



TEST REPORT IEC 62368-1 Audio/video, information and communication technology equipment Part 1: Safety requirements	
Report Number.....	AOC251120001S-R1
Date of issue	2025-11-25
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Name of Testing Laboratory preparing the Report	Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Applicant's name	CANDOR ESTABLISHMENT TRADING
Address	SALAHDELDEEN ALAYOBE STREET, ALZAHRA AREA ALMALAZ RIYADH, KINGDOM OF SAUDI ARABIA
Test specification:	
Standard	IEC 62368-1:2023
Test procedure.....	Test report
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) Originator....	UL Solutions (US)
Master TRF	Dated 2023-08-18
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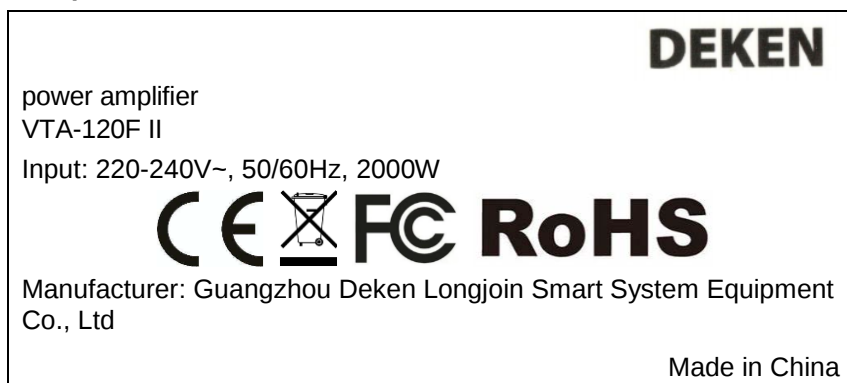
Test item description	power amplifier	
Trade Mark	DEKEN ; Thinuna	
Manufacturer	Guangzhou Deken Longjoin Smart System Equipment Co., Ltd 3rd Floor, Building 7, Huaren Langhe Electromechanical Industrial Zone, No. 624 Zhongshun Road, Pingshan Village, Panyu District, Guangzhou	
Model/Type reference	VTA-120F II, VTA-240F II, VTA-360F II, SS-6255A, DSR-8216, DA-4600, DA-4350, DA-42000E, DA-600, DTA-2300 WIFI	
Ratings	Input: 220-240V~, 50/60Hz, 2000W	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ Testing Laboratory:	Shenzhen AOCE Electronic Technology Service Co., Ltd	
Testing location/ address	Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China	
Tested by (name, function, signature)	Bill Hu Technical Engineer	<i>Bill Hu</i>
Approved by (name, function, signature) ..	Robin Liu Technical Manager	<i>Robin Liu</i>
Testing procedure: CTF Stage 1:		
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
Testing procedure: CTF Stage 2:		
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name, function, signature) .		
Approved by (name, function, signature) ..		
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) .		
Approved by (name, function, signature) ..		

Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment): Attachment #1: Photo document.	
Summary of testing:	
Tests performed (name of test and test clause): The submitted samples were found to comply with the requirements of: IEC 62368-1: 2023	Testing location: Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhongfuyuan Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Summary of compliance with National Differences (List of countries addressed): None ☐ The product fulfils the requirements of	

Copy of marking plate:

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

**Notes:**

1. The above marking are the minimum requirements by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

Test item particulars:			
Product group	☒ end product	☐ built-in component	
Classification of use by	☒ Ordinary person	☐ Children likely present	
	☐ Instructed person		
	☐ Skilled person		
Supply connection	☒ AC mains	☐ DC mains	
	☐ not mains connected:		
	☐ ES1	☐ ES2	☐ ES3
Supply tolerance	☒ +10%/-10%		
	☐ +20%/-15%		
	☐ +____%/ -____%		
	☐ None		
Supply connection – type	☒ pluggable equipment type A -		
	☐ non-detachable supply cord		
	☒ appliance coupler		
	☐ direct plug-in		
	☐ pluggable equipment type B -		
	☐ non-detachable supply cord		
	☐ appliance coupler		
	☐ permanent connection		
	☐ mating connector		
	☐ other:		
Considered current rating of protective device	☒ 16A for building; for equipment		
	Location: ☒ building	☐ equipment	
	☐ N/A		
Equipment mobility	☒ movable	☐ hand-held	☐ transportable
	☐ direct plug-in	☐ stationary	☐ for building-in
	☐ wall/ceiling-mounted	☐ SRME/rack-mounted	
	☐ other:		
Overvoltage category (OVC)	☐ OVC I	☒ OVC II	☐ OVC III
	☐ OVC IV		
Class of equipment	☒ Class I	☐ Class II	☐ Class III
	☐ Not classified	☐ other:	
Special installation location	☒ N/A	☐ restricted access area	
	☐ outdoor location		
	☐ other:		
Pollution degree (PD)	☐ PD 1	☒ PD 2	☐ PD 3
Manufacturer's specified T_{ma}	35 °C	☐ Outdoor: minimum ____ °C	
IP protection class	☒ IPX0	☐ IP____	
Power systems	☒ TN	☐ TT	☐ IT - ____ V _{L-L}
	☐ not AC mains		
Altitude during operation (m)	☒ 2000 m or less	☐ ____ m	
Altitude of test laboratory (m)	☒ 2000 m or less	☐ ____ m	
Mass of equipment (kg)	Approx. 12 kg		

Possible test case verdicts: - test case does not apply to the test object.....: N/A - test object does meet the requirement.....: P (Pass) - test object does not meet the requirement.....: F (Fail)	
Testing: Date of receipt of test item: 2025-10-15 Date (s) of performance of tests: 2025-10-15 to 2025-10-20	
General remarks: "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC60068-2-1:	
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) : Name: Guangzhou Deken Longjoin Smart System Equipment Co., Ltd Address: 3rd Floor, Building 7, Huaren Langhe Electromechanical Industrial Zone, No. 624 Zhongshun Road, Pingshan Village, Panyu District, Guangzhou	
General product information and other remarks: 1. This apparatus is power amplifier used for information technology equipment or audio/video equipment. 2. Maximum ambient temperature is 35°C. 3. The Clearances and Creepage Distances have additionally been assessed for suitability up to 2000 m. 4. All models are same except for the model name. 5. All tests were performed on the model VTA-120F II. This report was based on the original report AOC251120001S, only following items are revised, when this report issued, the original report will be withdraw: 1). Update Report Template.	

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: All circuits expect for output circuits	Ordinary	N/A	N/A	Enclosure, see 5.3.2, 5.4.2, 5.4.3, 5.5.3, 5.5.4.
ES1: Output of Winding transformer and USB Output	Ordinary	N/A	N/A	N/A
ES1: Accessible parts	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3	Enclosure	See 6.3	Min.V-1	N/A
PS3	PCB	See 6.3	Min.V-0	N/A
PS3	Internal wiring	See 6.3	See 6.5 (Equipment safeguards, rated VW-1)	N/A
PS3	Other combustible components / materials	See 6.3	See 6.4.5, 6.4.6	N/A
PS2	All combustible material for output terminal	See 6.3	V-1 or better	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS2: Equipment Mass	Ordinary	See 8.6	N/A	N/A
MS1: Sharp edges and corners	Ordinary	N/A	N/A	N/A
MS1: Fan blades	Ordinary	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R

TS1: All accessible parts	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: LED indicator light	Ordinary	N/A	N/A	N/A
Supplementary Information: “B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				

ENERGY SOURCE DIAGRAM

Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings

☐ ES ☐ PS ☐ MS ☐ TS ☐ RS

(See **OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS**)

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	(See appended Table 4.1.2.)	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment. See also Annex G	P
4.1.3	Equipment design and construction	Evaluation of safeguards regarding access to ES3 and to limiting the outputs to fulfill ES1, and protection in regard to risk of spread of fire, mechanical-caused injury and thermal burn considered.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :		N/A
4.1.5	Constructions and components not specifically covered		N/A
4.1.8	Liquids and liquid filled components (LFC)		N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.5)	P
4.4.3.3	Drop tests		N/A
4.4.3.4	Impact tests	(See Clause T.6)	P
4.4.3.5	Internal accessible safeguard tests		N/A
4.4.3.6	Glass impact tests		N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests		N/A
4.4.3.9	Air comprising a safeguard		P
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguard remains effective	P
4.4.4	Displacement of a safeguard by an insulating liquid		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.5	Safety interlocks		N/A
4.5	Explosion		P
4.5.1	General	No explosion observed during normal / abnormal / single fault conditions.	P
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	P
4.6	Fixing of conductors		P
	Fix conductors not to defeat a safeguard		P
	Compliance is checked by test :	(See Clause T.2)	P
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard .. :		N/A
4.7.3	Torque (Nm) :		N/A
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No coin/button cell batteries.	N/A
4.8.2	Instructional safeguard :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
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		P
4.10	Component requirements		P
4.10.1	Disconnect Device	(See Annex L)	P
4.10.2	Switches and relays	(See appended table 4.1.2.)	P
4.10.3	Mains power supply cords		P
4.10.4	Batteries and their protection circuits		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits	(See appended table 5.2)	P
5.2.2.2	Steady-state voltage and current limits	(See appended table 5.2)	P
5.2.2.3	Capacitance limits		N/A
5.2.2.4	Single pulse limits	No single pulse introduced	N/A
5.2.2.5	Limits for repetitive pulses	No repetitive pulses introduced	N/A
5.2.2.6	Ringing signals	No ringing signals.	N/A
5.2.2.7	Audio signals	(See Clause E.1)	P
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.1 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	ES2 or ES3 source cannot access by ordinary persons	P
	Accessibility to outdoor equipment bare parts	No outdoor equipment.	N/A
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V	No bare parts at ES2 or ES3 basic safeguard could be accessed by operator.	—
5.3.2.2 a)	Air gap – electric strength test potential (V)		N/A
5.3.2.2 b)	Air gap – distance (mm)	>0.2	P
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire	No such structure	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic		P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
5.4.1.5	Pollution degrees	PD2	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied.	N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces	Considered.	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat test.....		N/A
5.4.1.10.3	Ball pressure test	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances	(See appended table 5.4.2, 5.4.3)	P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method		P
5.4.2.2	Procedure 1 for determining clearance	(See appended table 5.4.2, 5.4.3)	P
	Temporary overvoltage	2000V _{peak} .	—
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2, 5.4.3)	P
5.4.2.3.2.2	a.c. mains transient voltage	2500V _{peak} .	—
5.4.2.3.2.3	d.c. mains transient voltage		—
5.4.2.3.2.4	External circuit transient voltage.....		—
5.4.2.3.2.5	Transient voltage determined by measurement		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Not such procedure used.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages	Up to 2000m, Factor 1.0	N/A
5.4.2.6	Clearance measurement	(See appended table 5.4.2, 5.4.3)	P
5.4.3	Creepage distances	(See appended table 5.4.2, 5.4.3)	P
5.4.3.1	General	See below.	P
5.4.3.3	Material group	IIIa or IIIb	—
5.4.3.4	Creepage distances measurement	(See appended table 5.4.2, 5.4.3)	P
5.4.4	Solid insulation		P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation		N/A

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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	No such construction within the EUT	N/A
5.4.4.6	Thin sheet material		P
5.4.4.6.1	General requirements	At least 2 layers of insulation tape are used for reinforced insulation and are not expected to be subject to handling or abrasion during ordinary or instructed person servicing.	P
5.4.4.6.2	Separable thin sheet material	Two layers are provided as reinforced insulation any one layer passed the electric strength test for reinforced insulation.	P
	Number of layers (pcs)	2-layer min.	P
5.4.4.6.3	Non-separable thin sheet material	No non-separable thin sheet material.	N/A
	Number of layers (pcs)		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material		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, E_P , K_R , d , V_{PW} (V)		N/A
	Alternative by electric strength test, tested voltage (V), K_R		N/A
5.4.5	Antenna terminal insulation	No antenna is used.	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance ($M\Omega$)		N/A
	Electric strength test		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%), temperature ($^{\circ}C$), duration (h)	95%, 40 $^{\circ}C$, 120h	—
5.4.9	Electric strength test	(See appended table 5.4.9)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.9.1	Test procedure for type test of solid insulation..... :	Method 1 used.	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test :		N/A
5.4.10.2.3	Steady-state test..... :		N/A
5.4.10.3	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	No connection to external circuits with transient voltage.	N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation ΔU_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—
5.4.11.3	Test method and compliance :		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 :		N/A
5.4.12.3	Compatibility of an insulating liquid :		N/A
5.4.12.4	Container for insulating liquid :		N/A
5.5	Components as safeguards		P
5.5.1	General		P
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 :		N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers		N/A
5.5.5	Relays	(See Annex G.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	Resistors		N/A
5.5.7	SPDs	No such varistor used	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA)		—
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation	No switches, current limiting devices or over current protective devices use in Protective conductors.	P
5.6.3	Requirement for protective earthing conductors		P
	Protective earthing conductor size (mm ²)	See table 4.1.2	—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors	The green/yellow wire was fasten to the internal metal enclosure by screw.	P
5.6.4.1	Protective bonding conductors		P
	Protective bonding conductor size (mm ²).	(See table 4.1.2)	—
5.6.4.2	Protective current rating (A)	16A	P
5.6.5	Terminals for protective conductors		P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)	Earth pin of appliance inlet used for protective earthing terminal	P
	Terminal size for connecting protective bonding conductors (mm)	Protective bonding conductor is metal enclosure, the terminal for protective bonding conductor: M3.5 screw type used	P
5.6.5.2	Corrosion	The potential difference between the two different metals is less than 0.6 V.	P
5.6.6	Resistance of the protective bonding system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method	(See appended table 5.6.6)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.6.3	Resistance (Ω) or voltage drop..... :	(See appended table 5.6.6)	P
5.6.7	Reliable connection of a protective earthing conductor		P
5.6.8	Functional earthing		N/A
	Conductor size (mm ²)..... :		N/A
	Class II with functional earthing marking		N/A
	Appliance inlet cl & cr (mm)..... :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(See appended table 5.7.4)	P
5.7.2.2	Measurement of voltage	(See appended table 5.7.4)	P
5.7.3	Equipment set-up, supply connections and earth connections		P
5.7.4	Unearthed accessible parts	Touch current at unearthed accessible conductive parts is not exceeding ES1 limits. (See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts	(See appended table 5.7.5)	P
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard..... :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits	No connection to external circuits with transient voltage.	N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA)		N/A
	b) Equipment connected to unearthed external circuits, current (mA)		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES..... :		N/A
	Air gap (mm)..... :		N/A
6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2	Power source circuit classifications	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	(See appended table 6.2.2)	P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
	Combustible materials outside fire enclosure	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Method of Control fire spread is used.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	Supplementary safeguards		P
6.4.3.2	Single Fault Conditions		P
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits	See below.	P
6.4.5.2	Supplementary safeguards	All component in PS2 and PS3 is mounted on V-0 Class material of printed boards and comply with the requirements of the relevant IEC components standard, see appended table 4.1.2 and annex G.	P
6.4.6	Control of fire spread in PS3 circuits	All component in PS3 complies with clause (min. V-1 class material) complies with 6.4.8, see appended table 4.1.2 and annex G.	P
6.4.7	Separation of combustible materials from a PIS	All circuitry and component are considered as PIS. External enclosure material is min.V-1 class material, see appended table 4.1.2	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.7.2	Separation by distance	All component and part comply with these requirements.	P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	Equipment enclosure was evaluated as a fire enclosure.	P
6.4.8.2	Fire enclosure and fire barrier material properties	See the following details.	P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier is used.	N/A
6.4.8.2.2	Requirements for a fire enclosure	Fire enclosure min. V-0 and metal enclosure	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below	P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions	No fire barrier is used.	N/A
6.4.8.3.3	Top openings and properties	No openings	N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.4	Bottom openings and properties	No openings	N/A
	Openings dimensions (mm)..... :		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties	No such openings fall within the area indicated by the 15mm in Figure 44; DC fan is not considered a PIS part.	P
	Openings dimensions (mm)..... :	3mm X 28mm max	P
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :	No such door or cover can be opened by ordinary persons.	N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating..... :	The arcing PIS greater than 13mm and the arcing PIS greater than 5mm.	P
6.4.9	Flammability of insulating liquid..... :		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements		P
6.5.2	Requirements for interconnection to building wiring..... :	The material of VW-1 on internal wiring were considered compliance equal to equivalent to IEC/TS 60695-11-21 relevant standards.	P
6.5.3	Internal wiring size (mm ²) for socket-outlets..... :		N/A
6.6	Safeguards against fire due to the connection to additional equipment		P

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Clause	Requirement + Test	Result - Remark	Verdict
7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....		—
7.6	Batteries and their protection circuits		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		P
8.4.1	Safeguards		P
	Instructional Safeguard	Accessible edges and corners of the equipment are rounded and are classified as MS1.	P
8.4.2	Sharp edges or corners	MS1	P
8.5	Safeguards against moving parts		P
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	Plastic fans blades: MS1 m=0.04kg, r=27.5mm. N=4180r/min max. $K = 6 \times 10^{-7} (m r^2 N^2)$ ≈ 317.13 $\frac{r / \text{min}}{15000} + \frac{K \text{ factor}}{2400}$ $\approx 0.42 < 1$	P
	MS2 or MS3 part required to be accessible for the function of the equipment	MS1	P
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....		N/A
8.5.4	Special categories of equipment containing 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

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
8.6.1	General	Equipment mass 7.12 kg > 7kg, classified as MS2.	P
	Instructional safeguard.....:		P
8.6.2	Static stability		P
8.6.2.2	Static stability test		P
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.7.1	Mount means type		N/A
8.7.2	Test methods		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	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles.....		—
	Force applied (N)		—
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		N/A
	Loading force applied (N)		N/A
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 slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard.....		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied.....		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm)		—

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Clause	Requirement + Test	Result - Remark	Verdict
9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts	All accessible surfaces are classified as TS1 (See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
9.3.2	Test method and compliance	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard		P
9.5.2	Instructional safeguard.....		N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance		N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	See Energy source identification and classification table.	P
	Lasers		—
	Lamps and lamp systems.....	RS1	—
	Image projectors		—
	X-Ray.....		—
	Personal music player		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		P
10.4.1	General requirements	LED indicator considered as RS1, no safeguard required	P
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure		N/A
10.4.3	Instructional safeguard		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons		—
10.5.3	Maximum radiation (pA/kg).....		—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....		N/A
	Unweighted RMS output voltage (mV).....		N/A
	Digital output signal (dBFS)		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30)		N/A
	Warning for $MEL \geq 100$ dB(A)		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV).....		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS	P
B.1	General	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers	(See Annex E)	P
B.2.3	Supply voltage and tolerances	+10% and -10% for a.c. mains.	P
B.2.5	Input test	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General		P
B.3.2	Covering of ventilation openings	(See appended tables B.3, B.4)	P
	Instructional safeguard	TS1	N/A
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector	No voltage selector	N/A
B.3.5	Maximum load at output terminals	(See appended tables B.3, B.4)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions	(See appended tables B.3, B.4)	P
B.3.8	Safeguards functional during and after abnormal operating conditions	(See appended tables B.3, B.4)	P
B.4	Simulated single fault conditions		P
B.4.1	General		P
B.4.2	Temperature controlling device	(See appended tables B.3, B.4)	P
B.4.3	Blocked motor test	(See appended tables B.3, B.4)	P
B.4.4	Functional insulation	(See appended tables B.3, B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended tables B.3, B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended tables B.3, B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended tables B.3, B.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.6	Short circuit or disconnection of passive components	(See appended tables B.3, B.4)	P
B.4.7	Continuous operation of components	The equipment is continuous operating type and no such components intended for short time operation or intermittent operation.	N/A
B.4.8	Compliance during and after single fault conditions	(See appended tables B.3, B.4)	P
B.4.9	Battery charging and discharging under single fault conditions		N/A
C	UV RADIATION		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 test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		P
E.1	Electrical energy source classification for audio signals		P
	Maximum non-clipped output power (W)	(See appended table B.3, B.4)	—
	Rated load impedance (Ω)	(See appended table 4.1.2)	—
	Open-circuit output voltage (V)	(See appended table B.3, B.4)	—
	Instructional safeguard	ES1, not required	—
E.2	Audio amplifier normal operating conditions		P
	Audio signal source type	(See appended table B.2.5)	—
	Audio output power (W)	(See appended table B.2.5)	—
	Audio output voltage (V)	(See appended table B.2.5)	—
	Rated load impedance (Ω)	(See appended table 4.1.2)	—
	Requirements for temperature measurement	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P

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Clause	Requirement + Test		Verdict
E.3	Audio amplifier abnormal operating conditions	(See appended table B.3, B.4)	P
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English. Versions in other languages will be provided when national certificate approval.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The equipment marking is located on the surface and is easily visible.	P
F.3.2	Equipment identification markings	See below.	P
F.3.2.1	Manufacturer identification	See copy of marking plate	P
F.3.2.2	Model identification	See copy of marking plate	P
F.3.3	Equipment rating markings	See copy of marking plate	P
F.3.3.1	Equipment with direct connection to mains	See copy of marking plate	P
F.3.3.2	Equipment without direct connection to mains	See copy of marking plate	P
F.3.3.3	Nature of the supply voltage	See copy of marking plate	P
F.3.3.4	Rated voltage.....	See copy of marking plate	P
F.3.3.5	Rated frequency	See copy of marking plate	P
F.3.3.6	Rated current or rated power.....	See copy of marking plate	P
F.3.3.7	Equipment with multiple supply connections	Only one connection.	N/A
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings		N/A
F.3.5.2	Switch position identification marking.....	The identification markings are marking on the switch	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.3	Replacement fuse identification and rating markings	The Fuse is located within the equipment and not replaceable by an ordinary person or an instructed person The fuse marking is marked on the fuse body: F12.5AL/ 250V	P
	Instructional safeguards for neutral fuse		N/A
F.3.5.4	Replacement battery identification marking		N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment		P
F.3.6.1.1	Protective earthing conductor terminal	The symbol with “⊕” is located adjacent to earthed terminal of appliance inlet	P
F.3.6.1.2	Protective bonding conductor terminals	The symbol with “⊕” is located adjacent to earthed terminal of appliance inlet	P
F.3.6.2	Equipment class marking	See copy of marking plate.	P
F.3.6.3	Functional earthing terminal marking		N/A
F.3.7	Equipment IP rating marking	IPX0	N/A
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	All markings required are easily discernible under normal lighting conditions.	P
F.3.10	Test for permanence of markings	After rubbing test by water and petroleum spirit, the marking still legible; it is not easily possible to remove the marking plate and show no curling.	P
F.4	Instructions		P
	a) Information prior to installation and initial use	Relevant safety caution texts and installation instruction are available	P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection	Relevant safety caution texts and installation instruction are available.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment		N/A
	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) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		P
G	COMPONENTS		P
G.1	Switches		P
G.1.1	General	(See appended table 4.1.2)	P
G.1.2	Ratings, endurance, spacing, maximum load	(See appended table 4.1.2)	P
G.1.3	Test method and compliance		N/A
G.2	Relays		P
G.2.1	Requirements	(See appended table 4.1.2)	P
G.2.2	Overload test		P
G.2.3	Relay controlling connectors supplying power to other equipment		P
G.2.4	Test method and compliance		P
G.3	Protective devices		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices	Approved fuse is used (See appended table 4.1.2)	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions		N/A
G.4	Connectors		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration.....	Approved AC inlet used	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	No misconnection likely.	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components		P
G.5.1.2	Protection against mechanical stress	Physical separation is provided by tubing on both secondary leads and primary leads.	P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)		—
	Test temperature (°C).....		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		P
G.5.3.1	Compliance method.....	The transformers meet the requirements given in G.5.3.2 and G.5.3.3.	P
	Position	T1	P
	Method of protection	Over current protection by circuit design.	P
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation.	P
	Protection from displacement of windings.....	By core and insulating tape	—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.3	Transformer overload tests	(See appended tables B.3, B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding temperatures	(See appended table B.3, B.4)	P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors		P
G.5.4.1	General requirements		P
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days) :		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		P
G.5.4.6.2	Tested in the unit		P
	Maximum Temperature :	(See appended table B.3, B.4)	P
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage :		—
G.6	Wire Insulation		P
G.6.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.6.2	Enamelled winding wire insulation		P
G.7	Mains supply cords		P
G.7.1	General requirements		P
	Type :	(See appended table 4.1.2)	—
G.7.2	Cross sectional area (mm ² or AWG) :	(See appended table 4.1.2)	P
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)..... :		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) :		N/A
G.7.3.2.4	Strain relief and cord anchorage 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		N/A
	Overall diameter or minor overall dimension, <i>D</i> (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	No Varistor used.	N/A
G.8.2	Safeguards against fire		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	No IC current limiters used.	N/A
	IC limiter output current (max. 5A)..... :		—
	Manufacturers' defined drift :		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		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
G.11	Capacitors and RC units		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
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5 with specifics		N/A
	Type test voltage $V_{ini,a}$:		—
	Routine test voltage, $V_{ini, b}$		—
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements		N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
G.16	IC including capacitor discharge function (ICX)		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		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	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..... :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling 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		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) :		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
J.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Winding wire insulation		—
	Solid round winding wire, diameter (mm)		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²).....		N/A
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm).....		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm).....		N/A
	Electric strength test before and after the test of K.7.2		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements	Appliance coupler used for disconnect device	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single-phase equipment	The disconnect device disconnect both poles simultaneously.	P
L.5	Three-phase equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources		N/A
	Instructional safeguard :		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards :		N/A
M.3	Protection circuits for batteries provided within the equipment		N/A
M.3.1	Requirements		N/A
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance		N/A
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance :		N/A
M.4.3	Fire enclosure :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
	Calculated hydrogen generation rate :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h) :		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%) :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%) :		N/A
M.7.4	Marking :		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)..... :		—
M.8.2.3	Correction factors :		—
M.8.2.4	Calculation of distance d (mm) :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		N/A
	Instructional safeguard :		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Material(s) used :		—

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Clause	Requirement + Test	Result - Remark	Verdict
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	Measurement is in accordance with applicable figures.	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General		P
P.2	Safeguards against entry or consequences of entry of a foreign object		P
P.2.1	General		P
P.2.2	Safeguards against entry of a foreign object		P
	Location and Dimensions (mm) :	3mm X 28mm max	—
P.2.3	Safeguards against the consequences of entry of a foreign object	The rectangular opening is covered by the speaker. Within the projected volume as depicted in Figure P.3 there are no bare conductive parts of ES3 or PS3 circuits.	P
P.2.3.1	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		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 adhesives securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T _c (°C) :		—
	Duration (weeks)..... :		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c) Regulating network limited output	(See appended table Q.1)	P
	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)	P
	Current rating of overcurrent protective device (A)		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A)		N/A
	Current limiting method		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test.....		—
R.3	Test method		N/A
	Cord/cable used for test		—
R.4	Compliance		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Mounting of samples		—
	Wall thickness (mm)		—
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 exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N		N/A
T.5	Steady force test, 250 N	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		P
T.7	Drop test		N/A
T.8	Stress relief test.....		N/A
T.9	Glass Impact Test		N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted.....	No such glass provided.	N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)	No such antennas provided.	N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General	Following the probes test specified in this annex Figure V.1, V.2, V.5 are suitable.	P

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Clause	Requirement + Test	Result - Remark	Verdict
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		N/A
V.1.4	Plugs, jacks, connectors tested with blunt probe		P
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		P
V.2	Accessible part criterion		P
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance :		N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure :		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods :		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		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

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Clause	Requirement + Test	Result - Remark	Verdict
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 :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
264Vac	Primary circuits supplied by a.c. mains supply	Normal	--	--	SS	--	ES3 (declared)
		Abnormal – see table B.3, B.4 for detail	--	--	SS	--	
		Single fault – see table B.3, B.4 for detail	--	--	SS	--	
264Vac	Transformer Green (13V) to Green (0V)	Normal	18.4Vpk	--	SS	--	ES1
		Abnormal – see table B.3, B.4 for detail	18.4Vpk	--	SS	--	
		Single fault – see table B.3, B.4 for detail	18.4Vpk	--	SS	--	
264Vac	Transformer Yellow (17V) to Black (0V)	Normal	24.2Vpk	--	SS	--	ES1
		Abnormal – see table B.3, B.4 for detail	24.2Vpk	--	SS	--	
		Single fault – see table B.3, B.4 for detail	24.2Vpk	--	SS	--	
264Vac	Transformer Blue (38V) to Black (0V)	Normal	53.8Vpk	--	SS	--	ES2
		Abnormal – see table B.3, B.4 for detail	53.8Vpk	--	SS	--	
		Single fault – see table B.3, B.4 for detail	53.8Vpk	--	SS	--	
264Vac	USB-A Output “+” to “-”	Normal	Max.5.03 Vdc	--	SS	--	ES1
		Abnormal – see table B.3, B.4 for detail	Max.5.03 Vdc	--	SS	--	
		Single fault – see table B.3, B.4 for detail	Max.5.03 Vdc	--	SS	--	
264Vac	USB-A output	Normal	--	0.182mA _{pk}	SS	--	ES1

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Clause	Requirement + Test			Result - Remark			Verdict
	terminal “+/-” to GND	Abnormal – see table B.3, B.4 for detail	--	0.182mA _{pk}	SS	--	
		Single fault – see table B.3, B.4 for detail	--	0.182mA _{pk}	SS	--	
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.							
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							

5.4.1.8	TABLE: Working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
Red 220V~					
Red-Green (13V)	217	307	60	--	
Red-Green (0V)	230	325	60	--	
Red-Yellow (17V)	213	301	60	--	
Red-Black (0V)	230	325	60	Max. RMS, Max. Peak	
Red-Yellow (17V)	213	301	60	--	
Red-Blue (38V)	192	271	60	--	
Red-Black (0V)	230	325	60	--	
Red-Blue (38V)	192	271	60	--	
Red 0V~					
Red-Green (13V)	19	26	60	--	
Red-Green (0V)	0.0	0	60	--	
Red-Yellow (17V)	25	34	60	--	
Red-Black (0V)	0.0	0	60	--	
Red-Yellow (17V)	25	34	60	--	
Red-Blue (38V)	54	76	60	--	
Red-Black (0V)	0.0	0	60	--	
Red-Blue (38V)	54	76	60	--	
Supplementary information:					
Tested voltage: Input: 230Vac, 60Hz; load: Maximum normal working.					

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics	N/A
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Clause	Requirement + Test		Result - Remark	Verdict
Method.....:			ISO 306 / B50	—
Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening (°C)	
--	--	--	--	
Supplementary information:				
--				

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics				P
Allowed impression diameter (mm).....:			≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
AC connector	Foshan Jinhao Electric Appliance Co., LTD	2.0	125	1.28	
Supplementary information:					
--					

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
Basic / supplementary:								
L to E at AC Inlet	<420	<250	60	1.5	>3.0	--	2.5	>3.0
N to E at AC Inlet	<420	<250	60	1.5	>3.0	--	2.5	>3.0
Live parts to metal enclosure	<420	<250	60	1.5	>3.0	--	2.5	>3.0
Primary (ac) to Earth	<420	<250	60	1.5	>3.0	--	2.5	>3.0
Reinforced:								
Primary winding to secondary winding	<420	<250	60	3.0	>6.0	--	5.0	>6.0
Primary to accessible conductive parts	<420	<250	60	3.0	>6.0	--	5.0	>6.0
Supplementary information:								
1) Only for frequency above 30 kHz								
2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)								
3) For clearance and creepage did not describe above are far larger than limit above.								

5.4.4.2	TABLE: Minimum distance through insulation				P
Distance through insulation	Peak voltage (V)	Insulation	Required DTI	Measured DTI	

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Clause	Requirement + Test		Result - Remark	Verdict
(DTI) at/of			(mm)	(mm)
Insulation tape	<420Vac	Reinforce	2 layers	Min. 2 layers
Supplementary information:				
--				

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						N/A
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
--	--	--	--	--	--	--	--
Supplementary information:							
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5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary				
L to N (with F1 opened)	DC	2500VDC	No	
L/N to metal enclosure	DC	2500VDC	No	
Reinforced:				
L/N to output terminal	DC	4000VDC	No	
L/N to LED panel (with metal foil)	DC	4000VDC	No	
Primary to secondary of transformer T1	DC	4000VDC	No	
Insulation tape used in and around transformer T1 (single layer)	DC	4000VDC	No	
Supplementary information:				
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5.5.2.2	TABLE: Stored discharge on capacitors					N/A
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class	
--	--	--	--	--	--	
Supplementary information:						
X-capacitors installed for testing:						
☐ bleeding resistor rating:						
☐ ICX:						

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit			

5.6.6	TABLE: Resistance of protective conductors and terminations				P
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
AC inlet connection earth to the farthest metal enclosure	32	2	--	0.027	
Supplementary information:					
--					

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V_{rms} or V_{pk})	Current (A_{rms} or A_{pk})	Freq. (Hz)	
USB-A Output terminals	Normal	264Vac	Max.5.02Vdc	--	50	ES1
	Abnormal – see table B.3, B.4 for detail	264Vac	Max.5.02Vdc	--	50	ES1
	Single fault – see table B.3, B.4 for detail	264Vac	Max.5.02Vdc	--	50	ES1
Accessible surface with metal foil	Normal	264Vac	--	0.127mA _{pk}	50	ES1
	Abnormal – see table B.3, B.4 for detail	264Vac	--	0.127mA _{pk}	50	ES1
	Single fault – see table B.3, B.4 for detail	264Vac	--	0.127mA _{pk}	50	ES1
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						

5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V)		253V 50Hz		—
Phase(s)		[X] Single Phase; [] Three Phase: [] Delta [] Wye		—
Power Distribution System		☒ TN ☐ TT ☐ IT		—
Location		Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment
Metal enclosure to earth		1	0.335	ES1
Supplementary Information:				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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5.8	TABLE: Backfeed safeguard in battery backed up supplies					N/A
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
--	--	--	--	--	--	--
Supplementary information:						
Abbreviation: SC= short circuit, OC= open circuit						

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
All internal circuits except for external output terminal	--	--	--	--	--	PS3 (Declared)
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						

6.2.3.1	TABLE: Determination of Arcing PIS				P
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No	
All internal circuits except for external output terminal	--	--	--	Yes (declaration)	
Supplementary information:					
--					

6.2.3.2	TABLE: Determination of resistive PIS			P
Location		Operating and fault condition	Dissipate power (W)	Resistive PIS? Yes / No
All internal circuits / components		--	--	Yes (declaration)
Supplementary information:				
Abbreviation: SC= short circuit; OC= open circuit				

8.5.5	TABLE: High pressure lamp				N/A
Lamp manufacturer	Lamp type	Explosion method	Longest axis of	Particle found	

IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
			glass particle (mm)	beyond 1 m Yes / No
--	--	--	--	--
Supplementary information:				
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9.6	TABLE: Temperature measurements for wireless power transmitters								N/A
Supply voltage (V):				--				—	
Max. transmit power of transmitter (W):				--				—	
Part A ¹⁾									
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	
--	--	--	--	--	--	--	--	--	
Measurement temperature T of part/at:	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	
--	--	--	--	--	--	--	--	--	
Part B ²⁾									
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	
--	--	--	--	--	--	--	--	--	
Measurement temperature T of part/at:	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	
--	--	--	--	--	--	--	--	--	
Supplementary information:									
1) The test is performed by powering up the transmitter and then placing each of the foreign objects specified in 9.6.2 in direct contact with the transmitter.									
2) The test is performed by first placing each of the foreign objects specified in 9.6.2 in direct contact with the transmitter and then powering up transmitter.									

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements						P
	Supply voltage (V).....		Condition 1		Condition 2		—
Ambient temperature during test T_{amb} (°C) .		25.0	35.0	25.0	35.0	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)	
AC inlet		30.2	40.2	37.7	47.7	70	
Switch		27.7	--	31.2	--	77	
Main volume knob		26.5	--	27.4	--	60	
Metal enclosure near USB-A port, outside		27.8	--	29.3	--	51	
Primary wire		37.0	47.0	52.6	62.6	80	
T1 coil		44.6	54.6	80.8	90.8	100	
Secondary wire		35.8	45.8	52.8	62.8	80	
Metal enclosure near T1, inside		36.6	46.6	56.9	66.9	--	
Metal enclosure near T1, outside		34.9	--	52.0	--	60	
AS-14F-12VDC-2H Body		42.4	52.4	56.3	66.3	85	
L1 coil		40.1	50.1	70.0	80.0	110	
E4 body		31.6	41.6	41.4	51.4	105	
L2 coil		32.1	42.1	37.2	47.2	110	
E1 body		31.4	41.4	35.2	45.2	105	
DC fan body		33.5	43.5	39.9	49.9	70	
PCB near D28		48.3	58.3	73.1	83.1	130	
PCB near U7		30.9	40.9	40.2	50.2	130	
PCB near IC1		39.8	49.8	45.6	55.6	130	
PCB near IC2		33.5	43.5	37.0	47.0	130	
PCB near USB		32.1	42.1	35.6	45.6	130	
PCB near U3A		33.3	43.3	36.9	46.9	130	
PCB near U2A		29.3	39.3	33.2	43.2	130	
PCB near U2B		32.4	42.4	37.2	47.2	130	
Internal wire		26.4	36.4	26.8	36.8	80	
C3 body		32.5	42.5	42.9	52.9	85	
Power cord		27.7	37.7	28.6	38.6	105	
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
Transformer Primary coil	25.0	13.159	25.3	15.112	81.1	100	A

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
Transformer Secondary coil	25.0	0.404	25.3	0.508	89.4	100	A
Supplementary information:							
Condition 1: Input: 198Vac/60Hz, Bluetooth-IN mode, 1/8 of max. non-clipped audio output power with 1kHz signal							
Condition 2: Input: 264Vac/60Hz, Bluetooth-IN mode, 1/8 of max. non-clipped audio output power with 1kHz signal							

B.2.5		TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
198	50	2.48	--	347	--	F1	2.48	Audio: 1/8 of max. Non-clipping output power with 1 kHz sine wave signal input	
198	60	2.49	--	349	--	F1	2.49		
220	50	2.648	--	412	2000	F1	2.648		
220	60	2.651	--	419	2000	F1	2.651		
240	50	2.792	--	448	2000	F1	2.792		
240	60	2.811	--	449	2000	F1	2.811		
264	50	3.159	--	571	--	F1	3.159		
264	60	3.163	--	576	--	F1	3.163		
Supplementary information:									
--									

B.2.5, E.3.1		TABLE: Input test for equipment containing audio amplifiers										N/A	
Operation Condition:		Signal type		Frequency (Hz)		Output loads (Ω)		Load setup					
Speakers		Sine wave input		1000		8		1/8 of max. Non-clipping output power with 1 kHz sine wave signal input					
Input									Amplifier Output				
Cond.	U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Ch.	U (V)	P (W)	Load (Ω)	
--	198	50	2.48	--	347	--	F1	2.48	--	25.2*2	158.76	8	
--	198	60	2.49	--	349	--	F1	2.49	--	25.3*2	160.02	8	
--	220	50	2.648	--	412	2000	F1	2.648	--	26.0*2	169.00	8	
--	220	60	2.651	--	419	2000	F1	2.651	--	26.2*2	171.61	8	
--	240	50	2.792	--	448	2000	F1	2.792	--	27.1*2	183.60	8	
--	240	60	2.811	--	449	2000	F1	2.811	--	27.1*2	183.60	8	
--	264	50	3.159	--	571	--	F1	3.159	--	33.3*2	277.22	8	

IEC 62368-1												
Clause		Requirement + Test						Result - Remark			Verdict	
--	264	60	3.163	--	576	--	F1	3.163	--	33.4*2	278.89	8
Supplementary information:												
--												

B.3, B.4		TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T_{amb} (°C)..... :						25°C if not specified	—
Power source for EUT: Manufacturer, model/type, output rating .. :						--	—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	current (A)	Observation	
IC2 Pin 7-9	SC	264Vac	30mins	F1	3.163	Unit normal working, no damage, no hazards.	
IC2 Pin 28-31	SC	264Vac	30mins	F1	0.421	The audio signal input shutdown, other units normal working, no damage, no hazard.	
IC1 Pin 5-6	SC	264Vac	30mins	F1	3.163	Unit normal working, no damage, no hazards.	
Q5 Pin 1-5	SC	264Vac	30mins	F1	0.429	The audio signal input shutdown, other units normal working, no damage, no hazard.	
Q1 Pin 1-5	SC	264Vac	30mins	F1	0.429	The audio signal input shutdown, other units normal working, no damage, no hazard.	
Speakers	Max. non-clipped audio output power	264Vac	1h	F1	13.12	When the transformer temperature reaches the operating temperature of the thermostat, the input will be disconnected. After the transformer temperature drops normally, the unit will recover normal operation. No damaged, no hazardous, can be recovered after troubleshooting	
Fan	Stalled	264Vac	7h	F1	3.163	The unit operated under the fault condition and ran for thermal equilibrium. No hazard, No damage.	
Openings	Blocked	264Vac	4h17mins	F1	3.163	The unit operated under the fault condition and ran for thermal equilibrium. No	

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
						hazard, No damage.
Transformer output (T1):38V	OL	264Vac	3h14mins	F1	3.163→ 3.988→ 4.251→ 4.622→ 0	The unit operated under the fault condition and ran for thermal equilibrium. No hazard, No damage. Max. load current 8.4A, Unit protect when transformer output overloaded with 8.45A, the thermostat will disconnect the AC input. No damage, no hazard.
Thermostat	SC	264Vac	30mins	F1	3.163	Unit normal working, no damage, no hazards.
Thermostat	OC	264Vac	30mins	F1	3.163→ 0	Unit AC input shutdown, other units normal working, no damage, no hazards.
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit; OL= Overload						

M.3	TABLE: Protection circuits for batteries provided within the equipment						N/A
Is it possible to install the battery in a reverse polarity position? :				--		—	
Equipment Specification		Charging					
		Voltage (V)		Current (A)			
		--		--			
Manufacturer/type		Battery specification					
		Non-rechargeable batteries		Rechargeable batteries			
		Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)
				Voltage (V)	Current (A)		
--		--	--	--	--	--	
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°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.							

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery				N/A
Maximum specified charging voltage (V)				--	---
Maximum specified charging current (A)				--	---
Highest specified charging temperature (°C)				--	---
Lowest specified charging temperature (°C)				--	---
Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	
--	--	--	--	--	--
Supplementary information:					
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature					

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						N/A
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--	--
Supplementary Information:							
--							

T.2, T.3, T.4, T.5	TABLE: Steady force test						P
Part/Location	Material	Thicknes s (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Internal components / wire	--	--	V.2	10	5	No reduction the clearances and creepage distances.	
Top enclosure	Metal	Min. 1.0	--	250	5	No damage, No hazard	
Side enclosure	Metal	Min. 1.0	--	250	5	No damage, No hazard	
Bottom enclosure	Metal	Min. 1.0	--	250	5	No damage, No hazard	
Supplementary information:							
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T.6, T.9	TABLE: Impact test						P
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IEC 62368-1				
Clause	Requirement + Test		Result - Remark	
Location/part	Material	Thickness (mm)	Height (mm)	Observation
Top enclosure	Metal	Min. 1.0	1300	No damage, No hazard
Side enclosure	Metal	Min. 1.0	1300	No damage, No hazard
Bottom enclosure	Metal	Min. 1.0	1300	No damage, No hazard
Supplementary information:				
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T.7	TABLE: Drop test				N/A
Location/part	Material	Thickness (mm)	Height (mm)	Observation	
--	--	--	--	--	
Supplementary information:					
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T.8	TABLE: Stress relief test					N/A
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
--	--	--	--	--	--	
Supplementary information:						
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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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4.1.2	TABLE: Critical components information					P
Object / part No.	Manufacturer / trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 1.0 mm	IEC/EN 62368-1	Test in appliance	
PCB	LONGYAN CITY HUNG TO PCB CO LTD	HT-M1	V-0, 130 °C	UL 94	UL E327182	
Internal wire (Primary)	Interchangeable	Interchangeable	Min. 300 V, Min. 105 °C, Min. VW-1	UL 758	UL	
Internal wire (Secondary)	Interchangeable	Interchangeable	Min. 300 V, Min. 80 °C, Min. VW-1	UL 758	UL	
Earth wire	Dongguan WENCHANG ELECTRONIC CO LTD	1672	Rated min. 18 AWG. 300 V. 105 °C, min. VW-1	UL 758	UL E214500	
Power cord	Ningbo Qiaopu Electric Co., Ltd.	H05VV-F	3×0.75mm ²	EN 50525-2-11	TÜV Rh: Certif. No.: R 50279805	
-Appliance connector	Ningbo Qiaopu Electric Co., Ltd.	QT3	AC 250V, 10A	IEC/EN 60320-1	TÜV Rh: Certif. No.: AN 50622694	
-Plug	Ningbo Qiaopu Electric Co., Ltd.	D19	AC 250V, 13A	SASO 2203	SASO	
AC Inlet	Zhejiang Bubujing Electronics Co., Ltd.	AC-03	AC 250V 10A	IEC/EN 60320-1 IEC/EN 60127-1 IEC/EN 60127-6	VDE 40049914	
-Fuse(F1)	XC Electronics (Shen Zhen) Corp. Ltd.	5F	F12.5A 250V	UL 248	UL E249609	
-Fuse (F6, F7)	XC Electronics (Shen Zhen) Corp. Ltd.	5F	F5A 250V	UL 248	UL E249609	
Power switch	Yueqing Leniu Electronics Co., Ltd	KCD1	AC 250V, 6A, 1E+4, T85	IEC 61058-1	CB (CQC): Certif. No.: CN46511 Report No.: CTIHEA6348	
-Thermostat	XC Electronics (Shenzhen) Corp. Ltd.	KSD9700	250V, A, 50°C	IEC/EN 60730-1 IEC/EN 60730-2-9	TÜV Rh: Certif. No.: R 50352062	
Transformer (T1)	Enping Guanglei Hardware Accessories Processing Shop	GU-180-OM-L	Class A	IEC/EN 62368-1	Test in appliance	

-Insulation tape	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510A	UL E246820
(Alternative)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ*(b)	130°C	UL 510A	UL E165111
-Primary lead wire	QIFURUI ELECTRONICS CO	1672	Rated min. 18 AWG, 300 V, 105 °C, Min. VW-1	UL 758	UL E211048
(Alternative)	Interchangeable	Interchangeable	Rated min. 12 AWG, 300 V, 105 °C, Min. VW-1	UL 758	UL
-Primary winding	TONGLING KINGKONG ELECTRONICS TECHNOLOGY CO LTD	xUEWA/180	180 °C	UL 1446	UL E250244
-Secondary lead wire	QIFURUI ELECTRONICS CO	1015	Rated min. 18 AWG (blue-black-blue) and 20AWG (green- green) and 20 AWG (yellow-black- yellow), 600 V, 105 °C, Min. VW-1	UL 758	UL E211048
-Secondary winding	TONGLING KINGKONG ELECTRONICS TECHNOLOGY CO LTD	xUEWA/180	180 °C	UL 1446	UL E250244
-Primary and Secondary Insulation	Mylar Specialty Films	Mylar 800	105 °C	UL 94	UL E93687
-Tube	GUANGDONG FOSHAN CITY SHUNDE QIAOCHENG INSULATION MATERIAL CO LTD	2753-3	300 V, VW-1	UL 224	UL E238534
-Thermostat	Baoying Safty Electronic Technology Co., Ltd.	BW-BMC-130°C	250V, 6A, 10E3, 130°C	IEC/EN 60730-1 IEC/EN 60730-2-9	VDE 40042780
DC fan	Guangzhou Lengjingxing Electronic Technology Co., Ltd.	LJX06H12Y-B	DC 12V, 0.16A, 1.8W, 16.68CFM, 3800rpm±10%	IEC/EN 62368-1	Test in appliance

Relay (RY1)	Xiamen Hongfa Electroacoustic Co., Ltd.	JQX-115F Serie(s)	250VAC, 8A, 1e4, 85°C	IEC/EN 61810-1	VDE 116934
Relay (RY2)	NINGBO HUIKE NEW ERA ELECTRICAL APPLIANCES CO., LTD.	HK19F-DC12V- SHG	125VAC, 1A, 1e5, 85°C	IEC/EN 61810-1	TÜV Rh: Certif. No.: R 50352062
Supplementary information:					
¹⁾ Provided evidence ensures the agreed level of compliance. See OD-2039. ²⁾ Description line content is optional. Main line description needs to clearly detail the component used for testing.					

Photos



Overview



Overview