



STC (Dongguan) Company Limited  
**EC DECLARATION OF CONFORMITY**

**Reference Number:** LVD-D161916DOC

Intracom Asia Co., Ltd  
4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan

declare the product

Description: 8-Port PoE+ Desktop Gigabit Switch  
Brand Name: Intellinet  
Model: 560641

complies with the requirements of the  
**EC Low Voltage Directive 2006/95/EC** (until April 19<sup>th</sup>, 2016) and  
**EC Low Voltage Directive 2014/35/EU** (from April 20<sup>th</sup>, 2016)

**Applicable Standard(s) with amendments:**

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

General Remarks:

This declaration is only valid when used in conjunction with the technical file(s) refers to DE115902

This declaration applies specifically to the sample(s) investigated in the technical report mentioned above and not to the bulk.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives.

**Manufacturer/Importer**



**Test Laboratory**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
LI Chang Jun, Ricky  
Authorized Signatory  
Electrical Safety Department  
For and on behalf of  
STC (Dongguan) Company Limited

www.dgstc.org

**Date of Issue:** 2016-04-13



Deutsche  
Akkreditierungsstelle  
D-PL-12121-01-00




<b>TEST REPORT</b>	
<b>IEC/EN 60950-1</b>	
<b>Information technology equipment – Safety –</b>	
<b>Part 1: General requirements</b>	
<b>Report Number</b> .....	DE115902
<b>Date of issue</b> .....	2016-04-13
<b>Total number of pages</b> .....	Page 1 to 59 for test report Appendix 1 to 5 for product photographs
<b>Testing Laboratory</b> .....	STC (Dongguan) Company Limited
<b>Address</b> .....	68 Fumin Nan Road, Dalang , Dongguan City, Guangdong Province, P.R. China
<b>Applicant's name</b> .....	Intracom Asia Co., Ltd
<b>Address</b> .....	4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan
<b>Test specification:</b>	
<b>Standard</b> .....	<input type="checkbox"/> IEC 60950-1:2005 (2nd Edition); Am 1:2009; Am 2: 2013 <input checked="" type="checkbox"/> EN 60950-1:2006+A11:2009+A1:2010+A12: 2011+A2:2013
<b>Test procedure</b> .....	N/A
<b>Non-standard test method</b> .....	N/A
<b>Test Report Form No.</b> .....	IEC60950_1B_M2
<b>Test Report Form(s) Originator</b> ....	<b>SGS Fimko Ltd</b>
<b>Master TRF</b> .....	Dated 2010-04
<b>Modified by</b> .....	STC
<b>Modified Date</b> .....	2013-12
<b>Copyright © 2010 Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components (IECEE), Geneva, Switzerland. All rights reserved.</b>	
This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
<b>Test item description</b> .....	8-Port PoE+ Desktop Gigabit Switch
<b>Trade Mark</b> .....	Intellinet
<b>Manufacturer</b> .....	Intracom Asia Co., Ltd
<b>Address</b> .....	4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan
<b>Model/Type reference</b> .....	560641
<b>Ratings</b> .....	100-240VAC 50/60Hz, Max.2.2A



<b>Testing procedure and testing location:</b>	
<input checked="" type="checkbox"/> <b>Testing Laboratory:</b>	STC (Dongguan) Company Limited
Testing location/ address .....	68 Fumin Nan Road, Dalang, Dongguan City, Guangdong Province, P.R. China
<input type="checkbox"/> <b>Associated Laboratory:</b>	
Testing location/ address .....	
Tested by (name + signature) .....	Amy Lin
Approved by (+ signature) .....	Ricky Lee
<input type="checkbox"/> Testing procedure: TMP	
Tested by (name + signature) .....	
Approved by (+ signature) .....	
Testing location/ address .....	
<input type="checkbox"/> Testing procedure: WMT	
Tested by (name + signature) .....	
Witnessed by (+ signature) .....	
Approved by (+ signature) .....	
Testing location/ address .....	
<input type="checkbox"/> Testing procedure: SMT	
Tested by (name + signature) .....	
Approved by (+ signature) .....	
Supervised by (+ signature) .....	
Testing location/ address .....	
<input type="checkbox"/> Testing procedure: RMT	
Tested by (name + signature) .....	
Approved by (+ signature) .....	
Supervised by (+ signature) .....	
Testing location/ address .....	





List of Attachments (including a total number of pages in each attachment): Page 1 to 59 for test report Appendix 1 to 5 for product photographs	
<b>Summary of testing:</b>  The sample(s) tested complies with the requirements of EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011 +A2:2013	
<b>Tests performed (name of test and test clause):</b>  EN 60950-1:2006+ A11:2009+ A1:2010+A12:2011 + A2:2013	<b>Testing location:</b>  68 Fumin Nan Road, Dalang, Dongguan City, Guangdong Province, P.R. China
<b>Summary of compliance with National Differences</b> <b>List of countries addressed:</b> Europe  <input checked="" type="checkbox"/> <b>The product fulfils the requirements of <u>EN 60950-1:2006+ A11:2009+ A1:2010+A12:2011+A2:2013</u></b>	
<b>Copy of marking plate:</b>  <div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"><p><b>Brand :</b> Intellinet </p><p><b>Model :</b> 560641</p><p><b>Product Name :</b> 8-Port PoE+ Desktop Gigabit Switch</p><p><b>Rated Input Voltage :</b> 100-240V AC, 50/60Hz</p><p><b>Rated Input Current :</b> MAX 2.2A</p><p style="text-align: right;">  Made in China</p></div>	



<b>Test item particulars</b> .....	: 8-Port PoE+ Desktop Gigabit Switch
<b>Equipment mobility</b> .....	: <input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
<b>Connection to the mains</b> .....	: <input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
<b>Operating condition</b> .....	: <input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
<b>Access location</b> .....	: <input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
<b>Over voltage category (OVC)</b> .....	: <input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other
<b>Mains supply tolerance (%) or absolute mains supply values</b> .....	: +6%, -10%
<b>Tested for IT power systems</b> .....	: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>IT testing, phase-phase voltage (V)</b> .....	: N/A
<b>Class of equipment</b> .....	: <input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
<b>Considered current rating of protective device as part of the building installation (A)</b> .....	: 16A
<b>Pollution degree (PD)</b> .....	: <input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
<b>IP protection class</b> .....	: IPX0
<b>Altitude during operation (m)</b> .....	: 2000
<b>Altitude of test laboratory (m)</b> .....	: < 2000
<b>Mass of equipment (kg)</b> .....	: 1.8kg
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....	: N (N/A)
- test object does meet the requirement .....	: P (Pass)
- test object does not meet the requirement.....	: F (Fail)
<b>Testing</b> .....	
<b>Date of receipt of test item</b> .....	: 2014-08-20; 2014-12-08
<b>Date(s) of performance of tests</b> .....	: 2014-08-20 to 2014-10-16; 2014-12-08 to 2014-12-23

**General remarks:**

The test results presented in this report relate only to the object tested.  
This report shall not be reproduced, 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.

This report shall not be reproduced unless prior written approval from STC (Dongguan) Company Limited For Conditions of issuance of this test report, please refer to the below Homepage.

Page 1 to 59 for test report  
Appendix 1 to 5 for product photographs

**Manufacturer's Declaration per sub-clause 6.2.5 of IEC 60950:**

**When differences exist; they shall be identified in the General product information section.**

**General product information:**

The submitted unit is Class I 8-Port PoE+ Desktop Gigabit Switch, Which including POE function and net function. Power output up to 34watts on ports 1-4 (IEEE 802.3at); and power output up to 15.4watts on ports 5-8 (IEEE 802.3af). It supplied by mains via a detachable power supply cord.

The max operated temperature is 40°C which is specified by manufacturer.

**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/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

1	<b>GENERAL</b>		P
---	----------------	--	---

1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	see appended table	P
1.5.2	Evaluation and testing of components		P
1.5.3	Thermal controls	Not used	N
1.5.4	Transformers	See Annex C	P
1.5.5	Interconnecting cables	No hazards	P
1.5.6	Capacitors bridging insulation	Approved capacitor used	P
1.5.7	Resistors bridging insulation	No such resistors	N
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N
1.5.8	Components in equipment for IT power systems	Not for IT power distribution systems	N
1.5.9	Surge suppressors	Varistor V1 was approved	P
1.5.9.1	General	See Annex Q	P
1.5.9.2	Protection of VDRs	Fuse F1 used	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
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No such Varistor	N

1.6	Power interface		P
1.6.1	AC power distribution systems	TN	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment	N
1.6.4	Neutral conductor		N

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	See below	P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N
	Rated voltage(s) or voltage range(s) (V) .....	100-240V	P
	Symbol for nature of supply, for d.c. only .....	AC input	N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated frequency or rated frequency range (Hz) .....	50/60Hz	P
	Rated current (mA or A) .....	Max. 2.2A	P
1.7.1.2	Identification markings	See copy of marking plate	P
	Manufacturer's name or trade-mark or identification mark .....	Intellinet	P
	Model identification or type reference .....	560641	P
	Symbol for Class II equipment only .....	Class I	N
	Other markings and symbols .....	Additional symbol or marking does 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	Appliance coupler as disconnect devices	P
1.7.2.3	Overcurrent protective device		N
1.7.2.4	IT power distribution systems		N
1.7.2.5	Operator access with a tool		N
1.7.2.6	Ozone	No ozone radiation	N
1.7.3	Short duty cycles	Continuous operation	N
1.7.4	Supply voltage adjustment .....		N
	Methods and means of adjustment; reference to installation instructions .....		N
1.7.5	Power outlets on the equipment .....	No such power outlets	N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....	F1: T5A 250VAC	P
1.7.7	Wiring terminals		P
1.7.7.1	Protective earthing and bonding terminals .....	 on inlet	P
1.7.7.2	Terminals for a.c. mains supply conductors	No such terminal provided	N
1.7.7.3	Terminals for d.c. mains supply conductors	No d.c. mains	N
1.7.8	Controls and indicators		P
1.7.8.1	Identification, location and marking .....		N
1.7.8.2	Colours .....	No colour impairs safety	N
1.7.8.3	Symbols according to IEC 60417 .....		P
1.7.8.4	Markings using figures .....		P
1.7.9	Isolation of multiple power sources .....		N
1.7.10	Thermostats and other regulating devices .....	No such adjustable devices	N
1.7.11	Durability	Legible after test	P
1.7.12	Removable parts	No such parts	N





IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.13	Replaceable batteries .....	No such battery	N
	Language(s) .....		—
1.7.14	Equipment for restricted access locations .....	Not for installation in restricted access locations	N

<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		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	Cannot touch live part and basic insulation	P
	Test by inspection .....	No hazards	P
	Test with test finger (Figure 2A) .....	No hazards	P
	Test with test pin (Figure 2B) .....	No hazards	P
	Test with test probe (Figure 2C) .....	No hazards	P
2.1.1.2	Battery compartments	No compartments	N
2.1.1.3	Access to ELV wiring	No ELV circuit	N
	Working voltage ( $V_{peak}$ or $V_{rms}$ ); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring		N
2.1.1.5	Energy hazards .....	(see appended tables 2.1.1.5)	P
2.1.1.6	Manual controls	No manual control	N
2.1.1.7	Discharge of capacitors in equipment	CX1: 0.47 $\mu$ F; CX2: 0.47 $\mu$ F	P
	Measured voltage (V); time-constant (s) .....	7V after 1s	—
2.1.1.8	Energy hazards – d.c. mains supply		N
	a) Capacitor connected to the d.c. mains supply ...:		N
	b) Internal battery connected to the d.c. mains supply .....		N
2.1.1.9	Audio amplifiers .....	No such componet	N
2.1.2	Protection in service access areas		N
2.1.3	Protection in restricted access locations		N

2.2	SELV circuits		P
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V) .....	(see appended tables 2.2)	P
2.2.3	Voltages under fault conditions (V) .....	(see appended tables 2.2)	P
2.2.4	Connection of SELV circuits to other circuits .....	Connect to SELV circuit only	P

2.3	TNV circuits		P
-----	--------------	--	---



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

2.3.1	Limits		P
	Type of TNV circuits .....	TNV-1	—
2.3.2	Separation from other circuits and from accessible parts		P
2.3.2.1	General requirements		P
2.3.2.2	Protection by basic insulation		P
2.3.2.3	Protection by earthing		P
2.3.2.4	Protection by other constructions .....		N
2.3.3	Separation from hazardous voltages		P
	Insulation employed .....	Main protective earthing terminal used	—
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed .....		—
2.3.5	Test for operating voltages generated externally		N

2.4	Limited current circuits		P
2.4.1	General requirements	Considered.	P
2.4.2	Limit values	173.6mA	P
	Frequency (Hz) .....	248KHz	—
	Measured current (mA).....	3.47mA	—
	Measured voltage (V) .....	6.94V	—
	Measured circuit capacitance (nF or $\mu$ F) .....	CY3: 3300PF	—
2.4.3	Connection of limited current circuits to other circuits	Under normal operating condition and in the event of a single failure	P

2.5	Limited power sources		N
	a) Inherently limited output		N
	b) Impedance limited output		N
	c) Regulating network limited output under normal operating and single fault condition	(see appended table 2.5)	N
	d) Overcurrent protective device limited output		N
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....		—
	Current rating of overcurrent protective device (A) ..		—
	Use of integrated circuit (IC) current limiters		—

2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing		P



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.2	Functional earthing		N
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors	Power cord set	P
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....	2.2A, 0.75mm <sup>2</sup>	—
2.6.3.3	Size of protective bonding conductors		P
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		—
	Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), AWG .....	2.2A, 18AWG	—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) .....	0.022Ω	P
2.6.3.5	Colour of insulation .....	The color combination green and yellow is used	P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals	Appliance coupler used	P
	Rated current (A), type, nominal thread diameter (mm) .....		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment		N
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		P
2.6.5.3	Disconnection of protective earth		N
2.6.5.4	Parts that can be removed by an operator	Applianc coupler	P
2.6.5.5	Parts removed during servicing		N
2.6.5.6	Corrosion resistance		N
2.6.5.7	Screws for protective bonding		P
2.6.5.8	Reliance on telecommunication network or cable distribution system		N
2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements	Fuse F1 used	P
	Instructions when protection relies on building installation		N
2.7.2	Faults not simulated in 5.3.7		N



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

2.7.3	Short-circuit backup protection	By building installation	P
2.7.4	Number and location of protective devices ..... :	One fuse	P
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel ..... :		N

2.8	Safety interlocks		N
2.8.1	General principles	No safety interlocks	N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
	Protection against extreme hazard		N
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches, relays and their related circuits		N
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..... :		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test	(see appended table 5.2)	N
2.8.8	Mechanical actuators		N

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials		P
2.9.2	Humidity conditioning	48 hrs	P
	Relative humidity (%), temperature (°C) ..... :	30°C, 93%	—
2.9.3	Grade of insulation	Basic 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 ..... :	<30KHz	P
2.10.1.2	Pollution degrees ..... :	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
2.10.1.6	Special separation requirements		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.1.7	Insulation in circuits generating starting pulses		N
2.10.2	Determination of working voltage		P
2.10.2.1	General	See appended table 2.10.2	P
2.10.2.2	RMS working voltage		P
2.10.2.3	Peak working voltage		P
2.10.3	Clearances		N
2.10.3.1	General		P
2.10.3.2	Mains transient voltages	2500V	P
	a) AC mains supply .....	100-240V	P
	b) Earthed d.c. mains supplies .....		N
	c) Unearthed d.c. mains supplies .....		N
	d) Battery operation .....		N
2.10.3.3	Clearances in primary circuits	See appended table 2.10.3 & 2.10.4	P
2.10.3.4	Clearances in secondary circuits		N
2.10.3.5	Clearances in circuits having starting pulses		N
2.10.3.6	Transients from a.c. mains supply .....		N
2.10.3.7	Transients from d.c. mains supply .....		N
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....		N
2.10.3.9	Measurement of transient voltage levels		N
	a) Transients from a mains supply		N
	For an a.c. mains supply .....		N
	For a d.c. mains supply .....		N
	b) Transients from a telecommunication network :		N
2.10.4	Creepage distances	See appended table 2.10.3 & 2.10.4	P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests .....	IIIb	—
2.10.4.3	Minimum creepage distances		P
2.10.5	Solid insulation	See appended table 2.10.5	P
2.10.5.1	General		P
2.10.5.2	Distances through insulation		P
2.10.5.3	Insulating compound as solid insulation		N
2.10.5.4	Semiconductor devices		N
2.10.5.5	Cemented joints		N
2.10.5.6	Thin sheet material – General		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.7	Separable thin sheet material		N
	Number of layers (pcs) .....		—
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material – standard test procedure		N
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		N
	Electric strength test		—
2.10.5.11	Insulation in wound components		P
2.10.5.12	Wire in wound components		P
	Working voltage .....		N
	a) Basic insulation not under stress .....		N
	b) Basic, supplementary, reinforced insulation .....		N
	c) Compliance with Annex U .....		N
	Two wires in contact inside wound component; angle between 45° and 90° .....	Separated by tape and tube	P
2.10.5.13	Wire with solvent-based enamel in wound components		N
	Electric strength test		—
	Routine test		N
2.10.5.14	Additional insulation in wound components		N
	Working voltage .....		N
	- Basic insulation not under stress .....		N
	- Supplementary, reinforced insulation .....		N
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards	See appended table 2.10.3 & 2.10.4	P
2.10.6.2	Coated printed boards		N
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N
2.10.6.4	Insulation between conductors on different layers of a printed board		N
	Distance through insulation		N
	Number of insulation layers (pcs) .....		N
2.10.7	Component external terminations		N
2.10.8	Tests on coated printed boards and coated components		N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N
2.10.8.3	Electric strength test		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling		N
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N
2.10.11	Tests for semiconductor devices and cemented joints		N
2.10.12	Enclosed and sealed parts		N

<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		<b>P</b>
3.1	General		P
3.1.1	Current rating and overcurrent protection	No hazards	P
3.1.2	Protection against mechanical damage	No hazards	P
3.1.3	Securing of internal wiring	No hazards	P
3.1.4	Insulation of conductors	Basic insulation for inside	P
3.1.5	Beads and ceramic insulators	No such parts	N
3.1.6	Screws for electrical contact pressure	No such screw	N
3.1.7	Insulating materials in electrical connections		N
3.1.8	Self-tapping and spaced thread screws	No such screw	N
3.1.9	Termination of conductors	Screw and soldering	P
	10 N pull test		P
3.1.10	Sleeving on wiring	Heat-shrinkable tube fixed on terminal	P

3.2	Connection to a mains supply		P
3.2.1	Means of connection.....:	Mains plug and appliance coupler	P
3.2.1.1	Connection to an a.c. mains supply		P
3.2.1.2	Connection to a d.c. mains supply		N
3.2.2	Multiple supply connections		N
3.2.3	Permanently connected equipment	Not such equipment	N
	Number of conductors, diameter of cable and conduits (mm) .....		—
3.2.4	Appliance inlets	Appliance inlet was approved	P
3.2.5	Power supply cords	Power cord set was approved	P
3.2.5.1	AC power supply cords		P
	Type .....	H03VV-F	—
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....	3G0.75mm <sup>2</sup>	—
3.2.5.2	DC power supply cords		N
3.2.6	Cord anchorages and strain relief	Detached power cord used	N



IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
	Mass of equipment (kg), pull (N) .....		—
	Longitudinal displacement (mm) .....		—
3.2.7	Protection against mechanical damage		N
3.2.8	Cord guards		N
	Diameter or minor dimension D (mm); test mass (g) .....		—
	Radius of curvature of cord (mm).....		—
3.2.9	Supply wiring space		N
3.3	Wiring terminals for connection of external conductors		N
3.3.1	Wiring terminals	Appliance coupler used	N
3.3.2	Connection of non-detachable power supply cords		N
3.3.3	Screw terminals		N
3.3.4	Conductor sizes to be connected		N
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ).....		—
3.3.5	Wiring terminal sizes		N
	Rated current (A), type, nominal thread diameter (mm) .....		—
3.3.6	Wiring terminal design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N
3.4	Disconnection from the mains supply		P
3.4.1	General requirement		P
3.4.2	Disconnect devices	Appliance coupler	P
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords		N
3.4.6	Number of poles - single-phase and d.c. equipment		P
3.4.7	Number of poles - three-phase equipment		N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices	Appliance coupler used also	N
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources		N
3.5	Interconnection of equipment		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits .....	SELV circuits to SELV circuits	P





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

3.5.3	ELV circuits as interconnection circuits		N
3.5.4	Data ports for additional equipment		P

<b>4</b>	<b>PHYSICAL REQUIREMENTS</b>		P
4.1	Stability		N
	Angle of 10°		N
	Test force (N) .....	< 7kg	N

4.2	Mechanical strength		P
4.2.1	General	Metal enclosure used	P
	Rack-mounted equipment.		P
4.2.2	Steady force test, 10 N		N
4.2.3	Steady force test, 30 N		N
4.2.4	Steady force test, 250 N		P
4.2.5	Impact test		P
	Fall test	500g, 1.3m	P
	Swing test	500g, 1.3m	P
4.2.6	Drop test; height (mm) .....		N
4.2.7	Stress relief test	Metal enclosure used	N
4.2.8	Cathode ray tubes	No CRT.	N
	Picture tube separately certified .....		N
4.2.9	High pressure lamps	No high pressure lamps.	N
4.2.10	Wall or ceiling mounted equipment; force (N) .....	Not such equipments	N

4.3	Design and construction		P
4.3.1	Edges and corners	Edges and corners are rounded or smoothed.	P
4.3.2	Handles and manual controls; force (N) .....	No handles or controls provided	N
4.3.3	Adjustable controls	No adjustable controls.	N
4.3.4	Securing of parts		P
4.3.5	Connection by plugs and sockets		P
4.3.6	Direct plug-in equipment		N
	Torque .....		—
	Compliance with the relevant mains plug standard .....		N
4.3.7	Heating elements in earthed equipment	No heating elements.	N
4.3.8	Batteries	No battery used	N
	- Overcharging of a rechargeable battery		N



**IEC/EN 60950-1**

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

	- Unintentional charging of a non-rechargeable battery		N
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery		N
4.3.9	Oil and grease	No oil or grease.	N
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	N
4.3.11	Containers for liquids or gases	No container for liquid or gas.	N
4.3.12	Flammable liquids .....	No flammable liquid.	N
	Quantity of liquid (l) .....		N
	Flash point (°C) .....		N
4.3.13	Radiation		P
4.3.13.1	General		N
4.3.13.2	Ionizing radiation		N
	Measured radiation (pA/kg) .....		—
	Measured high-voltage (kV) .....		—
	Measured focus voltage (kV) .....		—
	CRT markings .....		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N
	Part, property, retention after test, flammability classification .....		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....		N
4.3.13.5	Lasers (including laser diodes) and LEDs		P
4.3.13.5.1	Lasers (including laser laser diodes)		N
	Laser class .....		—
4.3.13.5.2	Light emitting diodes (LEDs)	LED used for indication only	P
4.3.13.6	Other types .....		N

4.4	Protection against hazardous moving parts		N
4.4.1	General	No moving parts	N
4.4.2	Protection in operator access areas .....		N
	Household and home/office document/media shredders	(see Annex EE)	N
4.4.3	Protection in restricted access locations .....		N
4.4.4	Protection in service access areas		N
4.4.5	Protection against moving fan blades		N
4.4.5.1	General		N
	Not considered to cause pain or injury. a).....		N



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

	Is considered to cause pain, not injury. b) .....		N
	Considered to cause injury. c) .....		N
4.4.5.2	Protection for users		N
	Use of symbol or warning .....		N
4.4.5.3	Protection for service persons		N
	Use of symbol or warning .....		N

4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per 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
4.6.1	Top and side openings	side openings	P
	Dimensions (mm) .....	Diameter: 2.30mm	—
4.6.2	Bottoms of fire enclosures	Metal enclosure	P
	Construction of the bottom, dimensions (mm) . :		—
4.6.3	Doors or covers in fire enclosures	No doors or covers	N
4.6.4	Openings in transportable equipment	Not such equipment.	N
4.6.4.1	Constructional design measures		N
	Dimensions (mm) .....		—
4.6.4.2	Evaluation measures for larger openings		N
4.6.4.3	Use of metallized parts		N
4.6.5	Adhesives for constructional purposes	No barrier of screen fixed by glue inside subwoofer	N
	Conditioning temperature (°C), time (weeks) .....		—

4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Metal enclosure	P
	Method 1, selection and application of components wiring and materials	See cl 4.7.2.2	P
	Method 2, application of all of simulated fault condition tests		N
4.7.2	Conditions for a fire enclosure		N
4.7.2.1	Parts requiring a fire enclosure		N
4.7.2.2	Parts not requiring a fire enclosure		P



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	Materials		P
4.7.3.1	General	See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures		N
4.7.3.3	Materials for components and other parts outside fire enclosures	Not require fire enclosure	N
4.7.3.4	Materials for components and other parts inside fire enclosures		N
4.7.3.5	Materials for air filter assemblies	No air filter assemblies	N
4.7.3.6	Materials used in high-voltage components	No high-voltage component	N

<b>5</b>	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		P
5.1	Touch current and protective conductor current		P
5.1.1	General	Class I equipment	P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N
5.1.3	Test circuit	Figure 5A	P
5.1.4	Application of measuring instrument	Annex D	P
5.1.5	Test procedure	Between Mains and metal enclosure & terminal	P
5.1.6	Test measurements		P
	Supply voltage (V) .....	254.4V, 60Hz	—
	Measured touch current (mA) .....	1.38	—
	Max. allowed touch current (mA) .....	3.5	—
	Measured protective conductor current (mA) .....	--	—
	Max. allowed protective conductor current (mA) ...:	--	—
5.1.7	Equipment with touch current exceeding 3.5 mA		N
5.1.7.1	General .....		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N
	Supply voltage (V) .....		—
	Measured touch current (mA) .....		—



**IEC/EN 60950-1**

Clause	Requirement + Test	Result - Remark	Verdict
	Max. allowed touch current (mA) .....		—
5.1.8.2	Summation of touch currents from telecommunication networks		N
	a) EUT with earthed telecommunication ports .....		N
	b) EUT whose telecommunication ports have no reference to protective earth		N

5.2	Electric strength		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	(see appended table 5.2)	P

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors		N
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation .....	Result see appended table 5.3	P
5.3.5	Electromechanical components	No such component	N
5.3.6	Audio amplifiers in ITE .....	No such component	N
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment	No such equipment	N
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No fire, no molten metal, no enclosure deformation and no temperature exceeding those in table 5D	P
5.3.9.2	After the tests	No any hazards	P

<b>6</b>	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		P
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		P
6.1.1	Protection from hazardous voltages		P
6.1.2	Separation of the telecommunication network from earth		P
6.1.2.1	Requirements		N
	Supply voltage (V) .....		—
	Current in the test circuit (mA) .....		—
6.1.2.2	Exclusions .....		P

6.2	Protection of equipment users from overvoltages on telecommunication networks		N
-----	---	--	---



**IEC/EN 60950-1**

Clause	Requirement + Test	Result - Remark	Verdict
6.2.1	Separation requirements		N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test		N
6.2.2.2	Steady-state test		N
6.2.2.3	Compliance criteria		N

6.3	Protection of the telecommunication wiring system from overheating		N
	Max. output current (A) .....	No telecommunication wiring system	—
	Current limiting method .....		—

<b>7</b>	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		N
7.1	General	No cable distribution system	N
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
7.3	Protection of equipment users from overvoltages on the cable distribution system		N
7.4	Insulation between primary circuits and cable distribution systems		N
7.4.1	General		N
7.4.2	Voltage surge test		N
7.4.3	Impulse test		N

<b>A</b>	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		N
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.1.1	Samples .....		—
	Wall thickness (mm) .....		—
A.1.2	Conditioning of samples; temperature (°C) .....		N
A.1.3	Mounting of samples .....		N
A.1.4	Test flame (see IEC 60695-11-3)		N
	Flame A, B, C or D .....		—
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	Sample 1 burning time (s) .....		—
	Sample 2 burning time (s) .....		—



**IEC/EN 60950-1**

Clause	Requirement + Test	Result - Remark	Verdict
	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.2.1	Samples, material .....		—
	Wall thickness (mm) .....		—
A.2.2	Conditioning of samples; temperature (°C) .....		N
A.2.3	Mounting of samples .....		N
A.2.4	Test flame (see IEC 60695-11-4)		N
	Flame A, B or C .....		—
A.2.5	Test procedure		N
A.2.6	Compliance criteria		N
	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
	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.3.1	Mounting of samples		N
A.3.2	Test procedure		N
A.3.3	Compliance criterion		N

<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		N
B.1	General requirements	(see appended table 1.5.1)	N
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
B.2	Test conditions		N
B.3	Maximum temperatures		N
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days) .....		—
	Electric strength test: test voltage (V) .....		—



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.6	Running overload test for d.c. motors in secondary circuits		P
B.6.1	General		N
B.6.2	Test procedure		N
B.6.3	Alternative test procedure		N
B.6.4	Electric strength test; test voltage (V) .....		N
B.7	Locked-rotor overload test for d.c. motors in secondary circuits	(see appended table 5.3)	P
B.7.1	General		N
B.7.2	Test procedure		N
B.7.3	Alternative test procedure		N
B.7.4	Electric strength test; test voltage (V) .....		N
B.8	Test for motors with capacitors		N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Operating voltage (V) .....		—

<b>C</b>	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		P
	Position .....	ETD34/TPT150A	—
	Manufacturer .....	(see appended tabel 1.5.1)	—
	Type .....	(see appended tabel 1.5.1)	—
	Rated values .....	(see appended tabel 1.5.1)	—
	Method of protection .....	Inherent	—
C.1	Overload test	(see appended tabel 5.3)	P
C.2	Insulation		P
	Protection from displacement of windings .....	Bobbin, insulation tube, insulaton tape	P

<b>D</b>	<b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)</b>		P
D.1	Measuring instrument		P
D.2	Alternative measuring instrument		N

<b>E</b>	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		N
----------	--	--	---

<b>F</b>	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		P
----------	---	--	---





**IEC/EN 60950-1**

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

<b>G</b>	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		N
G.1	Clearances		N
G.1.1	General		N
G.1.2	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V)		N
G.2.1	AC mains supply .....		N
G.2.2	Earthed d.c. mains supplies .....		N
G.2.3	Unearthed d.c. mains supplies .....		N
G.2.4	Battery operation .....		N
G.3	Determination of telecommunication network transient voltage (V) .....		N
G.4	Determination of required withstand voltage (V)		N
G.4.1	Mains transients and internal repetitive peaks .....		N
G.4.2	Transients from telecommunication networks .....		N
G.4.3	Combination of transients		N
G.4.4	Transients from cable distribution systems		N
G.5	Measurement of transient voltages (V)		N
	a) Transients from a mains supply		N
	For an a.c. mains supply		N
	For a d.c. mains supply		N
	b) Transients from a telecommunication network		N
G.6	Determination of minimum clearances .....		N

<b>H</b>	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		N
----------	---	--	---

<b>J</b>	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		N
	Metal(s) used .....		—

<b>K</b>	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		N
K.1	Making and breaking capacity		N
K.2	Thermostat reliability; operating voltage (V) .....		N
K.3	Thermostat endurance test; operating voltage (V) .....		N
K.4	Temperature limiter endurance; operating voltage (V) .....		N
K.5	Thermal cut-out reliability		N



**IEC/EN 60950-1**

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

K.6	Stability of operation		N
-----	------------------------	--	---

<b>L</b>	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		P
L.1	Typewriters		N
L.2	Adding machines and cash registers		N
L.3	Erasers		N
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N
L.7	Other business equipment	See condition in appended table 1.6.2	P

<b>M</b>	<b>ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>		N
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringing signal		N
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
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V) .....		N

<b>N</b>	<b>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)</b>		N
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N

<b>P</b>	<b>ANNEX P, NORMATIVE REFERENCES</b>		—
----------	--------------------------------------	--	---

<b>Q</b>	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		P
	- Preferred climatic categories .....	(see appended tabel 1.5.1) Varistor was apploved	P



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Maximum continuous voltage .....		P
	- Combination pulse current .....		P
	Body of the VDR Test according to IEC60695-11-5 .....		P
	Body of the VDR. Flammability class of material ( min V-1) .....		P
<b>R</b>	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N
R.2	Reduced clearances (see 2.10.3)		N
<b>S</b>	<b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		N
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
<b>T</b>	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N
			—
<b>U</b>	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		N
			—
<b>V</b>	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>		N
V.1	Introduction		N
V.2	TN power distribution systems		N
<b>W</b>	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		N
W.1	Touch current from electronic circuits		N
W.1.1	Floating circuits		N
W.1.2	Earthed circuits		N
W.2	Interconnection of several equipments		N
W.2.1	Isolation		N
W.2.2	Common return, isolated from earth		N
W.2.3	Common return, connected to protective earth		N



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

<b>X</b>	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)</b>		N
X.1	Determination of maximum input current		N
X.2	Overload test procedure		N

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

<b>Z</b>	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		P
----------	--	--	---

<b>AA</b>	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		N
-----------	--	--	---

<b>BB</b>	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>		—
-----------	--	--	---

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

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

<b>EE</b>	<b>ANNEX EE, Household and home/office document/media shredders</b>		N
EE.1	General		N
EE.2	Markings and instructions		N
	Use of markings or symbols.....		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Information of user instructions, maintenance and/or servicing instructions.....:		N
EE.3	Inadvertent reactivation test.....:		N
EE.4	Disconnection of power to hazardous moving parts: Use of markings or symbols.....:		N
EE.5	Protection against hazardous moving parts Test with test finger (Figure 2A) .....		N
	Test with wedge probe (Figure EE1 and EE2) .....		N



IEC/EN 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 <sup>1)</sup>	
AC plug	Shenzhen HongPu Electron Co., Ltd.	XTH-005	16A, 250V~	VDE 0620-1	VDE 40026370	
	Shenzhen Yuxin Wire & Cable Co., Ltd.	YX-201	16A, 250V~	VDE 0620-1	VDE 40001445	
Power cord	Shenzhen Baohing Electric Wire & Cable Manufacture Co., Ltd.	H03VV-F	3G0.75mm <sup>2</sup>	HD 21.5 S3+A1+A2	VDE 103727	
	Shenzhen Yuxin Wire & Cable Co., Ltd.	H03VV-F	3G0.75mm <sup>2</sup>	HD 21.5 S3+A1+A2	VDE 40012386	
AC connector	Shenzhen HongPu Electron Co., Ltd.	XTH-021	10A, 250V~	EN 60320-1	VDE 40025516	
	Shenzhen Yuxin Wire & Cable Co., Ltd.	YX-210	10A, 250V~	EN 60320-1	VDE 40035945	
Appliance Inlet	Tecx-Unions Technology Corporation	TU-301-AP	10A, 250VAC	EN 60320-1	VDE 40025582	
Primary lead wire & Earth wire	Zhongshan Dongfeng Zhoushishenlong Electronic Wire Co., Ltd.	1015	105°C, 600V, 18AWG, VW-1	UL 758	UL E257280	
	Cable-Net Industries Ltd.	1015	105°C, 600V, 18AWG, VW-1	UL 758	UL E198417	
	Various	1015	105°C, 600V, 18AWG, VW-1	UL 758	UL	
Heat shrinkable tube	Dongguan Salipt Co., Ltd.	SALIPT S-901-300	300V, 125°C, VW-1	UL 224	UL E209436	
	Dongguan Quantai Industrial Co., Ltd.	T-2	600V, 125°C, VW-1	UL 224	UL E227336	
	Various	Various	300V, 125°C, VW-1	UL 224	UL	
Insulation sheet on PCB	Mianyang Longhua Film Co., Ltd.	PC-770, PC-770F, PC-770F-A	PC, V-0, 80°C, Min. 0.4mm	UL 94, UL 746	UL E254551	
	Suzhou Omay Optical Materials Co., Ltd.	SE42, SE42B	PC, V-0, 80°C, Min. 0.4mm	UL 94, UL 746	UL E249605	
	Various	Various	PC, V-0, 80°C, Min. 0.4mm	UL 94, UL 746	UL	
White glue on PCB	Shen Zhen Bonic Science & Technology Co., Ltd.	Various	V-0, Min.130°C	UL 94, UL 746	UL E254560	



## IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

Object/part No.	Manufacturer/ trademark	Type/ model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
AC Connector CN1	Zhejiang Jinda Electronics Co., Ltd.	3.96T-02	V-0, 250Vac, 7A	UL 1977	UL E237523
	Shenzhen Yong Feng Ying Electronic Co., Ltd.	CS-1120	V-0, 250Vac, 7A	UL 1977	UL E241915
	Shanghai Yueshen Electronic Co., Ltd.	YSF6	V-0, 250Vac, 7A	UL 1977	UL E204074
Fuse F1	Dongguan Better Electronics Technology Co., Ltd.	932	T5AL250Vac	IEC 60127-1 IEC 60127-3	VDE 40033369
	Shenzhen Lanson Electronics Co. Ltd.	SMT	T5AL250Vac	IEC 60127-1 IEC 60127-3	VDE 40013102
	Cooper Bussmann LLC	SS-5	T5AL250Vac	IEC 60127-1 IEC 60127-3	VDE 40015513
	Dongguan Hongda Electronic Technology Co., Ltd.	2009	T5AL250Vac	IEC 60127-1 IEC 60127-3	VDE 40028260
	Various	Various	T5AL250Vac	IEC 60127-1 IEC 60127-3	VDE
Varistor V1	Centra Science Corp.	CNR-14D471K	470Vac, 85°C	IEC61051-1 IEC61051-2	VDE 40008220
	Lien Shun Electronics Co., Ltd.	14D471K	470Vac, 85°C	IEC61051-1 IEC61051-2	VDE 40005858
	Thinking Electronic Industrial Co., Ltd.	TVR14471-D	470Vac, 85°C	IEC61051-1 IEC61051-2	VDE 40021243
	Thinking Electronic Industrial Co., Ltd.	TVR14471	470Vac, 85°C	IEC61051-1 IEC61051-2	VDE 005944
	Brightking (Shenzhen) Co., Ltd.	471KD14	470Vac, 85°C	IEC61051-1 IEC61051-2	VDE 40027827
	Shaanxi Huaxing electronic group Co., Ltd.	MYG20G1 4K471	470Vac, 85°C	IEC61051-1 IEC61051-2	VDE 40018747
	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	STE-14D471K	470Vac, 85°C	IEC61051-1 IEC61051-2	VDE 40023049
Y1 capacitor CY3	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	3300pF 250Vac, 125°C	IEC 60384-14	VDE 40036393
	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CD	3300pF 250Vac, 125°C	IEC 60384-14	VDE 40025754



IEC/EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Object/part No.	Manufacturer/ trademark	Type/ model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
	Shaanxi Huaxing Electronic Development Co. Ltd.	CT7Y1	3300pF 400Vac, 125°C	IEC 60384-14	VDE 40015542
	Shenzhen Teruixiang Electronic Co, Ltd.	TY-Series (TYB,TYE, TYF)	3300pF 400Vac, 125°C	IEC 60384-14	VDE 40023136
	Dongguan Easy-gather Electronic Co., Ltd.	DCF	3300pF 400Vac, 125°C	IEC 60384-14	VDE 40022942
	Jya-Nay Co., Ltd.	JN	3300pF, Min.250Vac, 125°C	EN 60384-14	TÜV Rheinland Cert. No.: 69242987
Y2 capacitor CY4,CY5	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	3300pF 250Vac, 125°C	IEC 60384-14	VDE 40036393
	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CE	3300pF 250Vac, 125°C	IEC 60384-14	VDE 40025748
	Shaanxi Huaxing Electronic Development Co. Ltd.	CT7Y2	3300pF 400Vac, 125°C	IEC 60384-14	VDE 40032125
	Dongguan Easy-gather Electronic Co., Ltd.	DCF	3300pF 250Vac, 125°C	IEC 60384-14	VDE 40015758
Y2 capacitor CY1,CY2,	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	2200pF 250Vac, 125°C	IEC 60384-14	VDE 40036393
	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CE	2200pF 250Vac, 125°C	IEC 60384-14	VDE 40025748
	Shaanxi Huaxing Electronic Development Co. Ltd.	CT7Y2	2200pF 400Vac, 125°C	IEC 60384-14	VDE 40032125
	Dongguan Easy-gather Electronic Co., Ltd.	DCF	2200pF 250Vac, 125°C	IEC 60384-14	VDE 40015758
X2 capacitor CX1, CX2	Tenta Electric Industrial Co. Ltd.	MEX	0.47µF 275Vac	IEC 60384-14	VDE 119119
	Dain Electronics Co., Ltd.	MPX/NPX/ MEX	0.47µF 275Vac	IEC 60384-14	VDE 40018798
	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	MPX	0.47µF 275Vac	IEC 60384-14	VDE 40034679





IEC/EN 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/ model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
	Shenzhen Su Rong Capacitors Co., Ltd.	MPX/MKP	0.47 $\mu$ F 275Vac	IEC 60384-14	VDE 40008924
	Dongguan Easy-gather Electronic Co., Ltd.	MKP-X2	0.47 $\mu$ F 275Vac	IEC 60384-14	VDE 40022258
Thermistor TR1	Nanjing Shiheng Electronics Co., Ltd.	MF72- 10D11	10 $\Omega$ ,3A	IEC60950 UL1434	UL E241319
	Thinking Electronic Industrial Co., Ltd.	SCK-103	10 $\Omega$ ,3A	IEC60950 UL1434	UL E138827
Ophtocoupler U1	Everlight Electronics Co., Ltd.	EL817 V	Dti $\geq$ 0.4mm, Cl $\geq$ 6.0mm, Cr $\geq$ 7.5mm, 110 $^{\circ}$ C	EN 60747-5-5	VDE 132249
	Bright Led Electronics Corp.	BPC-817	Dti $\geq$ 0.4mm, Cr=8.0mm, Cl=7.6mm, 100 $^{\circ}$ C	IEC 60747-5- 2	VDE 40007240
	Lite-On Technology Corporation	LTV-817	Dti>0.5mm, Int. Cr>6.0mm, Ext. Cr>7.5mm, 100 $^{\circ}$ C	EN 60747-5-2	VDE 40015248
	Shenzhen Orient Components Co., Ltd.	ORPC-817	Dti $\geq$ 0.4mm, Cl $\geq$ 6.0mm, Cr $\geq$ 7.5mm, 100 $^{\circ}$ C	EN 60747-5-2	VDE 40029733
Inductors LF1, LF2	Shenzhen Topow Electronics Co., Ltd.	T18*10*7	24mH	EN 60950-1	Tested within appliance
Winding of LF1, LF2	Pacific Electric Wire & Cable (Shenzhen) Co., Ltd.	UEW/U	130 $^{\circ}$ C	UL1446	UL E201757
Insulation tape of LF1, LF2	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd.	PZ CZ	130 $^{\circ}$ C	UL 510	UL E165111
Inductors L1	Shenzhen Topow Electronics Co., Ltd.	T68-26A	160 $\mu$ H	EN 60950-1	Tested within appliance
Winding of L1	Pacific Electric Wire & Cable (Shenzhen) Co., Ltd.	UEW/U	130 $^{\circ}$ C	UL1446	UL E201757
Transformer T1	Shenzhen Topow Electronics Co., Ltd.	EI2820/TP T150A	Primary: N1: $\Phi$ 0.1mm*40P*44TS Secondary: N4: $\Phi$ 0.3mm*1P*5TS	EN 60950-1	Tested within appliance
Bobbin of T1	Chang Chun Plastics Co., Ltd.	T375J	V-0, 150 $^{\circ}$ C	UL 746, UL 94	UL E59481
Insulation tape of T1	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd.	PZ CZ	130 $^{\circ}$ C	UL 510	UL E165111
Winding of T1	Pacific Electric Wire &	UEW/U	130 $^{\circ}$ C	UL 1446	UL E201757



IEC/EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Object/part No.	Manufacturer/ trademark	Type/ model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
	Cable (Shenzhen) Co., Ltd.				
Varnish of T1	John C Dolph Co.	BC-346A	200°C	UL 1446	UL E317427
Insulating tube of T1	Great Holding Industrial Co., Ltd.	TFT	300V, 200°C	UL 224	UL E156256
Transformer T2	Shenzhen Topow Electronics Co., Ltd.	ETD34/TP T150A	Primary: N1: Φ0.1mm*40P*44TS N4: Φ0.3mm*1P*4TS Secondary: N2: Φ0.1mm*50P*12TS N3: Φ0.1mm*50P*12TS Class B	EN 60950-1	Tested within appliance
Bobbin of T2	Chang Chun Plastics Co., Ltd.	T375J	V-0, 150°C	UL 746, UL 94	UL E59481
Insulation tape of T2	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd.	PZ	130°C	UL 510	UL E165111
Winding of T2	Pacific Electric Wire & Cable (Shenzhen) Co., Ltd.	UEW/U	130°C	UL 1446	UL E201757
Insulating tube of T2	Great Holding Industrial Co., Ltd.	TFT	300V, 200°C	UL 224	UL E156256
Varnish of T2	John C Dolph Co.	BC-346A	200°C	UL 1446	UL E317427
Power board PCB	Sources Merge Industrial Ltd.	TCL1008FR	V-0, 130°C	UL 94, UL 746	UL E74729
	Boluo Eversun Electronics Plant	YY-D	V-0, 130°C	UL 94, UL 746	UL E250664
	Various	Various	V-0, 130°C	UL 94, UL 746	UL
Other PCB	Goldenmax International Technology (Zhuhai) Ltd.	Various	V-0, 130°C	UL 94, UL 746	UL E330731
	Various	Various	V-0, 130°C	UL 94, UL 746	UL
Supplementary information: /					



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

1.6.2		TABLE: Electrical data (in normal conditions)							P
Cond.	U (V)	Hz	I (A)	I <sub>rated</sub> (A)	P (W)	Fuse #	I <sub>fuse</sub> (A)	Condition/status	
01	90.0	50	1.25	--	113.0	F1	1.25	Normal operation	
02	100.0	50	1.13	2.2	112.4	F1	1.13		
03	240.0	50	0.533	2.2	109.4	F1	0.533		
04	254.4	50	0.543	--	110.2	F1	0.543		
05	90.0	60	1.24	--	112.0	F1	1.24		
06	100.0	60	1.12	2.2	112.2	F1	1.12		
07	240.0	60	0.525	2.2	108.6	F1	0.525		
08	254.4	60	0.540	--	109.2	F1	0.540		
Supplementary information: --									

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)		
--	--	52.87Vd.c.	3.86	203.6		
Supplementary information: Output of power supply PCB.						

2.1.1.5 c) 2)		TABLE: stored energy			N
Capacitance C (μF)	Voltage U (V)		Energy E (J)		
--	--		--		
supplementary information:					

2.2		TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components		
	V peak	V d.c.			
Output of power supply PCB	--	52.87	--		
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)				
S-C diode D12	Unit shut down, no output U=0				
Remark: Output of power supply PCB					



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

2.4.2	TABLE: limited current circuit measurement	P			
Location	Voltage (V)	Current (mA)	Freq. (Hz)	Limit (mA)	Comments
Between Y capacitor CY3	6.94	3.47	248K	173.6	CY3: 3300PF
Remark:					

2.5	TABLE: limited power sources	N		
Circuit output tested: Output of power supply PCB				
Measured Uoc (V) with all load circuits disconnected:				
	I <sub>sc</sub> (A)		VA	
	Meas.	Limit	Meas.	Limit
--	--	--	--	--
supplementary information:				

2.10.2	Table: working voltage measurement	P	
Location	RMS voltage (V)	Peak voltage (V)	Comments
Transformer T2 pin 1- pin 8	240	339	--
Transformer T2 pin 1- pin 9	240	339	--
Transformer T2 pin 1- pin 10	240	339	--
Transformer T2 pin 2- pin 8	240	339	--
Transformer T2 pin 2- pin 9	240	339	--
Transformer T2 pin 2- pin 10	240	339	--
Transformer T2 pin 5- pin 8	246	340	--
Transformer T2 pin 5- pin 9	240	339	--
Transformer T2 pin 5- pin 10	240	339	--
Transformer T2 pin 6- pin 8	311	448	Max. RMS & Peak of T2
Transformer T2 pin 6- pin 9	240	339	--
Transformer T2 pin 6- pin 10	242	408	--
Optocoupler U1 pin 1- pin 3	240	339	--
Optocoupler U1 pin 1- pin 4	240	339	Max. RMS & Peak of U1
Optocoupler U1 pin 2- pin 3	240	339	--
Optocoupler U1 pin 2- pin 4	240	339	--
Y capacitor CY3 pin 1- pin 2	240	339	Max. RMS & Peak of CY3



## IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

supplementary information:

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
L and N	339	240	1.5	2.4	2.5	3.8	
Two pins of F1	339	240	2.0	2.1	2.5	3.2	
Live part and earth	339	240	2.0	3.2	2.5	3.2	
Two pins of Capacitor CY1	339	240	2.0	4.8	2.5	4.8	
Two pins of Capacitor CY2	339	240	2.0	3.2	2.5	3.2	
Two pins of Capacitor CY3	339	240	4.0	7.9	5.0	7.9	
Two pins of Capacitor CY4	339	240	2.0	4.2	2.5	4.2	
Two pins of Capacitor CY5	339	240	2.0	4.2	2.5	4.2	
Optocoupler U1 (Pri.-Sec.)	339	240	4.0	7.9	5.0	7.9	
Transformer T2 (Pri.-Sec.) on PCB	448	311	4.3	10.7	6.3	10.7	
Transformer T2 (Pri.-Sec.)	448	311	4.3	8.9	6.3	8.9	
Live part and Sec.	339	240	2.0	12.2	2.5	12.2	
Live part and metal enclosure	339	240	2.0	3.2	2.5	3.2	
Supplementary information: --							

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)	
Transformer bobbin	448	311	3000	0.4	0.8	
Optocoupler U1	339	240	3000	0.4	≥0.4	
Supplementary information: --						



IEC/EN 60950-1										
Clause	Requirement + Test			Result - Remark				Verdict		
4.3.8	<b>TABLE: Batteries</b>								N	
The tests of 4.3.8 are applicable only when appropriate battery data is not available				No battery				N		
Is it possible to install the battery in a reverse polarity position?								N		
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition	--	--	--					--	--	
Max. current during fault condition	--	--	--					--	--	
Test results:				--				Verdict		
- Chemical leaks				--				N		
- Explosion of the battery				--				N		
- Emission of flame or expulsion of molten metal				--				N		
- Electric strength tests of equipment after completion of tests				--				N		
Remark: --										



## IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

4.3.8	TABLE: Batteries	N
Battery category..... : --		
Manufacturer ..... : --		
Type / model..... : --		
Voltage ..... : --		
Capacity..... : --		
Tested and Certified by (incl. Ref. No.) ..... : --		
Circuit protection diagram:		
MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)		
Location of replaceable battery		--
Language(s) .....		--
Close to the battery .....		--
In the servicing instructions .....		--
In the operating instructions .....		--



IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

4.5.1	TABLE: maximum temperatures			P
	Supply voltage (V) .....	90.0	254.4	—
	Ambient T <sub>min</sub> (°C) .....	24.0	24.4	—
	Ambient T <sub>max</sub> (°C) .....	24.5	24.8	—
Maximum measured temperature T of part/at:	T (°C)		Allowed T <sub>max</sub> (°C)	
	No. 05	No. 04		
Y- Capacitor CY1	61.3	47.4	125+24-40=109	
Varistors V1	65.2	52.2	85+24-40=69	
X-Capacitor CX1	71.8	54.9	100+24-40=84	
Inductors LT1 winding	78.9	56.1	110+24-40=94	
Inductors LT2 winding	80.8	55.4	110+24-40=94	
X-Capacitor CX2	79.0	56.5	100+24-40=84	
PCB near BD1	81.1	59.6	130+24-40=114	
PCB near D2	80.8	63.1	130+24-40=114	
Capacitor C2	73.1	61.1	105+24-40=89	
Inductors L1 winding	76.0	58.7	110+24-40=94	
PCB near Q1	67.3	61.6	130+24-40=114	
Transformer T1 bobbin	88.4	66.7	Reference	
Transformer T1 winding	89.1	67.9	110+24-40=94	
Y- Capacitor CY3	54.5	53.0	125+24-40=109	
Optocoupler U1	58.3	57.0	100+24-40=84	
Transformer T2 Pri. winding	75.1	73.7	110+24-40=94	
Transformer T2 Sec. winding	76.4	76.2	110+24-40=94	
Transformer T2 bobbin	75.7	75.4	Reference	
Capacitor C28	64.7	64.0	105+24-40=89	
PCB near D12	64.1	64.2	130+24-40=114	
PCB near IC (signal PCB)	53.5	52.4	130+24-40=114	
Inductors L6 winding	69.3	67.3	110+24-40=94	
Capacitor C1	58.8	57.4	105+24-40=89	
Internal wire of Pri.	62.9	50.8	105+24-40=89	
Internal wire of Sec.	52.9	52.2	80+24-40=64	
Power supply cord	26.7	26.6	75+24-40=59	
Metal enclosure	42.0	37.4	70+24-40=54	
Inlet surface	36.0	34.4	85+24-40=69	





IEC/EN 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Heat-sink	93.0		65.1		Reference	
Network terminal	37.4		37.1		70+24-40=54	
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	Allowed T <sub>max</sub> (°C)	Insulation class
--		--	--	--	--	--
Supplementary information: * The winding permitted temperature rise would be reduced 10K while the temperature rise measured for thermal-coupler method. Allowed Tmax=Tmax+Tamb-Tma, Tamb=24°C, Tma=40°C. The max operated temperature is 40°C which is specified by manufacturer						

4.5.5	TABLE: Ball pressure test of thermoplastic parts			P
	Allowed impression diameter (mm) .....	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
Bobbin of T1		125	1.03	
Bobbin of T2		125	0.87	
AC terminal CN1		125	1.14	
Supplementary information: --				

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Bobbin of T1	Chang Chun Plastics Co., Ltd.	T375J	3.0	V-0	UL E59481	
Bobbin of T2	Chang Chun Plastics Co., Ltd.	T375J	0.9	V-0	UL E59481	
AC terminal CN1	Zhejiang Jinda Electronics Co., Ltd.	3.96T-02	2.46	V-0	UL E237523	
Material of supply PCB	Various	Various	1.6	V-0	UL	
Supplementary information: --						

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
L/N and metal enclosure	1.38	3.5	--	
supplementary information: Input voltage: 254.4V, 60Hz				



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

<b>5.2</b>	<b>TABLE: Electric strength tests, impulse tests and voltage surge tests</b>			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Between L-N and metal enclosure & terminal		AC	1500	No
Transformer T2 primary and secondary		AC	3000	No
1 layer insulation tape of transformer		AC	3000	No
Between L and N without fuse F1		AC	1500	No
Supplementary information: --				

<b>5.3</b>	<b>TABLE: Fault condition tests</b>					P
Ambient temperature (°C) .....		21.5-23.4			—	
Power source for EUT: Manufacturer, model/type, output rating .....		--			—	
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
T2 output	O-L	254.4V	300 mins	F1	0.907	* No hazard occurred and no high temperature occurred. The max. temperature of L1 is 75.3°C. The max. temperature of T1 is 89.7°C. The max. temperature of T2 is 108.8°C. * The max. over-load current is 3.9A, over 3.9A, the unit shut down.
T2 output	S-C	254.4V	30mins	F1	0.130↔ 0.127	* No hazard occurred and no high temperature occurred. * Unit shut down.
D2 Pin 2-3	S-C	254.4V	30mins	F1	0.133↔ 0.130	* No hazard occurred and no high temperature occurred. * Unit shut down.
D2 Pin 1-2	S-C	254.4V	30mins	F1	0.143↔ 0.132	* No hazard occurred and no high temperature occurred. * Unit shut down.
Capacitor C20	S-C	254.4V	30mins	F1	0.132↔ 0.130	* No hazard occurred and no high temperature occurred. * Unit shut down.
Q6 Pin 1-2	S-C	254.4V	1s	F1	0	* No hazard occurred and no high temperature occurred. * Fuse F1 opened immediately.
Q5 Pin 2-3	S-C	254.4V	1s	F1	0	* No hazard occurred and no high temperature occurred. * Fuse F1 opened immediately.



IEC/EN 60950-1							
Clause	Requirement + Test					Result - Remark	Verdict
Capacitor C2	S-C	254.4V	1s	F1	0	* No hazard occurred and no high temperature occurred. * Fuse F1 opened immediately.	
Q2	S-C	254.4V	1s	F1	0	* No hazard occurred and no high temperature occurred. * Fuse F1 opened immediately.	
BD1	S-C	254.4V	1s	F1	0	* No hazard occurred and no high temperature occurred. * Fuse F1 opened immediately.	
Supplementary information: S-C is abbreviation of shorted- circuit. O-L is abbreviation of over-load. The limit of T1 and T2 winding: $165+21.5-40=146.5^{\circ}\text{C}$							

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)
T2 Pri. to Sec.	Reinforced insulation	448	311	3000Vac	4.3	6.3	*
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T2 Pri. to Sec.	Reinforced insulation			3000Vac	8.9	8.9	0.87mm 2 layers
supplementary information:							



IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

C.2	TABLE: transformers	P
Transformer		
<p>The transformer drawings include the following details:</p> <ul style="list-style-type: none"> <li><b>Top View (Left):</b> Shows a rectangular core with a width of 37.0MAX and a pin pitch of 0.8±0.5. Pins are numbered 7 on the left and 12 on the right.</li> <li><b>Top View (Right):</b> Shows the core with a width of 37.0MAX and a height of 28.0MAX. The core is labeled 'TOPOW ETD34/TPT150A'. Pins are numbered 6 on the left and 7 on the right.</li> <li><b>Front View (Left):</b> Shows the core with a height of 5.5±0.3. Pins are numbered 7 on the left and 12 on the right.</li> <li><b>Front View (Right):</b> Shows the core with a width of 30 and a height of 8. The core is labeled 'TOPOW ETD34/TPT150A'. Pins are numbered 6 on the left and 7 on the right.</li> <li><b>Winding Construction:</b> Shows a cross-section of the core with 'CORE TAPE 2 TS' and 'CORE' labels. The winding is shown on the right side of the core.</li> <li><b>Pin Connections:</b> Shows the winding connections for N1, N2, N3, and N4. N1 is connected to pins 1 and 6. N2 is connected to pins 9 and 10/11. N3 is connected to pins 8 and 10/11. N4 is connected to pins 5 and 6. A solid circle indicates the start of the winding.</li> <li><b>Bobbin Wall:</b> Shows a cross-section of the bobbin wall with pins numbered 1-6 on the left and 7-12 on the right.</li> </ul>		



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

**EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS**

**IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)**

Clause	Requirement + Test	Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"		P
Contents  (A2:2013)	Add the following annexes:  Annex ZA (normative) Normative references to international publications with their corresponding European publications  Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 21.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	<b>Replace</b> the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		P



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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Not such equipment.	N
(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
1.5.1  (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *	Added	P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N
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




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

<b>Zx Protection against excessive sound pressure from personal music players</b>		N
	<p><b>Zx.1 General</b>            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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>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.</p> <p>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.</p> <p>The requirements do not apply to:            hearing aid equipment and professional equipment;</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>	N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>Zx.2 Equipment requirements</b>            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 <math>L_{Aeq,T}</math> is <math>\leq 85</math> 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 <math>\leq 27</math> 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 <math>L_{Aeq,T}</math> is meant. See also Zx.5 and Annex Zx.</p>		N
	All other equipment shall:		N
	a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and		N
	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
	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.		N
	d) have a warning as specified in Zx.3; and		N
	e) not exceed the following: 1) equipment provided as a package (player with its listening device), the acoustic output shall be $\leq 100$ 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 $\leq 150$ mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1.		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>For music where the average sound pressure (long term <math>L_{Aeq,T}</math>) 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.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term <math>L_{Aeq,T}</math>) 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.</p> <p>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.</p>		N
	<p><b>Zx.3 Warning</b>            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.”</p> <div style="text-align: center;">  </div> <p style="text-align: center;"><b>Figure 1 – Warning label (IEC 60417-6044)</b></p> <p>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.</p>		N
	<b>Zx.4 Requirements for listening devices (headphones and earphones)</b>		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>Zx.4.1 Wired listening devices with analogue input</b> With 94 dBA sound pressure output <math>L_{Aeq,T}</math>, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be <math>\geq 75</math> mV.</p> <p>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).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N
	<p><b>Zx.4.2 Wired listening devices with digital input</b> 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 <math>L_{Aeq,T}</math> of the listening device shall be <math>\leq 100</math> dBA.</p> <p>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.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N
	<p><b>Zx.4.3 Wireless listening devices</b> 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 <math>L_{Aeq,T}</math> of the listening device shall be <math>\leq 100</math> dBA.</p> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N
	<p><b>Zx.5 Measurement methods</b> 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.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N



IEC/EN 60950-1									
Clause	Requirement + Test	Result - Remark	Verdict						
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>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):</p> <p>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;</p> <p>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>	Replaced.	P						
	<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.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>	Not such equipment	N						
2.7.2	This subclause has been declared 'void'.		N						
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N						
3.2.5.1	<p>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".</p> <p>In Table 3B, replace the first four lines by the following:</p> <table border="0"> <tr> <td>Up to and including 6  </td> <td>0,75<sup>a)</sup>  </td> </tr> <tr> <td>Over 6 up to and including 10  </td> <td>(0,75)<sup>b)</sup> 1,0  </td> </tr> <tr> <td>Over 10 up to and including 16  </td> <td>(1,0)<sup>c)</sup> 1,5  </td> </tr> </table> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition<sup>a)</sup>.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6	0,75 <sup>a)</sup>	Over 6 up to and including 10	(0,75) <sup>b)</sup> 1,0	Over 10 up to and including 16	(1,0) <sup>c)</sup> 1,5		N
Up to and including 6	0,75 <sup>a)</sup>								
Over 6 up to and including 10	(0,75) <sup>b)</sup> 1,0								
Over 10 up to and including 16	(1,0) <sup>c)</sup> 1,5								
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N						



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).	Added	N
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N
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 $\mu$ Sv/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.	Replaced	N
Bibliography	Additional EN standards.		—

<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>	—
-----------	--	---

<b>ZB ANNEX (normative)</b>			
<b>SPECIAL NATIONAL CONDITIONS (EN)</b>			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In <b>Denmark</b> , 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
1.2.13.14 (A11:2009)	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.7.2.1 and 7.3 of this annex.		N
1.5.7.1 (A11:2009)	In <b>Finland</b> , <b>Norway</b> and <b>Sweden</b> , 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



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

<b>ZB ANNEX (normative)</b>			
<b>SPECIAL NATIONAL CONDITIONS (EN)</b>			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.8	In <b>Norway</b> , 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
1.5.9.4	In <b>Finland, Norway</b> and <b>Sweden</b> , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N
1.7.2.1	In <b>Finland, Norway</b> and <b>Sweden</b> , 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 <b>Finland</b> : "Laitte on liitettävä suojakoskettimilla varustettuun pistorasiaan"  In <b>Norway</b> : "Apparatet må tilkoples jordet stikkontakt"  In <b>Sweden</b> : "Apparaten skall anslutas till jordat uttag"		N
1.7.2.1 (A11:2009)	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



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

<b>ZB ANNEX (normative)</b>			
<b>SPECIAL NATIONAL CONDITIONS (EN)</b>			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1 (A2:2013)	In <b>Denmark</b> , 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 <b>Denmark</b> shall be as follows: In <b>Denmark</b> : "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."		N
1.7.5  1.7.5 (A11:2009)	In <b>Denmark</b> , 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 <b>CLASS II EQUIPMENT</b> the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		N
1.7.5 (A2:2013)	In <b>Denmark</b> , 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
2.2.4	In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N
2.3.2	In <b>Finland, Norway and Sweden</b> there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N
2.3.4	In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N
2.6.3.3	In the <b>United Kingdom</b> , the current rating of the circuit shall be taken as 13 A, not 16 A.		N



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

<b>ZB ANNEX (normative)</b>			
<b>SPECIAL NATIONAL CONDITIONS (EN)</b>			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	In the <b>United Kingdom</b> , 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
2.10.5.13	In <b>Finland, Norway</b> and <b>Sweden</b> , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N

3.2.1.1	<p>In <b>Switzerland</b>, 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:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p> <p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>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:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A</p>		N
---------	---	--	---



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In <b>Denmark</b>, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>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.</p> <p>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.</p>		N
3.2.1.1 (A2:2013)	<p>In <b>Denmark</b>, 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.</p> <p>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.</p> <p>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.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N
3.2.1.1	<p>In <b>Spain</b>, 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.</p> <p>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.</p> <p>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.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	The plug cord set was approved	P





IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In the <b>United Kingdom</b>, 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.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N
3.2.1.1	<p>In <b>Ireland</b>, 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.</p>		N
3.2.4	<p>In <b>Switzerland</b>, for requirements see 3.2.1.1 of this annex.</p>		N
3.2.5.1	<p>In the <b>United Kingdom</b>, a power supply cord with conductor of 1,25 mm<sup>2</sup> is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>		N
3.3.4	<p>In the <b>United Kingdom</b>, 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:</p> <ul style="list-style-type: none"><li>• 1,25 mm<sup>2</sup> to 1,5 mm<sup>2</sup> nominal cross-sectional area.</li></ul>		N
4.3.6	<p>In the <b>United Kingdom</b>, 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.</p>		P
4.3.6	<p>In <b>Ireland</b>, 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.</p>		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In <b>Finland, Norway and Sweden</b> TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"><li>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that<ul style="list-style-type: none"><li>is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</li><li>has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</li><li>is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li></ul></li><li>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li><li>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li></ul>		N
6.1.2.1 (A1:2010)	<p>In <b>Finland, Norway and Sweden</b>, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"><li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li><li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li></ul> <p>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</p> <ul style="list-style-type: none"><li>- 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</li><li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li></ul>		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"><li>- 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;</li><li>- the additional testing shall be performed on all the test specimens as described in EN 60384-14:</li><li>- 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.</li></ul>		N
6.1.2.2	<p>In <b>Finland, Norway and Sweden</b>, 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.</p>		N
7.2	<p>In <b>Finland, Norway and Sweden</b>, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>		N
7.3 (A11:2009)	<p>In <b>Norway and Sweden</b>, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.</p>		N



IEC/EN 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
<b>PVC insulated cords</b>		
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
<b>Rubber insulated cords</b>		
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
<b>Cords having high flexibility</b>		
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

\*\*\*\* End of Test Report \*\*\*\*



**Product Photographs**



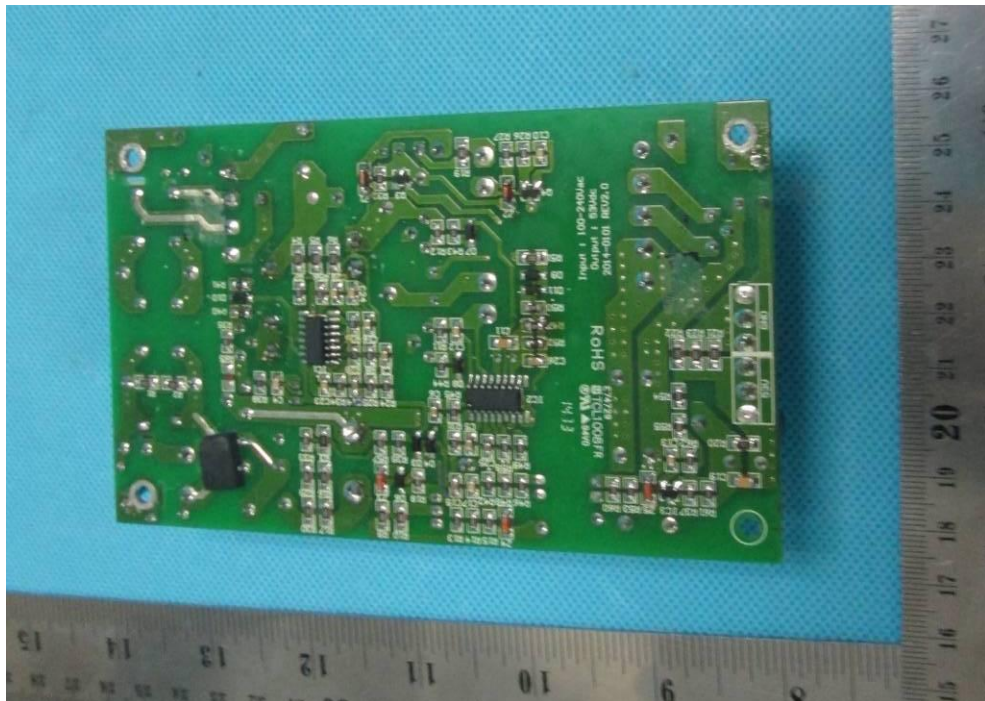
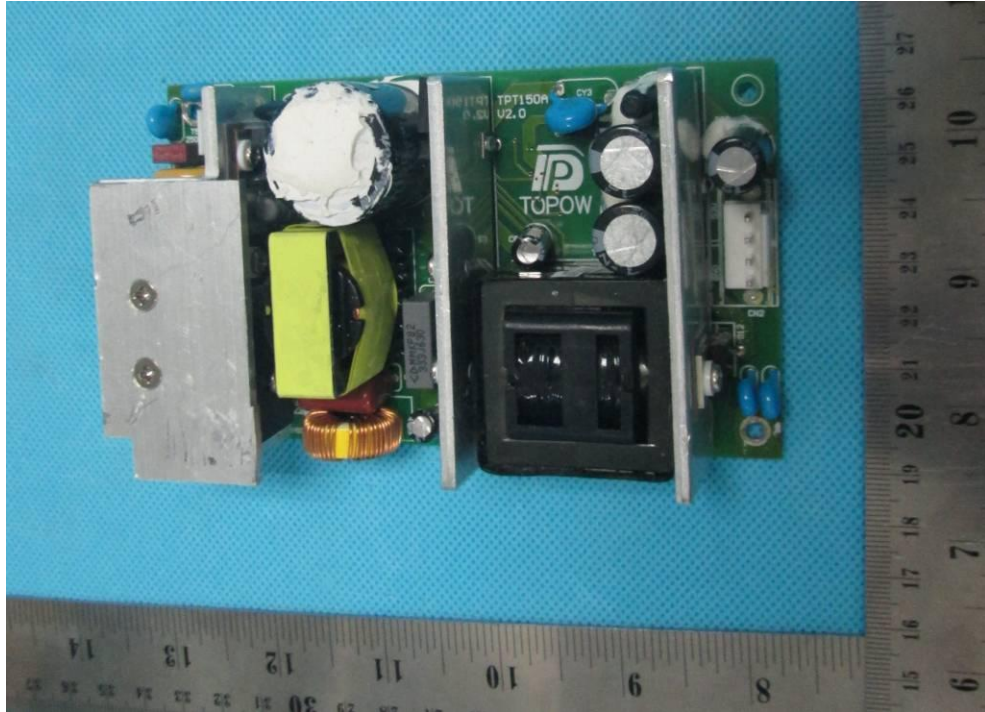


**Product Photographs**



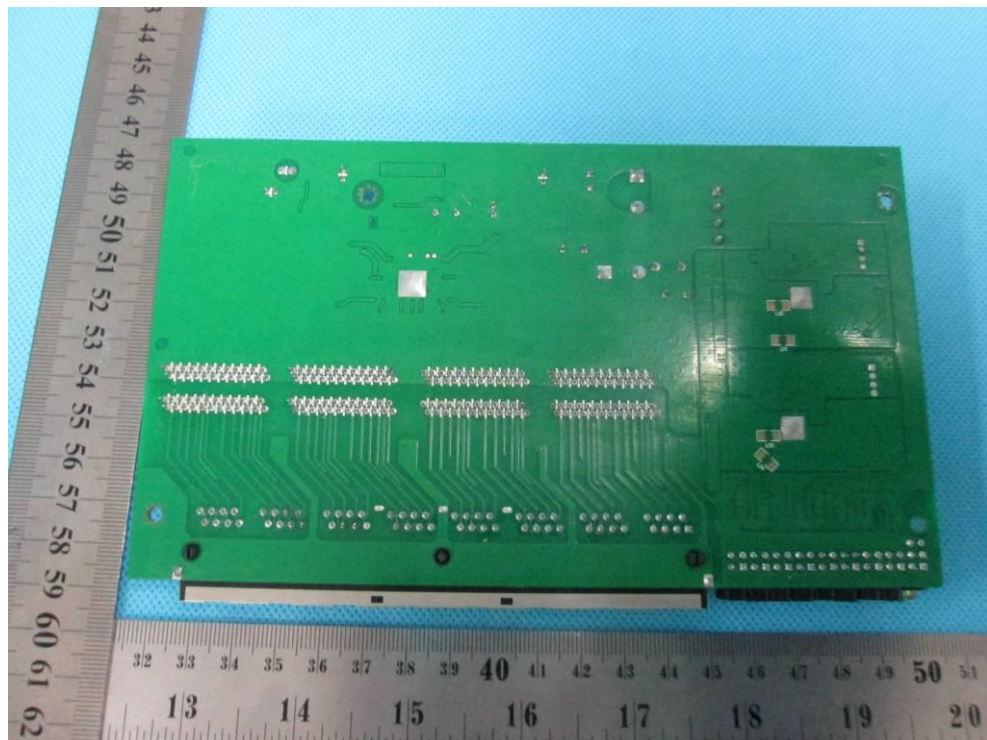


**Product Photographs**





**Product Photographs**







**Product Photographs**

