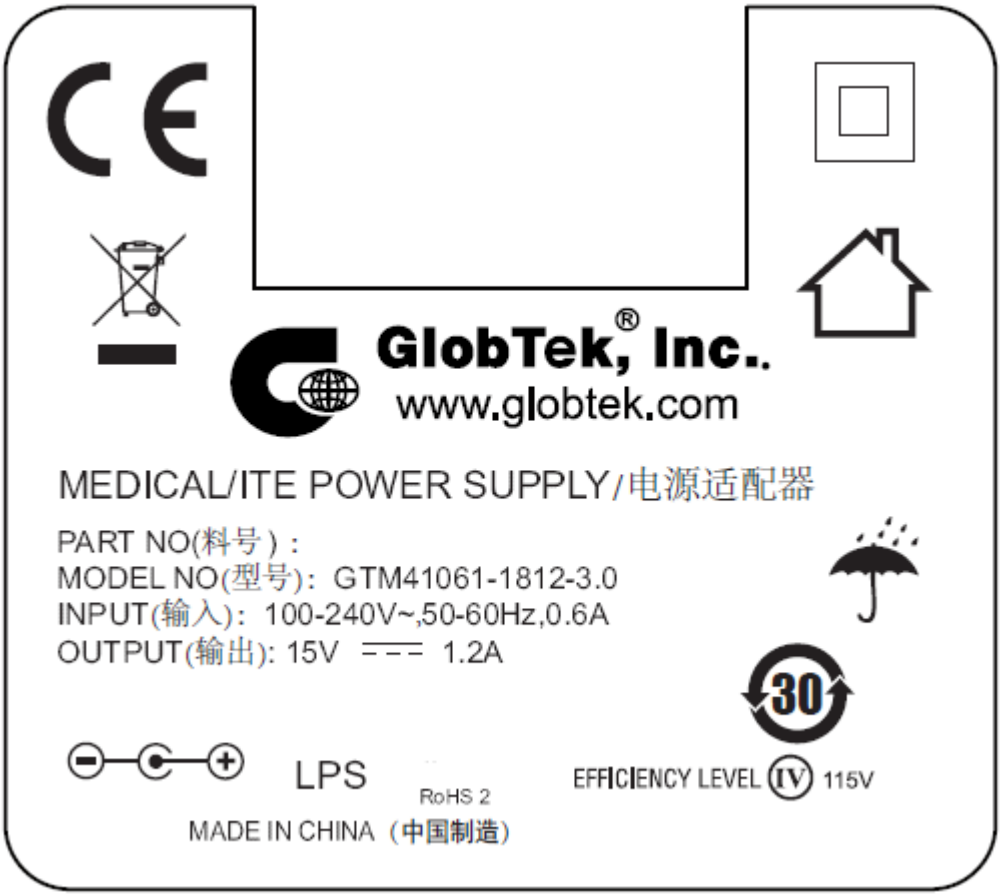
☒ The product fulfils the requirements of IEC 60950-1:2005 (Second Edition) + A1:2009 + A2:2013 and EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013.

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.

(Additional requirements for markings. See 1.7 NOTE)

Note: The marking plates of the other models listed in this report are identical with below except model name and output parameter.



Test item particulars.....:	
Equipment mobility.....:	[] movable [] hand-held [] transportable [] stationary [] for building-in [x] direct plug-in
Connection to the mains.....:	[x] pluggable equipment [x] type A [] type B [] permanent connection [] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition.....:	[x] continuous [] rated operating / resting time:
Access location .....:	[x] operator accessible [] restricted access location
Over voltage category (OVC) .....:	[] OVC I [x] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values .....:	±10%
Tested for IT power systems .....:	[] Yes [x] No
IT testing, phase-phase voltage (V) .....:	N/A
Class of equipment .....:	[] Class I [x] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	16A (20A for US and Canada)
Pollution degree (PD) .....:	[] PD 1 [x] PD 2 [] PD 3
IP protection class .....:	IP20
Altitude during operation (m) .....:	Max. 3000
Altitude of test laboratory (m) .....:	Max. 50
Mass of equipment (kg) .....:	Approx. 0.085kg
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 .....:	2017-12-18
Date (s) of performance of tests.....:	2017-12-20 to 2017-12-29

General remarks:
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 testing laboratory." (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.** **Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.** This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. GTM41061-1812-7.0, GTM41061-1818-3.0, GTM41061-1824 and GTM41061-1830 were tested as typical model for all tests as they contain all the relevant critical components and rated highest output current and power for each model of transformer. Tests for integral plug were performed on each plug portion. Constructional requirements with regard to the protection against electric shock and devices forming a part of the mains plug were also checked on the models listed above. PDSH 1062 is considered. Connector of the interchangeable plug adapter is tested with appliance. The relevant mechanical durability is evaluated according to IEC 61984. The samples submitted from for evaluation are representative of the products from each factory.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☒ **Yes** ☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	1. GLOBTEK INC 186 VETERANS DRIVE NORTHVALE, NJ 07647 USA 2. GlobTek (Suzhou) Co., Ltd. Building 4, No.76 JinLing East Road, Suzhou Industrial Park, Suzhou JiangSu, 215021, China

General product information:

Product covered by this report is ITE power supply module.
The device is direct plug-in power adapter with interchangeable plug portion, which is Class II apparatus. It can be used with different plug types. The evaluation sheets of the different plug types are also attached within this report. Two pieces of outer enclosure are enclosed by ultrasonic welding without screw.
All the types are designed for continuous operation.
The maximum operating temperature of models with output current greater than 3A is 30°C.
The maximum operating temperature of models with output current not greater than 3A is 40°C.

Model Similarity:

GT*41061-***
The 1st "*" part can be 'M' or '-' or 'H' for market identification and not related to safety.
The 2nd "*" part denotes the rated output wattage designation, which can be "01" to "18", with interval of 1.
The 3rd "*" part denotes the standard rated output voltage designation, which can be "12", "18", "24" or "30". These standard rated output voltage designations correspond to four isolated transformer models. Each transformer model is identical in insulation construction including clearance and creepage except number of turns per coil.
The 4th "*" part is optional, which can be "-0.1" to "-7.0" with interval of 0.1 to denote voltage deviation or blank to indicate no voltage different. The result by subtracting the deviation value from the standard rated output voltage denotes the rated output voltage, with a range of 5 - 30 volts. The standard rated output voltage is separately 12V, 18V, 24V and 30V.

model list

Model	Rated output voltage range	Max. rated output current	Max. rated output power	Transformer designation	Typical model
GT*41061-*12*	5-12Vdc	3.6A	18W	TF001	GTM41061-1812-7.0
GT*41061-*18*	12.1-18Vdc	1.49A	18W	TF002	GTM41061-1818-3.0
GT*41061-*24*	18.1-24Vdc	1.0A	18W	TF003	GTM41061-1824
GT*41061-*30*	24.1-30Vdc	0.75A	18W	TF004	GTM41061-1830

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
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components		P
1.5.3	Thermal controls		N/A
1.5.4	Transformers	See Annex C	P
1.5.5	Interconnecting cables		P
1.5.6	Capacitors bridging insulation	Comply with IEC 60384-14	P
1.5.7	Resistors bridging insulation		N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors	See Annex Q	P
1.5.9.1	General		P
1.5.9.2	Protection of VDRs		P
1.5.9.3	Bridging of functional insulation by a VDR		P
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A
1.6	**Power interface**		P
1.6.1	AC power distribution systems		P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor		P
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated voltage(s) or voltage range(s) (V) ..... :	See marking plate.	P
	Symbol for nature of supply, for d.c. only ..... :		N/A
	Rated frequency or rated frequency range (Hz) ... :	See marking plate.	P
	Rated current (mA or A) ..... :	See marking plate.	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark ..... :	See marking pages.	P
	Model identification or type reference ..... :	See marking pages.	P
	Symbol for Class II equipment only ..... :	See marking pages.	P
	Other markings and symbols ..... :	Additional symbols or marking do not give rise to misunderstanding.	P
1.7.1.3	Use of graphical symbols		P
1.7.2	Safety instructions and marking		P
1.7.2.1	General		P
1.7.2.2	Disconnect devices		P
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment ..... :		N/A
	Methods and means of adjustment; reference to installation instructions ..... :		N/A
1.7.5	Power outlets on the equipment ..... :		N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....:	F1 & F2, "T2A/250V" is marked adjacent to it.	P
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals.....:		N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking .....:		N/A
1.7.8.2	Colours .....:	The LED is illuminated when the EUT is operating and colour is only used for functional indicator:	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
		Green – Operation condition Off – Off condition	
1.7.8.3	Symbols according to IEC 60417.....:	The IEC 60417 No. 5009 is marked near the stand-by switch.	P
1.7.8.4	Markings using figures .....:		N/A
1.7.9	Isolation of multiple power sources .....:		N/A
1.7.10	Thermostats and other regulating devices .....:		N/A
1.7.11	Durability		P
1.7.12	Removable parts		P
1.7.13	Replaceable batteries .....:		N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations.....:		N/A
2	**PROTECTION FROM HAZARDS**		P
2.1	**Protection from electric shock and energy hazards**		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts		P
	Test by inspection ..... :	Operator can not contact with any parts with only basic insulation to ELV or hazardous voltage.	P
	Test with test finger (Figure 2A) ..... :		N/A
	Test with test pin (Figure 2B) ..... :		N/A
	Test with test probe (Figure 2C) ..... :		N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards ..... :	(see appended tables 2.1.1.5)	P
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		P
	Measured voltage (V); time-constant (s)..... :	$V_{t=1sec}$=36V; τ=48ms	—
2.1.1.8	Energy hazards – 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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.9	Audio amplifiers ..... :		N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A
2.2	**SELV circuits**		P
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V) ..... :	All accessible voltages are less than 42.4 Vp or 60 V dc and are classified as SELV.	P
2.2.3	Voltages under fault conditions (V) ..... :	Under fault conditions voltage never exceed 71 Vp and 120 Vdc and do not exceed 42.4 Vp or 60 Vdc for more than 0.2 sec.	P
2.2.4	Connection of SELV circuits to other circuits ..... :	SELV circuits intend to be connected to SELV circuits only.	P
2.3	**TNV circuits**		N/A
2.3.1	Limits	No TNV circuits	N/A
	Type of TNV circuits..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed..... :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	**Limited current circuits**		P
2.4.1	General requirements		P
2.4.2	Limit values	0.7 mA	P
	Frequency (Hz) ..... :	-	—
	Measured current (mA)..... :	0.064mA	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured voltage (V)..... :	32mV	—
	Measured circuit capacitance (nF or µF) ..... :	CY1, CY2: 1000pF	—
2.4.3	Connection of limited current circuits to other circuits		P
2.5	**Limited power sources**		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		P
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output		—
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A) .:		—
2.6	**Provisions for earthing and bonding**		N/A
2.6.1	Protective earthing	Class II equipment	N/A
2.6.2	Functional earthing		N/A
	Use of symbol for functional earthing .....:		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG..... :		—
2.6.3.3	Size of protective bonding conductors		N/A
	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)..... :		N/A
2.6.3.5	Colour of insulation ..... :		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		P
2.7.1	Basic requirements		P
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection		P
2.7.4	Number and location of protective devices ..... :	1, Line	P
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles	No such device.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Natural rubber, asbestos or hygroscopic materials are not used.	N/A
2.9.2	Humidity conditioning	Humidity treatment performed for 168 h per client's request.	P
	Relative humidity (%), temperature (°C) ..... :	93 %, 40℃	—
2.9.3	Grade of insulation		P
2.9.4	Separation from hazardous voltages		P
	Method(s) used ..... :	Method 1.	—

2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General		P
2.10.1.1	Frequency .....:	61.49kHz	P
2.10.1.2	Pollution degrees .....:	Pollution degree 2	P
2.10.1.3	Reduced values for functional insulation		P
2.10.1.4	Intervening unconnected conductive parts		P
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		P
2.10.2.1	General		P
2.10.2.2	RMS working voltage		P
2.10.2.3	Peak working voltage		P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply .....:	Overvoltage Category II	P
	b) Earthed d.c. mains supplies .....:		N/A
	c) Unearthed d.c. mains supplies .....:		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	d) Battery operation .....:		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply .....:		N/A
2.10.3.7	Transients from d.c. mains supply .....:		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....:		N/A
2.10.3.9	Measurement of transient voltage levels		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		P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests .....:	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation		P
2.10.5.1	General		P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices	Approved optocoupler.	P
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General	The thin sheet materials of polyester tape used in transformers.	P
2.10.5.7	Separable thin sheet material		P
	Number of layers (pcs) .....:	(see appended table 2.10.5)	—
2.10.5.8	Non-separable thin sheet material		P
2.10.5.9	Thin sheet material – standard test procedure		P
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		P
	Electric strength test	(see appended table 2.10.5)	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.11	Insulation in wound components		P
2.10.5.12	Wire in wound components		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 .....:	Approved triple insulated winding wire used.	P
	Two wires in contact inside wound component; angle between 45° and 90° .....:	Additional insulation tape is used.	P
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	Bobbin between the winding and core	P
	Working voltage .....:	(see appended table)	P
	- Basic insulation not under stress .....:		N/A
	- Supplementary, reinforced insulation .....:	(see appended table)	P
2.10.6	Construction of printed boards		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		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs).....:		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints	Approved optocouplers (U1) (see appended table 1.5.1)	P
2.10.12	Enclosed and sealed parts		N/A
3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	**General**		P
3.1.1	Current rating and overcurrent protection		P
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring		P
3.1.4	Insulation of conductors		P
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors	All conductors are reliably secured by use of solder-pins or glue or other mechanical fixing means.	P
	10 N pull test		P
3.1.10	Sleeving on wiring		N/A
3.2	**Connection to a mains supply**		P
3.2.1	Means of connection		P
3.2.1.1	Connection to an a.c. mains supply	Mains plug that is part of Direct Plug-in Equipment.	P
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) ..... :		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type ..... :		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
3.2.5.2	DC power supply cords		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) ..... :		—
	Radius of curvature of cord (mm) ..... :		—
3.2.9	Supply wiring space		N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) ..... :		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) ..... :		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		P
3.4.1	General requirement		P
3.4.2	Disconnect devices	The appliance plug is considered to be the disconnect device.	P
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		P
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	**Interconnection of equipment**		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits ..... :	Interconnection circuits of SELV through the output connectors. No ELV interconnection circuits.	P
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		N/A
4	**PHYSICAL REQUIREMENTS**		P
4.1	**Stability**		N/A
	Angle of 10°		N/A
	Test force (N) ..... :		N/A
4.2	**Mechanical strength**		P
4.2.1	General		P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N	10N applied to components. No hazard.	P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	250N applied to all sources of plastic enclosure. No hazard.	P
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm) ..... :	1000mm	P
4.2.7	Stress relief test	7h,70 °C	P
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :		N/A
4.3	**Design and construction**		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N) .....:		N/A
4.3.3	Adjustable controls		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 and heat shrinkable tubing are used.	P
4.3.5	Connection by plugs and sockets	Only specific interchangeable plugs can be used. They are all tested with appliance.	P
4.3.6	Direct plug-in equipment	See the appendix.	P
	Torque ..... :	0.038N m	—
	Compliance with the relevant mains plug standard ..... :	See the appendix.	P
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids ..... :		N/A
	Quantity of liquid (l) ..... :		N/A
	Flash point (°C) ..... :		N/A
4.3.13	Radiation		P
4.3.13.1	General		P
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) ..... :		—
	Measured high-voltage (kV) ..... :		—
	Measured focus voltage (kV) ..... :		—
	CRT markings ..... :		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification ..... :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		P
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class ..... :		—
4.3.13.5.2	Light emitting diodes (LEDs)	Indicating LED used.	—
4.3.13.6	Other types ..... :		N/A
4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas ..... :		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations ..... :		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)……:		N/A
	Is considered to cause pain, not injury. b) ……..:		N/A
	Considered to cause injury. c) ……:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……..:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ……..:		N/A
4.5	**Thermal requirements**		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L ..... :	(See annex L)	—
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 ..... :	(see appended table 4.5.5)	P
4.6	**Openings in enclosures**		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.6.1	Top and side openings		P
	Dimensions (mm) ..... :	No openings.	—
4.6.2	Bottoms of fire enclosures		P
	Construction of the bottomm, dimensions (mm) .. :	No openings.	—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in 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		N/A
	Conditioning temperature (°C), time (weeks) ..... :		—
4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 used.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	Fire enclosure is provided.	P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures	Min. V-1 material is used.	P
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Bobbin: V-0; PCB: min.V-1	P
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		P
5.1	**Touch current and protective conductor current**		P
5.1.1	General		P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		P
5.1.4	Application of measuring instrument		P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V) ..... :	(see appended table 5.1)	—
	Measured touch current (mA) ..... :	(see appended table 5.1)	—
	Max. allowed touch current (mA) ..... :	(see appended table 5.1)	—
	Measured protective conductor current (mA) ..... :	(see appended table 5.1)	—
	Max. allowed protective conductor current (mA) .. :	(see appended table 5.1)	—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General ..... :		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports ..... :		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	**Electric strength**		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	(see appended table 5.2)	P
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.2	Motors		N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation ..... :	Method a) & b) & c). Short Circuit tests, result see appended table 5.3.	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE ..... :		N/A
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests		P
5.3.9.2	After the tests		P
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	**Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment**		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		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 ..... :		—

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

7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	**General**		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)..... :		—
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

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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Manufacturer ..... :	See the table 1.5.1.	—
	Type ..... :	See the table 1.5.1.	—
	Rated values ..... :	See the table 1.5.1.	—
	Method of protection ..... :	Protective circuits.	—
C.1	**Overload test**	(see appended table 5.3)	P
C.2	**Insulation**	(see appended table 5.3)	P
	Protection from displacement of windings ..... :	The end turns are reliably fixed by tape, the whole transformer varnished (See appended table1.5.1)	P
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		P
D.1	**Measuring instrument**		P
D.2	**Alternative measuring instrument**		N/A
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		P
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	**Clearances**		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	**Determination of mains transient voltage (V)**		N/A
G.2.1	AC mains supply ..... :		N/A
G.2.2	Earthed d.c. mains supplies ..... :		N/A
G.2.3	Unearthed d.c. mains supplies ..... :		N/A
G.2.4	Battery operation ..... :		N/A
G.3	**Determination of telecommunication network transient voltage (V) ..... :**		N/A
G.4	**Determination of required withstand voltage (V)**		N/A
G.4.1	Mains transients and internal repetitive peaks .... :		N/A
G.4.2	Transients from telecommunication networks ..... :		N/A
G.4.3	Combination of transients		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.4	Transients from cable distribution systems		N/A
G.5	**Measurement of transient voltages (V)**		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	**Determination of minimum clearances .....:**		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		N/A
	Metal(s) used .....:		—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) .....:		N/A
K.3	Thermostat endurance test; operating voltage (V) .....:		N/A
K.4	Temperature limiter endurance; operating voltage (V) .....:		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A

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

M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) ..... :		—
M.3.1.2	Voltage (V) ..... :		—
M.3.1.3	Cadence; time (s), voltage (V) ..... :		—
M.3.1.4	Single fault current (mA) ..... :		—
M.3.2	Tripping device and monitoring voltage ..... :		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) ..... :		N/A

N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

P	**ANNEX P, NORMATIVE REFERENCES**		—

Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		P
	- Preferred climatic categories ..... :	See table 1.5.1	P
	- Maximum continuous voltage ..... :	See table 1.5.1	P
	- Combination pulse current ..... :	See table 1.5.1	P
	Body of the VDR Test according to IEC60695-11-5.....:		N/A
	Body of the VDR. Flammability class of material (min V-1).....:	V-1	P

R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
			—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		P
		Approved triple insulated winding wire used.	—
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		P
V.1	Introduction		P
V.2	TN power distribution systems		P
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		P
X.1	Determination of maximum input current		P
X.2	Overload test procedure		P
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
Y.1	Test apparatus ..... :		N/A
Y.2	Mounting of test samples ..... :		N/A
Y.3	Carbon-arc light-exposure apparatus ..... :		N/A
Y.4	Xenon-arc light exposure apparatus ..... :		N/A
Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**		P

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

AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**	N/A

BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**	—

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

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

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

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

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])
PCB	WALEX ELECTRONIC (WUXI) CO LTD	T2A, T2B, T4, T2	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	UL E154355 Tested with appliance
Alt.	PACIFIC WIN INDUSTRIAL LTD	PW-02, PW-03	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	UL E228070 Tested with appliance
Alt.	DONGGUAN HE TONG ELECTRONICS CO LTD	CEM1	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	UL E243157 Tested with appliance
Alt.	CHEERFUL ELECTRONIC	03, 03A	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	UL E199724 Tested with appliance
Alt.	DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	UL E251754 Tested with appliance
Alt.	SUZHOU CITY YILIHUA ELECTRONICS CO LTD	YLH-1	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	UL E251781 Tested with appliance
Alt.	DAFENG AREX ELECTRONICS TECHNOLOGY CO LTD	02V0, 04V0, 03V0	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	UL E186016 Tested with appliance
Alt.	BRITE PLUS ELECTRONICS (SUZHOU) CO LTD	DKV0-3A, DGV0-3A	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	UL E177671 Tested with appliance
Alt.	SHANGHAI H-FAST ELECTRONICS CO LTD	411001, 211001	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	UL E337862 Tested with appliance
Alt.	Interchangeable	Interchangeable	Min. V-0, min 1.6 mm thickness, 130°C	UL 796：2016	UL Approved.

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

Insulating tape wrapping around the PCB edge (Optional)	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1, 1350T-1	130°C	IEC/EN 60950-1 UL 510	UL E17385 Tested with appliance
Alt.	BONDTEC PACIFIC CO LTD	370S	130°C	IEC/EN 60950-1 UL 510	UL E175868 Tested with appliance
Alt.	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ, CT, WF	130°C	IEC/EN 60950-1 UL 510	UL E165111 Tested with appliance
Alt.	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	130°C	IEC/EN 60950-1 UL 510	UL E246950 Tested with appliance
Alt.	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	130°C	IEC/EN 60950-1 UL 510	UL E246820 Tested with appliance
Fuse (F1, F2) (F2 is optional.)	Conquer Electronics Co., Ltd.	MST	T2A, 250V	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40017118 UL E82636
Alt.	Ever Island Electric Co., Ltd. and Walter Electric	2010	T2A, 250V	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40018781 UL E220181
Alt.	Bel Fuse Ltd.	RST	T2A, 250V	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40011144 UL E20624
Alt.	Cooper Bussmann LLC	SS-5	T2A, 250V	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40015513 UL E19180
Alt.	Das & Sons International Ltd.	385T series	T2A, 250V	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40008524 UL E205718
Alt.	Shenzhen Lanson Electronics Co.	SMT	T2A, 250V	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40012592 UL E221465

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

Alt.	Walter Electronic Co. Ltd.	ICP series	T2A, 250V	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40012824 UL E56092
Insulation tube used on the fuse (Only for fuse ICP model)	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR, RSFR-H, RSFR-HPF	600V, 125°C	IEC/EN 60950-1 UL 224	UL E203950 Tested with appliance
Alt.	QIFURUI ELECTRONICS CO	QFR-h	600V, 125°C	IEC/EN 60950-1 UL 224	UL E225897 Tested with appliance
Alt.	DONGGUAN SALIPT CO LTD	SALIPT S-901-300, SALIPT S-901-600	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	UL E209436 Tested with appliance
Alt.	GUANGZHOU KAIHENG ENTERPRISE GROUP	K-2 (+), K-2 (CB)	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	UL E214175 Tested with appliance
Alt.	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	UL E180908 Tested with appliance
X capacitor (CX1) (optional)	Cheng Tung Industrial Co., Ltd.	CTX	X2, AC310V, Max.0,47µF, 40/110/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40022642 UL E193049
Alt.	Tenta Electric Industrial Co. Ltd.	MEX	X2, AC275V, Max. 0,47µF, 40/100/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 119119 UL E222911
Alt.	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	X2, AC275V, Max. 0,47µF, 40/100/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40015608 UL E183780
Alt.	Okaya Electric Industries	RE series	X2, AC275V, Max. 0,47µF, 55/100/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40028657 UL E47474
Alt.	VISHAY Capacitors Belgium NV	F1772 series	X2, AC310V, Max. 0,47µF, 40/100/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40005079 UL E354331

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

Alt.	Winday Electronic Industries Co., Ltd.	MPX	X2, AC275V, Max. 0,47µF, 40/100/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018071 UL E302125
Alt.	Dain Electronics Co., Ltd.	MPX, MEX, NPX	X2, AC275V, Max. 0,47µF, 40/100/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018798 UL E147776
Alt.	Sinhua Electronics (Huzhou) Co., Ltd.	MPX	X2, AC300V, Max. 0,47µF, 40/100/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40014686 UL E237560
Alt.	Shunde Da Hua Electric Co., Ltd.	HD-MKP series	X2, AC275V, Max. 0,47µF, 40/105/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001126 UL E227157
Alt.	Foshan Shunde Chuang Ge	MKP-X2	X2, AC275V, Max. 0,47µF, 40/105/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40008922 UL E308832
Alt.	Hongzhi Enterprises Ltd.	MPX	X2, AC275V, Max. 0,47µF, 40/100/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40023936 UL E192572
Alt.	Jiangsu Xinghua Huayu Co., Ltd.	MPX	X2, AC275V, Max. 0.47µF, 40/100/21/C	IEC/EN 60384-14	VDE 40022417
Y-Capacitor (CY1, CY2) (optional)	TDK Corporation	CD	Type Y1, max. 1000pF, min. 250V, 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40029780 UL E37861
Alt.	SUCCESS ELECTRONICS CO LTD	SE, SB	Type Y1, max. 1000pF, min. 250V, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40008996 UL E114280
Alt.	MURATA MFG CO LTD	KX	Type Y1, max. 1000pF, min. 250V, 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40002831 UL E37921
Alt.	WALSIN TECHNOLOGY CORP	AH	Type Y1, max. 1000pF, min. 250V, 25/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001804 UL E146544
Alt.	JYA-NAY CO LTD	JN	Type Y1, max. 1000pF, min. 250V, 25/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001831 UL E201384
Alt.	HAOHUA ELECTRONIC CO	CT7	Type Y1, max. 1000pF, min. 250V, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40003902 UL E233106

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

Alt.	HONGZHI ENTERPRISES LTD	Y Series	Type Y1, max. 1000pF, min. 400V, 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40038760 UL E192572
Alt.	JERRO ELECTRONICS CORP	JX-series	Type Y1, max. 1000pF, min. 250V, 40/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032158 UL E333001
Varistor (MOV1) (optional)	JOYIN CO LTD	10N471K, 14N471K	300VAC, 6kV/3kA, 40/85/56 V-1	IEC 61051-2 UL 1449	VDE 005937 UL E325508
Alt.	CENTRA SCIENCE CORP	10D471K, 14D471K	300VAC, 6kV/3kA, 40/85/56 V-1	IEC 61051-2 UL 1449	VDE 40008220 UL E316325
Alt.	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR10471K, TVR14471K	300VAC, 6kV/3kA, 40/85/56 V-1	IEC 61051-2 UL 1449	VDE 005944 UL E314979
Alt.	SUCCESS ELECTRONICS CO LTD	SVR10D471K, SVR14D471K	300VAC, 6kV/3kA, 40/85/56 V-1	IEC 61051-2 UL 1449	VDE 40030401 UL E330256
Alt.	CERAMATE TECHNICAL CO LTD	GNR10D471K, GNR14D471K	300VAC, 6kV/3kA, 40/85/56 V-1	IEC 61051-2 UL 1449	VDE 40031745 UL E315429
Alt.	BRIGHTKING (SHENZHEN) CO LTD	10D471K, 14D471K	300VAC, 6kV/3kA, 40/85/56 V-1	IEC 61051-2 UL 1449	VDE 40027827 UL E327997
Alt.	LIEN SHUN ELECTRONICS CO LTD	10D471K, 14D471K	300VAC, 6kV/3kA, 40/85/56 V-1	IEC 61051-2 UL 1449	VDE 40005858 UL E315524
Alt.	GUANGXI NEW FUTURE INFORMATION INDUSTRY CO LTD	10D471K, 14D471K	300VAC, 6kV/3kA, 40/85/56 V-1	IEC 61051-2 UL 1449	VDE 40030322 UL E323753
Optocoupler (U1)	LITE-ON Technology Corporation	LTV-817	Ext. Cr: min. 8.01 mm; DTI: min. 0.6 mm; Thermal cycling test. Max. operating temp.: 115°C	IEC/EN 60747-5-2 IEC/EN 60950-1 UL 1577	VDE 40015248 Semko No. 1119078 UL E113898

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

Alt.	Everlight Electronics Co., Ltd.	EL817	Ext. Cr: min. 7.7 mm; DTI: min. 0.5 mm; Thermal cycling test. Max. operating temp.: 110°C	IEC/EN 60747-5-2 IEC/EN 60950-1 UL 1577	VDE 132249 Nemko No. P11214765/A1 UL E214129
Alt.	Bright Led Electronics Corp.	BPC-817, BPC-817 M, BPC-817 S	Ext. Cr: min. 7.0 mm; DTI: min. 0.4 mm; Thermal cycling test. Max. operating temp.: 100°C	IEC/EN 60747-5-2 IEC/EN 60950-1 UL 1577	VDE 40007240 Semko No. 813247 UL E236324
Alt.	Fairchild Semiconductor Pte. Ltd.	FOD817B	Ext. Cr: min. 7.8 mm; DTI: min. 0.6 mm; Thermal cycling test. Max. operating temp.: 115°C	IEC/EN 60747-5-2 IEC/EN 60950-1 UL 1577	VDE 40026857 Semko No. 1024922 UL E90700
Transformer (T1)	GlobTek BOAM Haopuwei ENG	TF001, TF002, TF003, TF004	Class E, with critical component listed below	IEC/EN 60950-1	Tested with appliance
-Magnet wire	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWN/U	130°C	IEC/EN 60950-1 UL 1446	UL E201757 Tested with appliance
-Alt.	JUNG SHING WIRE CO LTD	UEW-4, UEY-2	130°C	IEC/EN 60950-1 UL 1446	UL E174837 Tested with appliance
-Alt.	JIANGSU HONGLIU MAGNET WIRE TECHNOLOGY CO LTD	2UEW/130	130°C	IEC/EN 60950-1 UL 1446	UL E335065 Tested with appliance
-Alt.	CHANGZHOU DAYANG WIRE & CABLE CO LTD	2UEW/130	130°C	IEC/EN 60950-1 UL 1446	UL E158909 Tested with appliance
-Alt.	WUXI JUFENG COMPOUND LINE CO LTD	2UEWB	130°C	IEC/EN 60950-1 UL 1446	UL E206882 Tested with appliance

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

-Alt.	JIANGSU DARTONG M & E CO LTD	UEW	130°C	IEC/EN 60950-1 UL 1446	UL E237377 Tested with appliance
-Alt.	SHANDONG SAINT ELECTRIC CO LTD	UEW/130	130°C	IEC/EN 60950-1 UL 1446	UL E194410 Tested with appliance
-Alt.	ZHEJIANG LANGLI ELECTRIC EQUIPMENTS CO LTD	UEW	130°C	IEC/EN 60950-1 UL 1446	UL E222214 Tested with appliance
-Alt.	NINGBO JINTIAN NEW MATERIAL CO LTD	2UEW/130	130°C	IEC/EN 60950-1 UL 1446	UL E227047 Tested with appliance
-Triple-insulated wire (Secondary)	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B)	Min.130°C	IEC/EN 60950-1 UL 2353	UL E211989 Tested with appliance
-Alt.	COSMOLINK CO LTD	TIW-M	Min.130°C	IEC/EN 60950-1 UL 2353	UL E213764 Tested with appliance
-Alt.	FURUKAWA ELECTRIC CO LTD	TEX-E	Min.130°C	IEC/EN 60950-1 UL 2353	UL E206440 Tested with appliance
-Alt.	TOTOKU ELECTRIC CO LTD	TIW-2	Min.130°C	IEC/EN 60950-1 UL 2353	UL E166483 Tested with appliance
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J, T375HF	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	UL E59481 Tested with appliance
-Alt.	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	UL E41429 Tested with appliance
-Alt.	HITACHI CHEMICAL CO LTD	CP-J-8800	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	UL E42956 Tested with appliance
-Insulating tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1, 1350T-1	Min.130°C	IEC/EN 60950-1 UL 510	UL E17385 Tested with appliance
-Alt.	BONDTEC PACIFIC CO LTD	370S	Min.130°C	IEC/EN 60950-1 UL 510	UL E175868 Tested with appliance

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

-Alt.	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ, CT, WF	Min.130°C	IEC/EN 60950-1 UL 510	UL E165111 Tested with appliance
-Alt.	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Min.130°C	IEC/EN 60950-1 UL 510	UL E246950 Tested with appliance
-Alt.	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Min.130°C	IEC/EN 60950-1 UL 510	UL E246820 Tested with appliance
-Pin-out support (PCB material)	DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	Min. V-0, min 1.0 mm thickness, 130°C	IEC/EN 60950-1 UL 796	UL E251754 Tested with appliance
-Alt	Interchangeable	Interchangeable	Min. V-1, min 1.0 mm thickness, min. 130°C	UL 796：2016	UL approved
Line filter (LF1) (Optional)	GlobTek BOAM haopuwei HEJIA ENG	NF00030	Class A	IEC/EN 60950-1	Tested with appliance
Enclosure & Blade holder	SABIC INNOVATIVE PLASTICS B V	SE1X	Min. V-1 at 1.5 mm thickness, 105°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	UL E45329 Tested with appliance
Alt.		C2950	Min. V-0 at 1.5 mm thickness, 75°C		
Alt.		CX7211	Min. V-1 at 1.25 mm thickness, 85°C		
Alt.		945 (GG)	Min. V-0 at 1.5 mm thickness, 120°C		
Alt.	COVESTRO DEUTSCHLAND AG [PC RESINS]	6485	Min. V-0 at 1.5 mm thickness, 115°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	UL E41613 Tested with appliance
Alt.	TEIJIN CHEMICALS LTD	LN-1250P, LN-1250G	Min. V-0 at 1.5 mm thickness, 115°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	UL E50075 Tested with appliance

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

Alt.	SABIC JAPAN L L C	SE1X	Min. V-1 at 1.5 mm thickness, 105°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	UL E207780 Tested with appliance
Alt.		C2950	Min. V-0 at 1.5 mm thickness, 75°C		
Alt.		CX7211	Min. V-1 at 1.25 mm thickness, 85°C		
Alt.		945 (GG)	Min. V-0 at 1.5 mm thickness, 120°C		
Alt.	CHI MEI Corporation	PA-765A	Min. V-1 at 1.5 mm thickness, 80°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	UL E56070 Tested with appliance
Alt.	CHI MEI Corporation	PC-540	Min. V-0 at 1.5 mm thickness, 80°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	UL E56070 Tested with appliance

Supplementary information:

1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.

For all transformers and all filters under all manufacturers.

1.5.1	TABLE: Opto Electronic Devices	P

Manufacturer ..... :	see appended table 1.5.1
Type ..... :	see appended table 1.5.1
Separately tested ..... :	see appended table 1.5.1
Bridging insulation ..... :	see appended table 1.5.1
External creepage distance ..... :	see appended table 1.5.1
Internal creepage distance ..... :	see appended table 1.5.1
Distance through insulation ..... :	see appended table 1.5.1
Tested under the following conditions ..... :	see appended table 1.5.1
Input ..... :	-
Output ..... :	-

supplementary information

*** Compliance with thermal cycling test was checked on these parts.**

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

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
Model: GTM41061-1812-7.0						
90Vac	0.472	-	24.0	F1, F2	0.472	O/P: 5Vdc, 3.6A.
100Vac	0.433	0.6	23.7	F1, F2	0.433	O/P: 5Vdc, 3.6A.
240Vac	0.191	0.6	23.2	F1, F2	0.191	O/P: 5Vdc, 3.6A.
264Vac	0.180	-	23.6	F1, F2	0.180	O/P: 5Vdc, 3.6A.
Model: GTM41061-1818-3.0						
90Vac	0.405	-	21.1	F1, F2	0.405	O/P: 15Vdc, 1.2A.
100Vac	0.368	0.6	21.0	F1, F2	0.368	O/P: 15Vdc, 1.2A.
240Vac	0.171	0.6	21.9	F1, F2	0.171	O/P: 15Vdc, 1.2A.
264Vac	0.164	-	22.1	F1, F2	0.164	O/P: 15Vdc, 1.2A.
Model: GTM41061-1824						
90Vac	0.425	-	21.02	F1, F2	0.425	O/P: 24Vdc, 0.75A.
100Vac	0.397	0.6	20.83	F1, F2	0.397	O/P: 24Vdc, 0.75A.
240Vac	0.177	0.6	21.11	F1, F2	0.177	O/P: 24Vdc, 0.75A.
264Vac	0.169	-	21.67	F1, F2	0.169	O/P: 24Vdc, 0.75A.
Model: GTM41061-1830						
90Vac	0.418	-	21.4	F1, F2	0.418	O/P: 30Vdc, 0.6A.
100Vac	0.388	0.6	21.3	F1, F2	0.388	O/P: 30Vdc, 0.6A.
240Vac	0.215	0.6	22.4	F1, F2	0.215	O/P: 30Vdc, 0.6A.
264Vac	0.206	-	22.8	F1, F2	0.206	O/P: 30Vdc, 0.6A.
Supplementary information: *: as the approved switching mode power adapter used, the input tolerance will not influence the output.						

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

2.1.1.5 c) 1)	TABLE: max. V, A, VA test			P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
Model: GTM41061-1812-7.0				
5Vdc	3.6A	5.17Vdc	4.00A	16.34
Model: GTM41061-1818-3.0				
15Vdc	1.2A	15.3dc	1.60A	24.40
Model: GTM41061-1824				
24Vdc	0.75A	24.03Vdc	1.50A	35.70
Model: GTM41061-1830				
30Vdc	0.6A	30.0Vdc	0.79A	22.95
Supplementary information:				

2.5	TABLE: Limited power sources				P
	Isc (A)		VA		
	Meas.	Limit	Meas.	Limit	
Model GTM41061-1812-7.0. Circuit output tested: +5V output					
normal condition (with table 2B), Uoc=5.17V	4.00A	8	16.34	100	
Model GTM41061-1818-3.0. Circuit output tested: +15V output					
normal condition (with table 2B), Uoc=15.3V	1.60A	8	22.95	100	
Model GTM41061-1824 Circuit output tested: +24V output					
normal condition (with table 2B), Uoc=24.03V	1.50A	8	35.70	100	
Model GTM41061-1830. Circuit output tested: +30V output					
normal condition (with table 2B), Uoc=30.0V	0.79A	8	24.40	100	
According to Table 2B (single fault condition) – R14 shorted Note: unit shut down immediately.					
According to Table 2B (single fault condition) – D5 shorted Note: unit shut down immediately.					
According to Table 2B (single fault condition) – D6 shorted Note: unit shut down immediately.					
Supplementary information:					

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

2.10.2	Table: working voltage measurement			P
Location		RMS voltage (V)	Peak voltage (V)	Comments
T1 Pin 1 to Pin 7		185	332	
T1 Pin 1 to Pin 8		188	400	
T1 Pin 2 to Pin 7		263	492	
T1 Pin 2 to Pin 8		274	508	Max. Vrms/Vp
T1 Pin 3 to Pin 7		188	328	
T1 Pin 3 to Pin 8		185	312	
T1 Pin 4 to Pin 7		241	448	
T1 Pin 4 to Pin 8		240	380	
U1 Pin 1 to Pin 3		188	312	
U1 Pin 1 to Pin 4		187	307	
U1 Pin 2 to Pin 3		180	311	
U1 Pin 2 to Pin 4		178	309	
CY1 & CY2		220	342	
Supplementary information:				
The maximum working voltage is measured when Model GTM41061-1830 is chosen as EUT.				

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

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements	P

Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Basic:						
Between two pins of CY1 on PCB trace	340	240	2.3	4.1	2.4	4.1
Functional:						
Between L and N before fuse	340	240	1.7	3.1	2.4	3.1
Between fuse two ends	340	240	1.7	2.6	2.4	2.6
Supplementary:						
Between two pins of CY2 on PCB trace	340	240	2.3	4.1	2.4	4.1
Reinforced:						
Plug pin-out on the connector side to accessible part when the plug portion is plugged in the socket without the power supply correctly attached.	340	240	4.6	5.6	4.8	5.6
Plug blade (plug portion) to outer enclosure	340	240	4.6	9.0	4.8	9.0
Primary circuit to accessible enclosure without insulating tape around the PCB edge	340	240	4.6	5.2	4.8	5.2
Primary circuit to accessible enclosure with insulating tape around the PCB edge	340	240	4.6	8.0	4.8	8.0
Primary circuit to secondary circuits (PCB trace under T1)	508	276	5.0	8.7	5.7	8.7
Primary circuit to secondary circuits (PCB trace under U1)	340	240	4.6	7.7	4.8	8.0[5]

Supplementary information:

FI: Function insulation; BI: Basic insulation; SI: Supplementary insulation; RI: Reinforced insulation

1. With the equipment to be operated at 3000m above sea level max. the minimum clearances shall be multiplied by the factor 1.14

2. Other functional insulation according to subclause 5.3.4 c).

3. Only minimum distance recorded (same as clearance) and the actual distance is much larger.

4. For the clearances and creepage distances which no described above are larger than the limit above.

5. There is a slot > 1 mm under components.

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

2.10.5	TABLE: Distance through insulation measurements	P

Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
T1 transformer bobbin (RI)	508	274	3000	0.4	0.6
Triple Insulating wire in transformer T1 (RI)	508	274	4500	3 layers	3 layers
Insulating tapes in transformer T1 (RI)	340	240	3000/1 layer	2 layers	2 layers
Supplementary information: FI: functional insulation; BI: basic insulation; RI: reinforced insulation.					

4.5	TABLE: Thermal requirements					P
	Supply voltage (V) :	90Vac	264Vac	90Vac	264Vac	—
	Ambient Tmin (°C) :	40.0	40.0	30.0	30.0	—
	Ambient Tmax (°C) :	40.0	40.0	30.0	30.0	—

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

Maximum measured temperature T of part/at:	T (°C)				Allowed Tmax (°C)
Model GTM41061-1830					
CX1 body	68.6	69.7	-	-	100
LF1 body	86.2	71.7	-	-	100
C1 body	83.5	82.9	-	-	105
CY1 body	79.3	77.6	-	-	125
Optocoupler body (U1)	78.2	83.8	-	-	100
T1 winding	89.5	94.8	-	-	105*
T1 core	86.1	91.4	-	-	--
PCB near D7	83.3	88.6	-	-	130
PCB near primary heatsink	72.4	82.4	-	-	130
Plastic enclosure	55.3	55.8	-	-	75
Model GTM41061-1812-7.0					
CX1 body	-	-	65.7	64.8	100
LF1 body	-	-	84.7	70.2	100
C1 body	-	-	80.9	79.7	105
CY1 body	-	-	84.7	80.2	125
Optocoupler body (U1)	-	-	84	88.5	100
T1 winding	-	-	94.9	100.8	105*
T1 core	-	-	87.3	92.3	--
PCB near D7	-	-	102.9	106.2	130
PCB near primary heatsink	-	-	88.9	89.5	130
Plastic enclosure	-	-	58.7	61.3	75
Model GTM41061-1818-3.0					
CX1 body	68.0	66.9	-	-	100
LF1 body	81.4	69.9	-	-	100
C1 body	77.1	75.5	-	-	105
CY1 body	76.6	76.8	-	-	125
Optocoupler body (U1)	76.6	80.2	-	-	100
T1 winding	82.5	88.3	-	-	105*
T1 core	84.4	89.5	-	-	--
PCB near D7	74.2	80.2	-	-	130
PCB near primary heatsink	68.8	71.1	-	-	130
Plastic enclosure	57.5	59.6	-	-	75
Model GTM41061-1824					

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

CX1 body	69.8	69.2	-	-	100
LF1 body	86.5	70.3	-	-	100
C1 body	83.1	79.6	-	-	105
CY1 body	78.1	75.3	-	-	125
Optocoupler body (U1)	76.9	79.4	-	-	100
T1 winding	86.4	89.5	-	-	105*
T1 core	86.2	89.0	-	-	--
PCB near D7	81.2	85.3	-	-	130
PCB near primary heatsink	75.1	76.2	-	-	130
Plastic enclosure	56.2	57.6	-	-	75

Temperature T of winding:	t1 (°C)	R1 (Ω)	t2 (°C)	R2 (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
--	--	--	--	--	--	--	--

Supplementary information:
The temperatures were measured by thermal couple method under worst case normal mode as described in 1.6.2 at voltage described in 1.4.5.
*: as the temperature of winding was measured by thermocouples, the limit value was reduced by 10°C.

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

Part	Test temperature(°C)	Impression diameter(mm)
Blade holder		
SE1X (pass 125°C ball pressure test by UL)	--	--
C2950	125	1.4
CX7211	125	1.4
EXCY0098	125	1.3
LN-1250P	125	1.3
LN-1250G	125	1.4
PA-765A	125	1.3
PC-540	125	1.3
945 (GG)	125	1.4
6485	125	1.4
Bobbin of Mains transformer		
T375J	125	1.2
T375HF	125	1.2
PM-9820	125	1.1

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

CP-J-8800	125	1.2
Supplementary information:		

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

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Plastic enclosure & blade holder	SABIC INNOVATIVE PLASTICS B V	SE1X	Min. 1.5mm	V-1	UL
Alt.		C2950	Min. 1.5mm	V-0	UL
Alt.		945 (GG)	Min. 1.5mm	V-0	UL
Alt.		CX7211	Min. 1.5mm	V-1	UL
Alt.	SABIC JAPAN L L C	SE1X	Min. 1.5mm	V-1	UL
Alt.		C2950	Min. 1.5mm	V-0	UL
Alt.		945 (GG)	Min. 1.5mm	V-0	UL
Alt.		CX7211	Min. 1.5mm	V-1	UL
Alt.	TEIJIN CHEMICALS LTD	LN-1250P, LN-1250G	Min. 1.5mm	V-0	UL
Alt.	CHI MEI Corporation	PA-765A	Min. 1.5mm	V-1	UL
Alt.	CHI MEI Corporation	PC-540	Min. 1.5mm	V-0	UL
Alt.	COVESTRO DEUTSCHLAND AG [PC RESINS]	6485	Min. 1.5mm	V-0	UL
PCB	WALEX ELECTRONIC (WUXI) CO LTD	T2A,T2B,T4, T2	Min. 1.6mm	V-0	UL
Alt.	PACIFIC WIN INDUSTRIAL LTD	PW-02, PW-03	Min. 1.6mm	V-0	UL
Alt.	DONGGUAN HE TONG	CEM1	Min. 1.6mm	V-0	UL
Alt.	CHEERFUL ELECTRONIC	03, 03A	Min. 1.6mm	V-0	UL
Alt.	DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	Min. 1.6mm	V-0	UL
Alt.	SUZHOU CITY YILIHUA	YLH-1	Min. 1.6mm	V-0	UL
Alt.	DAFENG AREX ELECTRONICS TECHNOLOGY CO LTD	02V0, 04V0, 03V0	Min. 1.6mm	V-0	UL
Alt.	BRITE PLUS ELECTRONICS	DKV0-3A, DGV0-3A	Min. 1.6mm	V-0	UL
Alt.	SHANGHAI H-FAST ELECTRONICS CO LTD	411001, 211001	Min. 1.6mm	V-0	UL
Supplementary information:					

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

5.1	TABLE: touch current measurement			P
Measured between:		Measured (mA)	Limit (mA)	Comments/conditions
L/N – Secondary output		0.098	0.25	--
L/N – Plastic enclosure covered with metal foil		0.010	0.25	--
Supplementary information: Input voltage: 264V Input frequency: 60Hz Overall capacity: CY1=CY2=1000pF				

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 (Vrms)	Breakdown Yes / No
Functional: Fuse two end (When fuse breaks down)		AC	1500V	No
Reinforced: Primary – Secondary output		AC	3000V	No
Reinforced: L/N to accessible plastic enclosure with metal foil		AC	3000V	No
Reinforced: Insulation tape (Tested 1 layer from every source)		AC	3000V	No
Supplementary information: For all models list in this report				

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

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) ..... :	20-25	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
D8	SC	264	1h	F1	0.418→ 0.02	Unit protected. Nohazards.
T1 sec.	SC	264	1h	F1	0.418→ 0.01	Unit protected. Nohazards.
R14	SC	264	1h	F1	0.418→ 0.03	Unit protected. Nohazards.
D5	SC	264	1h	F1	0.418→ 0.02	Unit protected. Nohazards.
D1	SC	264	1h	F1	0.418→ 0.01	Unit protected. Nohazards.
C1	SC	264	1h	F1	5.4A→ 0.01A	Fuse open immediately.No hazards.
U1 sec.	SC	264	1h	F1	0.418→ 0.02	Unit protected. Nohazards.
U1 pri.	SC	264	1h	F1	0.418→ 0.01	Unit protected. Nohazards.
D6	SC	264	1h	F1	0.418→ 0.02	Unit protected. Nohazards.
T1 sec.	O/L	264	1h	F1	0.418→ 0.453	output overload to max. 0.79A, T1 winding: 78.6°C,No hazard. Ambient=23.1°C.
output	O/L	264	1h	F1	0.418→ 0.431	output overload to max. 0.76A, T1 winding: 76.4°C,No hazard. Ambient=24.0°C.
output	S-C	264	1h	F1	0.418→ 0.02	Unit protected. No hazards.

Supplementary information:
SC: short circuit, OC: open circuit, O/L: overload.
Model GTM41061-1830 is chosen as the evaluation model.
During fault condition where the fuse opened, the test was repeated ten times to ensure no hazard.
During fault condition where the fuse did not open, the test was repeated three times.
The electric strength test performed after fault condition test and see appended table 5.2 for detailed test conditions.

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

C.2	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak /V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
T1	Primary and secondary (RI)	508	274	3000Vac	5.0	5.7	0.4 mm / 2 layers
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T1	Primary wire & core to secondary wire (RI)[3]			3000Vac	Min.10.0	Min.10.0	--
T1	Insulation tape wrapping between primary winding and secondary winding			3000Vac/1 layers	--	--	2 layers
T1	Triple insulation wire for secondary winding			3000Vac/1 layers	--	--	2 layers

Supplementary information:
1. Each transformer model is identical in insulation construction including clearance and creepage except number of turns per coil.
2. Altitude correction factor for clearances for an altitude of 3000 m (based on IEC 60664-1:2007): 1.14
3. Core is regarded as primary parts.

IEC 60950-1			
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

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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
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.		N/A
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.		N/A
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.		N/A

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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
(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		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 *		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.		N/A
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.		N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	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

IEC 60950-1			
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

IEC 60950-1			
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

IEC 60950-1			
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

IEC 60950-1			
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
	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

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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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;		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.		N/A
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.		N/A

IEC 60950-1			
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.		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		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 (artifical 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.		N/A
Bibliography	Additional EN standards.		—

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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
ZA	**NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS**		—

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.		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.		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.		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).		N/A
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.		N/A

IEC 60950-1			
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”		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).”		

IEC 60950-1			
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 jordtilkoplet utstyr – og er tilkoplet 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.”		N/A
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.”		N/A
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.		N/A

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

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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		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.		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.		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.		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.		P
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.		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.		N/A

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

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 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.		N/A

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

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
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.		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.		N/A

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

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.		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.		N/A
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 mm^2 to 1,5 mm^2 nominal cross-sectional area.		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.		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.		N/A

IEC 60950-1			
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.		N/A
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.		N/A

IEC 60950-1			
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.		N/A
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.		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.		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.		N/A

IEC 60950-1			
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

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

	National Differences Canada (CA) **IEC 60950-1, 2nd ed. + A1+A2** (CAN/CSA-C22.2 No 60950-1-07, Amendment 1) Last modification 2012-02-14	

	SPECICAL 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.		—
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.	Unit was evaluated according to IEC 60950-1. The requirements have to be checked during national approval.	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		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.		N/A

IEC 60950-1			
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."		P
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.		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.		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.		P
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.		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.		P
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.		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.		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Flexible power supply cords are required to be compatible with Tables 11 and 12 of the CEC and Article 400 of the NEC.		N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.		N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).		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).		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).		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.		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.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		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.		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.		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.		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
	OTHER DIFFERENCES The following key national differences are based on requirements other than national regulatory requirements		—
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	Critical components are IEC/EN/UL certified. See list of critical components. There may be additional requirements for components in Canada.	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.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		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.		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.3	The current rating of the circuit shall be taken as 20 A not 16 A		P
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.		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.		N/A
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		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.		P
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.		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.		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.		N/A

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

	National Differences China (CN) **IEC 60950-1, 2nd ed.** (GB 4943.1:2011) Last modification 2013-09-26	

1.1.2	Revise the third dashed paragraph as: —equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;	Altitude: 3000 m	N/A
1.4.5	At the end of the third dashed paragraph ,added following 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. Delete the contents which behind the first dash.		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.		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.		N/A
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.		N/A

IEC 60950-1			
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.		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.	Altitude: 3000 m. The marking label shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A
2.7.1	Amended the first paragraph as: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3. Delete note of Clause 2.7.1.		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.2	First section of Clause 2.9.2 amended as two sections: Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature 40±2℃ and a relative humidity of (93±3)%. During this conditioning the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value between 20 °C and 30 °C such that condensation does not occur. Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.		P
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.	Altitude: 3000 m Altitude correction factor: 1.14	N/A
2.10.3.3& 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K、2L and 2M.		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Altitude: 3000 m Altitude correction factor: 1.14	N/A
3.2.1.1	Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.		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.		N/A
Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35 °C shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.		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.		N/A
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.		N/A

IEC 60950-1			
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, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used at altitude above 2000m . DD.2 Climate warning label  Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used in tropical climate region.	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A
Annex EE (informative)	Added annex EE: Illustration relative to safety explanation in normative Chinese、Tibetan、Mongolian、Zhuang Language and Uighu.	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	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.		P

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

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

	National Differences Korea (KR) **IEC 60950-1, 2nd ed.; Am1: 2009** (K 60950-1) Last modification 2012-05-31	

1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).		N/A
8	EMC The apparatus shall comply with the relevant CISPR standards.	To be evaluated when submitted for the national approval.	—

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

	National Differences Japan (JP) **IEC 60950-1:2005 (Second Edition) + A1:2009 + A2:2013** (J 60950-1(H29))	

1.2.4.1	Add the following new notes. Note: Even if the equipment is designed as Class I, the equipment is regarded as CLASS 0I EQUIPMENT (see 1.2.4.3A) when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.		N/A
1.2.4.3A	Add the following new clause. 1.2.4.3A CLASS 0I EQUIPMENT Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by: - using BASIC INSULATION, and - providing either of the following a) or b) in order to connect those conductive parts that might assume a HAZARDOUS VOLTAGES in the event of BASIC INSULATION fault to the PROTECTIVE EARTHING CONDUCTOR in the building wiring. a) Provision of 2-pin plug with earthing lead including the condition of that 2-pin adaptor with earthing lead wire is provided or recommended. b) Provision of an independent earthing terminal, when 2-core mains cord (without earthing conductor) is used. Note – CLASS 0I EQUIPMENT may have a part constructed with Double Insulation or Reinforced Insulation.		N/A
1.3.2	Add the following notes after the first paragraph: Note 1 Transportable or similar equipment that are relocated frequently for intended usage should not be designed as Class I or CLASS 0I EQUIPMENT unless it is intended to be installed by service personnel. Note 2 Considering wiring circumstance in Japan, equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as Class I or CLASS 0I EQUIPMENT unless it is intended to be installed by service personnel.		N/A

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

1.5.1	Replace the first paragraph with the follows: Where safety is involved, components shall comply either with the requirements of this standard, with the safety aspects of the relevant JIS component standard, or IEC component standards, or components shall have equivalent to or better properties than these. Replace Note 1 with the following: Note 1 Components complying with the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance. Note 2 JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope. Add the following after the last paragraph: For an appliance connector that is able to fit with appliance inlet compatible with the standard sheet of IEC 60320-1 or JIS C 8283-1, the size of the connector shall comply with relevant standard sheet of IEC 60320-1 or JIS C 8283-1. A power supply cord set complying with JIS C 8286 is regarded to comply with this requirement. Note 3 A power supply cord set provided with appliance connector that is able to fit with appliance inlet compatible with the standard sheet of IEC 60320-1 or JIS C 8283-1 should comply with JIS C 8286.		P
1.5.2	Add the following Note 2 after the 4th dashed paragraph: Note 2 See 1.7.5A when Type C.14 appliance coupler rated 10 A per JIS C 8283-1 is used with an equipment rated not more than 125 V and rated more than 10 A.		P
1.5.5	Add the following Note after the last paragraph: NOTE An interconnection cord sets provided with interconnecting coupler for mains supply complying with JIS C 8283-2-2 should comply with JIS C 8286.		N/A
1.5.9.1	Add the following in the last of NOTE 1. Gas discharge tube connected in series with VDR may be used.		N/A
1.7	Replace EE.2 and EE.4 with the following: JA.1 Shredder warning JA.3 Shredder power disconnection		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1.2	Replace first and second dashed paragraphs with the followings: - manufacturer's or responsible company's name or trade-mark or identification mark; - manufacturer's or responsible company's model identification or type reference;		N/A
1.7.2.1	Add the following after the second paragraph. Instruction or equipment marking regarding safety shall be written in Japanese unless otherwise permitted in this standard.		N/A
1.7.2.5	Replace the last sentence with the following: An acceptable marking for an electric shock hazard is  (6.2.4 of JIS S 0101).		N/A
1.7.5	Replace the second paragraph with the following. Socket-outlets conforming to JISC8282-1 are examples of standard power supply outlets.		N/A

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

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

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

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

2.1.1.1	Replace item b) of 2.1.1.1with the following. b) A test with the test finger, Figure 2A, which shall not contact parts described above when applied to openings in the ENCLOSURES after removal of parts that can be detached by an OPERATOR, including fuseholders, and with OPERATOR access doors and covers open. It is permitted to leave lamps in place for this test. Connectors that can be separated by an OPERATOR, other than those complying with JIS C 8303 or JIS C 8285 or IEC 60309 series or JIS C 8283 series or IEC 60320 series, shall also be tested during disconnection. But even if the connector does not comply with these standards, the one having equivalent to or better performance need not be tested during disconnection. Note 4 Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		N/A
2.5	Replace “IEC 60730-1” with “JIS C 9730-1” (in item b)).		N/A
2.6.2	Delete the following line. • the symbol  ,IEC 60417-5018 (2011-07);		N/A
2.6.3.2	Add the following after the first paragraph. However where the single core conductor is used for protective earthing lead or earthing cord for CLASS 0I EQUIPMENT, either of the following condition shall be met. - Use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having equivalent to or more strength and thickness. - Single core cord or single core cab tire cable with 1.25 mm^2 or more cross-sectional area		N/A
2.6.3.5	Add the following after the first paragraph. However this requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A

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

2.6.4.2	Replace the first paragraph with the following. Equipment required to have protective earthing shall have a main protective earthing terminal. For equipment with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal. However, for CLASS 0I EQUIPMENT provided with the separate main protective earthing terminal other than appliance inlet, the separate main protective earthing terminal may be treated as mains protective earthing terminal.		N/A
2.6.5.4	Replace the first sentence with the following. Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following: Add the following after last paragraph: Note For CLASS 0I EQUIPMENT,1.7.14A is applied instead of this requirement.		N/A
2.6.5.8A	Add the following new clause after 2.6.5.8 2.6.5.8A Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external location where easily visible.		N/A
2.7.6	Replace “ISO 3864, No. 5036” with “6.2.4 of JIS S 0101”.		N/A
2.10.3.1	Replace the 8th paragraph with the following The above minimum CLEARANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, or even if it does not comply with the above standards but the one having equivalent to or better performance and dimension which comply with JIS C 8283 series of standards, JIS C 8303 or IEC 60309-2. Note Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		N/A

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

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

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

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

4.2.8	Add the following after the first paragraph: Note Intrinsically protected picture tube is required to comply with JIS C 6965 in clause 18 of JIS C 6065. No intrinsically protected picture tube which is out of scope of JIS C 6965 is required to test according to sub-clause 18.2 of JIS C 6065.		N/A
4.3.4	Add the following after the first sentence: This requirement also applies to those connections in CLASS 0I EQUIPMENT, where CLEARANCE or CREEPAGE DISTANCES over BASIC INSULATION would be reduced to less than the values specified in 2.10.		N/A
4.3.5	Replace the first dashed paragraph with the following. Within a manufacturer's unit or system, plugs and sockets likely to be used by the OPERATOR or by a SERVICE PERSON shall not be employed in a manner likely to create a hazard due to misconnection. In particular, connectors complying with IEC 60320/JIS C 8283 series of standards or JIS C 8303 or JIS C 8358 shall not be used for SELV CIRCUITS or TNV CIRCUITS. Keying, location or, in the case of connectors accessible only to a SERVICE PERSON, clear markings are permitted to meet the requirement.		N/A
4.3.6	Replace the 1st paragraph with the following DIRECT PLUG-IN EQUIPMENT shall not impose undue stress on the socket-outlet. The mains plug part shall comply with the standard for the relevant mains plug. (see 3.2.5A)		N/A
4.4.2	Replace the paragraph with the following: HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS shall also comply with Annex JA.		N/A
4.5.3	Add the following note to footnote b) of Table 4B: NOTE In case no data for the material is available, Appendix 4, 1. (1). b. 3 of the Interpretation on the Ministerial Ordinance stipulating Technical Specifications for Electrical Appliances is regarded as maximum temperature limit of the material.		N/A
5.1.3	Add a note after the first paragraph as follows: Note – Attention should be drawn to that majority of three-phase power system in Japan is of delta connection, and therefore, in that case, test is conducted using the test circuit from IEC 60990, figure 13.		N/A

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

5.1.6 — P

Replace Table 5A. as follows

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	Main protective earthing terminal of CLASS I EQUIPMENT	0,75	-
	Main protective earthing terminal of CLASS 0 I EQUIPMENT	0,5	-
MOVABLE (other than HAND_HELD, but including TRANSPORTABLE EQUIPMENT)	Main protective earthing terminal of CLASS I EQUIPMENT	3,5	-
	Main protective earthing terminal of CLASS 0 I EQUIPMENT	1.0	-
STATIONARY, PLUGGABLE TYPE A	Main protective earthing terminal of CLASS I EQUIPMENT	3,5	-
	Main protective earthing terminal of CLASS 0 I EQUIPMENT	1,0	-
ALL other STATIONARY EQUIPMENT - not subject to the conditions of 5.1.7 - subject to the conditions of 5.1.7	Main protective earthing terminal of CLASS I EQUIPMENT	3.5 -	- 5 % of input current
	Main protective earthing terminal of CLASS 0 I EQUIPMENT	1.0 -	- -

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

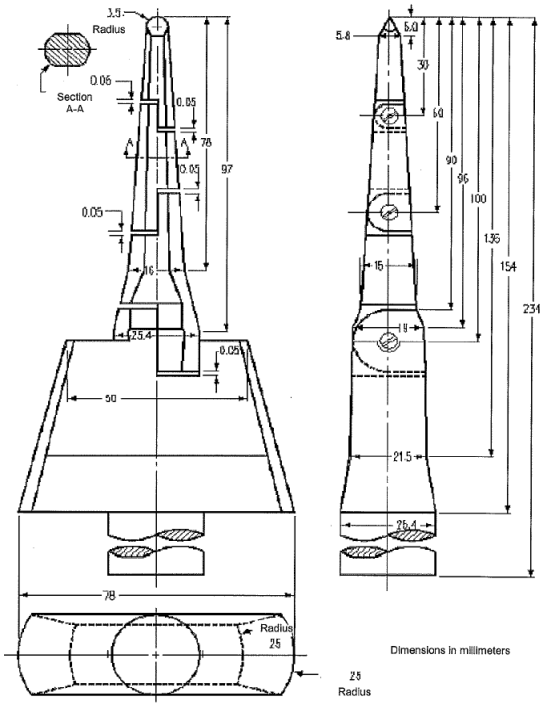
IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Annex G	Replace the paragraph before Table G.2 with the following The above minimum CLEARANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, and 1.5.1 of this standard in which dimension is comply with JIS C 8283 series, JIS C 8303 or IEC 60309-2.		N/A
Annex V V.1	Replace “3.1.2”in the first line of V.1 with “312” in the first line.		N/A
Annex W W.1	Replace the third sentence in the first paragraph with the following: Floating circuits can exist in CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and earthed circuits can exist in CLASS II EQUIPMENT.		N/A
Annex BB	This annex is not applicable.		N/A
Annex CC CC.2	Replace the third dashed paragraph with the following: *- 10 000 cycles of turning enable on and off with the input connected to a capacitor rated* *425 uF ± 10 uF and shorting the output;*		N/A
CC.3	Add note at end of CC.3: Note: The fast blow fuse should be the one complying with JIS C 6575-2.		N/A
CC.4	Replace the 2nd dashed paragraph with the following: - 10 000 cycles of turning enable on and off with a 100 Ω± 5 Ω resistor and a 425 uF ± 10 uF capacitor in parallel with the output; Replace the 4th dashed paragraph with the following: - 10 000 cycles of turning enable on and off with the input connected to a capacitor rated 425 uF ± 10 uF and shorting the output; Replace the 5th dashed paragraph with the following: −10 000 cycles of turning the input pin on and off with a capacitor rated 425 uF ± 10 uF connected to the input supply while keeping enable active and shorting the output; Replace the 6th dashed paragraph with the following: −10 000 cycles of turning the input pin on and off with an		N/A

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

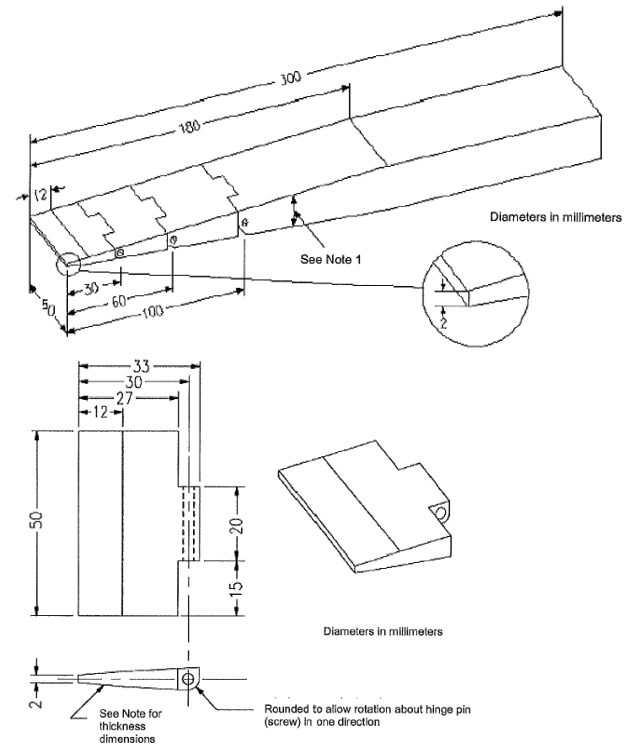
	ferrite-core inductor having 350 mH ± 10 mH inductance at 1 kHz and less than 1 Ω d.c. resistance connected to the input supply and return while keeping enable active and shorting the output; Replace the 10th dashed paragraph with the following: −3 cycles of exposing the device (not energized) to 70 °C ± 2 °C for 24 h; followed by at least 1 h at room ambient; followed by at least 3 h at -30 °C ± 2 °C; followed by 3 h at room ambient; Replace the 11th dashed paragraph with the following: −10 cycles of exposing the device (while energized) to 50 °C ± 2 °C for 10 min; followed by 10 min at 0 °C ± 2 °C with a 5 min period of transition from one state to the other;		
Annex EE	Replace Annex EE with the following Annex JA. Annex JA (normative) Document shredding machines HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS shall additionally comply with the requirements of this annex. **JA.1 Markings and instructions** The symbol  (JIS S 0101:2000, 6.2.1) and the following precautions for use shall be marked on readily visible part adjacent to document feed opening. The marking shall be clearly legible, permanent, and easily discernible; 子供が使用することによって，傷害などの危害が発生するおそれがある。; (that use by infants/children may cause a hazard of injury etc.) 文書投入口に手を触れることによって，細断機構に引き込まれるおそれがある。; (that a hand can be drawn into the mechanical section for shredding when touching the document-slot) 文書投入口に衣類が触れることによって，細断機構に引き込まれるおそれがある。; 		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	(that clothing can be drawn into the mechanical section for shredding when touching the document-slot) 文書投入口に髪の毛が触れることによって，細断機構に引き込まれるおそれがある。 ; (that hairs can be drawn into the mechanical section for shredding when touching the document-slot) - in case of equipment incorporating a commutator motor, 可燃性ガスを噴射することによって引火又は爆発するおそれがある。 (that equipment may catch fire or explode by spraying of flammable gas.) **JA.2 Inadvertent reactivation** Any safety interlock that can be operated by means of the test finger, Figure JA.1, is considered to be likely to cause inadvertent reactivation of the hazard. Compliance is checked by inspection and, where necessary, by a test with the test finger, Figure JA.1. **JA.3 Disconnection from the mains supply** Document shredding machines shall incorporate an isolating switch complying with sub-clause 3.4.2 as the device disconnecting the power of hazardous moving parts. For this switch, two-position (single-use) switch or multi-position (multifunction) switch (e.g., slide switch) may be used. If two-position switch, the positions for “ON” and “OFF” shall be indicated in accordance with sub-clause 1.7.8. If multi-position switch, the position for “OFF” shall be indicated in accordance with sub-clause 1.7.8 and other positions shall be indicated with proper terms or symbols. Compliance is checked by inspection.		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	JA.4 Protection against hazardous moving parts Any warning shall not be used instead of the structure for preventing access to hazardous moving parts. Document shredding machines shall comply with the following requirements. Insert the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying appreciable force. It shall not be possible to touch hazardous moving parts with the test finger. This consideration applies to all sides of MECHANICAL ENCLOSURES when the equipment is mounted as intended. Before testing with the test finger, remove the parts detachable without a tool. Insert the wedge-probe, Figure JA.2, into the document-slot. And, against all directions of openings, if straight-cutting type, a force of 45 N shall apply to the probe, and 90 N if cross-cutting type. In this case, the weight of the probe is to be factored into the overall applied force. Before testing with the wedge-probe, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shedding, with the probe.		N/A
	 **Figure JA.1 Test finger**		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
			N/A

(De



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

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

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

for ≤ 25 mm: +/- 0.13 mm

for > 25 mm: +/- 0.3 mm.

Figure JA.2 Wedge-probe

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

	National Differences United States of America (US) **IEC 60950-1, 2nd ed. + A1 + A2** (UL 60950-1, Second Edition, A1 + A2) Last modification 2014-01-24	

	NATIONAL CONDITIONS BASED ON REGULARTIONS		—
Sub-Clause	**National Condition**		—
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.	Unit was evaluated according to IEC 60950-1. The requirements have to be checked during national approval.	P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		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.		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."		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
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.		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.		P
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.		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.		P
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.		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.		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.		N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).		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).		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.”		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).		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.		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.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
4.3.13.5	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).		N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m3 (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
	OTHER DIFFERENCES		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 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, 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.		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 a 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.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		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.		N/A
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.		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		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.		P
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.		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.		P
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		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.		N/A

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

	National differences for Australia and New Zealand **IEC 60950-1, 2nd ed.** AS/NZS 60950.1:2015	

	National Differences		-
Appendix ZZ	Variations to IEC 60950-1, Ed 2.2 (2013) for Australia and New Zealand		-
1.2	**DEFINITIONS**		P
	After definition 'PERSON, SERVICE', insert the following new definition: POTENTIAL IGNITION SOURCE…….1.2.12.201		P
1.5	**COMPONENTS**		P
1.5.1	1..... First paragraph, insert the following text after the words 'IEC component standard: or the relevant Australian/New Zealand Standard 2..... In the Note, insert the following text after the word standard: or the relevant Australian/New Zealand Standard 3..... Second paragraph, delete the words 'without further evaluation'		P
1.5.2	1..... First paragraph, insert the following text after the word 'standard' or an Australian/New Zealand Standard 2..... First paragraph, second dash item, second line, insert the following text after the word 'standard' or an Australian/New Zealand Standard 3..... First paragraph, second dash item, last line, insert the following text after the word 'standard': or an Australian/New Zealand Standard		P
1.7	**MARKINGS AND INSTRUCTIONS**		N/A

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

			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		N/A
2.9	**ELECTRICAL INSULATION**		N/A
2.9.2	Variation Second paragraph, *delete* the word 'designated'		N/A
3.2.5	**POWER SUPPLY CORDS**		N/A
Table 3B	Variation 1..... *Dele te* the first four rows and replace with the following: 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 including 10 — (0.75)[b] 1.00 — 16 [1.3] Over 10 up to including 16 — (1.0)[c] 1.5 — 14 [2]		N/A
	2..... *Dele te* NOTE 1 and renumber existing NOTE 2 as 'NOTE'		N/A
	3..... *Dele te* 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 to the plug does not exceed 2 m (0,5 mm2 three-core supply flexible cords are not permitted; see AS/NZS 3191)		N/A
4.3	**DESIGN AND CONSTRUCTION**		P
4.3.6	Variation *Delete* the third paragraph and *replace* with the following:		P
	Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets		N/A
4.3.8	Addition Eighth paragraph, *insert* the following new note after the first dash item:		N/A

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

	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
4.3.13.5.1	Variation *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		N/A
	Third paragraph, first sentence, after 'IEC 60825-1', *insert* the following text: or AS/NZS 60825.1		N/A
	Fourth paragraph, after 'IEC 60825-1', *insert* the following text: or AS/NZS 60825.1		N/A
4.7	**RESISTANCE TO FIRE**		P
4.7	Addition At the end of Clause 4.7, *insert* the following text: For alternate tests refer to Clause 4.7.201		P
6	**CONNECTION TO TELECOMMUNICATIONS NETWORKS**		N/A
6.2.2	Variation For Australia only, *delete* the first paragraph and Note, and *replace* with the following: In Australia only, compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2		N/A
6.2.2.1	Variation For Australia only, *delete* the first paragraph including the Notes, 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 N.1. The interval between successive impulses is 60 s and the initial voltage, Uc, is: (i) ..... for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and (ii)..... For 6.2.1 b) and 6.2.1 c): 1.5kV		N/A
	NOTE 201 The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines		N/A
	NOTE 202 The value of 2.5 kV for 6.2.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages		N/A

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

6.2.2.2	Variation 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 6.2.1 a): 3kV; and (ii)..... for 6.2.1b) and 6.2.1c): 1.5kV		N/A
	NOTE 201 Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.		N/A
	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.		N/A
7	**CONNECTION TO CABLE DISTRIBUTION NETWORK**		N/A
7.3	Addition *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		N/A
Annex P	Addition *Add* the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets		N/A

	Special national conditions (if any)		
1.2.12	**FLAMMABILITY**		N/A
1.2.12.15	Addition After Clause 1.2.12.15, *insert* the following new clause:		N/A
1.2.12.201	**POTENTIAL IGNITION SOURCE** Possible fault which can start 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 15 VA		N/A
	Such a faulty contact or interruption in an electrical connection includes those which may occur in CONDUCTIVE PATTERNS on PRINTED BOARDS		N/A
	NOTE 1 An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE		N/A

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

	NOTE 2 This definition is from AS/NZS 60065:2012, Clause 2.8.11.		N/A
4	**PHYSICAL REQUIREMENTS**		N/A
4.1	Addition After Clause 4.1, *insert* new Clause 4.1.201 as follows:		N/A
4.1.201	**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	**DESIGN AND CONSTRUCTION**		N/A
4.3.8	Addition After Clause 4.3.8, *add* the following new clause as follows		N/A
4.3.8.201	**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
4.7	**RESISTANCE TO FIRE**		N/A
4.7.3.6	Addition After Clause 4.7.3.6, *add* new clauses as follows:		N/A
4.7.201	**Resistance to fire—Alternative tests**		N/A
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 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.		N/A
	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		N/A

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

	NOTE In considering how to minimize propagation of fire and what 'small parts are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another		N/A
	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		N/A
	For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5		N/A
	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		N/A
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.		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 3 mm 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:		N/A

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

	Clause of AS/NZS 60695.11.5	**Change**	N/A
	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 (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15s	
	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		N/A

IEC 60950-1			
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.		N/A
	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.		N/A
	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		N/A
	NOTE 3 Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		N/A
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.		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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.*		N/A
	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 m when the circuit supplied is disconnected.		N/A

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

Appendix No.9: Equipment combined with two-pole plug (Class II)

Supplementary tests on plug portion according to EN 50075:1990

Clause	Requirement + Test	Result - Remark	Verdict
1.	**Dimensions (Clause 7 of EN 50075)**		
	Plugs shall comply with standard size. (Standard sheet 1)		P
2.	**Protection Against Electric Shock (Clause 8 of EN 50075)**		
2.1	Live parts of plugs with the exception of the bare metal parts of the pins, shall not be accessible. (Clause 8.1 of EN 50075)		P
2.2	It shall not be possible to make connection between a pin of a plug and a live socket contact of a socket-outlet while the other pin is an accessible. (Clause 8.2 of EN 50075)		P
2.3	External parts of plugs, with the exception of pins, shall be of insulating material. (Clause 8.3 of EN 50075)		P
3.	**Construction (Clause 9 of EN 50075)**		
3.1	The plug cannot be opened by hand or by using a general purpose tool. (Clause 9.1 of EN 50075)		P
3.2	Pins of plugs shall be solid and shall have adequate mechanical strength. (Clause 9.3 of EN 50075)		P
3.3	Pins of plugs shall be locked against rotation and adequately fixed into the body of the plug. (Clause 9.4 of EN 50075)		P
3.4	Plugs shall be provided with soldered, crimped or equally effective permanent connection. (Clause 9.5 of EN 50075)		P
3.5	Plug shall be shaped in such a way and made of such a material that they can easily be withdrawn by hand from a socket-outlet. (by gripping the product enclosure, Clause 9.6 of EN 50075)		P
4.	**Resistance to Humidity (Clause 10 of EN 50075)**		N/A
	The integrated pins were tested together with the product. (See test report for product)		
5.	**Insulation Resistance and Electric Strength (Clause 11 of EN 50075)**		N/A
	(See test report for product)		
6.	**Mechanical Strength (Clause 13 of EN 50075)**		

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

Clause	Requirement + Test	Result - Remark	Verdict
	Plug shall have adequate mechanical strength to withstand the stresses imposed during use.		P
6.1	The plugs are pressed between two flat surfaces with a force of 150N for 5min. 15min after removal of the force, the plug shall not show such deformation as would result in undue alteration of the dimensions which ensure safety. (Clause 13.1 of EN 50075)		P
6.2	The plug is tested in a tumbling barrel. (Clause 13.2 of EN 50075, fall number is shown in test report for product) After the test, the plug shall show no damage within the meaning of this standard, in particular: --- no part shall become detached or loosened. --- the pin shall not turn when a torque of 0.4Nm is applied. Note: A section of the pin is square constructed for preventing the rotation.		P
6.3	The pins is held in a suitable clamp in such a position that the straight part of a steel wire (D=1+-0.02mm, U-shaped) rests on the plug pin. The plug is caused to move backwards and forwards, so that the wire rubs along the pin. The number of the movements is 20 000, and the rate of the operation is 25 movements per min. (Clause 13.3 of EN 50075)		P
	After the test, the pin show no damage which may effect safety or impair the further use of the plug, in particular, the insulating sleeve shall not have punctured or rucked up.		P
6.4	A pull force of 40N is applied for 60s on each pin in turn in the direction of the longitudinal axis of the pin. The pull is applied 60min after the plug has been placed in a heating cabinet of 70°C. After the plug cooling down to ambient temperature, any pin shall not have displaced in the body of the plug more than 1mm. (Clause 13.4 of EN 50075)		P
7.	**Resistance to Heat and to Ageing (Clause 14 of EN 50075)**		P
8.	**Current-carrying Parts and Connections (Clause 15 of EN 50075)**		
8.1	Connection, electrical and mechanical, shall withstand the mechanical stresses occurring in normal use, and electrical connections shall be designed that contact pressure is not transmitted through insulating material. (Clause 15.1 & 15.2 of EN 50075)		P
8.2	Current-carrying parts shall be of copper or an alloy containing at least 58% of copper. (Clause 15.3 of EN 50075)		P
9.	**Creepage Distance, Clearances, and Distances Through Insulation (Clause 16 of EN 50075)**		P
10.	**Resistance of Insulating Material to Abnormal Heat and to fire (Clause 17 of EN 50075)**		P

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

Appendix No.10: Dimension Checking for Two-pin plug according to EN50075

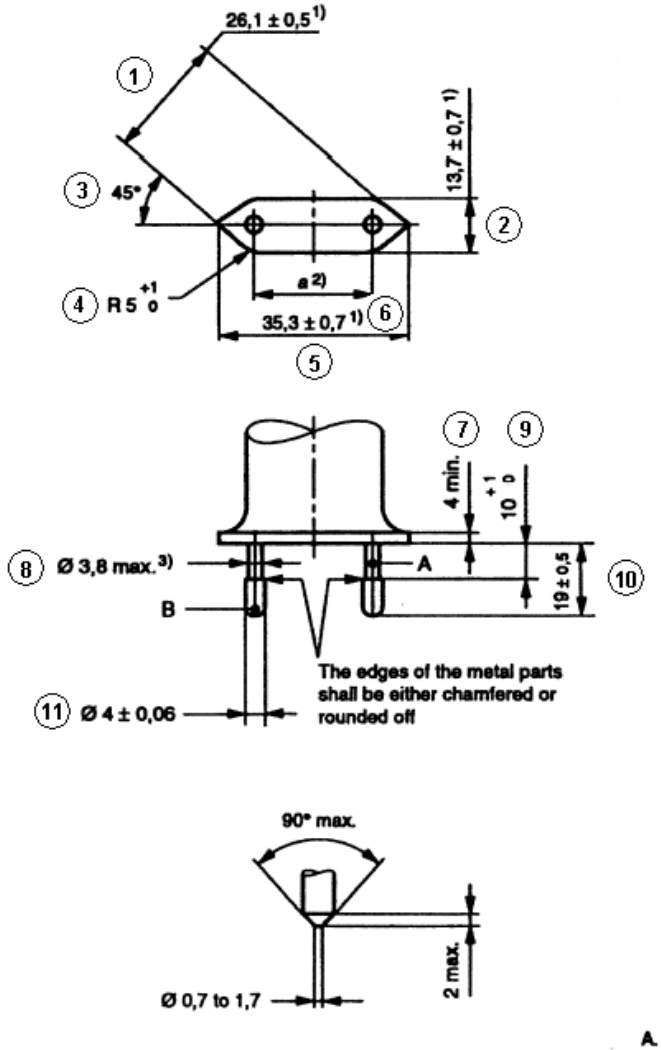
	DIMENSIONS Checked by means of measurement according to EN50075 Standard sheet 1 (see appendix no.5)	P

Position	**Requirement (mm)**	**Measured (mm)**	*Verdict*
1	25,6 – 26,6	25,84	P
2	13 – 14,4	13,98	P
3	45°	45°	P
4	R5 – 6	R5,4	P
5	34,6 – 36	35,09	P
6	18-19,2 in the plane of the engagement face	18,15	P
	17-18 at the ends of the pins	17,55	P
7	4min	-	N/A
8	ϕ3,8max	ϕ3,42	P
9	10-11	10,05	P
10	18,5 – 19,5	19,12	P
11	ϕ3,94 - ϕ4,06	ϕ3,98	P
	Dimensions of position 1, 2 and 3 shall not be exceeded within a distance of 18mm from the engagement face of the plug	19,15	P
	The edges of the metal parts shall be either chamfered or rounded off	Rounded off	P

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

Appendix No.11:

EN50075: 1990 Standard sheet 1



Dimensions in millimetres

1) These dimensions shall not be exceeded within a distance of 18 mm from the engagement face of the plug.

2) Dimension *a* is:

18 mm to 19,2 mm in the plane of the engagement face;

17 mm to 18 mm at the ends of the pins.

3) This dimension may be increased to 4 mm within a distance of 4 mm from the engagement face of the plug.

Pin ends shall be rounded, or conical as shown in detail sketch.

The sketches are not intended to govern design except as regards the dimensions shown.

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

Appendix No.12: Photo for plug portion according to EN 50075:1990





The connector conduct part can't be touched by test finger. Cl & CR are measured according to table 2.10.3 & 2.10.4.

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

Appendix No.13: Equipment's combined with Australian plug.

The Australian plug was tested according to Annex J of AS/NZS 3112: 2011+A1: 2012 + A2:2013 + A3:2016:

Clause	Requirement + Test	Main Clause	Verdict
J2.1	**Plug portion**		**P**
J2.2	**Requirements**		**P**
J 2.2.1	**General**		**P**
J 2.2.2	**Plug pins of plug portion**		**P**
	Material for pins	2.2.1	P
	The material of current carrying parts of plug pins should be copper, or copper alloy containing at least 58% copper for parts made from cold rolled sheet or at least 50% copper for other parts; or stainless steel containing at least 13% chromium and not more than 0.09% carbon.	>58%	P
	Assembly of pins	2.2.2	P
	The exposed ends and the contact portion of plug pins shall be smooth and free from openings or indentations;	2.2.3	P
	Live parts of insulated pin plugs shall not be exposed when the plug is partially or fully engaged with the associated socket.	2.2.4	P
	Plug up to 15A complying with Figure 2.1(a), 2.1(c) or 2.1(f) and of the insulated pin plug type do not need to comply with the R20.0 +/-1 mm of Figure 2.1(e).		P
J 2.2.3	**Ratings and dimensions for low voltage plug portions**	**2.8**	**P**
	Low voltage flat-pin plugs shall conform to the appropriate dimensions shown in Figure 2.1.	2.8.1	P
	the distance between a live pin of any plug and the edge of the moulding of the plug, shall be not less than 9 mm.	9.8 mm	P
	No point on the front face of the plug is more than 0.5 mm.		P
	Compliance with dimensional requirements of Figure 2.1	2.8.4	P
	Low voltage flat-pin or combination of flat and round pin, plugs having ratings up to 15A of Figure 2.1(a1), Figure2.1(c), Figure 2.1(d), Figure 2.1(f) or Figure 2.1(g) type shall comply with the dimensional requirements of Figure 2.1(e).		P

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

Clause	Requirement + Test	Main Clause	Verdict
	Plugs with insulated pins, complying with this Standard, need not comply with dimension R20+/-1.0 mm of Figure 2.1(e)		N/A
J 2.2.4	**Internal connections for plug portions**	**2.9**	**N/A**
	A loose terminal screw or conductive material cannot bridge any live parts or earthing parts;		N/A
	The earthing parts are effectively isolated from contact with a live conductor which may become detached		N/A
	The live parts are effectively isolated from contact with any earthing conductor which may become detached		N/A
J 2.2.5	**Arrangement of earthing connections for plug portions**	**2.10**	**N/A**
	The earthing pin of any low voltage, three-pin plug shall be that pin which is radial to the circle embracing the pins.		N/A
J 2.2.6	**Configuration of plug portions**	**2.12.6**	**P**
	Configuration of plugs, viewed as from the pins, shall be earth, neutral and active in a clockwise direction. Where there is no earthing pin, the live pins shall conform to this configuration.		P
J 2.2.7	**Tests**	**2.13**	**P**
J 2.2.7.1	General	2.13.1	P
J 2.2.7.2	High voltage test	3500Vac,1min for live poles of plug and any external metal. 1250Vac, 1min for insulated live poles and metal foil applied around the insulation on each live pin.	P
J 2.2.7.3	Mechanical strength of pin tests	2.13.7	P
J2.2.7.3.1	Tumbling barrel test	2.13.7.1	P

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

Clause	Requirement + Test	Main Clause	Verdict
	a) 500 times if the mass of the specimen does not exceed 250g. The pins being straightened after 100 drops and at the completion of the test to pass through the appropriate gauge of figure A1, B1 or F1;	120g	P
	b) 250 times if the mass of the specimen exceeds 250g. The pins being straightened after 25 drops and at the completion of the test to pass through the appropriate gauge of figure A1, B1 or F1;		N/A
	Following each test the samples shall comply with item (e) of clause 2.13.7.1: the pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		P
J2.2.7.3.2	Pin bending test	2.13.7.2	P
	All flat pins of plugs rated up to and including 15A shall be tested by clamping the plug in a rigid holding block and applying a bending force, as shown in Figure 2.8, to the pin under test.		P
J 2.2.7.4	Temperature rise test	2.13.8	P
	Test current is specified in the relevant product standard. The temperature rise of the terminals shall not exceed 45 K.	6.4 K	P
J 2.2.7.5	Securement of pins of the plug portion	2.13.9	P
	Movement of pins: clamped 5±0.5 mm and applying 18±1 N to the pin at 14±0.5 mm	2.13.9.1	P
	The maximum deflection shall not exceed 2.0 mm.	0.2mm	P
	Fixing of pins: maintained 50±2oC for 1 h. 60±0.6 N for 10 min.	2.13.9.2	P
	The attachment of pins shall be not more than 2.4 mm or if any pin fails to return to within 0.8 mm of its nominal length specified in Figure 2.1 within 5 min of the removal of the test force.	0.2mm	P
J 2.2.7.6	Tests on the insulation material of insulated pin plug portions	2.13.13	P
	Pressure test at high temperature	2.13.13.2	P
	maintained at 160±5 °C for 2 h. Force 2,5 N applied through the blade	0.02mm	P
	Thickness within the area of impression ≥ 50 %. no cracks		P
	Static damp heat test	2.13.13.3	P

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

Clause	Requirement + Test	Main Clause	Verdict
	Two damp heat cycles in accordance with AS 60068.2.30. Db (12+12h cycle), 95% relative humidity, low temperature 25±3°C and upper temperature 40°C, after this treatment and recovery to room temperature, the specimen subjected to:		P
	(a) the insulation resistance test in accordance with Clause 2.13.2(e);		P
	(b) high voltage test in accordance with Clause 2.13.3 and;		P
	(c) abrasion test in accordance with Clause 2.13.13.6.		P
	Low temperature test	2.13.13.4	P
	Maintained at -15±2°C for at least 24 h and returned to room temperature, the specimen shall be subjected to:		P
	(a) the insulation resistance test in accordance with Clause 2.13.2(e);		P
	(b) high voltage test in accordance with Clause 2.13.3 and;		P
	(c) abrasion test in accordance with Clause 2.13.13.6.		P
	Impact test at low temperature	2.13.13.5	P
	maintained at -15±2°C for at least 24 h. subjected to an impact test by means of the apparatus shown in Figure 2.6, the mass of falling weight be 100±1g , fall from a height of 100 mm. Four impacts. Return to room temperature. No cracks of the insulating material be visible with normal, or corrected to normal, vision without additional magnification..		P
	Abrasion test	2.13.13.6	P
	Plug pins provided with insulating sleeves: 20000 movements, 4 N (apparatus shown in Fingure 2.7 No damage, the insulating sleeve shall not have punctured or rucked up.		P
J 2.2.7.7	Equipment with integral pins intended to be supported by the contacts of socket-outlets shall not impose undue strain on those socket-outlets.		P

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

Clause	Requirement + Test	Main Clause	Verdict
	The additional torque, which has to be applied to the socket-outlet to maintain the engagement face in the vertical plane, shall not exceed 0.25 N.m.	not exceed 0.25 N.m.	P
J 2.3	Detachable plug portions Where a plug portion is detachable, compliance shall be established by assessment with the plug portion fully assembled with the equipment. Access to live parts shall be assessed for incorrect assembly of the plug portion. It shall not be possible to assemble the plug portion to the equipment resulting in a dangerous situation allowing access to live parts. The plug portion shall not expose live parts prior to assembly.		P

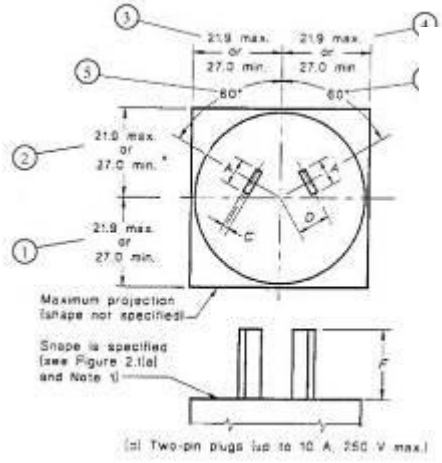
IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

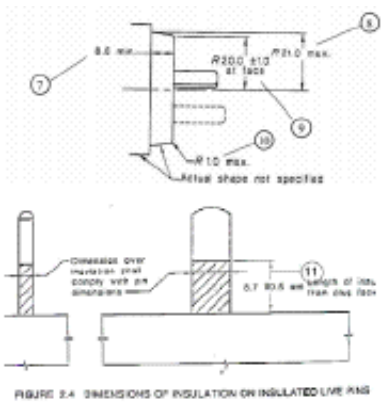
Appendix No.14：Dimension Checking for AU plug

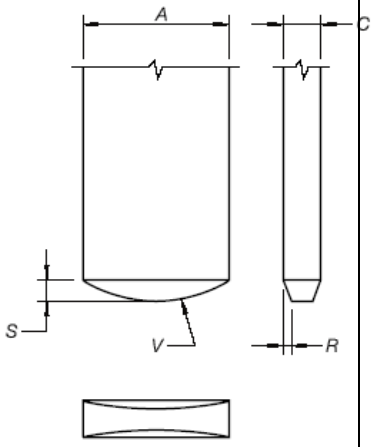
CHECKING OF DIMENSIONS

Dimensions checked by gauge and measurement

Standard sheet Figure 2.1 (c) Standard sheet Figure 2.1 (e) Standard sheet Figure 2.1 (h)







Position	Required(mm)	By Measurement(mm)	By the gauge shown in Figure A1
A	6.35±0.15	6,35	-
B	-	-	-
C	$1.63^{+0.15}_{-0.50}$	1,64	-
D	7.92	-	OK
E	-	-	-
F	17.06±0.4	17,17	-
G	-	-	-
R	0.35±0.05	0,32	-
S	0.90±0.10	0,84	-
T	≥0.60	-	-
V	6	-	OK
1	21.9 max. or 27.0 min.	21,14	-
2	21.9 max. or 27.0 min.	21,14	-
3	21.9 max. or 27.0 min.	62,88	-
4	21.9 max. or 27.0 min.	20,65	-
5	60°	-	OK
6	60°	-	OK
7	8.6 min.	12,15	-
8	21.0 max.	20,75	-
9	20.0±1.0	20,61	-
10	1.0 max	0,34	-
11	8.7±0.5	8,95	-

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

Appendix No.15: Photos of Australian plug portion





The connector conduct part can't be touched by test finger. Cl & CR are measured according to table 2.10.3 & 2.10.4.

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

Appendix No.16: Equipment combined with NEMA 1-15 plug portion according to UL 1310: 2011 Ed.6 +R:01Feb2017].

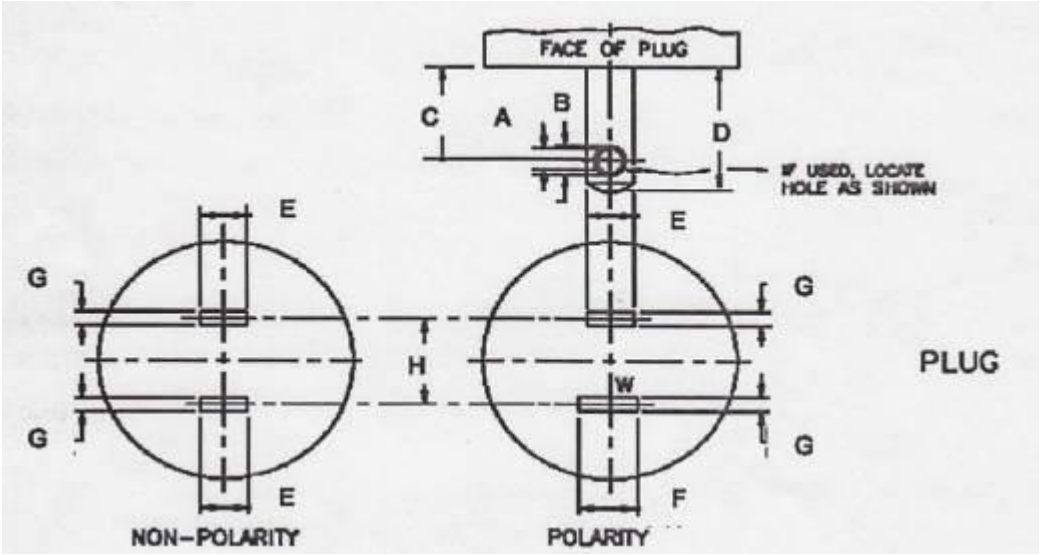
Clause	Requirement + Test	Main Clause	Verdict
7.11	Weight and moment computation		P
	WY/Z shall not exceed 48 ounces (1361g)	95.18g	P
	WY/S shall not exceed 48 ounces (1361g)	77.08g	P
	WX shall not exceed 80 ounce-inches (0.56N·m)	0.023Nm	P
	W shall not exceed 28 ounces (794g)	120g	P
43	Direct Plug-In Blade Secureness Test		P
43.1	General		P
43.2	Displacement of blade; (mm)	0.02mm	P
44	Direct Plug-In Security of Input Contacts Test		P
44.1	General		P
44.1.1	No risk of fire or electric shock		P
44.1.2	Each blade; 30 pounds-force (133 N)		P
44.1.3	Both blades and the grounding pin; 40 pounds-force (178 N)		P
44.2	Removable, folding, and retractable blade units		P
	The folding or retractable blades of the unit shall withstand 6000 cycles of rotating the blades from the plug-in position to the fully recessed position		P
	The removable blades of the unit shall withstand 6000 cycles of removal and attachment		P
	The temperature test was conducted, for the specified locations below, before and after the blade cycling		P
	Following the cycling and temperature tests the sample was subjected to the Blade Secureness Test and Input Contacts Security Test		P

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

Clause	Requirement + Test	Main Clause	Verdict
46.4	Rod pressure test		P
	Dielectric voltage withstand test between:	Primary to secondary: 1480VAC Primary to enclosure: 1480VAC	P
46.5	Resistance to crushing; 75 pounds-force (334N)		P

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

Appendix No.17: Dimensions of NEMA 1-15 plug portion



Symbol	Requirement (inch)	Measured (inch)		Symbol	Requirement (inch)	Measured (inch)
A	0.120 – 0.130	0.123		E	0.240 – 0.260	0.248
B	0.151 – 0.161	0.157		F	0.307 – 0.322	--
C	0.449 – 0.479	0.466		G	0.055 – 0.065	0.057
D	0.625 – 0.718	0.656		H	0.495 – 0.505	0.498
Perimeter faces to the plug blades shall not be less than 7.9 mm (intended for use with children's toys) or 5.1 mm from any point of either blade						12.39

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

Appendix No.18: Photos for NEMA 1-15 plug portion.





The connector conduct part can't be touched by test finger. Cl & CR are measured according to table 2.10.3 & 2.10.4.

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

Appendix No.19: Equipment combined with BS-plug portion
Supplementary tests on plug portion according to BS1363-1: 2016.

Clause	Requirement - Test	Result-Remark	Verdict
12.1	The disposition of the pins shall be as those shown in the standard. (fig. 4a)		P
12.2	The outline of the plug not exceed the dimensions shown in Fig 4a) for a distance of not less than 6.35mm from the engagement surface		P
	Pin disposition, length and body outline shall be checked by use of the gauge shown.		P
	Pin and sleeve dimensions shall be checked by measurement		P
	for non-solid pins where the chamfers general fell within the profiles of fig. 4 and their adequacy shall be checked by 12.9.5		N/A
12.2.1	Comply with the gauge in accordance with fig.5 but with a force shall not exceeding 20N	Max.14 N	P
	The line & neutral pin shall be entered into the gauge for a distance not exceeding 2mm.		P
	The plug shall enter the gauge fully when a force of 10N or less is applied.		P
	For plug with ISODs, where alignment cannot be maintained, the test in 13.8 of BS1363-2 shall be applied, the maximum withdrawal force shall not exceed 36N.		P
12.3	Part of pins from the periphery of the plug measured along the engagement surface should be not less than 9.5mm	Measured: 9.6mm	P
12.9	Plug pins shall be constructed of brass		P
12.9.1	plug pins shall be smooth and free from burrs or sharp edges		P
12.9.2	surfaces of the non-solid plug pins which are visible shall be free of apertures.		N/A
12.9.3	All seams and joints of non-solid plug pins shall be closed over their entire length		N/A
12.9.3	Test with a probe of 0,2mm diameter of steel		N/A
12.9.4	Plug pins shall have adequate strength to withstand the stresses of normal use.		P

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

Clause	Requirement - Test	Result-Remark	Verdict
12.9.4.1	For solid pins, apply a force of 1100N to the movable anvil and was strained at a rate not exceeding 10mm/min.		P
	The test shall be made separately on the line, neutral of plug pins		P
	After this test the plug shall fit the gauge to fig. 5 when used in the manner described in 12.2.1.		P
12.9.4.2	For non-solid pins		N/A
	a) After applied the force 800N on the movable anvil to the major axis of pins, the plug shall comply with 12.9.2, 12.9.3 and shall fit the gauge		N/A
	b) The applied force when the movement of the anvil from the datum point reaches 1,5min shall be not less than 1100N		N/A
12.9.4.3	For ISOD, After applied the force 400N on the movable anvil to the major axis of ISOD, the plug shall comply with 12.2.1 and shall fit the gauge not exceed 20N	Max.14N	P
12.9.5	plug with nickel plated brass pins, non-solid pins and/or ISOD shall not cause excess wear to sockets or shutter of socket-outlets		P
12.9.5.1	For nickel plated brass pins and non-solid pins, after the test, the shutter shall be operating satisfactorily and socket outlet shall be complied with 9.1, 16, 15, 13.4.1a, 10.2, 13.6, 13.7, 13.8 of BS1363-2.		P
	no opening in the surface of pins		P
12.9.5.2	For ISOD, after the test, the shutter shall be operating satisfactorily and socket contact shall be safely shielded		P
12.9.6	Plug pins and ISOD shall have adequate mechanical strength		P
	Each pin is twisted about its longitudinal axis by applying a torque of 1N for 60s		P
	After the test, the plug shall fit the gauge (fig. 5)		P
	The test is then repeated with each plug pin being twisted in the opposite direction		P

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

Clause	Requirement - Test	Result-Remark	Verdict
	After this second test, the plug shall fit the gauge		P
	In each case, the gauge is used in the manner as described in 12.2.1.		P
12.11	Plugs when fully assembled, the pins are adequately retained in position		P
	After the tests in clause 20, each pin is subjected for 60s to a pull of 100N without jerks in the direction of the major axis.		P
	The plug is mounted using the steel plate shown in fig.7. The apparatus is placed within an oven with test temperature of 70oC		P
	After the test, the plug shall comply with the gauge shown in fig.5		P
12.12	The degree of flexibility of mounting of the plug pins or the angular movement of the pins in the base shall be not greater than 3o30’	Max. 2o45’	P
	After all tests have been completed, the plug shall fit the gauge shown in fig.5		P
12.13	Suitable means shall be provided for withdrawing the plug without subjecting cord to stress		P
12.16	Line and neutral plug pins shall be fitted with insulating sleeves		P
	The dimensions of the pin and sleeve as fig 4a)		P
	Sleeves shall not be fitted to any earthing plug pin		P
12.17.2	A 50Hz voltage of substantially sinusoidal waveform is applied between each L and N pin and a thin metal strip wrapped around the base of the plug pin sleeve adjacent to the base		P
12.17.3	The test apparatus for resistance to abrasion (see fig.9)		P
	The plug is moved 10,000 times in each direction (20,000 movements)		P
	The test shall be made on one pin of each plug		P
	After the test, the sleeve shall not show damage which might impair the further use of the plug		P

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

Clause	Requirement - Test	Result-Remark	Verdict
	The sleeve shall not have been penetrated or creased		P
12.17.4	A set of three specimen pins is tested by means of the apparatus as shown in fig. 10.		P
	The test is made on one pin of each plug not used for the test described in 12.17.3.		P
	The apparatus is loaded so that the blade exerted a force on the specimen.	Required load:2.4N-2.5N; Measured load: 2.46N	P
	The apparatus is placed in a heating cabinet	125 °C, 120min	P
	The thickness of the insulation remaining at the point impression is measured and shall not have been reduced by more than 50%.	Original: 0.68mm; Remain: 0.55mm.	P
22.2	Parts of insulating material shall be sufficiently resistant to heat having particular regard for their location and function in the complete plug.		P
22.2.1	Other insulating material subjected to the ball pressure test		P
	The test is made in a heating cabinet maintained at a temperature of 75oC		P
	The surface of the part to be tested is placed such that a force of 20N is applied		P

	Parts	Test temp (°C)	Diameter of impression (mm)	Limit (mm)	—
	Not retain live part (Fuse carrier)	75	Max.0.9	≤2	P
	Retain live part (Insert & cap)	75	Max.0.9	≤2	P
	ISOD	75	Max.1.0	≤2	P

23.2	Glow-wire test		P
	necessary to retain live parts in position including ISOD	750°C (Insert & cap; ISOD)	P
	a) no visible flame and no sustained glowing		P
	b) flame and glowing extinguish within 30 s after removal of glow-wire		N/A

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

Clause	Requirement - Test	Result-Remark	Verdict
	- no ignition of the tissue paper		P
	not necessary to retain live parts in position	650°C	P
	a) no visible flame and no sustained glowing		P
	b) flame and glowing extinguish within 30 s after removal of glow-wire		N/A
	- no ignition of the tissue paper		P

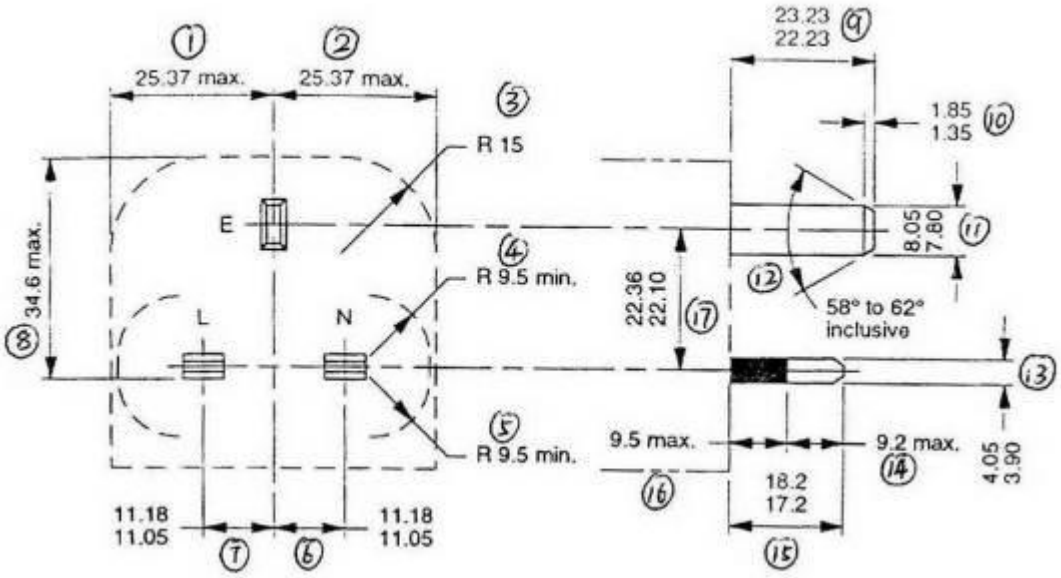
IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

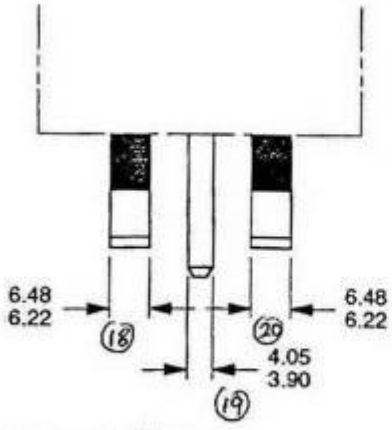
Appendix No.20: Dimensions of BS1363 plug portion

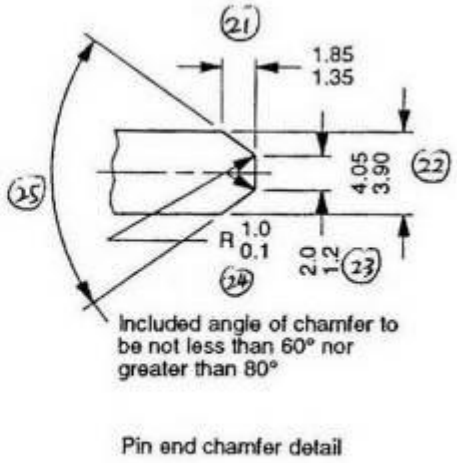
Dimensions Checked by means of measurement according to BS1363-3 Fig. 4 (see appendix no. 2)			
Position	Requirement (mm)	Measured (mm)	Verdict
1	25.37max	24.02	P
2	25.37max	24.02	P
3	R15min	Measured by gauge	P
4	R9.5min	9.60	P
5	R9.5min	9.60	P
6	11.05-11.18	11.12	P
7	11.05-11.18	11.12	P
8	34.6max	30.50	P
9	22.23-23.23	22.60	P
10	1.35-1.85	1.55	P
11	7.80-8.05	8.03	P
12	58°-62° inclusive	60°	P
13	3.90-4.05	3.99	P
14	9.2max	8.88	P
15	17.2-18.2	18.05	P
16	9.5max	9.17	P
17	22.10-22.36	22.21	P
18	6.22-6.48	6.26	P
19	3.90-4.05	4.03	P
20	6.22-6.48	6.26	P
21	1.35-1.85	1.81	P
22	3.90-4.05	3.98	P
23	1.2-2.0	1.24	P
24	R0.1-R1.0	R0.55	P
25	60°-80° inclusive	68°	P
Outline of the plug not exceed the dimension shown in figure 4 at least 6.35mm from the engagement surface		8.90	P

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

Appendix No.21: BS1363-3 Fig 4







Pin end chamfer detail

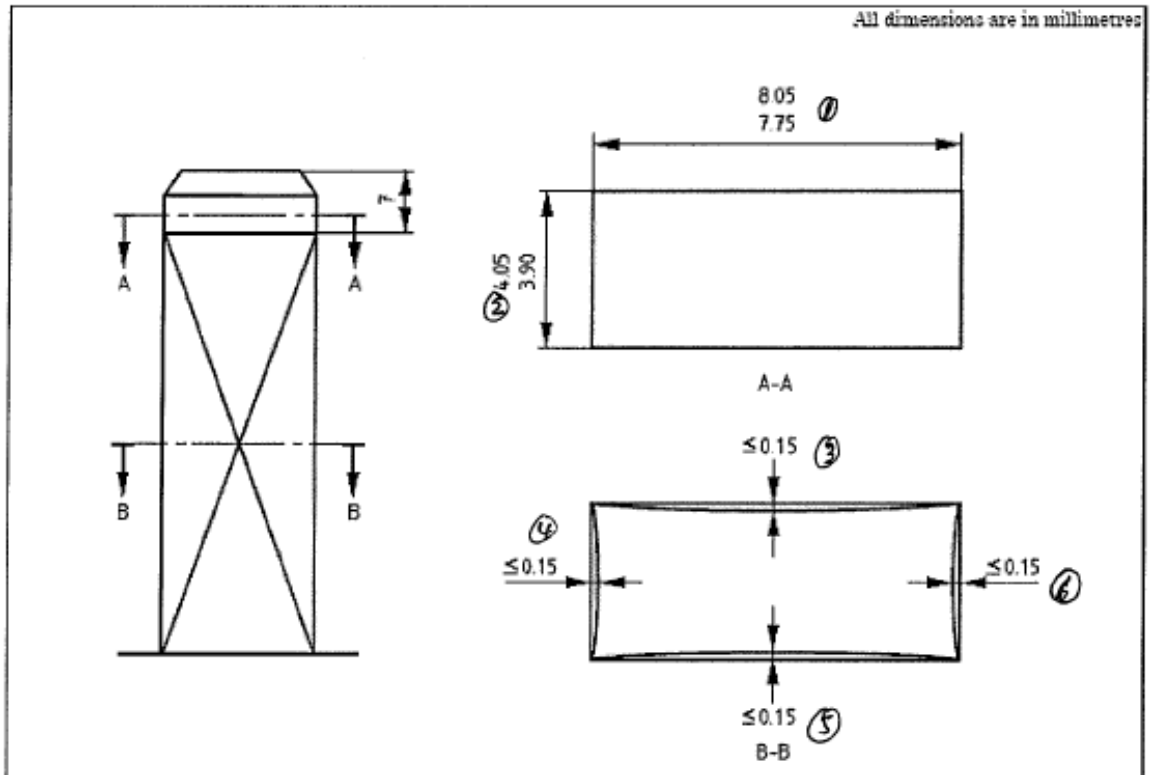
All dimensions are in millimetres.

Figure 4. Dimensions and disposition of pins (see clause 12)

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

Appendix No.22: Concave shrinkable allowance for ISODs

	Dimensions Checked by means of measurement according to BS1363-1 Fig. 4b		
Position	Requirement (mm)	Measured (mm)	Verdict
1	7.75-8.05	8.03	P
2	3.90-4.05	3.99	P
3	≤ 0.15	0.01	P
4	≤ 0.15	0.01	P
5	≤ 0.15	0.01	P
6	≤ 0.15	0.01	P



Solid insulated shutter opening device (ISOD)

NOTE Section A-A to be measured away from chamfer as shown.

Figure 4b) — Concave shrinkage allowance for ISODs

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

Appendix No.23: Photo for BS1363 plug

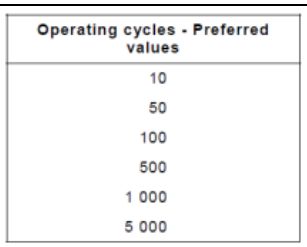




The connector conduct part can't be touched by test finger. Cl & CR are measured according to table 2.10.3 & 2.10.4.

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

Appendix No.24: MECHANICAL DURABILITY TEST FOR NON-STANDARD INTERCHANGEABLE PLUG ADAPTERS ACCORDING IEC 61984: 2008

IEC 61984: 2008			
Clause	Requirement + Test	Result - Remark	Verdict
6.14.1	**MECHANICAL ENDURANCE (COC AND CBC)**		P
	A connector, either COC or CBC, shall meet the mechanical operations without load as specified in the DS or in the manufacturer's specification (preferred numbers of operating cycles are given in Table 4a).	100 cycles	P
7.3.9	**MECHANICAL OPERATION**		P
	The object of this test is to assess the mechanical operational endurance of a connector either CBC or COC in the normal operational mode without electrical load.		P
	The test shall be carried out according to test 9a of IEC 60512, under the following conditions, unless otherwise specified.		P
	Test conditions:		P
	The specimens shall be engaged and disengaged by means of a device simulating normal operating conditions.		P
	The preparation and mounting of the specimen shall be as in normal use.		P
	The type and cross sectional area of the cable/wire bundle to be used shall be specified by the manufacturer or by the DS.		P
	The number of operating cycles shall be specified by the manufacturer or by the DS.		P
	Preferred values are indicated in Table 4a.	100 cycles	P
	The speed of insertion and withdrawal shall be approximately 0,01 m/s with a rest in the unmated position of approximately 30 s.		P
Table 4	Mechanical and electrical durability		P
	Table 4a – Operating cycles – Preferred values		P
		100 cycles	P

Operating cycles - Preferred values
10
50
100
500
1 000
5 000

Photograph:

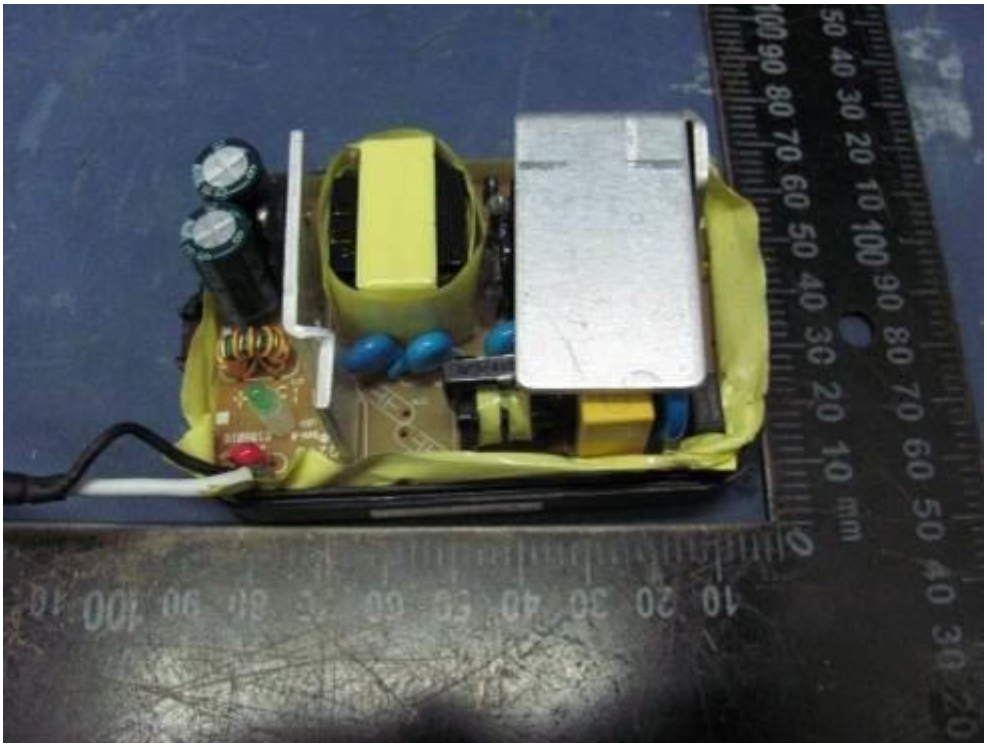
Fig. 1 - External view of EUT without plug portion attached



Fig. 2 - External view of EUT



Fig. 3 - Component side view of PCB



Note: Mains transformer shall be mounted as shown in the following figures.

Fig. 4 - Secondary wire installation view of mains transformer (Jump lead wire)

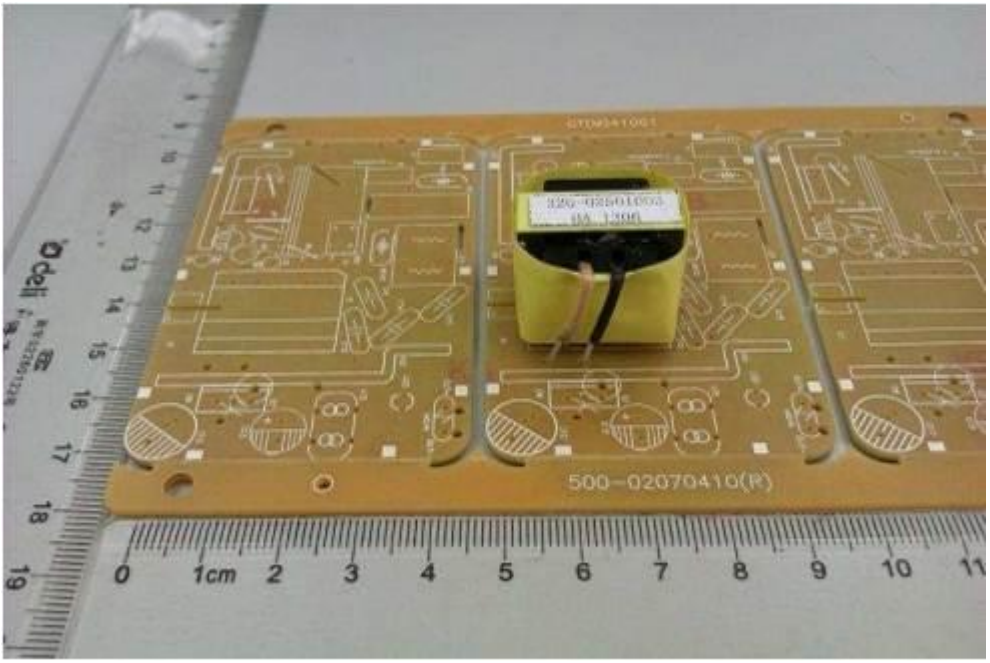


Fig. 5 - Installation view of mains transformer (without secondary pin-outs on the bobbin)

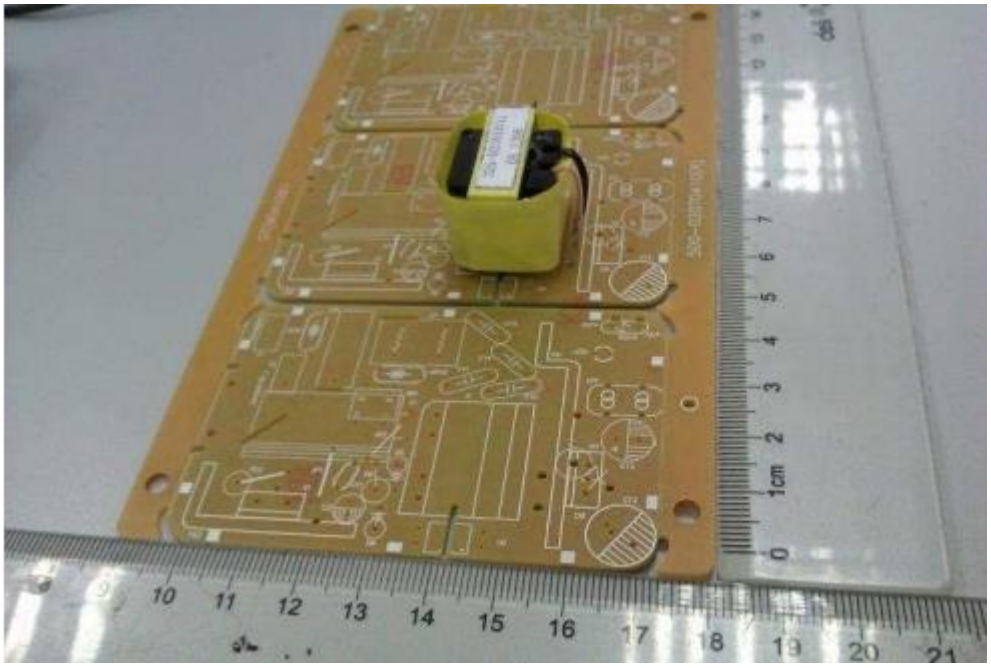


Fig. 6 - Soldering side view of PCB

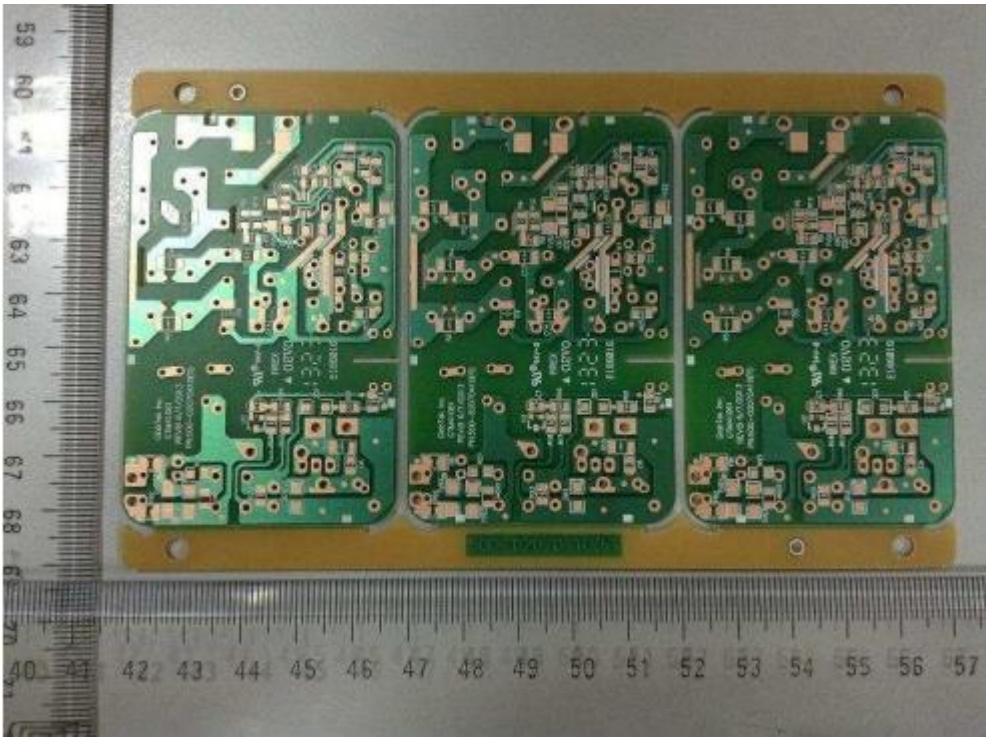


Fig. 7 - External view of mains transformer



Fig. 8 - External view of mains transformer

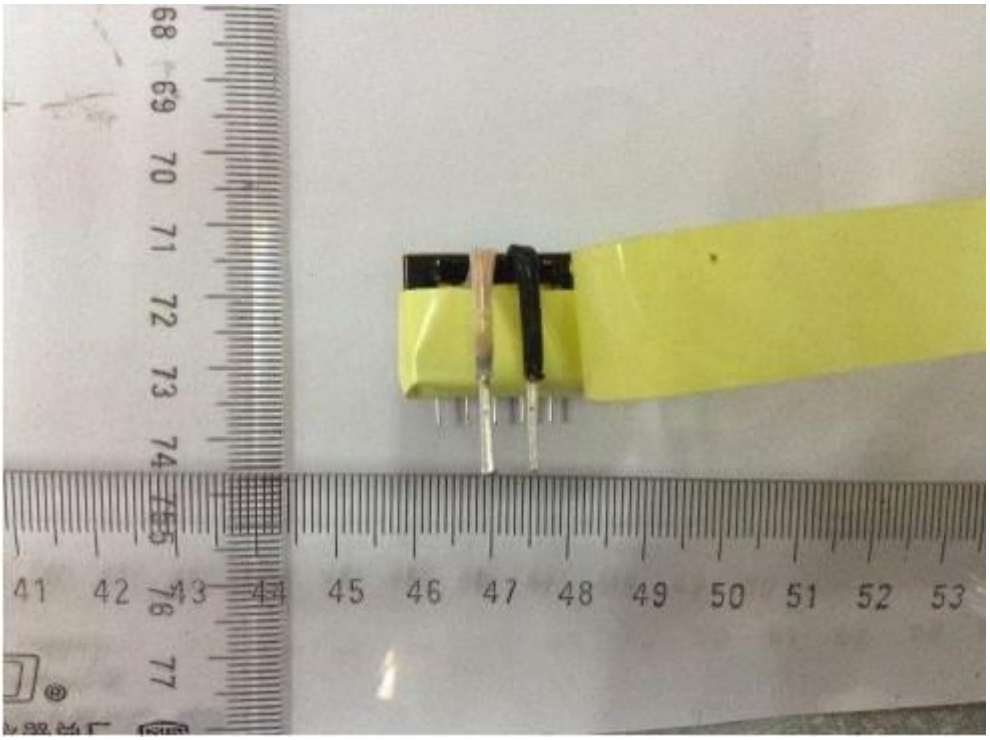


Fig. 9 - External view of mains transformer

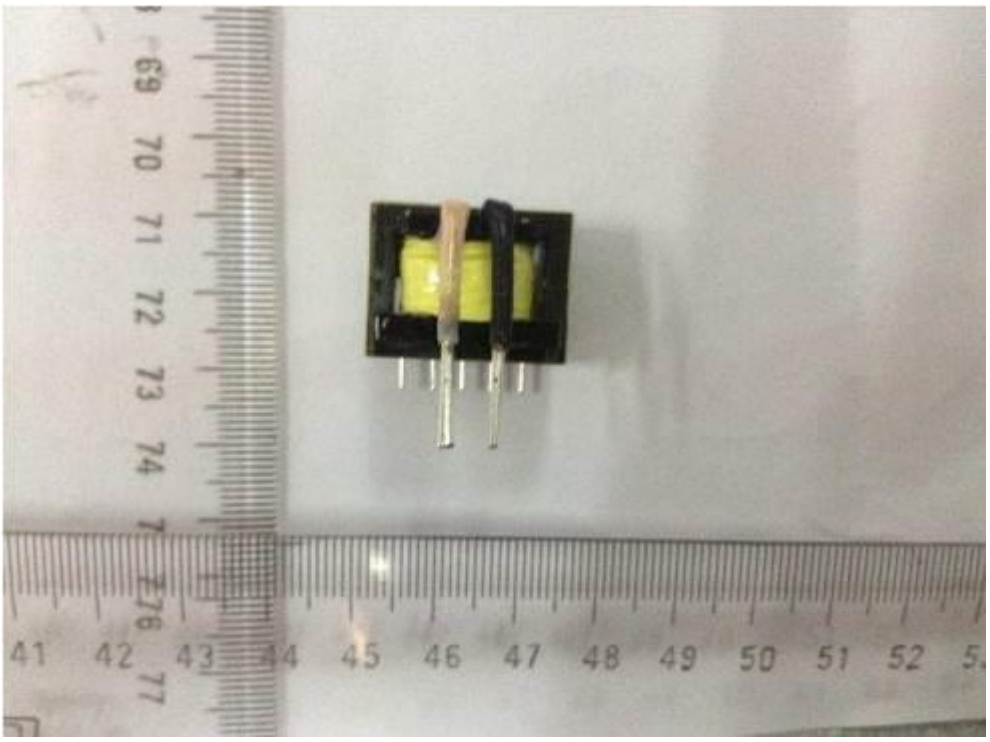


Fig. 10 - External view of mains transformer



Fig. 11 - External view of mains transformer with pin-out support (Optional)



Fig. 12 - External view of mains transformer with pin-out support (Optional)

