TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report number.....:	**BKC26074506GS**
Date of issue.....:	**Aug. 04, 2026**
Testing Laboratory.....:	**Shenzhen BKC Testing Co., Ltd.**
Address.....:	Room103, 1/F, Huaya Building, Huaya Industrial Park, Yousong Community, Longhua Subdistrict, Longhua District, Shenzhen, Guangdong, China
Applicant's name.....:	**Shenzhen MP LED Technology Co., Ltd**
Address.....:	B501-502, B601-602, Building 10.Huafeng Industrial Zone, Fengtang Avenue, Tangwei Community, Fuhai, Bao'an District, Shenzhen, Guangdong
Test specification.....:	
Standard.....:	IEC 62368-1: 2023 EN IEC 62368-1:2024+A11:2024
Test procedure.....:	CE-LVD
Non-standard test method.....:	N/A
Test Report Form No.:	IEC62368_1F
Test Report Form(s) Originator..	UL Solutions (US)
Master TRF.....:	Dated 2025-06-13
Test item description.....:	LED Display
Trademark.....:	MPLED® Make LED Display Simple
Manufacturer.....:	Same as applicant
Model/Type reference.....:	P3.91, P0.78, P0.93, P1.25, P1.53, P1.56, P1.86, P1.875, P2, P2.5, P3.07, P4, P4.4, P5, P5.7, P6.25, P6.67, P7.81, P8, P10
Ratings.....:	See the page 3

General disclaimer:

The test results presented in this report relate only to the object tested.

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):	
☒ **Testing Laboratory:**	Shenzhen BKC Testing Co.,Ltd
Testing location/ address.....:	Room103, 1/F, Huaya Building, Huaya Industrial Park, Yousong Community, Longhua Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tested by.....: Owen Yan / Test Engineer	Owen Yan
Checked by.....: Casey Wang / Project Engineer	Casey Wang
Approved by.....: Jerry Liao / Project Manager	SHENZHEN BKC TESTING CO. LTD. APPROVED

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

- Attachment 1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (28 pages)
- Attachment 2: Photo documentation. (3 pages)

Summary of testing:

Tests performed:

The submitted samples were found to comply with the requirements of:

Electrical safety
IEC 62368-1: 2023

EN IEC 62368-1:2024+A11:2024

Summary of compliance with National Differences:

List of countries addressed: National Differences and Group Differences, Refer Attachment No. 1 for details

☒ The product fulfils the requirements of EN IEC 62368-1:2024+A11:2024.

Artwork of marking plate(s):

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

LED Display

Model: P3.91

Rating(s): 200-240V~ 50/60Hz 320W



Shenzhen MP LED Technology Co., Ltd

B501-502, B601-602, Building 10.Huafeng Industrial Zone, Fengtang Avenue, Tangwei Community, Fuhai, Bao'an District, Shenzhen, Guangdong

Importer:XXXXXX
Address:XXXXXX

Made in China

Note:

The height of CE symbol ≥ 5.0mm; the height of WEEE symbol ≥ 7.0mm.

Test item particulars:	
Product group ..... :	☒ end product ☐ built-in component
Classification of use by..... :	☐ Ordinary person ☐ Children likely present ☒ Instructed person ☒ Skilled person
Supply connection..... :	☒ AC mains ☐ DC mains ☐ not mains connected: -☐ ES1 ☐ ES2 ☐ ES3
Supply tolerance ..... :	☒ +10%/-10% ☐ +20%/-15% ☐ + %/ - % ☐ None
Supply connection – type ..... :	☒ pluggable equipment type A - ☐ non-detachable supply cord ☒ appliance coupler ☐ direct plug-in ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:
Considered current rating of protective device.... :	☒ 16 A; Location: ☒ building ☐ equipment ☐ N/A
Equipment mobility..... :	☐ movable ☐ hand-held ☐ transportable ☐ direct plug-in ☒ stationary ☐ for building-in ☐ wall/ceiling-mounted ☐ SRME/rack-mounted ☐ other:
Overvoltage category (OVC) ..... :	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Class of equipment ..... :	☒ Class I ☐ Class II ☐ Class III ☐ Not classified ☐
Special installation location ..... :	☒ N/A ☐ restricted access area ☐ outdoor location ☐
Pollution degree (PD) ..... :	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified T_{ma}..... :	35 °C ☐ Outdoor: minimum °C
IP protection class ..... :	☒ IPX0 ☐ IP___
Power systems ..... :	☒ TN ☐ TT ☐ IT - V_{L-L} ☐ not AC mains
Altitude during operation (m) ..... :	☒ 2000 m or less ☐ m
Altitude of test laboratory (m) ..... :	☒ 2000 m or less ☐ m
Mass of equipment (kg) ..... :	13.5 kg

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.....:	Jul. 27, 2026
Date (s) of performance of tests.....:	Jul. 27, 2026 to Aug. 04, 2026
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
General product information: 1. The products are a **LED Display** for used with information technology equipment or audio/video equipment. 2. All models are identical except their model name, all tests were conducted on model: **P3.91**.	

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	**Possible Hazard**			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: All primary circuit	Ordinary	Equipment safeguard (for parts connected to Earth)	Equipment safeguard (Earthing)	Metal shell, power supply (certificated)
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1st S	2nd S
PS3: Primary circuit	Fire enclosure	See 6.3	Metal enclosure	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges	Ordinary	N/A	N/A	N/A
MS2: Equipment mass	Ordinary	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: All accessible parts	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source	Body Part	Safeguards		

(e.g. RS1: PMP sound output)	(e.g., Ordinary)	B	S	R
RS1: LED screen	Ordinary	N/A	N/A	N/A
Supplementary Information: "B" – Basic Safeguard; "S" – Supplementary Safeguard; "R" – Reinforced Safeguard				

ENERGY SOURCE DIAGRAM
Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems. Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings
☒ **ES** ☒ **PS** ☒ **MS** ☒ **TS** ☒ **RS**

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies	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
4.1.2	Use of components	See table 4.1.2	P
4.1.3	Equipment design and construction	No accessible part which could cause injury	P
4.1.4	Specified ambient temperature for outdoor use (°C).....		N/A
4.1.5	Constructions and components not specifically covered		P
4.1.8	Liquids and liquid filled components (LFCs))	(See G.15)	N/A
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.3, T.4, T.5)	P
4.4.3.3	Drop tests		N/A
4.4.3.4	Impact tests		P
4.4.3.5	Internal accessible safeguard tests		N/A
4.4.3.6	Glass impact tests	(See Clause T.9, Annex U)	N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Annex T.8)	N/A
4.4.3.9	Air comprising a safeguard	(See Annex T)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.3.10	Accessibility, glass, safeguard effectiveness		N/A
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks	(See Annex K)	N/A
4.5	Explosion	No explosion	P
4.5.1	General	(See Annex M for batteries)	P
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	P
4.6	Fixing of conductors		P
	Fix conductors not to defeat a safeguard		P
	Compliance is checked by test:	(See Clause T.2)	P
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard..... :		N/A
4.7.3	Torque (Nm)..... :		N/A
4.8	Equipment containing coin/button cell batteries	No lithium coin/button cell battery used.	N/A
4.8.1	General		N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....:	(See Annex P)	N/A
4.10	Component requirements		P
4.10.1	Disconnect Device	(See Annex L)	P
4.10.2	Switches and relays	(See Annex G)	N/A
4.10.3	Mains power supply cords	(See Clause G.7)	N/A
4.10.4	Batteries and their protection circuits	(See Annex M)	N/A

5	**ELECTRICALLY-CAUSED INJURY**		P
5.2	Classification and limits of electrical energy sources	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	See below.	P
5.2.2.2	ES1 and ES2 limits	(See appended table 5.2)	P
5.2.2.3	Capacitance limits.....:	(See appended table 5.2)	P
5.2.2.4	Single pulse limits .....:	No such single pulses with the EUT	N/A
5.2.2.5	Limits for repetitive pulses.....:	No such repetitive pulses with the EUT	N/A
5.2.2.6	Ringing signals .....:	(See Annex H)	N/A
5.2.2.7	Audio signals .....:	(See Clause E.1)	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See below.	P
5.3.1 a)	ES2/ES3 circuits that are not ES2/ES3 mains		P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 could be accessible to ordinary person.	P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V.....:	The probe could not insert into the equipment as there is no ventilation on the product.	P
5.3.2.2 a)	Air gap – electric strength test potential (V):	(See appended table 5.4.9)	P
5.3.2.2 b)	c) Air gap (mm) .....:		P
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire		P
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T except natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Material is non-hygroscopic		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	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2	N/A
5.4.1.5.3	Thermal cycling	Pollution degree 2	N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such starting pulses within the EUT	N/A
5.4.1.8	Determination of working voltage		P
5.4.1.9	Insulating surfaces	Considered.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See below	P
5.4.1.10.2	Vicat test.....:	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure .....:	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method	(See Annex X)	P
5.4.2.2	Procedure 1 for determining clearance		P
	Temporary overvoltage :		—
5.4.2.3	Procedure 2 for determining clearance		P
5.4.2.3.2.2	A.C. mains transient voltage:	2500Vac	—
5.4.2.3.2.3	D.C. mains transient voltage :		—
5.4.2.3.2.4	External circuit transient voltage:		—
5.4.2.3.2.5	Transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test :	(See appended table 5.4.2)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages :		N/A
5.4.2.6	Clearance measurement:	(See appended table 5.4.2)	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 and CTI .....:	IIIb	—
5.4.3.4	Creepage distances measurement :	(See appended table 5.4.3)	P
5.4.4	Solid insulation		P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation .....:	(See appended table 5.4.4.2)	N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material	See below	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs) .....:		P
5.4.4.6.3	Non-separable thin sheet material	No such thin sheet material within the EUT	N/A
	Number of layers (pcs) .....:		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material.....:	See above	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		P
5.4.4.9	Solid insulation at frequencies >30 kHz, EP, KR, d, VPW (V) :	(See appended Table 5.4.4.9)	N/A
	Alternative by electric strength test, tested voltage (V), KR :	(See appended Tables 5.4.4.9 and 5.4.9)	N/A
5.4.5	Antenna terminal insulation	See below	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (MΩ)..... :		—
	Electric strength test.....:		—
5.4.6	Insulation of internal wire as part of supplementary safeguard..... :	No such insulation of internal wire used alone as supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%)..... :	93%	—
	Temperature (°C) .....:	25°C	—
	Duration (h) .....:	48h	—
5.4.9	Electric strength test.....:	(See appended table 5.4.9)	P

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Clause	Requirement + Test	Result - Remark	Verdict
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	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits	(See appended table 5.4.9)	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..... :	(See appended table 5.4.9)	N/A
5.4.10.2.3	Steady-state test..... :	(See appended table 5.4.9)	N/A
5.4.10.3	Verification for insulation breakdown for impulse test :		N/A
5.4.11	Insulation between external circuits and earthed circuitry..... :	(See appended table 5.4.9)	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage Uop (V) :		—
	Nominal voltage Upeak (V):		—
	Max increase due to variation ΔUsp :		—
	Max increase due to ageing ΔUsa :		—
5.4.11.3	Test method and compliance :	(See appended table 5.4.9)	N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid:	(See appended table 5.4.9)	N/A
5.4.12.3	Compatibility of an insulating liquid :	(See appended table 5.4.9)	N/A
5.4.12.4	Container for insulating liquid :		N/A
5.5	Components as safeguards		P
5.5.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.2	Capacitors and RC units	Evaluated in the test report of approved power supply	P
5.5.2.1	General requirement	Evaluated in the test report of approved power supply	N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :	Evaluated in the test report of approved power supply	N/A
5.5.3	Transformers	Evaluated in the test report of approved power supply	N/A
5.5.4	Optocouplers	Evaluated in the test report of approved power supply	N/A
5.5.5	Relays	Evaluated in the test report of approved power supply	N/A
5.5.6	Resistors	Evaluated in the test report of approved power supply	N/A
5.5.7	SPD's		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable..... :		N/A
	Insulation resistance (MΩ).....		N/A
	Electric strength test.....	(See appended table 5.4.9)	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA):		—
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		P
5.6.3	Requirement for protective earthing conductors		P
	Protective earthing conductor size (mm^2) ..... :		—
5.6.4	Requirement for protective bonding conductors		P
5.6.4.1	Protective bonding conductors		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Protective bonding conductor size (mm^2)..... :		—
5.6.4.2	Protective current rating (A) ..... :		—
5.6.5	Terminals for protective conductors		P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm):		P
	Terminal size for connecting protective bonding conductors (mm):		P
	Relevant IEC standard.....		P
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method:	(See appended table 5.6.6)	P
5.6.6.3	Resistance (Ω) or voltage drop..... :	(See appended table 5.6.6)	P
5.6.7	Reliable earthing		P
5.6.8	Functional earthing		N/A
	Conductor size (mm^2):		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm):		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 4 and 5 of IEC 60990 was used	P
5.7.2.1	Measurement of touch current.....:	(See appended table 5.7.4)	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990:1999 applied.	P
	System of interconnected equipment (separate connections/single connection)..... :		—
	Multiple connections to mains (one connection at a time/simultaneous connections).....:		—
5.7.4	Unearthed accessible parts:	(See appended Table 5.7.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	Earthed conductive accessible parts:	(See appended Table 5.7.5)	P
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA) :		N/A
	Instructional Safeguard :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits	No external circuits.	N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	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
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES:	(See appended table 5.8)	N/A
	Air gap (mm):		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	(See appended table 6.2.2)	P
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	No such materials used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Control of fire spread.	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		N/A
6.4.3.1	Supplementary Safeguards		N/A
6.4.3.2	Single Fault Conditions..... :	(See appended table B.4)	N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		N/A
6.4.5.2	Supplementary safeguards .....:		N/A
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS	See the following details.	N/A
6.4.7.1	General.....:		N/A
6.4.7.2	Separation by distance	No separation	N/A
6.4.7.3	Separation by a fire barrier	No separation	N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.2	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	See above.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties	No opening	N/A
	Openings dimensions (mm) :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.4	Bottom openings and properties	No opening	N/A
	Openings dimensions (mm) :		N/A
	Flammability tests for the bottom of a fire enclosure	(See Clause S.3)	N/A
	Instructional Safeguard :		N/A
6.4.8.3.5	Side openings and properties	No opening	N/A
	Openings dimensions (mm) :		N/A
6.4.8.3.6	Integrity of the fire enclosure, condition met: a), b) or c)..... :	No removable door or cover on the equipment	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating :	Metal enclosure	P
6.4.9	Flammability of insulating liquid :		N/A
	Auto ignition temperature (°C).....		N/A
	Flashpoint temperature (°C).....		N/A
6.5	Internal and external wiring		N/A
6.5.1	General requirements		N/A
6.5.2	Requirements for interconnection to building wiring..... :	(See Annex Q.)	N/A
6.5.3	Internal wiring size (mm^2) for socket-outlets:		N/A
6.6	Safeguards against fire due to connection to additional equipment		N/A

7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		N/A
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals within the equipment.	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

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguard (ISO 7010).....:		—

8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General	See the following details.	P
8.2	Mechanical energy source classifications	MS1 for accessible surface of equipment, MS2 for mass of equipment	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		—
	Instructional Safeguard :		—
8.4.2	Sharp edges or corners		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts		N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	A manually activated stopping device for moving MS3		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional Safeguard :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Maximum stopping distance from the point of activation (m) :		N/A
	Space between end point and nearest fixed mechanical part (mm):		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly :		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts:		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N) :		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test:		N/A
8.5.5.3	Glass particles dimensions (mm):		N/A
8.6	Stability of equipment	Fixed installation	N/A
8.6.1	General		N/A
	Instructional Safeguard :		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force :		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Wheels diameter (mm):		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force) :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Position of feet or movable parts :		—
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Requirements		N/A
	Mount means type.....		N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N):		N/A
	Horizontal force to a wall or another structure		N/A
	Test 2, number of attachment points and test force (N):		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm):		N/A
8.8	Handles strength		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles:		—
	Weight applied (kg).....		—
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Pull test		—
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
	Loading force applied (N):		—
8.10.4	Cart, stand or carrier impact test		N/A
	Loading force applied (N) on each supporting surface.....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard :		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied :		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas	(See Annex T)	N/A
	No sharp edges or points		N/A
	Button/Ball diameter (mm)..... :		—

9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	All accessible surfaces are classified as TS1, see appended table 5.4.1.4, 6.3.2, 9.0, B.2.6.	P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts :	(See appended table)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard		P
9.5.2	Instructional safeguard :		N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance :	(See appended table 9.6)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10	**RADIATION**		P
10.2	Radiation energy source classification	RS1: LED screen	P
10.2.1	General classification		N/A
	Lasers:		—
	Lamps and lamp systems:		—
	Image projectors:		—
	X-Ray:		—
	Personal music player:		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply:		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		P
10.4.1	General requirements		P
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location ：		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure ：		N/A
10.4.3	Instructional safeguard ：		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons ：		—
10.5.3	Maximum radiation (pA/kg) ：		—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output LAeq,T, dB(A):		N/A
	Unweighted RMS output voltage (mV):		N/A
	Digital output signal (dBFS):		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30):		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Warning for MEL ≥ 100 dB(A):		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards:		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV):		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output LAeq,T, dB(A):		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output LAeq,T, dB(A):		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.1.6	Specific output conditions		N/A
B.2	Normal Operating Conditions		P
B.2.1	General requirements.....:	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :		N/A
B.2.3	Supply voltage and tolerances	±10%	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.2.6.4	Equipment intended for building-in or rack-mounting		N/A
B.3	Simulated abnormal operating conditions		N/A
B.3.1	General requirements.....:	(See appended table B.3)	N/A
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector..... :	No setting of voltage selector within the EUT	N/A
B.3.5	Maximum load at output terminals.....:	(See appended table B.3&B.4)	N/A
B.3.6	Reverse battery polarity	No battery within the EUT	N/A
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		N/A
B.4	Simulated single fault conditions		P
B.4.1	General	No such device	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test		N/A
B.4.4	Functional insulation	See below.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3 &B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3 &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.3 &B.4)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.3 &B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Compliance during and after single fault conditions:	(See appended table B.3&B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	No battery involved in the EUT	N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	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

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Clause	Requirement + Test	Result - Remark	Verdict
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators	No such consideration.	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	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W):		N/A
	Rated load impedance (Ω) :		N/A
	Open-circuit output voltage (V):		N/A
	Instructional safeguard:		N/A
E.2	Audio signals used during test		N/A
E.2.1	Pink noise test signal		N/A
E.2.2	Sine-wave signal		N/A
E.3	Operating conditions of equipment containing an audio amplifier		N/A
E.3.1	Normal operating conditions	(See appended table B.2.5, E.3.1)	N/A
E.3.2	Abnormal operating conditions	(See appended table B.3, B.4)	N/A
E.3.3	Audio equipment temperature measurement conditions……:		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements		P
	Instructions – Language .....:	Evaluated the user manual in English version. The manufacturer commits to provide them in the language of the countries where the product will be distributed.	—
F.2	Letter symbols and graphical symbols	Complied	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.2.1	Letter symbols according to IEC60027-1	Complied	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Complied	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	On the product	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification ..... :		—
F.3.2.2	Model identification .....:		—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains	Considered	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage.....:	~ used for input voltage	—
F.3.3.4	Rated voltage..... :	See copy of marking plate	—
F.3.3.5	Rated frequency..... :	See copy of marking plate	—
F.3.3.6	Rated current or rated power.....:	See copy of marking plate	—
F.3.3.7	Equipment with multiple supply connections	No such device	N/A
F.3.4	Voltage setting device	No such device	N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings	No such device	N/A
F.3.5.2	Switch position identification marking..... :		N/A
F.3.5.3	Replacement fuse identification and rating markings..... :		P
	Instructional safeguards for neutral fuse:		N/A
F.3.5.4	Replacement battery identification marking.....:	No such device	N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Protective bonding conductor terminals :		N/A
F.3.6.2	Equipment class marking		P
F.3.6.3	Functional earthing terminal marking:		N/A
F.3.7	Equipment IP rating marking .....:	IPX0 product without marking	—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	Marking plate was provided on the enclosure and it was legible, permanent and easily discernible.	P
F.3.10	Test for permanence of markings	Complied	P
F.4	Instructions		P
	-Information prior to installation and initial use		P
	-Equipment for use in locations where children not likely to be present		N/A
	-Instructions for installation and interconnection		N/A
	-Equipment intended for use only in restricted access area		N/A
	-Equipment intended to be fastened in place		P
	-Instructions for audio equipment terminals		N/A
	-Protective earthing used as a safeguard		P
	-Protective conductor current exceeding ES2 limits		N/A
	-Graphic symbols used on equipment		N/A
	-Permanently connected equipment not provided with all-pole mains switch		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	-Replaceable components or modules providing safeguard function		N/A
	-Equipment containing insulating liquid		N/A
	-Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards	Considered	P
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction	Considered	P
G	**COMPONENTS**		P
G.1	Switches		N/A
G.1.1	General		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protection Devices		N/A
G.3.1	Thermal cut-offs	No thermal cut-off provided within the equipment.	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	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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.3.2.2	Test method and compliance		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices	Evaluated in the test report of approved power supply.	N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided	No such component.	N/A
G.3.5.2	Single faults conditions.....:	(See appended Table B.4)	N/A
G.4	Connectors		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration .....:		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	Wound Components		P
G.5.1	Wire insulation in wound components.....	Evaluated in the test report of approved power supply.	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Evaluated in the test report of approved power supply.	P
G.5.1.2 b)	Construction subject to routine testing	(See G.5.1.2 a)	N/A
G.5.2	Endurance test	(See G.5.1.2 a)	N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s)..... :		—
	Temperature (°C).....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
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).....:	Evaluated in the test report of approved power supply.	P
	Position.....:	See table 4.1.2	—
	Method of protection .....:	Reinforced insulation	—
G.5.3.2	Insulation	See above and appended table B.3 & B.4.	P
	Protection from displacement of windings.....:	Insulation tape used	—
G.5.3.3	Overload test.....:	(See appended table B.3)	P
G.5.3.3.1	Test conditions		P
	Position.....	T1	P
	Method of protection.....	Primary windings and secondary windings are separated by reinforced insulation.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3&B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Alternative test method was not considered.	N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter:		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation:		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4	Motors		N/A
G.5.4.1	General requirements		N/A
	Position .....:		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
	Electric strength test.....	(See appended table 5.4.9)	—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
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) .....:		N/A
	Electric strength test (V)..... :		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
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).....:		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
G.6.1	General		P
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		P
G.7.1	General requirements		P
	Type.....:		—
G.7.2	Cross-sectional area (mm^2), (AWG) :		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
G.7.5.2	Mass (g) .....:		—
	Diameter (m).....:		—
	Temperature (°C).....:		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test	(See appended table B.3)	N/A
G.8.2.3	Temporary overvoltage test	(See appended table B.3)	N/A
G.9	Integrated Circuit (IC) Current Limiters		N/A
G.9.1	Requirements	No IC current limiter provided within the equipment.	N/A
	IC limiter output current (max. 5A):		N/A
	Manufacturers' defined drift :		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		N/A
G.10.1	General	No resistor used for safety guard	N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
	Changes of resistance (%).....		N/A
	Measured current with the lowest resistance value		N/A
G.10.4	Voltage surge test		N/A
	Changes of resistance (%).....		N/A
G.10.5	Impulse test	No resistor used for safety guard	N/A
	Changes of resistance (%).....		N/A
G.10.6	Overload test		N/A
	Changes of resistance (%).....		N/A
G.11	Capacitor and RC units		N/A
G.11.1	General requirements	Evaluated in the test report of approved power supply.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5 with specifics	Evaluated in the test report of approved power supply.	N/A
	Type test voltage Vini .....:		—
	Routine test voltage, Vini,b ..... :		—
G.13	Printed boards		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board provided within the equipment.	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.....:	(See appended table 5.4.4.5)	N/A
	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.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements .....:	(See G.13)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.15	Pressurized liquid filled components or LFC assemblies		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.2.7	Compliance criteria		N/A
G.15.3	Compliance		N/A
G.15.3.2	Hydrostatic pressure test, applied test pressure.....		N/A
G.15.3.3	Creep resistance test		N/A
G.15.3.4	Tubing and fittings compatibility test, the change of tensile strength (%).....		N/A
G.15.3.5	Thermal cycle test, test temperature (°C).....		N/A
G.15.3.6	Force test		N/A
G.15.3.7	Compliance criteria		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required	No such component used	N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		—
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test:		N/A
	Mains voltage that impulses to be superimposed on:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test:		—
G.16.3	Capacitor discharge test:		N/A
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**		N/A
J.1	General requirements		N/A
	Winding wire insulation.....	Evaluated in the test report of approved power supply.	N/A
	Solid round winding wire, diameter (mm).....		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm^2).....		N/A
J.2/J.3	Tests and Manufacturing		N/A
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements	No safety interlock provided within the equipment.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K.2	Components of safety interlock safeguard mechanism	(See Annex G)	N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance..... :	(See appended table B.4)	N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method..... :		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)..... :		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		N/A
	Electric strength test before and after the test of K.7.2..... :		N/A
K.7.2	Overload test, Current (A)..... :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test ..... :	(See appended table 5.4.11)	N/A
L	**DISCONNECT DEVICES**		P
L.1	General requirements		P
L.2	Permanently connected equipment		N/A
	Instructions for permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructions for single pole disconnect device		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
	Instructions for pluggable equipment		N/A
L.8	Multiple power sources	Only one a.c. mains connection.	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
M.2.2	Compliance and test method (identify method)... :		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 .....:		N/A
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
	IEC 62133-2 batteries used for sub-system power powering application.....		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.2.2	Compliance.....:		N/A
M.4.2.2.1	General		N/A
M.4.2.2.2	Abnormal operating conditions		N/A
M.4.2.2.3	Single fault conditions		N/A
M.4.3	Fire enclosure.....:		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): .....:		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		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
	Calculated hydrogen generation rate.....:		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m^3/h).....:		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate..... :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.4	Marking..... :		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_Z (m^3/s)..... :		N/A
M.8.2.3	Correction factors..... :		N/A
M.8.2.4	Calculation of distance *d* (mm) ..... :		N/A
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		N/A
	Instructional safeguard..... :		N/A
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used..... :	Pollution degree considered	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Value of *X* (mm)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
P	**SAFEGUARDS AGAINST CONDUCTIVE OBJECTS**		N/A
P.1	General requirements	See the following details.	N/A
P.2	Safeguards against entry or consequences of entry of a foreign object		N/A
P.2.1	General		N/A
	Location and Dimensions (mm)		N/A
P.2.2	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.4 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts.....		N/A
P.2.3	Consequence of entry test.....		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
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T_C (°C).....:		N/A
	Duration (weeks).....:		N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		N/A
Q.1	Limited power sources		N/A
Q.1.1	Requirements		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	d) Overcurrent protective device limited output		N/A
	e) 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		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test..... :		N/A
R.3	Test method		N/A
	Cord/cable used for test..... :		N/A
R.4	Compliance		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.....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	- Material did not show any additional holes for combustible materials		N/A
	- Cheesecloth did not ignite for top openings		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
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C)..... :		—
S.6	Grille covering material, cloth, and reticulated foam		N/A
	Samples, material.....:		—
	Measured distance from the centre of the fuel tablet (mm).....:		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)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	(See appended table T.6)	P
	Fall test		P
	Swing test		N/A
T.7	Drop test ..... :	(See appended table T.7)	N/A
T.8	Stress relief test.....:	(See appended table T.8)	N/A
T.9	Glass Impact Test..... :	(See appended table T.9)	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m)..... :		—
T.10	Glass fragmentation test..... :	(See sub-clause 4.4.4.9)	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 EFEECTS 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.....:	(See Annex T)	N/A
V	**DETERMINATION OF ACCESSIBLE PARTS**		P
V.1	Accessible parts of equipment	No access with test probes to any hazardous parts	P
V.1.1	General		P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
V.1.4	Plugs, jacks, connectors tested with blunt probe		P
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	Accessible part criterion	See above.	P
X	**ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)**		N/A
	Clearance:	(See appended table X)	N/A
Y	**CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES**		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure :		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods :		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means	(See Annex P.4)	N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3 :		N/A
Y.5.3	Water spray test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
	Relevant tests of IEC 60529 or Y.5.5.2 or Y.5.5.3..		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test :	(See Table T.6)	N/A

4.1.2	TABLE: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
PCB	Interchangable	Interchangable	V-0, 130ºC	UL 796	UL
Earthing wire	Jiang Yin Tianqi Silicone Rubber Products Co., Ltd	H05S-K	T180, 1 X 0.75 mm^2 300/500V	DIN 0282-3	VDE
Internal wire	GUANGZHOU TANG YAO WIRES CO LTD	1332	24-22AWG;300V 200ºC	UL758	UL
AC inlet	Yueqing Leci Electronics Co., Ltd.	DB-8	250Vac, 2.5A, 70ºC	EN 60320-1, UL 498	VDE, UL
Power supply	Shenzhen Rong Electric Technology CO.,LTD	MA200SH5	Input: 200-240VAC 3.0A Max 47-63Hz Output: 5.0V⎓ 40A	IEC/EN 62368-1	CE
Supplementary information:					

5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type[1)]	Additional Info [2)]	
264Va.c. 60Hz	Primary circuits supplied by a.c. mains supply	Normal	264V rms	--	SS	60Hz	ES3
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc. 2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							

5.4.1.8	TABLE: Working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
L to N	≤250	≤420	30K	--	
Supplementary information:					

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Method.....	ISO 306 / B50		—
Object/ Part No./Material	Manufacturer/trademark	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	Test temperature (°C)	Impression diameter (mm)
AC inlet	See table 4.1.2	125	1.1
Supplementary information:			

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm)	Required[3] cr (mm)	cr (mm)
L, N to ground	≤420	≤240	50	1.5	5.0	3.0	>5.0
L, N to metal enclosure	≤420	≤240	50	1.5	5.0	3.0	>5.0
Supplementary information: 1) Only for frequency above 30 kHz 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied) 3) Ferrite core of transformer T1 considered as primary live part.							

5.4.4.2	TABLE: Distance through insulation measurements			N/A
Distance through insulation (DTI) at/of	Peak voltage (V)	Required DTI (mm)	Measured DTI (mm)	
--	--	--	--	
Supplementary information:				

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						N/A
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
--	--	--	--	--	--	--	
Supplementary information:							

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
L to N (Fusible resistor opened)	DC	2500 V	No	
L/N to metal enclosure	DC	2500 V	No	
L/N to LED screen (wrap with metal foil)	DC	4000 V	No	
Supplementary information:				

5.5.2.2	TABLE: Stored discharge on capacitors				N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
--	--	--	--	--	--
--	--	--	--	--	--

Supplementary information:

X-capacitors installed for testing are:

☐ bleeding resistor rating:

☐ 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

5.6.6	TABLE: Resistance of protective conductors and terminations			P
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
Earthed metal enclosure	32	2	1.056	0.033
Supplementary information:				

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V_{rms} or V_{pk})	Current (A_{rms} or A_{pk})	Freq. (Hz)	
Accessible enclosure with metal foil to earth	Normal Condition	264V/60Hz	--	0.122mArms	60	ES1
	Abnormal (See appended table B.3,B.4)	264V/60Hz	--	0.122mArms	60	ES1
	Single fault –	264V/60Hz	--	0.134mArms	60	ES1

	SC/OC (See appended table B.3,B.4)					
Supplementary information: See appended table 5.2 for details.						
Abbreviation: SC= short circuit; OC= open circuit						

5.7.5	**TABLE: Earthed accessible conductive part**			P
Supply voltage (V).....:	264Vac			—
Phase(s) ..... :	[×] Single Phase; [ ] Three Phase: [ ] Delta [ ] Wye			
Power Distribution System .....:	☒ TN ☐ TT ☐ IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
Earthed accessible metal part to earth	1(e open, normal and reverse polarity p)	Normal: 0.26mArms Reverse: 0.26mArms	ES1	
Supplementary Information:				

5.8	**TABLE: Backfeed safeguard in battery backed up supplies**					N/A
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
--	--	--	--	--	--	--
Supplementary information: Abbreviation: SC= short circuit, OC= open circuit						

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
Internal circuit	Normal	Power (W) :	--	--	PS3 (declared)
		V_A (V) :	--	--	
		I_A (A) :	--	--	

Supplementary Information: (*) Measurement taken only when limits at 3 seconds exceed PS1 limits. Measurement taken only when limits at 5 seconds exceed PS2 limits

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	
All primary circuits/components	--	--	--	Yes	
Supplementary information: 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. The output circuit is not arcing PIS as the open voltage of which is less than 50Vpeak.					

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
All internal circuits/components	--	--	--	--	Yes (declaration)
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
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No
--	--	--	--	--
Supplementary information:				

9.6	TABLE: Temperature measurements for wireless power transmitters	N/A
Supply voltage (V).....:		—
Max. transmitting power (W)..... :		—

Part A [1)]

Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
Steel disc								
Aluminium ring								
Aluminium foil								
Measurement temperature T of part/at:	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)

Part B [2)]

Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
Steel disc								
Aluminium ring								
Aluminium foil								
Measurement temperature T of part/at:	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)

Supplementary information: 1) The test is performed by powering up the transmitter and then placing each of the foreign objects specified in 9.6.2 in direct contact with the transmitter. 2) The test is performed by first placing each of the foreign objects specified in 9.6.2 in direct contact with the transmitter and then powering up transmitter.

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**							P
	Supply voltage (V)	AC264 V/50Hz	AC180V/ 60Hz	--	--	--	--	
	Test condition	Normal	Normal	--	--	--	--	
	Ambient T(°C)	24.5	24.6	--	--	--	--	
Maximum measured temperature T of part/at:		T (°C)						Allowed T_{max} (°C)
Accessible parts:		Shift to 25°C	Shift to 25°C	--	--	--	--	--
Enclosure		30.5	32.8	--	--	--	--	77
LED screen		33.6	35.2	--	--	--	--	77
Other parts:		Shift to 35°C	Shift to 35°C	--	--	--	--	--
Power supply		61.1	63.5	--	--	--	--	Ref.
PCB near U1		56.2	58.4	--	--	--	--	130
PCB near U3		54.6	57.1	--	--	--	--	130
PCB near U5		53.2	55.7	--	--	--	--	130
Internal wire		50.2	52.5	--	--	--	--	80
AC inlet		46.3	47.8	--	--	--	--	70
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:							

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
180V/50Hz	3.036	--	325.7	--	--	--	Normal condition (Full white screen)
180V/60Hz	3.037	--	325.7	--	--	--	
200V/50Hz	2.788	--	324.4	320	--	--	
200V/60Hz	2.789	--	324.5	320	--	--	
240V/50Hz	2.365	--	323.9	320	--	--	
240V/60Hz	2.366	--	323.9	320	--	--	
264V/50Hz	2.101	--	324.2	--	--	--	
264V/60Hz	2.102	--	324.3	--	--	--	
Supplementary information:							

B.2.5, E.3.1	TABLE: Input test for equipment containing audio amplifiers			N/A
Operation Condition:	Signal type	Frequency (Hz)	Output loads (Ω)	Load setup
A1	Sine wave input	1000	-	All channels driven, (maximum) non-clipped output power
A2	Peak response frequency	-	-	All channels driven, (maximum) non-clipped output power
B1	Sine wave input	1000	-	All channels driven, 1/8 non-clipped output power
B2	Peak response frequency	-	-	All channels driven, 1/8 non-clipped output power
C	Band-limited pink noise signal	-	-	All channels driven, 1/8 non-clipped output power
D	-	-	-	-

Input									Amplifier Output			
Cond.	U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Ch.	U (V)	P (W)	Load (Ω)

--	--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--	--
Supplementary information:												

B.3,B.4	**TABLE: Abnormal operating and fault condition tests**					P
Ambient temperature (°C) .....:					35	—
Power source for EUT: Manufacturer, model/type, output rating .:					Refer to below	—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (min)	Fuse no.	Fuse current, (A)	Observation
U1 pin2-pin4	SC	264	30mins	--	--	Unit shutdown immediately, no hazards, no damaged.
U3 pin1-pin3	SC	180	30mins	--	--	Unit shutdown immediately, no hazards, no damaged.
Supplementary information:SC= short circuit; OC= open circuit						

M.3	**TABLE: Protection circuits for batteries provided within the equipment**							N/A
Is it possible to install the battery in a reverse polarity position?.....:					--			—
Equipment Specification				Charging				
				Voltage (V)		Current (A)		
				--		--		
Manufacturer/type		Battery specification						
		Non-rechargeable batteries		Rechargeable batteries				
		Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)	
				Voltage (V)	Current (A)			
--		--	--	--	--	--	--	
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.								
Specified battery temperature (ºC).....:					--			
Component No.	Fault	Charge/	Test	Temp.	Current	Voltage	Observation	

	condition	discharge mode	time	(°C)	(A)	(V)	
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:

Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.

M.4.2	**TABLE: Charging safeguards for equipment containing a secondary lithium battery**	N/A

Maximum specified charging voltage (V)..... :	--	—
Maximum specified charging current (A) .....:	--	—
Highest specified charging temperature (°C) .....:	--	
Lowest specified charging temperature (°C) .....:	--	

Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	
--	--	--	--	--	--

Supplementary information:

Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature

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:

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 component	--	--	10	5	No damaged
All side of enclosure	Metal	Min. 2.0	250	5	No damaged
Supplementary information:					

T.6, T.9	TABLE: Impact tests			P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
All side of enclosure	Metal	Min. 2.0	1300	No damaged
Supplementary information:				

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

T.8	TABLE: Stress relief test				N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
--	--	--	--	--	--
Supplementary information:					

X	TABLE: Alternative method for determining minimum clearances distances		N/A
Clearance distanced between:	Peak of working voltage (V)	Required cl (mm)	Measured cl (mm)
--	--	--	--
Supplementary information:			

IEC62368-1- ATTACHMENT 1	
ATTACHMENT TO TEST REPORT IEC 62368-1 **EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES** Audio/video, information and communication technology equipment - Part 1: Safety requirements	
Differences according to.....:	EN IEC 62368-1-2024 + A11:2024
Attachment Form No.....:	EU_GD_IEC 62368_1F
Attachment Originator.....:	UL Solutions (Demko)
Master Attachment.....:	2024-05-16

EN IEC 62368-1-2024 + A11:2024 – CENELEC COMMON MODIFICATIONS			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2024+A11:2024. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2023. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2023 are prefixed “Z”.		P
	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
1	Modification to the whole document		N/A

IEC62368-1- ATTACHMENT 1

IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)

Delete all the “country” notes in the reference document according to the following list:

0.2.1	Note 1 and Note 2		1	Note 4 and Note 5		3.3.8.1	Note 2
3.3.8.3	Note 1		4.1.15	Note		4.7.3	Note 1 and Note 2
5.4.2.3.2.2 Table 12	Note C		5.4.2.3.2.4	Note 1 and Note 3		5.4.2.3.2.4 Table 13	Note 2
5.4.2.5	Note 2		5.4.5.1	Note		5.4.10.2.1	Note
5.4.10.2.2	Note		5.4.10.2.3	Note			
5.5.2.1	Note		5.5.6	Note		5.6.4.2.1	Note 2 and Note 3 and Note 4
5.6.8	Note 2		5.7.7.1	Note 1 and Note 2		8.5.4.2.3	Note
10.2.1 Table 39	Note 3 and Note 4 and Note 5		10.5.3	Note 2		10.6.1	Note 3
F.3.3.4	Note 2		F.3.3.6	Note 3		Y.4.1	Note 3
Y.4.5	Note						

N/A

2 Modification to Clause 1 N/A

1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU. Add the following paragraph and note after Note 5: “This document is a type test standard. NOTE Z2 Routine tests of complete equipment, sub-assemblies or components are covered by EN 62911.”		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
3	**Modification to Clause 2**		N/A
2	Add the following references: EN 71-1:2014+A1:2018, Safety of toys - Part 1: Mechanical and physical properties EN 50332-1:2013, Sound system equipment: Headphones and earphones associated with personal music players - Maximum sound pressure level measurement methodology - Part 1: General method for "one package equipment" EN 50332-2:2013, Sound system equipment: Headphones and earphones associated with personal music players - Maximum sound pressure level measurement methodology - Part 2: Matching of sets with headphones if either or both are offered separately, or are offered as one package equipment but with standardised connectors between the two allowing to combine components of different manufacturers or different design EN 50332-3:2017, Sound system equipment: headphones and earphones associated with personal music players - Maximum sound pressure level measurement methodology - Part 3: Measurement method for sound dose management IEC/TR 62471-2, Photobiological safety of lamps and lamp systems - Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety		N/A
4	**Modification to Clause 4**		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
4	**Add** the following new subclause 4.Z1 after subclause 4.9: “For compliance with B.3 and B.4 in circuits connected to an AC **mains**, protective **devices** shall be provided, subject to the following: - for **pluggable equipment type A**, the protective **devices** shall be included as parts of the equipment, with the exception of components in series with the **mains** input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, for which the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet;		N/A
	- for **pluggable equipment type B** or **permanently connected equipment**, the protection may be the dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, for example a fuse or circuit breaker, is fully specified in the installation instructions. Where protective **devices** are required within the equipment, the protective **devices** within the equipment shall operate before or at the same time the expected building installation protection will operate. For earth faults in single-phase equipment, it is not necessary to provide 2 protective **devices**. It is expected that the building installation will protect against earth faults. This applies also in countries where an IT power distribution system is used.”		N/A
5	**Modification to subclause 4.1.9**		P

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
4.1.9	Add the following paragraph at the end of this subclause: "Products need to comply with the requirements of this document with appropriate measurement uncertainty. NOTE Z1 See also the RED ADCO position on 'Measurement uncertainty in published harmonized standards'."		P
6	**Modification to subclause 5.4.9.1**		N/A
5.4.9.1	**Add** the following note after the 5th paragraph: "NOTE Z1 For guidance on the use of high voltage source, see IEC 60060-1, Clause 8 of IEC 60243-1 and IEC 61180."		N/A
7	**Modification to subclause 5.4.2.3.2.4**		N/A
5.4.2.3.2.4	**Add** the following at the end of this subclause: "The requirement for interconnection with **external circuit** in a HBES/BACS network is in addition given in EN IEC 63044-3:2018."		N/A
8	**Modification to subclause 5.6.6.2**		N/A
5.6.6.2	**Replace** item d) with the following: "d) For equipment powered from a DC mains, if the protective current rating of the circuit under test exceeds 25 A, the test current shall be minimum as required in item a), unless the manufacturer specifies a higher value."		N/A
9	**Modification to subclause 9.3.1**		N/A
9.3.1	**Replace** the second paragraph with the following: "An **accessible** part that, while in contact with the body, is likely to drop in temperature upon touch can be evaluated under the limits of Annex A of IEC Guide 117:2010 using the test method of 4.5 of IEC Guide 117."		N/A
10	**Modification to subclause 10.2.1**		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
10.2.1	**Add** the following to c) and d) in Table 38: "For additional requirements, see 10.5.1."		N/A
11	**Modification to subclause 10.4.1**		N/A
10.4.1	**Replace** the second paragraph of 10.4.1 with: "Electronic light effect equipment does not have to comply with the requirements of 10.4. However, 114 IEC/TR 62471-2 shall be considered and proper installation instructions shall be provided. **Replace** the ninth paragraph of 10.4.1 with: The following information shall be provided in the user manual for safe operation and installation. This information shall also be provided for safe operation by a skilled person who may be exposed to Risk Group 3 energy levels. Adequate instructions for proper assembly, installation, maintenance and safe use, including clear warnings concerning precautions to avoid possible exposure to hazardous optical radiation; and Advice on safe operating procedures and warnings concerning **reasonably foreseeable misuse,** malfunctions and hazardous failure modes. Where servicing and maintenance procedures are detailed, they shall include explicit instructions on safe procedures to be followed; and The marking on the equipment shall be reproduced in the user manual. A yellow background is not required in the user manual.		N/A
12	**Modification to subclause 10.4.4**		N/A
10.4.4	**Replace** the last paragraph of 10.4.4 with: "Compliance against material degradation from UV radiation is checked by the applicable tests of Annex C."		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
13	**Modification to subclause 10.5.1**		N/A
10.5.1	**Add** the following after the first paragraph: "For RS1 compliance is checked by measurement under the following conditions: In addition to the **normal operating conditions**, all controls adjustable from the outside of the equipment by hand, by any object such as a **tool** or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made. NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm^2, at any point at a distance of 10 cm from the outer surface of the equipment. Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made. For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level. NOTE Z2 These values appear in Directive 2013/59/Euratom of 5 December 2013."		N/A
14	**Modification to subclause 10.5.3**		N/A
10.5.3	**Replace** the second paragraph of 10.5.3 with: "The amount of radiation is determined by means of a radiation monitor of the ionizing chamber type with an effective area of 1 000 mm2 ± 10 mm2 or by measuring equipment of other types giving equivalent results."		N/A
15	**Modification to Clause 10**		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
	Replace 10.6 with the following:		N/A
10.6	**Safeguards against acoustic energy sources**		N/A
10.6.1	**General**		N/A
10.6.1.1	**Introduction** **Safeguard** requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an **ordinary person**, that: - is designed to allow the user to listen to audio or audiovisual content / material; and - uses a listening **device**, such as headphones or earphones that can be worn in or on or around the ears; and - has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
	Listening **devices** sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to: - **professional equipment**; NOTE 3 **Professional equipment** is equipment sold through special sales channels. All products sold through normal electronics stores or general public sales channels are considered not to be **professional equipment**. - hearing aid equipment and other devices for assistive listening; - the following type of analogue personal music players: - long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and - cassette player/recorder; 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. - a player while connected to an external amplifier that does not allow the user to walk around while in use; - hearing protection devices (HPD) that comply with EN 352-8 For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply. The relevant requirements are given in EN 71-1:2014+A1:2018, 4.20 and the related tests methods and measurement distances apply.		N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
10.6.2.1	General This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3. For classifying the acoustic output *L*Aeq,*T* , measurements are based on the A-weighted equivalent sound pressure level over a 30 s period. 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, measurements may be done over the duration of the complete song. In this case, *T* becomes the duration of the song. NOTE Classical music, acoustic music and broadcast 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 content 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 does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, 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 dB.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the *L*Aeq,*T* acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1:2013. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1:2013. – The RS1 limits will be updated for all devices as per 10.6.3.2.		N/A
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the *L*Aeq,*T* acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1:2013.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.		N/A
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the *L*Aeq,*T* acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1:2013.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
10.6.3.3	RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1:2013. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3:2017, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface).		N/A
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1:2013 or EN 50332-2:2013 as applicable.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
10.6.4.2	Protection of persons Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3. NOTE 1 Volume control is not considered a safeguard. Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use. The elements of the instructional safeguard shall be as follows: – element 1a: the symbol , IEC 60417-6044 (2011-01) – element 2: “High sound pressure” or equivalent wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off. The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time. NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed. NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off. A skilled person shall not be unintentionally exposed to RS3.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	General requirements Personal music players shall give the warnings as provided below when tested according to EN 50332-3:2017, using the limits from this clause. The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration. The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		N/A
10.6.5.2	Dose-based warning and requirements When a dose of 100 % *CSD* is reached, and at least at every 100 % further increase of *CSD*, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1. The warning shall at least clearly indicate that listening above 100 % *CSD* leads to the risk of hearing damage or loss.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
10.6.5.3	Exposure-based requirements With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at. The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3:2017. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface. In case the source is known not to be music (or test signal), the EL may be disabled.		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input With 94 dB *L*Aeq acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed “programme simulation noise” as described in EN 50332-1:2013 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1:2013, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the *L*Aeq,*T* acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1:2013; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the *L*Aeq,*T* acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.4	Measurement method Measurements shall be made in accordance with EN 50332-2:2013 as applicable.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
16	**Modification to subclause G.3.1.2**		N/A
	Add the following note after the first paragraph: “NOTE Z1 An IEC 60730 series standard is considered relevant if the component in question falls within its scope.”		N/A
17	**Modification to subclause G.7.1**		N/A
	Add the following note at the end of the subclause: “NOTE Z1 The harmonized code designations corresponding to the IEC cable types are given in Annex ZD.”		N/A
18	**Modification to subclause M.2**		N/A
	Add the following paragraph after the first paragraph: “The size of the battery compartment shall be designed taking into account the battery compartment recommendations of the relevant battery standard. NOTE For general guidance on the design of the battery compartment, see Clause 8 of IEC 62485-4.”		N/A
19	**Modification to Bibliography**		N/A

IEC62368-1- ATTACHMENT 1		
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)		
	Add the following notes for the standards indicated: IEC 60060-1 NOTE Harmonized as EN 60060-1. IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60204-1 NOTE Harmonized as EN IEC 60204-1. IEC 60204-11 NOTE Harmonized as EN IEC 60204-11. IEC 60243-1 NOTE Harmonized as EN 60243-1. IEC 60269-2 NOTE Harmonized as HD 60269-2. EC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5:2005 NOTE Harmonized as EN 60664-5:2007. IEC 60721-3-4 NOTE Harmonized as EN IEC 60721-3-4. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC61180 NOTE Harmonized as EN 61180. IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1 IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN IEC 61643-331. IEC 61140:2016 NOTE Harmonized as EN 61140:201 IEC 61439-5:2014 NOTE Harmonized as EN 61439-5:2015. IEC 61969-3 NOTE Harmonized as EN 61969-3. IEC 62040:2017 NOTE Harmonized as EN IEC 62040:2019. IEC 62305-1 NOTE Harmonized as EN 62305-1. IEC 62368-3 NOTE Harmonized as EN 62368-3. IEC 62485-4 NOTE Harmonized as EN IEC 62485-4. ISO 10218-1 NOTE Harmonized as EN ISO 10218-1. IS0 10218-2 NOTE Harmonized as EN ISO 10218-2 IS0 13482 NOTE Harmonized as EN ISO 13482. IS0 13850 NOTE Harmonized as EN ISO 13850.	N/A
20	**Addition of annexes**	N/A
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**	N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
4.1.15	**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 **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
5.4.11.1 and Annex G	**Finland and Sweden** To the end of the subclause the following is added: 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.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
	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 5.4.7 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, subclass Y2. A capacitor classified Y3 according to EN 60384-14, 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 5.4.10; --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.		

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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.10.3.		N/A
5.6.4.2.1	Ireland and United Kingdom 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
5.6.4.2.1	France After the indent for pluggable equipment type A, the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A. *Justification:* In France, according to NF C15-100 standard, in certain cases, the maximum rated current of the protective **device** circuit-breaker is 20 A.		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
5.6.8	Norway To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment. See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
5.7.7.1	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: “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.		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
	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
8.5.4.2.3	United Kingdom Add the following after the 2nd dash bullet in 3rd paragraph: An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.		N/A
B.3.1 and B.4	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		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

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A

IEC62368-1- ATTACHMENT 1			
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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 (Röntgenverordnung), 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
ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		N/A

IEC62368-1- ATTACHMENT 1		
IEC 62368-1, GROUP DIFFERENCES (CENELEC common modifications EN)		
		N/A

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F
		H03VVH2-F
Ordinary polyviny chloride sheathed flexible cord	60227 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	HO7RN-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
Cords insulated and sheathed with halogen-free therm oplastic compounds		
Light halogen-free thermoplastic insulated andsheathed flexible cords		H03Z1Z1-F
		H03Z1Z1H2-F
Ordinary halogen-free thermoplastic insulated andsheathed flexible cords		H05Z1Z1-F
		H05Z1Z1H2-F

Attachment 2:

Photo-documentation

Photo 1

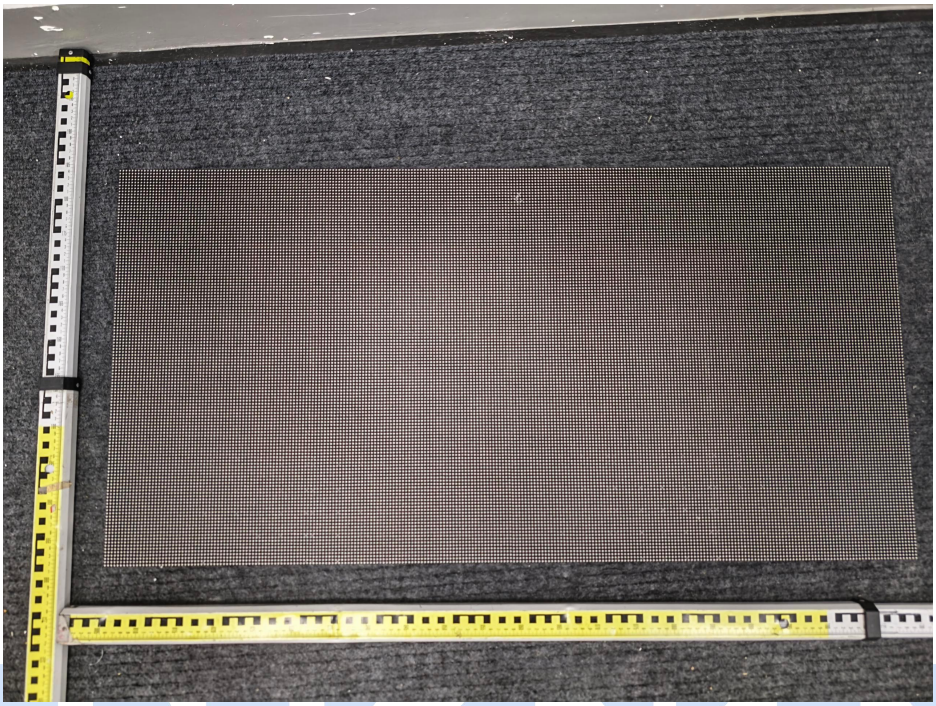


Photo 2



Photo 3

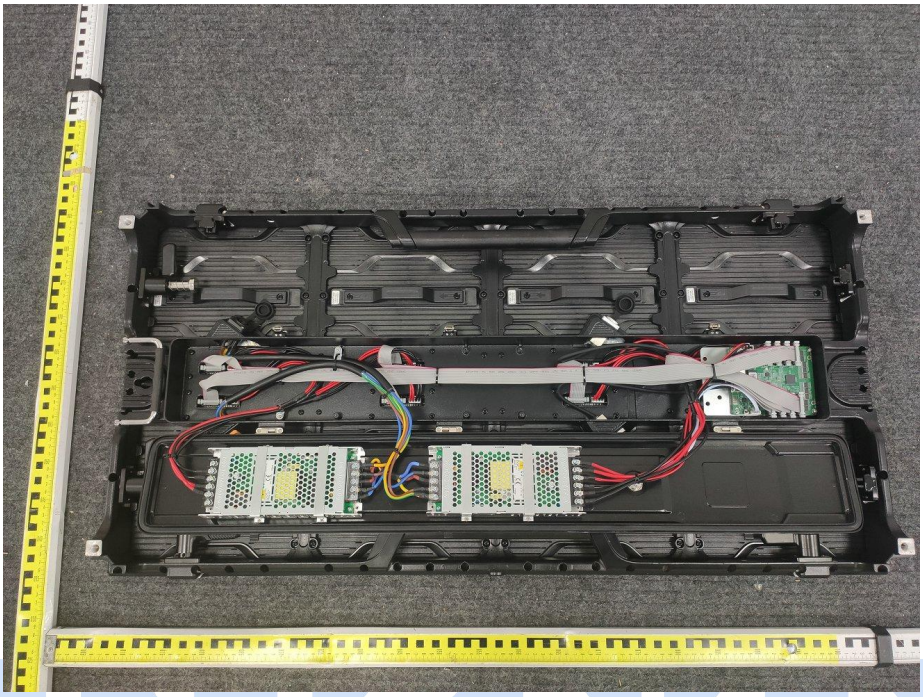
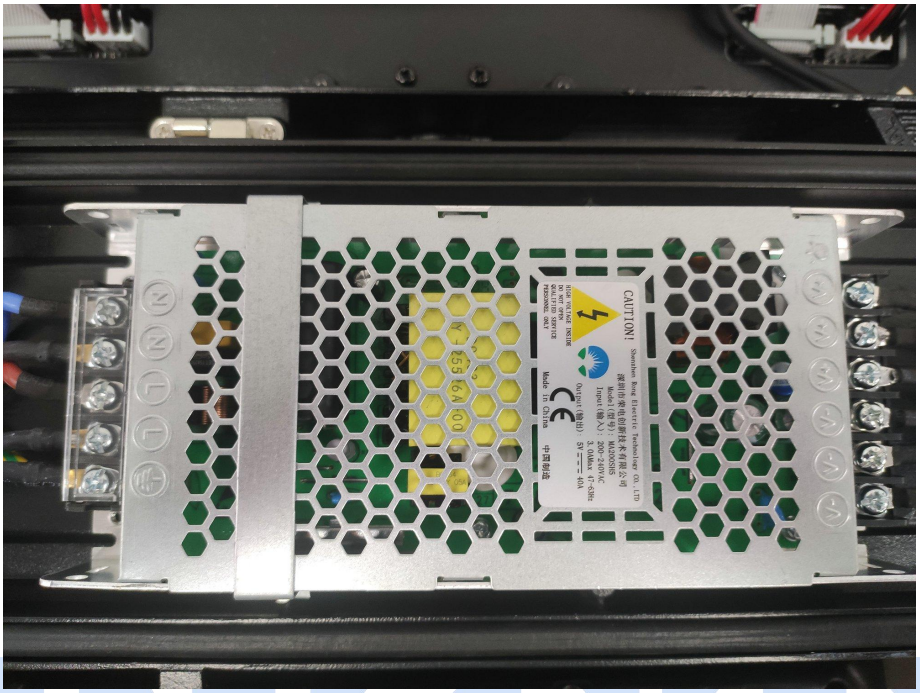


Photo 4



Photo 5



※※※※※ **END OF REPORT** ※※※※※