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Report No.: HK2512153660-SR

## LVD TEST REPORT

# CE-LVD

## TEST REPORT

Prepared for :

**EDA Technology Shanghai Co.,Ltd  
Building 29, No.1661 Jialuo Road, Jiading District, Shanghai, PRC**

**Product: CM5 AI CAMERA**

**Trade Mark: EDATEC**

**Model Name: ED-AIC3000**

**Date of Test: Dec. 23, 2025 to Dec. 26, 2025**

**Date of Report: Dec. 26, 2025**

**Report Number: HK2512153660-SR**

Prepared By :

**Shenzhen HUAK Testing Technology Co., Ltd.**

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Bao'an District, Shenzhen, Guangdong, China**

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**TEST REPORT****EN 62368-1****Audio/video, information and communication technology equipment**  
**Part 1: Safety requirements****Report Number** ..... HK2512153660-SR**Date of issue** ..... 2025-12-26**Total number of pages** ..... 95 pages**Applicant's name** ..... EDA Technology Shanghai Co.,Ltd**Address** ..... Building 29, No.1661 Jialuo Road, Jiading District, Shanghai, PRC**Test specification:****Standard** ..... EN IEC 62368-1:2024+A11:2024**Test procedure** ..... CE-LVD**Non-standard test method** ..... N/A**TRF template used** ..... IECEE OD-2020-F1:2023, Ed.1.6**Test Report Form No.** ..... IEC62368\_1F**Test Report Form(s)** ..... UL Solutions (US)**Originator** ..... :**Master TRF** ..... Dated2023-08-18**Copyright © 2023 Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components (IECEE), Geneva, Switzerland. All rights reserved.**

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

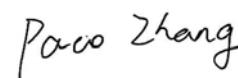
**Test Item description** ..... CM5 AI CAMERA**Trade Mark** ..... EDATEC**Manufacturer** ..... EDA Technology Shanghai Co.,Ltd**Manufacturer Address** ..... Building 29, No.1661 Jialuo Road, Jiading District, Shanghai, PRC**Model/Type reference** ..... ED-AIC3000**Ratings** ..... Input: 24VDC, 60W**IEC62368\_1F**

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<b>Testing procedure and testing location:</b>		
<input checked="" type="checkbox"/>	<b>Testing Laboratory:</b>	Shenzhen HUAK Testing Technology Co., Ltd.
<b>Testing location/ address .....</b> :		1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
<input type="checkbox"/>	<b>Associated Testing Laboratory:</b>	
<b>Testing location/ address .....</b> :		
<b>Tested by (name + signature).....</b> :		Paco Zhang 
<b>Approved by (name, function, signature) ..</b> :		Dendi Wei 
<b>Testing procedure: TMP/CTF Stage 1:</b>		
<b>Testing location/ address .....</b> :		
<b>Tested by (name + signature).....</b> :		
<b>Approved by (name + signature) .....</b> :		
<b>Testing procedure: WMT/CTF Stage 2:</b>		
<b>Testing location/ address .....</b> :		
<b>Tested by (name + signature).....</b> :		
<b>Witnessed by (name + signature) .....</b> :		
<b>Approved by (name + signature) .....</b> :		
<b>Testing procedure: SMT/CTF Stage 3 or 4:</b>		
<b>Testing location/ address .....</b> :		
<b>Tested by (name + signature).....</b> :		
<b>Witnessed by (name + signature) .....</b> :		
<b>Approved by (name + signature) .....</b> :		
<b>Supervised by (name + signature).....</b> :		

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

- Appendix 1: For requirements of European group differences. (31 pages)
- Appendix 2: Photo attachments. (5 pages)

**Summary of testing:****Tests performed (name of test and test clause):**

All clauses.

**Testing location:**

Shenzhen HUAK Testing Technology Co., Ltd.  
 1-2/F., Building B2, Junfeng Zhongcheng Zhizao  
 Innovation Park, Heping, Fuhai Street, Bao'an District,  
 Shenzhen, Guangdong, China

**Summary of compliance with National Differences:**

European group differences.

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

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## HUAK TESTING

Test item particulars:			
Product group .....	<input checked="" type="checkbox"/> end product	<input type="checkbox"/> built-in component	
Classification of use by .....	<input checked="" type="checkbox"/> Ordinary person <input checked="" type="checkbox"/> Children likely present <input checked="" type="checkbox"/> Instructed person <input checked="" type="checkbox"/> Skilled person		
Supply connection.....	<input type="checkbox"/> AC mains <input checked="" type="checkbox"/> not mains connected: <input checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3	<input type="checkbox"/> DC mains	
Supply tolerance .....	<input type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> + ____ %/ - ____ % <input checked="" type="checkbox"/> None		
Supply connection – type .....	<input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: <input type="checkbox"/> ____A; Location: <input type="checkbox"/> building <input type="checkbox"/> equipment		
Considered current rating of protective device.....	<input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> direct plug-in <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> wall/ceiling-mounted <input type="checkbox"/> SRME/rack-mounted <input type="checkbox"/> other:		
Overvoltage category (OVC) .....	<input type="checkbox"/> OVC I	<input type="checkbox"/> OVC II	<input type="checkbox"/> OVC III
Class of equipment .....	<input type="checkbox"/> Class I	<input type="checkbox"/> Class II	<input checked="" type="checkbox"/> Class III
Special installation location .....	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> restricted access area	
Pollution degree (PD) .....	<input type="checkbox"/> PD 1	<input checked="" type="checkbox"/> PD 2	<input type="checkbox"/> PD 3
Manufacturer's specified $T_{ma}$ .....	25°C	<input type="checkbox"/> Outdoor: minimum ____ °C	
IP protection class .....	<input checked="" type="checkbox"/> IPX0	<input type="checkbox"/> IP ____	
Power systems .....	<input type="checkbox"/> TN	<input type="checkbox"/> TT	<input type="checkbox"/> IT - ____ V <sub>L-L</sub>
Altitude during operation (m) .....	<input checked="" type="checkbox"/> 2000 m or less	<input type="checkbox"/> ____ m	
Altitude of test laboratory (m) .....	<input checked="" type="checkbox"/> 2000 m or less	<input type="checkbox"/> ____ m	
Mass of equipment (kg) .....	<7kg		

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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)

**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.

The related applicable OSM decisions have been considered and the requirements found fulfilled

Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods.

**Manufacturer's Declaration per sub-clause 4.2.5 of IEC60068-2-29:**

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....

Yes  
 Not applicable

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

**Name and address of factory (ies) .....** : Same as manufacturer

**GENERAL PRODUCT INFORMATION:****Product Description –**

The products are CM5 AI CAMERA to be in indoor use only, electronic components mounted on PWB, External enclosure is metal.

**Model Differences –**

N/A

**Additional application considerations – (Considerations used to test a component or sub-assembly) –**

N/A

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## OVERVIEW OF EMPLOYED SAFEGUARDS

Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary; Instructed; Skilled	ES1: All internal circuits	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Enclosure	PS1: All internal circuits	N/A	N/A	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary; Instructed; Skilled	MS1: sharp edges and corners	N/A	N/A	N/A
Ordinary; Instructed; Skilled	MS1: Equipment mass	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	TS1: External enclosure	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	RS1: LED	N/A	N/A	N/A

## Supplementary Information:

- (1) See attached energy source diagram for additional details.
- (2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault

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### 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



## EN 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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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 (oC).....		N/A
4.1.5	Constructions and components not specifically covered		N/A
4.1.8	Liquids and liquid filled components (LFC)	(See G.15)	N/A
4.1.15	Markings and instructions	(See Annex F)	N/A
4.4.3	Safeguard robustness		N/A
4.4.3.1	General		N/A
4.4.3.2	Steady force tests.....	(See Clause T.3, T.4, T.5)	N/A
4.4.3.3	Drop tests .....		N/A
4.4.3.4	Impact tests .....		N/A
4.4.3.5	Internal accessible safeguard enclosure and barrier 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
4.4.3.8	Thermoplastic material tests .....	(See Annex T.8)	N/A
4.4.3.9	Air comprising a safeguard.....	(See Annex T)	N/A
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguard remains effective	N/A
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks		N/A
4.5	Explosion	No explosion	P
4.5.1	General	(See Annex M for batteries)	N/A
4.5.2	No explosion during normal/abnormal operating	(See Clause B.2, B.3)	N/A

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## EN 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
	condition		
	No harm by explosion during single fault conditions	(See Clause B.4)	N/A
4.6	Fixing of conductors		N/A
	Fix conductors not to defeat a safeguard		N/A
	Compliance is checked by test.....	(See Clause T.2)	N/A
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard.....	See below	N/A
4.7.3	Torque (Nm) .....		N/A
4.8	Products containing coin/button cell batteries	No lithium coin/button cell battery	N/A
4.8.1	General		N/A
4.8.2	Instructional safeguard .....		N/A
4.8.3	Battery compartment door/cover construction	Not such 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	(See Clause T.7)	N/A
4.8.4.5	Impact test		N/A
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		N/A
4.10	Component requirements		N/A
4.10.1	Disconnect Device	(See Annex L)	N/A
4.10.2	Switches and relays	(See Annex G)	N/A

5	<b>ELECTRICALLY-CAUSED INJURY</b>	P
5.2	Classification and limits of electrical energy sources	P
5.2.2	ES1, ES2 and ES3 limits	ES1
5.2.2.2	Steady-state voltage and current.....	(See appended table 5.2)

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Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.3	Capacitance limits .....	(See appended table 5.2)	N/A
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 .....	No such ringing signals with the EUT	N/A
5.2.2.7	Audio signals .....		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)	Accessible ES1/ES2 derived from ES2/ES3 circuits		P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements		N/A
	Test with test probe from Annex V .....	The probe could not insert into the equipment as there is no ventilation on the product.	N/A
5.3.2.2 a)	Air gap – electric strength test potential (V) .....	(See appended table 5.4.9)	N/A
5.3.2.2 b)	Air gap – distance (mm) .....		N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminals intended to be used by ordinary person.	N/A
5.4	Insulation materials and requirements		N/A
5.4.1.2	Properties of insulating material		N/A
5.4.1.3	Material is non-hygroscopic		N/A
5.4.1.4	Maximum operating temperature for insulating materials .....	(See appended table)	N/A
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		N/A
5.4.1.8	Determination of working voltage .....		N/A
5.4.1.9	Insulating surfaces	Considered.	N/A

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## EN 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See below	N/A
5.4.1.10.2	Vicat softening temperature .....	(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)	N/A
5.4.2	Clearances		N/A
5.4.2.1	General requirements		N/A
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance		N/A
	Temporary overvoltage .....		—
5.4.2.3	Procedure 2 for determining clearance		N/A
5.4.2.3.2.2	a.c. mains transient voltage .....		—
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 .....		—
5.4.2.3.3	Exceptions of determining required withstand voltage .....		—
5.4.2.3.4	Determining clearances using required withstand voltage .....		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test .....		N/A
5.4.2.5	Multiplication factors for clearances and test voltages .....		N/A
5.4.2.6	Clearance measurement .....	(See appended table 5.4.2.6)	N/A
5.4.3	Creepage distances .....	(See appended table 5.4.3)	N/A
5.4.3.1	General		N/A
5.4.3.3	Material Group .....	IIIb	—
5.4.3.4	Creepage distances measurement .....	(See appended table 5.4.3)	N/A
5.4.4	Solid insulation		N/A
5.4.4.1	General requirements		N/A
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

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## EN 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material.....	(See appended Table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
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		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).....		N/A
	Electric strength test.....	(See appended table 5.4.9)	N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard.....	(See appended table 5.4.4.2)	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%) :		—
	Temperature (°C) :		—
	Duration (h) :		—
5.4.9	Electric strength test.....	(See appended table 5.4.9)	N/A
5.4.9.1	Test procedure for a solid insulation type test		N/A
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		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

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Clause	Requirement + Test	Result - Remark	Verdict
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	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage $U_{op}$ (V) ..... :		—
	Nominal voltage $U_{peak}$ (V) ..... :		—
	Max increase due to variation $U_{sp}$ ..... :		—
	Max increase due to ageing $\Delta U_{sa}$ ..... :		—
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 : (See appended table 5.4.9)		N/A
5.5	Components as safeguards		
5.5.1	General		N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... : (See appended table 5.5.2.2)		N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers	(See sub-clause 5.4 or Annex G.12)	N/A
5.5.5	Relays	(See Annex G.2)	N/A
5.5.6	Resistors	(See Annex G.10)	N/A
5.5.7	SPD's	(See Annex G.8)	N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable ..... : (See Annex G.10.3)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA) : .....		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm <sup>2</sup> ) .....		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm <sup>2</sup> ).....: .....		—
5.6.4.2	Protective current rating (A) .....		—
5.6.5	Terminal size for connecting protective earthing conductors (mm) .....		N/A
5.6.5.1	Terminal size for connecting protective bonding conductors (mm) .....		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method .....	(See appended table 5.6.6)	N/A
5.6.6.3	Resistance (Ω) or voltage drop.....: .....	(See appended table 5.6.6)	N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm <sup>2</sup> ) : .....		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		N/A
5.7.2	Measuring devices and networks	Figure 4 of IEC 60990 was used in determining of the limit of ES1.	N/A
5.7.2.1	Measurement of touch current		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
5.7.4	Unearthing accessible parts : (See appended table 5.7.4)		N/A
5.7.5	Earthing accessible conductive parts : (See appended table 5.7.5)		N/A
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 due to 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 from external circuits		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....: (See appended table 6.2.2)		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....: (See appended table 6.2.3.1)		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).....: (See appended table 5.8)		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)		N/A
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	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials .....	(See appended table B.1.5 and B.3)	P
	Combustible materials outside fire enclosure	No such materials used.	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Approved fire enclosure used	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		P
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	Supplementary safeguards		P
6.4.3.2	Single Fault Conditions .....: (See appended table B.4)		P
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards .....: Approved fire enclosure used		P
6.4.6	Control of fire spread in PS3 circuit		N/A
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		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		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	No opening	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
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:		N/A
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Side openings and properties		N/A
	Openings dimensions (mm).....:		N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c).....:		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	V-0 enclosure used	N/A
6.4.9	Flammability of insulating liquid.....:		N/A
6.5	Internal and external wiring		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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6.5.1	Requirements		N/A
6.5.2	Requirements for interconnection to building wiring.....:		N/A
6.5.3	Internal wiring size (mm <sup>2</sup> ) for socket-outlets.....:		N/A
6.6	Safeguards against fire due to connection to additional equipment	(See Annex Q.)	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
	Instructional safeguard (ISO 7010) .....		—
7.6	Batteries .....	(See Annex M)	N/A

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications	Sharp edges and corners, classified as MS1 Equipment maximum mass < 7 kg, classified as MS1	P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners	Accessible edges and corners of the equipment are rounded and are classified as MS1.	P
8.4.1	Safeguards		P
	Instructional Safeguard.....:		P
8.4.2	Sharp edges or corners		P
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
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional Safeguard .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	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
	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		N/A
8.6.1	Product classification		N/A
	Instructional Safeguard..... :		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
8.6.2.3	Downward Force Test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.3	Relocation stability test		N/A
	Wheels diameter (mm).....		—
	Tilt test		
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....		N/A
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....		N/A
8.7.2	Direction and applied force .....		N/A
	Test 1, additional downwards force (N).....		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	Classification		N/A
8.8.2	Handle strength test		N/A
	Number of handles.....		N/A
	Force applied (N) .....		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
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
8.10.5	Mechanical stability		N/A
	Force applied (N) .....		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard.....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
	Button/Ball diameter (mm) .....		—

<b>9</b>	<b>THERMAL BURN INJURY</b>	P
9.2	Thermal energy source classifications	P
9.3	Touch temperature limits	P
9.3.1	Touch temperatures of accessible parts.....:	P
9.3.2	Test method and compliance	P
9.4	Safeguard 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

<b>10</b>	<b>RADIATION</b>	P
10.2	Radiation energy source classification	P
10.2.1	General classification	RS1
	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

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Clause	Requirement + Test	Result - Remark	Verdict
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)	LED	P
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and locati.....		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure .....	(See Annex C)	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.....		N/A
10.5.3	Maximum radiation (pA/kg).....	(See appended tables B.3 & B.4)	N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output LAeq,T, dB(A) .....		N/A
	Unweighted RMS output voltage (mV).....		N/A
	Digital output signal (dBFS) .....		
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		—
10.6.3.3	Exposure-based warning and requirements		—
	30 s integrated exposure level (MEL30) .....		—
	Warning for MEL $\geq$ 100 dB(A) .....		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		—
	Instructional safeguards.....		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		—
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.6.2	Corded listening devices with digital input		—
	Max. acoustic output LAeq,T, dB(A) .....		—
10.6.6.3	Cordless listening devices		—
	Max. acoustic output LAeq,T, dB(A) .....		—

<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>	<b>P</b>
<b>B.1 .....</b>	<b>General</b>	<b>P</b>
B.1.5	Temperature measurement conditions	(See appended table B.1.5)
<b>B.2 .....</b>	<b>Normal Operating Conditions</b>	<b>P</b>
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)
	Audio Amplifiers and equipment with audio amplifiers .....	N/A
B.2.3	Supply voltage and tolerances	N/A
B.2.5	Input test..... :	(See appended table B.2.5)
B.3	Simulated abnormal operating conditions	P
B.3.1	General requirements..... :	(See appended table B.3)
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
B.3.4	Setting of voltage selector .....	No setting of voltage selector within the EUT
B.3.5	Maximum load at output terminals .....	N/A
B.3.6	Reverse battery polarity	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	All safeguards remained effectively.
B.4	Simulated single fault conditions	P
B.4.2	Temperature controlling device open or short-circuited .....	(See appended table B.4)
B.4.3	Motor tests	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....	(See Clause G.5)
B.4.4	Short circuit of functional insulation	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.4.1	Short circuit of clearances for functional insulation		N/A
B.4.4.2	Short circuit of creepage distances for functional insulation		N/A
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		N/A
B.4.6	Short circuit or disconnect of passive components		N/A
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ... :		P
<b>C</b>	<b>UV RADIATION</b>		N/A
C.1	Protection of materials in equipment from UV radiation		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
<b>D</b>	<b>TEST GENERATORS</b>		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N/A
<b>E.1</b>	<b>Electrical energy source classification for audio signals</b>		N/A
	Maximum non-clipped output power (W) .....:		—
	Rated load impedance ( $\Omega$ ) .....:		—
	Open-circuit output voltage (V) .....:		—
	Instructional safeguard .....:	See Clause F.5	—
<b>E.2</b>	Audio amplifier abnormal operating conditions		N/A
	Audio signal source type .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Audio output power (W).....: .....		N/A
	Audio output voltage (V).....: .....		N/A
	Rated load impedance ( $\Omega$ ) .....: .....		N/A
	Requirements for temperature measurement	(See Table B.1.5)	N/A
E.3	Audio amplifier abnormal operating conditions	(See Table B.3, B.4)	N/A
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>	<b>P</b>	
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		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	On the product	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....: .....	See marking	—
F.3.2.2	Model identification .....: .....	See marking	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage .....: .....	See marking	—
F.3.3.4	Rated voltage .....: .....	See marking	—
F.3.3.4	Rated frequency .....: .....	See marking	—
F.3.3.6	Rated current or rated power .....: .....	See marking	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings.....: .....		N/A
F.3.5.2	Switch position identification marking .....: .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.3	Replacement fuse identification and rating markings .....		N/A
F.3.5.4	Replacement battery identification marking .....		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
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	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....		N/A
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
	a)..... Information prior to installation and initial use		P
	b)..... Equipment for use in locations where children not likely to be present		N/A
	c)..... Instructions for installation and interconnection		P
	d)..... Equipment intended for use only in restricted access area		N/A
	e)..... Equipment intended to be fastened in place		N/A
	f)..... Instructions for audio equipment terminals		N/A
	g)..... Protective earthing used as a safeguard		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	h)..... Protective conductor current exceeding ES2 limits		N/A
	i)..... Graphic symbols used on equipment		P
	j)..... Permanently connected equipment not provided with all-pole mains switch		N/A
	k)..... Replaceable components or modules providing safeguard function		N/A
	l)..... Equipment containing insulating liquid		N/A
	m) .....		N/A
F.5	Instructional safeguards	No instructional safeguard is considered as necessary.	N/A
<b>G</b>	<b>COMPONENTS</b>		N/A
<b>G.1</b>	<b>Switches</b>		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
<b>G.2</b>	<b>Relays</b>		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
<b>G.3</b>	<b>Protection Devices</b>		N/A
G.3.1	Thermal cut-offs		N/A
G.3.1.1a)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Aging hours (H) .....		—
	Single Fault Condition .....		—
	Test Voltage (V) and Insulation Resistance (Ω). :		—
G.3.3	PTC Thermistors	No PTC thermistor provided within the equipment.	N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....: (See appended Table B.4)		N/A
<b>G.4</b>	<b>Connectors</b>		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
<b>G.5</b>	<b>Wound Components</b>		N/A
G.5.1	Wire insulation in wound components.....		N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....		—
	Temperature (°C) .....		—
G.5.2.3	Wound Components supplied by mains		N/A
<b>G.5.3</b>	<b>Transformers</b>		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) .....		N/A
	Position.....:		—
	Method of protection .....		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings.....:		—
G.5.3.3	Overload test.....:		N/A
G.5.3.3.1	Test conditions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
<b>G.5.4</b>	<b>Motors</b>		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) ..... : .....		—
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 ..... : .....		—
<b>G.6</b>	<b>Wire Insulation</b>		N/A
G.6.1	General		N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
<b>G.7</b>	<b>Mains supply cords</b>		N/A
G.7.1	General requirements		N/A
	Type ..... : .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A).....:		—
	Cross-sectional area (mm <sup>2</sup> ), (AWG).....:		—
G.7.2	Compliance and test method		N/A
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	Test method and compliance		—
	Overall diameter or minor overall dimension, D (mm).....:		—
	Radius of curvature after test (mm).....:		—
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
G.8.2	Safeguard against shock		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated Circuit (IC) Current Limiters		N/A
G.9.1	Requirements		N/A
	IC limiter output current (max. 5A) .....		—
	Manufacturers' defined drift .....		—
G.9.2	Test Program		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.3	Compliance		N/A
<b>G.10 Resistors</b>			N/A
G.10.1	General		N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
<b>G.11 Capacitor and RC units</b>			N/A
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
<b>G.12 Optocouplers</b>			N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....		N/A
	Type test voltage Vini .....		—
	Routine test voltage, Vini,b .....		—
<b>G.13 Printed boards</b>			N/A
G.13.1	General requirements		N/A
G.13.2	Uncoated printed boards		N/A
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation .....	(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
<b>G.14 Coating on components terminals</b>			N/A
G.14.1	Requirements .....	(See G.13)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>G.15</b>	<b>Liquid filled components</b>		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.15.3	Compliance		N/A
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		N/A
G.16.1	Condition for fault tested is not required		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.....:		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test .....		—
G.16.3	Capacitor discharge test .....		
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		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

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Clause	Requirement + Test	Result - Remark	Verdict
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....		—
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		N/A
	General requirements	(See separate test report)	N/A
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N/A
K.1	General requirements		N/A
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 (type and circuit location) .....		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
<b>L</b>	<b>DISCONNECT DEVICES</b>		N/A
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		N/A
M.1	General requirements		P
M.2	Safety of batteries and their cells		P

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Clause	Requirement + Test	Result - Remark	Verdict
M.2.1	Batteries and their cells comply with relevant IEC standards .....		P
M.3	Protection circuits for batteries provided within the equipment		P
M.3.1	Requirements		P
M.3.2	Tests		P
	Overcharging of a rechargeable battery		P
	Excessive discharging		P
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		P
M.3.3	Compliance .....	(See appended Tables and Annex M and M.3)	P
M.4	Additional safeguards for equipment containing secondary lithium battery		P
M.4.1	General		P
M.4.2	Charging safeguards		P
M.4.2.1	Charging operating limits		P
M.4.2.2	Compliance.....:	(See Table M.4.2)	—
M.4.3	Fire Enclosure		P
M.4.4	Endurance of equipment containing a secondary lithium battery		P
M.4.4	Drop test of equipment containing a secondary lithium battery		P
M.4.4.2	Preparation and procedure for the drop test		P
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): .....		P
M.4.4.4	Check of the charge/discharge function		P
M.4.4.5	Charge / discharge cycle test		P
M.4.4.6	Compliance		P
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		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

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Clause	Requirement + Test	Result - Remark	Verdict
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 <sup>3</sup> /h).....:.....		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
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 requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume Vz (m <sup>3</sup> /s):.....		—
M.8.2.3	Correction factors.....:.....		—
M.8.2.4	Calculation of distance d (mm) .....		—
M.9	Preventing electrolyte spillage		P
M.9.1	Protection from electrolyte spillage		P
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	<b>ELECTROCHEMICAL POTENTIALS</b>		N/A
	Metal(s) used .....	Pollution degree considered	—
O	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		N/A
	Value of X (mm) .....		—

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## EN 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
<b>P</b> <b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>			N/A
P.1	General requirements	No opennigs	N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) .....		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metallized plastic parts .....		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		—
	Conditioning, TC (°C).....		—
	Duration (weeks).....		—
<b>Q</b> <b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>			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
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance.....	(See appended table Q.1)	N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	Current rating of overcurrent protective device (A).....:		—
<b>Q.2</b>	<b>Test for external circuits – paired conductor cable</b>		—
	Maximum output current (A) .....		N/A
	Current limiting method .....		N/A
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). .....		N/A
R.4	Compliance		N/A
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		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 .....	V-0 enclosure used	—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material .....		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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 (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		N/A
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
T.4	Steady force test, 100 N .....	(See appended table T.4)	P
T.5	Steady force test, 250 N .....	(See appended table T.5)	N/A
T.6	Enclosure impact test	(See appended table T.6)	N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test .....	(See appended table T.7)	P
T.8	Stress relief test .....	(See appended table T.8)	P
T.9	Impact Test (glass)		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) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
<b>U MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>			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
<b>V DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>			N/A
V.1	Accessible parts of equipment		N/A
V.1.1	General		N/A
V.1.2	Surfaces and openings tested with jointed test probes		N/A
V.1.3	Openings tested with straight unjointed test probes		N/A
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
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		N/A
<b>X ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)</b>			N/A
	Clearance.....: (See appended table X)		N/A
<b>Y CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES</b>			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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
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
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

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**4.1.2****TABLE: List of critical components****P**

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

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1
PCB	MeiZhou ChaoJie Electronic technology Co., Ltd.	CJ-D	V-0, 130°C	EN IEC 62368-1	UL E313924 and tested with appliance
Internal wire	Xin Sheng Terminal Mfg Ltd	1007	80 °C, 300V~, 20AWG	EN IEC 62368-1	UL E328303 and Tested with appliance
AC/DC SWITCHING ADAPTOR	MEAN WELL Enterprises Co., Ltd.	GSM60A24-P1J	Input: 100-240V~, 50/60Hz, 1.4-0.7A Output: 24VDC, 2.5A, 60W MAX	EN IEC 62368-1	From report CN2563R4 001

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Clause	Requirement + Test	Result - Remark	Verdict
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## 5.2 Table: Classification of electrical energy sources

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## 5.2.2.2 – Steady State Voltage and Current conditions

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
				U (V)	I (mA)	Type1)	Additional Info 2)	
1	24VDC	All circuits	Normal	24VDC	-	--	--	ES1
			Abnormal	24VDC	--	--	--	
			Single fault – SC/OC	24VDC	--	--	--	

## 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				N/A
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	

## Supplementary information:

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Penetration (mm).....				—
Object/ Part No./Material	Manufacturer/t trademark	T softening (°C)		
supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict
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<b>5.4.1.10.3</b>	<b>TABLE: Ball pressure test of thermoplastics</b>			N/A
Allowed impression diameter (mm) .....	$\leq 2 \text{ mm}$			—
Object/Part No./Material	Manufacturer/trademark		Test temperature (°C)	Impression diameter (mm)
Supplementary information:				

<b>5.4.2, 5.4.3</b>	<b>TABLE: Minimum Clearances/Creepage distance</b>							N/A
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) <sup>1</sup>	Required cl (mm)	cl (mm) <sup>2</sup>	Required <sup>3</sup> cr (mm)	cr (mm)	
Supplementary information:								
Note 1: Only for frequency above 30 kHz								
Note 2: See table 5.4.2.4 if this is based on electric strength test								
Note 3: Provide Material Group								

<b>5.4.4.2</b>	<b>TABLE: Minimum distance through insulation</b>						N/A
Distance through insulation di at/of:	Peak voltage (V)		Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Supplementary information:							

<b>5.4.4.9</b>	<b>TABLE: Solid insulation at frequencies &gt;30 kHz</b>						N/A
Insulation material	$E_p$	Frequency (kHz)	$K_R$	Thickness $d$ (mm)	Insulation	$V_{PW}$ (Vpk)	
Supplementary information:							

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Clause	Requirement + Test	Result - Remark	Verdict
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5.6.6	TABLE: Resistance of protective conductors and terminations				N/A
	Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance ( $\Omega$ )

Supplementary information:

5.7.4	TABLE: Unearthed accessible parts					N/A
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)	

Supplementary information:

Abbreviation: SC= short circuit; OC= open circuit

5.7.5	TABLE: Earthing accessible conductive part				N/A
Supply voltage (V) .....				—	
Phase(s) .....	<input type="checkbox"/> Single Phase; <input type="checkbox"/> Three Phase: <input type="checkbox"/> Delta <input type="checkbox"/> Wye				
Power Distribution System .....	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT				
Location	Fault Condition No in IEC 60990 clause 6.2.2		Touch current (mA)	Comment	

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

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Clause	Requirement + Test	Result - Remark	Verdict
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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 <sup>*</sup>	PS Classification
Input	Normal	Power (W) :	5.6	--	PS1
		V <sub>A</sub> (V) :	--	--	
		I <sub>A</sub> (A) :	--	--	

Supplementary information:

Abbreviation: SC= short circuit; OC= open circuit

Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.

6.2.3.1 Table: Determination of Potential Ignition Sources (Arcing PIS)					N/A
Location	Open circuit voltage After 3 s (V <sub>p</sub> )	Measured r.m.s current (I <sub>rms</sub> )	Calculated value (V <sub>p</sub> x I <sub>rms</sub> )	Arcing PIS? Yes / No	

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<sub>p</sub>) and normal operating condition rms current (I<sub>rms</sub>) is greater than 15.

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Clause	Requirement + Test	Result - Remark	Verdict
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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

Supplementary Information:

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

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

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

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<b>9.6</b>	<b>TABLE: Temperature measurements for wireless power transmitters</b>								N/A
Supply voltage (V).....	HUAK TESTING								—
Max. transmit power of transmitter (W).....	HUAK TESTING								—
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)	
Supplementary information:	HUAK TESTING								HUAK TESTING

<b>5.4.1.4, 9.3, B.1.5, B.2.6</b>	<b>TABLE: Temperature measurements</b>								P
	Supply voltage (V).....			24VDC		--		--	
	Ambient T <sub>min</sub> (°C) .....			23.0	25.0	—	—	—	—
	Ambient T <sub>max</sub> (°C) .....			23.9	25.0	—	—	—	—
Maximum measured temperature T of part/at.....				T (°C)				Allowed T <sub>max</sub> (°C)	
PCB	HUAK TESTING			31.4	33.4	—	—	—	130
Metal enclosure	HUAK TESTING			30	32.0	—	—	—	60
Internal wire	HUAK TESTING			30.7	32.7	—	—	—	80
Supplementary information:	HUAK TESTING								
Temperature T of winding:	t <sub>1</sub> (°C)		R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class	
	HUAK TESTING			HUAK TESTING					
Supplementary information: N/A	HUAK TESTING								

<b>B.2.5</b>	<b>TABLE: Input test</b>								P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status		
24	--	--	5.6	60	--	--	Max normal load		

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Clause	Requirement + Test	Result - Remark	Verdict
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## B.3, B.4 TABLE: Abnormal operating condition tests

P

Ambient temperature (°C) ..... : 25°C if not mentioned

—

Power source for EUT: Manufacturer, model/type, output rating .. : See page 2

—

Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
U4	S-C	24VDC	10 mins	--	--	--	--	No hazard, no broken
C6	S-C	24VDC	10 mins	--	--	--	--	No hazard, no broken
C3	S-C	24VDC	10 mins	--	--	--	--	No hazard, no broken

Supplementary information:

## 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? ..... : No

—

Equipment Specification	Charging					
	Voltage (V)		Current (A)			
		Battery specification				
		Non-rechargeable batteries		Rechargeable batteries		
Manufacturer/type	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 (°C) ..... : --

Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation

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.

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Clause	Requirement + Test	Result - Remark	Verdict
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<b>M.4.2 TABLE: Charging safeguards for equipment containing a secondary lithium battery</b>					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					

<b>Q.1 TABLE: Circuits intended for interconnection with building wiring (LPS)</b>						N/A
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U <sub>oc</sub> (V)	I <sub>sc</sub> (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
Supplementary Information:						
SC=Short circuit						

<b>T.2, T.3, T.4, T.5 TABLE: Steady force test</b>						N/A
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Supplementary information:						

<b>T.6, T.9 TABLE: Impact tests</b>						N/A
-------------------------------------	--	--	--	--	--	-----

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Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation

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:

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-Appendix 1: For requirements of European group differences.

## ATTACHMENT to IEC 62368-1:2023

Clause	Requirement + Test	Result - Remark	Verdict
<b>ATTACHMENT TO TEST REPORT</b> <b>IEC 62368-1:2023</b> <b>EUROPEAN GROUP DIFFERENCES AND EUROPEAN NATIONAL DIFFERENCES</b> (Audio/video, information and communication technology equipment Part 1: Safety requirements)			
<b>Differences according to</b> : EN IEC 62368-1:2024 + A11:2024			
<b>TRF template used</b> : IEC6EE OD-2020-F2:2024, Ed. 2			
<b>Attachment Form No.</b> : EU_GD_IEC62368_1F			
<b>Attachment Originator</b> : UL Solutions (Demko)			
<b>Master Attachment</b> : 2025-08-29			
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Clause	Requirement + Test	Result - Remark	Verdict
<b>CENELEC COMMON MODIFICATIONS</b>			
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".			
	Add the following annexes: Annex ZA (normative) Annex ZB (normative) Annex ZC (informative) Annex ZD (informative)	Normative references to international publications with their corresponding European publications Special national conditions A-deviations IEC and CENELEC code designations for flexible cords	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>1</b>	<b>MODIFICATION to the whole document</b>		P
<b>Delete all the “country” notes in the reference document according to the following list:</b>			P
	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 Note c Table 12	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 Note 3 and Note 4 and Note 5 Table 39	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
	Y.4.5 Note		
<b>2</b>	<b>Modification to Clause 1</b>		N/A
1	<b>Add the following note at the end of Clause 1:</b>  “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
<b>3</b>	<b>Modification to Clause 2</b>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	<p>Add the following new subclause 4.Z1 after subclause 4.9:</p> <p>“For compliance with B.3 and B.4 in circuits connected to an AC mains, protective devices shall be provided, subject to the following:</p> <ul style="list-style-type: none"> <li>- 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;</li> <li>- 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.</li> </ul> <p>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.</p> <p>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.”</p>		N/A
5	<b>Modification to subclause 4.1.9</b>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.1.9	<p>Add the following paragraph at the end of this subclause:</p> <p>“Products need to comply with the requirements of this document with appropriate measurement uncertainty.</p> <p>NOTE Z1 See also the RED ADCO position on ‘Measurement uncertainty in published harmonized standards’.”</p>		N/A
<b>6</b>	<b>Modification to subclause 5.4.9.1</b>		N/A
5.4.9.1	<p>Add the following note after the 5th paragraph:</p> <p>“NOTE Z1 For guidance on the use of high voltage source, see IEC 60060-1, Clause 8 of IEC 60243-1 and IEC 61180.”</p>		N/A
<b>7</b>	<b>Modification to subclause 5.4.2.3.2.4</b>		N/A
5.4.2.3.2.4	<p>Add the following at the end of this subclause:</p> <p>“The requirement for interconnection with external circuit in a HBES/BACS network is in addition given in EN IEC 63044-3:2018.”</p>		N/A
<b>8</b>	<b>Modification to subclause 5.6.6.2</b>		N/A
5.6.6.2	<p>Replace item d) with the following:</p> <p>“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.”</p>		N/A
<b>9</b>	<b>Modification to subclause 9.3.1</b>		N/A
9.3.1	<p>Replace the second paragraph with the following:</p> <p>“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.”</p>		N/A
<b>10</b>	<b>Modification to subclause 10.2.1</b>		N/A
10.2.1	<p>Add the following to <sup>c)</sup> and <sup>d)</sup> in Table 38:</p> <p>“For additional requirements, see 10.5.1.”</p>		N/A
<b>11</b>	<b>Modification to subclause 10.4.1</b>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1	<p>Replace the second paragraph of 10.4.1 with:</p> <p>“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.”</p> <p>Replace the ninth paragraph of 10.4.1 with:</p> <p>“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.</p> <p>Adequate instructions for proper assembly, installation, maintenance and safe use, including clear warnings concerning precautions to avoid possible exposure to hazardous optical radiation; and</p> <p>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</p> <p>The marking on the equipment shall be reproduced in the user manual. A yellow background is not required in the user manual.”</p>		N/A
12	<b>Modification to subclause 10.4.4</b>		N/A
10.4.4	<p>Replace the last paragraph of 10.4.4 with:</p> <p>“Compliance against material degradation from UV radiation is checked by the applicable tests of Annex C.”</p>		N/A
13	<b>Modification to subclause 10.5.1</b>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.2	<b>Classification of devices without the capacity to estimate sound dose</b>		N/A
10.6.2.1	<p>General</p> <p>This standard is transitioning from short-term based (30 s) requirements to long-term based (40 h) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3:2017.</p> <p>For classifying the acoustic output <math>LA_{eq,T}</math>, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.</p> <p>For music where the average sound pressure (long term <math>LA_{eq,T}</math>) 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, <math>T</math> becomes the duration of the song.</p> <p>NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term <math>LA_{eq,T}</math>) 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.</p> <p>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.</p>		

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Clause	Requirement + Test	Result - Remark	Verdict

Clause	Requirement + Test	Result - Remark	Verdict
10.6.2.3	<p>RS2 limits (to be superseded, see 10.6.3.3)</p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> <li>- 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 detection, the LAeq,T acoustic output shall be <math>\leq 100</math> dB(A) when playing the fixed "programme simulation noise" as described in EN 50332-1:2013:</li> <li>- 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 <math>\leq 150</math> mV (analogue interface) or <math>-10</math> dBFS (digital interface) when playing the fixed "programme simulation noise" as described in EN 50332-1:2013.</li> </ul>		N/A
10.6.2.4	<p>RS3 limits</p> <p>RS3 is a class 3 acoustic energy source that exceeds RS2 limits.</p>		N/A
10.6.3	<b>Classification of devices (new)</b>		N/A
10.6.3.1	<p>General</p> <p>Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision 2009/490/EC of 23 June 2009, are given below.</p>		N/A

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## HUAK TESTING

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Clause	Requirement + Test	Result - Remark	Verdict

Clause	Requirement + Test	Result - Remark	Verdict
10.6.3.2	<p><b>RS1 limits (new)</b></p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> <li>- 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 LAeq,T acoustic output shall be <math>\leq 80</math> dB when playing the fixed “programme simulation noise” described in EN 50332-1:2013;</li> <li>- 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 <math>\leq 15</math> mV (analogue interface) or <math>-30</math> dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1:2013.</li> </ul>		N/A

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EN 62368-1

# EN 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
10.6.3.3	<p><b>RS2 limits (new)</b></p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> <li>- 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 50332-3:2017, shall be <math>\leq 80</math> dB when playing the fixed “programme simulation noise” described in 249 EN 50332-1:2013;</li> <li>- 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 EN 50332-3:2017, shall be <math>\leq 15</math> mV (analogue interface) or <math>-30</math> dBFS when playing the fixed “programme simulation noise” described in EN 50332-1:2013.</li> </ul>		N/A
10.6.4	<b>Requirements for maximum sound exposure</b>		N/A
10.6.4.1	<p><b>Measurement methods</b></p> <p>All volume controls shall be turned to maximum during tests.</p> <p>Measurements shall be made in accordance with EN 50332-1:2013 or EN 50332-2:2013 as applicable.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Clause	Requirement + Test	Result - Remark	Verdict
10.6.4.2	<p><b>Protection of persons</b></p> <p>Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3.</p> <p>NOTE 1 Volume control is not considered to be a safeguard.</p> <p>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.</p> <p>The elements of the instructional safeguard shall be as follows:</p> <ul style="list-style-type: none"> <li>- element 1a: the symbol , IEC 60417-6044 (2011-01)</li> <li>- element 2: "High sound pressure" or equivalent text</li> <li>- element 3: "Hearing damage risk" or equivalent text</li> <li>- element 4: "Do not listen at high volume levels for long periods." or equivalent text</li> </ul> <p>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.</p> <p>The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output level exceeding RS1 limits. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output level exceeding RS1 limits. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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Clause	Requirement + Test	Result - Remark	Verdict
10.6.6.3	<p>Cordless listening devices</p> <p>In cordless mode,</p> <p>with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1:2013; and</p> <p>respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and</p> <p>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 <math>L_{Aeq}</math>, Tacoustic output of the listening device shall be <math>\leq 100</math> dB with an input signal of <math>-10</math> dBFS.</p>		N/A
10.6.6.4	<p>Measurement method</p> <p>Measurements shall be made in accordance with EN 50332-2:2013 as applicable."</p>		N/A
16	<b>Modification to subclause G.3.1.2</b>		N/A
G.3.1.2	<p>Add the following note after the first paragraph:</p> <p>"NOTE Z1 An IEC 60730 series standard is considered relevant if the component in question falls within its scope."</p>		N/A
17	<b>Modification to subclause G.7.1</b>		N/A
G.7.1	<p>Add the following note at the end of the subclause:</p> <p>"NOTE Z1 The harmonized code designations corresponding to the IEC cable types are given in Annex ZD."</p>		N/A
18	<b>Modification to subclause M.2</b>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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Clause	Requirement + Test	Result - Remark	Verdict
M.2	<p>Add the following paragraph after the first paragraph:</p> <p>“The size of the battery compartment shall be designed taking into account the battery compartment recommendations of the relevant battery standard.</p> <p>NOTE For general guidance on the design of the battery compartment, see Clause 8 of IEC 62485-4.”</p>		N/A
19	<p><b>Modification to Bibliography</b></p> <p>Add the following references:</p> <p>EN 60060-1, High-voltage test techniques – Part 1: General definitions and test requirements</p> <p>EN 60898-1, Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations – Part 1: Circuit-breakers for a.c. operation</p> <p>EN 62911, Audio, video and information technology equipment – Routine electrical safety testing in production</p> <p>ADCO RED Position on ‘Measurement uncertainty in published harmonized standards’ – <a href="https://ec.europa.eu/docsroom/documents/32381">https://ec.europa.eu/docsroom/documents/32381</a></p> <p>Add the following notes for the standards indicated:</p> <p>IEC 60060-1      NOTE Harmonized as EN 60060-1.</p> <p>IEC 60130-9      NOTE Harmonized as EN 60130-9.</p> <p>IEC 60204-1      NOTE Harmonized as EN IEC 60204-1.</p> <p>IEC 60204-11     NOTE Harmonized as EN IEC 60204-11.</p> <p>IEC 60243-1      NOTE Harmonized as EN 60243-1.</p> <p>IEC 60269-2      NOTE Harmonized as HD 60269-2.</p> <p>IEC 60309-1      NOTE Harmonized as EN 60309-1.</p> <p>IEC 60364       NOTE some parts harmonized in HD 384/HD 60364 series.</p> <p>IEC 60601-2-4    NOTE Harmonized as EN 60601-2-4.</p> <p>IEC 60664-5:2005 NOTE Harmonized as EN 60664-5:2007.</p> <p>IEC 60721-3-4    NOTE Harmonized as EN IEC 60721-3-4.</p> <p>IEC 61032:1997   NOTE Harmonized as EN 61032:1998 (not modified).</p> <p>IEC 61180       NOTE Harmonized as EN 61180.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	IEC 61508-1	NOTE Harmonized as EN 61508-1.	N/A
	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 61140:2016.	
	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.	
	ISO 10218-2	NOTE Harmonized as EN ISO 10218-2.	
	ISO 13482	NOTE Harmonized as EN ISO 13482.	
	ISO 13850	NOTE Harmonized as EN ISO 13850.	
20	<b>Addition of annexes</b>		N/A
ZB	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS</b>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.1 and Annex G	<p>Finland and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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Clause	Requirement + Test	Result - Remark	Verdict
	<p>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</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.10;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 60384-14;</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</li> </ul>		N/A

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**EN 62368-1**

Clause	Requirement + Test	Result - Remark	Verdict
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Clause	Requirement + Test	Result - Remark	Verdict
	<p>Translation to Swedish:</p> <p>"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."</p>		N/A
8.5.4.2.3	<p>United Kingdom</p> <p>Add the following after the 2nd dash bullet in 3rd paragraph:</p> <p>An emergency stop system complying with the requirements of EN IEC 60204-1 and EN ISO 13850 is required where there is a risk of personal injury.</p>		N/A
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>The following is applicable:</p> <p>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</p>		N/A

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-Appendix 2: Photo document.



Photo 1: Overall view



Photo 2: Overall view

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Photo 3: Overall view



Photo 4: Overall view

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Photo 5: Overall view



Photo 6: Overall view

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Photo 7: Overall view

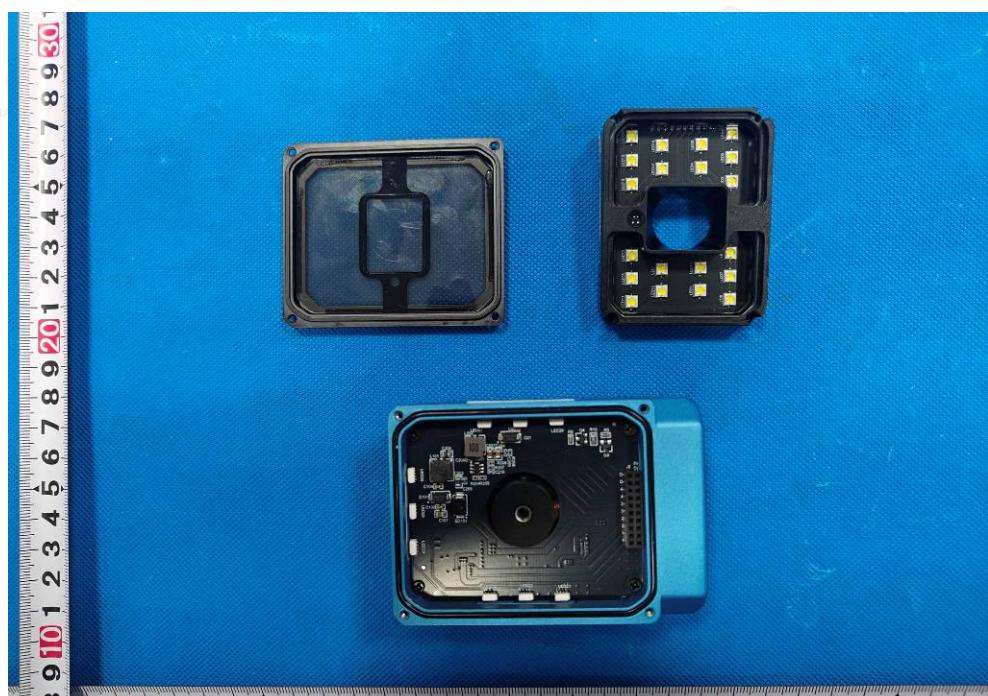


Photo 8: Internal view

### IEC62368\_1F

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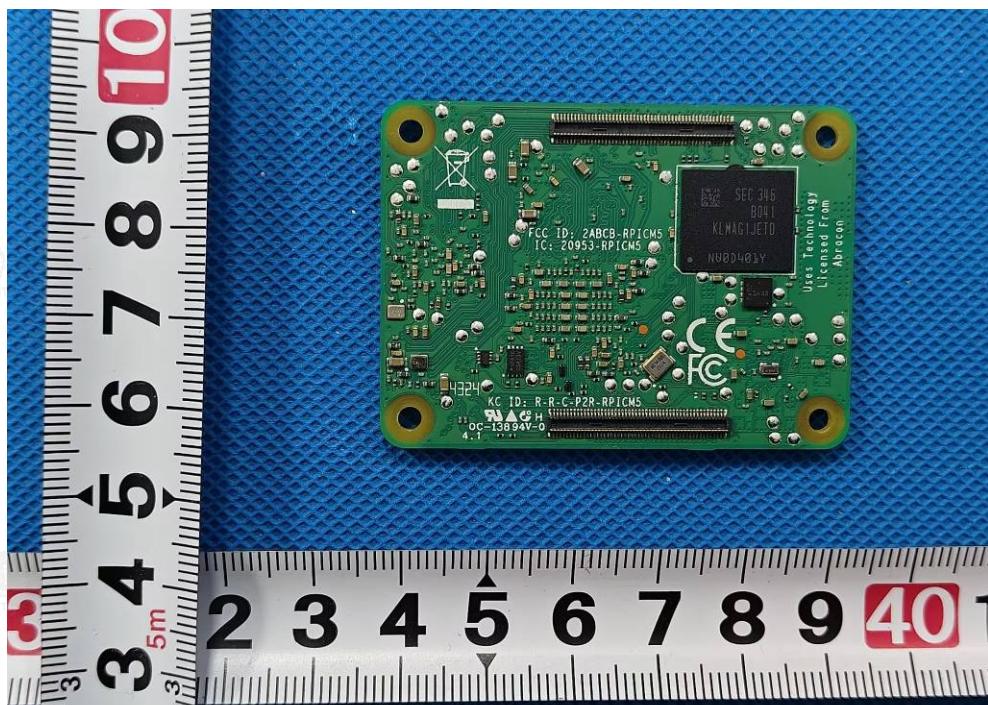


Photo 11: PCB view

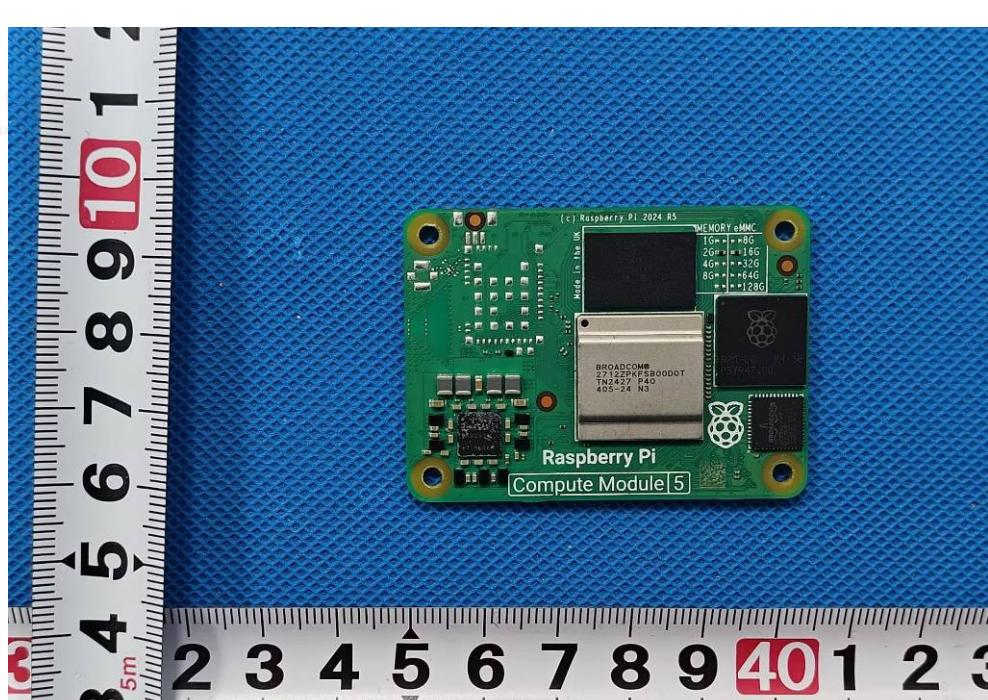


Photo 12: PCB view

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Photo 13: PCB view

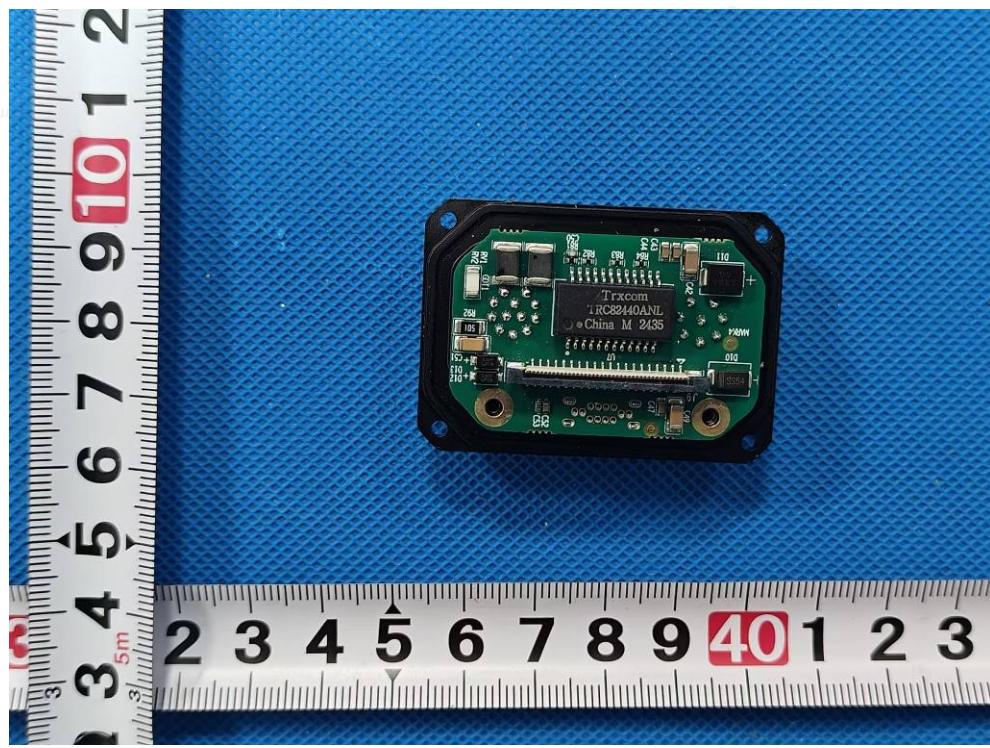


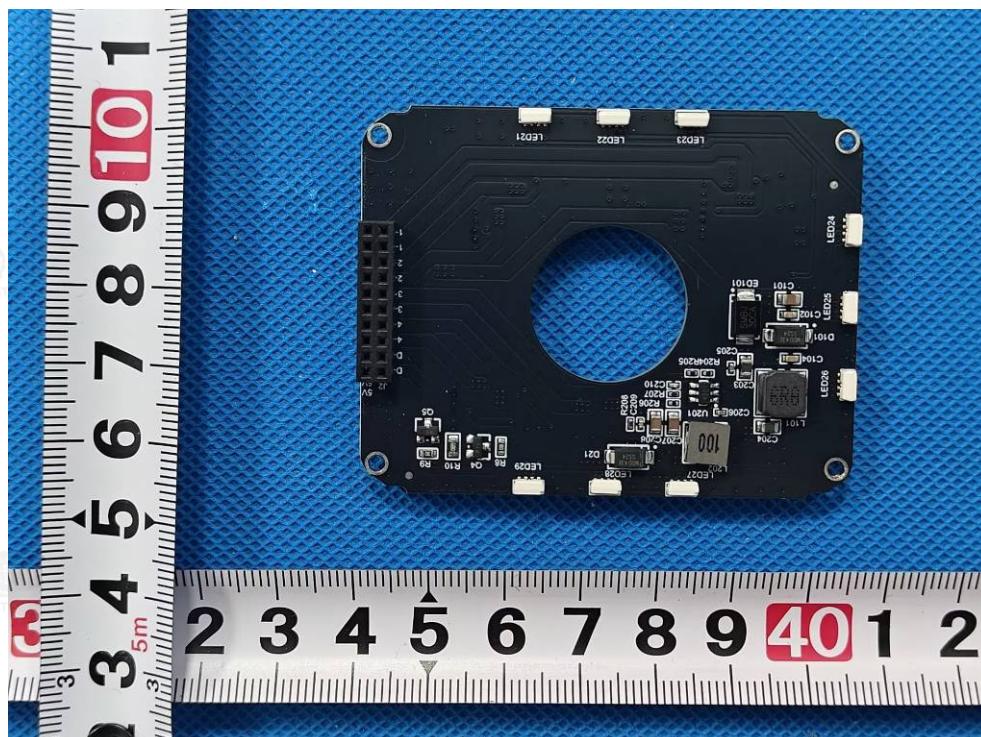
Photo 14: PCB view

**IEC62368\_1F**

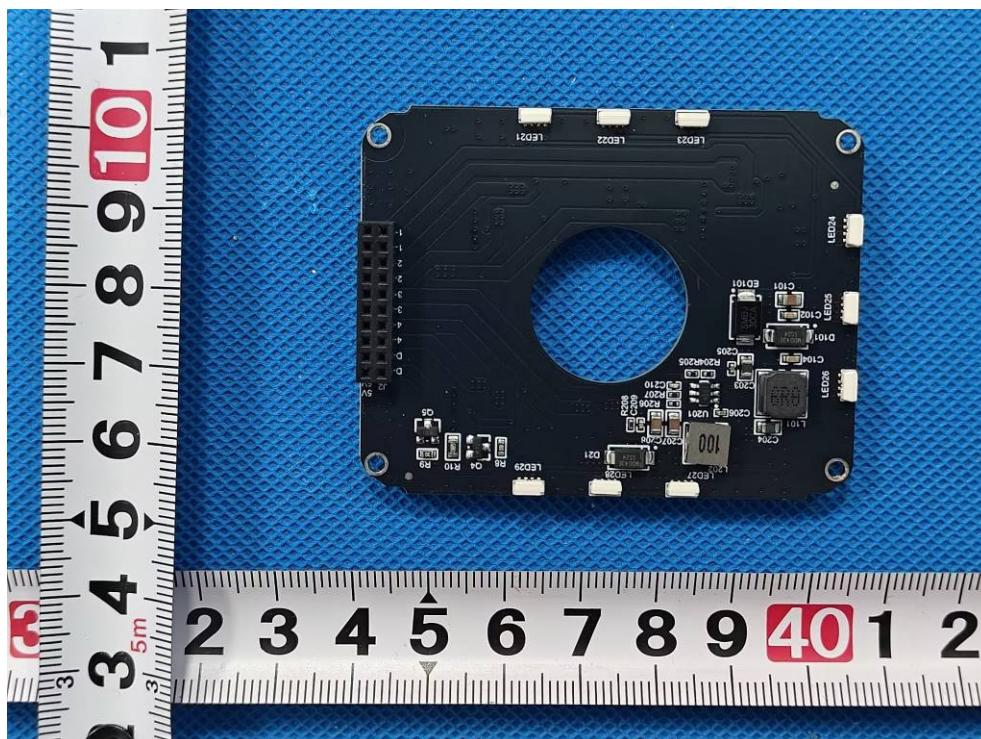
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### Photo 15: PCB view



## Photo 16: PCB view



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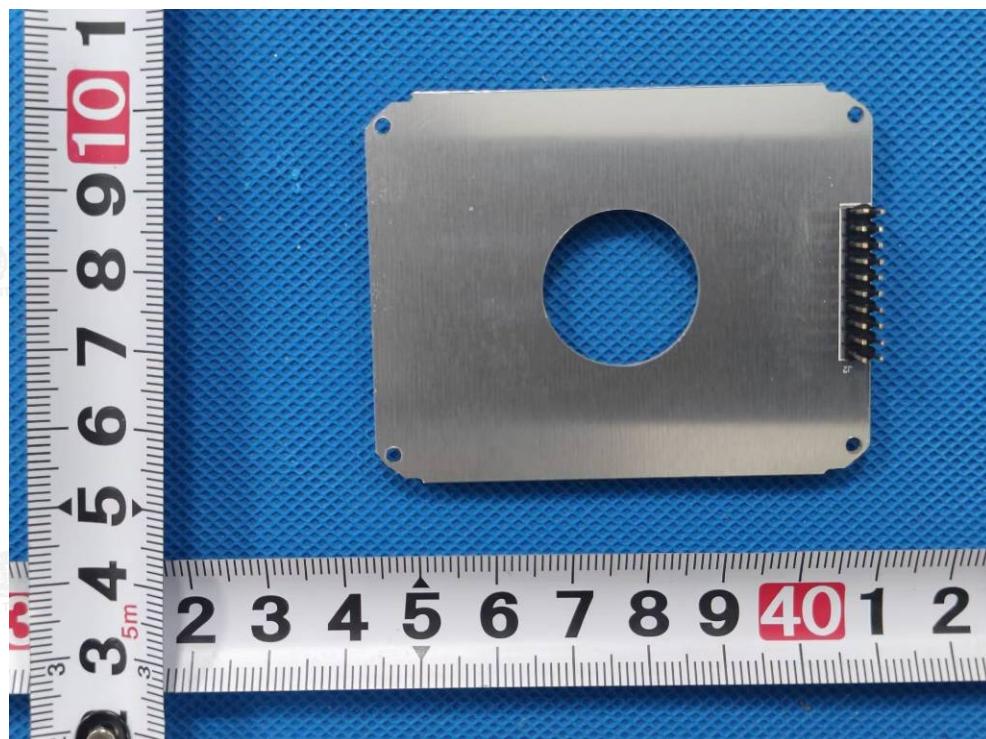


Photo 17: PCB view

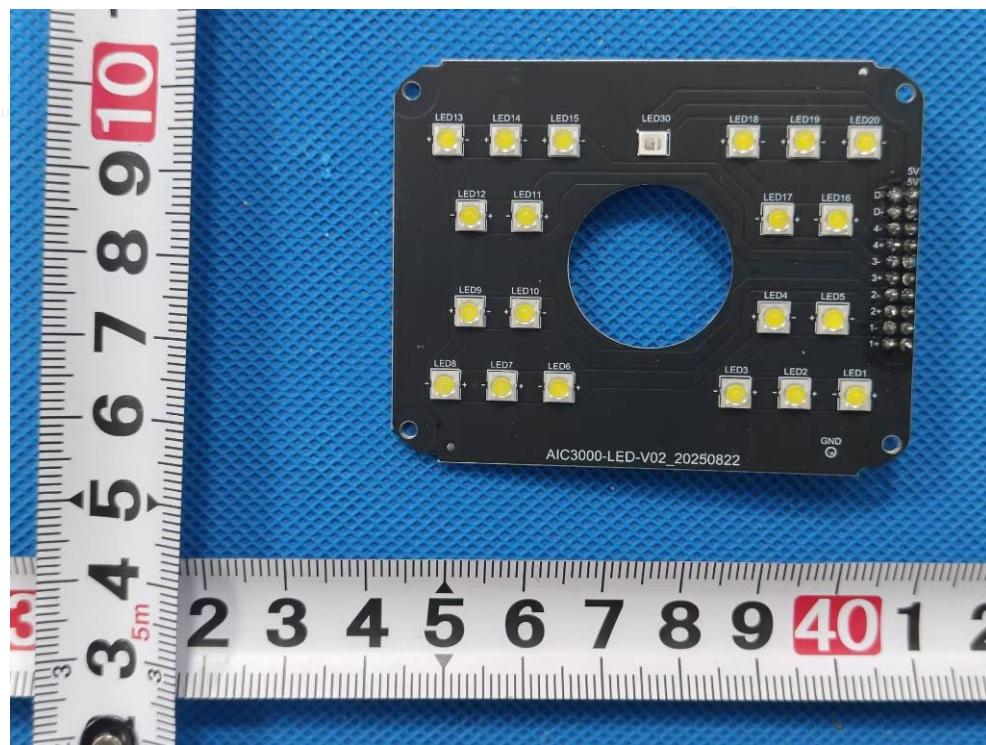


Photo 18: PCB view

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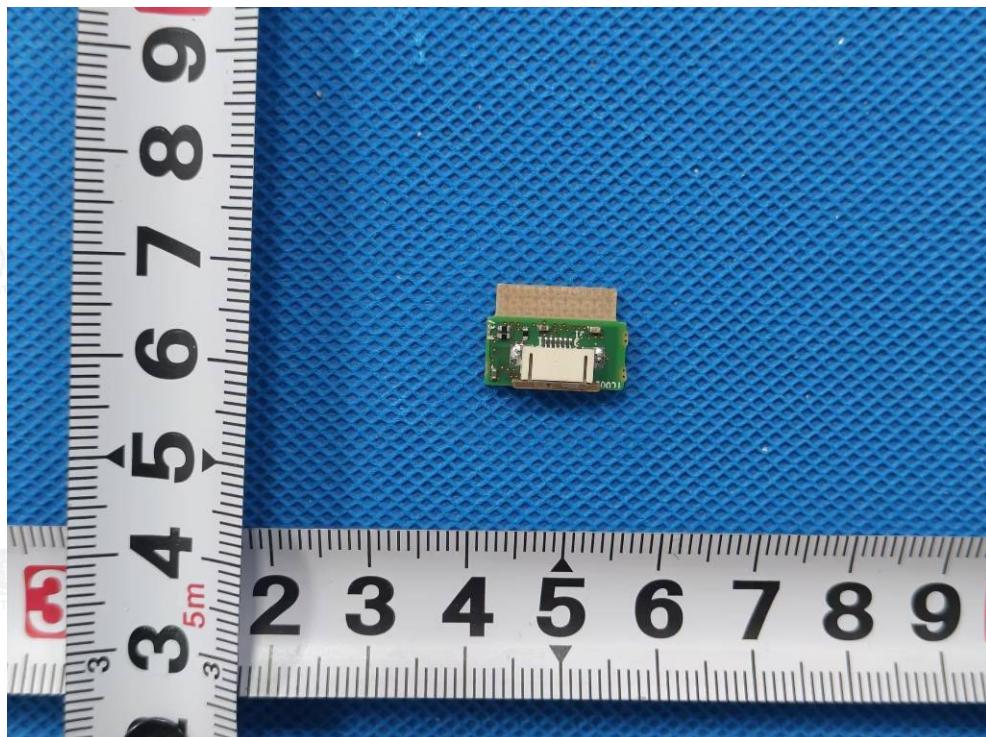


Photo 19: PCB view

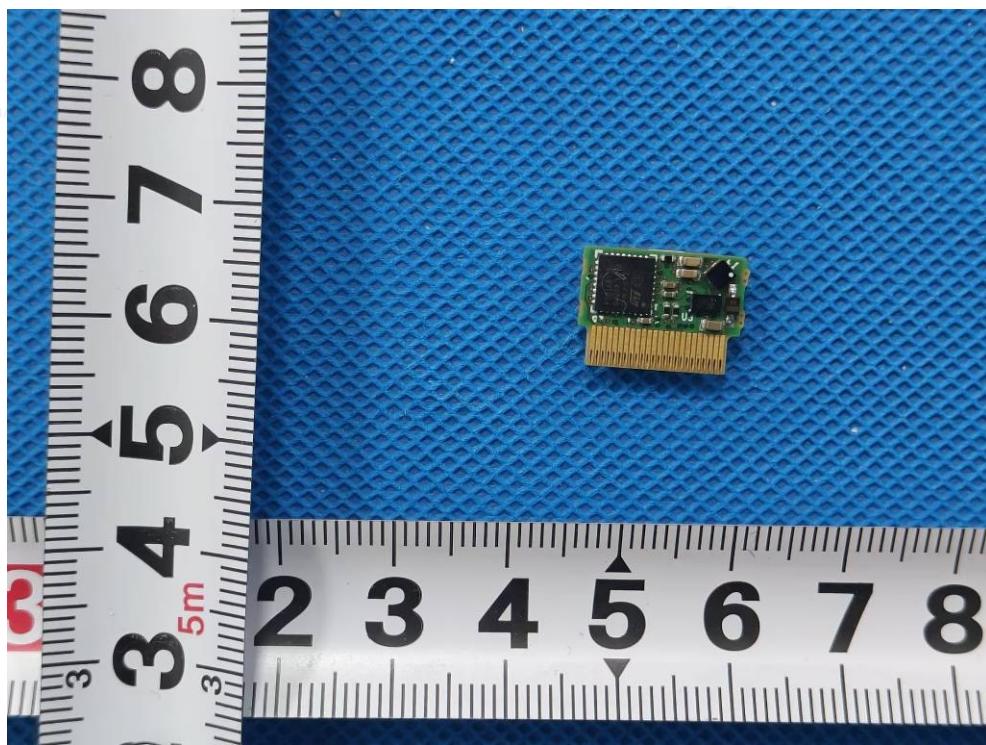


Photo 20: PCB view

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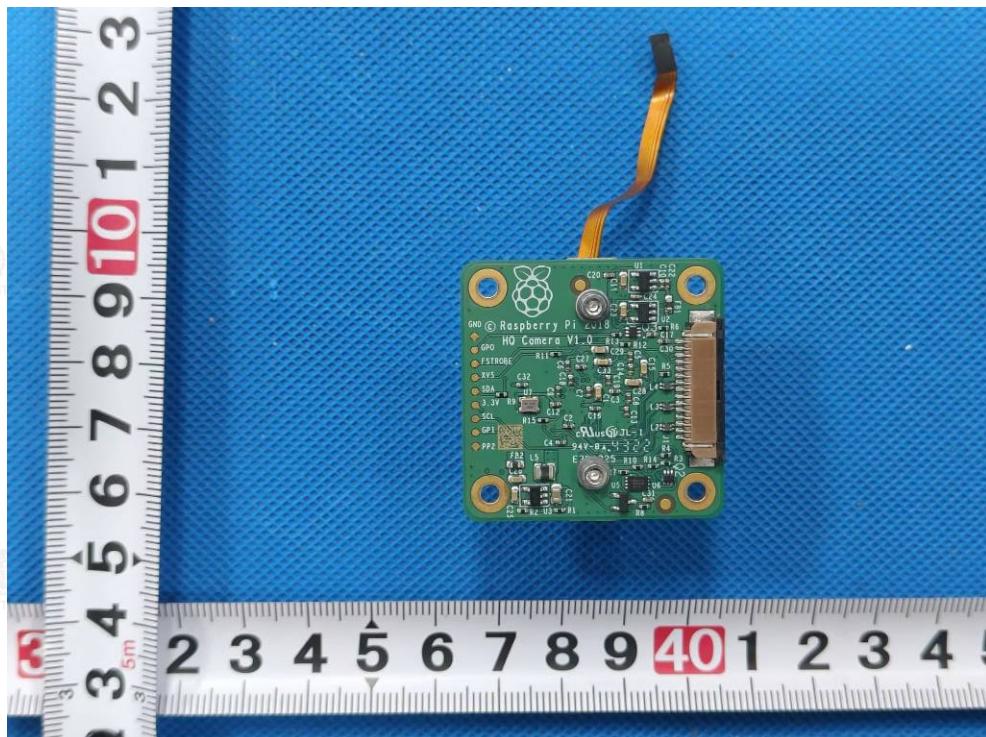


Photo 21: PCB view

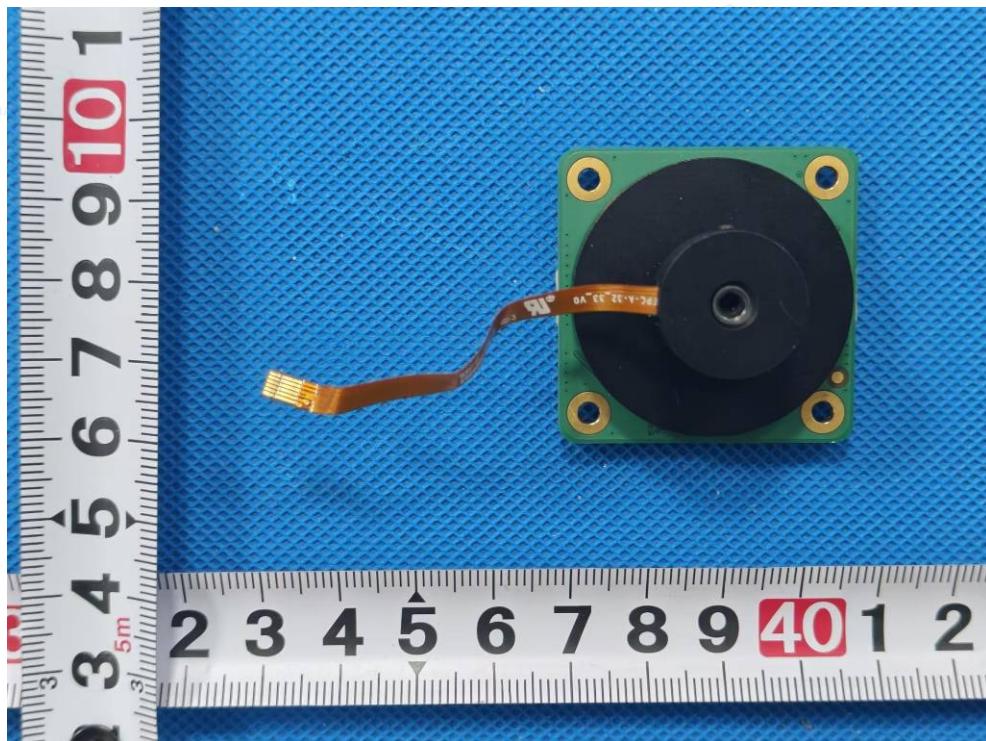


Photo 22: PCB view

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Photo 23: Adapter view

-----End of report-----

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