IDTRONIC GMBH

CE LVD REPORT

Prepared For:	IDTRONIC GMBH Ludwig-Reichling Straße 4, 67059 Ludwigshafen,GERMANY
Product Name:	Turnstile
Trade Name:	iDTRONIC
Model:	IDG8700, IDG1100, IDG1000, IDG1300, IDG1200, IDG1800, IDG1700, IDG1900, IDG1600, IDG1500, IDG1400, IDG2000, IDG2200, IDG2400, IDG2600, IDG2800, IDG3000, IDG3200, IDG3400, IDG3600, IDG3800, IDG4600, IDG4800, IDG4900, IDG4700, IDG4500, IDG4100, IDG4000, IDG4200, IDG4400, IDG5000, IDG5200,IDG5400, IDG5500, IDG5600, IDG5700, IDG5800, IDG5900, IDG5100, IDG5300, IDG6000, IDG6900, IDG6700, IDG6800, IDG6500, IDG6600, IDG6200, IDG6100, IDG6300, IDG6400, IDG6950, IDG7800, IDG7900, IDG7000, IDG7930, IDG7950, IDG7970, IDG7100, IDG7200, IDG7300, IDG7400, IDG7500, IDG7600, IDG8100, IDG8300, IDG8500, IDG8400, IDG8900, IDG8200, IDG8000, IDG8600, IDG8800, IDG9600, IDG9700, IDG9100, IDG9900, IDG9300, IDG9500
Prepared By:	BST Testing (Shenzhen) Co.,Ltd. No.7, New Era Industrial Zone, Guantian, Bao'an District, Shenzhen, Guangdong, China
Test Date:	Nov. 28, 2023 - Dec. 08, 2023
Date of Report:	Dec. 08, 2023
Report No.:	XDX46235614120801SR

TEST REPORT

EN IEC62368-1

Information technology equipment - Safety - Part 1: General requirements

Testing laboratory	:	BST Testing (Shenzhen) Co.,Ltd.
Address	:	No.7, New Era Industrial Zone, Guantian, Bao'an District, Shenzhen, Guangdong, China
Testing location	:	BST Testing (Shenzhen) Co.,Ltd.
Applicant	:	IDTRONIC GMBH
Address	:	Ludwig-Reichling Straße 4, 67059 Ludwigshafen,GERMANY
Standard	:	EN IEC 62368-1:2020/A11:2020
Procedure deviation	:	N/A.
Non-standard test method	:	N/A.
Type of test object	:	Turnstile
Trademark	:	iDTRONIC
Model/type reference	:	See page 1
Rating	:	Input: 95-264V~, 50/60Hz, Output: DC24V, 7.5A , 180W
Manufacturer	:	IDTRONIC GMBH
Address	:	Ludwig-Reichling Straße 4, 67059 Ludwigshafen,GERMANY
Test item particulars:		
Equipment mobility	:	N/A.
Operation condition	:	Continuous
Class of equipment	:	Class I
Protection against ingress of water .	:	N/A.

Possible test case verdicts :

test case does not apply to the test object	:	N(.A.)
test object does meet the requirement	:	P(ass)
test object does not meet the requirement	:	F(ail)

General remarks:	
"(see remark #)" refers to a remark appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a comma is used as the decimal separator. The test results presented in this report relate only to the object tested. This report shall not be reproduced except in full without the written approval of the testing laboratory.	Attached with: A. photo documentation Remark: 1. The series products have the same circuit diagram, PCB layout and functionality. The differences are the model name, All of the test conduct on model: S.IDG8700

Artwork of Marking Label

Turnstile
Model: IDG8700
Input: AC 95V-264V, 50/60Hz,
Output: DC 24V, 7.5A Max, 180W

IDTRONIC GMBH

Prepared by : Adam Chen
Engineer

Reviewer : Jacky Zhang
Supervisor

Approved & Authorized Signer : Andy Yan
Manager

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Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		**P**
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	(See appended table 4.1.2)	N/A
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests.....:	(See Annex T.4, T.5)	P
4.4.4.3	Drop tests.....:		N/A
4.4.4.4	Impact tests.....:	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:	30N	P
4.4.4.6	Glass Impact tests.....:	No such glass used	N/A
4.4.4.7	Thermoplastic material tests.....:	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion		P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to .....:	Internal wire and internal components	P
4.7	Equipment for direct insertion into mains socket - outlets	No such apparatus	N/A
4.7.2	Mains plug part complies with the relevant standard.....:		N/A
4.7.3	Torque (Nm).....:		N/A
4.8	Products containing coin/button cell batteries		N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:	By tool	—
4.8.4	Battery Compartment Mechanical Tests.....:	Internal fixed by solder and external secured by enclosure	N/A
4.8.5	Battery Accessibility	Not become accessible	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.9	Likelihood of fire or shock due to entry of conductive object..... :	(See Annex P)	P

5	**ELECTRICALLY-CAUSED INJURY**		**P**
5.2.1	Electrical energy source classifications..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :	(See appended table 5.5.2)	P
5.2.2.4	Single pulse limits..... :	No single pulse introduced	N/A
5.2.2.5	Limits for repetitive pulses..... :	No repetitive pulses introduced	N/A
5.2.2.6	Ringing signals ..... :	No means for connection to telephone network and no ringing signal generated.	N/A
5.2.2.7	Audio signals ..... :	No audio signal terminals	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V..... :	Cannot contact with the conductive part for ES3 voltage	P
	b) Electric strength test potential (V)..... :		P
	c) Air gap (mm) ..... :		N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminal	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning..... :	Refer to Cl. 5.4.8	P
5.4.1.4	Maximum operating temperature for insulating materials ..... :	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree..... :	Pollution degree 2 considered	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	Approved power supply units used	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	No such part.	P
5.4.1.10.2	Vicat softening temperature..... :		N/A
5.4.1.10.3	Ball pressure ..... :		P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage ..... :	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage..... :	2500V peak	—
	b) d.c. mains transient voltage ..... :	No such transient voltage	—
	c) external circuit transient voltage..... :	No such transient voltage	—
	d) transient voltage determined by measurement...	Max.13.6Vpeak (evaluated in approved PSU)	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Procedure 2 considered	N/A
5.4.2.5	Multiplication factors for clearances and test voltages..... :	The multiplication factor for altitude up to 2500m is 1.07	P
5.4.3	Creepage distances..... :	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	Material group IIIb is assumed to be used	—
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation ..... :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation		P
5.4.4.4	Solid insulation in semiconductor devices	Approved optocoupler used in approved power supply	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material	Insulation tape used in transformers of approved power supply	P
	Number of layers (pcs) ..... :	Min. 2	P
5.4.4.6.3	Non-separable thin sheet material		P
5.4.4.6.4	Standard test procedure for non-separable thin sheet material.....:		P
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	Approved TIW used in transformers of approved power supply	P
5.4.4.9	Solid insulation at frequencies >30 kHz.....:	Approved transformers of approved power supply	P
5.4.5	Antenna terminal insulation	No such terminal	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ)..... :		—
5.4.6	Insulation of internal wire as part of supplementary safeguard.....:	(see appended table 5.4.9)	P
5.4.7	Tests for semiconductor components and for cemented joints	Approved optocoupler used in approved power supply	P
5.4.8	Humidity conditioning		P
	Relative humidity (%)..... :	95%	—
	Temperature (°C) .....:	40°C	—
	Duration (h) ..... :	120h	—
5.4.9	Electric strength test.....:	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit	Only signal transmission on external circuit	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test..... :		N/A
5.4.10.2.3	Steady-state test..... :		N/A
5.4.11	Insulation between external circuits and earthed circuitry..... :		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation U_{sp} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
	$U_{op}= U_{peak} + \Delta U_{sp} + \Delta U_{sa}$..... :		—
5.5	Components as safeguards		
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :	(See appended table 5.5.2.2)	P
5.5.3	Transformers	Approved switch power supply units used	P
5.5.4	Optocouplers	Approved switch power supply units used	P
5.5.5	Relays	Approved switch power supply units used	P
5.5.6	Resistors	Approved switch power supply units used	P
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:		N/A
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) ..... :		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2)..... :		—
	Protective current rating (A) ..... :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm^2), nominal thread diameter (mm)..... :	Protective bonding terminal: Complied with Cl. 5.6.6.2. Conductor size: Min. 1.0 mm^2, nominal thread diameter: 4.0mm	N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω).....:		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
	System of interconnected equipment (separate connections/single connection).....:	Single equipment	—
	Multiple connections to mains (one connection at a time/simultaneous connections).....:	Single connection	—
5.7.4	Earthed conductive accessible parts.....:	(See appended Table 5.7.4)	P
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A

6	**ELECTRICALLY- CAUSED FIRE**		**P**
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault.... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault.....:	(See appended table 6.2.2)	P
6.2.2.4	PS1 .....:	(See appended table 6.2.2)	P
6.2.2.5	PS2 .....:	(See appended table 6.2.2)	P
6.2.2.6	PS3 .....:	(See appended table 6.2.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS .....:	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method of control fire spread used, suitable fire enclosure shall be provided.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards		P
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... :	(See appended table 6.4.3)	P
	Special conditions for temperature limited by fuse		P
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards .....:	V-0 PCB used; Wire and tubing comply with IEC 60332-1 and IEC 60695-11-21; Components in PS2 circuit mounted on V-0 PCB. Min separation requirement between PIS and combustible material comply with 6.4.7	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuit	- Parts as in 6.4.5 above; - Connectors: Min.V-1 material used - Combustible material that are not part of a PS2 or PS3 circuit: min. V-2 or equivalent.	P
6.4.7	Separation of combustible materials from a PIS		P
6.4.7.1	General.....:	Achieved by separation distance	P
6.4.7.2	Separation by distance		P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions	No barriers used.	N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....:	No Top Openings in area of corn from PIS or Louvered construction; Max 5 mm in all dimension, or Max 1mm in width regardless of length	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:	Complies with a) or b)	P
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c).....:	B	P
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	Min 5VB use	P
6.5	Internal and external wiring		P
6.5.1	Requirements	Internal primary input wires insulated with PVC	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.5.2	Cross-sectional area (mm^2) ..... :	(see appended table 4.1.2)	—
6.5.3	Requirements for interconnection to building wiring.....		N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	USB port used	P

7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		**P**
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions.....:		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010):		—
7.6	Batteries:		N/A

8	**MECHANICALLY-CAUSED INJURY**		**P**
8.1	General		P
8.2	Mechanical energy source classifications	MS1: Sharp edges and Corners MS2: Equipment mass. MS1: Movable part	P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		N/A
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		P
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment	Moving MS1 part	P
8.5.2	Instructional Safeguard..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard..... :		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N).....:		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:		N/A
8.6	Stability		P
8.6.1	Product classification	The relevant stability tests after the stress relief test in the clause T.8 when the equipment has cooled to room temperature.	P
	Instructional Safeguard..... :		—
8.6.2	Static stability		P
8.6.2.2	Static stability test		P
	Applied Force:	46N applied	—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt:	Not tip over	—
8.6.4	Glass slide test		P
8.6.5	Horizontal force test (Applied Force)	29.9N applied, rotated 360° while tilted 15°	P
	Position of feet or movable parts:	Not tip over	—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) :		N/A
8.7.2	Direction and applied force:		N/A
8.8	Handles strength		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.8.1	Classification	MS2	P
8.8.2	Applied Force :	460N applied	P
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force:		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force:		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N):		—
8.10.6	Thermoplastic temperature stability (°C):		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N* .....:		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....		N/A
	Button/Ball diameter (mm).....:		—

9	**THERMAL BURN INJURY**		**P**
9.2	Thermal energy source classifications	External enclosure: TS1	P
9.3	Safeguard against thermal energy sources		P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard		P
9.4.2	Instructional safeguard :		P

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Clause	Requirement + Test	Result - Remark	Verdict

10	**RADIATION**		**P**
10.2	Radiation energy source classification	No laser and scanner used	P
10.2.1	General classification		P
10.3	Protection against laser radiation	No such devices used	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault.....		N/A
	Instructional safeguard.....		—
	Tool.....		—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		P
10.4.1.a)	RS3 for Ordinary and instructed persons.....:		N/A
10.4.1.b)	RS3 accessible to a skilled person..... :		N/A
	Personal safeguard (PPE) instructional safeguard..... :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1.....		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions .....:	Exempt group	P
10.4.1.e)	Enclosure material employed as safeguard is opaque.....:		N/A
10.4.1.f)	UV attenuation.....:		N/A
10.4.1.g)	Materials resistant to degradation UV ..... :		N/A
10.4.1.h)	Enclosure containment of optical radiation.....:		N/A
10.4.1.i)	Exempt Group under normal operating conditions..... :	Exempt group	P
10.4.2	Instructional safeguard.....:		N/A
10.4.3	Compliance criteria		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment:		N/A
	Normal, abnormal, single fault conditions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Equipment safeguards		N/A
	Instructional safeguard for skilled person:		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation		—
	Abnormal and single-fault condition:		N/A
	Maximum radiation (pA/kg):		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A).....:		N/A
	Output voltage, unweighted r.m.s.....:		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards.....:		N/A
	Equipment safeguard prevent ordinary person to RS2.....:		—
	Means to actively inform user of increase sound pressure.....:		—
	Equipment safeguard prevent ordinary person to RS2.....:		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output.....:		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A).....:		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A).....:		—

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		**P**
B.2	Normal Operating Conditions		P

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.2.1	General requirements.....:	(See summary of testing & appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :	No audio amplifier circuits	N/A
B.2.3	Supply voltage and tolerances	Specified by manufacturer	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements.....:	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test	A.C. mains supply only	N/A
B.3.4	Setting of voltage selector..... :	No such voltage selector	N/A
B.3.5	Maximum load at output terminals ..... :	Considered	P
B.3.6	Reverse battery polarity	According to Annex M	P
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited.....:	(See appended table B.4)	P
B.4.3	Motor tests		P
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....:	According to Annex G.5.4	P
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.7	Continuous operation of components	(See appended table B.4)	P
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions.....:	According to Annex M	P
C	**UV RADIATION**		**N/A**
C.1	Protection of materials in equipment from UV radiation	No UV radiation within the EUT.	N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	**TEST GENERATORS**		**N/A**
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		**N/A**
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) ..... :		—
	Rated load impedance (Ω) ..... :		
E.2	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		**P**
F.1	General requirements		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructions – Language .....:	English checked	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Located on the enclosure	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification :	See page 1	—
F.3.2.2	Model identification .....:	See page 1	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage.....:	~	—
F.3.3.4	Rated voltage.....:	100-240Vac	—
F.3.3.4	Rated frequency.....:	50/60Hz	—
F.3.3.6	Rated current or rated power.....:	36W	—
F.3.3.7	Equipment with multiple supply connections	No multiple supply connection	N/A
F.3.4	Voltage setting device	No such device	N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings.....:		N/A
F.3.5.2	Switch position identification marking.....:	No switch used	N/A
F.3.5.3	Replacement fuse identification and rating markings.....:		N/A
F.3.5.4	Replacement battery identification marking.....:	Fixed by solder	N/A
F.3.5.5	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		P
F.3.6.1.1	Protective earthing conductor terminal		P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)	Class II equipment	P
F.3.6.2.1	Class II equipment with or without functional earth	Class II equipment	P
F.3.6.2.2	Class II equipment with functional earth terminal marking		P
F.3.7	Equipment IP rating marking ..... :	IP20, no marking is needed	—
F.3.8	External power supply output marking		P
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		P
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		P
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		P
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		P
F.5	Instructional safeguards	Not become accessible, fixed by solder.	N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

G	**COMPONENTS**		**P**
G.1	**Switches**		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		P
G.2.1	General requirements	Approved power supply units used	P
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		N/A
G.3.1	Thermal cut-offs	No thermal cut-offs	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal links	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H)..... :		—
	Single Fault Condition..... :		—
	Test Voltage (V) and Insulation Resistance (Ω)..:		—
G.3.3	PTC Thermistors	No PTC thermistors	N/A
G.3.4	Overcurrent protection devices	Tested with approved power supply units	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:		N/A
G.4	**Connectors**		P
G.4.1	Spacings		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Mains connector configuration ..... :	Approved inlet used	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		P
G.5	**Wound Components**		P
G.5.1	Wire insulation in wound components.....	Approved power supply units used	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) ..... :		—
	Temperature (°C) ..... :		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) ..... :	Approved power supply units used	P
	Position ..... :		—
	Method of protection ..... :		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings.....:		—
G.5.3.3	Overload test.....:		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		P
G.5.4.1	General requirements		P
	Position ..... :	(See appended table 4.1.2)	—
G.5.4.2	Test conditions		P
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		P
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V) ..... :		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) ..... :	7h	P
	Electric strength test (V) ..... :		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		P
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature ..... :		N/A
	Electric strength test (V) ..... :		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) ..... :	7h	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test (V) ..... :		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage ..... :		—
G.6	**Wire Insulation**		P
G.6.1	General		P
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		P
G.7.1	General requirements		P
	Type.....:	(See appended table 4.1.2)	—
	Rated current (A).....:	(See appended table 4.1.2)	—
	Cross-sectional area (mm^2), (AWG)..... :	(See appended table 4.1.2)	—
G.7.2	Compliance and test method		P
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) ..... :		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) ..... :		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry..... :		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.5.2	Mass (g) ..... :		—
	Diameter (m) ..... :		—
	Temperature (°C) ..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		P
G.8.1	General requirements	Approved power supply units used	P
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test..... :		N/A
G.8.3.3	Temporary overvoltage..... :		N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No such IC used	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA ..... :		—
G.9.1 d)	IC limiter output current (max. 5A) ..... :		—
G.9.1 e)	Manufacturers' defined drift ..... :		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		N/A
G.10.1	General requirements	No such resistors	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		P
G.11.1	General requirements	Approved power supply units used	P
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)..... :	Approved power supply units used	P
	Type test voltage Vini ..... :		—
	Routine test voltage, Vini,b ..... :		—
G.13	**Printed boards**		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction) ..... :		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Number of insulation layers (pcs) ..... :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements .....:	(See G.13)	N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage ..... :		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage ..... :		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
D2)	Capacitance ..... :		—
D3)	Resistance ..... :		—

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

J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		**P**
	General requirements		P

K	**SAFETY INTERLOCKS**		**P**
K.1	General requirements		P
K.2	Components of safety interlock safeguard mechanism	Approved. meet the requirements of G.1.2	P
K.3	Inadvertent change of operating mode		P
K.4	Interlock safeguard override		P
K.5	Fail-safe		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Compliance ..... :	Complied with B.4	P
K.6	Mechanically operated safety interlocks		P
K.6.1	Endurance requirement		P
K.6.2	Compliance and Test method ..... :		N/A
K.7	Interlock circuit isolation		P
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) ..... :	Gap clearance: 1.0mm, Limit: 0.5mm (according to procedure 2) (See appended table 5.4.2.2)	P
K.7.2	Overload test, Current (A) ..... :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test ..... :		N/A

L	**DISCONNECT DEVICES**		**P**
L.1	General requirements	Plug or AC inlet	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources		N/A

M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.2.2	Compliance and test method (identify method) ..... :	Inspection or evaluation based on data provided by the manufacturer.	N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance ..... :	Complied	N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature ..... :		—
M.4.2.2 b)	Single faults in charging circuitry ..... :	(See appended table Annex M)	—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		P
M.6.1	Short circuits	(See appended table M)	P
M.6.1.1	General requirements		P
M.6.1.2	Test method to simulate an internal fault	External fault considered; No internal fault for single cell battery.	P
M.6.2	Leakage current (mA) ..... :		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *Vz* (m^3/s) ..... :		—
M.8.2.3	Correction factors ..... :		—
M.8.2.4	Calculation of distance *d* (mm) ..... :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) ..... :	Specification of battery was considered.	P

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Clause	Requirement + Test	Result - Remark	Verdict

N	**ELECTROCHEMICAL POTENTIALS**		**P**
	Metal(s) used ..... :	Copper and mild steel	—

O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		**P**
	Figures O.1 to O.20 of this Annex applied ..... :	Considered	—

P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		**P**
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object		P
	Location and Dimensions (mm) ..... :	No Top Openings in area of corn from PIS or Louvered construction; Max 5 mm in all dimension, or Max 1mm in width regardless of length	—
P.2.3	Safeguard against the consequences of entry of foreign object		P
P.2.3.1	Safeguards against the entry of a foreign object		P
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C) ..... :		—
	Tr (°C) ..... :		—
	Ta (°C) ..... :		—
P.4.2 b)	Abrasion testing ..... :		N/A
P.4.2 c)	Mechanical strength testing..... :		N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		**N/A**
Q.1	Limited power sources	No any output port	N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output	See appended tabel Annex Q.1	N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method ..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		**N/A**
R.1	General requirements		N/A

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). ..... :		N/A

S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		**N/A**
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C)..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C)..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A

T	**MECHANICAL STRENGTH TESTS**		**P**
T.1	General requirements		P
T.2	Steady force test, 10 N ..... :	(See appended table T.2)	P
T.3	Steady force test, 30 N ..... :	(See appended table T.3)	P
T.4	Steady force test, 100 N ..... :	(See appended table T.4)	N/A
T.5	Steady force test, 250 N ..... :	(See appended table T.5)	P
T.6	Enclosure impact test		P
	Fall test		P
	Swing test		N/A
T.7	Drop test ..... :		N/A
T.8	Stress relief test ..... :	70ºC, 7h	P
T.9	Impact Test (glass)	No glass used	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Impact energy (J) ..... :		—
	Height (m) ..... :		—
T.10	Glass fragmentation test ..... :		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) ..... :		—

U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		**N/A**
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....:		N/A

V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		**P**
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.1.2	**TABLE: List of critical components**		N/A

4.8.4, 4.8.5	**TABLE: Lithium coin/button cell batteries mechanical tests**	N/A
(The following mechanical tests are conducted in the sequence noted.)		

4.8.4.2	**TABLE: Stress Relief test**		—
Part	**Material**	**Oven Temperature (°C)**	**Comments**

4.8.4.3	**TABLE: Battery replacement test**		—
Battery part no.....			—
Battery Installation/withdrawal		Battery Installation/Removal Cycle	Comments
		1	
		2	
		3	
		4	
		5	
		6	
		8	
		9	
		10	

4.8.4.4	**TABLE: Drop test**		N/A
Impact Area	Drop Distance	Drop No.	Observations

4.8.4.5	**TABLE: Impact**		N/A
Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.8.4.6	**TABLE: Crush test**		N/A
Test position	**Surface tested**	**Crushing Force (N)**	**Duration force applied (s)**
Supplementary information:			

4.8.5	**TABLE: Lithium coin/button cell batteries mechanical test result**		**N/A**
Test position	**Surface tested**	**Force (N)**	**Duration force applied (s)**
Supplementary information:			

5.2	**Table: Classification of electrical energy sources**					**N/A**
5.2.2.2 – Steady State Voltage and Current conditions						
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1		Primary circuitssupplied bya.c. mainssupply	Normal	365V rms	--	60	ES3
			Abnormal	N/A	N/A	N/A	
2		Transformersecondary pin 6 . 7to 8.9	Normal	357 Vpk	--	53k	ES2
3		Outout + to -	Normal	24.01 Vpk	--	--	ES1

5.2.2.3 - Capacitance Limits						
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
		C1	Normal	470	357	ES3
			Abnormal	--	--	

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

			Single fault – SC/OC	--	--	

5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC				

5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
--	---	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

Test Conditions:

Normal – N/A Abnormal - N/A

Supplementary information: SC=Short Circuit, OC=Short Circuit, @=shut down

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**			**P**
	Supply voltage (V) ..... :	95*0.9V, 50Hz	264*1.1V, 50Hz	—
	Ambient T_{min} (°C) ..... :	40.0	40.0	—
	Ambient T_{max} (°C) ..... :	40.0	40.0	—
	Tma (°C) ..... :	40.0	40.0	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
T1 winding		62.9	64.9	110
T1 core		61.2	62.8	110
PC1		57.5	58.7	100
PCB		58.2	59.8	125
DC output terminal		55.0	56.5	80
Internal enclosure near T1		49.6	51.1	80
Internal enclosure(left)		41.3	41.7	80
Internal enclosure(back)		41.9	42.5	80
Touch temperature Clause 9.0				
External enclosure		28.0	45.3	70 (contact time <1s)
External metal		29.8	47.1	94 (contact time <1s)
External enclosure(left)		24.4	41.1	94 (contact time <1s)
External enclosure(back)		25.3	41.9	94 (contact time <1s)
External metal enclosure(back)		25.1	41.8	70 (contact time <1s)
Ambient		23.8	24.6	-

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:							
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
Supplementary information: Test condition: Continuous Printing A4 size.							

5.4.1.10.2	**TABLE: Vicat softening temperature of thermoplastics**		N/A
Method..... :	ISO 306 / B50		—
Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening (°C)
Supplementary information:			

5.4.1.10.3	**TABLE: Ball pressure test of thermoplastics**				P
Allowed impression diameter (mm)..... :	≤ 2 mm				—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
PCB	--	--	125	0.80mm	
Supplementary information:					

5.4.2, 5.4.3	**TABLE: Minimum Clearances/Creepage distance**							P
Clearance (cl) and creepage distance (cr) at/of/between:	U_p (V)	U_{rms} (V)	Freq [1] (Hz)	Required cl (mm)	cl (mm)	E.S. [2] (V)	Required cr (mm)	cr (mm)
Functional insulation								
Different polarity of mains switch contacts	420	250	50	1.27	6.5	--	2.5	6.5
Different polarity of temperature select switch contacts	420	250	50	1.27	6.5	--	2.5	6.5
Basic/supplimentary insulation								

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Clause	Requirement + Test				Result - Remark			Verdict
Between live part and metal enclosure	420	250	50	1.27	6.8	--	2.5	6.8
Reinforced insulation								
Between primary circuit and second circuit	496	250	50	2.54	9.6	--	5.0	9.6
--								
Supplementary information: 1) Only for frequency above 30 kHz 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)								

5.4.2.4	**TABLE: Clearances based on electric strength test**			N/A
Test voltage applied between:		Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No
--		--	--	--
Supplementary information:				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	**TABLE: Distance through insulation measurements**				N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Enclosure	340	<30k	--	0.4	Min. 2.5
Bobbin of transformer	340	<30k	--	0.4	Min. 2.5
Supplementary information:					

5.4.9	**TABLE: Electric strength tests**			**P**
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:				
--		--	--	--
Basic/supplementary:				

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.9	**TABLE: Electric strength tests**			**P**
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
L/N to enclosure		AC	2500	No
#Insulator of internal wires		AC	2500	No
Reinforced:				
Input to output of power supply unit		AC	4000	No
L/N and SELV terminals/enclosure		AC	4000	No
Routine Tests:				
--		--	--	--
Supplementary information: (#): All alternative sources have been considered.				

5.5.2.2	**TABLE: Stored discharge on capacitors**				**P**
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
264*1.1V, 60Hz	Inlet	N	--	12.2Vdc	ES2
264*1.1V, 60Hz	Inlet	S	--	--	--

Supplementary information:

X-capacitors installed for testing are:

☒ bleeding resistor rating: see PSU test report.

☒ X capacitors: see PSU test report.

☐ ICX:

Notes:

A. Test Location:

Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth

B. Operating condition abbreviations:

N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.6.6.2	**TABLE: Resistance of protective conductors and terminations**				**N/A**
Accessible part		Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
Supplementary information:					

5.7.2.2, 5.7.4	**TABLE: Earthed accessible conductive part**		**P**
Supply voltage.....:			—
Location		Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)
Measured to protective earthing terminal		1	0.12
		2*	0.17
		3	N/A
		4	N/A
		5	N/A
		6	N/A
		8	N/A

Supplementary Information:

Notes:
[1] Supply voltage is the anticipated maximum Touch Voltage
[2] Earthed neutral conductor [Voltage differences less than 1% or more]
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.
N: Normal condition, R: Reverse condition.

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
A	All primary circuit/ components	Power (W) :	--	--	PS3 (declared)#
		V_A (V) :	--	--	
		I_A (A) :	--	--	
		V_A (V) :	--	--	
		I_A (A) :	--	--	
B	Output (12V) of power supply unit	Power (W) :	180	180	PS3
		V_A (V) :	24	24	
		I_A (A) :	7.5	7.5	

Supplementary Information:

(*) Measurement taken only when limits at 3 seconds exceed PS1 limits.

(#) The power of output of power supply unit was exceeded 100W after 5s based on the rated output rating.

(&) Approved power supply unit used.

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			P
Location	Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No
--	--	--	--	--

Supplementary information:

All primary circuit/components were considered as arcing PIS, the open circuit of all secondary components/ circuit were not exceeded 50V.

An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)				P
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No

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Clause	Requirement + Test	Result - Remark	Verdict

All internal circuits/ components	--	--	--	--	Yes

Supplementary Information:

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

8.5.5	**TABLE: High Pressure Lamp**		N/A
Description		Values	Energy Source Classification
Lamp type..... :			—
Manufacturer..... :			—
Cat no..... :			—
Pressure (cold) (MPa)..... :			MS_
Pressure (operating) (MPa)..... :			MS_
Operating time (minutes)..... :			—
Explosion method..... :			—
Max particle length escaping enclosure (mm). :			MS_
Max particle length beyond 1 m (mm)..... :			MS_
Overall result ..... :			
Supplementary information:			

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
95V50Hz	--	--	180	171.8	F1	--	simplex Printing A4size.
95V60Hz	--	--	180	171.7	F1	--	
264V50Hz	--	--	180	175.4	F1	--	
264V60Hz	--	--	180	175.3	F1	--	
Supplementary information:							

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....:				20.0-35.0 unless otherwise specified.				—
Power source for EUT: Manufacturer, model/type, output rating ..:				See cover page for details				—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Ventilation	Blocked	264*1.1V	2h	F1	0.3	Type K	External metal : 32.7°C External enclosure(left): 25.9°C Knob: 26.6°C External enclosure(back): 27.3°C External metal enclosure(back): 27.7°C	Operated as normal. No damage, no hazard, NC, NT
Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4. S/C: short circuit, O/L: overload, O/C: open circuit; CD: Components damaged; The Hi-pot test conducted successfully after the completion of fault condition test. Temperature limit for transformer winding under the fault condition: 165°C. NC: Cheesecloth remianed intact; NT: Tissue paper remained intact.								

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

B.4	TABLE: Fault condition tests		P
Ambient temperature (°C) .....:		25 (unless otherwise specified)	—
Power source for EUT: Manufacturer, model/type, output rating ..:		--	—

Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
R1 On the Control board	S/C	240*1.1 V	10min	F1	-	Type K	-	Operated as normal, no damage, no hazard.

Supplementary information:

1) S/C: short circuit, O/L: overload, O/C: open circuit; CD: components damaged;

2) The Hi-pot test conducted successfully after the completion of fault condition test.

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

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

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

EN IEC62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

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

	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Supplementary information:									

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**				N/A
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
	Normal				
	Abnormal				
	Single fault – SC/OC				
Supplementary Information:					

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
Supplementary Information:				

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Clause	Requirement + Test	Result - Remark	Verdict

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**	**N/A**

Note: Measured UOC (V) with all load circuits disconnected:

Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--

Supplementary Information:
SC=Short circuit, OC=Open circuit

T.2, T.3, T.4, T.5	**TABLE: Steady force test**	**P**

Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Internal components	--	--	10	5	Clearance and crecpage still complient with the requirement of the standard
Rear Enclosure, Upper Enclosure, Front Enclosure, Left Enclosure, Right Enclosure	--	--	250	5	Enclosure remained intact

Supplementary information:

T.6, T.9	**TABLE: Impact tests**	**P**

Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
Rear Enclosure, Upper Enclosure, Front Enclosure, Left Enclosure, Right Enclosure	--	--	1300	Enclosure remained intact

Supplementary information:

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Clause	Requirement + Test	Result - Remark	Verdict

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
--	--	--	--	--	
Supplementary information:					

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
External enclosure	--	--	70	7	Enclosure remained intact
Supplementary information:					

EUROPEAN NATIONAL DIFFERENCES according to EN 62368-1			
CENELEC COMMON MODIFICATIONS			
Clause	Requirement + Test	Result - Remark	Verdict
General	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed “Z”. Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights. This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC). Requirement of sound pressure for personal music player addressed by the mandate M/452 are covered in 10.6 "Safeguards against acoustic energy sources". For equipment falling within the scope of directives other than those against which this standard is harmonized, additional requirements from those directives may apply.		P
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
ZA	**NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS**		**-**
b) ZB ANNEX (normative) **c) SPECIAL NATIONAL CONDITIONS**			

4.1.15	**Denmark, Finland, Norway** and **Sweden** To the end of the subclause the following is added: **Class I pluggable equipment type A** intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and **accessible** parts, have a marking stating that the equipment shall be connected to an earthed **mains** socket-outlet. The marking text in the applicable countries shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.” In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		N/A
4.7.3	**United Kingdom** To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A
5.2.2.2	**Denmark** After the 2nd paragraph add the following: A warning (marking **safeguard**) for high **touch current** is required if the **touch current** exceeds the limits of 3.5 mA a.c. or 10 mA d.c.		N/A
5.4.11.1 And Annex G	**Finland and Sweden** To the end of the subclause the following is added:		N/A

4.7.3	United Kingdom To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0.4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1.5 kV multiplied by 1.6 (the electric strength test of 5.4.9 shall be performed using 1.5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1.5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2.5 kV defined in 5.4.11;		N/A
And Annex G (cont'd)	• the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2.5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A

5.5.2.1	**Norway** After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: Resistors used as **basic safeguard** or bridging **basic insulation** in **class I pluggable equipment type A** shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	**Denmark** **Add** to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification:* In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	**Ireland and United Kingdom** **5.6.4.2.1 After the indent for pluggable equipment type A, the following is added:** **– the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.**		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1.25 mm^2 to 1.5 mm^2 in cross-sectional area.		N/A
5.7.5	**Denmark** To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the **protective conductor current** exceeds the limits of 3.5 mA a.c. or 10 mA d.c.		N/A

5.7.6.1	**Norway and Sweden** To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:		N/A
5.7.6.1 (cont'd)	"Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)" NOTE In Norway, due to regulation for CATV- installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1.5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): "Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet." Translation to Swedish: "Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.".		N/A

5.7.6.2	**Denmark** To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3.5 mA .		N/A
B.3.1 and B.	**Ireland and United Kingdom** The following is applicable: To protect against excessive currents and short- circuits in the primary circuit of **direct plug-in equipment**, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the **direct plug-in equipment**, until the requirements of Annexes B.3.1 and B.4 are met.		/A

G.4.2	**Denmark** To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class III apparatus with a rated current of 2.5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a. *Justification:* Heavy Current Regulations, Section 6c		N/A
G.4.2	**United Kingdom** To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A

G.7.1	**United Kingdom** To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	**Ireland** To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard.		N/A
G.7.2	**Ireland and United Kingdom** To the first paragraph the following is added: A power supply cord with a conductor of 1.25 mm^2 is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A
	i. ZC ANNEX (informative) **ii. A – DEVIATIONS**		
10.5.2	**Germany** The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification*: German ministerial decree against ionizing radiation (Rötgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. **NOTE** Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de		N/A

F.1	**Italy** The following requirements shall be fulfilled: • The power consumption in Watts (W) shall be indicated on TV receivers and in their instruction for use (Measurement according to EN 60555-2). Note/Nota *EN 60555-2 has since been replaced by IEC 60107-1:1997.* • TV receivers shall be provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language. • Marking for controls and terminals shall be in Italian language. Abbreviation and international symbols are allowed provided that they are explained in the instruction for use. • The ECC manufacturers are bound to issue a conformity declaration according to the above requirements in the instruction manual. The correct statement for conformity to be written in the instruction manual, shall be: *Questo apparecchio è fabbricato nella CEE nel rispetto delle disposizioni del D.M. marzo 1992 ed è in particolare conforme alle prescrizioni dell'art. 1 dello stesso D.M.*		N/A
F.1	• The first importers of TV receivers manufactured outside EEC are bound to submit the TV receivers for previous conformity certification to the Italian Post Ministry (PP.TT). The TV receivers shall have on the backcover the certification number in the following form: D.M. 26/03/1992 xxxxx/xxxxx/S or T or pT S for stereo T for Teletext pT for retrofitable teletext *Justification:* Ministerial Decree of 26 March 1992 : National rules for television receivers trade. NOTE/NOTA: *Ministerial decree above contains additional, but not safety relevant requirements*		N/A
F.1	• The first importers of TV receivers manufactured outside EEC are bound to submit the TV receivers for previous conformity certification to the Italian Post Ministry (PP.TT). The TV receivers shall have on the backcover the certification number in the following form: D.M. 26/03/1992 xxxxx/xxxxx/S or T or pT S for stereo T for Teletext pT for retrofitable teletext		N/A

ANNEX A:

Photo-documentation

Overview

Photo 1 General Appearance of the EUT

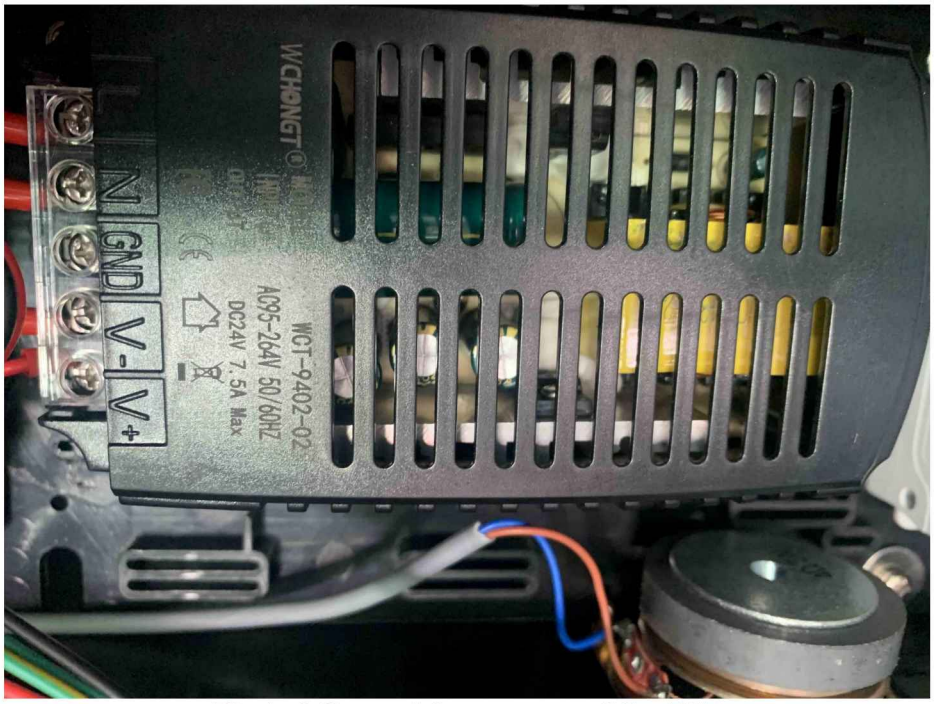

Photo 2 General Appearance of the EUT

********END********