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# **TEST REPORT**

EN IEC 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

**Report Number.....:** RKEYS250827250

Total number of pages...... 82 pages

Tested by (name + signature).....: Echo Zhong

Approved by (name + signature)...: Jason Zhan

Testing Laboratory Name......: Guangdong KEYS Testing Technology Co., Ltd.

Guangdong, China

Applicant's name...... Mid Ocean Brands B.V.

Address...... Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan,

Kowloon, Hong Kong

Manufacturer's name...... 117486

Address..... N/A

**Test specification:** 

Standard.....: EN IEC 62368-1:2024/A11:2024

Test procedure....: Safety report

Non-standard test method.....: N/A

Test item description.....: Wireless Microphone

Trade Mark.....: N/A

Model/Type reference..... MO2665

Ratings....... Type-C Input : DC 5V, 1A

Battery: 3.7V, 400mAh, 1.48Wh



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Esho Zhonf



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#### **List of Attachments:**

- Measurement Section
- Attachment No.1: European National Differences. (35 pages)
- Attachment No.2:Photo document (4 pages)

Total number of pages in each attachment is indicated in each individual attachment.

## **Summary of testing:**

The tested samples fulfilled the requirements of specified standards.

### **Testing location:**

Guangdong KEYS Testing Technology Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict, Dongguan, Guangdong, China

## **Summary of compliance with National Differences:**

List of countries addressed:

European National Differences.

☐ The product fulfils the requirements of EN IEC 62368-1:2024/A11:2024

Remark:

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# Copy of marking plate:

The artwork below may be only a draft.

Wireless Microphone

Model: MO2665

Type-C Input: DC 5V, 1A

Battery: 3.7V, 400mAh, 1.48Wh



MADE IN CHINA

Importer: xxx Address: yyy

#### Note:

- 1. xxx means importer company name; yyy means importer company address information.
- 2. The marking for the other models are identical as above except the model no. only.
- 3.As declared by client that the name (or registered trade mark) and address of the certificate holder (manufacturer) or the importer or authorized representative based within the European Economic Area will be clearly affixed on the product or where that is not possible, on the packaging or in a document accompanying the product.
- 4. The height of letters and numerals was not less than 2mm.
- 5. The height of symbol " was not less than 7mm.
- 6. The height of the other graphical symbols was not less than 5mm.

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Test item particulars		: See test report
Product group	:	: ⊠ end product □ built-in component
Classification of use by	······································	: ⊠ Ordinary person
(6)		☐ Instructed person
9	125	☐ Skilled person
Supply connection	:	:   AC mains
050		☐ DC mains
15		□ not mains connected:     □
(E)	0.6	⊠ ES1 □ ES2 □ ES3
Supply tolerance	Æ.	: 🗆 +10%/-10%
	9	· +20%/-15%
(E)		+ %/ <sub>0</sub> / <sub>-</sub> %/ <sub>0</sub>
Classification of use by	None     Non	
Supply connection – type	9	:   pluggable equipment type A -
9	(Fe	non-detachable supply cord
A.69		appliance coupler
(Te)	. /.	☐ direct plug-in
A		☐ pluggable equipment type B -
	4	non-detachable supply cord
26	C.	appliance coupler
25		permanent connection
(F)	0.6	☐ mating connector ☐ other: Not directly connected to
	(6)	mains
Considered current rating of pro	otective device:	: ☐ 16 A; Location:☐ building☐ equipment
(E)		□ N/A
Equipment mobility	:	: ⊠ movable  hand-held transportable
	125	☐ direct plug-in☐ stationary☐ for building-in
	(F)	☐ wall/ceiling-mounted ☐ SRME/rack-mounted
A.69		other:

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Overvoltage category (OVC)::	: □ OVC I□ OVC II□ OVC III□ OVC IV	100
4		
Class of equipment:	: Class I Class II	
J. J	☐ Class II with functional earthing	
		0
Special installation location:	: 🛛 N/A 🔲 restricted access area	1
0.50	□ outdoor location □	
Special installation location:	: ⊠ N/A ☐ restricted access area	
(E)	□ outdoor location □	
Pollution degree (PD):	: □ PD 1 ⋈ PD 2 □ PD 3	
Manufacturer's specified T <sub>ma</sub> :	: 25 °C	
IP protection class:	.: ⊠ IPX0□ IP	
Power systems:	: TN TT IT - V <sub>L-L</sub>	
CE CE	□ not AC mains	
Altitude during operation (m):	: $\boxtimes$ 2000 m or less $\square$ m	
Altitude of test laboratory (m):		
Mass of equipment (kg):	: 0.04 kg	
Possible test case verdicts:	(S.)	
- 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	049	
Date of receipt of test item:	.: Aug. 22, 2025	
Date (s) of performance of tests::	: Aug. 22, 2025 to Aug. 29, 2025	

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	1 16
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report.	46
"(See appended table)" refers to a table appended to the report.	Ď .
Throughout this report a $\square$ comma / $\boxtimes$ point is used as the decimal separator.	(40
Name and address of factory (ies):	V
General product informRation:	. 6
1. The appliance/equipment is "Wireless Microphone" with models "Test Model: MO2665.", cl	ass III appliance.
2. All test mode on MO2665.	9
3. The ambient temperature is 25°C.	
(LE	



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	IEC 62368-1	A	(Jet
Clause	Requirement + Test	Result - Remark	Verdict
4	General Requirements		P
4.1.1	Acceptance of materials, components and subassemblies	(Ex)	P
4.1.2	Use of components	(See appended table 4.1.2)	P
4.1.3	Equipment design and construction		P
4.1.4	Specified ambient temperature for outdoor use (°C):	25	P
4.1.5	Constructions and components not specifically covered	(LC)	N/A
4.1.8	Liquids and liquid filled components (LFC)	No such components	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 Annex T.2, T.4)	P
4.4.3.3	Drop tests	(See Annex T.7)	P
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests	No internal accessible safeguard	N/A
4.4.3.6	Glass impact tests	No glass used	N/A
4.4.3.7	Glass fixation tests	No such equipment	N/A
	Glass impact test (1J)	050	N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Clause T.8)	P
4.4.3.9	Air comprising a safeguard	Considered	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguards remain effective	P
4.4.4	Displacement of a safeguard by an insulating liquid	No insulating liquids	N/A
4.4.5	Safety interlocks	No safety interlocks	N/A
4.5	Explosion	9	P
4.5.1	General	No explosion occurs during normal/abnormal operation and 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 and conductive parts		P
25	Fix conductors not to defeat a safeguard	A.69	P
(Le	Compliance is checked by test :	(See Clause T.2)	P

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	IEC 62368-1	A.	Colo
Clause	Requirement + Test	Result - Remark	Verdict
4.7	Equipment for direct insertion into mains socket—out	tlets	N/A
4.7.2	Mains plug part complies with relevant standard :	0.5	N/A
4.7.3	Torque (Nm):		N/A
4.8	Equipment containing coin/button cell batteries	9	N/A
4.8.1	General	No such coin/button battery	N/A
4.8.2	Instructional safeguard:	0.40	N/A
4.8.3	Battery compartment door/cover construction	(E	N/A
A	Open torque test	0.50	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	250	N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance	(E	N/A
	30N force test with test probe	9	N/A
6	20N force test with test hook	9	N/A
4.9	Likelihood of fire or shock due to entry of conductive	e object	P
4.10	Component requirements	(.5.)	P
4.10.1	Disconnect Device	(See Annex L)	15 P
4.10.2	Switches and relays	No switches and relays used	N/A
4.10.3	Mains power supply cords	(See Clause G.7)	N/A
4.10.4	Batteries and their protection circuits	(See Annex M)	P
5	Electrically-caused injury		P
5.2	Classification and limits of electrical energy sources	(C)	P
5.2.2	ES1, ES2 and ES3 limits	ES1	P
5.2.2.2	Steady-state voltage and current limits :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits:	(See appended table 5.2)	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 means for connection to telephone network and no	N/A
	4 65	ringing signal generated	9
5.2.2.7	Audio signals	No audio signal terminals	N/A
5.3	Protection against electrical energy sources	(Le	P

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	0.5		116
	IEC 62368-1	*	(Te
Clause	Requirement + Test	Result - Remark	Verdict
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	(E)	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	(6)	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		P
5.3.2.1	Accessibility to electrical energy sources and safeguards	2.5	P
(10)	Accessibility to outdoor equipment bare parts	(6)	N/A
5.3.2.2	Contact requirements	9	N/A
	Test with test probe from Annex V		
5.3.2.2 a)	Air gap – electric strength test potential (V) :		N/A
5.3.2.2 b)	Air gap – distance (mm) :		N/A
5.3.2.3	Compliance	150	N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminals	N/A
5.4	Insulation materials and requirements	(E	P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic	No hygroscopic insulating material used as insulation	N/A
5.4.1.4	Maximum operating temperature for insulating materials:	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees :	Pollution degree 2 considered	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	0.5	N/A
5.4.1.5.3	Thermal cycling test	9	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such circuit	N/A
5.4.1.8	Determination of working voltage :	(See appended table 5.4.1.8)	N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	6	N/A
5.4.1.10.2	Vicat test:	Compliance is checked by ball pressure test	N/A
5.4.1.10.3	Ball pressure test :	(See appended table 5.4.1.10.3)	N/A
5.4.2	Clearances	26	N/A
5.4.2.1	General requirements	(0)	N/A
- /		1.50	

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	IEC 62368-1	A	(Ex
Clause	Requirement + Test	Result - Remark	Verdict
(E)	Clearances in circuits connected to AC Mains, Alternative method	(E)	N/A
5.4.2.2	Procedure 1 for determining clearance	(See appended table 5.4.2)	N/A
	Temporary overvoltage :	À	_
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2)	N/A
5.4.2.3.2.2	a.c. mains transient voltage:	2.5	_
5.4.2.3.2.3	d.c. mains transient voltage :	No such transient voltage	_
5.4.2.3.2.4	External circuit transient voltage:	No such transient voltage	_
5.4.2.3.2.5	Transient voltage determined by measurement:	No need to conduct this test	_
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 :	(Ets)	N/A
5.4.2.6	Clearance measurement :	(See appended table 5.4.2)	N/A
5.4.3	Creepage distances	(See appended table 5.4.2 and 5.4.3)	N/A
5.4.3.1	General		N/A
5.4.3.3	Material group :	Material group IIIb is assumed to be used	_
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	025	N/A
5.4.4.2	Minimum distance through insulation :	(See appended table 5.4.4.2)	N/A
5.4.4.3	Insulating compound forming solid insulation	(6)	N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints	No such components	N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements	(E)	N/A
5.4.4.6.2	Separable thin sheet material	10	N/A
	Number of layers (pcs) :	(FC)	N/A
5.4.4.6.3	Non-separable thin sheet material	9	N/A
	Number of layers (pcs) :		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material:	(Et	N/A

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	4.6	(4)	,
	IEC 62368-1	4	(E)
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.5	Mandrel test	(5)	N/A
5.4.4.7	Solid insulation in wound components	(See Annex G.6)	N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, $E_P$ , $K_R$ , $d$ , $V_{PW}$ (V):	(See appended table 5.4.4.9)	N/A
1	Alternative by electric strength test, tested voltage (V), $K_R$ :	(See appended table 5.4.4.9)	N/A
5.4.5	Antenna terminal insulation	(E)	N/A
5.4.5.1	General	9	N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (M $\Omega$ ):		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	No such insulation	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	6	N/A
	Relative humidity (%), temperature (°C), duration (h)	070	_
5.4.9	Electric strength test		N/A
5.4.9.1	Test procedure for type test of solid insulation:	(See appended table 5.4.9)	N/A
5.4.9.2	Test procedure for routine test	-	N/A
5.4.10	Safeguards against transient voltages from external circuits	No external circuits	N/A
5.4.10.1	Parts and circuits separated from external circuits	(E)	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 :	(C)	N/A
5.4.10.3	Verification for insulation breakdown for impulse test :	(F)	N/A
5.4.11	Separation between external circuits and earth	No external circuits	N/A
5.4.11.1	Exceptions to separation between external circuits and earth	. (0	N/A
5.4.11.2	Requirements	Co	N/A
	A - 50		

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	0.5	4	1
	IEC 62368-1		(10)
Clause	Requirement + Test	Result - Remark	Verdict
(6	SPDs bridge separation between external circuit and	(E)	N/A
8	earth 05	039	
	Rated operating voltage $U_{op}(V)$ :	(LE)	_
	Nominal voltage U <sub>peak</sub> (V) :	9	_
	Max increase due to variation $\Delta U_{sp}$ :		_
M	Max increase due to ageing $\Delta U_{sa}$ :	0.6	_
5.4.11.3	Test method and compliance :	(C)	N/A
5.4.12	Insulating liquid	No such 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 :	25	N/A
5.5	Components as safeguards	(te)	N/A
5.5.1	General	(C	N/A
5.5.2	Capacitors and RC units	(See appended table 4.1.2)	N/A
5.5.2.1	General requirement	6	N/A
5.5.2.2	Safeguards against capacitor discharge after	(See appended table 5.5.2.2)	N/A
	disconnection of a connector :	15	
5.5.3	Transformers	(See Annex G.5.3)	N/A
5.5.4	Optocouplers	optocouplers used	N/A
5.5.5	Relays	No relay used	N/A
5.5.6	Resistors	No such resistors	N/A
9	Application type of resistors:	5	_
5.5.7	Surge suppressors	(See Clause G.8)	N/A
	GDT:	9	N/A
5.5.8	Insulation between the mains and an external circuit		N/A
0.60	consisting of a coaxial cable:		
(Je	Insulation resistance (M $\Omega$ ):	(E)	N/A
A	Electric strength test :	(See appended table 5.4.9)	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment	(Te)	N/A
	RCD rated residual operating current (mA) :	A	
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	A.69	N/A
5.6.2.1	General requirements	(E	N/A

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	0.6		n 6
	IEC 62368-1	4	(E)
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.2	Colour of insulation	120	N/A
5.6.3	Requirement for protective earthing conductors	00	N/A
	Protective earthing conductor size (mm <sup>2</sup> ) :	See above	
	Protective earthing conductor serving as a reinforced safeguard	9	N/A
(E	Protective earthing conductor serving as a double safeguard	(Colo	N/A
5.6.4	Requirements for protective bonding conductors	4	N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm <sup>2</sup> ). :	See appended table 4.1.2	
5.6.4.2	Protective current rating (A):		N/A
5.6.5	Terminals for protective conductors	25	N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm):	See above	N/A
6	Terminal size for connecting protective bonding conductors (mm) :	(5	N/A
	Relevant IEC standard:		N/A
5.6.5.2	Corrosion	0.40	N/A
5.6.6	Resistance of the protective bonding system	<u> </u>	N/A
5.6.6.1	Requirements	(4	N/A
5.6.6.2	Test Method:		N/A
5.6.6.3	Resistance $(\Omega)$ 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	(E	N/A
	Conductor size (mm <sup>2</sup> ) :	9	N/A
	Class II with functional earthing marking:		N/A
0.60	Appliance inlet cl & cr (mm) :		N/A
5.7	Prospective touch voltage, touch current and protecti	ve conductor current	N/A
5.7.2	Measuring devices and networks	4	N/A
5.7.2.1	Measurement of touch current	(Fe)	N/A
5.7.2.2	Measurement of voltage	A	N/A
5.7.3	Equipment set-up, supply connections and earth connections	2.6	N/A
5.7.4	Unearthed accessible parts :	(See appended table 5.7.4)	N/A
	8.27	- /-	

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	IEC 62368-1	4	(EX
Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	Earthed accessible conductive parts :	(C. 5)	N/A
5.7.6	Requirements when touch current exceeds ES2 limits	0 00	N/A
	Protective conductor current (mA) :	(10)	N/A
	Instructional Safeguard:	9	N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits	No external circuits	N/A
5.7.7.1	Touch current from coaxial cables	(E)	N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables	Ex.	N/A
5.7.8	Summation of touch currents from external circuits	No external circuits	N/A
	a) Equipment connected to earthed external circuits, current (mA):	0.5	N/A
(	b) Equipment connected to unearthed external circuits, current (mA):	(E)	N/A
5.8	Backfeed safeguard in battery backed up supplies	9	N/A
6	Mains terminal ES:	5	N/A
; * /	Air gap (mm):		N/A
6	Electrically- caused fire		P
6.2	Classification of PS and PIS		1.6 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 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
(E)	Combustible materials outside fire enclosure :	000	N/A
6.4	Safeguards against fire under single fault conditions	000	P
6.4.1	Safeguard method	Method of control fire spread used	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A

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	IEC 62368-1	~	(Tex.
Clause	Requirement + Test	Result - Remark	Verdict
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	. (E.)	N/A
6.4.3.1	Supplementary safeguards	(4)	N/A
6.4.3.2	Single Fault Conditions:	(See appended table B.3, B.4)	P
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	2.5	N/A
6.4.5	Control of fire spread in PS2 circuits	(C)	N/A
6.4.5.2	Supplementary safeguards	(See appended table 4.1.2 and Annex G)	N/A
6.4.6	Control of fire spread in PS3 circuits		P
6.4.7	Separation of combustible materials from a PIS	No separation of combustible materials by distance or by a fire barrier	N/A
6.4.7.2	Separation by distance	A CE	N/A
6.4.7.3	Separation by a fire barrier	9	N/A
6.4.8	Fire enclosures and fire barriers	6	P
6.4.8.2	Fire enclosure and fire barrier material properties	Plastic Enclosure:V-0	P
6.4.8.2.1	Requirements for a fire barrier	1630	N/A
6.4.8.2.2	Requirements for a fire enclosure	Plastic Enclosure:V-0	16 P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	(4	N/A
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings on the fire enclosure	N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties	No openings on the fire enclosure	N/A
0.6	Openings dimensions (mm):		N/A
6.4.8.3.4	Bottom openings and properties	No openings on the fire enclosure	N/A
	Openings dimensions (mm):	(C)	N/A
	Flammability tests for the bottom of a fire enclosure	9	N/A
	Instructional Safeguard:		N/A
6.4.8.3.5	Side openings and properties	No openings on the fire enclosure	N/A

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			A
	IEC 62368-1		(10)
Clause	Requirement + Test	Result - Remark	Verdict
(6	Openings dimensions (mm):	12	N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)	(E)	N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire	Plastic Enclosure:V-0	P
6.4.9	barrier distance (mm) or flammability rating : Flammability of insulating liquid:		N/A
0.4.9	Auto ignition temperature (°C) :	1000	N/A
- 6	Flashpoint temperature (°C):	6	N/A
6.5		(10)	N/A N/A
6.5.1	Internal and external wiring General requirements	Approved input wire and output wire used	N/A
6.5.2	Requirements for interconnection to building wiring:	0.5	N/A
6.5.3	Internal wiring size (mm <sup>2</sup> ) for socket-outlets :	(6)	N/A
6.6	Safeguards against fire due to the connection to addit	ional equipment	N/A
7	INJURY CAUSED BY HAZARDOUS SUBSTANCE		N/A
7.2	Reduction of exposure to hazardous substances	.63	N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equ	ipment (PPE)	N/A
	Personal safeguards and instructions:		_
7.5	Use of instructional safeguards and instructions	(4	N/A
4	Instructional safeguard (ISO 7010) :		_
8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications	2.5	P
8.3	Safeguards against mechanical energy sources	(E	P
8.4	Safeguards against parts with sharp edges and corner	rs	P
8.4.1	Safeguards	Sharp edges and corners: MS1 classification; Equipment mass: MS1	P
(F)	A.19	classification	
	Instructional Safeguard:		N/A
8.4.2	Sharp edges or corners	MS1 classification, no safeguard required	0.0
8.5 19	Safeguards against moving parts	Tequited	N/A
8.5.1	Requirements	No moving parts	N/A
	11	1 mo p Par as	1 - " - 1

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	IEC 62368-1	V	(E)
Clause	Requirement + Test	Result - Remark	Verdict
(G)	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	(E)	N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	A manually activated stopping device for moving MS3		N/A
A	Moving MS3 parts only accessible to skilled person	0.62	N/A
8.5.2	Instructional safeguard:	(6)	N/A
8.5.4	Special categories of equipment containing moving parts	(E)	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	600	N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system	(1)	N/A
8.5.4.2.2.2	Visual indicator	6	N/A
8.5.4.2.3	Emergency stop system	<u> </u>	N/A
	Maximum stopping distance from the point of activation (m):	(Et)	N/A
	Space between end point and nearest fixed mechanical part (mm) :	(A)	N/A
8.5.4.2.4	Endurance requirements	050	N/A
	Mechanical system subjected to 100 000 cycles of operation	E.	N/A
	- Mechanical function check and visual inspection	9	N/A
	- Cable assembly :		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media	(Ex	N/A
8.5.4.3.1	Equipment safeguards	4 (%)	N/A
8.5.4.3.2	Instructional safeguards against moving parts :	9	N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N):	4.6	N/A
8.5.4.3.5	Compliance	(C)	N/A

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	IEC 62368-1	9	(E)
Clause	Requirement + Test	Result - Remark	Verdict
8.5.5	High pressure lamps	(E)	N/A
9	Explosion test:	049	N/A
8.5.5.3	Glass particles dimensions (mm):	(3)	N/A
8.6	Stability of equipment	∀	N/A
8.6.1	General	Equipment mass < 7.0kg and is classified as MS1	N/A
6	Instructional safeguard:	0.6	N/A
8.6.2	Static stability	(C)	N/A
8.6.2.2	Static stability test:	7	N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability	070	N/A
6	Wheels diameter (mm):	6	_
	Tilt test	(E	N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test :	9	N/A
8.7	<b>Equipment mounted to wall, ceiling or other structur</b>	e AS	N/A
8.7.1	Mount means type:		N/A
	Mount means type:	(4	N/A
8.7.2	Test methods		N/A
(4)	Test 1, additional downwards force (N) :	0.5	N/A
9	Test 2, number of attachment points and test force (N)	( Car	N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm) :	9	N/A
8.8	Handles strength		N/A
8.8.1	General	(E)	N/A
8.8.2	Handle strength test	0.0	N/A
	Number of handles :	(To)	_
	Force applied (N):	A .	100
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test	0.60	N/A
8.10	Carts, stands and similar carriers	(C)	N/A

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	IEC 62368-1	A	(E)
Clause	Requirement + Test	Result - Remark	Verdict
8.10.1	General	(C)	N/A
8.10.2	Marking and instructions :	149	N/A
8.10.3	Cart, stand or carrier loading test	(16)	N/A
	Loading force applied (N) :	9	N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability	159	N/A
(F)	Force applied (N):	4.6	_
8.10.6	Thermoplastic temperature stability	(6)	N/A
8.11	Mounting means for slide-rail mounted equipment (S	SRME)	N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails	0.6	N/A
(-	Instructional Safeguard:	(E)	N/A
8.11.3	Mechanical strength test	Y CE	N/A
8.11.3.1	Downward force test, force (N) applied :		N/A
8.11.3.2	Lateral push force test	6	N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance	650	N/A
8.12	Telescoping or rod antennas		N/A
	No sharp edges or points	(v	N/A
2	Button/ball diameter (mm) :		N/A
9	Thermal burn injury		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits	1	P
9.3.1	Touch temperatures of accessible parts :	Accessible plastic enclosure:	P
		TS1 classification;	
		(See appended table)	
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		N/A
9.5	Requirements for safeguards	DT 0 11 1 1	N/A
9.5.1	Equipment safeguard	No safeguard is not required for TS1 classification	N/A
9.5.2	Instructional safeguard:	Instructional safeguard is not required	N/A
		required	

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	IEC 62368-1	A	(Ex
Clause	Requirement + Test	Result - Remark	Verdict
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General	No wireless power transmitters	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
9.5.2	Instructional safeguard:	Instructional safeguard is not required	N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General	No wireless power transmitters	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
10	RADIATION		N/A
10.2	Radiation energy source classification	035	N/A
10.2.1	General classification	(Le)	N/A
	Lasers :	No laser radiation	_
	Lamps and lamp systems :	No lamps and lamp systems	
9	Image projectors :	Not such equipment	
),	X-Ray :	No X-Ray	
	Personal music player :	Not such equipment	
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	d lamp systems (including LED	N/A
5	types)	26	
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible	9	N/A
	radiation level needs to exceed		5
0.60	Risk group marking and location:	- /-	N/A
(Tex	Information for safe operation and installation	(E)	N/A
10.4.2	Requirements for enclosures	25	N/A
	UV radiation exposure:	(16)	N/A
10.4.3	Instructional safeguard:	A	N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements	No such X-radiation	N/A
(Fe)	Instructional safeguard for skilled persons:	(IC)	_

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	IEC 62368-1		(E)
Clause	Requirement + Test	Result - Remark	Verdict
10.5.3	Maximum radiation (pA/kg):	(See appended tables B.3 & B.4)	
10.6	Safeguards against acoustic energy sources	0	N/A
10.6.1	General	(4)	N/A
10.6.2	Classification	9	N/A
	Acoustic output $L_{Aeq,T}$ , $dB(A)$ :		N/A
M	Unweighted RMS output voltage (mV) :	0.6	N/A
(10)	Digital output signal (dBFS):	(C)	N/A
10.6.3	Requirements for dose-based systems	4 (%)	N/A
10.6.3.1	General requirements	(3)	N/A
10.6.3.2	Dose-based warning and automatic decrease	V	N/A
10.6.3.3	Exposure-based warning and requirements		N/A
1	30 s integrated exposure level (MEL30) :	25	N/A
(	Warning for MEL $\geq$ 100 dB(A) :	(F)	N/A
10.6.4	Measurement methods	(C	N/A
10.6.5	Protection of persons	9	N/A
9	Instructional safeguards :	9	N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)	64	N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV):	(4	N/A
10.6.6.2	Corded listening devices with digital input		N/A
50	Max. acoustic output $L_{Aeq,T}$ , dB(A) :	0.5	N/A
10.6.6.3	Cordless listening devices	5	N/A
	Max. acoustic output $L_{Aeq,T}$ , $dB(A)$ :	(C	N/A
В	NORMAL OPERATING CONDITION TESTS, CONDITION TESTS AND SINGLE FAULT CONDI	ABNORMAL OPERATING TION TESTS	P
B.1	General	. /.	P
B.1.5	Temperature measurement conditions	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
B.1.6	Specific output conditions	(Fe)	N/A
B.2	Normal operating conditions	A	P
B.2.1	General requirements :	(See Test Item Particulars and appended test tables)	P

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	IEC 62368-1	A	(E)
Clause	Requirement + Test	Result - Remark	Verdict
(E)	Audio Amplifiers and equipment with audio amplifiers :	No audio amplifier circuits	N/A
B.2.3	Supply voltage and tolerances	(4)	N/A
B.2.5	Input test:	(See appended table B.2.5)	P
B.2.6.4	Equipment intended for building-in or rack-mounting		N/A
B.3	Simulated abnormal operating conditions	0.6	P
B.3.1	General	(C)	P
B.3.2	Covering of ventilation openings	No ventilation openings	N/A
	Instructional safeguard:		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 table B.3, B.4)	P
B.3.6	Reverse battery polarity	(F)	N/A
B.3.7	Audio amplifier abnormal operating conditions	No audio amplifiers	N/A
B.3.8	Safeguards functional during and after abnormal	(See appended table B.3)	P
B.4	operating conditions :	9	D
	Simulated single fault conditions  General	0.9	P
B.4.1		No such device used	P
B.4.2 B.4.3	Temperature controlling device  Blocked motor test	7	N/A
	7 4.9	No motors used	N/A
B.4.4 B.4.4.1	Functional insulation  Short circuit of clearances for functional insulation	(C 1. 14-11. D.2. D.4)	N/A
B.4.4.1 B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3, B.4) (See appended table B.3, B.4)	P P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards used.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3, B.4)	Р
B.4.6	Short circuit or disconnection of passive components	(See appended table B.3, B.4)	P
B.4.7	Continuous operation of components	Not intermittent or short-time operation equipment	N/A
B.4.8	Compliance during and after single fault conditions:	(See appended table B.4)	Р
B.4.9	Battery charging and discharging under single fault conditions		N/A

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	4.6	14	
	IEC 62368-1	9	(E)
Clause	Requirement + Test	Result - Remark	Verdict
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiati	ion 🔰	N/A
C.1.2	Requirements	No UV radiation in the	N/A
	A CE	equipment	d.
C.1.3	Test method		N/A
C.2	UV light conditioning test	2.5	N/A
C.2.1	Test apparatus :	(6)	N/A
C.2.2	Mounting of test samples	9	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	059	N/A
D.2	Antenna interface test generator	(F)	N/A
D.3	Electronic pulse generator	(c	N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAIN	NING AUDIO AMPLIFIERS	N/A
E.1	Electrical energy source classification for audio signal	ls	N/A
h.	Maximum non-clipped output power (W):		_
	Rated load impedance $(\Omega)$ :	(c. ?	_
	Open-circuit output voltage (V):		_
	Instructional safeguard:	(4	_
E.2	Audio amplifier normal operating conditions		N/A
E.2.1	Pink noise test signal	029	_
E.2.2	Sine-wave signal	5	_
E.3	Operating conditions of equipment containing an aud	lio amplifier	_
E.3.1	Normal operating conditions	(See appended table B.2.5,	
	A.5	E.3.1)	
E.3.2	Abnormal operating conditions	(See appended table B.3, B.4)	N/A
E.3.3	Audio equipment temperature measurement	0.2	N/A
A	conditions	25	
F	EQUIPMENT MARKINGS, INSTRUCTIONS,	AND INSTRUCTIONAL	P
	SAFEGUARDS		(E)
F.1	General		P
15	Language :	English version checked	_
F.2	Letter symbols and graphical symbols	(6	P

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	IEC 62368-1	9	(E)
Clause	Requirement + Test	Result - Remark	Verdict
F.2.1	Letter symbols according to IEC60027-1	13	P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	(E)	P
F.3	Equipment markings	9	P A
F.3.1	Equipment marking locations	The marking is located on external enclosure of the equipment and easily visible	P
F.3.2	Equipment identification markings	A (25)	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		P
F.3.3.1	Equipment with direct connection to mains	05	P
F.3.3.2	Equipment without direct connection to mains	(Fe)	N/A
F.3.3.3	Nature of the supply voltage:	To Co	N/A
F.3.3.4	Rated voltage:	See marking plate	P
F.3.3.5	Rated frequency :	5	N/A
F.3.3.6	Rated current or rated power :	See marking plate	P
F.3.3.7	Equipment with multiple supply connections	Single supply connection	N/A
F.3.4	Voltage setting device	No voltage setting device	N/A
F.3.5	Terminals and operating devices	(4	N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings :	No mains appliance outlet and socket-outlet	N/A
F.3.5.2	Switch position identification marking :	Not such switch	N/A
F.3.5.3	Replacement fuse identification and rating markings:	(E	N/A
	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	(E)	N/A
F.3.6	Equipment markings related to equipment classification	15	N/A
F.3.6.1	Class I equipment	(to	N/A
F.3.6.1.1	Protective earthing conductor terminal :	A	N/A
F.3.6.1.2	Protective bonding conductor terminals :		N/A
F.3.6.2	Equipment class marking :	A.6	N/A
F.3.6.3	Functional earthing terminal marking:	(C)	N/A

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	A.6	(4)	- 6
	IEC 62368-1	A	(Ex
Clause	Requirement + Test	Result - Remark	Verdict
F.3.7	Equipment IP rating marking :	000	N/A
F.3.8	External power supply output marking :	See copy of marking plate	P
F.3.9	Durability, legibility and permanence of marking	(49)	P
F.3.10	Test for permanence of markings	7	P
F.4	Instructions		P
A.	a) Information prior to installation and initial use	2.5	P
(Fe	b) Equipment for use in locations where children not likely to be present	(E) (%)	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	050	N/A
(	f) Instructions for audio equipment terminals	(te)	N/A
	g) Protective earthing used as a safeguard	To Co	N/A
	h) Protective conductor current exceeding ES2 limits		N/A
6	i) Graphic symbols used on equipment	6	N/A
	j) Permanently connected equipment not provided with all-pole mains switch	6.60	N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
(4)	m) Installation instructions for outdoor equipment	020	N/A
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance	(C)	N/A
G.2	Relays	A 15	N/A
G.2.1	Requirements	No relays used	N/A
G.2.2	Overload test	A	N/A
G.2.3	Relay controlling connectors supplying power to other		N/A
05	equipment	150	
G.2.4	Test method and compliance	(LE)	N/A

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Clause Requirement + Test	Result - Remark	Verdict
Clause Requirement + Test	Result - Remark	Verdict
	A (9	
Protective devices	(6)	N/A
G.3.1 Thermal cut-offs	No thermal cut-off used	N/A
Thermal cut-outs separately approved according to II 60730 with conditions indicated in a) & b)	EC	N/A
Thermal cut-outs tested as part of the equipment indicated in c)	as	N/A
G.3.1.2 Test method and compliance	(10)	N/A
Thermal links	No thermal links used	N/A
a) Thermal links tested separately according to II 60691 with specifics	EC S	N/A
b) Thermal links tested as part of the equipment		N/A
Test method and compliance	050	N/A
PTC thermistors	No PTC thermistors used	N/A
6.3.4 Overcurrent protection devices	T (i	N/A
Safeguards components not mentioned in G.3.1 to G.3	.4	N/A
Non-resettable devices suitably rated and markit provided	ng	N/A
Single faults conditions:	(See appended table B.4)	N/A
G.4 Connectors		N/A
G.4.1 Spacings		N/A
Mains connector configuration :		N/A
Plug is shaped that insertion into mains socket-outlets appliance coupler is unlikely	or The output connecter is such a shape that cannot insertion into a mains socket-outlet	P
Wound components		N/A
Wire insulation in wound components	Approved source of triple insulated wire used as secondary winding for reinforced insulation	A
G.5.1.2 Protection against mechanical stress	Separated by the insulation tube	N/A
G.5.2 Endurance test	-	N/A
G.5.2.1 General test requirements		N/A
G.5.2.2 Heat run test	0.10	N/A
Test time (days per cycle) :	(E	_

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			15
	IEC 62368-1	_	(10)
Clause	Requirement + Test	Result - Remark	Verdict
(6	Test temperature (°C) :	1.20	_
G.5.2.3	Wound components supplied from the mains	125	N/A
G.5.2.4	No insulation breakdown	(49)	N/A
G.5.3	Transformers	4	N/A
G.5.3.1	Compliance method :	The isolation transformer meets	N/A
04		the requirements given in	
(10)		G.5.3.2 and G.5.3.3	
A	Compliance method :	Electronic protection	N/A
G.5.3.2	Insulation		N/A
	Protection from displacement of windings:	Fixed by bobbin and insulation tape	_
G.5.3.3	Transformer overload tests	(See appended table B.3, B.4)	N/A
G.5.3.3.1	Test conditions	(4)	N/A
	Position:	T GE	N/A
	Method of protection :	9	N/A
G.5.3.3.2	Winding temperatures	6	N/A
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW	(6.5)	N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter :	(4	
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced	029	N/A
<b>5</b>	insulation :	0.6	
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	Co.	N/A
G.5.4.1	General requirements	No motor used	N/A
G.5.4.2	Motor overload test conditions	(4)	N/A
G.5.4.3	Running overload test	A	N/A
G.5.4.4	Locked-rotor overload test		N/A
05	Test duration (days) :	A.6	N/A
(40)	Electric strength test :	(See appended table 5.4.9)	N/A

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	IEC 62368-1	9	125
	N. 19		(F)
Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.5	Running overload test for DC motors	(E)	N/A
G.5.4.5.2	Tested in the unit	0,5	N/A
G.5.4.5.3	Alternative method	(F)	N/A
	Electric strength test :	(See appended table 5.4.9)	N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit	0.6	N/A
(10)	Maximum Temperature :	(LE)	N/A
A	Electric strength test :	(See appended table 5.4.9)	N/A
G.5.4.6.3	Alternative method		N/A
	Electric strength test :	(See appended table 5.4.9)	N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors	0.50	N/A
G.5.4.9	Series motors	(F)	N/A
	Operating voltage :	(6	_
G.6	Wire Insulation	9	N/A
G.6.1	General	Not such TIW used	N/A
G.6.2	Enamelled winding wire insulation		N/A
<b>G.7</b>	Mains power supply cords and interconnection cables	(E)	N/A
G.7.1	General requirements	No mains supply cords used	N/A
	Type :	(4	_
G.7.2	Cross sectional area (mm² or AWG) :		N/A
G.7.3	Cord anchorages and strain relief for non-detachable	029	N/A
5	power supply cords		
G.7.3.2	Cord strain relief	(6	N/A
G.7.3.2.1	Requirements	9	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) :	(E)	N/A
G.7.3.2.4	Strain relief and cord anchorage material	15	N/A
G.7.4	Cord Entry	(FC)	N/A
G.7.5	Non-detachable cord bend protection	A	N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance	A.63	N/A

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	IEC 62368-1	4	(E)
Clause	Requirement + Test	Result - Remark	Verdict
(E)	Overall diameter or minor overall dimension, D (mm) :	CE,	_
	Radius of curvature after test (mm) :	(4)	
G.7.6	Supply wiring space	9	N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire	2.6	N/A
G.7.6.2.1	Requirements	(C)	N/A
G.7.6.2.2	Test with 8 mm strand	4	N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General	25	N/A
G.8.2.2	Varistor overload test	(F)	N/A
G.8.2.3	Temporary overvoltage test	(6	N/A
G.9	Integrated circuit (IC) current limiters	9	N/A
G.9.1	Requirements	No such IC used	N/A
/	IC limiter output current (max. 5A) :		_
	Manufacturers' defined drift :	(E)	
G.9.2	Test Program		N/A
G.9.3	Compliance	(4	N/A
G.10	Resistors		N/A
G.10.1	General	0%	N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test	(Te	N/A
	Changes of resistance (%) :	9	N/A
	Measured current with the lowest resistance value :		N/A
G.10.4	Voltage surge test	. /2	N/A
(Te	Changes of resistance (%) :	( co	N/A
G.10.5	Impulse test	05	N/A
	Changes of resistance (%) :	(Fe)	N/A
G.10.6	Overload test	The state of the s	N/A
	Changes of resistance (%) :		N/A
G.11	Capacitors and RC units	1.6	N/A
G.11.1	General requirements	(See appended table 4.1.2)	N/A

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	IEC 62368-1	A	(E)
Clause	Requirement + Test	Result - Remark	Verdict
G.11.2	Conditioning of capacitors and RC units	13	N/A
G.11.3	Rules for selecting capacitors	0,0	N/A
G.12	Optocouplers	(4)	N/A
	Optocouplers comply with IEC 60747-5-5 with specifics		N/A
A1	Type test voltage V <sub>ini,a</sub> :	0.5	
(10)	Routine test voltage, V <sub>ini, b</sub> :	(C)	_
G.13	Printed boards	4	P
G.13.1	General requirements	(See appended table 4.1.2)	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board is compliant with the minimum requirements of clearances (5.4.2) and creepage distances (5.4.3)	P
G.13.3	Coated printed boards	No coated printed boards	N/A
G.13.4	Insulation between conductors on the same inner surface	120	N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation:		N/A
2	Number of insulation layers (pcs) :		_
G.13.6	Tests on coated printed boards	049	N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance	(Car	N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements :		N/A
G.15	Pressurized liquid filled components or LFC assembli	es	N/A
G.15.1	Requirements	120	N/A
G.15.2	Test methods and compliance criteria for self-contained LFC	(E)	N/A
G.15.2.1	Hydrostatic pressure test, applied test pressure:	9	N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test, the change of tensile strength (%) :	CE45	N/A

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	IEC 62368-1		(E)
Clause	Requirement + Test	Result - Remark	Verdict
G.15.2.4	Vibration test	12.5	N/A
G.15.2.5	Thermal cycling test, test temperature (°C):	0,5	N/A
G.15.2.6	Force test	(4)	N/A
G.15.2.7	Compliance criteria	9	N/A
G.15.3	Test methods and compliance for a modular LFC		N/A
G.15.3.2	Hydrostatic pressure test, applied test pressure:	2.5	N/A
G.15.3.3	Creep resistance test	(C)	N/A
G.15.3.4	Tubing and fittings compatibility test, the change of tensile strength (%) :	Cer's	N/A
G.15.3.5	Thermal cycle test, test temperature (°C) :		N/A
G.15.3.6	Force test		N/A
G.15.3.7	Compliance criteria	049	N/A
G.16	IC including capacitor discharge function (ICX)	(F)	N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment	9	N/A
5	ICX tested separately	6	N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test:	(Ex)	
	Mains voltage that impulses to be superimposed on:	(4	_
(25)	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test:	029	_
G.16.3	Capacitor discharge test :		N/A
Н	CRITERIA FOR TELEPHONE RINGING SIGNALS	S	N/A
H.1	General	9	N/A
H.2	Method A		N/A
H.3	Method B	- 7-	N/A
H.3.1	Ringing signal	No telephone ringing signals	N/A
H.3.1.1	Frequency (Hz) :	25	_
H.3.1.2	Voltage (V) :	(Fe)	_
H.3.1.3	Cadence; time (s) and voltage (V) :	A	_
H.3.1.4	Single fault current (mA): :		_
H.3.2	Tripping device and monitoring voltage	0.60	N/A

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	4.6	(+)	,
	IEC 62368-1	A	(E)
Clause	Requirement + Test	Result - Remark	Verdict
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage	(E)	N/A
H.3.2.2	Tripping device	(19)	N/A
H.3.2.3	Monitoring voltage (V):	9	N/A
J	INSULATED WINDING WIRES FOR USE INSULATION	WITHOUT INTERLEAVED	N/A
J.1 (&	General	(E	N/A
9	Winding wire insulation :	Approved triple insulated wires complied with Annex J of IEC 62368-1	_
	Solid round winding wire, diameter (mm):		N/A
(	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm <sup>2</sup> ):	(Eth	N/A
J.2/J.3	Tests and Manufacturing	J (,0	? _
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard:	No safety interlocks	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	049	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

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	4.6		
	IEC 62368-1	7	(Let
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
L.1	General requirements	The appliance coupler used as disconnect device	N/A
L.2	Permanently connected equipment	Not such equipment	N/A
L.3	Parts that remain energized	No parts remain energized after the mains plug disconnected	N/A
L.4	Single-phase equipment	The appliance coupler disconnects both poles simultaneously	N/A
L.5	Three-phase equipment	Single phase equipment	N/A
L.6	Switches as disconnect devices	No switches used as disconnect devices	N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
	Instructional safeguard:		N/A
M	EQUIPMENT CONTAINING BATTERIES AN CIRCUITS	ND THEIR PROTECTION	P
M.1	General requirements		P
M.2	Safety of batteries and their cells	049	P
M.2.1	Batteries and their cells comply with relevant IEC standards:	IEC 62133-2	P
M.3	Protection circuits for batteries provided within the ed	quipment	AP
M.3.1	Requirements		P
M.3.2	Test method		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		N/A
M.3.3	Compliance		P
M.4	Additional safeguards for equipment containing a second	ondary lithium battery	P
M.4.1	General		P

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	A.6		
	IEC 62368-1	A	(Ex
Clause	Requirement + Test	Result - Remark	Verdict
4.0	IEC 62133-2 batteries used for sub-system power		P
	powering application :		
M.4.2	Charging safeguards	(40)	P
M.4.2.1	Requirements	A	P (
M.4.2.2	Test		P
M.4.2.2.1	General		P
M.4.2.2.2	Abnormal operating conditions		P
M.4.2.2.3	Single fault conditions		P
M.4.2.3	Compliance criteria :	(See appended table M.4.2)	P
M.4.3	Fire enclosure:		P
M.4.4	Drop test of equipment containing a secondary lithium		P
,	battery	15	
M.4.4.2	Preparation and procedure for the drop test		P
M.4.4.3	Drop, Voltage on reference and dropped batteries (V);		P
	voltage difference during 24 h period (%):		
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	Test method and compliance		N/A
M.6	Safeguards against short-circuits		P
M.6.1	External and internal faults		P
M.6.2	Compliance		P
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
9	Minimum air flow rate, $Q$ (m <sup>3</sup> /h):	0.0	N/A
M.7.3	Ventilation tests	(Le	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

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	A.6		
	IEC 62368-1	A	(Ex
Clause	Requirement + Test	Result - Remark	Verdict
A . 60	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 s	park sources of batteries with	N/A
Λ.	aqueous electrolyte	2.6	
M.8.1	General		N/A
M.8.2	Test method	4 650	N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume $V_{\rm Z}$ (m <sup>3</sup> /s) :		_
M.8.2.3	Correction factors:		_
M.8.2.4	Calculation of distance <i>d</i> (mm) :		
M.9	Preventing electrolyte spillage	(F)	<sub>6</sub> P
M.9.1	Protection from electrolyte spillage		P
M.9.2	Tray for preventing electrolyte spillage	Not stationary equipment	N/A
M.10	Instructions to prevent reasonably foreseeable misuse		P
	Instructional safeguard:	Specified in user manual	P
N	ELECTROCHEMICAL POTENTIALS		N/A
	Material(s) used :	Pollution degree considered	_
0	MEASUREMENT OF CREEPAGE DISTANCES AN	ND CLEARANCES	P
	Value of $X$ (mm) :	Considered	
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECT	S	P
P.1	General		P
P.2	Safeguards against entry or consequences of entry of	a foreign object	P
P.2.1	General		N/A
P.2.2	Safeguard requirements	No openings	N/A
	The ES3 and PS3 keep-out volume in Figure P.4 not applicable to transportable equipment	No openings	_
	Transportable equipment with metalized plastic parts :		
P.2.3	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

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	IEC 62368-1	9	(Et
Clause	Requirement + Test	Result - Remark	Verdict
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts	(4)	N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T <sub>C</sub> (°C) :		_
	Duration (weeks) :		_
Q	CIRCUITS INTENDED FOR INTERCONNECTIO	N WITH BUILDING WIRING	N/A
Q.1	Limited power sources		N/A
Q.1.1	Requirements		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output	(See appended table Annex Q.1)	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 Annex Q.1)	N/A
	Current rating of overcurrent protective device (A):		N/A
Q.2	Test for external circuits – paired conductor cable	No such external circuits	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 barrie the steady state power does not exceed 4 000 W	er materials of equipment where	N/A
	Samples, material:		
	Wall thickness (mm) :		_
	I .		

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A	(E)
Result - Remark	Verdict
	_
ons	N/A
	N/A
	N/A
	N/A
er integrity	N/A
	_
	_
	_
for	N/A
	N/A
e	N/A
	N/A
	N/A
	_
	N/A
of	N/A
000	
	- /-
	_
m	_
	N/A
plet	N/A
	P P

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	IEC 62368-1	9	Cer
Clause	Requirement + Test	Result - Remark	Verdict
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 :	(See appended table T.4)	P
T.5	Steady force test, 250 N :		N/A
T.6	Enclosure impact test		P
	Fall test		P
	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	Glass Impact Test :	No glass used	N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted:	No glass used	N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) :	No telescoping or rod antennas used	N/A
U	MECHANICAL STRENGTH OF CATHODE PROTECTION AGAINST THE EFFECTS OF IMI	RAY TUBES (CRT) AND PLOSION	N/A
U.1	General		N/A
	Instructional safeguard:	No CRTs	N/A
U.2	Test method and compliance for non-intrinsically pr	otected CRTs	N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		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	No openings	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

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	IEC 62368-1	(E)
Clause	Requirement + Test Result - Remark	Verdict
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)	
	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
Y.5.5	Protection from excessive dust	N/A
Y.5.5.1	General	N/A
Y.5.5.2	IP5X equipment	N/A

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	IEC 62368-1		(6)
Clause	Requirement + Test	Result - Remark	Verdict
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures	049	N/A
Y.6.1	General		N/A
Y.6.2	Impact test :		N/A

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4.1.2 TAB	LE: List of critical co	omponents	(25°		P
Object /	Manufacturer/	Type / model	Technical	Standard	Mark(s) of
part No.	trademark		data		conformity1
Battery	YX (S)	IMR14500	3.7V, 400mAh, 1.48Wh	IEC 62133-2	IEC
PCB	Interchangeable	JLD-2003CS-1-	V-0,130℃	UL 94 UL 796	UL G
Plastic enclosure	Interchangeable	Interchangeable	V-0,130℃	UL 94	UL

### Supplementary information:

<sup>&</sup>lt;sup>2)</sup> Description line content is optional. Main line description needs to clearly detail the component used for testing

5.2	TABLE: Classification of electrica	al energy sources		(10		P	
Supply	Location (e.g. circuit designation)	Test conditions	Param	eters			ES
Voltage			U(V)	I (mA)	Type <sup>1)</sup>	Additional Info <sup>2)</sup>	Class
5Vdc	EUT input	Normal	5			DC	
		Abnormal:					ES1
		Single fault – SC/OC					
5Vdc	Battery circuit	Normal	3.7			DC	
2	050	Abnormal:	(4)		-0.6		ES1
	(40)	Single fault – SC/OC			Ac		

## 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.
- 3) SC Short-circuited; OC Open-circuited.

5.4.1.8 TABLE: Working voltage measurement				(	(1)	N/A
Location		RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
05	)		3	7.6		
(19)				10		

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<sup>&</sup>lt;sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039.



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	A . (A		
Supplementary information:			
Tested under 240V, 60Hz		120	(A)

5.4.1.10.2 <b>TABLE:</b> Vicat s	4.1.10.2 TABLE: Vicat softening temperature of thermoplastics							
Method:		ISO 306 / B50	120					
Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening	(°C)				
	- (46)			(19				
Supplementary information:								
029	C.	1 0.6						

		A 16	2				0 60	
5.4.1	1.10.3	TABLE: Ball pro	essure test of thermoplast	(6)	N/A			
Allo	Allowed impression diameter (mm) : ≤ 2 mm							_
Ohio	Object/Part No./Material		Manufacturer/trademark	Ti: 1 ( )		Test temperature	Impres	sion
Obje	ect/Part N	io./Materiai	Manufacturer/trademark	Thickness (mm)		(°C)		er (mm)
	d			A		150		
Supp	plementa	ry information:						
T1 b	obbin is	phenolic, no test re	equire.				(6	

5.4.2, 5.4.3 TABLE: Minimum Clearances/Creepage distance							N/A	
Clearance (cl) and	$U_p$	$U_{rms}$	Freq 1)	Required*	cl	E.S. <sup>2)</sup>	Required	cr
creepage distance (cr)	(V)	(V)	(Hz)	cl (mm)	(mm)	(V)	cr (mm)	(mm)
at/of/between:								
	6		15				(	
0.6			(Te		,			
(0)			A	1	12			

### Supplementary information:

- 1) Only for frequency above 30 kHz.
- 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied).
- 3) \* Both frequencies lower than 30 kHz and higher than 30 kHz are present. Limit from Table 11 based on the temporary overvoltage (2000Vpeak) which is higher than Table 12.
- 4) BI: basic insulation; SI: supplementary insulation; DI: double insulation; RI: reinforced insulation.
- 5) Ferrite core of transformer T1 considered as primary live part.
- 6) The clearance is evaluated up to 5000m above sea level and the multiplication factor for altitude is 1.48
- 7) If no specified, the worst conditions were recorded.

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

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0	(10		0 (0		1			7	(Ex	S	
(DTI) at/of								(m	m)	(mm)	
			9		1	19					(A)
16					(1)			0.60			
(6					V			(Te			
Supplement	ary informa	ation:				<u>'</u>				'	
	1	4	^	19					(F)	/	
			(/6			- /-					(10
5.4.4.9	TABLE:	Solid in	sulation at f	requenc	cies >3(	) kHz				N	I/A
Insulation n	naterial		$E_{\mathrm{P}}$	Freque	ency	$K_{\rm R}$	,	Thickness a	d Insulation	$V_{\mathrm{PW}}$	
				(kHz)				(mm)		(Vpl	<b>c</b> )
		(JE	7					A	(	(6)	
Supplement	ary informa	ition:			'		,				
As an altern	ative to the	above, t	he electric st	rength to	est acco	rding to	clause	5.4.9 and	see table 5.4.	9 for det	ails.
	. /-			<b>V</b>		(10					
5.4.9	TABLE:	Electric	strength tes	sts		A		10	10	]	N/A
Test voltage	applied be	tween:			Voltag	ge shape		Test vo	ltage (V)	Break	down
					(Surge	, Impuls	se, AC,	,		Yes /	No
					DC, et	c.)					
5				6			125				
/	0.6					(-	Te		. /.		
Supplement	ary informa	ation:			'					<b>,</b>	
••	A		120						9	1	6
5.5.2.2	TABLE:	Stored	discharge on	capaci	tors					(4)	N/A
Location		Supply	voltage (V)	Opera	ting an	d fault	Switc	ch position	Measured	ES (	Class
			- , ,	condit	tion 1)			-	voltage (Vp	k)	
¥	140	?					(6)		16	,	
	(10)		- /-						(6		
Supplement	ary informa	ition:									
* *			g: see table 4	.1.2	120	2				(	Y
			e table 4.1.2		(10)			. /-			
[] ICX:					A		do	To			

5.6.6	TABLE: Resistance of p	TABLE: Resistance of protective conductors and terminations									
Lagation		Test current	current Duration		Resistance						
Location		(A)	(min)	(V)	$(\Omega)$						
(4)	0.6			- 10							

1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit

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	( )		0.60				(4)				
Supplementa	ary inforn	nation:									
			8	1	25			(A)			
16				(1)		0.60		¥			
5.7.4	TABLE	E: Unearthed a	ccessibl	e parts				N/A			
Location		Operating and	Su	pply	Parameters		ES				
		fault conditions		oltage (V)	Voltage	Current	Freq.				
				- , ,	$(V_{rms} \text{ or } V_{pk})$	(A <sub>rms</sub> or A	(Hz)				
			A		16.						
04	9				6	1.6					
(10)		26				(10)					
Supplementa	arv inforn	nation:					^	(0			
* *		ort circuit; OC=	open c	ircuit.			C	/			
		eak value) is m	• /	100	asuring netwoi	k specified in	Figure 4, IEC	60990:2016			
`		oeak value) is m			711-7		· ·				
	30	. ,		<u> </u>	9	010	2				
5.7.5	TABLE	E: Earthed acce	essible c	onductive pa	ırt	(Te)		N/A			
Supply volta	-	(10)		· (C							
Phase(s)	:	9	Г	1 Single Pha	se: [ ] Three P	hase: [ ] Delta	[] Wye	<del>\$</del>			
Power Distri	ibution Sy	vstem :	<u>Γ</u>	-14-		] IT	LJ J				
Location		, 202111	Fa	ult Condition		Touch current	Comment				
200411011				60990 clause 6.2.2 (mA)							
	A	04	9	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		J.	1.6				
Supplementa	ary Inforn	nation:	Ĭ.				<i>)</i>	1.5			
o ppromon.	J 11110111			(LC				~			
25				-6	0	70					
5.8	TABLE	E: Backfeed saf	eguard	in hattery ha	icked un sunt	olies	06	N/A			
Location	111222	Supply		ng and fault	Time (s)	Open-circuit	Touch	ES Class			
20 <b>0u</b> tion		1 1	condition	•		voltage (V)	current (A)	Lo ciass			
			<u> </u>	Λ.	<u> </u>			167			
Supplementa	ary inforn	nation:		16	\ <u></u>						
(6)				V	(	1.6					
4		050			(		15				
6.2.2	TABLE	E: Power source	e circuit	t classificatio	ns		(6)	P			
		7.00	ige (V)	Current (A)	Max.	Time (S)	PS class				
Location	1 ^	lition	Voice	150 (1)		Power <sup>1)</sup> (W)	Time (s)	I S class			
EUT input		•101011		[4	7/_	(vv)		PS3			
LOT Input	- <b>-</b>				7	CE		(Declared			
1 /2							1				



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#### Supplementary information:

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

6.2.3.1	TABLE: Determin	nation of Arcing PIS	(L	N/A	
Location		Open circuit voltage	Measured r.m.s	Calculated value	Arcing PIS?
		after 3 s (Vpk)	current (A)		Yes / No
	*	(Te)	2 (2	~	(Le

### Supplementary information:

- 1) An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage  $(V_p)$  and normal operating condition rms current  $(I_{rms})$  is greater than 15.
- 2) All primary circuit/components were considered as arcing PIS, the max. open circuit voltage of output for all models were not exceeded 50V.

<b>6.2.3.2 TABLE:</b> Dete	ermination of resistive PIS		P
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS?
			Yes / No
Input terminal	4		Yes
	(E		(Declared)

#### Supplementary information:

- 1. All primary/secondary components except output terminal were considered as resistive PIS.
- 2. 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.

3. A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (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 pro	essure lamp	049		N/A	
Lamp manufacturer		Lamp type	Explosion method	Longest axis of	Particle found	
				glass particle	beyond 1 m	
				(mm)	Yes / No	
	6	- 06		(10)	0.6	
Supplementa	ary information:					
		A	170			

P

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		A . (	<u> </u>								
B.1.5, B.2.6											
Supply voltage	: (V) :			Charging Di				Discharge	Discharge		
Ambient tempe	Ambient temperature during test $T_{amb}$ (°C):							A.65		_	
Maximum measured temperature <i>T</i> of part/at:				T(	(°C)					Allowed	
										T <sub>max</sub> (°C)	
PCB near D1	(4)	1	25	45	.6			46.9	(4)	130	
Plastic enclosu	re (outside)	(4	0	35	.3			36.9		77	
Plastic enclosu	re (inside)		7	33	.9	~_		39.6		.Ref	
Battery				31	.3			36.3		.Ref	
Tma	A 10	2		23	.9			24.2			
Temperature T	of winding:	t <sub>1</sub> (°C)	$R_1(\Omega)$		t <sub>2</sub> (°C)		$R_2(\Omega)$	T (°C)	Allowed	Insulation	
									T <sub>max</sub> (°C)	class	
						^	5			(-	

### Supplementary information:

- 1. Thermocouple method used.
- 2. The maximum operation ambient temperature is 25°C. The test data for external enclosure are adjusted at 25°C.
- 3. #: External surfaces touched occasionally for very short periodes: 1s<t<10s.

B.2.5	TABLE: In	put test		(6)			P	
U (V)	I(A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
5	0.156	1	0.78			9	Charge by Type-C port	

Supplementary information:

Equipment may be have rated current or rated power or both. Both should be measured.

B.3, B.4	TAI	BLE: Abnor	rmal operati	ing and fau	ılt condi	tion tests	1 (6)	P
Ambient tem	perat	ture T <sub>amb</sub> (°C	() : 126				See below	
Power source	for	EUT: Manu	See page 2					
Component N	No.	Condition	voltage	Test time	Fuse no.	Fuse	Observation	
D1 SC 5 1s Unit become steady state, no damage, no hazard.								damage,
Supplementa	ry in	formation:		'		•		

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Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.

- 1) SC: Short-circuited; OC: Open-circuited; OL: Overloaded; BL: Blocked.
- 2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.

					1 1 1 1 1						-	
M.3	TABLE: P	rotection circui	ts for	batteries	provided	with	in the	equipm	ent	I	P	
Is it possible t	to install the b	attery in a rever	se po	larity posit	tion? :		No	6		_	_	
		Charging	Charging									
Equipment Sp	ecification	Voltage (V)			Curr	ent (A)						
		5		·	1				(			
		Battery specifi	Battery specification									
		Non-rechargea	Recharge	eable	batteri	ies						
Manufacturer/type		Discharging	Uni	ntentional	Charging	<u> </u>			Discharging	Rev	erse	
		current (A)	charging		Voltage (	age (V) Current (A)		ent (A)	current (A)	cha	rging	
			current (A)							curi	rent (A)	
IMR14500				(A)	4.2		0.2		0.4	0		
Note: The test	ts of M.3.2 ar	e applicable onl	y wh	en above aj	ppropriate	data	is not	available	e.			
Specified batt	ery temperati	ıre (°C) :			7	1		1.0	10			
Component	Fault	Charge/ discha	arge	Test time	Temp.	Cu	rrent	Voltage	Observation	n		
No.	condition	mode			(°C)	(A)	)	(V)				
Q1 pin 3-6	SC	Charge		7h	40.5	0.4		4.2	NL,NS	NL,NS,NE,1		
Q1 pin 3-6	SC	Discharge	Discharge 7h			0.4	9	4.2	NL,NS	S,NE	,NF	
Supplementar	y information	n:										
A 1.1	00 4 .	······································	. •	'. NIT	1 ' 1	1 4	<b>3</b> . T	. 1	:11	1 NIT	,	

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.

		1	1.0				V		
M.4.2 TA	BLE: Charging safe	eguards for eq	uipment con	taining a s	secondary lit	hium battery	P		
Maximum specif	ied charging voltage (	(V):	A	4.2	7		_		
Maximum specified charging current (A) : 0.4									
Highest specified charging temperature (°C) : 45									
Lowest specified	charging temperature	e (°C) :		0		A			
Battery	Operating and	Measuremen	t	·		Observation			
manufacturer/typ	e fault condition	Charging	Charging Charging Temp.						
voltage (V)   current (A)   (°C)									

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Li-ion battery	Normal	4.2	0.4	41.8	No abnormal, no
	operation	5	05		hazard.
Li-ion battery	Battery pack	4.2	0.4	40.9	No abnormal, no
(IC	(B- to P- SC of		A	Car	hazard.
9	battery PCB)				025

### 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	Condition	U <sub>oc</sub> (VDC)	$\square$ Time (s)	$I_{sc}(A)$		S (VA)	
Circuit	Condition			Meas.	Limit	Meas.	Limit
	1-	~	(4	d'			
1,6	2		9	d a	070		
	25				(F)	A	6

### Supplementary Information:

SC=Short circuit, OC=Open circuit.

T.2, T.3, T.4, T.5	ΓABLE: Steady f	orce test		9		P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Top enclosure	Plastic	Min. 1.0	Circular plane surface 30 mm in diameter	100	5	Enclosure remained intact, no crack/opening developed. Internal ES3 were not accessible after test. No insulation breakdown.
Bottom enclos	ure Plastic	Min. 1.0	Circular plane surface 30 mm in diameter	100	5	Enclosure remained intact, no crack/opening developed. Internal ES3 were not accessible after test. No insulation breakdown.

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Side enclosure	Plastic	Min. 1.0	Circular plane surface 30 mm in diameter	100	500	Enclosure remained intact, no crack/opening developed. Internal ES3 were not accessible after test. No insulation breakdown.
Supplementary in	formation:					

T.6, T.9 TABLE: Impact test			(6	P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation
Top enclosure	Plastic	Min. 1.0	1300	Enclosure remained intact, no crack/opening developed. Internal ES3 were not accessible after test. No insulation breakdown.
Bottom enclosure	Plastic	Min. 1.0	1300	Enclosure remained intact, no crack/opening developed. Internal ES3 were not accessible after test. No insulation breakdown.
Side enclosure	Plastic	Min. 1.0	1300	Enclosure remained intact, no crack/opening developed. Internal ES3 were not accessible after test. No insulation breakdown.
Supplementary inform	nation:			
A	100	>		200

T.7 TAB	LE: Drop test	9	125	P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation
Top enclosure	Plastic	Min. 1.0	1000	No damage, no hazardous
Bottom enclosure	Plastic	Min. 1.0	1000	No damage, no hazardous
Side enclosure	Plastic	Min. 1.0	1000	No damage, no hazardous
Supplementary info	ormation:			
(6		A	(6)	

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		. [			1 10	
T.8 TABI	LE: Stress relief te	st	050		P	
Lastina/Dant	Matarial	Thickness Oven Temperature		Duration	Oleganistian	
Location/Part	Material	(mm)	(°C) (h)		Observation	
Completed sample	Plastic	Min. 1.0	70	7	No distortion, no hazard	
Supplementary info	rmation:					
	×	(To			1.6	

	and the second s					
X TABLE: Alternative method for determining minimum clearances distances N/A						
Clearance distanced between:	Peak of working voltage	Required cl	Measured cl			
	(V)	(mm)	(mm)			
	- 040		- 9			
Supplementary information:						
- /-	V	(6)				



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### ATTACHMENT TO TEST REPORT

## IEC 62368-1

# EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

(Audio/video, information and communication technology equipment Part 1: Safety requirements)

**Differences according to.....**: EN IEC 62368-1-2024 + A11:2024

**TRF template used.....:** IECEE OD-2020-F2:2022, Ed. 1.2

Attachment Form No.....: EU GD IEC 62368 1F

Attachment Originator.....: UL Solutions (Demko)

**Master Attachment**.....: 2024-05-16

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	4	
6	CENELEC COMMON MODIFICATIONS (EN)	N/A
7	Clause numbers in the cells that are shaded light grey are clause references in EN	N/A
Co Co	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".	(Et
J	Add the following annexes:	N/A
	Annex ZA (normative) Normative references to international publications with their corresponding European publications	(E)
(E)	Annex ZB (normative) Special national conditions  Annex ZC (informative) A-deviations	9
(4)	Annex ZD (informative) IEC and CENELEC code designations for flexible cords	A.6
1	MODIFICATION to the whole document	N/A
(Ets	Delete all the "country" notes in the reference document according to the following list:	N/A

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	(IF)		6			(4)	,
	0.2.1	Note 1 and Note 2	1	Note 4 and Note 5	3.3.8.1	Note 2	
025	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and Note 2	
(P)	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and Note 3	5.4.2.3.2.4 Table 13	Note 2	3
	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			1 63
15	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and Note 3 and Note 4	Ĝ.
( Je	5.6.8	Note 2	5.7.7.1	Note 1 and Note 2	8.5.4.2.3	Note	9.60
	10.2.1 Table 39	Note 3 and Note 4 and Note 5	10.5.3	Note 2	10.6.1	Note 3	J.
	F.3.3.4	Note 2	F.3.3.6	Note 3	Y.4.1	Note	1
	Y.4.5	Note	5	8	× ×		1
1.6	-			7	1	H.	
	Modificatio	n to Clause 1					N/A
(	electrical and within the E	0.0		16		(Ets	A.62
	Directive 20	011/65/EU."	Cet .	7		7	C.
19	Add the foll	owing paragra	ph and note a	fter Note	25		
Ÿ	5:	ant is a thurst	act atom dand	(	8	(Ets)	. /
	"This docum	(Ex)					
15	NOTE Z2 R						
(Le		ies or compon	ents are cover	ed by EN	(6		
A	62911."	A	6		G.	(Ets	A.69
	Modificatio	n to Clause 2	`			7	N/A
				10			
(65)	Aaa the follo	owing referenc	res:	2	049		N/A

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	(FE)	(10)	
	EN 71-1:2014+A1:2018, Safety of toys - Part 1:	9	1.65
	Mechanical and physical properties		6
0.6		2.6	
(10)	EN 50332-1:2013, Sound system equipment:	(CC)	
9	Headphones and earphones associated with		>
	personal music players - Maximum sound	(te	
	pressure level measurement methodology - Part 1:	A	(E
	General method for "one package equipment"		6
059		0.6	
(10)	EN 50332-2:2013, Sound system equipment:	(E	
9	Headphones and earphones associated with		70
	personal music players - Maximum sound	(2)	D
	pressure level measurement methodology - Part 2:		(.
	Matching of sets with headphones if either or both	9	
0	are offered separately, or are offered as one	25	
(fr	package equipment but with standardised	(C)	,
	connectors between the two allowing to combine	9	150
	components of different manufacturers or different		9
6	design	26	
	4	(E)	
ľ	EN 50332-3:2017, Sound system equipment:	0.50	
	headphones and earphones associated with	(te	2 (2
	personal music players - Maximum sound	4	Ce
	pressure level measurement methodology - Part 3:		
159	Measurement method for sound dose management	0.6	
TO,	V	(10)	
A	IEC/TR 62471-2, Photobiological safety of lamps	000	
	and lamp systems - Part 2: Guidance on	C. C.	0.60
	manufacturing requirements relating to non-laser		(Te
	optical radiation safety		9
4	Modification to Clause 4		N/A
4	Add the following new subclause 4.Z1 after	6	N/A
	subclause 4.9:	(E)	1 1/11
	"For compliance with B.3 and B.4 in circuits		05
	connected to an AC mains, protective devices		(4)
- 6	shall be provided, subject to the following:		~
(E		650	
4	- for <b>pluggable equipment type A</b> , the protective	0.5	
	1 / 50 / 5 / 5 / 5 / 5 / 5 / 5 / 5 / 5 /	Libuan Dand Dangahang Subdistrict Dangay	

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	devices shall be included as parts of the	9	(E)
	equipment, with the exception of components in		9
050	series with the <b>mains</b> input to the equipment such	150	
(to	as the supply cord, appliance coupler, r.f.i. filter	(Te	
9	and switch, for which the building installation	A Care	
	shall be regarded as providing protection in		0.1
	accordance with the rating of the wall socket		(10)
	outlet;		9
(Ex		(E)	
A	- for pluggable equipment type B or	4	10
	permanently connected equipment, the	(2)	D .
	protection may be the dedicated overcurrent and		
	short-circuit protection in the building installation,	9	4
1	provided that the means of protection, for example	0.6	
(4	a fuse or circuit breaker, is fully specified in the	(E	
7	installation instructions.	9	(5)
	24	/	9
6	Where protective <b>devices</b> are required within the	. (0	
	equipment, the protective <b>devices</b> within the		
ř.	equipment shall operate before or at the same time	049	
	the expected building installation protection will	(Te	0 (0
	operate.	7	(Color)
0.6	For earth faults in single-phase equipment, it is not	. /	
10	necessary to provide 2 protective <b>devices</b> . It is	CE"	
9	expected that the building installation will protect	000	
	against earth faults. This applies also in countries	(E)	- /-
	where an IT power distribution system is used."	A	(E)
5	Modification to subclause 4.1.9		N/A
4.1.9	Add the following paragraph at the end of this	13	N/A
6	subclause:	0.0	
	(4)	(LE)	
	"Products need to comply with the requirements	9	65
	of this document with appropriate measurement		(F)
0.60	uncertainty.	. 7.	
(10)	4	(E)	

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	2.6		/
15	NOTE Z1 See also the RED ADCO position on 'Measurement uncertainty in published harmonized standards'."	0.60	Œ"
6	Modification to subclause 5.4.9.1		N/A
5.4.9.1	Add the following note after the 5th paragraph:  "NOTE Z1 For guidance on the use of high voltage source, see IEC 60060-1, Clause 8 of IEC 60243-1 and IEC 61180."	Vien (Eg.	N/A
7	Modification to subclause 5.4.2.3.2.4	1162	N/A
5.4.2.3.2.4	Add the following at the end of this subclause:		N/A
	"The requirement for interconnection with external circuit in a HBES/BACS network is in addition given in EN IEC 63044-3:2018."		
8	Modification to subclause 5.6.6.2		N/A
5.6.6.2	Replace item d) with the following:  "d) For equipment powered from a DC mains, if the protective current rating of the circuit under test exceeds 25 A, the test current shall be minimum as required in item a), unless the manufacturer specifies a higher value."	E. C.	N/A
9	Modification to subclause 9.3.1		N/A
9.3.1	Replace the second paragraph with the following:  "An accessible part that, while in contact with the body, is likely to drop in temperature upon touch can be evaluated under the limits of Annex A of IEC Guide 117:2010 using the test method of 4.5 of IEC Guide 117."		N/A
10	Modification to subclause 10.2.1		N/A
10.2.1	Add the following to e) and d) in Table 38:  "For additional requirements, see 10.5.1."	125	N/A

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11	Modification to subclause 10.4.1		N/A
10.4.1	Replace the second paragraph of 10.4.1 with:		N/A
150		05	
(4)	"Electronic light effect equipment does not have	City of the city o	
	to comply with the requirements of 10.4.	To the state of th	
	However,		0
	114 IEC/TR 62471-2 shall be considered and		(10
	proper installation instructions shall be provided.		
Co.	9	050	
6	Replace the ninth paragraph of 10.4.1 with:	( Le	6
	(E		E. C.
	The following information shall be provided in the	C.	V
	user manual for safe operation and installation.	5	
	This information shall also be provided for safe		
	operation by a skilled person who may be exposed	035	
(	to Risk Group 3 energy levels.	(F)	0.60
			(6)
	Adequate instructions for proper assembly,		9
5	installation, maintenance and safe use, including	0.5	
	clear warnings concerning precautions to avoid	C.	
	possible exposure to hazardous optical radiation;	9	
	and	(E)	0.6
	(FC)	9	(E)
	Advice on safe operating procedures and warnings		
049	concerning reasonably foreseeable misuse,	0.5	
The state of the s	malfunctions and hazardous failure modes. Where	(C)	
V	servicing and maintenance procedures are	A (5%)	
	detailed, they shall include explicit instructions on		16
	safe procedures to be followed; and		(10)
	sure procedures to contain was, and		9
25	The marking on the equipment shall be	15	
(A)	reproduced in the user manual. A yellow	(F)	
	background is not required in the user manual.	A (5.12)	
	ouenground is not required in the user manual.		15
12	Modification to subclause 10.4.4		N/A
10.4.4	Replace the last paragraph of 10.4.4 with:	A.69	N/A
(Fe)		(Te	

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	4.6		
A.6	"Compliance against material degradation from UV radiation is checked by the applicable tests of Annex C."		E.
13	Modification to subclause 10.5.1		N/A
10.5.1	Add the following after the first paragraph:	The state of the s	N/A
	"For RS1 compliance is checked by measurement	7	(Je
	under the following conditions:		6
(E)	9	000	
(2)	In addition to the normal operating conditions,		6
	all controls adjustable from the outside of the	(de	
	equipment by hand, by any object such as a tool or	9	P.
	a coin, and those internal adjustments or pre-sets	67	
	which are not locked in a reliable manner, are		
(	adjusted so as to give maximum radiation whilst	160	
	maintaining an intelligible picture for 1 h, at the	(3)	15
	end of which the measurement is made.		(C)
	A CE		9
5	NOTE Z1 Soldered joints and paint lockings are	036	
)	examples of adequate locking.	6	
		A CETO	
	The dose-rate is determined by means of a		049
	radiation monitor with an effective area of 10		(To)
- /-	cm2, at any point at a distance of 10 cm from the		4
(5)	outer surface of the equipment.	000	
5	Moreover, the measurement shall be made under	6.6	
	fault conditions causing an increase of the	(E	
	high-voltage, provided an intelligible picture is		049
	maintained for 1 h, at the end of which the		(F)
0.60	measurement is made.		
Co	For RS1, the dose-rate shall not exceed 1 $\mu$ Sv/h	000	
8	taking account of the background level.	0.6	
374	(A)	(10)	
	NOTE Z2 These values appear in Directive	9	65
	2013/59/Euratom of 5 December 2013."		(4)
14	Modification to subclause 10.5.3		N/A
10.5.3	Replace the second paragraph of 10.5.3 with:	(FE)	N/A
		117	

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		(Te	
(Ex)	"The amount of radiation is determined by means of a radiation monitor of the ionizing chamber type with an effective area of 1 000 mm2 $\pm$ 10 mm2 or by measuring equipment of other types giving equivalent results."	E. C.	
15	Modification to Clause 10		N/A
0.6	Replace 10.6 with the following:		N/A
10.6	Safeguards against acoustic energy sources	Œ	N/A
10.6.1	General	(A)	N/A
10.6.1.1	Introduction	-	N/A
	Safeguard requirements for protection against	6	(
/	long-term exposure to excessive sound pressure	2.6	
(4	levels from personal music players closely	(C)	
7	coupled to the ear are specified below.		050
	Requirements for earphones and headphones	)	The state of the s
6	intended for use with personal music players are		
	also covered.	650	
/	A personal music player is a portable equipment	5	
	intended for use by an <b>ordinary person</b> , that:	(LC)	
	- is designed to allow the user to listen to audio or	9	100
	audiovisual content / material;		(F)
A.6	and	. /	
TEL	- uses a listening device, such as headphones or	CE"	
À	earphones that can be worn in or on or around the	000	
	ears;	(LE)	- /-
	and	9	(E)
	- has a player that can be body worn (of a size		(2)
050	suitable to be carried in a clothing pocket) and is	0.60	
(TE)	intended for the user to walk around with while in	(6	
A	continuous use (for example, on a street, in a	000	
	subway, at an airport, etc.).	(F)	0.6
	(KE)		(Te
	EXAMPLES Portable CD players, MP3 audio		9
05	players, mobile phones with MP3 type features,	150	
(4)	PDAs or similar	(10)	

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	(F)	(Te	
	equipment.		(E)
0.60	Personal music players shall comply with the	0.60	
(E	requirements of either 10.6.2 or 10.6.3.	(E)	
	020	0.00	,
	NOTE 1 Protection against acoustic energy	(LE)	
	sources from telecom applications is referenced to	9	Co.
	ITU-T P.360.		
0.5		6.6	
(10)	NOTE 2 It is the intention of the Committee to	(Co.)	
9	allow the alternative methods for now, but to only		19
	use the dose	(2)	
	measurement method as given in 10.6.5 in future.		
	Therefore, manufacturers are encouraged to	9	4
a	implement 10.6.5 as soon as possible.	(C. 6)	
6	Listening devices sold separately shall comply		15
	with the requirements of 10.6.6.		(10)
2.	These requirements are valid for music or video		9
10	mode only.	0.5	
1	The requirements do not apply to:	6.6	
	- professional equipment;	(LE)	
	- processional equipment,		020
	NOTE 3 Professional equipment is equipment		(P)
25	sold through special sales channels. All products	0.6	
(10)	sold through normal electronics stores or general	(E	
7	public sales channels are considered not to be	1000	
	professional equipment.		16
	(te)	0	(Te
	- hearing aid equipment and other devices for		9
125	assistive listening;	059	
(F)	- the following type of analogue personal music	( Co	
	players:	A CE	
	- long distance radio receiver (for example, a		05
	multiband radio receiver or world band radio		(40)
0 10	receiver, an AM radio receiver), and		7
(E)	- cassette player/recorder;	650	
(4)	A.69	65	

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	(FE)	(FC)	
Cer's	NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.	E. C.	
E	<ul> <li>a player while connected to an external amplifier that does not allow the user to walk around while in use;</li> <li>hearing protection devices (HPD) that comply with EN 352-8</li> <li>For equipment that is clearly designed or intended</li> </ul>	Ser Ca	
5	primarily for use by children, the limits of the relevant toy standards may apply.  The relevant requirements are given in EN 71-1:2014+A1:2018, 4.20 and the related tests methods and measurement distances apply.	E. Cero	
10.6.2	Classification of devices without the capacity to	estimate sound dose	N/A
10.6.2.1	General 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. For classifying the acoustic output <i>L</i> Aeq, <i>T</i> , measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.		N/A
	For music where the average sound pressure (long term <i>L</i> Aeq, <i>T</i> ) 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, <i>T</i> becomes the duration of the song.  NOTE Classical music, acoustic music and	Caro Caro	E.

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		(LE)	
	broadcast typically has an average sound pressure	9	(6)
	(long term $LAeq,T$ ) which is much lower than the		(F)
0.6	average programme simulation noise. Therefore, if	26	
(E	the player is capable to analyse the content and	(Car	
9	compare it with the programme simulation noise,	C.	ig .
	the warning does not need to be given as long as	(Fe)	
	the average sound pressure of the song does not	A	(c
	exceed the required limit.		6
15		A.69	
(TE	For example, if the player is set with the	(10)	
9	programme simulation noise to 85 dB, but the	9	70
	average music level of the song is only 65 dB,	(3)	D.
	there is no need to give a warning or ask an	·	1 (
	acknowledgement as long as the average sound	9	
0	level of the song is not above the basic limit of 85	15	
(Tr	dB.	(C)	. /-
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2)	A	N/A
	9		(2)
5	RS1 is a class 1 acoustic energy source that does	0.60	
	not exceed the following:	C.	
/	for equipment provided as a package (player with	049	
	its listening device), and with a proprietary	(F)	0.6
	connector between the player and its listening	4	(E)
	device, or where the combination of player and		
05	listening device is known by other means such as	1.6	
The state of the s	setting or automatic detection, the $L$ Aeq, $T$	(Te	
9	acoustic output shall be $\leq 85$ dB when playing the	A CHO	
	fixed "programme simulation noise" described in		15
	EN 50332-1:2013.	_	(Te
	A CE		9
100	for equipment provided with a standardized	049	
(F)	connector (for example, a 3,5 mm	(Te)	
	headphone/earphone jack) that allows connection	The Contract of the Contract o	
	to a listening device for general use, the	(A)	049
	unweighted r.m.s. output voltage shall be $\leq 27 \text{ mV}$		(40)
- /-	(analogue interface) or -25 dBFS (digital		4
Car	interface) when playing the fixed 214 "programme	120	
(4)	simulation noise" described in EN 50332-1:2013.	(4)	

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	4.6		,
	(E	A .	(649
	The RS1 limits will be updated for all devices as		9
0.6	per 10.6.3.2.	0.60	
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3)	(E)	N/A
9	Certify .	A CAS	?
	RS2 is a class 2 acoustic energy source that does		
	not exceed the following:		(Le
	for equipment provided as a package (player with		6
040	its listening device), and with a proprietary	0.6	
(10)	connector between the player and its listening	(C)	
9	device, or when the combination of player and		70
	listening device is known by other means such as	(4	V
	setting or automatic detection, the LAeq,T		
	acoustic output shall be $\leq 100 \text{ dB(A)}$ when	(?)	
1	playing the fixed "programme simulation noise"	25	
(4)	as described in EN 50332-1:2013.	(Te	,
7	(E)	9	(C)
	for equipment provided with a standardized		(F)
6	connector (for example, a 3,5 phone jack) that	. /	
	allows connection to a listening device for general	(E)	
/	use, the unweighted r.m.s. output voltage shall be	0.50	
	≤ 150 mV (analogue interface) or −10 dBFS	(Te)	. /
	(digital interface) when playing the fixed	4	CE
	"programme simulation noise" as described in		(4)
15	226 EN 50332-1:2013.	0.6	
10.6.2.4	RS3 limits	(6)	N/A
10,01211	(Color	050	1,71
	RS3 is a class 3 acoustic energy source that	( Company of the comp	0.60
	exceeds RS2 limits.	7	(6
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General	120	N/A
10.0.5.1	Previous limits (10.6.2) created abundant false	4	1 1/1
	negative and false positive PMP sound level	(C)	
	warnings. New limits, compliant with The	9	020
	Commission Decision 2009/490/EC of 23 June		(4)
0 (0	2009, are given below.		A
10.6.3.2	RS1 limits (new)	165	N/A
10.0.3.2	The state of the s	(4)	1N/A

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	(Le)	(10)	
	RS1 is a class 1 acoustic energy source that does	A	(Et
	not exceed the following:		(4)
0.5	for equipment provided as a package (player with	8.6	~
(C)	its listening device), and with a proprietary	(E	
9	connector between the player and its listening		>
	device, or where the combination of player and	( Company of the comp	
	listening device is known by other means such as	7	(E
	setting or automatic detection, the LAeq,T		6
050	acoustic output shall be $\leq 80$ dB when playing the	0.6	
(Te)	fixed "programme simulation noise" described in	(C)	
A	EN 50332-1:2013.		70
	0.5	(F	V
	for equipment provided with a standardized	/a	(
	connector (for example, a 3,5 phone jack) that	~	
16	allows connection to a listening device for general	125	
(F)	use, the unweighted r.m.s. output voltage shall be	(Le)	. /.
	≤ 15 mV (analogue interface) or −30 dBFS	4	(6)
	(digital interface) when playing the fixed		(A)
5	"programme simulation noise" described in EN	0.6	
	50332-1:2013.	C'	
10.6.3.3	RS2 limits (new)	9	N/A
(	RS2 is a class 2 acoustic energy source that does		A.60
	not exceed the following:		(6
	for equipment provided as a package (player with		9
125	its listening device), and with a proprietary	025	
The state of the s	connector between the player and its listening	(Te)	
0	device, or where the combination of player and	A CELO	
	listening device is known by other means such as		15
	setting or automatic detection, the weekly <b>sound</b>		(Te.
- /-	<b>exposure level</b> , as described in EN 50332-3:2017,		A
(E)	shall be $\leq 80$ dB when playing the fixed	035	
6	"programme simulation noise" described in	45	
_	249 EN 50332-1:2013.	(E)	
	A CES		125
	for equipment provided with a standardized		(F)
- 6	connector (for example, a 3,5 phone jack) that		~
(E)	allows connection to a listening device for general	63	
(2)	use, the unweighted r.m.s. output level, integrated	6	

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		(1)	
Ces	over one week, as described in EN 50332-3:2017, shall be $\leq$ 15 mV (analogue interface) or $-30$ dBFS	CE45	
10.6.4	Requirements for maximum sound exposure	Cox.	N/A
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests.  Measurements shall be made in accordance with EN 50332-1:2013 or EN 50332-2:2013 as	E. C.	N/A
10.6.4.2	applicable.  Protection of persons  Except as given below, protection requirements	6	N/A
Q	for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3.  NOTE 1 Volume control is not considered to be a	(Ex)	(E)
(5)	safeguard.  Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional	E. C.	A.63
(E)	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	(C)	
7	instructional safeguard may be given through the equipment display during use. The elements of the instructional safeguard shall	(Ex.)	(E)
(E)	be as follows:  - element 1a: the symbol , IEC 60417-6044 (2011–01)  - element 2: "High sound pressure" or equivalent	Ex.	(Et)
(E's	text - element 3: "Hearing damage risk" or equivalent text	(2h)	9

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		(Te	
	- element 4: "Do not listen at high volume levels	A	15
	for long periods." or equivalent text		
15		0.60	
(10)	An equipment safeguard shall prevent exposure	(Le	
9	of an ordinary person to an RS2 source without		7
	intentional physical action from the ordinary	(F)	
	person and shall automatically return to an output	7	(Co
	level not exceeding what is specified for an RS1		G
050	source when the power is switched off.	0.6	
(16)	The equipment shall provide a means to actively	(10)	
9	inform the user of the increased sound level when	4	19
	the equipment is operated with an output level	(£	
	exceeding RS1 limits. Any means used shall be		(
	acknowledged by the user before activating a	9	\
0	mode of operation which allows for an output	25	
(Fr	level exceeding RS1 limits. The acknowledgement	(E	,
	does not need to be repeated more than once every	9	1620
	20 h of cumulative listening time.		6
6	( C	- 6	
	NOTE 2 Examples of means include visual or		
1	audible signals. Action from the user is always	25	
	needed.	(te	0 (0
	(C)	4	CE
	NOTE 3 The 20 h listening time is the		
15	accumulative listening time, independent of how	0.6	
Te.	often and how long the personal music player has	(C)	
A	been switched off.	000	
	25		0.60
	A skilled person shall not be unintentionally	7	(10)
	exposed to RS3.		9
10.6.5	Requirements for dose-based systems	050	N/A
10.6.5.1	General requirements	40	N/A
	Personal music players shall give the warnings as	(LE)	
	provided below when tested according to	A	(6)
	281 EN 50332-3:2017, using the limits from this		6
0.60	clause.	. /	
(10)	The manufacturer may offer optional settings to	(E)	

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		(10)	
	allow the users to modify when and how they wish	9	15
	to receive the notifications and warnings to		6
0.6	promote a better user experience without defeating	0.60	
(10)	the <b>safeguards</b> . This allows the users to be	(CE)	
9	informed in a method that best meets their	049	>
	physical capabilities and device usage needs. If	(LE)	
	such optional settings are offered, an administrator	4	60
	(for example, parental restrictions,		6
059	business/educational administrators, etc.) shall be	0.6	
(10)	able to lock any optional settings into a specific	(C)	
9	configuration.	9	15
	The personal music player shall be supplied with	(To	D
	easy to understand explanation to the user of the		(.
	dose management system, the risks involved, and	9	
0	how to use the system safely. The user shall be	15	
(He	made aware that other sources may significantly	(Te	
7	contribute to their sound exposure, for example	9	(C)
	work, transportation, concerts, clubs, cinema, car		9
6	races, etc.	0.60	
10.6.5.2	Dose-based warning and requirements	E C	N/A
/	When a dose of 100 % CSD is reached, and at	050	
(	least at every 100 % further increase of CSD, the	(LE)	0.6
	device shall warn the user and require an	7	(6
	acknowledgement. In case the user does not		9
049	acknowledge, the output level shall automatically	0.6	
Te.	decrease to a level in compliance with class RS1	(6	
A	limits.	A 670	
	The warning shall at least clearly indicate that	(F)	0.6
	listening above 100 % CSD leads to the risk of		(6
	hearing damage or loss.		9
10.6.5.3	Exposure-based requirements	15	N/A
15	With only dose-based requirements, cause and	(LE	
~	effect could be far separated in time, defying the	4	
	purpose of educating users about safe listening		15
	practice. In addition to dose-based requirements, a	V	(Te
2	PMP shall therefore also put a limit to the		9
620	short-term sound level a user can listen at.	049	
(4)	The exposure-based limiter (EL) shall	(10)	

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	0.6		
	automatically reduce the sound level not to exceed	A	(5)
	100 dB(A) or 150 mV integrated over the past 180		(4)
15	s, based on methodology defined in EN	0.6	
(Te	50332-3:2017. The EL settling time (time from	(LE)	
9	starting level reduction to reaching target output		>
	level) shall be 10 s or less.	(F)	
	Test of EL functionality is conducted according to	7	(Ce
	EN 50332-3:2017, using the limits from this		6
15	clause. For equipment provided as a package	0.6	
(Te	(player with its listening device), the level	(C)	
A	integrated over 180 s shall be 100 dB or lower.		70
	For equipment provided with a standardized	(F	V
	connector, the un-weighted level integrated over	10	(
	180 s shall be no more than 150 mV for an	7	\
0	analogue interface and no more than -10 dBFS for	25	
(In	a digital interface.	(C)	. /-
~	In case the source is known not to be music (or	4	(E)
	test signal), the EL may be disabled.		9
10.6.6	Requirements for listening devices	0.6	N/A
	(headphones, earphones, etc.)		
10.6.6.1	Corded listening devices with analogue input	9	N/A
	With 94 dB LAeq acoustic pressure output of the	(LE)	0.6
	listening device, and with the volume and sound	~	(6
	settings in the listening device (for example,		9
05	built-in volume level control, additional sound	0.6	
( Constant	features like equalization, etc.) set to the	Ce	
7	combination of positions that maximizes the	1000	
	measured acoustic output level, the input voltage		16
	of the listening device when playing the fixed	0	(TE
<i>a</i>	"programme simulation noise" as described in EN		9
040	$50332-1:2013$ shall be $\geq 75$ mV.	139	
(F)	2.6	(FC)	
	NOTE The values of 94 dB and 75 mV	J. C. C. C.	
	correspond with 85 dB and 27 mV in 10.6.2.2. or		15
	100 dB and 150 mV in 10.6.2.3.	V	(LE
10.6.6.2	Corded listening devices with digital input		N/A
025	With any playing device playing the fixed	139	1771
(F)	"programme simulation noise" described in EN	(FE)	
		A.S	1

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	4.6	(4)	,
	50332-1:2013, and with the volume and sound	A	(E)
	settings in the listening device (for example,		(4)
059	built-in volume level control, additional sound	0.6	
(10)	features like equalization, etc.) set to the	(2)	
9	combination of positions that maximize the	0.40	
	measured acoustic output, the $LAeq, T$ acoustic		
	output of the listening device shall be $\leq 100 \text{ dB}$	7	(Re
	with an input signal of -10 dBFS.		C)
10.6.6.3	Cordless listening devices	0.6	N/A
(10)	In cordless mode,	(C)	
A	with any playing and transmitting device playing	9	19
	the fixed programme simulation noise described in	(L	D
	EN 50332-1:2013; and respecting the cordless		(
	transmission standards, where an air interface		
1	standard exists that specifies the equivalent	0.5	
(4)	acoustic level; and with volume and sound settings	(Te	,
7	in the receiving device (for example, built-in	9	(C)
	volume level control, additional sound features		9
6	like equalization, etc.) set to the combination of	- /-	
	positions that maximize the measured acoustic		
	output for the above mentioned programme	050	
	simulation noise, the $LAeq$ , $T$ acoustic output of	(Te.	- /-
	the listening device shall be $\leq 100 \text{ dB}$ with an	4	(E)
	input signal of -10 dBFS.		(4)
10.6.6.4	Measurement method	A.63	N/A
10.0.0.1	Measurements shall be made in accordance with	(C)	17/11
A	EN 50332-2:2013 as applicable."	0.5	
16	Modification to subclause G.3.1.2	71.62	N/A
			14/11
	Add the following note after the first paragraph:		77/4
05	Aud the following note after the first paragraph:	050	N/A
4	"NOTE Z1 An IEC 60730 series standard is	(TC)	
V	(1.65)	A Com	
	considered relevant if the component in question	(4)	15
	falls within its scope."	V	1.0
17	Modification to subclause G.7.1		
(2)	Add the following note at the end of the	049	N/A
(4)	subclause:	(te)	

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	(T)	. /-		(	Te	
E	"NOTE Z1 The hard corresponding to the Annex ZD."	1/-	code designations ole types are given in	E.S.	0.43	
18	Modification to su	bclause l	M.2			N/A
(Ex)	Add the following paragraph:  "The size of the bat designed taking into compartment recombattery standard.	tery com	partment shall be the battery	e Ceres	(Jet)	N/A
	NOTE For general g battery compartmen 62485-4."	_	on the design of the ause 8 of IEC	E,		
19	Modification to Bi	bliograp	hy			N/A
(	Add the following i	notes for	the standards indicated	if (in		N/A
. (0	IEC 60060-1 IEC 60130-9 IEC 60204-1	NOTE NOTE NOTE	Harmonized as EN 60 Harmonized as EN 60 Harmonized as EN IE	0130-9.		(Ex)
C	IEC 60204-11	NOTE	Harmonized as EN IE	C 60204-11.		
A	IEC 60243-1	NOTE	Harmonized as EN 60			
	IEC 60269-2		Harmonized as HD 60			125
	IEC 60309-1		Harmonized as EN 60			(R)
(Ets	IEC 60364 IEC 60601-2-4	NOTE	Harmonized as EN 60		series.	Ť
A	IEC 60664-5:2005 IEC 60721-3-4	NOTE	Harmonized as EN 60 Harmonized as EN IE			
	IEC 60721-3-4	NOTE		1032:1998 (not modified)		05
	IEC 61180	NOTE	Harmonized as EN 61		-	(A)
0.60			(1-)	2 /2		

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	(1)	00			(10)	,
	IEC 61508-1	NOTE	Harmonized as EN 6150	18-1.	A	(6)
	IEC 61558-2-1	NOTE	Harmonized as EN 6155	8-2-1.		9
05	IEC 61558-2-4	NOTE	Harmonized as EN 6155	8-2-4.		
(The	IEC 61558-2-6	NOTE	Harmonized as EN 6155	68- <mark>2-6</mark> .	0.60	
	IEC 61643-21	NOTE	Harmonized as EN 6164	3-21.	(Car	
	IEC 61643-311	NOTE	Harmonized as EN 6164	3-311.	9	0
	IEC 61643-321	NOTE	Harmonized as EN 6164	3-321.		(to
0.6	IEC 61643-331	NOTE	Harmonized as EN IEC	61643-331.		~
(Let	IEC 61140:2016	NOTE	Harmonized as EN 6114	0:2016.		
9	IEC 61439-5:2014	NOTE	Harmonized as EN 6143	9-5:2015.	00	9
	IEC 61969-3	NOTE	Harmonized as EN 6196	69-3.	(3)	
	IEC 62040:2017	NOTE	Harmonized as EN IEC	62040:2019.		(
	IEC 62305-1	NOTE	Harmonized as EN 6230	)5-1.		
d	IEC 62368-3	NOTE	Harmonized as EN 6236	8-3.		
6	IEC 62485-4	NOTE	Harmonized as EN IEC	62485-4.		A.6
1	ISO 10218-1	NOTE	Harmonized as EN ISO	10218-1.	(.	(c)
,	ISO 10218-2	NOTE	Harmonized as EN ISO	10218-2.		A
10	ISO 13482	NOTE	Harmonized as EN ISO	13482.		
/	ISO 13850	NOTE	Harmonized as EN ISO	13850.	6	
	(4)	6			(10)	A.60
20	Addition of annexo	es			Y I	N/A
ZB	ANNEX ZB, SPEC	CIAL NA	ATIONAL CONDITION	NS (EN)		N/A
4.1.15	Finland, Norway a			(E)		N/A
4.1.15	To the end of the su			A.	125	N/A
	added:	05	8		(1)	1.6
	Class I pluggable e	equipme	nt type A intended for			(TE
/ .	connection to other	equipme	ent or a			A
(5)	network shall, if saf	fety relie	s on connection to	125		
6	reliable earthing or if surge suppressors are			0.60		
	connected between			V	(E	
	accessible parts, ha				9	(619
	the equipment shall		ected to an earthed			(4)
0.6	mains socket-outlet		(te	0.60		-
(TE	-	the appl	icable countries shall	(Tex		
A	be as follows:				0.5	

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	46		,
	In <b>Finland</b> : "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"	9	(EX)
05	In Norway: "Apparatet må tilkoples jordet	A.62	7
(FC)	stikkontakt"	(C)	
A	In Sweden: "Apparaten skall anslutas till jordat	A CH	
	uttag"		^
4.7.3	United Kingdom		N/A
0.5	To the end of the subclause the following is added:	A.60	
(10)	7	(Co.)	
9	The torque test is performed using a socket-outlet		19
	complying with BS 1363, and the plug part	(3)	
	shall be assessed to the relevant clauses of BS	V.	(
	1363. Also see Annex G.4.2 of this annex.	9	\
5.4.11.1 and		070	
	Finland and Sweden	(LE)	N/A
Annex G	To the end of the subclause the following is	A	(6)
	added:		9
5	For separation of the telecommunication network	16	
	from earth the following is applicable:	C.	
(	If this insulation is solid, including insulation	A (5%)	
\	forming part of a component, it shall at least		15
	consist of either		(10)
			A
150	- two layers of thin sheet material, each of	125	
5	which shall pass the electric strength test	6.6	
	below, or	(LE)	
	and layer having a distance through	9	100
	- one layer having a distance through insulation of at least 0,4 mm, which shall		(F)
16	pass the electric strength test below.	0.60	
(E	pass the electric strength test below.	(E)	
A	A. 2°	019	
	A.5	(te	0.6
	If this insulation forms part of a semiconductor	A	(10)
	component (e.g. an optocoupler), there is no		9
05	distance through insulation requirement for the	15	
(Te	insulation consisting of an insulating	(6)	

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compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition

- passes the tests and inspection criteria of 5.4.7 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and
- is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV.

It is permitted to bridge this insulation with a capacitor complying with EN 60384-14, subclass Y2.

A capacitor classified Y3 according to EN 60384-14, may bridge this insulation under the following conditions:

- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.10;
- the additional testing shall be performed on all the test specimens as described in EN 60384-14;
- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.

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5.5.2.1	Norway	9	N/A
	After the 3rd paragraph the following is added:		9
05	Due to the IT power distribution system used,	0.6	
(te	capacitors are required to be rated for the	(C)	
	applicable line-to-line voltage (230 V).	C.E.	
5.5.6	Finland, Norway and Sweden	9	N/A
	To the end of the subclause the following is	*	(10
	added:		A
Cet.	Resistors used as basic safeguard or bridging	250	
(F)	basic insulation in class I pluggable		6
	equipment type A shall comply with G.10.1 and	(To	
	the test of G.10.3.	6	Y
5.6.4.2.1	Ireland and United Kingdom	6	N/A
1	After the indent for pluggable equipment type A,	15	
(4)	the following is added:	(C)	
	- the <b>protective current rating</b> is taken to	A	CE'S
	be 13 A, this being the largest rating of		(2)
5	fuse used in the <b>mains</b> plug.	A.65	
5.6.4.2.1	France	9	N/A
	After the indent for pluggable equipment type A,		
	the following is added:		125
	- in certain cases, the <b>protective current</b>		(Te
0.6	rating of the circuit supplied from the	. /-	<u> </u>
C	mains is taken as 20 A instead of 16 A.	CEN	
9	620	05	
	Justification:	(Fe)	- /-
	In France, according to NF C15-100 standard, in	4	(E)
	certain cases, the maximum rated current of the		9
05	protective <b>device</b> circuit-breaker is 20 A.	A.6	
5.6.5.1	Ireland and United Kingdom	(C)	N/A
	To the second paragraph the following is added:	J. (12)	
	The range of conductor sizes of flexible cords to	6	25
	be accepted by terminals for equipment with a		(10)
	rated current over 10 A and up to and including		A
(6)	13 A is:	120	
(1)	1,25 mm2 to 1,5 mm2 in cross-sectional area.	6	
	(16)	16	

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	0.6		
5.6.8	Norway	4	N/A
	To the end of the subclause the following is		9
05	added:	0.5	
(10)	Equipment connected with an earthed mains plug	(LE)	
9	is classified as class I equipment. See	J. C.29	
	the Norway marking requirement in 4.1.15. The	(3)	
	symbol IEC 60417-6092, as specified in F.3.6.2, is		(L
	accepted.		9
5.7.7.1	Norway and Sweden	(E)	N/A
9	To the end of the subclause the following is		56
	added:	(4	
	The screen of the television distribution system is	9	
	normally not earthed at the entrance of the	6	
	building and there is normally no equipotential	0 (0	
(F	bonding system within the building. Therefore	(E	
9	the protective earthing of the building installation		05
	needs to be isolated from the screen of a cable		The state of the s
6	distribution system.		0
1		070	
7	It is however accepted to provide the insulation	5	
	1	(C)	
	external to the equipment by an adapter or an interconnection cable with galvanic isolator,	9	1620
	which may be provided by a retailer, for example.		(F)
A.69	The user manual shall then have the following or	. /2	
10	similar information in Norwegian and Swedish	CE .	
9	language respectively, depending on in what	050	
	country the equipment is intended to be used in:	(TE)	- /-
	"Apparatus connected to the protective earthing of	9	Car
	the building installation through the mains		
05	connection or through other apparatus with a	0.6	
(10)	connection to protective earthing – and to a	(C)	
A	television distribution system using coaxial cable,	9	
	may in some circumstances create a fire hazard.	(F)	0.6
	Connection to a television distribution system	$\forall$	(tet
	therefore has to be provided through a device		A
049	providing electrical isolation below a certain	15	
(4)	frequency range (galvanic isolator, see	(6)	

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25	injury.	0.6	
	requirements of EN IEC 60204-1 and EN ISO 13850 is required where there is a risk of personal		9
	An emergency stop system complying with the		Cars
	3rd paragraph:	(TE)	
4	Add the following after the 2nd dash bullet in	0	
Cars		125	
8.5.4.2.3	United Kingdom		N/A
	apparaten och kabel-TV nätet.".		(10)
	kabel-TV nät galvanisk isolator finnas mellan	9	15
9	detta skall vid anslutning av apparaten till	A CES	
E.	vissa fall medfőra risk főr brand. Főr att undvika	(FE)	
070	och samtidigt är kopplad till kabel-TV nät kan i	059	
	jordat vägguttag och/eller via annan utrustning		9
	"Apparater som är kopplad till skyddsjord via	$\forall$	(10)
	Translation to Swedish:	(F)	0.6
	(2)	J 125	
	mellom apparatet og kabel-TV nettet."	6	
5	kabel-TV nett installeres en galvanisk isolator	0.6	
	dette skal det ved tilkopling av apparater til		9
	nett, kan forårsake brannfare. For å unngå	A	(6)
(F.	utstyr – og er tilkoplet et koaksialbasert kabel-TV	(te)	0.60
1	nettplugg og/eller via annet jordtilkoplet	049	
	"Apparater som er koplet til beskyttelsesjord via	7	
	(LE)	6	()
	also be accepted in Norway):	(Z	V
A	Translation to Norwegian (the Swedish text will	A Co	45
(10)		(E)	
039	RMS, 50 Hz or 60 Hz, for 1 min.	A.6	
	1,5 kV		1
	insulation shall withstand a dielectric strength of	A	Co
	provide electrical insulation below 5 MHz. The	(FC)	
	isolator shall	046	
(LE)	CATV-installations, and in Sweden, a galvanic	(E)	
0.60	NOTE In Norway, due to regulation for	. / .	
	75		(F)
	EN 60728-11)"	9	050
		(10	

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B.4	(E)	4	(E)
	The following is applicable:		
15	To protect against excessive currents and	A.6	
(10)	short-circuits in the primary circuit of direct	(LE)	
9	plug-in equipment, tests according to Annexes	A Cox	1
	B.3.1 and B.4 shall be conducted using an external		_
	miniature circuit breaker complying with EN		(10
	60898-1, Type B, rated 32A. If the equipment		9
05	does not pass these tests, suitable protective	0.50	
( Le	devices shall be included as an integral part of the	(TE)	/-
9	direct plug-in equipment, until the requirements	4	70
	of Annexes B.3.1 and B.4 are met	G.	V
G.4.2	United Kingdom	6	N/A
	(LE		
(E	To the end of the subclause the following is	125	
	added:		0.6
	The plug part of direct plug-in equipment shall be	Ų.	(6)
	assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9,		A
10	12.11, 12.12, 12.13, 12.16, and 12.17, except that	036	
	the test of 12.17 is performed at not less than		
(-	125 °C. Where the metal earth pin is replaced by	(CC)	
	an Insulated Shutter Opening Device (ISOD), the		05
	requirements of clauses 22.2 and 23 also apply.		(Fe
G.7.1	United Kingdom	A.60	N/A
10	₩	(C)	
9	To the first paragraph the following is added:	000	
	0,5	(F)	0.6
	Equipment which is fitted with a flexible cable or	~	(6
	cord and is designed to be connected to a mains		9
05	socket conforming to BS 1363 by means of that	16	
(to	flexible cable or cord shall be fitted with a	(10)	
	'standard plug' in accordance with the Plugs and	A Cto	
	Sockets etc. (Safety) Regulations 1994, Statutory		05
	Instrument 1994 No. 1768, unless exempted by		(10)
2	those		9
600	regulations.	050	
(4)	A.62	(Le	

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	1	(4)	
	NOTE "Standard plug" is defined in SI 1768:1994	A	(E)
	and essentially means an approved plug		9
050	conforming to BS 1363 or an approved conversion	15	
(FE)	plug.	(Te	
G.7.1	Ireland	A CEX	N/A
	0.50	(3)	A.
	To the first paragraph the following is added:		(10
			9
(61°	Apparatus which is fitted with a flexible cable or	039	
(F)	cord shall be provided with a plug in accordance	(FE)	6
	with Statutory Instrument 525: 1997, "13 A Plugs	A GO	et e
	and Conversion Adapters for Domestic Use	6	Y
>	Regulations: 1997. S.I. 525 provides for the	6	(-
	recognition of a standard of another Member State		
(L	which is equivalent to the relevant Irish Standard	(E)	
G.7.2	Ireland and United Kingdom		N/A
G.7.2	4.5		14/1
10	To the first paragraph the following is added:		7
		070	
7	A power supply cord with a conductor of 1,25	5	
	mm <sup>2</sup> is allowed for equipment which is rated over		
	10 A and up to and including 13 A.	9	165
	1 6		(4)
0.19	(Te	A.G	×
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)	(CC)	N/A
10.5.2	Germany	A 670	N/A
	125	(F)	16
	The following requirement applies:		(10)
	A CENS		9
000	For the operation of any cathode ray tube intended	150	
(Te	for the display of visual images operating at	(LE)	
	an acceleration voltage exceeding 40 kV,	A CERO	
	authorization is required, or application of type		05
	approval (Bauartzulassung) and marking.		(Te)
- /-			
(E)	Justification:	120	
(4)	German ministerial decree against ionizing	(F)	

Guangdong KEYS Testing Technology Co., Ltd.



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	4		(4)	,
	radiation (Röntgenverordnung), in force since		A	(6)
	2002-07-01, implementing the European Directive			6
16	96/29/EURATOM.	0.6		
(10)	~	(0)		
9	NOTE Contact address:		049	
	Physikalisch-Technische Bundesanstalt,		(In	
	Bundesallee 100, D-38116 Braunschweig,		9	Co
	Tel.: Int+49–531–592–6320, Internet:			6
05	http://www.ptb.de	0.6		
(F)	026	(E)	0.6	

# ZD IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS

N/A

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H
Cords insulated and sheathed with halogen- free thermoplastic compounds		
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F
110.		V

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# Photo documentation

			110
	front	50 60 70 80 90 100 10 20 30 40 50 90 78 90 97 90	
	right side	100 10 20 30 40 50 60 70 80 80 70 80 70 80 80 70 70 80 70 70 80 70 80 70 70 70 70 70 70 70 70 70 70 70 70 70	(Le
	left side	10 20 30 40 40 10 10 10 10 10 10 10 10 10 10 10 10 10	
	top	90 40 80 80 100 100 100 100 100 100 100 100	
	bottom		(
	internal	\$ 02 05 04 02 05 04 02 09 07 08 06 00101 02 05 04 08 09 00201 03 05 04 03 09 07 08 09 00201 03 05 04 03 09 07 08 09 00201 03 05 04 03 09 05 04 03 04 03 05 04 03 04 03 05 04 03 04 03 05 04 03 0	
6			
$\square$	front (C)		'n
	rear		
	right side	The Heart	
	left side	Total and a a a a a a a a a a a a a a a a a a	6
	top	Tago again, ara	E P
P	bottom	a O min of Os of Os	
	internal	and and an	Es
	(E)		

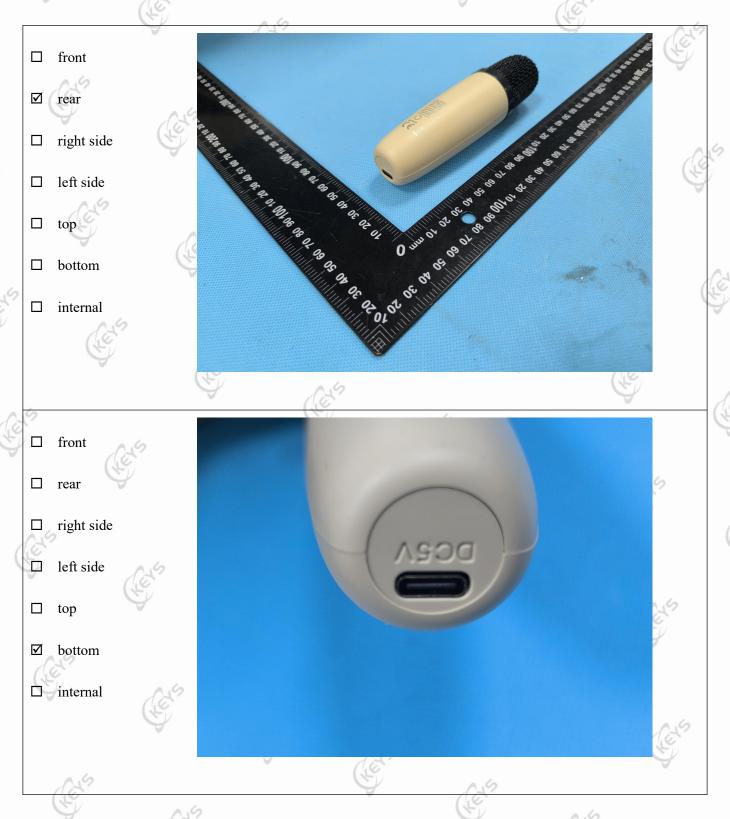
Guangdong KEYS Testing Technology Co., Ltd.

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front rear right side left side bottom internal 6 front rear right side □ left side ¥. top bottom internal

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☐ front

□ rear

□ right side

□ left side

□ top

□ bottom

internal



☐ front

□ rear

□ right side

□ left side

□ top

□ bottom

internal



\*\*\* End of Report \*\*\*

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# **TEST REPORT**

EN IEC 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

**Report Number....:** RKEYS250813362

Total number of pages...... 83 pages

Tested by (name + signature).....: Echo Zhong

Approved by (name + signature)...: Jason Zhan

Testing Laboratory Name.....: Guangdong KEYS Testing Technology Co., Ltd.

Guangdong, China

Applicant's name...... Mid Ocean Brands B.V.

Address...... Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan,

Kowloon, Hong Kong

Manufacturer's name...... 117486

Address..... N/A

**Test specification:** 

**Standard.....:** EN IEC 62368-1:2024/A11:2024

Test procedure....: Safety report

Non-standard test method.....: N/A

Test item description.....: Wireless Speaker

Trade Mark.....: N/A

Model/Type reference...... MO2665

Type-C Input : DC 5V, 1A

Battery :DC 3.7V, 800mAh,2.96Wh



Scan to view he original file

Guangdong KEYS Testing Technology Co., Ltd.

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Esho Zhonf



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#### General disclaimer:

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#### **List of Attachments:**

- Measurement Section
- Attachment No.1: European National Differences. (35 pages)
- Attachment No.2:Photo document (5 pages)

Total number of pages in each attachment is indicated in each individual attachment.

## **Summary of testing:**

The tested samples fulfilled the requirements of specified standards.

### **Testing location:**

Guangdong KEYS Testing Technology Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict, Dongguan, Guangdong, China

#### **Summary of compliance with National Differences:**

List of countries addressed:

European National Differences.

☐ The product fulfils the requirements of EN IEC 62368-1:2024/A11:2024

Remark:

Guangdong KEYS Testing Technology Co., Ltd.



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# Copy of marking plate:

The artwork below may be only a draft.

Wireless Speaker

Model: MO2665

Type-C Input: DC 5V, 1A

Battery: DC 3.7V, 800mAh, 2.96Wh



117486 MADE IN CHINA

> Importer: xxx Address: yyy

#### Note:

- 1. xxx means importer company name; yyy means importer company address information.
- 2. The marking for the other models are identical as above except the model no. only.
- 3.As declared by client that the name (or registered trade mark) and address of the certificate holder (manufacturer) or the importer or authorized representative based within the European Economic Area will be clearly affixed on the product or where that is not possible, on the packaging or in a document accompanying the product.
- 4. The height of letters and numerals was not less than 2mm.
- 5. The height of symbol " was not less than 7mm.
- 6. The height of the other graphical symbols was not less than 5mm.

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Test item particulars		: See test report
Product group	:	: ⊠ end product □ built-in component
Classification of use by	······································	: ⊠ Ordinary person
(6)		☐ Instructed person
9	125	☐ Skilled person
Supply connection	:	:   AC mains
050		☐ DC mains
15		□ not mains connected:     □
(E)	0.6	⊠ ES1 □ ES2 □ ES3
Supply tolerance	Æ.	: 🗆 +10%/-10%
	9	· +20%/-15%
(E)		+ %/ <sub>0</sub> / <sub>-</sub> %/ <sub>0</sub>
(A)	9	None     Non
Supply connection – type	9	:   pluggable equipment type A -
9	(Fe	non-detachable supply cord
A.69		appliance coupler
(Te)	. /.	☐ direct plug-in
A (		☐ pluggable equipment type B -
	4	non-detachable supply cord
26	C.	appliance coupler
25		permanent connection
(F)	0.6	☐ mating connector ☐ other: Not directly connected to
<u> </u>	(6)	mains
Considered current rating of pro	otective device:	: ☐ 16 A; Location:☐ building☐ equipment
(E)		□ N/A
Equipment mobility	:	: ⊠ movable  hand-held transportable
	125	☐ direct plug-in☐ stationary☐ for building-in
	(F)	☐ wall/ceiling-mounted ☐ SRME/rack-mounted
A.69		other:

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Overvoltage category (OVC):	
4	other: Not directly connected to mains
Class of equipment:	☐ Class I☐ Class II
( ) ( ) ( ) ( ) ( ) ( )	☐ Class II with functional earthing
Special installation location:	N/A  □ restricted access area
05	□ outdoor location □
Special installation location:	N/A □ restricted access area
	□ outdoor location □
Pollution degree (PD):	□ PD 1 ⋈ PD 2 □ PD 3
Manufacturer's specified T <sub>ma</sub> :	25 °C  Outdoor: minimum °C
IP protection class:	
Power systems:	☐ TN☐ TT☐ IT - V <sub>L-L</sub>
	□ not AC mains
Altitude during operation (m):	∑ 2000 m or less
Altitude of test laboratory (m):	
Mass of equipment (kg):	0.21 kg
Possible test case verdicts:	49
- 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:	64
Date of receipt of test item:	Aug. 11, 2025
Date (s) of performance of tests:	Aug. 11, 2025 to Aug. 18, 2025

Guangdong KEYS Testing Technology Co., Ltd.



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	1 160
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 $\square$ comma / $\boxtimes$ point is used as the decimal separator.	(4
Name and address of factory (ies):	
General product informRation:	'n
1. The appliance/equipment is "Wireless Speaker" with models "Test Model: MO2665.", class III app	liance.
2. All test mode on MO2665.	
3. The ambient temperature is 25°C.	



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	IEC 62368-1	₩	(Tex
Clause	Requirement + Test	Result - Remark	Verdict
4	General Requirements	. /-	P
4.1.1	Acceptance of materials, components and subassemblies	(Ex	P
4.1.2	Use of components	(See appended table 4.1.2)	P
4.1.3	Equipment design and construction		P
4.1.4	Specified ambient temperature for outdoor use (°C):	25	P
4.1.5	Constructions and components not specifically covered	(6)	N/A
4.1.8	Liquids and liquid filled components (LFC)	No such components	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 Annex T.2, T.4)	P
4.4.3.3	Drop tests	(See Annex T.7)	ω P
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests	No internal accessible safeguard	N/A
4.4.3.6	Glass impact tests	No glass used	N/A
4.4.3.7	Glass fixation tests	No such equipment	N/A
	Glass impact test (1J)	0.50	N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Clause T.8)	P
4.4.3.9	Air comprising a safeguard	Considered	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguards remain effective	P
4.4.4	Displacement of a safeguard by an insulating liquid	No insulating liquids	N/A
4.4.5	Safety interlocks	No safety interlocks	N/A
4.5	Explosion	9	P
4.5.1	General	No explosion occurs during normal/abnormal operation and 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 and conductive parts		P
15	Fix conductors not to defeat a safeguard	A.69	P
(To	Compliance is checked by test :	(See Clause T.2)	P

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	IEC 62368-1	A.	Colo
Clause	Requirement + Test	Result - Remark	Verdict
4.7	Equipment for direct insertion into mains socket—out	tlets	N/A
4.7.2	Mains plug part complies with relevant standard :	0.5	N/A
4.7.3	Torque (Nm):	(10)	N/A
4.8	Equipment containing coin/button cell batteries	9	N/A
4.8.1	General	No such coin/button battery	N/A
4.8.2	Instructional safeguard:	0.40	N/A
4.8.3	Battery compartment door/cover construction	(E	N/A
A	Open torque test	0.50	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	250	N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance	(E	N/A
	30N force test with test probe	9	N/A
6	20N force test with test hook	9	N/A
4.9	Likelihood of fire or shock due to entry of conductive	e object	P
4.10	Component requirements	(.5)	P
4.10.1	Disconnect Device	(See Annex L)	15 P
4.10.2	Switches and relays	No switches and relays used	N/A
4.10.3	Mains power supply cords	(See Clause G.7)	N/A
4.10.4	Batteries and their protection circuits	(See Annex M)	P
5	Electrically-caused injury		P
5.2	Classification and limits of electrical energy sources	(C)	P
5.2.2	ES1, ES2 and ES3 limits	ES1	P
5.2.2.2	Steady-state voltage and current limits :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits:	(See appended table 5.2)	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 means for connection to telephone network and no	N/A
	4 65	ringing signal generated	9
5.2.2.7	Audio signals	No audio signal terminals	N/A
5.3	Protection against electrical energy sources	(LE	P

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	IEC 62368-1	₩	(Tex.
Clause	Requirement + Test	Result - Remark	Verdict
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	(E)	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	(49)	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		P
5.3.2.1	Accessibility to electrical energy sources and safeguards	2.5	P
(6)	Accessibility to outdoor equipment bare parts	(C)	N/A
5.3.2.2	Contact requirements	A (%)	N/A
	Test with test probe from Annex V		
5.3.2.2 a)	Air gap – electric strength test potential (V) :		N/A
5.3.2.2 b)	Air gap – distance (mm) :		N/A
5.3.2.3	Compliance	159	N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminals	N/A
5.4	Insulation materials and requirements	(E	P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic	No hygroscopic insulating material used as insulation	N/A
5.4.1.4	Maximum operating temperature for insulating materials:	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees :	Pollution degree 2 considered	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	0.5	N/A
5.4.1.5.3	Thermal cycling test	9	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such circuit	N/A
5.4.1.8	Determination of working voltage :	(See appended table 5.4.1.8)	N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts	(E)	N/A
8	are directly mounted	0.0	
5.4.1.10.2	Vicat test:	Compliance is checked by ball pressure test	N/A
5.4.1.10.3	Ball pressure test :	(See appended table 5.4.1.10.3)	N/A
5.4.2	Clearances	A.60	N/A
5.4.2.1	General requirements	(E)	N/A

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	IEC 62368-1	A	(Ex
Clause	Requirement + Test	Result - Remark	Verdict
(E)	Clearances in circuits connected to AC Mains, Alternative method	(E)	N/A
5.4.2.2	Procedure 1 for determining clearance	(See appended table 5.4.2)	N/A
	Temporary overvoltage :	À	_
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2)	N/A
5.4.2.3.2.2	a.c. mains transient voltage:	2.5	_
5.4.2.3.2.3	d.c. mains transient voltage :	No such transient voltage	_
5.4.2.3.2.4	External circuit transient voltage:	No such transient voltage	_
5.4.2.3.2.5	Transient voltage determined by measurement:	No need to conduct this test	_
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 :	(Ets)	N/A
5.4.2.6	Clearance measurement :	(See appended table 5.4.2)	N/A
5.4.3	Creepage distances	(See appended table 5.4.2 and 5.4.3)	N/A
5.4.3.1	General		N/A
5.4.3.3	Material group :	Material group IIIb is assumed to be used	_
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	025	N/A
5.4.4.2	Minimum distance through insulation :	(See appended table 5.4.4.2)	N/A
5.4.4.3	Insulating compound forming solid insulation	(6)	N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints	No such components	N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements	(E)	N/A
5.4.4.6.2	Separable thin sheet material	10	N/A
	Number of layers (pcs) :	(FC)	N/A
5.4.4.6.3	Non-separable thin sheet material	4	N/A
	Number of layers (pcs) :		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material:	(Et	N/A

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	IEC 62368-1	$\forall$	(E)
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.5	Mandrel test	150	N/A
5.4.4.7	Solid insulation in wound components	(See Annex G.6)	N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, $E_P$ , $K_R$ , $d$ , $V_{PW}$ (V):	(See appended table 5.4.4.9)	N/A
Λ.	Alternative by electric strength test, tested voltage (V), $K_R$ :	(See appended table 5.4.4.9)	N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General	4	N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (M $\Omega$ ):	•	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	No such insulation	N/A
5.4.7	Tests for semiconductor components and for cemented joints	The second secon	N/A
5.4.8	Humidity conditioning	6	N/A
/	Relative humidity (%), temperature (°C), duration (h)	050	
5.4.9	Electric strength test		N/A
5.4.9.1	Test procedure for type test of solid insulation:	(See appended table 5.4.9)	N/A
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits	No external circuits	N/A
5.4.10.1	Parts and circuits separated from external circuits	(C)	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 :	(6.0	N/A
5.4.10.3	Verification for insulation breakdown for impulse test :	(Et's	N/A
5.4.11	Separation between external circuits and earth	No external circuits	N/A
5.4.11.1	Exceptions to separation between external circuits and earth	. /	N/A
5.4.11.2	Requirements	(E)	N/A
		a Salaman and a	

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	IEC 62368-1		124
_	A5		( Le
Clause	Requirement + Test	Result - Remark	Verdict
(E)	SPDs bridge separation between external circuit and earth	Care A. Ca	N/A
	Rated operating voltage $U_{op}(V)$ :		
	Nominal voltage $U_{peak}(V)$ :	9	
	Max increase due to variation $\Delta U_{sp}$ :		
0.6	Max increase due to ageing $\Delta U_{sa}$ :	- 6	_
5.4.11.3	Test method and compliance :	(6)	N/A
5.4.12	Insulating liquid	No such insulating liquid	N/A
5.4.12.1	General requirements	3 1	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 :	A59	N/A
5.5	Components as safeguards	(10)	N/A
5.5.1	General	(c	N/A
5.5.2	Capacitors and RC units	(See appended table 4.1.2)	N/A
5.5.2.1	General requirement	6	N/A
5.5.2.2	Safeguards against capacitor discharge after	(See appended table 5.5.2.2)	N/A
	disconnection of a connector :	163	
5.5.3	Transformers	(See Annex G.5.3)	N/A
5.5.4	Optocouplers	optocouplers used	N/A
5.5.5	Relays	No relay used	N/A
5.5.6	Resistors	No such resistors	N/A
3	Application type of resistors:	5	_
5.5.7	Surge suppressors	(See Clause G.8)	N/A
	GDT:	9	N/A
5.5.8	Insulation between the mains and an external circuit		N/A
0.6	consisting of a coaxial cable:	- (-	
(6)	Insulation resistance (M $\Omega$ ) :	CE"	N/A
A	Electric strength test :	(See appended table 5.4.9)	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment	(46)	N/A
	RCD rated residual operating current (mA) :	A	_
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	1.6	N/A
5.6.2.1	General requirements	(10)	N/A

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	IEC 62368-1	9	(Ex
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.2	Colour of insulation	100	N/A
5.6.3	Requirement for protective earthing conductors	0	N/A
	Protective earthing conductor size (mm <sup>2</sup> ) :	See above	
	Protective earthing conductor serving as a reinforced safeguard	7	N/A
(E	Protective earthing conductor serving as a double safeguard	CE'S	N/A
5.6.4	Requirements for protective bonding conductors	165	N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm <sup>2</sup> ). :	See appended table 4.1.2	
5.6.4.2	Protective current rating (A):		N/A
5.6.5	Terminals for protective conductors	049	N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm):	See above	N/A
6	Terminal size for connecting protective bonding conductors (mm) :		N/A
	Relevant IEC standard:	~	N/A
5.6.5.2	Corrosion Corrosion	A59	N/A
5.6.6	Resistance of the protective bonding system	(46)	N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method:	-	N/A
5.6.6.3	Resistance ( $\Omega$ ) or voltage drop :	See appended table 5.6.6	N/A
5.6.7	Reliable connection of a protective earthing conductor	The state of the s	N/A
5.6.8	Functional earthing	100	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 protecti	ve conductor current	N/A
5.7.2	Measuring devices and networks	0.6	N/A
5.7.2.1	Measurement of touch current	(10)	N/A
5.7.2.2	Measurement of voltage	Ä	N/A
5.7.3	Equipment set-up, supply connections and earth connections	a (a	N/A
5.7.4	Unearthed accessible parts :	(See appended table 5.7.4)	N/A

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	IEC 62368-1	$\forall$	(E)
Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	Earthed accessible conductive parts :	100	N/A
5.7.6	Requirements when touch current exceeds ES2 limits	0.0	N/A
	Protective conductor current (mA) :	(10)	N/A
	Instructional Safeguard:	7	N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits	No external circuits	N/A
5.7.7.1	Touch current from coaxial cables	(E	N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables	CE45	N/A
5.7.8	Summation of touch currents from external circuits	No external circuits	N/A
	a) Equipment connected to earthed external circuits, current (mA):	0.5	N/A
(	b) Equipment connected to unearthed external circuits, current (mA):	(E)	N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
9	Mains terminal ES:	6	N/A
)	Air gap (mm):		N/A
6	Electrically- caused fire		P
6.2	Classification of PS and PIS	(4)	1.6 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 5.4.1.4, 6.3.2, 9.0, B.2.6)	(P
Cet	Combustible materials outside fire enclosure :	13	N/A
6.4	Safeguards against fire under single fault conditions	0.6	P
6.4.1	Safeguard method	Method of control fire spread used	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
		A .60	

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	IEC 62368-1	A	(Text
Clause	Requirement + Test	Result - Remark	Verdict
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	· (E)	N/A
6.4.3.1	Supplementary safeguards	(4)	N/A
6.4.3.2	Single Fault Conditions:	(See appended table B.3, B.4)	P (
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	2.5	N/A
6.4.5	Control of fire spread in PS2 circuits	(C)	N/A
6.4.5.2	Supplementary safeguards	(See appended table 4.1.2 and Annex G)	N/A
6.4.6	Control of fire spread in PS3 circuits		P
6.4.7	Separation of combustible materials from a PIS	No separation of combustible materials by distance or by a fire barrier	N/A
6.4.7.2	Separation by distance	Q.C	N/A
6.4.7.3	Separation by a fire barrier	9	N/A
6.4.8	Fire enclosures and fire barriers	6	P
6.4.8.2	Fire enclosure and fire barrier material properties	Plastic Enclosure:V-0	P
6.4.8.2.1	Requirements for a fire barrier	100	N/A
6.4.8.2.2	Requirements for a fire enclosure	Plastic Enclosure:V-0	16 P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	(4	N/A
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings on the fire enclosure	N/A
6.4.8.3.2	Fire barrier dimensions	(E)	N/A
6.4.8.3.3	Top openings and properties	No openings on the fire enclosure	N/A
0.6	Openings dimensions (mm):		N/A
6.4.8.3.4	Bottom openings and properties	No openings on the fire enclosure	N/A
	Openings dimensions (mm):	(TO)	N/A
	Flammability tests for the bottom of a fire enclosure	9	N/A
	Instructional Safeguard:		N/A
6.4.8.3.5	Side openings and properties	No openings on the fire enclosure	N/A

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	HEC (22/9.1	<u> </u>	A
	IEC 62368-1		(To.
Clause	Requirement + Test	Result - Remark	Verdict
(6	Openings dimensions (mm):	12	N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)	(Ex)	N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating:	Plastic Enclosure:V-0	P
6.4.9	Flammability of insulating liquid:	26	N/A
(10)	Auto ignition temperature (°C) :	(C)	N/A
A	Flashpoint temperature (°C):	05	N/A
6.5	Internal and external wiring		N/A
6.5.1	General requirements	Approved input wire and output wire used	N/A
6.5.2	Requirements for interconnection to building wiring:	05	N/A
6.5.3	Internal wiring size (mm <sup>2</sup> ) for socket-outlets :	(40)	N/A
6.6	Safeguards against fire due to the connection to addit	ional equipment	N/A
7	INJURY CAUSED BY HAZARDOUS SUBSTANCE	S	N/A
7.2	Reduction of exposure to hazardous substances	6	N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equ	ipment (PPE)	N/A
	Personal safeguards and instructions:		_
7.5	Use of instructional safeguards and instructions	(4	N/A
<i>y</i>	Instructional safeguard (ISO 7010) :		_
8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications	8.6	P
8.3	Safeguards against mechanical energy sources	(Let	P
8.4	Safeguards against parts with sharp edges and corner	rs	P
8.4.1	Safeguards	Sharp edges and corners: MS1 classification;	P
(R)	14	Equipment mass: MS1 classification	
	Instructional Safeguard:	(6)	N/A
8.4.2	Sharp edges or corners	MS1 classification, no safeguard required	A.6
8.5	Safeguards against moving parts	A.69	N/A
8.5.1	Requirements	No moving parts	N/A

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	IEC 62368-1	~	(TE
Clause	Requirement + Test	Result - Remark	Verdict
(E)	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	(E)	N/A
	MS2 or MS3 part required to be accessible for the function of the equipment	(Le)	N/A
	A manually activated stopping device for moving MS3		N/A
A	Moving MS3 parts only accessible to skilled person	A.6	N/A
8.5.2	Instructional safeguard:	(10)	N/A
8.5.4	Special categories of equipment containing moving parts	(E)	N/A
8.5.4.1	General	V	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	659	N/A
3.5.4.2.2	Access protection override	CH CH	N/A
8.5.4.2.2.1	Override system	(F)	N/A
8.5.4.2.2.2	Visual indicator	6	N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m):	(Et)	N/A
,	Space between end point and nearest fixed mechanical part (mm) :	(f	N/A
8.5.4.2.4	Endurance requirements	050	N/A
	Mechanical system subjected to 100 000 cycles of operation	E CEN	N/A
	- Mechanical function check and visual inspection	9	N/A
	- Cable assembly :		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media	(Et	N/A
8.5.4.3.1	Equipment safeguards	A CE	N/A
3.5.4.3.2	Instructional safeguards against moving parts :	9	N/A
3.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N):	A.6	N/A
8.5.4.3.5	Compliance	(C)	N/A

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	IEC 62368-1	A	(Tex
Clause	Requirement + Test	Result - Remark	Verdict
8.5.5	High pressure lamps	(E)	N/A
9	Explosion test:	049	N/A
8.5.5.3	Glass particles dimensions (mm):		N/A
8.6	Stability of equipment	Ä	N/A
8.6.1	General	Equipment mass < 7.0kg and is classified as MS1	N/A
6	Instructional safeguard:	0.6	N/A
8.6.2	Static stability	(E	N/A
8.6.2.2	Static stability test:		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability	050	N/A
(4)	Wheels diameter (mm):	6	_
	Tilt test	(6)	N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test :	9	N/A
8.7	Equipment mounted to wall, ceiling or other structur	e Oxo	N/A
8.7.1	Mount means type:	(F)	N/A
	Mount means type:	(4	N/A
8.7.2	Test methods		N/A
(4)	Test 1, additional downwards force (N) :	049	N/A
9	Test 2, number of attachment points and test force (N)	5	N/A
	Test 3 Nominal diameter (mm) and applied torque		N/A
8.8	(Nm) : Handles strength		N/A
8.8.1	General	139	N/A
8.8.2	Handle strength test	(4)	N/A
0.0.2	Number of handles :	The state of the s	
	Force applied (N):	4	100
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test	4.6	N/A
8.10	Carts, stands and similar carriers	(6	N/A

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	IEC 62368-1	9	(E)
Clause	Requirement + Test	Result - Remark	Verdict
8.10.1	General	65	N/A
8.10.2	Marking and instructions :	0	N/A
8.10.3	Cart, stand or carrier loading test	(10)	N/A
	Loading force applied (N)	A	N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability	059	N/A
(F)	Force applied (N):	(16)	_
8.10.6	Thermoplastic temperature stability	(C)	N/A
8.11	Mounting means for slide-rail mounted equipment (S	SRME)	N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails	A.69	N/A
(-	Instructional Safeguard:	(E)	N/A
8.11.3	Mechanical strength test	4	N/A
8.11.3.1	Downward force test, force (N) applied :	C.	N/A
8.11.3.2	Lateral push force test	6	N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance	120	N/A
8.12	Telescoping or rod antennas	8	N/A
	No sharp edges or points	(:	N/A
2	Button/ball diameter (mm) :		N/A
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 :	Accessible plastic enclosure:	P
		TS1 classification;	
		(See appended table)	
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		N/A
9.5	Requirements for safeguards	T	N/A
9.5.1	Equipment safeguard	No safeguard is not required for TS1 classification	N/A
9.5.2	Instructional safeguard:	Instructional safeguard is not required	N/A
		required	

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	IEC 62368-1	A	(E)
Clause	Requirement + Test	Result - Remark	Verdict
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General	No wireless power transmitters	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
9.5.2	Instructional safeguard:	Instructional safeguard is not required	N/A
9.6	Requirements for wireless power transmitters	-	N/A
9.6.1	General	No wireless power transmitters	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
10	RADIATION		N/A
10.2	Radiation energy source classification	059	N/A
10.2.1	General classification	(F)	N/A
	Lasers :	No laser radiation	_
	Lamps and lamp systems :	No lamps and lamp systems	_
9	Image projectors :	Not such equipment	
	X-Ray :	No X-Ray	
	Personal music player :	Not such equipment	_
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply:	(4)	N/A
10.4	Safeguards against optical radiation from lamps and	d lamp systems (including LED	N/A
	types)		
0.4.1	General requirements	(LC)	N/A
	Instructional safeguard provided for accessible		N/A
	radiation level needs to exceed		5
0.6	Risk group marking and location:	- /-	N/A
(Tex	Information for safe operation and installation	(E)	N/A
0.4.2	Requirements for enclosures	25	N/A
	UV radiation exposure:	(FE)	N/A
10.4.3	Instructional safeguard:	A	N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements	No such X-radiation	N/A
(FC)	Instructional safeguard for skilled persons:	(60	_

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	IEC 62368-1	9	(Tex
Clause	Requirement + Test	Result - Remark	Verdict
10.5.3	Maximum radiation (pA/kg):	(See appended tables B.3 & B.4)	_
10.6	Safeguards against acoustic energy sources	25	N/A
10.6.1	General	(4)	N/A
10.6.2	Classification	9	N/A
	Acoustic output $L_{Aeq,T}$ , $dB(A)$ :		N/A
A	Unweighted RMS output voltage (mV) :	0.6	N/A
(10)	Digital output signal (dBFS):		N/A
10.6.3	Requirements for dose-based systems	9	N/A
10.6.3.1	General requirements	9	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
1	30 s integrated exposure level (MEL30) :	050	N/A
(	Warning for MEL ≥ 100 dB(A) :	(F)	N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons	9	N/A
9	Instructional safeguards :	9	N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)	65	N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV) :	(4	N/A
10.6.6.2	Corded listening devices with digital input		N/A
(4)	Max. acoustic output $L_{Aeq,T}$ , $dB(A)$ :	0,49	N/A
10.6.6.3	Cordless listening devices	5	N/A
	Max. acoustic output $L_{Aeq,T}$ , $dB(A)$ :	(LC)	N/A
В	NORMAL OPERATING CONDITION TESTS, CONDITION TESTS AND SINGLE FAULT CONDI		P
B.1 6	General	. /.	P
B.1.5	Temperature measurement conditions	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
B.1.6	Specific output conditions	(F)	N/A
B.2	Normal operating conditions	A	P
B.2.1	General requirements :	(See Test Item Particulars and appended test tables)	Р

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	IEC 62368-1	A	(E)
Clause	Requirement + Test	Result - Remark	Verdict
(E)	Audio Amplifiers and equipment with audio amplifiers :	No audio amplifier circuits	N/A
B.2.3	Supply voltage and tolerances		N/A
B.2.5	Input test:	(See appended table B.2.5)	P d
B.2.6.4	Equipment intended for building-in or rack-mounting		N/A
B.3	Simulated abnormal operating conditions	0.6	P
B.3.1	General	(C)	P
B.3.2	Covering of ventilation openings	No ventilation openings	N/A
	Instructional safeguard:		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 table B.3, B.4)	P
B.3.6	Reverse battery polarity	(LE)	N/A
B.3.7	Audio amplifier abnormal operating conditions	No audio amplifiers	N/A
B.3.8	Safeguards functional during and after abnormal	(See appended table B.3)	P
6	operating conditions :	6	
B.4	Simulated single fault conditions	0.5	P
B.4.1	General	(6	P
B.4.2	Temperature controlling device	No such device used	N/A
B.4.3	Blocked motor test	No motors used	N/A
B.4.4	Functional insulation		N/A
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3, B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3, B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards used.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3, B.4)	P
B.4.6	Short circuit or disconnection of passive components	(See appended table B.3, B.4)	P
B.4.7	Continuous operation of components	Not intermittent or short-time operation equipment	N/A
B.4.8	Compliance during and after single fault conditions:	(See appended table B.4)	P
B.4.9	Battery charging and discharging under single fault conditions		N/A

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	IEC 62368-1	A	(E)
Clause	Requirement + Test	Result - Remark	Verdict
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements	No UV radiation in the equipment	N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test	0.6	N/A
C.2.1	Test apparatus :	(C	N/A
C.2.2	Mounting of test samples	9	N/A
C.2.3	Carbon-arc light-exposure test	9	N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators	039	N/A
D.2	Antenna interface test generator	(Fe)	N/A
D.3	Electronic pulse generator	(,0	N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAIN	ING AUDIO AMPLIFIERS	N/A
É.1	Electrical energy source classification for audio signal	S	N/A
	Maximum non-clipped output power (W):		_
	Rated load impedance $(\Omega)$ :	100	
	Open-circuit output voltage (V):		_
	Instructional safeguard:	(4	_
E.2	Audio amplifier normal operating conditions		N/A
E.2.1	Pink noise test signal	029	_
E.2.2	Sine-wave signal	9	_
E.3	Operating conditions of equipment containing an aud	io amplifier	_
E.3.1	Normal operating conditions	(See appended table B.2.5, E.3.1)	_
E.3.2	Abnormal operating conditions	(See appended table B.3, B.4)	N/A
E.3.3	Audio equipment temperature measurement conditions:	Cer 049	N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, SAFEGUARDS	AND INSTRUCTIONAL	P
F.1	General		P
15	Language :	English version checked	_
F.2	Letter symbols and graphical symbols	(6	P

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	IEC 62368-1	9	(Fels
Clause	Requirement + Test	Result - Remark	Verdict
F.2.1	Letter symbols according to IEC60027-1	65	P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	(E)	P
F.3	Equipment markings	A	P A
F.3.1	Equipment marking locations	The marking is located on external enclosure of the equipment and easily visible	P
F.3.2	Equipment identification markings	000	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		P
F.3.3.1	Equipment with direct connection to mains	036	P
F.3.3.2	Equipment without direct connection to mains	(4)	N/A
F.3.3.3	Nature of the supply voltage:	To Co	N/A
F.3.3.4	Rated voltage:	See marking plate	P
F.3.3.5	Rated frequency:	6	N/A
F.3.3.6	Rated current or rated power :	See marking plate	P
F.3.3.7	Equipment with multiple supply connections	Single supply connection	N/A
F.3.4	Voltage setting device	No voltage setting device	N/A
F.3.5	Terminals and operating devices	(4	N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings :	No mains appliance outlet and socket-outlet	N/A
F.3.5.2	Switch position identification marking :	Not such switch	N/A
F.3.5.3	Replacement fuse identification and rating markings:	(E	N/A
	Instructional safeguards for neutral fuse :	9	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	(E)	N/A
F.3.6	Equipment markings related to equipment classification	20	N/A
F.3.6.1	Class I equipment	(10)	N/A
F.3.6.1.1	Protective earthing conductor terminal :	A	N/A
F.3.6.1.2	Protective bonding conductor terminals :		N/A
F.3.6.2	Equipment class marking :	A.6	N/A
F.3.6.3	Functional earthing terminal marking:	(LC)	N/A

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	IEC 62368-1	A	(E)
Clause	Requirement + Test	Result - Remark	Verdict
F.3.7	Equipment IP rating marking :	000	N/A
F.3.8	External power supply output marking :	See copy of marking plate	P
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings	9	P d
F.4	Instructions		P
Λ.	a) Information prior to installation and initial use	0.60	P
( C	b) Equipment for use in locations where children not likely to be present	(E)	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	05	N/A
(	f) Instructions for audio equipment terminals	(te)	N/A
	g) Protective earthing used as a safeguard	To the state of th	N/A
	h) Protective conductor current exceeding ES2 limits		N/A
6	i) Graphic symbols used on equipment	6	N/A
	j) Permanently connected equipment not provided with all-pole mains switch	65	N/A
	k) Replaceable components or modules providing safeguard function		N/A
2	1) Equipment containing insulating liquid		N/A
(4)	m) Installation instructions for outdoor equipment	020	N/A
F.5	Instructional safeguards	4	N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance	(E)	N/A
G.2	Relays	4	N/A
G.2.1	Requirements	No relays used	N/A
G.2.2	Overload test	A	N/A
G.2.3	Relay controlling connectors supplying power to other		N/A
05	equipment	0.60	*
G.2.4	Test method and compliance	(6	N/A

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	IEC 62368-1	A	(E)
Clause	Requirement + Test	Result - Remark	Verdict
G.3	Protective devices	120	N/A
G.3.1	Thermal cut-offs	No thermal cut-off used	N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
<u> </u>	Thermal cut-outs tested as part of the equipment as indicated in c)	A.62	N/A
G.3.1.2	Test method and compliance	(C)	N/A
G.3.2	Thermal links	No thermal links used	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
G.3.2.2	Test method and compliance	034	N/A
G.3.3	PTC thermistors	No PTC thermistors used	N/A
G.3.4	Overcurrent protection devices	de de	N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4	9	N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided	9	N/A
G.3.5.2	Single faults conditions:	(See appended table B.4)	N/A
G.4	Connectors		N/A
G.4.1	Spacings	(4	N/A
G.4.2	Mains connector configuration :		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or	The output connecter is such a	P
9	appliance coupler is unlikely	shape that cannot insertion into a mains socket-outlet	
G.5	Wound components		N/A
G.5.1	Wire insulation in wound components	Approved source of triple insulated wire used as secondary winding for reinforced insulation	N/A
G.5.1.2	Protection against mechanical stress	Separated by the insulation tube	N/A
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test	0 (0	N/A
(6	Test time (days per cycle) :	10	_

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	0.50		15
	IEC 62368-1	_	(10)
Clause	Requirement + Test	Result - Remark	Verdict
(6	Test temperature (°C) :	1.20	_
G.5.2.3	Wound components supplied from the mains	125	N/A
G.5.2.4	No insulation breakdown	(49)	N/A
G.5.3	Transformers	4	N/A
G.5.3.1	Compliance method :	The isolation transformer meets	N/A
04		the requirements given in	
(10)		G.5.3.2 and G.5.3.3	
A	Compliance method :	Electronic protection	N/A
G.5.3.2	Insulation		N/A
	Protection from displacement of windings:	Fixed by bobbin and insulation tape	_
G.5.3.3	Transformer overload tests	(See appended table B.3, B.4)	N/A
G.5.3.3.1	Test conditions	(4)	N/A
	Position:	T GE	N/A
	Method of protection :	9	N/A
G.5.3.3.2	Winding temperatures	6	N/A
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW	(6.5)	N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter :	(4	
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced	029	N/A
<b>5</b>	insulation :	0.6	
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	Co.	N/A
G.5.4.1	General requirements	No motor used	N/A
G.5.4.2	Motor overload test conditions	(4)	N/A
G.5.4.3	Running overload test	A	N/A
G.5.4.4	Locked-rotor overload test		N/A
05	Test duration (days) :	A.6	N/A
(10)	Electric strength test :	(See appended table 5.4.9)	N/A

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	IEC 62368-1	A	(Tex
Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.5	Running overload test for DC motors	13.	N/A
G.5.4.5.2	Tested in the unit	0.5	N/A
G.5.4.5.3	Alternative method	(LE	N/A
	Electric strength test :	(See appended table 5.4.9)	N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit	0.6	N/A
(10)	Maximum Temperature :	(C)	N/A
4	Electric strength test :	(See appended table 5.4.9)	N/A
G.5.4.6.3	Alternative method		N/A
	Electric strength test :	(See appended table 5.4.9)	N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors	0.50	N/A
G.5.4.9	Series motors	(F)	N/A
	Operating voltage :	(C	
G.6	Wire Insulation	9	N/A
G.6.1	General	Not such TIW used	N/A
G.6.2	Enamelled winding wire insulation		N/A
<b>G.7</b>	Mains power supply cords and interconnection cables		N/A
G.7.1	General requirements	No mains supply cords used	N/A
	Type :	(4	_
G.7.2	Cross sectional area (mm <sup>2</sup> or AWG) :		N/A
G.7.3	Cord anchorages and strain relief for non-detachable	070	N/A
5	power supply cords	5	
G.7.3.2	Cord strain relief	(10)	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	0 (0	N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) :	(c)	N/A
G.7.3.2.4	Strain relief and cord anchorage material	049	N/A
G.7.4	Cord Entry	(4)	N/A
G.7.5	Non-detachable cord bend protection	A	N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance	0.6	N/A

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	IEC 62368-1	A	(Et
Clause	Requirement + Test	Result - Remark	Verdict
(G)	Overall diameter or minor overall dimension, D (mm):	(E)	_
	Radius of curvature after test (mm) :	(19)	
G.7.6	Supply wiring space	9	N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire	2.6	N/A
G.7.6.2.1	Requirements	(C)	N/A
G.7.6.2.2	Test with 8 mm strand	4	N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General	059	N/A
G.8.2.2	Varistor overload test	(Te)	N/A
G.8.2.3	Temporary overvoltage test	(E	N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements	No such IC used	N/A
/	IC limiter output current (max. 5A) :		_
	Manufacturers' defined drift :	163	_
G.9.2	Test Program		N/A
G.9.3	Compliance	(4	N/A
G.10	Resistors		N/A
G.10.1	General	029	N/A
G.10.2	Conditioning	5	N/A
G.10.3	Resistor test	(LC	N/A
	Changes of resistance (%) :	9	N/A
	Measured current with the lowest resistance value :		N/A
G.10.4	Voltage surge test	. /-	N/A
(10)	Changes of resistance (%) :	CE"	N/A
G.10.5	Impulse test	4 45	N/A
	Changes of resistance (%) :	(16)	N/A
G.10.6	Overload test	The state of the s	N/A
	Changes of resistance (%) :		N/A
G.11	Capacitors and RC units	15	N/A
G.11.1	General requirements	(See appended table 4.1.2)	N/A

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	IEC 62368-1	A	(Tex
Clause	Requirement + Test	Result - Remark	Verdict
G.11.2	Conditioning of capacitors and RC units	125	N/A
G.11.3	Rules for selecting capacitors	0.5	N/A
G.12	Optocouplers	(4)	N/A
	Optocouplers comply with IEC 60747-5-5 with specifics		N/A
A	Type test voltage V <sub>ini,a</sub> :	2.6	_
(10)	Routine test voltage, V <sub>ini, b</sub> :	(C)	_
G.13	Printed boards	9	P
G.13.1	General requirements	(See appended table 4.1.2)	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board is compliant with the minimum requirements of clearances (5.4.2) and creepage distances (5.4.3)	P
G.13.3	Coated printed boards	No coated printed boards	N/A
G.13.4	Insulation between conductors on the same inner surface	000	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	25	N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance	The Carlo	N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements :		N/A
G.15	Pressurized liquid filled components or LFC assembli	es	N/A
G.15.1	Requirements	029	N/A
G.15.2	Test methods and compliance criteria for self-contained LFC	(A)	N/A
G.15.2.1	Hydrostatic pressure test, applied test pressure:	A design of the second of the	N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test, the change of tensile strength (%) :	CE S	N/A

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	IEC 62368-1		(E)
Clause	Requirement + Test	Result - Remark	Verdict
G.15.2.4	Vibration test	12.5	N/A
G.15.2.5	Thermal cycling test, test temperature (°C):	0,5	N/A
G.15.2.6	Force test	(4)	N/A
G.15.2.7	Compliance criteria	9	N/A
G.15.3	Test methods and compliance for a modular LFC		N/A
G.15.3.2	Hydrostatic pressure test, applied test pressure:	2.5	N/A
G.15.3.3	Creep resistance test	(C)	N/A
G.15.3.4	Tubing and fittings compatibility test, the change of tensile strength (%) :	Cer's	N/A
G.15.3.5	Thermal cycle test, test temperature (°C) :		N/A
G.15.3.6	Force test		N/A
G.15.3.7	Compliance criteria	049	N/A
G.16	IC including capacitor discharge function (ICX)	(F)	N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment	9	N/A
5	ICX tested separately	6	N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test:	(Ex)	
	Mains voltage that impulses to be superimposed on:	(4	_
(25)	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test:	029	_
G.16.3	Capacitor discharge test :		N/A
Н	CRITERIA FOR TELEPHONE RINGING SIGNALS	S	N/A
H.1	General	9	N/A
H.2	Method A		N/A
H.3	Method B	- 7-	N/A
H.3.1	Ringing signal	No telephone ringing signals	N/A
H.3.1.1	Frequency (Hz) :	25	_
H.3.1.2	Voltage (V) :	(Fe)	_
H.3.1.3	Cadence; time (s) and voltage (V) :	A	_
H.3.1.4	Single fault current (mA): :		
H.3.2	Tripping device and monitoring voltage	0.60	N/A

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	46		
	IEC 62368-1	9	(E
Clause	Requirement + Test	Result - Remark	Verdict
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage	(E)	N/A
H.3.2.2	Tripping device	(4)	N/A
H.3.2.3	Monitoring voltage (V):	A	N/A
J	INSULATED WINDING WIRES FOR USE INSULATION	WITHOUT INTERLEAVED	N/A
J.1 (4	General	(6)	N/A
A	Winding wire insulation :	Approved triple insulated wires complied with Annex J of IEC 62368-1	_
	Solid round winding wire, diameter (mm):		N/A
(	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm <sup>2</sup> ):	(E)	N/A
J.2/J.3	Tests and Manufacturing	Q.	~ _
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard:	No safety interlocks	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	025	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	A	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

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	IEC 62368-1	A	(Et
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
L.1	General requirements	The appliance coupler used as disconnect device	N/A
L.2	Permanently connected equipment	Not such equipment	N/A
L.3	Parts that remain energized	No parts remain energized after the mains plug disconnected	N/A
L.4	Single-phase equipment	The appliance coupler disconnects both poles simultaneously	N/A
L.5	Three-phase equipment	Single phase equipment	N/A
L.6	Switches as disconnect devices	No switches used as disconnect devices	N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
	Instructional safeguard:		N/A
M	EQUIPMENT CONTAINING BATTERIES AS CIRCUITS	ND THEIR PROTECTION	P
M.1	General requirements		P
M.2	Safety of batteries and their cells	05	P
M.2.1	Batteries and their cells comply with relevant IEC standards:	IEC 62133-2	P
M.3	Protection circuits for batteries provided within the e	quipment	P
M.3.1	Requirements		P
M.3.2	Test method		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		N/A
M.3.3	Compliance		P
M.4	Additional safeguards for equipment containing a sec	ondary lithium battery	P
M.4.1	General		P

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	4.6		- 6
	IEC 62368-1	A	(Et
Clause	Requirement + Test	Result - Remark	Verdict
20.07	IEC 62133-2 batteries used for sub-system power		P
	powering application :		
M.4.2	Charging safeguards	(40)	P
M.4.2.1	Requirements	A	P (
M.4.2.2	Test		P
M.4.2.2.1	General		P
M.4.2.2.2	Abnormal operating conditions		P
M.4.2.2.3	Single fault conditions		P
M.4.2.3	Compliance criteria :	(See appended table M.4.2)	P
M.4.3	Fire enclosure:		P
M.4.4	Drop test of equipment containing a secondary lithium		P
/	battery	050	
M.4.4.2	Preparation and procedure for the drop test		P
M.4.4.3	Drop, Voltage on reference and dropped batteries (V);		P
	voltage difference during 24 h period (%):		
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	Test method and compliance		N/A
M.6	Safeguards against short-circuits		P
M.6.1	External and internal faults		P
M.6.2	Compliance		P
M.7	Risk of explosion from lead acid and NiCd batteries	9	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
9	Minimum air flow rate, $Q$ (m <sup>3</sup> /h):	4	N/A
M.7.3	Ventilation tests	(6)	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

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	IEC 62368-1	Y	(ct
Clause	Requirement + Test	Result - Remark	Verdict
	1	Result Remark	
N 7 2 4	Obtained hydrogen generation rate :  Ventilation test – alternative 3		N/A
M.7.3.4			N/A
N 6 7 4	Hydrogen gas concentration (%):		N/A
M.7.4	Marking:		N/A
M.8	Protection against internal ignition from external s	park sources of batteries with	N/A
<u> </u>	aqueous electrolyte	A.6	27/4
M.8.1	General		N/A
M.8.2	Test method	7	N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume $V_Z$ (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	(H)	6 P
M.9.1	Protection from electrolyte spillage		P
M.9.2	Tray for preventing electrolyte spillage	Not stationary equipment	N/A
M.10	Instructions to prevent reasonably foreseeable misuse		P
	Instructional safeguard:	Specified in user manual	P
N	ELECTROCHEMICAL POTENTIALS		N/A
	Material(s) used :	Pollution degree considered	_
0	MEASUREMENT OF CREEPAGE DISTANCES AN	D CLEARANCES	P
	Value of $X$ (mm) :	Considered	_
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECT	S	P
P.1	General		P
P.2	Safeguards against entry or consequences of entry of	a foreign object	P
P.2.1	General		N/A
P.2.2	Safeguard requirements	No openings	N/A
	The ES3 and PS3 keep-out volume in Figure P.4 not applicable to transportable equipment	No openings	_
	Transportable equipment with metalized plastic parts :		
P.2.3	Consequence of entry test :	4	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

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	IEC 62368-1	9	(Et
Clause	Requirement + Test	Result - Remark	Verdict
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts	(4)	N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T <sub>C</sub> (°C) :		_
	Duration (weeks) :		_
Q	CIRCUITS INTENDED FOR INTERCONNECTIO	N WITH BUILDING WIRING	N/A
Q.1	Limited power sources		N/A
Q.1.1	Requirements		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output	(See appended table Annex Q.1)	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 Annex Q.1)	N/A
	Current rating of overcurrent protective device (A):		N/A
Q.2	Test for external circuits – paired conductor cable	No such external circuits	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 barrie the steady state power does not exceed 4 000 W	er materials of equipment where	N/A
	Samples, material:		_
	Wall thickness (mm) :		_

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	IEC 62368-1	A	(E)
Clause	Requirement + Test	Result - Remark	Verdict
2 .01	Conditioning (°C):		_
	Test flame according to IEC 60695-11-5 with conditions		N/A
	as set out		
	- 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 in	ntegrity	N/A
	Samples, material:		_
	Wall thickness (mm) :		_
	Conditioning (°C):		_
	- Material did not show any additional holes for		N/A
	combustible materials		
	- Cheesecloth did not ignite for top openings		N/A
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
	Mounting of samples :		
	Wall thickness (mm) :		_
	Cheesecloth did not ignite		_
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of		N/A
	equipment with a steady state power exceeding 4 000		
	W		- /-
	Samples, material:		
	Wall thickness (mm) :		
	Conditioning (°C):		
S.6	Grille covering material, cloth, and reticulated foam		
	Samples, material:		N/A
	Measured distance from the centre of the fuel tablet		N/A
_	(mm):		
T	MECHANICAL STRENGTH TESTS		P
Г.1	General		P

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	IEC (2269.1	The state of the s	Oto
	IEC 62368-1		(FC)
Clause	Requirement + Test	Result - Remark	Verdict
Т.2	Steady force test, 10 N :	(See appended table T.2)	P
Г.3	Steady force test, 30 N :		N/A
Г.4	Steady force test, 100 N :	(See appended table T.4)	P
Γ.5	Steady force test, 250 N :		N/A
Г.6	Enclosure impact test		P
	Fall test		P
	Swing test		N/A
Г.7	Drop test :	(See appended table T.7)	P
Г.8	Stress relief test :	(See appended table T.8)	P
Г.9	Glass Impact Test :	No glass used	N/A
Γ.10	Glass fragmentation test		N/A
	Number of particles counted:	No glass used	/ N/A
Г.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) :	No telescoping or rod antennas used	N/A
U	MECHANICAL STRENGTH OF CATHODE PROTECTION AGAINST THE EFFECTS OF IMP	RAY TUBES (CRT) AND PLOSION	N/A
U.1	General		N/A
	Instructional safeguard:	No CRTs	N/A
U <b>.2</b>	Test method and compliance for non-intrinsically pr	rotected CRTs	N/A
U <b>.3</b>	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		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	No openings	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

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	IEC 62368-1	(E)
Clause	Requirement + Test Result - Remark	Verdict
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)	
	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
Y.5.5	Protection from excessive dust	N/A
Y.5.5.1	General	N/A
Y.5.5.2	IP5X equipment	N/A

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	IEC 62368-1		(E)
Clause	Requirement + Test	Result - Remark	Verdict
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures	049	N/A
Y.6.1	General		N/A
Y.6.2	Impact test :		N/A

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					1.6			
4.1.2 TAB	LE: List of critical o	omponents	120	P				
Object /	Manufacturer/	Type / model	Technical	Standard	Mark(s) of			
part No.	trademark		data		conformity1			
Battery	LL G	IMR 18650	3.7V 800mAh, 2.96Wh	IEC 62133-2	IEC			
PCB	Interchangeable	JLD-3054GS-2- 2	V-0,130°C	UL 94 UL 796	UL G			
Plastic enclosure	Interchangeable	Interchangeable	V-0,130°C	UL 94	UL			

## Supplementary information:

<sup>&</sup>lt;sup>2)</sup> Description line content is optional. Main line description needs to clearly detail the component used for testing

5.2	TABLE: Classification of electrica	al energy sources		(10	1	P	
Supply	Location (e.g. circuit designation)	Test conditions	Parame	eters			ES
Voltage			U (V)	I (mA)	Type <sup>1)</sup>	Additional	Class
						Info 2)	
5Vdc	EUT input	Normal	5			DC	
		Abnormal:					ES1
		Single fault – SC/OC					
5Vdc	Battery circuit	Normal	3.7			DC	
3	039	Abnormal:	1		-0.6		ES1
	(LE)	Single fault – SC/OC	_		Act		

# 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.
- 3) SC Short-circuited; OC Open-circuited.

5.4.1.8	TABLE: Working volta		N/A		
Location		RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
- 05			2	7.6	
(10)				10	

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<sup>&</sup>lt;sup>1)</sup>Provided evidence ensures the agreed level of compliance. See OD-CB2039.



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	4.60		
Supplementary information:			
Tested under 240V, 60Hz	9	040	4

			A . W					
5.4.1.10.2 TABLE: Vicat softening temperature of thermoplastics								
Method:		ISC	306 / B50	120				
Object/ Part No./Mate	erial Manufacturer/trad	emark Thickne	ss (mm)	T softening	(°C)			
	- (46)				(76			
Supplementary inforn	nation:							
250		C	A.69					

		A 19	2			(L)	060	
	5.4.1.10.3	TABLE: Ball pr	essure test of thermoplast	(6)	N/A			
	Allowed imp	9	_					
>	Object/Part No./Material		Manufacturer/trademark	T1.:-1()		Test temperature		sion
	Object/Part P	No./Material	Manufacturer/trademark	Thickness (mm)		(°C)	C) diameter	
	(A	e		A		150		
	Supplementa	ry information:						
	T1 bobbin is	phenolic, no test r	equire.				(10	

5.4.2, 5.4.3 TABLE: Minimum Clearances/Creepage distance								N/A
Clearance (cl) and	$U_p$	U <sub>rms</sub>	Freq 1)	Required*	cl	E.S. <sup>2)</sup>	Required	cr
creepage distance (cr)	(V)	(V)	(Hz)	cl (mm)	(mm)	(V)	cr (mm)	(mm)
at/of/between:								
	(A)		15					
0.6			(10)		,			9
(4)			A		73			

# Supplementary information:

- 1) Only for frequency above 30 kHz.
- 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied).
- 3) \* Both frequencies lower than 30 kHz and higher than 30 kHz are present. Limit from Table 11 based on the temporary overvoltage (2000Vpeak) which is higher than Table 12.
- 4) BI: basic insulation; SI: supplementary insulation; DI: double insulation; RI: reinforced insulation.
- 5) Ferrite core of transformer T1 considered as primary live part.
- 6) The clearance is evaluated up to 5000m above sea level and the multiplication factor for altitude is 1.48
- 7) If no specified, the worst conditions were recorded.

5.4.4.2	TABLE: Minimu	n distance through insula	tion A.6		N/A
Distance thro	ough insulation	Peak voltage (V)	Insulation	Required DTI	Measured DTI

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~	(/6		- /-						(Tex		
(DTI) at/of								(m	m)	(mn	1)
			9		1	25			·		(4)
15					(4			A.63			
(L)								(Te)			
Supplement	ary informa	tion:									
		\$		19					(F)		
	1		(/6	Ž.		- 6					(Je
5.4.4.9	TABLE:	Solid in	sulation at fi	requen	cies >3	0 kHz					N/A
Insulation m	naterial		$E_{\rm P}$	Freque	ency	$K_{\rm R}$		Thickness a	Insulation	$V_{\rm F}$	PW .
		1.4		(kHz)				(mm)		(V	pk)
		(6		L .						6	
Supplement				10							
As an altern	ative to the	above, 1	he electric str	ength t	est acc	ording to	clause	e 5.4.9 and s	see table 5.4.9	of for o	details.
	A.6					(10			10		T
5.4.9			e strength tes	sts		A		1.0	(2)		N/A
Test voltage	applied be	tween:				ge shape			tage (V)		akdown
					(Surg	e, Impuls etc.)	se, AC	,		Ye	es / No
10				G			25				
)	0.6					(-	Te		- 1-		
Supplement	ary informa	ition:			•					'	
	A		120						y	1	049
5.5.2.2	TABLE:	Stored	discharge on	capaci	tors					(	N/A
Location		Supply	voltage (V)	Opera	_	nd fault	Swite	ch position	Measured voltage (Vpl		S Class
	019	>					6	/	15		
	(FE)		0.60						(10)		- /-
Supplement	ary informa	ition:									
X-capacitors	s installed f	or testin	g: see table 4.	1.2	04	9					6
[ X ] bleedir	ng resistor r	rating: se	ee table 4.1.2		(A)		1	25			Ŭ.

5.6.6	TABLE: Resistance of p	N/A			
Lagation		Test current	Duration	Voltage drop	Resistance
Location		(A)	(min)	(V)	$(\Omega)$
(4)	0.6			- 10	

1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit

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	(1	-V		6			(4)		
Supplementa	ary inforn	nation:							
			9	/	070			(A)	
1.6					F.	0.60			
5.7.4	TABLE	: Unearthed a	ccessi	ble parts				N/A	
Location		Operating and	5	Supply	Parameters			ES clas	
		fault conditions	s	Voltage (V)	Voltage	Current	Current Freq.		
					$(V_{rms} \text{ or } V_{pk})$	(A <sub>rms</sub> or A			
				7	164				
A	9				(6)	0.6			
(10)		- /-				(10)			
Supplement	ary inforn	nation:							
	•	ort circuit; OC=	= onen	circuit					
			_	116	easuring netwo	ork specified in l	Figure 4 IFC 6	0990-2016	
	_				7 4	ork specified in	_		
. Current (	037300 <u>F</u>	Jean varae) 13 11	<u> </u>	ed using the m	casaring netwo	ork specified in	7	0770. 2010	
5.7.5 TABLE: Earthed accessible conductive part								N/A	
		. Earthed acc	cssibic	conductive p	art	6	IVA		
Supply voltage (V) :  Phase(s) : [ ] Single Phase; [ ] Three Phase: [ ] Delta [ ] Wye									
Phase(s)	ibution Cr	vatam :		TN			[] Wye		
Power Distr	ibution Sy	/stem:	1			T T	C		
Location				Fault Condition		Touch current	Comment		
	-	Δ.	5	60990 clause 6	.2.2	(mA)	L L	2 (2	
G 1 .	T. C.	1.6.						CK,	
Supplementa	ary Intorn	nation:		//6				V	
15				(F)		.6			
(6)		/-	_		(de	<u> </u>			
5.8	TABLE	: Backfeed saf		<b>_</b>		-	15	N/A	
Location		Supply	_	ating and fault	Time (s)	Open-circuit	Touch	ES Class	
		voltage (V)	condi	tion		voltage (V)	current (A)	1.0	
			4		192-			72	
Supplementa	ary inforn	nation:							
(to		- 10			(	10			
A									
6.2.2	TABLE	: Power sourc	e circı	uit classification	ons	(F)	P		
Location	Location Operating and fault Voltag				Current (A)	) Max.	Time (S)	PS class	
	cond	lition				Power <sup>1)</sup> (W)			
EUT input				(	<b>5</b> /	150		PS3	
(the		0.60			<b>*</b>	(Te		(Declared)	
7	1	1.0			1	n Road, Dongcheng Su	070		

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USB output	Normal	2.27	2.60	5.9	3	PS1			
1		1105		1 - 1 -		/16			
11 3	Supplementary information:								
1) Measured aft	er 3 s tor PS1	and measured after 5 s f	or PS2 and PS3.	0.60					

6.2.3.1	TABLE: Determin	nation of Arcing PIS	9	N/A	
Location		Open circuit voltage	Measured r.m.s	Calculated value	Arcing PIS?
		after 3 s (Vpk)	current (A)		Yes / No
		Y	(C)		9

## Supplementary information:

- 1) An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage  $(V_p)$  and normal operating condition rms current  $(I_{rms})$  is greater than 15.
- 2) All primary circuit/components were considered as arcing PIS, the max. open circuit voltage of output for all models were not exceeded 50V.

6.2.3.2 TABLE: Determin	100										
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS?								
			Yes / No								
Input terminal	(C)		Yes								
2	_ 0	S	(Declared)								

#### Supplementary information:

- 1. All primary/secondary components except output terminal were considered as resistive PIS.
- 2. 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
- 3. A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (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 pro	essure lamp	2		N/A				
Lamp manufacturer		Lamp type	Explosion method	Longest axis of	Particle found				
				glass particle	beyond 1 m				
				(mm)	Yes / No				
		- (6	,,		- (6				
Supplementary information:									
25			5	,					

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5.4.1.4, 9.3, <b>TABLE: Tempe</b>	rature mea	sureme	nts						P
B.1.5, B.2.6									
Supply voltage (V) :	Supply voltage (V) :						Discharge		_
Ambient temperature during tes	25.	.0		G	C.		_		
Maximum measured temperature <i>T</i> of part/at:				°C)					Allowed
									$T_{\text{max}}$ (°C)
PCB near U1	(4		42.	.9			46.2		130
Plastic enclosure (outside)	7	1	33.2 35.3			35.3		77	
Plastic enclosure (inside)			30.5		31.9		.Ref		
Battery	2		32.5			33.2		.Ref	
Internal wire			33.	.7			35.0	(E)	110
Tma		120	24.	.4			24.5	6	
Temperature T of winding:	t <sub>1</sub> (°C)	$R_1(\Omega)$		t <sub>2</sub> (°C)		$R_2(\Omega)$	T (°C)	Allowed	Insulation
								T <sub>max</sub> (°C)	class
- 6					Y		-125		

# Supplementary information:

- 1. Thermocouple method used.
- 2. The maximum operation ambient temperature is 25°C. The test data for external enclosure are adjusted at 25°C.
- 3. #: External surfaces touched occasionally for very short periodes: 1s<t<10s.

B.2.5	TABLE: In	put test				9	P. 5
U (V)	I (A)	I rated (A)	P(W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
5.5	0.493	1	2.465	1	7.6		Charge by Type-C port
Suppleme	entary information	on:		•	(10)		
Equipmen	nt may be have r	rated current or	rated power	er or both. Both	should be me	easured.	9

	-	1	12					010
B.3, B.4	TABI	LE: Abnor	mal operati	ng and fau	ılt condi	tion tests	5	P
Ambient tem	peratui	re T <sub>amb</sub> (°C	:		(10)		See below	_
Power source	e for El	UT: Manuf	facturer, mod	lel/type, ou	tputrating	g :	See page 2	_
Component N	No.	Condition	Supply	Test time	Fuse	Fuse	Observation	
			voltage		no.	current		
			(V)			(A)		
L1	S	SC	5	1s	15	)	Unit become steady state, no	damage,
0.60					(10)		no hazard.	~
USB output	S	SC	5	1s	4		Unit normal operation, the US	SB can not
		15					work normally, no damage, no	o hazard.

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USB output	OL	5	(c 1s			Unit normal operation, when USB loaded
			0	04	2	to more than 2.6A then USB output
15				(Fe		shutdown immediately , recoverable,no
(C)						hazard.

#### Supplementary information:

Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.

- 1) SC: Short-circuited; OC: Open-circuited; OL: Overloaded; BL: Blocked.
- 2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.

			1/		_ /					
M.3	TABLE: Pi	otection circui	ts fo	r batteries	provided	with	in the	equipm	ent	P
Is it possible	to install the b	attery in a rever	se po	olarity posi	tion? :		No	05		
		Charging								
Equipment S <sub>1</sub>	pecification	Voltage (V)					Curr	ent (A)		
		5		123			1		6	Y
		Battery specifi	icatio	on						
		Non-rechargea	Rechargeable batteries							
Manufacturer/type		Discharging	Unintentional		Charging				Discharging	Reverse
		current (A)	cha	rging	Voltage (V)		Current (A) c		current (A)	charging
			cur	rent (A)						current (A)
18650				(le	4.2		0.4		0.8	0
Note: The tes	ts of M.3.2 are	e applicable onl	y wh	en above aj	ppropriate	data	is not	available	<b>.</b>	
Specified bat	tery temperatu	re (°C) :				(F)			a.6	
Component	Fault	Charge/ discha	arge	Test time	Temp.	Cui	rrent	Voltage	Observation	n
No.	condition	mode			(°C)	(A)		(V)		
Q1 pin 3-6	SC	Charge		7h	9 42.5	0.8	4.2		NL,NS,NE,NF	
Q1 pin 3-6	SC	Discharge		7h	43.5	0.8		4.2	NL,NS	S,NE,NF

# Supplementary information:

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

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery						
Maximum sp	ecified charging voltage (V):	4.2	_				
Maximum sp	ecified charging current (A):	0.8					

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	* V	A . (A						
Highest specified cha	rging temperatur	e (°C) :		45		A	_	
Lowest specified char	rging temperature	e (°C) :	070	0			_	
Battery	Operating and	Measuremen	t			Observation		
manufacturer/type	fault condition	Charging	Charging	Temp.				
		voltage (V)	current (A)	(°C)				
Li-ion battery	Normal	4.2	0.8	42.8		No abnormal	, no	
	operation	(Fe.				hazard.	(10	
Li-ion battery	Battery pack	4.2	0.8	44.9		No abnormal	, no	
025	(B- to P- SC of		(A)		050	hazard.		
( LE	battery PCB)		W.		(Te)			

# 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)							
Output	Condition	U <sub>oc</sub> (VDC)	$\square$ Time (s)	$I_{sc}(A)$		S (VA)		
Circuit	Condition			Meas.	Limit	Meas.	Limit	
10		(4)		15				
2	A.69			(FR)				
(	C			A	(Et	P.		
Supplementary	Supplementary Information:							

SC=Short circuit, OC=Open circuit.

				40 . 6			
T.2, T.3, T.4, T.5	TABLE: Steady fo	orce test	V	(E)		P	
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Top enclosure	Plastic	Min. 1.0	Circular plane surface 30 mm in diameter	100	5	Enclosure remained no crack/opening developed. Internal I were not accessible a test. No insulation breakdown.	ES3

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Bottom enclosure	Plastic	Min. 1.0	Circular plane surface 30 mm in diameter	100	566	Enclosure remained intact, no crack/opening developed. Internal ES3 were not accessible after test. No insulation breakdown.		
Side enclosure	Plastic	Min. 1.0	Circular plane surface 30 mm in diameter	100	5 66	Enclosure remained intact, no crack/opening developed. Internal ES3 were not accessible after test. No insulation breakdown.		
Supplementary inf	Supplementary information:							

1.6			A	120	
T.6, T.9 TABLI	E: Impact test			(Fe	P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Top enclosure	Plastic	Min. 1.0	1300	Enclosure remains crack/opening de Internal ES3 we accessible after insulation break	re not test. No
Bottom enclosure	Plastic	Min. 1.0	1300	Enclosure remains crack/opening de Internal ES3 we accessible after insulation break	ned intact, no eveloped. re not test. No
Side enclosure	Plastic	Min. 1.0	1300	Enclosure remai crack/opening d Internal ES3 we accessible after insulation break	eveloped. re not test. No
Supplementary inform	nation:	·			
	A O	40			25

T.7 TABL	E: Drop test	A	(E)		P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Cuanadana VEVS Tas	ting Tashnalagy Co. L.	Address: Building 1, N	No.18, Shihuan Road, Dongche	ng Subdistrict, Dongguan, Gua	ngdong, China
Guanguong KE15 Tes	ting Technology Co., L	Tel: +86-0769-222210	088 http://www.kevs-lab.com	E-mail: info@kevs-lab.com	0.60



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Top enclosure	Plastic	Min. 1.0	1000		No damage, no hazardous			
Bottom enclosure	Plastic	Min. 1.0	1000		No damage, no hazardous			
Side enclosure	Plastic	Min. 1.0	1000	0.6	No damage, no hazardous			
Supplementary information:								
A	1643			9	029			

T.8 TAB	LE: Stress relief te	st (	2		P (©	
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Completed sample	Plastic	Min. 1.0	70	7 (49)	No distortion, no hazard	
Supplementary info	Supplementary information:					
	A	019			( )	

X	X TABLE: Alternative method for determining minimum clearances distances N/A						
Clearance distanced between: Peak of working voltage Required cl Measured cl							
		(V)	(mm)	(mm)			
	(Tr			- (6			
Supplementary information:							
10		9	029				

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## ATTACHMENT TO TEST REPORT

# IEC 62368-1

# EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

(Audio/video, information and communication technology equipment Part 1: Safety requirements)

**Differences according to.....**: EN IEC 62368-1-2024 + A11:2024

**TRF template used.....:** IECEE OD-2020-F2:2022, Ed. 1.2

Attachment Form No.....: EU GD IEC 62368 1F

Attachment Originator....: UL Solutions (Demko)

**Master Attachment**.....: 2024-05-16

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	4			
6	CENELEC COMMON MODIFICATIONS (EN)	N/A		
7	Clause numbers in the cells that are shaded light grey are clause references in EN			
Co Co	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".	(Et		
J	Add the following annexes:	N/A		
	Annex ZA (normative) Normative references to international publications with their corresponding European publications	(E)		
(E)	Annex ZB (normative) Special national conditions  Annex ZC (informative) A-deviations	9		
(4)	Annex ZD (informative) IEC and CENELEC code designations for flexible cords	A.6		
1	MODIFICATION to the whole document	N/A		
(Ets	Delete all the "country" notes in the reference document according to the following list:	N/A		

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	(H)		6			(4)	,
	0.2.1	Note 1 and Note 2	1	Note 4 and Note 5	3.3.8.1	Note 2	
025	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and Note 2	
(P)	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and Note 3	5.4.2.3.2.4 Table 13	Note 2	3
	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			1 63
15	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and Note 3 and Note 4	Ĝ.
( Je	5.6.8	Note 2	5.7.7.1	Note 1 and Note 2	8.5.4.2.3	Note	9.60
	10.2.1 Table 39	Note 3 and Note 4 and Note 5	10.5.3	Note 2	10.6.1	Note 3	J.
	F.3.3.4	Note 2	F.3.3.6	Note 3	Y.4.1	Note	1
	Y.4.5	Note	5	8	× ×		1
1.6	-			7	1	H.	
	Modificatio	n to Clause 1					N/A
(	electrical and within the E	0.0		16		(Ets	A.62
	Directive 20	011/65/EU."	Cet .	7		7	C.
19	Add the foll	owing paragra	ph and note a	fter Note	25		
Ÿ	5:	ant is a thurst	ost stondond	(	8	(Ets)	. /
	"This docum	(Ex)					
15	NOTE Z2 R						
(Le		ies or compon	ents are cover	ed by EN	(6		
A	62911."	A	6		G.	(Ets	A.69
	Modificatio	n to Clause 2	`			7	N/A
				10			
(65)	Aaa the follo	owing referenc	res:	2	049		N/A

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	(FE)	(10)	
	EN 71-1:2014+A1:2018, Safety of toys - Part 1:	9	1.65
	Mechanical and physical properties		6
0.6		2.6	
(10)	EN 50332-1:2013, Sound system equipment:	(E)	
9	Headphones and earphones associated with		>
	personal music players - Maximum sound	(te	
	pressure level measurement methodology - Part 1:	A	(E
	General method for "one package equipment"		6
059		0.6	
(10)	EN 50332-2:2013, Sound system equipment:	(E	
9	Headphones and earphones associated with		70
	personal music players - Maximum sound	(2)	D
	pressure level measurement methodology - Part 2:		(.
	Matching of sets with headphones if either or both	9	
0	are offered separately, or are offered as one	25	
(fr	package equipment but with standardised	(C)	,
	connectors between the two allowing to combine	9	150
	components of different manufacturers or different		9
6	design	26	
	4	(E)	
ľ	EN 50332-3:2017, Sound system equipment:	0.50	
	headphones and earphones associated with	(te	2 (2
	personal music players - Maximum sound	4	Ce
	pressure level measurement methodology - Part 3:		
150	Measurement method for sound dose management	0.6	
TO,	V	(10)	
A	IEC/TR 62471-2, Photobiological safety of lamps	000	
	and lamp systems - Part 2: Guidance on	C. C.	0.60
	manufacturing requirements relating to non-laser		(Te
	optical radiation safety		9
4	Modification to Clause 4		N/A
4	Add the following new subclause 4.Z1 after	6	N/A
	subclause 4.9:	(E)	1 1/11
	"For compliance with B.3 and B.4 in circuits		05
	connected to an AC mains, protective devices		(4)
- 6	shall be provided, subject to the following:		~
(E		620	
4	- for <b>pluggable equipment type A</b> , the protective	0.5	
	1 / 50 / 5 / 5 / 5 / 5 / 5 / 5 / 5 / 5 /	Libuan Dand Dangahang Subdistrict Dangay	

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		(Te	
	devices shall be included as parts of the	A	600
	equipment, with the exception of components in		(4)
16	series with the <b>mains</b> input to the equipment such	0.60	
(TE	as the supply cord, appliance coupler, r.f.i. filter	(CE)	
9	and switch, for which the building installation	049	•
	shall be regarded as providing protection in	(LE)	
	accordance with the rating of the wall socket	A	Co
	outlet;		6
05		0.6	
(10)	0 /0	(C)	
A	- for pluggable equipment type B or	9 (	10
	permanently connected equipment, the	4	$\nu$
	protection may be the dedicated overcurrent and	·	(
	short-circuit protection in the building installation,		
0	provided that the means of protection, for example	15	
(In	a fuse or circuit breaker, is fully specified in the	(Te	. /-
7	installation instructions.	4	(E)
	0.50		9
6	Where protective <b>devices</b> are required within the	- 6	
	equipment, the protective <b>devices</b> within the		
	equipment shall operate before or at the same time	039	
(	the expected building installation protection will	(Te	. /
	operate.	4	(E)
	000		
159	For earth faults in single-phase equipment, it is not	0.60	
6	necessary to provide 2 protective <b>devices</b> . It is	(C)	
7	expected that the building installation will protect	0.5	
	against earth faults. This applies also in countries	( Le	0.60
	where an IT power distribution system is used."	7	(10)
5	Modification to subclause 4.1.9		N/A
4.1.9	Add the following paragraph at the end of this	059	N/A
	subclause:	(H)	I WA
	(E	(E	
	"Products need to comply with the requirements	6	049
	of this document with appropriate measurement		(4)
- 10	uncertainty.		7
Car		120	
	1		

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	2.6		/
0.5	NOTE Z1 See also the RED ADCO position on 'Measurement uncertainty in published harmonized standards'."	0.60	Œ"
6	Modification to subclause 5.4.9.1		N/A
5.4.9.1	Add the following note after the 5th paragraph:  "NOTE Z1 For guidance on the use of high voltage source, see IEC 60060-1, Clause 8 of IEC 60243-1 and IEC 61180."	Vien (Eg.	N/A
7	Modification to subclause 5.4.2.3.2.4	1162	N/A
5.4.2.3.2.4	Add the following at the end of this subclause:		N/A
	"The requirement for interconnection with <b>external circuit</b> in a HBES/BACS network is in addition given in EN IEC 63044-3:2018."		
8	Modification to subclause 5.6.6.2		N/A
5.6.6.2	Replace item d) with the following:  "d) For equipment powered from a DC mains, if the protective current rating of the circuit under test exceeds 25 A, the test current shall be minimum as required in item a), unless the manufacturer specifies a higher value."	E.	N/A
9	Modification to subclause 9.3.1		N/A
9.3.1	Replace the second paragraph with the following:  "An accessible part that, while in contact with the body, is likely to drop in temperature upon touch can be evaluated under the limits of Annex A of IEC Guide 117:2010 using the test method of 4.5 of IEC Guide 117."	Exp Ch	N/A
10	Modification to subclause 10.2.1		N/A
10.2.1	Add the following to c) and d) in Table 38:  "For additional requirements, see 10.5.1."	1249	N/A

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11	Modification to subclause 10.4.1		N/A
10.4.1	Replace the second paragraph of 10.4.1 with:		N/A
65		05	
6	"Electronic light effect equipment does not have	Circ and	
	to comply with the requirements of 10.4.		
	However,		0
	114 IEC/TR 62471-2 shall be considered and		(10
	proper installation instructions shall be provided.		
Co.	9	050	
6	Replace the ninth paragraph of 10.4.1 with:	( Le	6
	(E)		E. C.
	The following information shall be provided in the		V
	user manual for safe operation and installation.	5	
	This information shall also be provided for safe		
(	operation by a skilled person who may be exposed	035	
(	to Risk Group 3 energy levels.	(F)	0.60
		7	(6)
	Adequate instructions for proper assembly,		9
6	installation, maintenance and safe use, including	0.5	
	clear warnings concerning precautions to avoid	0	
	possible exposure to hazardous optical radiation;	0.40	
	and	(Feb.	0.6
	(10)	9	(E)
	Advice on safe operating procedures and warnings		
049	concerning reasonably foreseeable misuse,	15	
The state of the s	malfunctions and hazardous failure modes. Where	(C)	
V	servicing and maintenance procedures are	A (62)	
	detailed, they shall include explicit instructions on	(4)	16
	safe procedures to be followed; and		(10)
	sure procedures to obtain wear, and		9
000	The marking on the equipment shall be	059	
(F)	reproduced in the user manual. A yellow	(F)	
	background is not required in the user manual.	A Cha	
	background is not required in the user manual.		25
12	Modification to subclause 10.4.4		N/A
10.4.4	Replace the last paragraph of 10.4.4 with:	A.63	N/A
10.7.7	1 8 7	(E	1 1/71
1	A .60		1

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	0.6		2
0.5	"Compliance against material degradation from UV radiation is checked by the applicable tests of Annex C."		Œ.
13	Modification to subclause 10.5.1		N/A
13	Modification to subclause 10.5.1  Add the following after the first paragraph:  "For RS1 compliance is checked by measurement under the following conditions:  In addition to the normal operating conditions, all controls adjustable from the outside of the equipment by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.  NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.  The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm2, at any point at a distance of 10 cm from the outer surface of the equipment.		N/A N/A
	Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.  For RS1, the dose-rate shall not exceed 1 μSv/h taking account of the background level.  NOTE Z2 These values appear in Directive 2013/59/Euratom of 5 December 2013."	Est Est	Certs Certs
14	Modification to subclause 10.5.3	(16)	N/A
10.5.3	<b>Replace</b> the second paragraph of 10.5.3 with:	6	N/A

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		(Te	
(Ex)	"The amount of radiation is determined by means of a radiation monitor of the ionizing chamber type with an effective area of 1 000 mm2 $\pm$ 10 mm2 or by measuring equipment of other types giving equivalent results."	E. C.	
15	Modification to Clause 10		N/A
0.6	Replace 10.6 with the following:		N/A
10.6	Safeguards against acoustic energy sources	Œ	N/A
10.6.1	General	(A)	N/A
10.6.1.1	Introduction	-	N/A
	Safeguard requirements for protection against	6	(
/	long-term exposure to excessive sound pressure	2.6	
(4	levels from personal music players closely	(C)	
7	coupled to the ear are specified below.		050
	Requirements for earphones and headphones		(A)
6	intended for use with personal music players are		
	also covered.	670	
/	A personal music player is a portable equipment	5	
	intended for use by an <b>ordinary person</b> , that:	(10)	
	- is designed to allow the user to listen to audio or	9	100
	audiovisual content / material;		(F)
0.60	and		
10	- uses a listening device, such as headphones or	CE ?	
Y	earphones that can be worn in or on or around the	000	
	ears;	(E)	. /-
	and	4	(E)
	- has a player that can be body worn (of a size		(4)
05	suitable to be carried in a clothing pocket) and is	0.6	
(Te.	intended for the user to walk around with while in	(E	
A	continuous use (for example, on a street, in a	000	
	subway, at an airport, etc.).		0.60
			(JE)
	EXAMPLES Portable CD players, MP3 audio		
05	players, mobile phones with MP3 type features,	15	
(40)	PDAs or similar	(LE)	

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	(Le	(Te	
	equipment.	9	(E)
	Personal music players shall comply with the		9
CES	requirements of either 10.6.2 or 10.6.3.	65	
(4)	requirements of ettner 10.0.2 of 10.0.3.		
	NOTE 1 Protection against acoustic energy	(LE)	
	sources from telecom applications is referenced to	9	00
	ITU-T P.360.		(F)
0.60	(LE)	0.60	
(E	NOTE 2 It is the intention of the Committee to	(Car	
9	allow the alternative methods for now, but to only		19
	use the dose	(4)	Ž
	measurement method as given in 10.6.5 in future.		
	Therefore, manufacturers are encouraged to	9	-
0	implement 10.6.5 as soon as possible.	14	
(12	A.6	(10)	- /-
	Listening devices sold separately shall comply	A	(6)
	with the requirements of 10.6.6.		4
5	These requirements are valid for music or video	A.60	
4	mode only.	E C	
	The requirements do not apply to:	9 640	
1	- professional equipment;	CE.	15
	(FE)	~	(Te
	NOTE 3 Professional equipment is equipment		9
1620	sold through special sales channels. All products	059	
6	sold through normal electronics stores or general	(te	
	public sales channels are considered not to be	To Cat	
	professional equipment.	8	05
			(4)
0.60	- hearing aid equipment and other devices for		~
(6	assistive listening; - the following type of analogue personal music	(E)	
	players:	15	
	- long distance radio receiver (for example, a	(LE)	0 /0
	multiband radio receiver or world band radio	A	Cer
	receiver, an AM radio receiver), and		(2)
05	- cassette player/recorder;	15	
(Te	, , , , , , , , , , , , , , , , , , ,	(6)	
		0.6	

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	(A)	(FC)	
E.S	NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.	E. C.	
(Ex)	<ul> <li>a player while connected to an external amplifier that does not allow the user to walk around while in use;</li> <li>hearing protection devices (HPD) that comply with EN 352-8</li> <li>For equipment that is clearly designed or intended</li> </ul>	S CE S	
is G	primarily for use by children, the limits of the relevant toy standards may apply.  The relevant requirements are given in EN 71-1:2014+A1:2018, 4.20 and the related tests methods and measurement distances apply.	E.	
10.6.2	Classification of devices without the capacity to	estimate sound dose	N/A
10.6.2.1	General 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. For classifying the acoustic output <i>L</i> Aeq, <i>T</i> , measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.		N/A
	For music where the average sound pressure (long term <i>L</i> Aeq, <i>T</i> ) 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, <i>T</i> becomes the duration of the song.  NOTE Classical music, acoustic music and	Ex. Ex.	(F)

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		(LE)	
	broadcast typically has an average sound pressure	A	(6)
	(long term $LAeq,T$ ) which is much lower than the		(F)
0.6	average programme simulation noise. Therefore, if	0.60	
(E)	the player is capable to analyse the content and	( Color	
	compare it with the programme simulation noise,	049	,
	the warning does not need to be given as long as	(4)	
	the average sound pressure of the song does not	4	6
	exceed the required limit.		6
16	The state of the s	26	
(Te	For example, if the player is set with the	(Car	
9	programme simulation noise to 85 dB, but the		16
	average music level of the song is only 65 dB,	(4)	
	there is no need to give a warning or ask an		
	acknowledgement as long as the average sound	9	4
0	level of the song is not above the basic limit of 85	0.6	
(40	dB.	(LE)	
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2)	Y .	N/A
10,0,2,2	019		(F) 1111
6	RS1 is a class 1 acoustic energy source that does	- /-	
	not exceed the following:	(ct)	
ľ	for equipment provided as a package (player with	039	
	its listening device), and with a proprietary	(FE)	0 (0
	connector between the player and its listening	9	(E)
	device, or where the combination of player and		
15	listening device is known by other means such as	0.60	
(FE)	setting or automatic detection, the $LAeq,T$	(6	
A	acoustic output shall be $\leq 85$ dB when playing the	000	
	fixed "programme simulation noise" described in	CE .	A.60
	EN 50332-1:2013.		(E
	A CENT		9
050	for equipment provided with a standardized	0.50	
(A)	connector (for example, a 3,5 mm	(E	
	headphone/earphone jack) that allows connection	9	
	to a listening device for general use, the	(3)	15
	unweighted r.m.s. output voltage shall be ≤ 27 mV	V	(Te
ž.	(analogue interface) or -25 dBFS (digital		A
(2)	interface) when playing the fixed 214 "programme	049	
6	simulation noise" described in EN 50332-1:2013.	(10)	
	// 4.3		

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	2.6		
2 (2	The RS1 limits will be updated for all devices as per 10.6.3.2.		Œ <sup>3</sup>
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3)	(E)	N/A
10.0.2.5	020	C. C.	17/21
	RS2 is a class 2 acoustic energy source that does	(TE)	
	not exceed the following:	A	a Ca
	for equipment provided as a package (player with		6
A.1	its listening device), and with a proprietary	0.60	
(10)	connector between the player and its listening	(C)	
A	device, or when the combination of player and		19
	listening device is known by other means such as	(2)	
	setting or automatic detection, the LAeq,T		
	acoustic output shall be $\leq 100 \text{ dB(A)}$ when	9	\
1	playing the fixed "programme simulation noise"	0.5	
	as described in EN 50332-1:2013.	(10)	
	A CENT		120
	for equipment provided with a standardized	1	3
6	connector (for example, a 3,5 phone jack) that	. /-	
	allows connection to a listening device for general	(C)	
/	use, the unweighted r.m.s. output voltage shall be	250	
	≤ 150 mV (analogue interface) or −10 dBFS	(6)	
	(digital interface) when playing the fixed	4	(E)
	"programme simulation noise" as described in		(2)
15	226 EN 50332-1:2013.	0.6	
10.6.2.4	RS3 limits	(E)	N/A
10.0.2.4	(C. 5)	049	1 1/11
	RS3 is a class 3 acoustic energy source that	(te	0.6
	exceeds RS2 limits.	4	CE
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General	120	N/A
10.0.0.1	Previous limits (10.6.2) created abundant false	4.6	1 1/11
	negative and false positive PMP sound level	(TE)	
	warnings. New limits, compliant with The		100
	Commission Decision 2009/490/EC of 23 June		(F)
0.60	2009, are given below.		~
10.6.3.2	RS1 limits (new)	(E)	N/A
	A 19	2.6	

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RS1 is a class 1 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the LAeq,T acoustic output shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1;2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or −30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1;2013.  RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device, 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 FN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated		(HE)	(Fe)	
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 ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1;2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that aillows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or −30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1:2013.  10.6.3.3  RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3.5 phone jack) that allows connection to a listening device for general			9	(E)
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 \leq 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be \leq 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1:2013.  10.6.3.3  R82 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and listening device is known by other means such as setting or automatic defection, the weekly sound exposure level, as described in EN 50332-3:2017, shall be \leq 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		71.0.		9
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 ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or −30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1:2013.  10.6.3.3  RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and 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 ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3.5 phone jack) that allows connection to a listening device for general	125		15	
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 \$ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be \$ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1:2013.  10.6.3.3  RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and 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 \$ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general	(F)		(te)	
listening device is known by other means such as setting or automatic detection, the LAeq,T acoustic output shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or −30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1:2013.  10.6.3.3  RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general			C.E.	
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(digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1:2013.  10.6.3.3  RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general	(F)	71 (2)	(F)	0.60
"programme simulation noise" described in EN 50332-1:2013.  10.6.3.3  RS2 limits (new)  RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general			4	(6)
50332-1:2013.  RS2 limits (new)  RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		// 67		9
RS2 limits (new)  RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general	16		0.60	
RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly <b>sound</b> exposure level, as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		50332-1:2013.	Ø.	
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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 <b>sound exposure level</b> , as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		RS2 is a class 2 acoustic energy source that does	(E)	0.60
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 <b>sound exposure level</b> , as described in EN 50332-3:2017, shall be $\leq 80$ dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		not exceed the following:		(E)
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 <b>sound exposure level</b> , as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		for equipment provided as a package (player with		
device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly <b>sound exposure level</b> , as described in EN 50332-3:2017, shall be $\leq 80$ dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general	05	its listening device), and with a proprietary	15	
listening device is known by other means such as setting or automatic detection, the weekly <b>sound exposure level</b> , as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed  "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general	4	connector between the player and its listening	(C)	
setting or automatic detection, the weekly <b>sound exposure level</b> , as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general	9	device, or where the combination of player and	9	
exposure level, as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		listening device is known by other means such as		16
shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		setting or automatic detection, the weekly <b>sound</b>		(10)
"programme simulation noise" described in 249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		<b>exposure level</b> , as described in EN 50332-3:2017,		
249 EN 50332-1:2013.  for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general	000	shall be $\leq 80$ dB when playing the fixed	036	
for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general	(F)	"programme simulation noise" described in	(te)	
connector (for example, a 3,5 phone jack) that allows connection to a listening device for general	~	249 EN 50332-1:2013.	4	
connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		0.5	6	15
allows connection to a listening device for general		for equipment provided with a standardized		(10)
		connector (for example, a 3,5 phone jack) that		A
use, the unweighted r.m.s. output level, integrated	000		050	
	(4)	use, the unweighted r.m.s. output level, integrated	(te	

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(4)		
over one week, as described in EN 50332-3:2017, shall be $\leq$ 15 mV (analogue interface) or $-30$ dBFS	CE45	
Requirements for maximum sound exposure	Cox.	N/A
Measurement methods	9	N/A
All volume controls shall be turned to maximum		(Te
during tests.		V
Measurements shall be made in accordance with	650	
EN 50332-1:2013 or EN 50332-2:2013 as		6
applicable.	Customark Customark	
Protection of persons	6	N/A
Except as given below, protection requirements	6	(
for parts accessible to ordinary persons,		
instructed	(E)	
<b>persons</b> and <b>skilled persons</b> are given in 4.3.	(1)	050
0.6		(LE)
NOTE 1 Volume control is not considered to be a		A
safeguard.	0.5	
0.6	6	
Between RS2 and an ordinary person, the basic	(E)	
safeguard may be replaced by an instructional	9	049
safeguard in accordance with Clause F.5, except		(To)
that the instructional safeguard shall be placed		A
on the equipment, or on the packaging, or in the	120	
instruction manual. Alternatively, the	0.6	
instructional safeguard may be given through	(10)	
the equipment display during use.		120
The elements of the instructional safeguard shall		6
be as follows:		
	(Ca)	
- element 1a: the symbol, IEC 60417-6044	0.5	
(2011–01)	(LE)	
- element 2: "High sound pressure" or equivalent	A	(62)
text		(4)
- element 3: "Hearing damage risk" or equivalent	. (0	
text	(E)	
	shall be ≤ 15 mV (analogue interface) or −30 dBFS  Requirements for maximum sound exposure  Measurement methods All volume controls shall be turned to maximum during tests.  Measurements shall be made in accordance with EN 50332-1:2013 or EN 50332-2:2013 as applicable.  Protection of persons  Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3.  NOTE 1 Volume control is not considered to be a safeguard.  Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use.  The elements of the instructional safeguard shall be as follows:  - element 1a: the symbol (2011–01)  - element 2: "High sound pressure" or equivalent text  - element 3: "Hearing damage risk" or equivalent	shall be ≤ 15 mV (analogue interface) or −30 dBFS  Requirements for maximum sound exposure  Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1:2013 or EN 50332-2:2013 as applicable.  Protection of persons Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3.  NOTE 1 Volume control is not considered to be a safeguard.  Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use.  The elements of the instructional safeguard shall be as follows:  - element 1a: the symbol (100) (100), IEC 60417-6044 (2011-01) - element 2: "High sound pressure" or equivalent text - element 3: "Hearing damage risk" or equivalent

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		(Te	
	- element 4: "Do not listen at high volume levels	A	15
	for long periods." or equivalent text		
15		0.60	
(10)	An equipment safeguard shall prevent exposure	(Le	
9	of an ordinary person to an RS2 source without		7
	intentional physical action from the ordinary	(F)	
	person and shall automatically return to an output	7	(Co
	level not exceeding what is specified for an RS1		G
050	source when the power is switched off.	0.6	
(16)	The equipment shall provide a means to actively	(10)	
9	inform the user of the increased sound level when	4	19
	the equipment is operated with an output level	(£	
	exceeding RS1 limits. Any means used shall be		(
	acknowledged by the user before activating a	9	\
0	mode of operation which allows for an output	25	
(Fr	level exceeding RS1 limits. The acknowledgement	(E	,
	does not need to be repeated more than once every	9	1620
	20 h of cumulative listening time.		6
6	( C	- 6	
	NOTE 2 Examples of means include visual or		
1	audible signals. Action from the user is always	049	
	needed.	(te	0 (0
	(C)	4	CE
	NOTE 3 The 20 h listening time is the		
15	accumulative listening time, independent of how	0.6	
Te.	often and how long the personal music player has	(C)	
A	been switched off.	000	
	25		0.60
	A skilled person shall not be unintentionally	7	(10)
	exposed to RS3.		9
10.6.5	Requirements for dose-based systems	050	N/A
10.6.5.1	General requirements	40	N/A
	Personal music players shall give the warnings as	(LE)	
	provided below when tested according to	A	(6)
	281 EN 50332-3:2017, using the limits from this		6
0.60	clause.	. /	
(10)	The manufacturer may offer optional settings to	(E)	

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	(F)	(Le)	
0.6	allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating		(E)
CE	the <b>safeguards</b> . This allows the users to be	Co. S	
(4)	informed in a method that best meets their	0.0	,
	physical capabilities and device usage needs. If	(6)	
	such optional settings are offered, an administrator	9	16
	(for example, parental restrictions,		E
0.60	business/educational administrators, etc.) shall be	0 /0	
(Let	able to lock any optional settings into a specific	(E)	
	configuration.		16
	The personal music player shall be supplied with	(4	
	easy to understand explanation to the user of the		
	dose management system, the risks involved, and	9	
0	how to use the system safely. The user shall be	0.6	
(to	made aware that other sources may significantly	(LE)	
4	contribute to their sound exposure, for example	A	(C)
	work, transportation, concerts, clubs, cinema, car		5
6	races, etc.	0.60	
10.6.5.2	Dose-based warning and requirements	E C	N/A
/	When a dose of 100 % CSD is reached, and at	029	
	least at every 100 % further increase of CSD, the	(F)	0.60
	device shall warn the user and require an		(6
	acknowledgement. In case the user does not		
050	acknowledge, the output level shall automatically	15	
4	decrease to a level in compliance with class RS1	(Te	
~	limits.	4	
	The warning shall at least clearly indicate that		15
	listening above 100 % CSD leads to the risk of		(10)
	hearing damage or loss.		A
10.6.5.3	Exposure-based requirements	049	N/A
6	With only dose-based requirements, cause and	2.6	
	effect could be far separated in time, defying the	(E	
	purpose of educating users about safe listening		05
	practice. In addition to dose-based requirements, a		(F)
0.60	PMP shall therefore also put a limit to the		
(6	short-term sound level a user can listen at.	(E)	
6	The exposure-based limiter (EL) shall	6	

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	0.6	(4)	
	automatically reduce the sound level not to exceed	4	(5)
	100 dB(A) or 150 mV integrated over the past 180		(4)
15	s, based on methodology defined in EN	0.6	
(Te	50332-3:2017. The EL settling time (time from	(LE)	
9	starting level reduction to reaching target output		>
	level) shall be 10 s or less.	(4)	
	Test of EL functionality is conducted according to	~	(Ce
	EN 50332-3:2017, using the limits from this		6
15	clause. For equipment provided as a package	0.6	
(Te	(player with its listening device), the level	(C)	
A	integrated over 180 s shall be 100 dB or lower.		70
	For equipment provided with a standardized	(A	V
	connector, the un-weighted level integrated over	10	(
	180 s shall be no more than 150 mV for an	~	\
0	analogue interface and no more than -10 dBFS for	25	
(In	a digital interface.	(LE)	. /-
~	In case the source is known not to be music (or	4	(E)
	test signal), the EL may be disabled.		9
10.6.6	Requirements for listening devices	0.6	N/A
	(headphones, earphones, etc.)	E C	
10.6.6.1	Corded listening devices with analogue input	0.50	N/A
	With 94 dB LAeq acoustic pressure output of the	(te	0.6
	listening device, and with the volume and sound	~	(6
	settings in the listening device (for example,		9
05	built-in volume level control, additional sound	0.5	
( C	features like equalization, etc.) set to the	(E	
7	combination of positions that maximizes the	100	
	measured acoustic output level, the input voltage		16
	of the listening device when playing the fixed		(TE
<i>a</i>	"programme simulation noise" as described in EN		9
040	$50332-1:2013$ shall be $\geq 75$ mV.	039	
(F)	2.6	(FC)	
	NOTE The values of 94 dB and 75 mV	4	
	correspond with 85 dB and 27 mV in 10.6.2.2. or		15
	100 dB and 150 mV in 10.6.2.3.		(Te
10.6.6.2	Corded listening devices with digital input		N/A
125	With any playing device playing the fixed	050	
(3)	"programme simulation noise" described in EN	(te)	
	13	A.9	1

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	4.6		
	50332-1:2013, and with the volume and sound	A	(E)
	settings in the listening device (for example,		(4)
0.5	built-in volume level control, additional sound	0.60	
(10)	features like equalization, etc.) set to the	(E	
9	combination of positions that maximize the		>
	measured acoustic output, the $LAeq, T$ acoustic	(te	
	output of the listening device shall be ≤ 100 dB	7	Ge
	with an input signal of -10 dBFS.		G.
10.6.6.3	Cordless listening devices	0.5	N/A
(10)	In cordless mode,	(10)	
9	with any playing and transmitting device playing	4	70
	the fixed programme simulation noise described in	(3)	
	EN 50332-1:2013; and respecting the cordless		1
	transmission standards, where an air interface		1
0	standard exists that specifies the equivalent	0.5	
(4	acoustic level; and with volume and sound settings	(E	,
	in the receiving device (for example, built-in	9	(4)
	volume level control, additional sound features		(E)
6	like equalization, etc.) set to the combination of	- 6	
	positions that maximize the measured acoustic		
	output for the above mentioned programme	049	
	simulation noise, the $LAeq$ , $T$ acoustic output of	(FE)	2 (2
	the listening device shall be $\leq 100 \text{ dB}$ with an	4	Ce
	input signal of -10 dBFS.		(2)
10.6.6.4	Measurement method	0.6	N/A
Te	Measurements shall be made in accordance with	(E)	1 1112
A	EN 50332-2:2013 as applicable."	000	
16	Modification to subclause G.3.1.2		N/A
			1 1/11
	Add the following note after the first paragraph:		77/4
00	Add the following note after the first paragraph.	0.5	N/A
(F)	"NOTE Z1 An IEC 60730 series standard is	(10)	
	(16)	4	
	considered relevant if the component in question		15
	falls within its scope."	V	1.0
17	Modification to subclause G.7.1		
(670	Add the following note at the end of the	0.5	N/A
6	subclause:	(4)	
1.00	A mil T		

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	(4)	. /-		(	Te	
(Ext	"NOTE Z1 The hard corresponding to the Annex ZD."	1/-	code designations ble types are given in	E	73	Œ,
18	Modification to sul	bclause 1	M.2			N/A
Cer <sup>t</sup>	Add the following paragraph:  "The size of the batt designed taking into compartment recombattery standard.	tery com	partment shall be the battery	e Care		N/A
	NOTE For general g battery compartmen 62485-4."		on the design of the ause 8 of IEC	(E)		E S
19	Modification to Bil	bliograp	hy			N/A
1	Add the following r	notes for	the standards indicated	if the	>	N/A
	IEC 60060-1 IEC 60130-9 IEC 60204-1	NOTE NOTE NOTE	Harmonized as EN 60 Harmonized as EN 60 Harmonized as EN IE	0130-9.		(Ets
(E)	IEC 60204-11	NOTE	Harmonized as EN IE			
Ÿ	IEC 60243-1	NOTE	Harmonized as EN 60	)243-1.		
	IEC 60269-2	NOTE	Harmonized as HD 60	0269-2.		15
	IEC 60309-1	NOTE	Harmonized as EN 60	309-1.		(10)
0.60	IEC 60364	NOTE	some parts harmonize	ed in HD 384/HD 60364	series.	A
(E)	IEC 60601-2-4	NOTE	Harmonized as EN 60			
A	IEC 60664-5:2005	NOTE	Harmonized as EN 60			
	IEC 60721-3-4	NOTE	Harmonized as EN IE			15
	IEC 61032:1997	NOTE		1032:1998 (not modified	).	(FE.
0.60	IEC 61180	NOTE	Harmonized as EN 61	1100.		$\forall$

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	(1)	00			(10)	,
	IEC 61508-1	NOTE	Harmonized as EN 6150	18-1.	A	(6)
	IEC 61558-2-1	NOTE	Harmonized as EN 6155	8-2-1.		9
05	IEC 61558-2-4	NOTE	Harmonized as EN 6155	8-2-4.		
(The	IEC 61558-2-6	NOTE	Harmonized as EN 6155	68- <b>2-</b> 6.	0.60	
	IEC 61643-21	NOTE	Harmonized as EN 6164	3-21.	(Car	
	IEC 61643-311	NOTE	Harmonized as EN 6164	3-311.	9	0
	IEC 61643-321	NOTE	Harmonized as EN 6164	3-321.		(Fe
0.6	IEC 61643-331	NOTE	Harmonized as EN IEC	61643-331.		~
(Let	IEC 61140:2016	NOTE	Harmonized as EN 6114	0:2016.		
9	IEC 61439-5:2014	NOTE	Harmonized as EN 6143	9-5:2015.	00	9
	IEC 61969-3	NOTE	Harmonized as EN 6196	69-3.	(3)	
	IEC 62040:2017	NOTE	Harmonized as EN IEC	62040:2019.		(
	IEC 62305-1	NOTE	Harmonized as EN 6230	)5-1.		
d	IEC 62368-3	NOTE	Harmonized as EN 6236	8-3.		
6	IEC 62485-4	NOTE	Harmonized as EN IEC	62485-4.		A.6
1	ISO 10218-1	NOTE	Harmonized as EN ISO	10218-1.	(.	C
,	ISO 10218-2	NOTE	Harmonized as EN ISO	10218-2.		A
10	ISO 13482	NOTE	Harmonized as EN ISO	13482.		
/	ISO 13850	NOTE	Harmonized as EN ISO	13850.	6	
	(4)	6			(10)	A.69
20	Addition of annexo	es			Y I	N/A
ZB	ANNEX ZB, SPEC	CIAL NA	ATIONAL CONDITION	NS (EN)		N/A
4.1.15	Finland, Norway a			(E)		N/A
4.1.15	To the end of the su			A.	125	N/A
	added:	05	8		(1)	1.6
	Class I pluggable e	equipme	nt type A intended for			(Te
/ .	connection to other	equipme	ent or a			A
(5)	network shall, if saf	fety relie	s on connection to	125		
6	reliable earthing or	if surge	suppressors are	(Fe)	0.60	
	connected between			V	(E	
	accessible parts, ha				9	(619
	the equipment shall		ected to an earthed			(4)
0.6	mains socket-outlet		(te	0.60		-
(FE)		the appl	icable countries shall	( Cer		
A	be as follows:				0.5	

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	46		,
	In <b>Finland</b> : "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"	9	(EX)
05	In Norway: "Apparatet må tilkoples jordet	A.62	7
(FC)	stikkontakt"	(6)	
A	In Sweden: "Apparaten skall anslutas till jordat	A CH	
	uttag"		^
4.7.3	United Kingdom		N/A
0.5	To the end of the subclause the following is added:	A.60	
(10)	7		
9	The torque test is performed using a socket-outlet		19
	complying with BS 1363, and the plug part	(3)	
	shall be assessed to the relevant clauses of BS	V.	(
	1363. Also see Annex G.4.2 of this annex.	9	\
5.4.11.1 and		070	
	Finland and Sweden	(Fe)	N/A
Annex G	To the end of the subclause the following is	A	(6)
	added:		9
5	For separation of the telecommunication network	A.6	
	from earth the following is applicable:		
(	If this insulation is solid, including insulation	9	
\	forming part of a component, it shall at least		15
	consist of either		(10)
			A
120	- two layers of thin sheet material, each of	120	
5	which shall pass the electric strength test	4.6	
	below, or	(LE)	
	- one layer having a distance through	9	100
	insulation of at least 0,4 mm, which shall		6
15	pass the electric strength test below.	26	
(Te	pass the electric strength test below.	(E)	
A	A. 27	00	
	A.5	(F)	0.60
	If this insulation forms part of a semiconductor	A	(10)
	component (e.g. an optocoupler), there is no		9
05	distance through insulation requirement for the	15	
(Te	insulation consisting of an insulating	00	

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compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition

- passes the tests and inspection criteria of 5.4.7 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and
- is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV.

It is permitted to bridge this insulation with a capacitor complying with EN 60384-14, subclass Y2.

A capacitor classified Y3 according to EN 60384-14, may bridge this insulation under the following conditions:

- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.10;
- the additional testing shall be performed on all the test specimens as described in EN 60384-14;
- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.

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5.5.2.1	Norway	9	N/A
	After the 3rd paragraph the following is added:		9
05	Due to the IT power distribution system used,	0.6	
(te	capacitors are required to be rated for the	(C)	
	applicable line-to-line voltage (230 V).	C.E.	
5.5.6	Finland, Norway and Sweden	9	N/A
	To the end of the subclause the following is	*	(10
	added:		A
Cet.	Resistors used as basic safeguard or bridging	250	
(F)	basic insulation in class I pluggable		6
	equipment type A shall comply with G.10.1 and	(10)	
	the test of G.10.3.	6	Y
5.6.4.2.1	Ireland and United Kingdom	6	N/A
1	After the indent for pluggable equipment type A,	15	
(4)	the following is added:	(C)	
	- the <b>protective current rating</b> is taken to	A	CE'S
	be 13 A, this being the largest rating of		(2)
5	fuse used in the <b>mains</b> plug.	A.65	
5.6.4.2.1	France	9	N/A
	After the indent for pluggable equipment type A,		
	the following is added:		125
	- in certain cases, the <b>protective current</b>		(Te
0.6	rating of the circuit supplied from the	. /-	<u> </u>
C	mains is taken as 20 A instead of 16 A.	CEN	
9	620	05	
	Justification:	(Fe)	- /-
	In France, according to NF C15-100 standard, in	4	(E)
	certain cases, the maximum rated current of the		9
05	protective <b>device</b> circuit-breaker is 20 A.	A.6	
5.6.5.1	Ireland and United Kingdom	(C)	N/A
	To the second paragraph the following is added:	J. C.E.S	
	The range of conductor sizes of flexible cords to	6	25
	be accepted by terminals for equipment with a		(10)
	rated current over 10 A and up to and including		A
(6)	13 A is:	120	
(1)	1,25 mm2 to 1,5 mm2 in cross-sectional area.	6	
-	(16)	16	

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	A . S		
5.6.8	Norway	A	N/A
	To the end of the subclause the following is		9
05	added:	15	
(4)	Equipment connected with an earthed mains plug	(Te	
	is classified as class I equipment. See	J. C. C.	1
	the Norway marking requirement in 4.1.15. The		^
	symbol IEC 60417-6092, as specified in F.3.6.2, is	× ·	(10
	accepted.		9
5.7.7.1	Norway and Sweden	150	N/A
9	To the end of the subclause the following is		15
	added:	(4	
	The screen of the television distribution system is	4	<i>F</i>
	normally not earthed at the entrance of the	9	
^	building and there is normally no equipotential	2 /2	
(Le	bonding system within the building. Therefore	(Et	
9	the protective earthing of the building installation		05
	needs to be isolated from the screen of a cable		(1º)
10	distribution system.		A
	A Comment of the Comm	050	
<i>Y</i>	It is however accepted to provide the insulation	5	
(	external to the equipment by an adapter or an	(C)	
	interconnection cable with galvanic isolator,	9	620
	which may be provided by a retailer, for example.		(F)
A.60	The user manual shall then have the following or	0.10	
Te	similar information in Norwegian and Swedish	CE .	
A	language respectively, depending on in what	25	
	country the equipment is intended to be used in:	(te	0 (0
	"Apparatus connected to the protective earthing of	A	CE
	the building installation through the mains		9
05	connection or through other apparatus with a	A 69	
(To)	connection to protective earthing – and to a	(6	
7	television distribution system using coaxial cable,	A 150	
	may in some circumstances create a fire hazard.	E	1.5
	Connection to a television distribution system		(Te
	therefore has to be provided through a device		9
670	providing electrical isolation below a certain	25	
(F)	frequency range (galvanic isolator, see	(40)	

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25	injury.	0.6	
	requirements of EN IEC 60204-1 and EN ISO 13850 is required where there is a risk of personal		9
	An emergency stop system complying with the		Cars
	3rd paragraph:	(TE)	
4	Add the following after the 2nd dash bullet in	0	
Cars		125	
8.5.4.2.3	United Kingdom		N/A
	apparaten och kabel-TV nätet.".		(10)
	kabel-TV nät galvanisk isolator finnas mellan	9	15
9	detta skall vid anslutning av apparaten till	A CES	
E.	vissa fall medfőra risk főr brand. Főr att undvika	(FE)	
070	och samtidigt är kopplad till kabel-TV nät kan i	059	
	jordat vägguttag och/eller via annan utrustning		9
	"Apparater som är kopplad till skyddsjord via	$\forall$	(10)
	Translation to Swedish:	(F)	0.6
	(2)	J 125	
	mellom apparatet og kabel-TV nettet."	6	
5	kabel-TV nett installeres en galvanisk isolator	16	
	dette skal det ved tilkopling av apparater til		9
	nett, kan forårsake brannfare. For å unngå	A	(6)
(F.	utstyr – og er tilkoplet et koaksialbasert kabel-TV	(40)	0.60
1	nettplugg og/eller via annet jordtilkoplet	049	
	"Apparater som er koplet til beskyttelsesjord via	7	
	(LE)	6	()
	also be accepted in Norway):	(Z	V
A	Translation to Norwegian (the Swedish text will	A Co	45
(10)		(E)	
039	RMS, 50 Hz or 60 Hz, for 1 min.	A.6	
	1,5 kV		1
	insulation shall withstand a dielectric strength of	A	Co
	provide electrical insulation below 5 MHz. The	(FC)	
	isolator shall	046	
(LE)	CATV-installations, and in Sweden, a galvanic	(E)	
0.60	NOTE In Norway, due to regulation for	. / .	
	75		(F)
	EN 60728-11)"	9	050
		(10	

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	46		
B.4	(E)	Y Y	(E)
	The following is applicable:		9
05	To protect against excessive currents and	15	
(10)	short-circuits in the primary circuit of direct	(6)	
	plug-in equipment, tests according to Annexes	Co.	1
	B.3.1 and B.4 shall be conducted using an external		_
	miniature circuit breaker complying with EN		(10
	60898-1, Type B, rated 32A. If the equipment		9
049	does not pass these tests, suitable protective	150	
(45)	devices shall be included as an integral part of the	(TE)	1-
	direct plug-in equipment, until the requirements		70
	of Annexes B.3.1 and B.4 are met	6	V
G.4.2	United Kingdom	6	N/A
	(Fe		
(10	To the end of the subclause the following is	(E)	
9	added:		15
	The plug part of direct plug-in equipment shall be		(F)
7.	assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9,		A
5	12.11, 12.12, 12.13, 12.16, and 12.17, except that	0.5	
/	the test of 12.17 is performed at not less than	6.6	
(	125 °C. Where the metal earth pin is replaced by		
	an Insulated Shutter Opening Device (ISOD), the		670
	requirements of clauses 22.2 and 23 also apply.		(h)
G.7.1	United Kingdom	A.6	N/A
10	A (A	(C)	
7	To the first paragraph the following is added:	1000	
	125		0.6
	Equipment which is fitted with a flexible cable or		(10)
	cord and is designed to be connected to a mains		9
000	socket conforming to BS 1363 by means of that	150	
The	flexible cable or cord shall be fitted with a	(Te	
	'standard plug' in accordance with the Plugs and	A (67)	
	Sockets etc. (Safety) Regulations 1994, Statutory	6	059
	Instrument 1994 No. 1768, unless exempted by		(10)
ž.	those		9
(2)	regulations.	039	
(4)	2.6	(Le	

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	2.6		
	NOTE "Standard plug" is defined in SI 1768:1994	7	(Ex)
	and essentially means an approved plug		9
05	conforming to BS 1363 or an approved conversion	0.5	
(Te.	plug.	(C)	
G.7.1	Ireland	8	N/A
	To the first paragraph the following is added:		(Fe
(Ceta	Apparatus which is fitted with a flexible cable or	65	
9	cord shall be provided with a plug in accordance		15
	with Statutory Instrument 525: 1997, "13 A Plugs	(4	
	and Conversion Adapters for Domestic Use		r .
	Regulations: 1997. S.I. 525 provides for the	6	-
	recognition of a standard of another Member State		
(F	which is equivalent to the relevant Irish Standard	(E)	
G.7.2	Ireland and United Kingdom	9	N/A
	150		9
6	To the first paragraph the following is added:		
	A	(%)	
	A power supply cord with a conductor of 1,25	2	
	mm <sup>2</sup> is allowed for equipment which is rated over	(Te	
	10 A and up to and including 13 A.	7	(E)
	(C.45)		(2)
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)	025	N/A
10.5.2	Germany	00	N/A
10.3.2	4	(LE)	14/71
	The following requirement applies:	9	650
	3 1 6 11		(4)
16	For the operation of any cathode ray tube intended	2 (2	
(10)	for the display of visual images operating at	(Car	
9	an acceleration voltage exceeding 40 kV,	070	
	authorization is required, or application of type	(FC)	0.60
	approval (Bauartzulassung) and marking.	A	(E
			9
15	Justification:	0.60	
(te)	German ministerial decree against ionizing	(LE)	
		2.6	1

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	4.6		(4)	/
	radiation (Röntgenverordnung), in force since		A	Cets
	2002-07-01, implementing the European Directive			6
15	96/29/EURATOM.	025		
P	NOTE Contact address:	(P)	629	
	Physikalisch-Technische Bundesanstalt,		(F)	0
	Bundesallee 100, D-38116 Braunschweig,			(6
	Tel.: Int+49–531–592–6320, Internet:			9
05	http://www.ptb.de	050		
(P)	049		15	

## ZD IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS

N/A

Type of flexible cord	Code des	Code designations	
	IEC	CENELEC	
PVC insulated cords	y.		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y	
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F	
Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F	
Rubber insulated cords			
Braided cord	60245 IEC 51	H03RT-F	
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F	
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F	
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F	
Cords having high flexibility			
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H	
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H	
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H	
Cords insulated and sheathed with halogen- free thermoplastic compounds			
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-I	
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-I	

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## Photo documentation

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\*\*\* End of Report \*\*\*

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