







TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number.: DHQA-19JY2363VTSHP Date of issue: 2019-08-01 Total number of pages: 72 pages	
Applicant's name: ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD. Address: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China	
Test specification: Standard: IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013 Test procedure: CE-LVD Non-standard test method: N/A	
Test Report Form No: IEC60950_1F Test Report Form(s) Originator: SGS Fimko Ltd Master TRF: Dated 2014-02	
<p>This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.</p>	
Test item description: Trade Mark: Manufacturer: Model/Type reference: Ratings:	NETWORK PTZ CAMERA  or  Same as applicant DH-SD10A248WA-HNF, DH-SD10A248WAN-HNF, SD10A248WA-HNF, SD10A248WAN-HNF, DH-SD10A260WA-HNF, DH-SD10A260WAN-HNF, SD10A260WA-HNF, SD10A260WAN-HNF, DH-SD10A448WA-HNF, DH-SD10A448WAN-HNF, SD10A448WA-HNF, SD10A448WAN-HNF, DH-SD10A848WA-HNF, DH-SD10A848WAN-HNF, SD10A848WA-HNF, SD10A848WAN-HNF, SD10Axyzutm-Hab, DH-SD10Axyzutm-Hab(x=0-9 or blank; y=0-9; z=0-9; u=A-Z; t=A-Z or blank; m=N, P or blank; a=C, N or blank; b=I, R, F, P or blank). 36V ===, 2.23A or Hi POE (40-57V ===, 1.6A) for EUT (1) I/P: 100-240V~, 50/60Hz, 1.6A, O/P: 36V ===, 2.23A for Adapter; (2) I/P: 100-240V~, 50/60Hz; O/P: 36V ===, Min. 2.23A for Adapter (optional).

Testing procedure and testing location:		
<input checked="" type="checkbox"/> Testing Laboratory:	LCIE CHINA COMPANY LIMITED	
Testing location/ address.....:	Building 4, No. 518, Xin Zhuan Road, CaoHejing Songjiang High-Tech Park, Shanghai P.R.C (201612)	
Tested by (name + signature).....:	Daisy Fu Project Engineer	
Approved by (name + signature)	Tom Zhang Project Manager	
List of Attachments (including a total number of pages in each attachment):		
Attachments 1: Picture of EUT (page 42-55)		
Attachments 2: List of Europe National Differences(page 56-72)		
Tests performed (name of test and test clause):	Testing location:	
Clause 1.5 Components Clause 1.6 Power interface Clause 1.7 Markings and instructions Clause 2.1 Protection form electric shock and energy hazards Clause 2.2 SELV circuit Clause 2.5 Limited power sources Clause 2.9 Electrical insulation Clause 4 Physical requirements Clause 4.5 Thermal requirements Clause 4.7 Resistance to fire Clause 5.3 Abnormal operating and fault Conditions Annex L Normal load conditions for some types of electrical business equipment During above tests, the EUT is supplied by approved external power supply (Output rating: 36V ---, 2.23A or Hi POE(40-57V ---, 1.6A)	LCIE CHINA COMPANY LIMITED. Building 4, No. 518, Xin Zhuan Road, CaoHejing Songjiang High-Tech Park, Shanghai P.R.C (201612)	
Summary of compliance with National Differences:		
List of countries addressed		
1. EU GROU Differences (EN 60950-1:2006+A11:2009+A1:2010+A12:2011+ A2:2013)		
2. EU Special National Conditions, EU A-deviation: none		
The product complies with the above requirements.		

Copy of marking plate:

NETWORK PTZ CAMERA

dhua
TECHNOLOGY

SD10A848WA-HNF

36V \equiv 2.23A/HiPoE(40-57V \equiv ,1.6A)

P/N:1.0.01.07.13209



S/N: 5E03D6FYAKF1C45

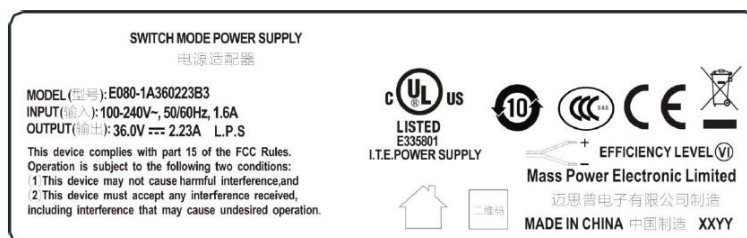


MADE IN CHINA



ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD.

Label for EUT



Label for Adapter

-Note:

- The instruction sheet and marking should be translated to the language where the product will be sell.
- The height of WEEE marking shall be at least 7 mm.
- The CE height of other symbol shall be at least 5 mm.
- For EUROPEAN market the batch number, name and address of EUROPEAN importer also should list in the marking plate.

Test item particulars.....:	
Equipment mobility.....:	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....:	<input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input checked="" type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: not directly connected to the mains
Mains supply tolerance (%) or absolute mains supply values	N/A (not directly connected to the mains)
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	N/A (not directly connected to the mains)
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IPX0
Altitude during operation (m)	Up to 5000m
Altitude of test laboratory (m)	Approx. 20m
Mass of equipment (kg)	Approx. 12.6

Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item	2019-07-02
Date (s) of performance of tests	2019-07-02 to 2019-07-24
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	

Name and address of factory (ies)	: 1, ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD. No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China 2, ZHEJIANG DAHUA ZHILIAN CO., LTD. No.28, Dongqiao Road, Dongzhou Street, Fuyang District, Hangzhou, P.R. China.								
General product information:									
<p>-The equipment is network camera which is a remote video surveillance device. All electrical control parts of equipment were fixed on V-0 PCB and housed in plastic enclosure by screws.</p> <p>-The equipment supplied by approved external power supply (Output rating: 36V $\overline{=}$, 3A) or Hi POE (40-57V $\overline{=}$, 1.6A), and the "Max. Ambient temperature is +60°C" should be indicated in user manual and accredited test report.</p> <p>-The product has been evaluated at ceiling and wall mounted means.</p> <p>-The manufacture specified maximum operated ambient temperature is +55°C for camera with IR on, +60°C for camera with IR off.</p> <p>Models DH-SD10A248WA-HNF, DH-SD10A248WAN-HNF, SD10A248WA-HNF, SD10A248WAN-HNF, DH-SD10A260WA-HNF, DH-SD10A260WAN-HNF, SD10A260WA-HNF, SD10A260WAN-HNF, DH-SD10A448WA-HNF, DH-SD10A448WAN-HNF, SD10A448WA-HNF, SD10A448WAN-HNF, DH-SD10A848WA-HNF, DH-SD10A848WAN-HNF, SD10A848WA-HNF, SD10A848WAN-HNF, SD10Axyzutm-Hab and DH-SD10Axyzutm-Hab(x=0-9 or blank; y=0-9; z=0-9; u=A-Z; t=A-Z or blank; m=N, P or blank; a=C, N or blank; b=I, R, F, P or blank) are identical to each other except for different model name, sensor pixel and optical zoom factor. Model SD8A240WA-HNF was selected as the representative for all the test.</p>									
Abbreviations used in the report:									
- normal conditions - functional insulation - double insulation - between parts of opposite polarity	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">N.C.</td> <td style="width: 50%;">S.F.C</td> </tr> <tr> <td>OP</td> <td>BI</td> </tr> <tr> <td>DI</td> <td>SI</td> </tr> <tr> <td>BOP</td> <td>RI</td> </tr> </table>	N.C.	S.F.C	OP	BI	DI	SI	BOP	RI
N.C.	S.F.C								
OP	BI								
DI	SI								
BOP	RI								
Indicate used abbreviations (if any)									

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

1	GENERAL		P
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1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Components, which are certified to IEC and/or national standards, are used correctly within their ratings, Components not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	No such thermal controls provided	N/A
1.5.4	Transformers	Transformers provided in secondary circuit, and used are suitable for the intended application and comply with the relevant requirements of the standard.	P
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	P
1.5.6	Capacitors bridging insulation	No such capacitors	N/A
1.5.7	Resistors bridging insulation	No such resistors	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	See above	N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	See above	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	See above	N/A
1.5.8	Components in equipment for IT power systems	No such Components	N/A
1.5.9	Surge suppressors	No such Components	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs	No VDRs	N/A
1.5.9.3	Bridging of functional insulation by a VDR	See above	N/A
1.5.9.4	Bridging of basic insulation by a VDR	See above	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	See above	N/A
1.6	Power interface		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6.1	AC power distribution systems	Not directly connect to the mains	N/A
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/A
1.6.4	Neutral conductor	Not directly connect to the mains	N/A

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking		N/A
	Multiple mains supply connections.....:	See copy of marking plate	P
	Rated voltage(s) or voltage range(s) (V)	See copy of marking plate	P
	Symbol for nature of supply, for d.c. only		N/A
	Rated frequency or rated frequency range (Hz)		N/A
	Rated current (mA or A)	See copy of marking plate	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark	See copy of marking plate	P
	Model identification or type reference	See page 1	P
	Symbol for Class II equipment only	Class III apparatus	N/A
	Other markings and symbols	See copy of marking plate	P
1.7.1.3	Use of graphical symbols	See copy of marking plate	P
1.7.2	Safety instructions and marking		P
1.7.2.1	General	English version provided.	P
1.7.2.2	Disconnect devices	Class III apparatus	N/A
1.7.2.3	Overcurrent protective device	Class III apparatus	N/A
1.7.2.4	IT power distribution systems	Class III apparatus	N/A
1.7.2.5	Operator access with a tool	Class III apparatus	N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles	Equipment is designed for continuous operation	N/A
1.7.4	Supply voltage adjustment	No power selector or adjustment	N/A
	Methods and means of adjustment; reference to installation instructions	See above	N/A
1.7.5	Power outlets on the equipment	No such power outlet	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	No such fuse used	N/A
1.7.7	Wiring terminals		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.7.1	Protective earthing and bonding terminals	Class III apparatus	N/A
1.7.7.2	Terminals for a.c. mains supply conductors	Not directly connected to mains power supply	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	Not directly connected to mains power supply	N/A
1.7.8	Controls and indicators	No safety relevant controls or indicators	N/A
1.7.8.1	Identification, location and marking	See above	N/A
1.7.8.2	Colours	See above	N/A
1.7.8.3	Symbols according to IEC 60417.....	See above	N/A
1.7.8.4	Markings using figures	See above	N/A
1.7.9	Isolation of multiple power sources	No multiple power source	N/A
1.7.10	Thermostats and other regulating devices	No such devices	N/A
1.7.11	Durability	After this test there was no damage to the label. The marking on the label did not fade. There was no curling or lifting of the label edge.	P
1.7.12	Removable parts	No such parts	N/A
1.7.13	Replaceable batteries	No such batteries	N/A
	Language(s)	See above	—
1.7.14	Equipment for restricted access locations.....	Not intended for use in a restricted access location	N/A

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts	No hazard energized parts	N/A
	Test by inspection	See above	N/A
	Test with test finger (Figure 2A)	See above	N/A
	Test with test pin (Figure 2B)	See above	N/A
	Test with test probe (Figure 2C)	See above	N/A
2.1.1.2	Battery compartments	No such battery compartment provided.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)	(see appended tables 2.10.2 and 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No such hazardous voltage circuit wiring in entire equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.5	Energy hazards	(see appended tables 2.1.1.5)	N/A
2.1.1.6	Manual controls	No such controls	N/A
2.1.1.7	Discharge of capacitors in equipment	Class III apparatus	N/A
	Measured voltage (V); time-constant (s)	Class III apparatus	—
2.1.1.8	Energy hazards – d.c. mains supply	Class III apparatus	N/A
	a) Capacitor connected to the d.c. mains supply ...:		N/A
	b) Internal battery connected to the d.c. mains supply :		N/A
2.1.1.9	Audio amplifiers		N/A
2.1.2	Protection in service access areas	Class III apparatus	N/A
2.1.3	Protection in restricted access locations		N/A

2.2	SELV circuits		P
2.2.1	General requirements	Class III equipment	P
2.2.2	Voltages under normal conditions (V)	All accessible voltages are less than 42.4V peak or 60Vdc and are classified as SELV.	P
2.2.3	Voltages under fault conditions (V)	Under fault conditions voltages never exceed 71V peak and 120Vdc and do not exceed 42.4V peak or 60V dc for more than 0.2s	P
2.2.4	Connection of SELV circuits to other circuits	Connected to SELV circuit only.	P

2.3	TNV circuits		N/A
2.3.1	Limits		N/A
	Type of TNV circuits	No TNV circuit	—
2.3.2	Separation from other circuits and from accessible parts	See above	N/A
2.3.2.1	General requirements	See above	N/A
2.3.2.2	Protection by basic insulation	See above	N/A
2.3.2.3	Protection by earthing	See above	N/A
2.3.2.4	Protection by other constructions	See above	N/A
2.3.3	Separation from hazardous voltages	See above	N/A
	Insulation employed	See above	—
2.3.4	Connection of TNV circuits to other circuits	See above	N/A
	Insulation employed	See above	—
2.3.5	Test for operating voltages generated externally	See above	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.4	Limited current circuits		N/A
2.4.1	General requirements	Class III apparatus	N/A
2.4.2	Limit values	See above	N/A
	Frequency (Hz).....:	See above	—
	Measured current (mA)	See above	—
	Measured voltage (V)	See above	—
	Measured circuit capacitance (nF or μ F).....:	See above	—
2.4.3	Connection of limited current circuits to other circuits	See above	N/A

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

2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing	Class III apparatus	N/A
2.6.2	Functional earthing	See above	N/A
	Use of symbol for functional earthing	See above	N/A
2.6.3	Protective earthing and protective bonding conductors	See above	N/A
2.6.3.1	General	See above	N/A
2.6.3.2	Size of protective earthing conductors	See above	N/A
	Rated current (A), cross-sectional area (mm^2), AWG	See above	—
2.6.3.3	Size of protective bonding conductors	See above	N/A
	Rated current (A), cross-sectional area (mm^2), AWG	See above	—
	Protective current rating (A), cross-sectional area (mm^2), AWG	See above	—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test	See above	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	current (A), duration (min)		
2.6.3.5	Colour of insulation.....	See above	N/A
2.6.4	Terminals	See above	N/A
2.6.4.1	General	See above	N/A
2.6.4.2	Protective earthing and bonding terminals	See above	N/A
	Rated current (A), type, nominal thread diameter (mm)	See above	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	See above	N/A
2.6.5	Integrity of protective earthing	See above	N/A
2.6.5.1	Interconnection of equipment	See above	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	See above	N/A
2.6.5.3	Disconnection of protective earth	See above	N/A
2.6.5.4	Parts that can be removed by an operator	See above	N/A
2.6.5.5	Parts removed during servicing	See above	N/A
2.6.5.6	Corrosion resistance	See above	N/A
2.6.5.7	Screws for protective bonding	See above	N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system	See above	N/A

2.7	Overcurrent and earth fault protection in primary circuits		N/A
2.7.1	Basic requirements	Not directly connected to mains, and entire circuit of equipment is secondary circuit.	N/A
	Instructions when protection relies on building installation	See above	N/A
2.7.2	Faults not simulated in 5.3.7	See above	N/A
2.7.3	Short-circuit backup protection	See above	N/A
2.7.4	Number and location of protective devices	See above	N/A
2.7.5	Protection by several devices	See above	N/A
2.7.6	Warning to service personnel.....	See above	N/A

2.8	Safety interlocks		N/A
2.8.1	General principles	Class III apparatus	N/A
2.8.2	Protection requirements	See above	N/A
2.8.3	Inadvertent reactivation	See above	N/A
2.8.4	Fail-safe operation	See above	N/A
	Protection against extreme hazard	See above	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.8.5	Moving parts	See above	N/A
2.8.6	Overriding	See above	N/A
2.8.7	Switches, relays and their related circuits	See above	N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm)	See above	N/A
2.8.7.2	Overload test	See above	N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test	(see appended table 5.2)	N/A
2.8.8	Mechanical actuators		N/A

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Class III equipment Natural rubber, materials containing asbestos and hygroscopic material are not used as insulation.	P
2.9.2	Humidity conditioning	See above	N/A
	Relative humidity (%), temperature (°C)	See above	—
2.9.3	Grade of insulation	Functional insulation only	P
2.9.4	Separation from hazardous voltages	See above	N/A
	Method(s) used	See above	—

2.10	Clearances, creepage distances and distances through insulation		N/A
2.10.1	General	Class III apparatus	N/A
2.10.1.1	Frequency	See above	N/A
2.10.1.2	Pollution degrees	See above	N/A
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts	No such parts	N/A
2.10.1.5	Insulation with varying dimensions	See above	N/A
2.10.1.6	Special separation requirements	See above	N/A
2.10.1.7	Insulation in circuits generating starting pulses	See above	N/A
2.10.2	Determination of working voltage	See above	N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage	See above	N/A
2.10.2.3	Peak working voltage	See above	N/A
2.10.3	Clearances	Class III product-secondary circuits comply with Sub-clause 5.3.4.	N/A
2.10.3.1	General	See above	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.2	Mains transient voltages	See above	N/A
	a) AC mains supply	See above	N/A
	b) Earthed d.c. mains supplies	See above	N/A
	c) Unearthed d.c. mains supplies	See above	N/A
	d) Battery operation	See above	N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.4	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.5	Clearances in circuits having starting pulses	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.6	Transients from a.c. mains supply	Class III apparatus	N/A
2.10.3.7	Transients from d.c. mains supply	Class III apparatus	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems	Class III apparatus	N/A
2.10.3.9	Measurement of transient voltage levels	Class III apparatus	N/A
	a) Transients from a mains supply	See above	N/A
	For an a.c. mains supply	See above	N/A
	For a d.c. mains supply	See above	N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances	Class III product-secondary circuits comply with Sub-clause 5.3.4.	N/A
2.10.4.1	General		N/A
2.10.4.2	Material group and comparative tracking index		N/A
	CTI tests	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5	Solid insulation		N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5.6	Thin sheet material – General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs)		—
2.10.5.8	Non-separable thin sheet material		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	Class III apparatus	N/A
2.10.5.12	Wire in wound components	Class III apparatus	N/A
	Working voltage	Class III apparatus	N/A
	a) Basic insulation not under stress	Class III apparatus	N/A
	b) Basic, supplementary, reinforced insulation	Class III apparatus	N/A
	c) Compliance with Annex U	Class III apparatus	N/A
	Two wires in contact inside wound component; angle between 45° and 90°	Class III apparatus	N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test	(see appended table 2.10.5)	—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	Class III apparatus	N/A
	Working voltage	Class III apparatus	N/A
	- Basic insulation not under stress	Class III apparatus	N/A
	- Supplementary, reinforced insulation	Class III apparatus	N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.2	Coated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation	(see appended table 2.10.5)	N/A
	Number of insulation layers (pcs).....		N/A
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test	(see appended table 5.2)	N/A
2.10.8.4	Abrasion resistance test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Internal wires have gauge suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	The wires are routed away from sharp edges and parts which could damage insulation.	P
3.1.3	Securing of internal wiring	The wires are positioned in such a manner that prevents excessive strain, loosening of terminal connections and damage of conductor insulation.	P
3.1.4	Insulation of conductors	The insulation of the individual conductors suitable for the application and the working voltage.	P
3.1.5	Beads and ceramic insulators	No such insulator used	N/A
3.1.6	Screws for electrical contact pressure	No electrical contact pressure by screwed connections.	N/A
3.1.7	Insulating materials in electrical connections	All connections are metal to metal.	N/A
3.1.8	Self-tapping and spaced thread screws	No self-tapping screws are used.	N/A
3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring	No sleeving used on wirings for supplementary insulation.	N/A

3.2	Connection to a mains supply		N/A
3.2.1	Means of connection	The equipment is not intended to directly connected to the mains supply	N/A
3.2.1.1	Connection to an a.c. mains supply	Class III apparatus	N/A
3.2.1.2	Connection to a d.c. mains supply	See above	N/A
3.2.2	Multiple supply connections	See above	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.2.3	Permanently connected equipment	See above	N/A
	Number of conductors, diameter of cable and conduits (mm)	See above	—
3.2.4	Appliance inlets	See above	N/A
3.2.5	Power supply cords	See above	N/A
3.2.5.1	AC power supply cords	See above	N/A
	Type	See above	—
	Rated current (A), cross-sectional area (mm ²), AWG	See above	—
3.2.5.2	DC power supply cords	Class III apparatus	N/A
3.2.6	Cord anchorages and strain relief	See above	N/A
	Mass of equipment (kg), pull (N)	See above	—
	Longitudinal displacement (mm)	See above	—
3.2.7	Protection against mechanical damage	See above	N/A
3.2.8	Cord guards	See above	N/A
	Diameter or minor dimension D (mm); test mass (g)	See above	—
	Radius of curvature of cord (mm)	See above	—
3.2.9	Supply wiring space		N/A

3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals	The equipment is not intended to directly connected to the mains supply	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	Disconnection from the mains supply		N/A
3.4.1	General requirement	The equipment is not intended to directly connected to the mains supply	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	Interconnection of equipment		P
3.5.1	General requirements	See below	P
3.5.2	Types of interconnection circuits	SELV circuits	P
3.5.3	ELV circuits as interconnection circuits	No such ELV interconnection circuits	N/A
3.5.4	Data ports for additional equipment	All data ports complied with LPS (see appended table 2.5.)	P

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N/A
	Angle of 10°	The weight of unit does not exceed 7kg	N/A
	Test force (N)	Equipment is not a floor-standing unit	N/A

4.2	Mechanical strength		P
4.2.1	General		N/A
	Rack-mounted equipment.	(see Annex DD)	N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm)		N/A
4.2.7	Stress relief test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.8	Cathode ray tubes	No cathode ray tube	N/A
	Picture tube separately certified	(see separate test report or attached certificate)	N/A
4.2.9	High pressure lamps	No high pressure lamps	N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	Wall and ceiling mounted means provided; 371N force is applied downwards through the centre of gravity of the equipment for 1min. No any damaged happened on equipment and associated mounting plate.	P

4.3	Design and construction		P
4.3.1	Edges and corners	All edges and corners are judged to be sufficiently well rounded.	P
4.3.2	Handles and manual controls; force (N)	No handle or manual control.	N/A
4.3.3	Adjustable controls	No such control device.	N/A
4.3.4	Securing of parts	Electrical and mechanical connection can be expected to withstand usual mechanical stress. No loosening of parts is likely to occur.	P
4.3.5	Connection by plugs and sockets		N/A
4.3.6	Direct plug-in equipment	No such direct plug-in equipment.	N/A
	Torque	See above	—
	Compliance with the relevant mains plug standard	See above	N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries	No such batteries	N/A
	- Overcharging of a rechargeable battery	See above	N/A
	- Unintentional charging of a non-rechargeable battery	See above	N/A
	- Reverse charging of a rechargeable battery	See above	N/A
	- Excessive discharging rate for any battery	See above	N/A
4.3.9	Oil and grease	No oil or grease	N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases	No container for liquids or gases	N/A
4.3.12	Flammable liquids	No flammable liquids	N/A
	Quantity of liquid (l)	See above	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Flash point (°C)	See above	N/A
4.3.13	Radiation		P
4.3.13.1	General		P
4.3.13.2	Ionizing radiation	No ionizing radiation	N/A
	Measured radiation (pA/kg)	See above	—
	Measured high-voltage (kV)	See above	—
	Measured focus voltage (kV)	See above	—
	CRT markings	See above	—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No UV radiation	N/A
	Part, property, retention after test, flammability classification	See above	N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation	No UV radiation	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	Infrared-red LED	P
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class	No such device	—
4.3.13.5.2	Light emitting diodes (LEDs)	Infrared-red LED is considered as low power LEDs	
4.3.13.6	Other types		N/A

4.4	Protection against hazardous moving parts		N/A
4.4.1	General	No hazardous moving parts	N/A
4.4.2	Protection in operator access areas	See above	N/A
	Household and home/office document/media shredders	(see Annex EE)	N/A
4.4.3	Protection in restricted access locations	No hazardous moving parts	N/A
4.4.4	Protection in service access areas	No hazardous moving parts	N/A
4.4.5	Protection against moving fan blades	No hazardous moving parts	N/A
4.4.5.1	General	See above	N/A
	Not considered to cause pain or injury. a).....	See above	N/A
	Is considered to cause pain, not injury. b)	See above	N/A
	Considered to cause injury. c)	See above	N/A
4.4.5.2	Protection for users	See above	N/A
	Use of symbol or warning	See above	N/A
4.4.5.3	Protection for service persons	See above	N/A
	Use of symbol or warning	See above	N/A

4.5	Thermal requirements		P
4.5.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict

4.5.2	Temperature tests	The equipment and its component parts did not attain excessive temperatures during normal operation. (see appended table 4.5)	P
	Normal load condition per Annex L :	Operated in the most unfavorable way of operation given in the operating instruction until steady conditions established.	—
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	No opening	P
	Dimensions (mm) :	See above	—
4.6.2	Bottoms of fire enclosures	Metallic enclosure provided on bottom. No opening	N/A
	Construction of the bottom, dimensions (mm) :	See above	—
4.6.3	Doors or covers in fire enclosures	No such door or cover.	N/A
4.6.4	Openings in transportable equipment	No opening	N/A
4.6.4.1	Constructional design measures	See above	N/A
	Dimensions (mm) :	See above	—
4.6.4.2	Evaluation measures for larger openings	See above	N/A
4.6.4.3	Use of metallized parts	See above	N/A
4.6.5	Adhesives for constructional purposes	No opening	N/A
	Conditioning temperature (°C), time (weeks) :	See above	—

4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame		P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	N/A
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.7.2.2	Parts not requiring a fire enclosure	Circuit should be supplied by a limited power source complying with 2.5 and with components mounted on materials of Class V-1 or better.	P
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures		N/A
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures		N/A
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		N/A
5.1	Touch current and protective conductor current		N/A
5.1.1	General	Class III apparatus	N/A
5.1.2	Configuration of equipment under test (EUT)	See above	N/A
5.1.2.1	Single connection to an a.c. mains supply	See above	N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply	See above	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	See above	N/A
5.1.3	Test circuit	See above	N/A
5.1.4	Application of measuring instrument	See above	N/A
5.1.5	Test procedure	See above	N/A
5.1.6	Test measurements	See above	N/A
	Supply voltage (V)	See above	—
	Measured touch current (mA)	See above	—
	Max. allowed touch current (mA)	See above	—
	Measured protective conductor current (mA)	See above	—
	Max. allowed protective conductor current (mA)...	See above	—
5.1.7	Equipment with touch current exceeding 3,5 mA	See above	N/A
5.1.7.1	General	See above	N/A
5.1.7.2	Simultaneous multiple connections to the supply	See above	N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	See above	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system	See above	N/A
	Supply voltage (V)	See above	—
	Measured touch current (mA)	See above	—
	Max. allowed touch current (mA)	See above	—
5.1.8.2	Summation of touch currents from telecommunication networks	See above	N/A
	a) EUT with earthed telecommunication ports	See above	N/A
	b) EUT whose telecommunication ports have no reference to protective earth	See above	N/A
5.2	Electric strength		N/A
5.2.1	General	(see appended table 5.2)	N/A
5.2.2	Test procedure		N/A
5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	N/A
5.3.2	Motors	(see appended Annex B)	N/A
5.3.3	Transformers	(see appended Annex C)	N/A
5.3.4	Functional insulation :	Functional insulation complies with the requirement (c.)	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE :		N/A
5.3.7	Simulation of faults	See appended table 5.3	P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No fire or molten metal was emitted. No overheating.	P
5.3.9.2	After the tests	(See appended table 5.3)	P
6	CONNECTION TO TELECOMMUNICATION NETWORKS		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	(see appended table 5.2)	N/A
	Supply voltage (V)		—

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Clause	Requirement + Test	Result - Remark	Verdict

	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N/A

6.2	Protection of equipment users from overvoltages on telecommunication networks		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test	(see appended table 5.2)	N/A
6.2.2.2	Steady-state test	(see appended table 5.2)	N/A
6.2.2.3	Compliance criteria		N/A

6.3	Protection of the telecommunication wiring system from overheating		N/A
	Max. output current (A)		—
	Current limiting method		—

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test	(see appended table 5.2)	N/A
7.4.3	Impulse test	(see appended table 5.2)	N/A

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Flame A, B, C or D		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material		—
	Wall thickness (mm)		—
A.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N/A
B.1	General requirements		N/A
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
B.2	Test conditions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

B.3	Maximum temperatures	(see appended table 5.3)	N/A
B.4	Running overload test	(see appended table 5.3)	N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)		N/A
B.8	Test for motors with capacitors	(see appended table 5.3)	N/A
B.9	Test for three-phase motors	(see appended table 5.3)	N/A
B.10	Test for series motors		N/A
	Operating voltage (V)		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N/A
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
	Method of protection		—
C.1	Overload test	(see appended table 5.3)	N/A
C.2	Insulation	(see appended tables 5.2 and C2)	N/A
	Protection from displacement of windings		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		N/A
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		N/A

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
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J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal(s) used		—

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation	(see appended table 5.3)	N/A

L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment	The equipment is operated according to the most unfavorable way of operation given in the operating instructions.	P

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A

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

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

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

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

S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
		See separate test report	—

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N/A
		See separate test report	—

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A

W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A

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

W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A

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

Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N/A
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AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
-----------	--	--	-----

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

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

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

EE	ANNEX EE, Household and home/office document/media shredders		N/A
EE.1	General		N/A

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

1.5.1	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾	
External Adapter	Mass Power Electronic limited	E080- 1A360223B3	I/P: 100-240V~, 50/60Hz, 1.6A; O/P: 36Vdc, 2.23A	IEC 60950- 1:2005 +A1: 2009+A2:2013 EN 60950-1: 2006+A11:2009 +A1:2010+A12:2 011+A2:2013	Report No.:085- 170495702-000 issue by TUV SUD Certification and Testing(China) Co., Ltd. Guangzhou Branch	
Plastic enclosure	SABIC INNOVATIVE PLASTICS B V	3412R(f1), ML3999(f1)	V-0, 125°C, min. thickness 2.0mm	UL 94	UL E45329	
Plastic IR cover	SABIC INNOVATIVE PLASTICS US L L C	923A(f1), 953A(GG)(f1), 923ASR(f1), 943ASR(f1)	V-0, 120°C, min. thickness 3.0mm	UL 94	UL E121562	
PCB	SUNTAK MULTILAYER PCB CO LTD	STM-5	V-0, 130°C	UL 796	UL E207844	
PCB	SHENZHEN KING BROTHER ELECTRONICS TECHNOLOGY CO LTD	KB-01	V-0, 130°C	UL 796	UL E225430	
PCB	SHENZHEN KING BROTHER ELECTRONICS TECHNOLOGY CO LTD	KB-04	V-0, 130°C	UL 796	UL E225430	
(Alternate)	Interchangeable	Interchangeable	V-0, 130°C	UL 796	UL	
LED lamp	Osram Opto Semiconductors Asia Limited	SFH 4235	I _F =1A, V _F =3.0V, λ=860nm	IEC/EN 60950-1, IEC/EN 62471	Test with appliance	
LED lamp	LITEON OPTOELECTRO NICS	LTE-R38386A- S-DH	I _F =1A, V _F =1.8V, λ=850nm	IEC/EN 60950-1, IEC/EN 62471	Test with appliance	
DC stepping motor	CHANGZHOU 3X MOTION TECHNOLOGIES CO., LTD	35BYJ212H42- 60-526-01T	12Vdc, 60Ω	IEC/EN 60950-1	Test with appliance	
DC vertical motor	Shanghai Moons' Electric Co., Ltd	MS23HA8L4150 -01	2phase, 2.48Vdc, 0.8/phase	IEC/EN 60950-1	Test with appliance	
DC horizontal motor	Shanghai Moons' Electric Co., Ltd	MS23HA8L4150 -03	2phase, 2.48Vdc, 0.8/phase	IEC/EN 60950-1	Test with appliance	

DC Fan	SUNON	EF50151BX-1C02C-S99	12Vdc, 1.80W	EN 60950-1: 2006+A11+A1+A12+A2	Cert. No. R50275749 issued by TUV RH
DC Fan	Adda Corporation	AD0412HB-G70	12Vdc, 0.10A	EN 60950-1: 2006+A:11+A12	Cert. No.: R 50068602 issued by TUV RH
Lithium ion Battery	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	ML414H	3Vdc, 1mAh	UL 1642	UL MH15628

Supplementary information:

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

1.5.1	TABLE: Opto Electronic Devices	N/A
Manufacturer.....:	--	
Type.....:	--	
Separately tested.....:	--	
Bridging insulation	--	
External creepage distance	--	
Internal creepage distance	--	
Distance through insulation	--	
Tested under the following conditions	--	
Input.....:	--	
Output.....:	--	
supplementary information:		
None		

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
36	1.026	2.23	36.936	--	--	Maximum normal load with IR ON	
36	0.616	2.23	22.176	--	--	Maximum normal load with IR OFF	
Supplementary information: None							

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				N/A
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
--	--	--	--	--	
--	--	--	--	--	
supplementary information:					

2.1.1.5 c) 2)	TABLE: stored energy	N/A
Capacitance C (μF)	Voltage U (V)	Energy E (J)
--	--	--
--	--	--
supplementary information:		
None		

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			N/A
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
--		--	--	--
--		--	--	--
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
--		--		
--		--		
sSupplementary information: None				

2.5	TABLE: Limited power sources					P
Circuit output tested:--						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Test condition (Single fault)	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
J14(Pin1-4:NC, Pin 12, 17, 20: GND)	--	--	--	--	--	--
Pin 5-11 (Alarm in 7-Alarm in 1) to GND	--	2.0	0	8	0	100
Pin 13-16 (Alarm out), Pin 18-19 (Audio in/out) to GND	--	0	0	8	0	100
J1 (Pin 2, 5, 7: GND, Pin 1, 3: Power in)	--	--	--	--	--	--
Pin 6 (RS485_N), 8(Video) to GND	--	0	0	8	0	100
Pin 4 (RS485_P), to GND	--	4.60	0	8	0	100
J12(RJ45, Pin 9,10: NC)	--	--	--	--	--	--
Pin 1-8 to GND	--	0	0	8	0	100
supplementary information:						
Sc=Short circuit, Oc=Open circuit						

2.10.2	Table: working voltage measurement			N/A
Location		RMS voltage (V)	Peak voltage (V)	Comments
--		--	--	--
--		--	--	--
supplementary information:				
None				

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						N/A
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Functional:							
--	--	--	--	--	--	--	--
Basic/supplementary:							
--	--	--	--	--	--	--	--
Reinforced:							
--	--	--	--	--	--	--	--
Supplementary information: Certificated power supply used.							

2.10.5	TABLE: Distance through insulation measurements					N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
--	--	--	--	--	--	--
--	--	--	--	--	--	--
Supplementary information: None						

4.3.8	TABLE: Batteries								P
The tests of 4.3.8 are applicable only when appropriate battery data is not available					--				--
Is it possible to install the battery in a reverse polarity position?					--				--
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	0.8mA	300mA	1.5uA	--	--	--
Max. current during fault condition (R85 shorted)	--	--	--	1.2mA	300mA	--	--	--	--
Max. current during fault condition (D4 Pin 1-2 shorted)	--	--	--	2.9mA	300mA	--	--	--	--
Max. current during fault condition (BT4 shorted)	--	--	--	--	--	1.5mA			

Test results:		Verdict
- Chemical leaks	No	P
- Explosion of the battery	No	P
- Emission of flame or expulsion of molten metal	No	P
- Electric strength tests of equipment after completion of tests	--	N/A
Supplementary information: "S-C" means short circuit.		

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

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

4.5	TABLE: Thermal requiremens						P
Supply voltage (V):	36Vdc	36Vdc	36Vdc	36Vdc	--	--	—
Ambient Tmin (°C):	--	--	--	--	--	--	—
Ambient Tmax (°C):	--	Shift to Tma	--	Shift to Tma	--	--	—
Maximum measured temperature T of part/at:	T (°C)						Allowed Tmax (°C)
For Camera	IR ON	IR ON	IR OFF	IR OFF	--	--	--
PCB near U6(35_535 board)	50.0	79.3	43.1	77.3	--	--	130
BT4 body(35_535 board)	53.3	82.6	46.3	80.5	--	--	For ref.
Sensor board(35_447 board)	51.6	80.9	44.5	78.7	--	--	130
PCB near U11(51_262 board)	51.8	81.1	38.3	72.5	--	--	130
LED board(35_330 board)	42.2	71.5	33.7	67.9	--	--	130
Plastic inside near LED	42.3	71.6	33.9	68.1	--	--	125
Wiper motor	41.1	70.4	34.5	68.7	--	--	For ref.
Metal case near LED	39.7	69.0	32.7	66.9	--	--	70
Plastic outside near LED	41.6	70.9	30.4	64.6	--	--	95
Glass near LED	38.7	68.0	33.2	67.4	--	--	80
Horizontal motor	36.0	65.3	33.7	67.9	--	--	For ref.
Vertical motor	38.0	67.3	35.2	69.4	--	--	For ref.
PCB near U13(32_424 board)	43.4	72.7	41.1	75.3	--	--	130
C68 body(32_424 board)	39.1	68.4	36.8	71.0	--	--	105
PCB near U6(32_424 board)	40.3	69.6	38.0	72.2	--	--	130
C385 body(35_430 board)	44.5	73.8	41.4	75.6	--	--	105
T2 body(35_430 board)	48.4	77.7	45.2	79.4	--	--	110
FIL3 body(35_430 board)	33.9	63.2	31.5	65.7	--	--	130
PCB near M3(35_430 board)	40.0	69.3	37.0	71.2	--	--	130
Internal wire	31.5	60.8	30.0	64.2	--	--	80
Ambient	25.7°C	55.0°C	25.8°C	60.0°C	--	--	--

For Adapter (Test with appliance)							
Supply voltage (V) :	90Vac	90Vac	264Vdc	264Vdc	--	--	--
Ambient Tmin (°C) :	--	--	--	--	--	--	--
Ambient Tmax (°C) :	--	Shift to Tma	--	Shift to Tma	--	Shift to Tma	--
Maximum measured temperature T of part/at:	T (°C)						Allowed Tmax (°C)
Test direction	Label down	Label down	Label down	Label down	--	--	--
AC inlet	43.6	78.1	40.2	75.2	--	--	120
Primary lead wire	45.8	80.3	41.8	76.8	--	--	105
MOV2 body	60.7	95.2	52.4	87.4	--	--	105
MOV3 body	47.2	81.7	43.4	78.4	--	--	105
CX1 body	61.4	95.9	53.2	88.2	--	--	100
LF1 winding	62.8	97.3	54.0	89.0	--	--	130
LF2 winding	65.6	100.1	54.8	89.8	--	--	130
L1 winding	68.4	102.9	57.2	92.2	--	--	130
L2 winding	65.6	100.1	59.1	94.1	--	--	130
PCB under BD1	66.0	100.5	58.0	93.0	--	--	130
C1 body	67.8	102.3	62.3	97.3	--	--	105
PCB near Q2	66.7	101.2	59.3	94.3	--	--	130
T1 winding	72.6	107.1	69.3	104.3	--	--	110
T1 core	69.3	103.8	66.0	101.0	--	--	110
PC1 body	69.1	103.6	67.2	102.2	--	--	110
CY1 body	59.0	93.5	55.4	90.4	--	--	125
CY2 body	57.2	91.7	54.7	89.7	--	--	125
LF3 winding	56.1	90.6	55.0	90.0	--	--	130
C7 body	67.8	102.3	68.7	103.7	--	--	105
PCB under D8/D9	73.3	107.8	73.3	108.3	--	--	130
Output cord	44.1	78.6	43.8	78.8	--	--	80
Enclosure inside near top of T1	48.9	83.4	46.1	81.1	--	--	120
Enclosure outside near top of T1	49.2	83.7	45.4	80.4	--	--	95
Enclosure inside near bottom of T1	59.7	94.2	56.2	91.2	--	--	120
Enclosure outside near bottom of T1	57.3	91.8	54.2	89.2	--	--	95
Ambient	25.5°C	60.0°C	25.0°C	60.0°C	--	--	--
Test direction	Label up	Label up	Label up	Label up	--	--	--
AC inlet	43.3	77.2	39.3	73.5	--	--	120

Primary lead wire	45.7	79.6	41.1	75.3	--	--	105
MOV2 body	60.0	93.9	51.0	85.2	--	--	105
MOV3 body	47.8	81.7	42.8	77.0	--	--	105
CX1 body	60.4	94.3	51.3	85.5	--	--	100
LF1 winding	62.1	96.0	52.3	86.5	--	--	130
LF2 winding	64.1	98.0	52.7	86.9	--	--	130
L1 winding	67.1	101.0	55.1	89.3	--	--	130
L2 winding	65.0	98.9	57.6	91.8	--	--	130
PCB under BD1	64.9	98.8	56.3	90.5	--	--	130
C1 body	66.6	100.5	60.3	94.5	--	--	105
PCB near Q2	65.6	99.5	57.7	91.9	--	--	130
T1 winding	71.6	105.5	67.6	101.8	--	--	110
T1 core	68.5	102.4	64.4	98.6	--	--	110
PC1 body	67.9	101.8	65.5	99.7	--	--	110
CY1 body	60.6	94.5	56.0	90.2	--	--	125
CY2 body	59.0	92.9	55.5	89.7	--	--	125
LF3 winding	57.1	91.0	55.2	89.4	--	--	130
C7 body	66.9	100.8	67.1	101.3	--	--	105
PCB under D8/D9	71.7	105.6	71.2	105.4	--	--	130
Output cord	44.2	78.1	43.5	77.7	--	--	80
Enclosure inside near top of T1	52.7	86.6	49.4	83.6	--	--	120
Enclosure outside near top of T1	53.1	87.0	49.2	83.4	--	--	95
Enclosure inside near bottom of T1	55.2	89.1	51.6	85.8	--	--	120
Enclosure outside near bottom of T1	51.7	85.6	48.7	82.9	--	--	95
Ambient	26.1°C	60.0°C	25.8°C	60.0°C	--	--	--
Temperature T of winding:	t1 (°C)	R1 (Ω)	t2 (°C)	R2 (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
Supplementary information: The manufacture specified maximum operated ambient temperature is +60°C for camera with IR OFF; +55°C for camera with IR On.							

4.5.5	TABLE: Ball pressure test of thermoplastic parts			N/A
	Allowed impression diameter (mm) :		≤ 2 mm	—
Part			Test temperature (°C)	Impression diameter (mm)
--			--	--

--	--	--
Supplementary information: None		

4.7	TABLE: Resistance to fire					P
Part		Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
PCB		See appended table 1.5.1	See appended table 1.5.1	--	V-0	UL approved
Supplementary information: The equipment powered by a certificated external power adapter that complied with the requirement of the limited power source, and the components are mounted on PCB material of V-0 class.						

5.1	TABLE: touch current measurement			N/A
Measured between:		Measured (mA)	Limit (mA)	Comments/conditions
--		--	--	--
--		--	--	--
supplementary information: None				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			N/A
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	—	Breakdown Yes / No
Functional:				
Between mains poles (fuse disconnected)		--	--	--
--		--	--	--
Basic/supplementary:				
--		--	--	--
--		--	--	--
Reinforced:				
--		--	--	--
--		--	--	--
Supplementary information: None				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		25.7°C			—
	Power source for EUT: Manufacturer, model/type, output rating		See page 1			—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
C126	s-c	36Vdc	10mins	--	0	EUT shutdown, no damaged, no hazards.

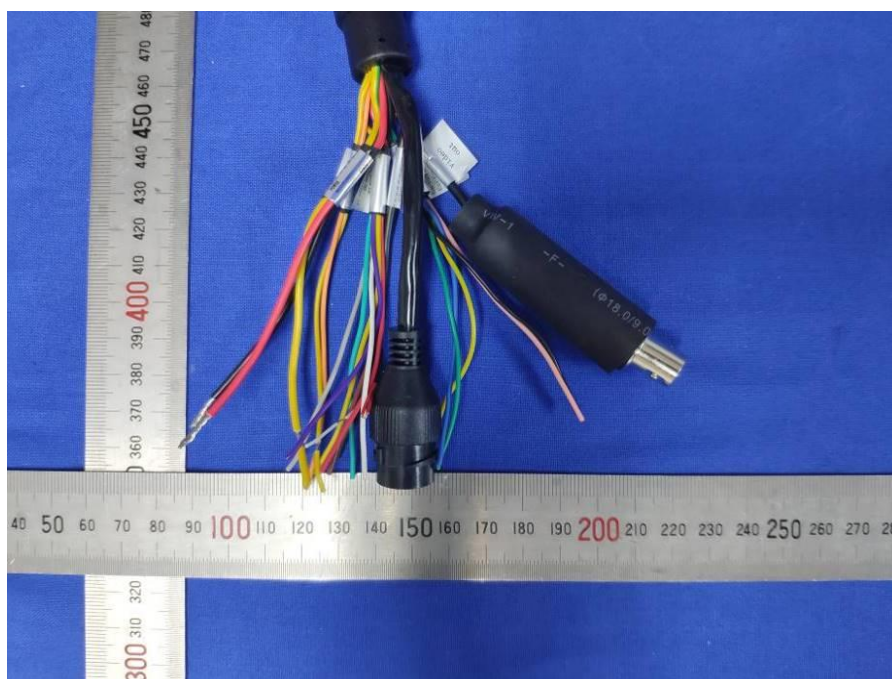
L3	s-c	36Vdc	10mins	--	0.99	EUT normal operation
Fan near power board	Locked	36Vdc	4hrs	--	0.98	Normal operation until steady condition. Measured temperature as following: Metal case near LED:40.3°C; Plastic case near LED, outside:42.5°C; Ambient: 26.2°C
Fan near sensor	Locked	36Vdc	3h30mins	--	0.99	Normal operation until steady condition. Measured temperature as following: Metal case near LED:39.7°C; Plastic case near LED, outside:42.4°C; Ambient: 25.8°C
Supplementary information: s-c= short circuit, o-l=overload , o-c=open circuit						

Attachments 1: Picture of EUT

Overall view



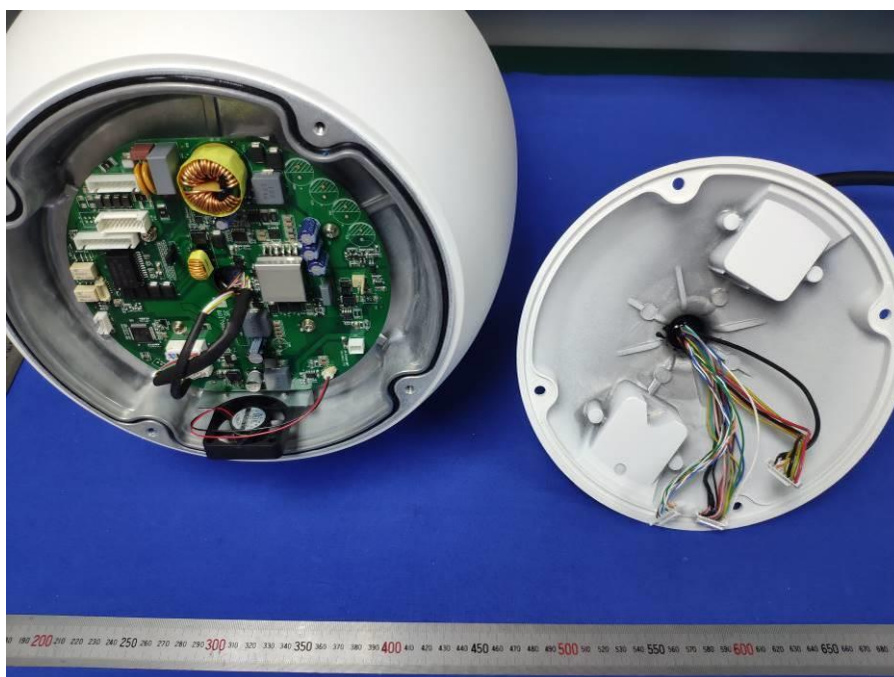
Overall view



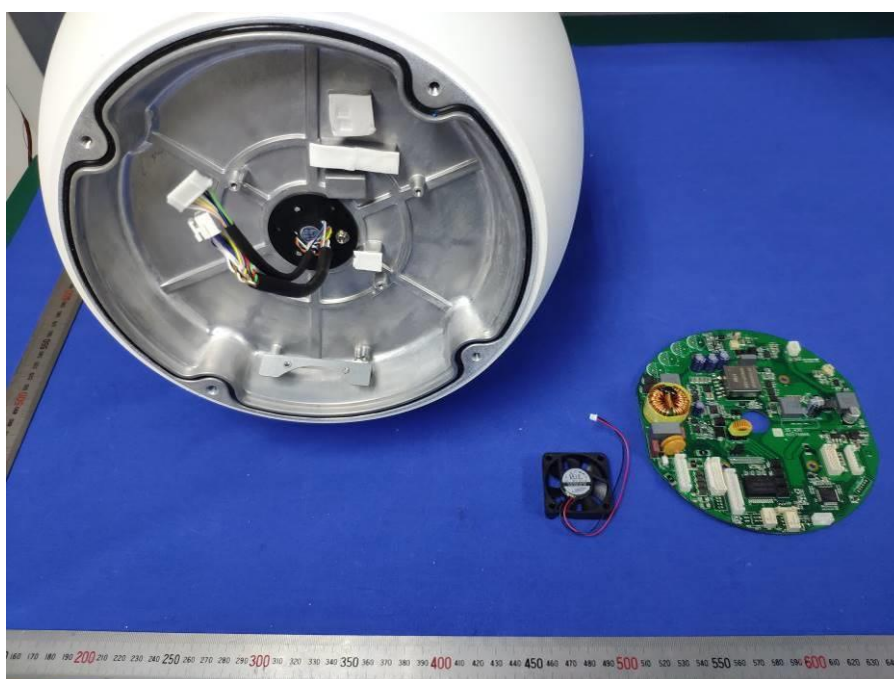
Connectors overview



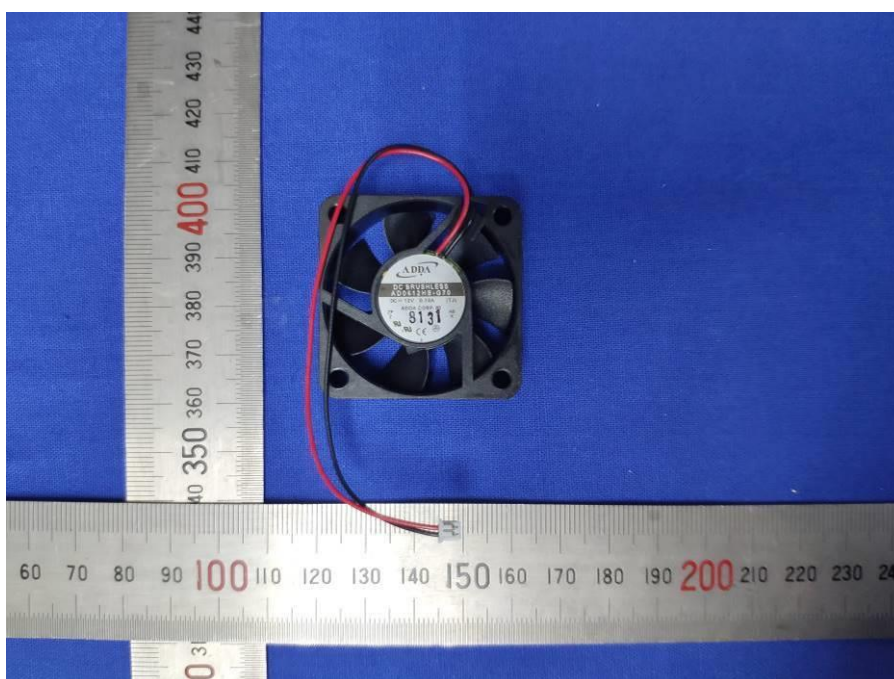
Internal overview



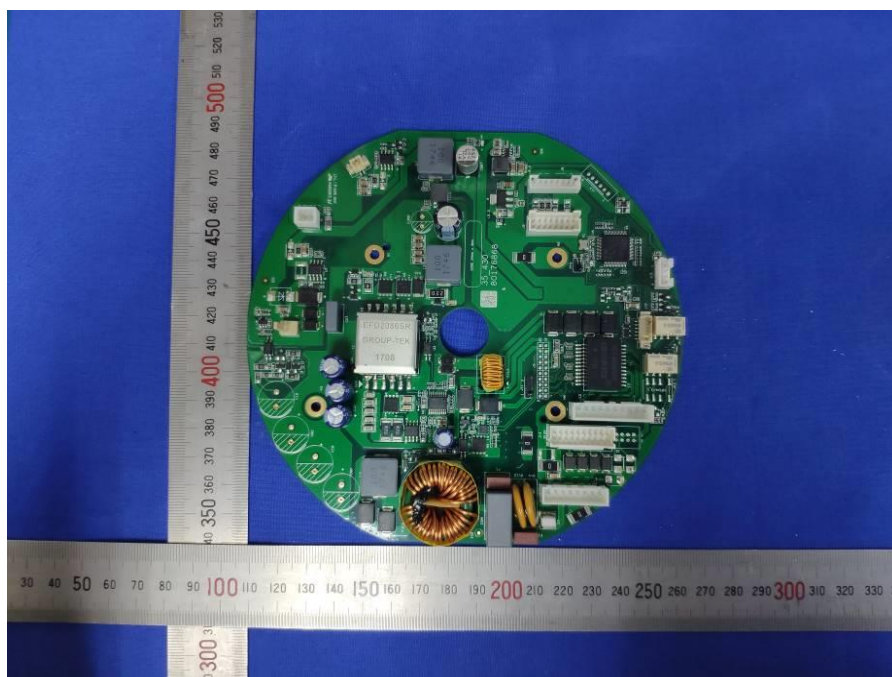
Internal overview



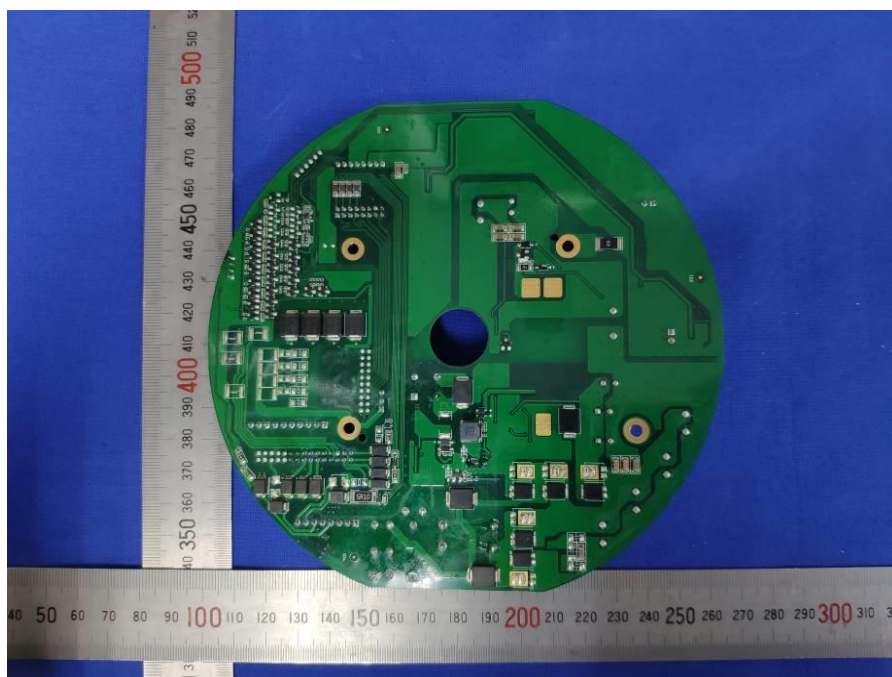
Internal overview



DC Fan overview



Overview of PCB board



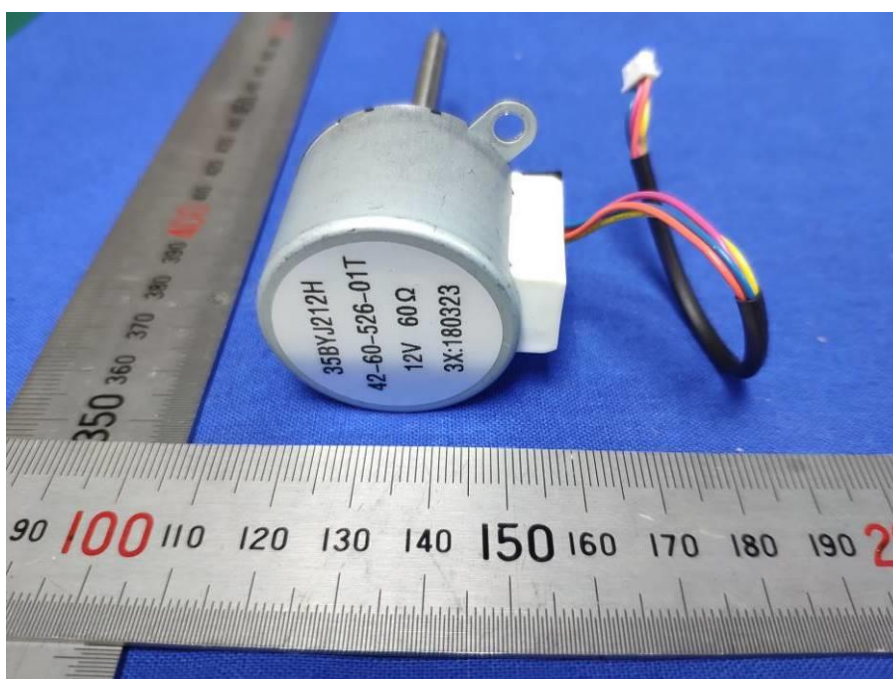
Overview of PCB board



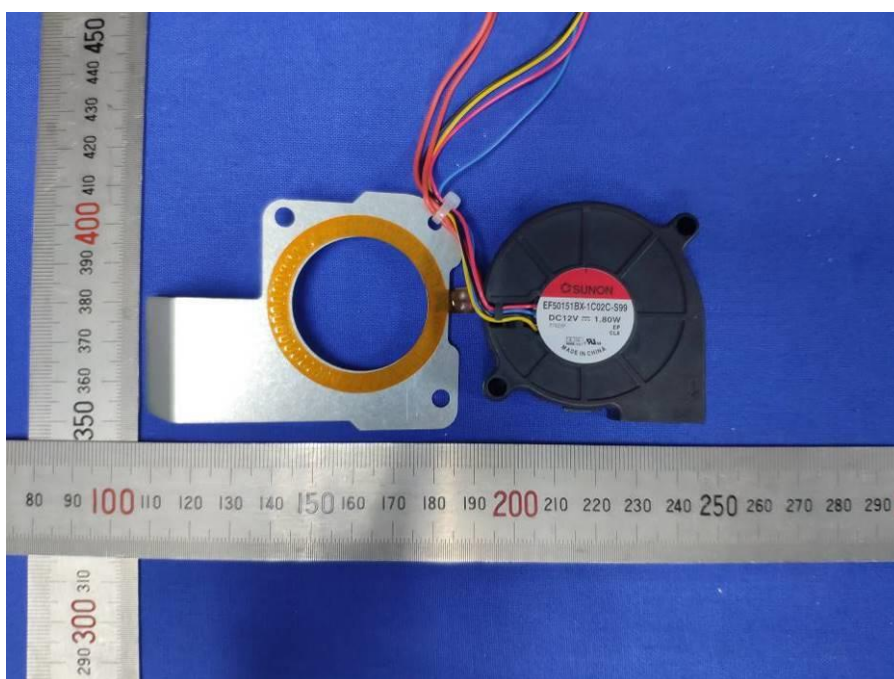
Internal overview



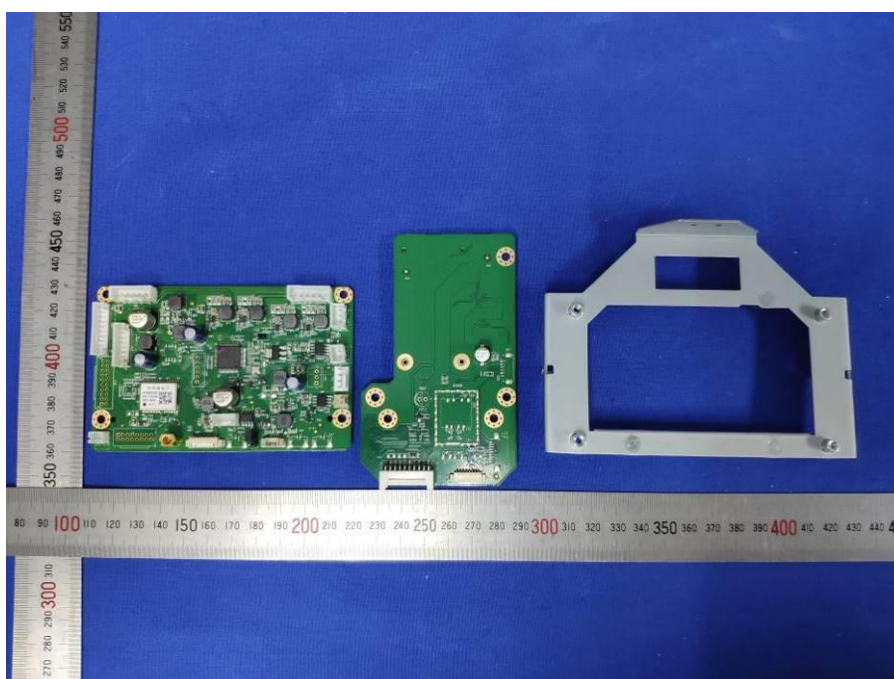
Internal overview



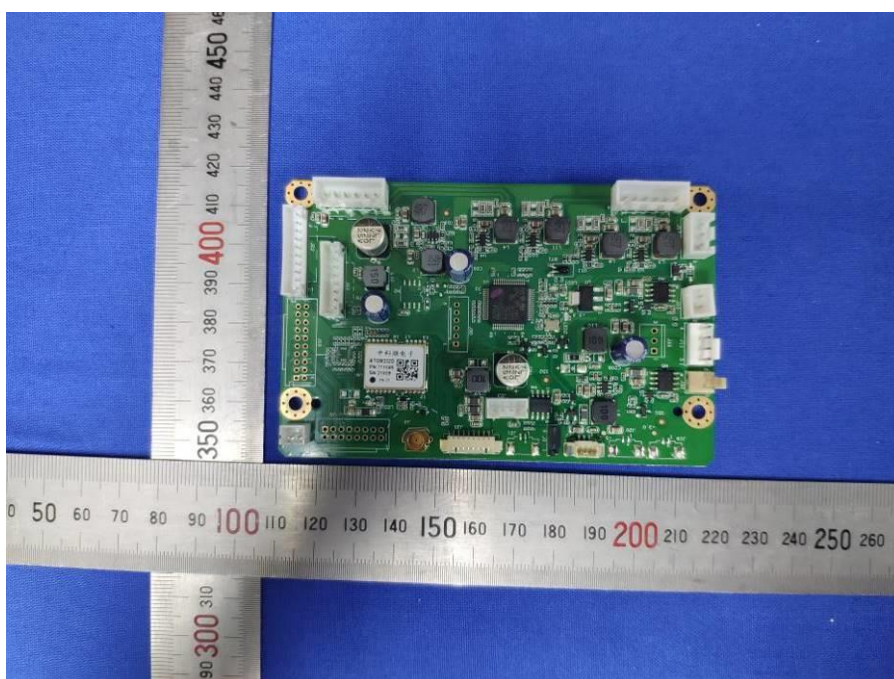
DC motor overview



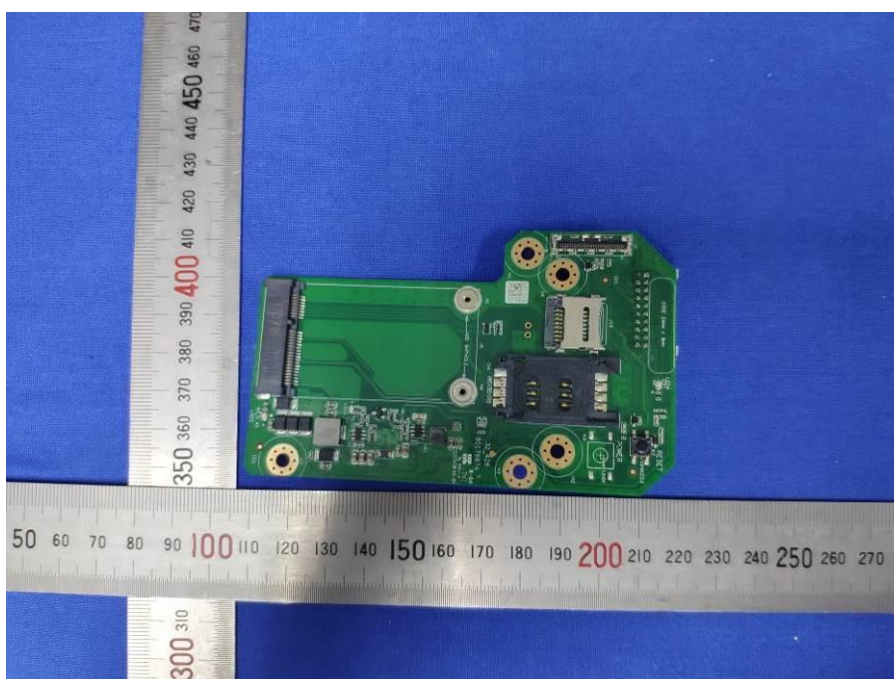
DC Fan overview



Internal overview



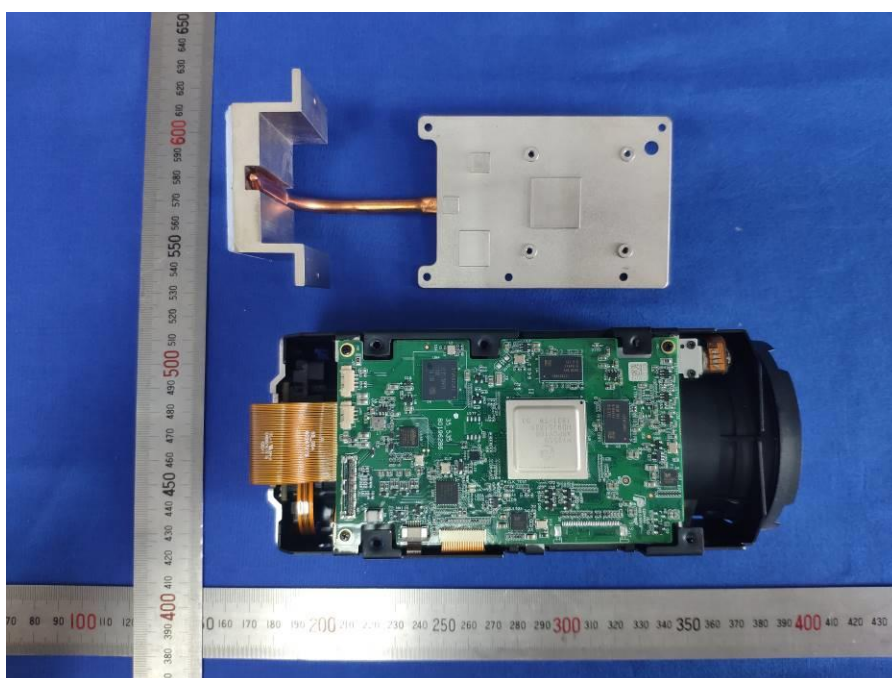
Overview of PCB board



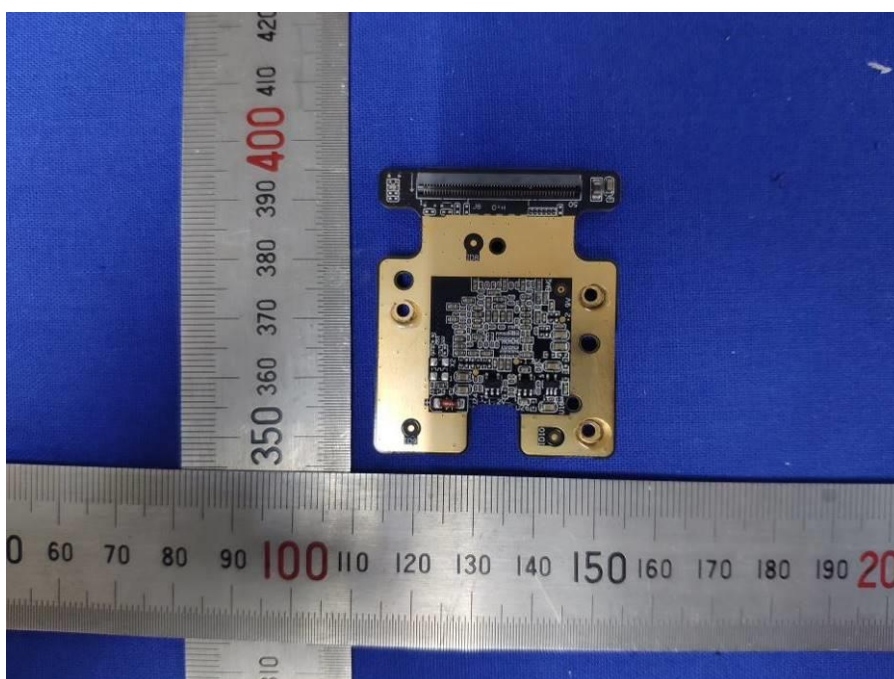
Overview of PCB board



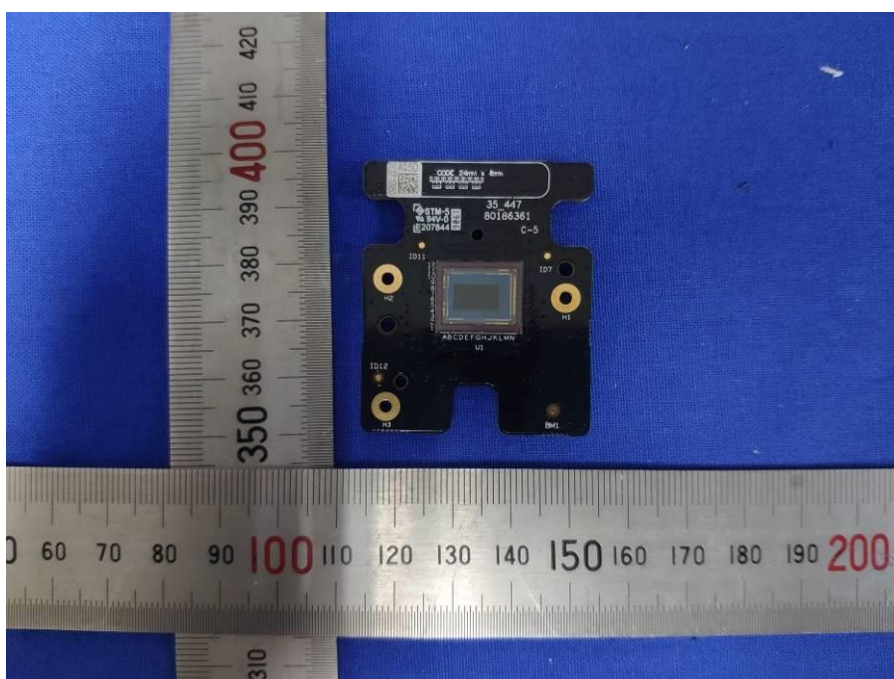
Internal overview



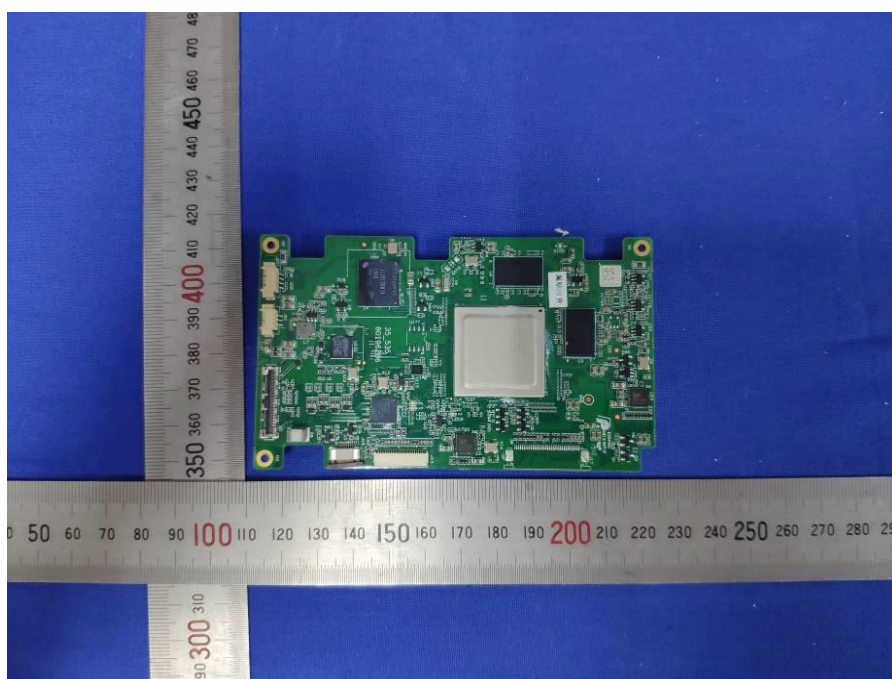
Internal overview



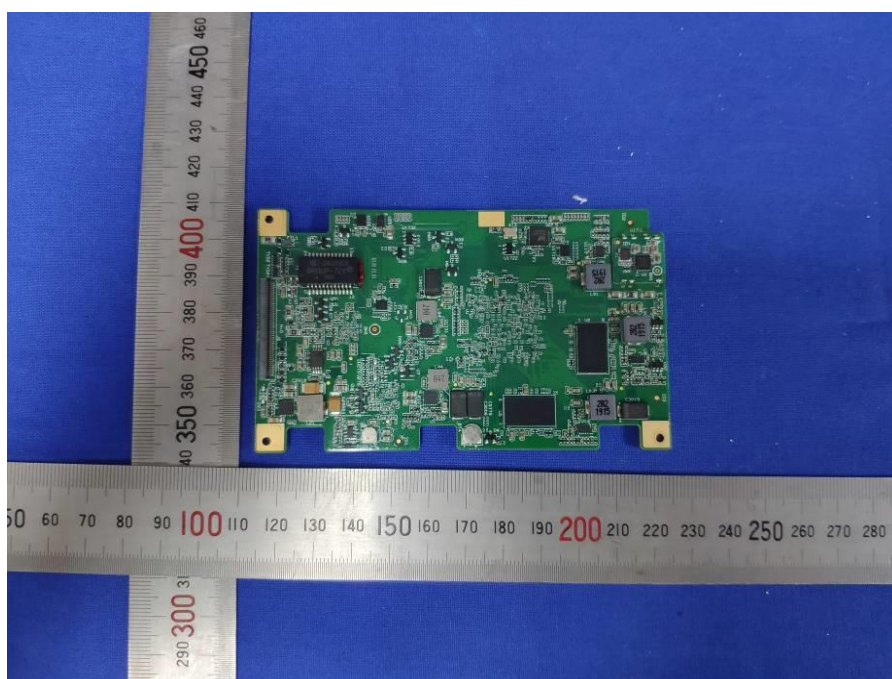
Overview of PCB board



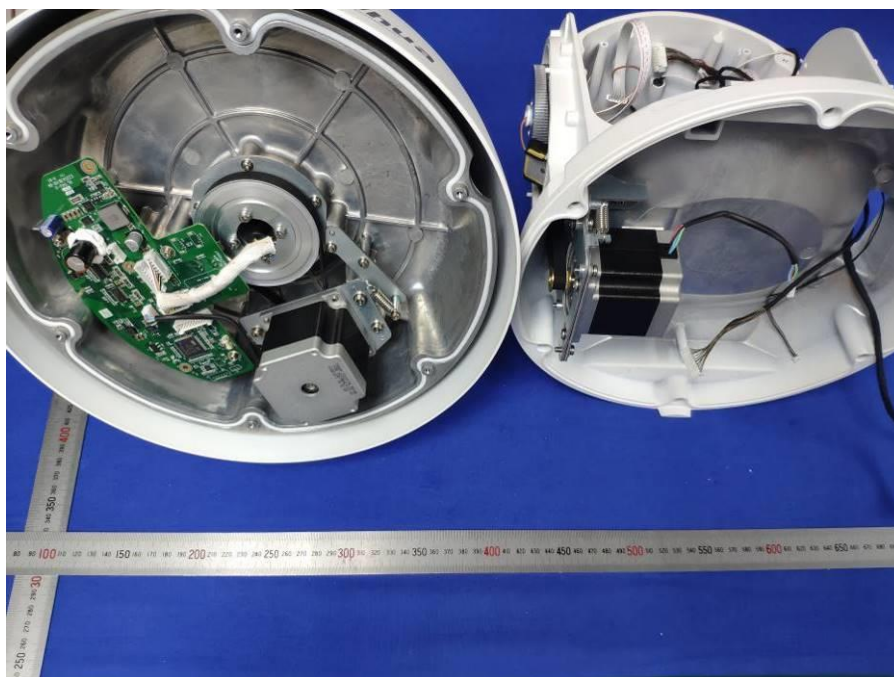
Overview of PCB board



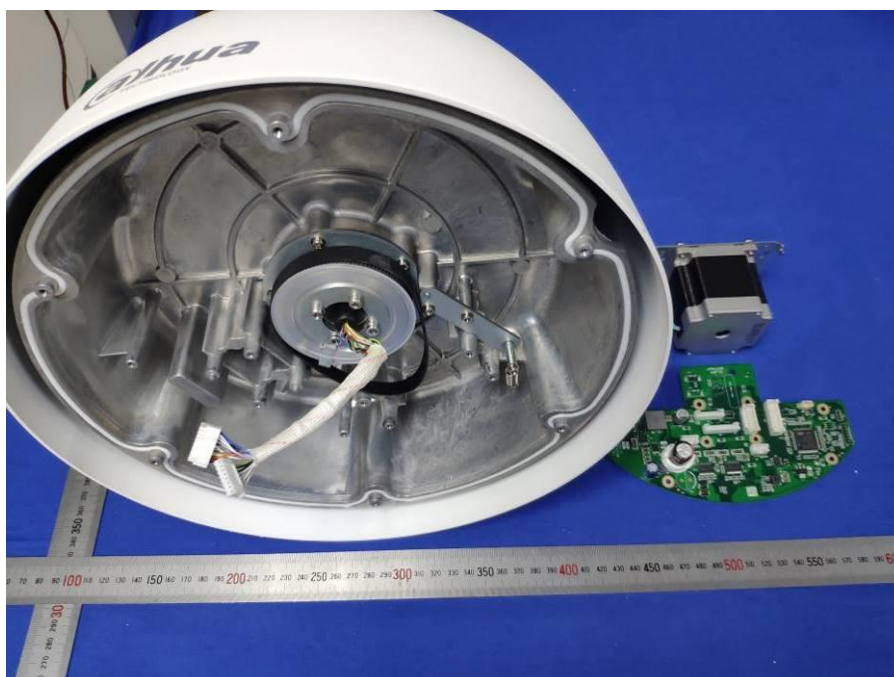
Overview of PCB board



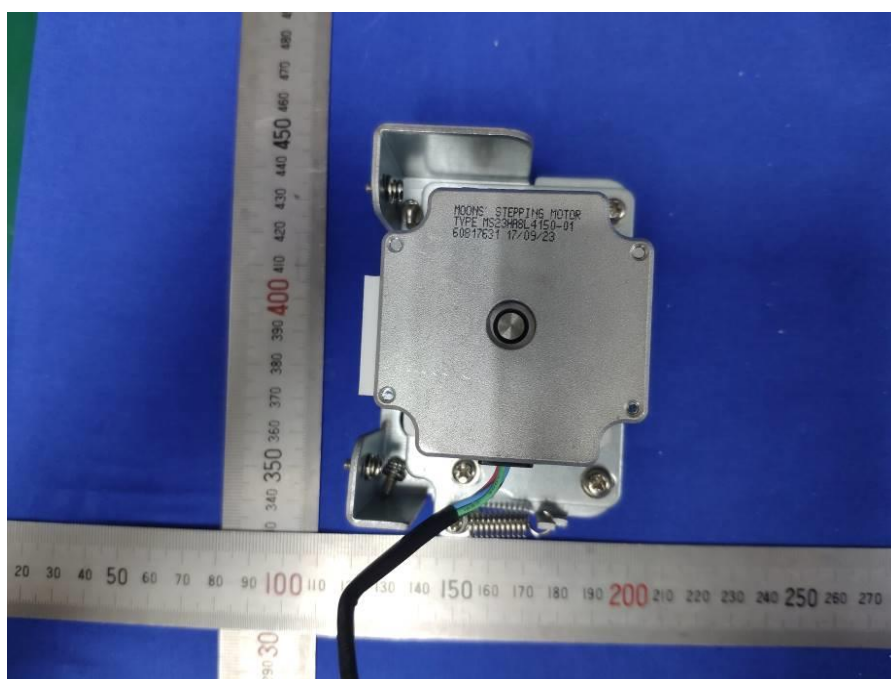
Overview of PCB board



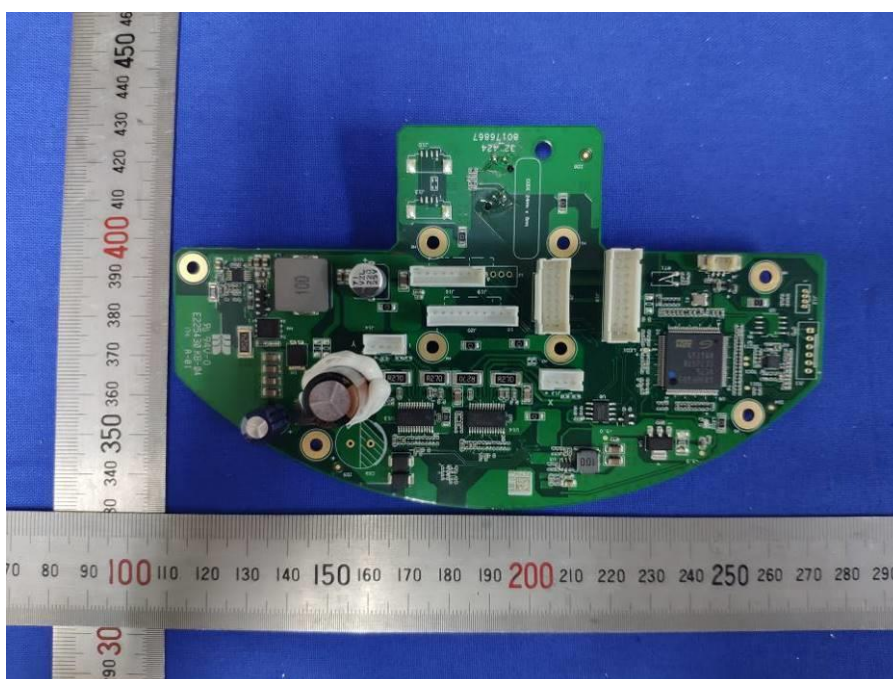
Internal overview



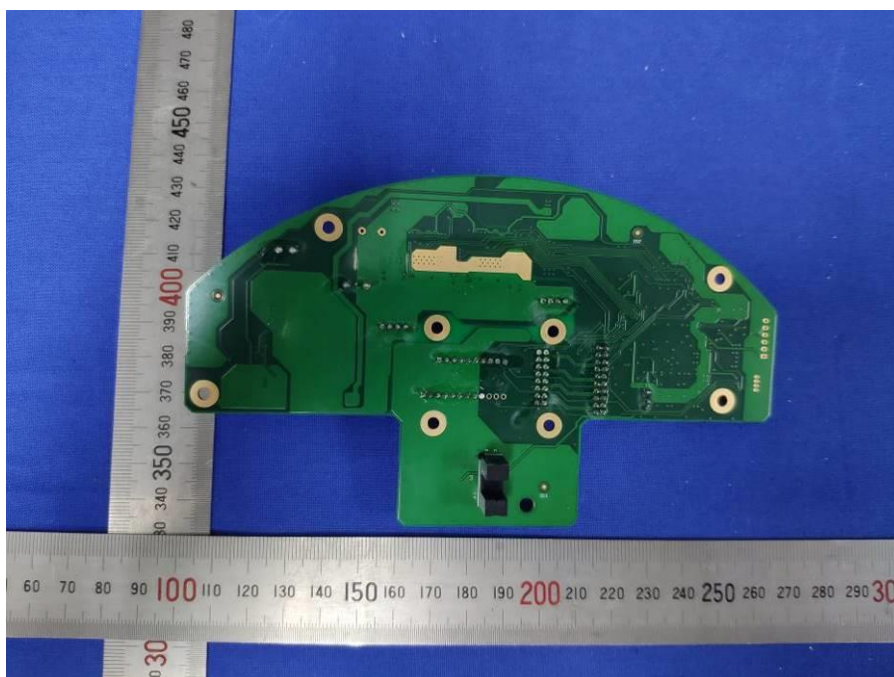
Internal overview



DC motor overview



Overview of PCB board



Overview of PCB board



Overview of External Adapter

Attachments 2: List of Europe National Differences

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


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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.1.1 (A1:2010)	Replace the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		P
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 *		N/A
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12:2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.1 General</p> <p>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:</p> <ul style="list-style-type: none"> 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>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:</p> <ul style="list-style-type: none"> while the personal music player is connected to an external amplifier; or while the headphones or earphones are not used. <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:</p> <ul style="list-style-type: none"> hearing aid equipment and professional equipment; <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>		N/A
	<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/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.2 Equipment requirements</p> <p>No safety provision is required for equipment that complies with the following:</p> <ul style="list-style-type: none"> equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1. <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <ul style="list-style-type: none"> a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and 		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>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.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <ol style="list-style-type: none"> 1) equipment provided as a package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. <p>For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.</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/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.3 Warning</p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <p style="padding-left: 40px;">the symbol of Figure 1 with a minimum height of 5 mm; and</p> <p style="padding-left: 40px;">the following wording, or similar:</p> <p>“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;">Figure 1 – Warning label (IEC 60417-6044)</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/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	<p>Zx.4.1 Wired listening devices with analogue input</p> <p>With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV.</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/A
	<p>Zx.4.2 Wired listening devices with digital input</p> <p>With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.</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/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.4.3 Wireless listening devices</p> <p>In wireless mode:</p> <ul style="list-style-type: none"> with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N/A
	<p>Zx.5 Measurement methods</p> <p>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/A
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> <ul style="list-style-type: none"> a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; 		P

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)												
Clause	Requirement + Test	Result - Remark	Verdict									
	<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>		P									
2.7.2	This subclause has been declared 'void'.		P									
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		P									
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><tr><td>Up to and including 6 </td><td>0,75 ^{a)} </td><td>Over 6</td></tr><tr><td>up to and including 10 (0,75) ^{b)}</td><td>1,0 </td><td>Over 10</td></tr><tr><td>up to and including 16 (1,0) ^{c)}</td><td>1,5 </td><td></td></tr></table> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition ^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6	0,75 ^{a)}	Over 6	up to and including 10 (0,75) ^{b)}	1,0	Over 10	up to and including 16 (1,0) ^{c)}	1,5			N/A
Up to and including 6	0,75 ^{a)}	Over 6										
up to and including 10 (0,75) ^{b)}	1,0	Over 10										
up to and including 16 (1,0) ^{c)}	1,5											
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N/A									
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table><tr><td>Over 10 up to and including 16 </td><td>1,5 to 2,5 </td><td>1,5 to 4 </td></tr></table> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4		N/A						
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4										
4.3.13.6 (A1:2010)	<p>Replace the existing NOTE by the following:</p> <p>NOTE Z1 Attention is drawn to:</p> <p>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and</p> <p>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).</p>		N/A									
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A									

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Annex H	<p>Replace the last paragraph of this annex by:</p> <p>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 μSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.</p> <p>Replace the notes as follows:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p>		N/A
Bibliography	Additional EN standards.		—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
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ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N/A
1.2.13.14 (A11:2009)	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1 (A11:2009)	In Finland , Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	In Finland , Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		N/A
1.7.2.1 (A11:2009)	<p>In Norway and Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p>		

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“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.”</p> <p>Translation to Swedish:</p> <p>”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.”</p>		N/A
1.7.2.1 (A2:2013)	<p>In Denmark, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in Denmark shall be as follows: In Denmark: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”</p>		N/A
1.7.5 1.7.5 (A11:2009)	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5 (A2:2013)	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.</p> <p>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.</p> <p>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.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N/A
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.		P
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
3.2.1.1	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2:1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p>		P

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A		P
3.2.1.1	In Denmark , supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N/A
3.2.1.1 (A2:2013)	In Denmark , supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Justification the Heavy Current Regulations, 6c		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</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>		N/A
3.2.1.1	<p>In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</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/A
3.2.1.1	<p>In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.</p>		N/A
3.2.4	<p>In Switzerland, for requirements see 3.2.1.1 of this annex.</p>		N/A
3.2.5.1	<p>In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>		N/A
3.3.4	<p>In the United Kingdom, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is:</p> <ul style="list-style-type: none"> • 1,25 mm² to 1,5 mm² nominal cross-sectional area. 		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	In the United Kingdom , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In Ireland , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A
5.1.7.1	In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<p>In Finland, Norway and Sweden, 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"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <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"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. 		N/A
	<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"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14: - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14. 		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.2	In Finland , Norway and Sweden , the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In Finland , Norway and Sweden , for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3 (A11:2009)	In Norway and Sweden , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

Annex ZD
(informative)

IEC and CENELEC code designations for flexible cords

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