

Report No:-
Date

IS/IEC62368-1:2023

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Test Report No.: xx001

Page 1 of xx

Issue Date: DD/MM/YYYY

Manufacturer:	Applicant's Name	
	Applicant's Address	
Test item:	Audio/video, information and communication technology equipment	
Identification:	(Model No.)	Serial No.:
Receipt No.:	Date of receipt:	
Testing laboratory and its address:	Lab Name	
	Lab Address	
Test specification:	IS/IEC 62368-1:2023	
Test Result:	<i>The test item passed / failed the test specification(s).</i>	
Other Aspects:	- <i>Brief description or additional details could be given by the labs here.</i>	
This test report relates to the test sample submitted and list of documents attached.		

Tested by:	Approved by / Authorized Signatory:	Issued by:
(Name / Designation)	(Name / Designation)	(Name / Designation)
Date:	Date:	Date:

Reference source not found.

TEST REPORT IS/IEC 62368-1:2023 Audio/video, information and communication technology equipment Part 1: Safety requirements	
Report Reference No.	Xxxxxxxx 001
Date of issue.....	(see cover page)
Total number of pages	(see cover page)
Testing Laboratory	Lab Name
Address	Lab Address
Manufacturer's name	Applicant's Name
Address	Applicant's Address
Test specification:	
Standard.....	IS/IEC 62368-1:2023
Test procedure.....	Compliance Report
Non-standard test method.....	N/A
Test Report Form No.	BIS_ ITAV_IS/IEC 62368-1-V2.0
Test Report Form(s) Originator	Bureau of Indian Standards
Master TRF.....	07/07/2025
Test item description	Audio/video, information and communication technology equipment
Trademark	
Model/Type reference	
Ratings	
Other Documents submitted.....	Please refer to Table – List of Attachments at Page No. xx

Tested by:	Approved by / Authorized Signatory:	Issued by:
(Name / Designation)	(Name / Designation)	(Name / Designation)
Date:	Date:	Date:

Reference source not found.

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

Reference source not found.

TEST REPORT	
IS/IEC 62368-1:2023	
Audio/video, information and communication technology equipment Part 1: Safety requirements	
Report Number.	Xxxxxxxxx 001
Date of issue	(see cover page)
Total number of pages	(see cover page)
Testing Laboratory	Lab Name
Address.....	Lab Address
Applicant's name	Applicant's Name
Address	Applicant's Address
Test specification:	
Standard	IS/IEC 62368-1:2023
Test procedure	Compliance Report
Non-standard test method	N/A
TRF template used	IECEE OD-2020-F1:2024, Ed.1.7
Test Report Form No.	IEC62368_1F
Test Report Form(s) Originator	Bureau of Indian Standards
Master TRF	Dated 2025-06-13
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If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.	
This report is not valid as a CB Test Report unless signed by an approved IECEE Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
General disclaimer:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing NCB. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test item description		
Trademark(s)		
Manufacturer		
Model/Type reference		
Ratings		
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input type="checkbox"/> CB Testing Laboratory:		
Testing location/ address.....		
Tested by (name, function, signature).....		
Approved by (name, function, signature)...		
Testing procedure: CTF Stage 1:		
Testing location/ address.....		
Tested by (name, function, signature).....		
Approved by (name, function, signature)...		
Testing procedure: CTF Stage 2:		
Testing location/ address.....		
Tested by (name + signature)		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature)...		
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
Testing location/ address.....		
Tested by (name, function, signature).....		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature)...		
Supervised by (name, function, signature) :		

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

Summary of testing:

Tests performed (name of test, test clause and date test performed):

Testing location: (CBTL, SPTL, CTF, Subcontractor)

Provide information on testing location (CBTL, SPTL, Client's laboratory, Subcontractor's laboratory and split testing when allowed and used).

Summary of compliance with National Differences

Include only National Differences evaluated and declared by member countries of IECEE CB Scheme. Non-member countries or national or regional standards can be included for information in the General Product Information section of the Test Report but will not be listed on CB Test Certificate. (See OD 2037, item 7.1).

- IECEE Member countries that are also CENELEC members

Compliance with Group Differences evaluated **yes** **No** N/A

No countries to be listed here. Select N/A if no GD TRF published.

Select No if the client did not request to evaluate Group Differences

- IECEE Member countries with published National Differences which were evaluated:

Insert countries (ISO codes) or N/A. CENELEC members evaluated in first bullet and with National Differences in addition to Group Differences shall also be listed here.

- IECEE Member countries that did not publish any National Differences:

Insert countries (ISO codes) or N/A

To support compliance with published National Differences, attach a compilation of relevant ND and/or GD TRFs to the CB Test Report

Use of uncertainty of measurement for decisions on conformity (decision rule) :

No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

Other: ... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

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

Test item particulars:

Product group: end product / built-in component

Classification of use by: Ordinary person / Children likely present / Instructed person / Skilled person

Supply connection.....: AC mains / DC mains
not mains connected:
ES1 / ES2 / ES3

Supply tolerance: +10%/-10%
+20%/-15%
+ ____ %/ - ____ %
None

Supply connection – type: pluggable equipment type A
non-detachable supply cord / appliance coupler / direct plug-in
pluggable equipment type B
non-detachable supply cord / appliance coupler
permanent connection / mating connector
other: ____

Considered current rating of protective device... : ____ A;
Location: building / equipment
N/A

Equipment mobility..... : Movable / hand-held / transportable / direct plug-in / stationary / for building-in / wall/ceiling-mounted / SRME/rack-mounted / other: ____

Overvoltage category (OVC) : OVC I / OVC II / OVC III / OVC IV / ____

Class of equipment : Class I / Class II / Class II with functional earthing / Class III / Not classified / ____

Special installation location : N/A / restricted access area / outdoor location / ____

Pollution degree (PD) : PD 1 / PD 2 / PD 3

Manufacturer's specified T_{ma}..... : ____ °C / Outdoor: minimum ____ °C

IP protection class : IPX0 / IP____

Power systems : TN / TT / IT - ____ V_{L-L}
not AC mains

Altitude during operation (m) : 2000 m or less / ____ m

Altitude of test laboratory (m) : 2000 m or less / ____ m

Mass of equipment (kg) : ____ kg

Possible test case verdicts:

- test case does not apply to the test object.....: N/A
- test object does meet the requirement.....: P (Pass)
- test object does not meet the requirement.....: F (Fail)

Testing.....: *No information required (title only)*
Date of receipt of test item: *For new tests performed for the issuance of this report*
Date (s) of performance of tests.....: *Enter: "See summary of tests" or record exact dates for new tests or write N/A when no tests were performed.
May be defined as overall time frame for new tests performed*

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a comma / point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	<input type="checkbox"/> Yes <input type="checkbox"/> Not applicable
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When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)

General product information and other remarks:

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
Supplementary Information: “B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				

ENERGY SOURCE DIAGRAM

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

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

ES **PS** **MS** **TS** **RS**

IS/IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		
4.1.1	Acceptance of materials, components and subassemblies		
4.1.2	Use of components		
4.1.3	Equipment design and construction		
4.1.4	Specified ambient temperature for outdoor use (°C) :		
4.1.5	Constructions and components not specifically covered		
4.1.8	Liquids, refrigerants and liquid filled components (LFCs)	(See Clause G.15) IEC 60335-2-40 and IEC 61010-2-011	
4.1.15	Markings and instructions	(See Annex F)	
4.4.3	Safeguard robustness		
4.4.3.1	General		
4.4.3.2	Steady force tests	(See Clause T.3, T.4, T.5)	
4.4.3.3	Drop tests	(See Clause T.7)	
4.4.3.4	Impact tests	(See Clause T.6)	
4.4.3.5	Internal accessible safeguard tests	(See Clause T.3)	
4.4.3.6	Glass impact tests	(See Clause T.9) Annex U;	
4.4.3.7	Glass fixation test		
	Glass impact test (1J)	(See Clause T.9)	
	Push/pull test (10 N)		
4.4.3.8	Thermoplastic material tests	(See Clause T.8)	
4.4.3.9	Air comprising a safeguard	Annex T,	
4.4.3.10	Accessibility, glass, safeguard effectiveness		
4.4.4	Displacement of a safeguard by an insulating liquid		
4.4.5	Safety interlocks	(See Annex K)	
4.5	Explosion		
4.5.1	General	(See Annex M for batteries)	
4.5.2	No explosion during normal/abnormal operating conditions	(See Clause B.2, B.3)	
	No harm by explosion during single fault conditions	(See Clause B.4)	
4.6	Fixing of conductors and conductive parts		

IS/IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Fix conductors and conductive parts not to defeat a safeguard		
4.6.2	Compliance is checked by test :	(See Clause T.2)	
4.7	Equipment for direct insertion into mains socket-outlets		
4.7.2	Mains plug part complies with relevant standard ... :		
4.7.3	Compliance criteria Torque (Nm)..... :		
4.8	Equipment containing coin or button cell batteries		
4.8.1	General		
4.8.2	Instructional safeguard :		
4.8.3	Coin or button cell battery compartment, door or cover construction		
	Open torque test		
4.8.4.2	Stress relief test	(See Clause T.8)	
4.8.4.3	Battery replacement test		
4.8.4.4	Drop test	(See Clause T.7)	
4.8.4.5	Impact test	(See Clause T.6)	
4.8.4.6	Crush test		
4.8.5	Compliance		
	30N force test with test probe		
	20N force test with test hook		
4.9	Likelihood of fire or shock due to entry of conductive object		
4.10	Component requirements		
4.10.1	Disconnect device	(See Annex L)	
4.10.2	Switches and relays	(See Annex G)	
4.10.3	Mains power supply cords	(See Clause G.7)	
4.10.4	Batteries and their protection circuits	(See Annex M)	

5	ELECTRICALLY-CAUSED INJURY		
5.2	Classification and limits of electrical energy sources		
5.2.2	ES1 and ES2 limits		
5.2.2.2	Steady-state voltage and current limits :	(See appended table 5.2)	
5.2.2.3	Capacitance limits :	(See appended table 5.2)	
5.2.2.4	Single pulse limits..... :	(See appended table 5.2)	

IS/IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.5	Limits for repetitive pulses..... :	(See appended table 5.2)	
5.2.2.6	Ringings signals	(See Annex H)	
5.2.2.7	Audio signals	(See Clause E.1)	
5.3	Protection against electrical energy sources		
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		
5.3.1 a)	ES2/ES3 circuits that are not ES2/ES3 mains		
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		
5.3.2.1	Accessibility to electrical energy sources and safeguards		
	Accessibility to outdoor equipment bare parts		
5.3.2.2	Contact requirements		
	Test with test probe from Annex V..... :		—
5.3.2.2 a)	Air gap – electric strength test potential (V)..... :	(See appended table 5.4.9)	
5.3.2.2 b)	Air gap – distance (mm)		
5.3.2.3	Compliance		
5.3.2.4	Terminals for connecting stripped wire		
5.4	Insulation materials and requirements		
5.4.1.2	Properties of insulating material		
5.4.1.3	Compliance		
	Non-hygroscopic materials		
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	
5.4.1.5	Pollution degrees..... :		—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		
5.4.1.5.3	Thermal cycling test		
5.4.1.6	Insulation in transformers with varying dimensions		
5.4.1.7	Insulation in circuits generating starting pulses		
5.4.1.8	Determination of working voltage	(See appended table 5.4.1.8)	
5.4.1.9	Insulating surfaces		
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		

IS/IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10.2	Vicat test	(See appended table 5.4.1.10.2)	
5.4.1.10.3	Ball pressure test.....	(See appended table 5.4.1.10.3)	
5.4.2	Clearances		
5.4.2.1	General requirements		
	Clearances in circuits connected to AC Mains, Alternative method	(See Annex X)	
5.4.2.2	Procedure 1 for determining clearance		
	Temporary overvoltage		—
5.4.2.3	Procedure 2 for determining clearance		
5.4.2.3.2.2	AC mains transient voltages		—
5.4.2.3.2.3	DC mains transient voltages		—
5.4.2.3.2.4	External circuit transient voltages		—
5.4.2.3.2.5	Transient voltage determined by measurement.....		—
5.4.2.3.3	Exceptions of determining required withstand voltage		
5.4.2.3.4	Determining clearances using required withstand voltage	(See appended table 5.4.2, 5.4.3)	
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2, 5.4.3)	
5.4.2.5	Multiplication factors for clearances and test voltages.....		—
5.4.2.6	Clearance measurement.....	(See appended table 5.4.2, 5.4.3)	
5.4.3	Creepage distances		
5.4.3.1	General		
5.4.3.3	Material group and CTI.....		—
5.4.3.4	Creepage distances measurement.....	(See appended table 5.4.2, 5.4.3)	
5.4.4	Solid insulation		
5.4.4.1	General requirements		
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	
5.4.4.3	Insulating compound forming solid insulation		
5.4.4.4	Solid insulation in semiconductor devices		
5.4.4.5	Insulating compound forming cemented joints		

IS/IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6	Thin sheet material		
5.4.4.6.1	General requirements		
5.4.4.6.2	Separable thin sheet material	(See appended table 5.4.9)	
	Number of layers (pcs) :		
5.4.4.6.3	Non-separable thin sheet material		
	Number of layers (pcs) :		
5.4.4.6.4	Standard test procedure for non-separable thin sheet material :	(See appended table 5.4.9)	
5.4.4.6.5	Mandrel test		
5.4.4.7	Solid insulation in wound components		
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)	
	Alternative by electric strength test, tested voltage (V), K_R :	(See appended tables 5.4.4.9 and 5.4.9)	
5.4.5	Antenna terminal insulation		
5.4.5.1	General		
5.4.5.2	Voltage surge test		
5.4.5.3	Insulation resistance ($M\Omega$) :		
	Electric strength test..... :	(See appended table 5.4.9)	
5.4.6	Insulation of internal wire as part of supplementary safeguard		
5.4.7	Tests for semiconductor components and for cemented joints		
5.4.8	Humidity conditioning		
	Relative humidity (%), temperature ($^{\circ}C$), duration (h) :		—
5.4.9	Electric strength test	(See appended table 5.4.9)	
5.4.10	Safeguards against transient voltages from external circuits		
5.4.10.1	Parts and circuits separated from external circuits		
5.4.10.2	Test methods		
5.4.10.2.1	General		
5.4.10.2.2	Impulse test :		
5.4.10.2.3	Steady-state test..... :	(See appended table 5.4.9)	
5.4.10.3	Verification for insulation breakdown..... :		

IS/IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.11	Separation between external circuits and earth		
5.4.11.1	Exceptions to separation between external circuits and earth		
5.4.11.2	Requirements		
	Surge suppressors bridge separation between external circuit and earth		
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation ΔU_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—
5.4.11.3	Test method and compliance..... :	(See appended table 5.4.9)	
	Test voltage (V) of additional test..... :		—
	Measured current (mA) of additional test..... :		
5.4.12	Insulating liquid		
5.4.12.1	General requirements		
5.4.12.2	Electric strength of an insulating liquid..... :	(See appended table 5.4.9)	
5.4.12.3	Compatibility of an insulating liquid		
	Thermal classification of IEC 60085..... :		—
5.4.12.4	Container for insulating liquid		
5.5	Components as safeguards		
5.5.1	General		
5.5.2	Capacitors and RC units		
5.5.2.1	General requirement		
5.5.2.2	Capacitor discharge after disconnection of a connector..... :	(See appended table 5.5.2.2)	
5.5.3	Transformers	(See Clause G.5.3)	
5.5.4	Optocouplers	(See Clause 5.4 or Clause G.12)	
5.5.5	Relays	(See Clause 5.4)	
5.5.6	Resistors	(See Clause G.10)	
	Application type of resistors..... :		—
5.5.7	Surge suppressors	(See Clause G.8)	
	GDT.....:		

IS/IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable		
	Insulation resistance (MΩ)		
	Electric strength test.....	(See appended table 5.4.9)	
5.5.9	Safeguards for socket-outlets in outdoor equipment		
	RCD rated residual operating current (mA).....		—
5.6	Protective conductor		
5.6.2	Requirements for protective conductors		
5.6.2.1	General requirements		
5.6.2.2	Colour of insulation		
5.6.3	Requirements for protective earthing conductors		
	Protective earthing conductor size (mm ²)		—
	Protective earthing conductor serving as a reinforced safeguard		
	Protective earthing conductor serving as a double safeguard		
5.6.4	Requirements for protective bonding conductors		
5.6.4.1	Protective bonding conductors		
	Protective bonding conductor size (mm ²).		—
5.6.4.2	Protective current rating (A)		—
5.6.5	Terminals for protective conductors		
5.6.5.1	Terminal size for connecting protective earthing conductors (mm).....		
	Terminal size for connecting protective bonding conductors (mm).....		
	Relevant IEC standard		
5.6.5.2	Corrosion		
5.6.6	Resistance of the protective bonding system		
5.6.6.1	Requirements		
5.6.6.2	Test method.....	(See appended table 5.6.6)	
5.6.6.3	Resistance (Ω) or voltage drop	(See appended table 5.6.6)	
5.6.7	Reliable connection of a protective earthing conductor		
5.6.8	Functional earthing		
	Conductor size (mm ²)		

IS/IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Class II with functional earthing marking :		
	Appliance inlet cl & cr (mm)..... :		
5.7	Prospective touch voltage, touch current and protective conductor current		
5.7.2	Measuring devices and networks		
5.7.2.1	Measurement of touch current		
5.7.2.2	Measurement of voltage		
5.7.3	Equipment set-up, supply connections and earth connections		
5.7.4	Unearthed accessible parts :	(See appended table 5.7.4)	
5.7.5	Earthed accessible conductive parts :	(See appended table 5.7.5)	
5.7.6	Requirements when touch current exceeds ES2 limits		
	Protective conductor current (mA)..... :		
	Instructional Safeguard :		
5.7.7	Prospective touch voltage and touch current associated with external circuits		
5.7.7.1	Touch current from coaxial cables		
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		
5.7.8	Summation of touch currents from external circuits		
	a) Equipment connected to an earthed external circuit, current (mA) :		
	b) Equipment connected to an unearthed external circuit, current (mA) :		
5.8	Backfeed safeguard in battery backed up supplies		
	Mains terminal ES :	(See appended table 5.8)	
	Air gap (mm)..... :	(See appended table 5.4.2, 5.4.3)	

6	ELECTRICALLY- CAUSED FIRE		
6.2	Classification of power sources and potential ignition sources		
6.2.2	Power source circuit classifications :	(See appended table 6.2.2)	
6.2.3	Classification of potential ignition sources		
6.2.3.1	Arcing PIS :	(See appended table 6.2.3.1)	
6.2.3.2	Resistive PIS :	(See appended table 6.2.3.2)	

IS/IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.3	Safeguards against fire under normal operating and abnormal operating conditions		
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials	(See appended table 5.4.1.4, 9.3, B.1.5 and B.2.6)	
	Combustible materials not inside a fire enclosure.... :		
6.4	Safeguards against fire under single fault conditions		
6.4.1	Safeguard method		—
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		
6.4.3.1	Supplementary safeguards		
6.4.3.2	Single fault conditions	(See appended table B.4)	
	Special conditions for temperature limited by fuse		
6.4.4	Control of fire spread in PS1 circuits		
6.4.5	Control of fire spread in PS2 circuits		
6.4.5.2	Supplementary safeguards		
6.4.6	Control of fire spread in PS3 circuits		
6.4.7	Separation of combustible materials from a PIS		
6.4.7.2	Separation by distance		
6.4.7.3	Separation by a fire barrier		
6.4.8	Fire enclosures and fire barriers		
6.4.8.2	Fire enclosure and fire barrier material properties		
6.4.8.2.1	Requirements for a fire barrier		
6.4.8.2.2	Requirements for a fire enclosure		
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		
6.4.8.3.1	Fire enclosure and fire barrier openings		
6.4.8.3.2	Fire barrier dimensions		
6.4.8.3.3	Top openings and properties		
	Openings dimensions (mm)		
	Flammability tests for the top of a fire enclosure	(See Clause S.2)	
6.4.8.3.4	Bottom openings and properties		
	Openings dimensions (mm)		

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Clause	Requirement + Test	Result - Remark	Verdict
	Flammability tests for the bottom of a fire enclosure	(See Clause S.3)	
	Instructional Safeguard		
6.4.8.3.5	Side openings and properties		
	Openings dimensions (mm)		
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c).....		
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating		
6.4.9	Flammability of insulating liquid		
	Auto ignition temperature (°C).....		
	Flashpoint temperature (°C).....		
6.5	Internal and external wiring		
6.5.1	General requirements		
6.5.2	Requirements for interconnection to building wiring		
6.5.3	Internal wiring size (mm ²) for socket-outlets		
6.6	Safeguards against fire due to the connection to additional equipment		

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		
7.2	Reduction of exposure to hazardous substances		
7.3	Ozone exposure		
7.4	Use of personal safeguards or personal protective equipment (PPE)		
	Personal safeguards and instructions		—
7.5	Use of instructional safeguards and instructions		
	Instructional safeguard (ISO 7010)		—

8	MECHANICALLY-CAUSED INJURY		
8.2	Mechanical energy source classifications		
8.3	Safeguards against mechanical energy sources		
8.4	Safeguards against parts with sharp edges and corners		
8.4.1	Requirements		
	Instructional Safeguard		
8.4.2	Compliance criteria		
8.5	Safeguards against moving parts		

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.1	Requirements		
	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts		
	MS2 or MS3 part required to be accessible for the function of the equipment		
	A manually activated stopping device for moving MS3		
	Moving MS3 parts only accessible to skilled person		
8.5.2	Instructional safeguard :		
8.5.4	Special categories of equipment containing moving parts		
8.5.4.1	General		
8.5.4.2	Equipment containing work cells with MS3 parts		
8.5.4.2.1	Protection of persons in the work cell		
8.5.4.2.2	Access protection override		
8.5.4.2.2.1	Override system		
8.5.4.2.2.2	Visual indicator		
8.5.4.2.3	Emergency stop system		
	Maximum stopping distance from the point of activation (m) :		
	Space between end point and nearest fixed mechanical part (mm)..... :		
8.5.4.2.4	Endurance requirements		
	Mechanical system subjected to 100 000 cycles of operation		
	- Mechanical function check and visual inspection		
	- Cable assembly :		
8.5.4.3	Equipment having electromechanical device for destruction of media		
8.5.4.3.1	Equipment safeguards		
8.5.4.3.2	Instructional safeguards against moving parts :		
8.5.4.3.3	Disconnection from the supply		
8.5.4.3.4	Cut type and test force (N) :		
8.5.4.3.5	Compliance		
8.5.5	High pressure lamps		
	Explosion test :		

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.5.3	Glass particles dimensions (mm)..... :		
8.6	Stability of equipment		
8.6.1	Requirements		
	Instructional safeguard for MS2 and MS3 television sets..... :		
8.6.2	Static stability		
8.6.2.2	Static stability test..... :		
8.6.2.3	Downward force test		
8.6.3	Relocation stability		
	Wheels diameter (mm)..... :		—
	Tilt test		
8.6.4	Glass slide test		
8.6.5	Horizontal force test..... :		
8.7	Equipment mounted to wall, ceiling or other structure		
8.7.1	Requirements		
	Mount means type..... :		
8.7.2	Test methods		
	Test 1, additional downwards force (N)..... :		
	Horizontal force to a wall or another structure		
	Test 2, number of attachment points and test force (N)..... :		
	Test 3, nominal diameter (mm) and applied torque (Nm)..... :		
8.8	Handles strength		
8.8.1	General		
8.8.2	Handle strength test		
	Number of handles..... :		—
	Weight applied (kg)..... :		—
8.9	Wheels or casters attachment requirements		
8.9.2	Pull test		
8.10	Carts, stands and similar carriers		
8.10.1	General		
8.10.2	Marking and instructions..... :		
8.10.3	Cart, stand or carrier loading test		

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Clause	Requirement + Test	Result - Remark	Verdict
	Loading force applied (N)		
8.10.4	Cart, stand or carrier impact test	(See Clause T.6)	
	Loading force applied (N) on each supporting surface		
8.10.5	Mechanical stability		
	Force applied (N)		
8.10.6	Thermoplastic temperature stability	(See Clause T.8)	
8.11	Mounting means for slide-rail mounted equipment (SRME)		
8.11.1	General		
8.11.2	Requirements		
	Instructional Safeguard		
8.11.3	Mechanical strength test		
8.11.3.1	Downward force test, force applied (N)		
8.11.3.2	Lateral push force test		
8.11.3.3	Integrity of slide rail end stops		
8.11.4	Compliance criteria		
8.12	Telescoping or rod antennas		
	No sharp edges or points		
	Button/ball diameter (mm)		

9	THERMAL BURN INJURY		
9.2	Thermal energy source classifications		
9.3	Touch temperature limits		
9.3.1	Touch temperatures of accessible parts.....	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	
9.3.2	Test method and compliance		
9.4	Safeguards against thermal energy sources		
9.5	Requirements for safeguards		
9.5.1	Equipment safeguard		
9.5.2	Instructional safeguard		
9.6	Requirements for wireless power transmitters		
9.6.1	General		
9.6.2	Specification of the foreign objects		

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Clause	Requirement + Test	Result - Remark	Verdict
9.6.3	Test method and compliance criteria..... :	(See appended table 9.6)	

10	RADIATION		
10.2	Radiation energy source classifications		
10.2.1	General classification		
	Lasers..... :		—
	Lamps and lamp systems..... :		—
	Image projectors..... :		—
	X-Ray..... :		—
	Personal music player..... :		—
10.3	Safeguards against laser radiation		
	The standard(s) equipment containing laser(s) comply..... :		
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		
10.4.1	General requirements		
	Instructional safeguard provided for accessible radiation level needs to exceed		
	Risk group marking and location..... :		
	Information for safe operation and installation		
10.4.2	Requirements for equipment safeguards		
	UV radiation exposure..... :	(See Annex C)	
10.4.3	Instructional safeguard..... :		
10.5	Safeguards against X-radiation		
10.5.1	Requirements		
	Instructional safeguard for skilled persons..... :		
10.5.3	Maximum radiation (pA/kg)..... :	(See appended tables B.3 & B.4)	
10.6	Safeguards against acoustic energy sources		
10.6.1	General		
10.6.2	Classification		
	Acoustic output $L_{Aeq,T}$, dB(A)..... :		
	Unweighted RMS output voltage (mV)..... :		
	Digital output signal (dBFS)..... :		

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.3	Requirements for dose-based systems		
10.6.3.1	General requirements		
10.6.3.2	Dose-based warning and automatic decrease		
10.6.3.3	Exposure-based warning and requirements		
	30 s integrated exposure level (MEL30) :		
	Warning for MEL \geq 100 dB(A)..... :		
10.6.4	Measurement methods		
10.6.5	Protection of persons		
	Instructional safeguards :		
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		
10.6.6.1	Corded listening devices with analogue input		
	Listening device input voltage (mV) :		
10.6.6.2	Corded listening devices with digital input		
	Max. acoustic output $L_{Aeq,T}$, dB(A) :		
10.6.6.3	Cordless listening devices		
	Max. acoustic output $L_{Aeq,T}$, dB(A) :		

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		
B.1	General		
B.1.5	Temperature measurement conditions	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	
B.1.6	Specific output conditions		
B.2	Normal operating conditions		
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	
	Audio Amplifiers and equipment containing an audio amplifiers :	(See Annex E)	
B.2.3	Supply voltage and tolerances		
B.2.5	Input test..... :	(See appended table B.2.5) (See Clause E.3 for audio amplifier)	
B.2.6.4	Equipment intended for building-in or rack-mounting		

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Clause	Requirement + Test	Result - Remark	Verdict
B.3	Simulated abnormal operating conditions		
B.3.1	General		
B.3.2	Covering of ventilation openings		
	Instructional safeguard :		
B.3.3	DC mains polarity test		
B.3.4	Setting of voltage selector		
B.3.5	Maximum load at output terminals		
B.3.6	Reverse battery polarity		
B.3.7	Audio amplifier abnormal operating conditions	(See Clause E.3.2)	
B.3.8	Safeguards functional during and after abnormal operating conditions :	(See appended table B.3, B.4)	
B.4	Simulated single fault conditions		
B.4.1	General		
B.4.2	Temperature controlling device		
B.4.3	Blocked motor test		
B.4.4	Functional insulation		
B.4.4.1	Short circuit of clearances for functional insulation		
B.4.4.2	Short circuit of creepage distances for functional insulation		
B.4.4.3	Short circuit of functional insulation on coated printed boards		
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		
B.4.6	Short circuit or disconnection of passive components		
B.4.7	Continuous operation of components		
B.4.8	Compliance criteria during and after single fault conditions :	(See appended table B.3, B.4)	
B.4.9	Battery charging and discharging under single fault conditions	(See Annex M)	
C	UV RADIATION		
C.1	Protection of materials in equipment from UV radiation		
C.1.2	Requirements		
C.1.3	Test method and compliance criteria		
C.2	UV light conditioning test		

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Clause	Requirement + Test	Result - Remark	Verdict
C.2.1	Test apparatus..... :		
C.2.2	Mounting of test samples		
C.2.3	Carbon-arc light-exposure test		
C.2.4	Xenon-arc light-exposure test		
D	TEST GENERATORS		
D.1	Impulse test generators		
D.2	Antenna interface test generator		
D.3	Electronic pulse generator		
E	TEST CONDITIONS FOR EQUIPMENT INTENDED TO AMPLIFY AUDIO SIGNALS		
E.1	Electrical energy source classification for audio signals		
	Maximum non-clipped output power (W) :		—
	Rated load impedance (Ω) :		—
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard :		—
E.2	Audio signals used during test		
E.2.1	Pink noise test signal		
E.2.2	Sine-wave signal		
E.3	Operating conditions of equipment containing an audio 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)	
E.3.3	Audio equipment temperature measurement conditions.....:		
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		
F.1	General		
	Language :		—
F.2	Letter symbols and graphical symbols		
F.2.1	Letter symbols according to IEC 60027-1		
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		
F.3	Equipment markings		
F.3.1	Equipment marking locations		

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.2	Equipment identification markings		
F.3.2.1	Manufacturer identification		
F.3.2.2	Model identification		
F.3.3	Equipment rating markings		
F.3.3.1	Equipment with direct connection to mains		
F.3.3.2	Equipment without direct connection to mains		
F.3.3.3	Nature of the supply voltage.....		
F.3.3.4	Rated voltage		
F.3.3.5	Rated frequency		
F.3.3.6	Rated current or rated power		
F.3.3.7	Equipment with multiple supply connections		
F.3.4	Voltage setting device		
F.3.5	Markings on terminals and operating devices		
F.3.5.1	Mains appliance outlet and socket-outlet markings :		
F.3.5.2	Switch position identification marking..... :		
F.3.5.3	Replacement fuse identification and rating markings		
	Instructional safeguards for neutral fuse		
F.3.5.4	Replacement battery identification marking	(See Clause M.10)	
F.3.5.5	Neutral conductor terminal		
F.3.5.6	Terminal marking location		
F.3.6	Equipment markings related to equipment classification		
F.3.6.1	Class I equipment		
F.3.6.1.1	Protective earthing conductor terminal..... :		
F.3.6.1.2	Protective bonding conductor terminals		
F.3.6.2	Equipment class marking		
F.3.6.3	Functional earthing terminal marking		
F.3.7	Equipment IP rating marking		
F.3.8	External power supply unit output marking		
F.3.9	Durability, legibility and permanence of markings		
F.3.10	Test for permanence of markings		
F.4	Instructions		

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Clause	Requirement + Test	Result - Remark	Verdict
	– Information prior to installation and initial use		
	– Equipment for use in locations where children not likely to be present		
	– Instructions for installation and interconnection		
	– Equipment intended for use only in restricted access area		
	– Equipment intended to be fastened in place		
	– Instructions for audio equipment terminals		
	– Protective earthing used as a safeguard		
	– Protective conductor current exceeding ES2 limits		
	– Graphic symbols used on equipment		
	– Permanently connected equipment not provided with all-pole mains switch		
	– Replaceable components or modules providing safeguard function		
	– Equipment containing insulating liquid		
	– Installation instructions for outdoor equipment		
F.5	Instructional safeguards		
G	COMPONENTS		
G.1	Switches		
G.1.1	General		
G.1.2	Ratings, endurance, spacing, maximum load		
G.1.3	Test method and compliance criteria		
G.2	Relays		
G.2.1	Requirements and compliance criteria		
G.2.2	Overload test		
G.2.3	Relay controlling connectors supplying power to other equipment		
G.2.4	Test method and compliance criteria		
G.3	Protective devices		
G.3.1	Thermal cut-offs		
	Thermal cut-outs separately approved according to IEC 60730-1 with conditions indicated in a) & b)		
	Thermal cut-outs tested as part of the equipment as indicated in c)		

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.2	Test method and compliance criteria		
G.3.2	Thermal links		
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		
	b) Thermal links tested as part of the equipment		
G.3.2.2	Test method and compliance criteria		
G.3.3	PTC thermistors		
G.3.4	Overcurrent protection devices		
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		
G.3.5.1	Non-resettable devices suitably rated and marking provided		
G.3.5.2	Single faults conditions..... :	(See appended table B.3, B.4)	
G.4	Connectors		
G.4.1	Spacings		
G.4.2	Mains connectors configuration..... :		
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		
G.5	Wound components		
G.5.1	Wire insulation in wound components		
G.5.1.2	Protection against mechanical stress		
G.5.2	Endurance test		
G.5.2.1	General test requirements		
G.5.2.2	Heat run test		
	Test time (days per cycle)..... :		—
	Test temperature (°C)..... :		—
G.5.2.3	Wound components supplied from the mains		
G.5.2.4	Compliance criteria		
G.5.3	Transformers		
G.5.3.1	General		
	Compliance method..... :		
G.5.3.2	Insulation		
	Protection from displacement of windings..... :		—
G.5.3.3	Transformer overload tests		

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.3.1	Test conditions		
	Position		
	Method of protection.....		
G.5.3.3.2	Winding temperatures		
G.5.3.3.3	Winding temperatures - alternative test method		
G.5.3.4	Transformers using FIW		
G.5.3.4.1	General		
	FIW wire nominal diameter.....		—
G.5.3.4.2	Transformers with basic insulation only		
G.5.3.4.3	Transformers with double insulation or reinforced insulation		
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		
G.5.3.4.5	Thermal cycling test and compliance		
G.5.3.4.6	Partial discharge test		
G.5.4	Motors		
G.5.4.1	General requirements		
G.5.4.2	Motor overload test conditions		
G.5.4.3	Running overload test		
G.5.4.4	Locked-rotor overload test		
	Test duration (days)		—
	Electric strength test.....	(See appended table 5.4.9)	
G.5.4.5	Running overload test for DC motors		
G.5.4.5.2	Tested in the unit		
	Electric strength test.....	(See appended table 5.4.9)	
G.5.4.5.3	Alternative method		
	Electric strength test.....	(See appended table 5.4.9)	
G.5.4.6	Locked-rotor overload test for DC motors		
G.5.4.6.2	Tested in the unit		
	Maximum Temperature (°C).....		
	Electric strength test.....	(See appended table 5.4.9)	
G.5.4.6.3	Alternative method		
	Electric strength test.....	(See appended table 5.4.9)	

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.7	Motors with capacitors		
G.5.4.8	Three-phase motors		
G.5.4.9	Series motors		
	Operating voltage (V) :		—
G.6	Wire Insulation		
G.6.1	General		
G.6.2	Enamelled winding wire insulation		
G.7	Mains power supply cords and interconnection cables		
G.7.1	General requirements		
	Type..... :		—
G.7.2	Cross sectional area (mm ² or AWG) :		
G.7.3	Cord anchorages and strain relief		
G.7.3.2	Cord strain relief		
G.7.3.2.1	Requirements		
	Strain relief test force (N) :		
G.7.3.2.2	Strain relief mechanism failure		
G.7.3.2.3	Cord sheath or jacket position, distance (mm) :		
G.7.3.2.4	Strain relief and cord anchorage material		
G.7.4	Cord Entry		
G.7.5	Non-detachable cord bend protection		
G.7.5.1	Requirements		
G.7.5.2	Test method and compliance criteria		
	Overall diameter or minor overall dimension, <i>D</i> (mm) :		—
	Radius of curvature after test (mm)..... :		—
G.7.6	Supply wiring space		
G.7.6.1	General requirements		
G.7.6.2	Stranded wire		
G.7.6.2.1	Requirements		
G.7.6.2.2	Test with 8 mm strand		
G.8	Varistors		
G.8.1	General requirements		
G.8.2	Safeguards against fire		

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Clause	Requirement + Test	Result - Remark	Verdict
G.8.2.1	General		
G.8.2.2	Varistor overload test		
G.8.2.3	Temporary overvoltage test		
G.9	Integrated circuit (IC) current limiters		
G.9.1	Requirements		
	IC limiter output current (max. 5A) :		—
	Manufacturers' defined drift :		—
G.9.2	Test Program		
G.9.3	Compliance criteria		
G.10	Resistors		
G.10.1	General		
G.10.2	Conditioning		
G.10.3	Resistor test		
	Changes of resistance (%) :		
	Measured current with the lowest resistance value :		
G.10.4	Voltage surge test		
	Changes of resistance (%) :		
G.10.5	Impulse test		
	Changes of resistance (%) :		
G.10.6	Overload test		
	Changes of resistance (%) :		
G.11	Capacitors and RC units		
G.11.1	General requirements		
G.11.2	Conditioning of capacitors and RC units		
G.11.3	Rules for selecting capacitors		
G.12	Optocouplers		
	Optocouplers comply with IEC 60747-5-5 with specifics		
	Type test voltage $V_{ini,a}$:		—
	Routine test voltage, $V_{ini,b}$:		—
G.13	Printed boards		
G.13.1	General requirements		
G.13.2	Uncoated printed boards		

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.3	Coated printed boards		
G.13.4	Insulation between conductors on the same inner surface		
G.13.5	Insulation between conductors on different surfaces		
	Distance through insulation :		
	Number of insulation layers (pcs) :		—
G.13.6	Tests on coated printed boards		
G.13.6.1	Sample preparation and preliminary inspection		
G.13.6.2	Test method and compliance criteria		
G.14	Coating on components terminals		
G.14.1	Requirements :	(See Clause G.13)	
G.15	Pressurized liquid filled components or LFC assemblies		
G.15.1	Requirements		
G.15.2	Test methods and compliance criteria for self-contained LFC		
G.15.2.1	Hydrostatic pressure test, applied test pressure :		
G.15.2.2	Creep resistance test		
G.15.2.3	Tubing and fittings compatibility test, the change of tensile strength (%)..... :		
G.15.2.4	Vibration test		
G.15.2.5	Thermal cycling test, test temperature (°C)..... :		
G.15.2.6	Force test		
G.15.2.7	Compliance criteria		
G.15.3	Test methods and compliance for a modular LFC		
G.15.3.2	Hydrostatic pressure test, applied test pressure :		
G.15.3.3	Creep resistance test		
G.15.3.4	Tubing and fittings compatibility test, the change of tensile strength (%)..... :		
G.15.3.5	Thermal cycle test, test temperature (°C) :		
G.15.3.6	Force test		
G.15.3.7	Compliance criteria		
G.16	IC including capacitor discharge function (ICX)		
G.16.1	Condition for fault tested is not required		

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Clause	Requirement + Test	Result - Remark	Verdict
	ICX with associated circuitry tested in equipment		
	ICX tested separately		
G.16.2	Tests		
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on..... :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test		—
G.16.3	Capacitor discharge test..... :	(See appended table 5.5.2.2)	
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		
H.1	General		
H.2	Method A		
H.3	Method B		
H.3.1	Ringling signal		
H.3.1.1	Frequency (Hz)		—
H.3.1.2	Voltage (V)		—
H.3.1.3	Cadence; time (s) and voltage (V)		—
H.3.1.4	Single fault condition current (mA):		—
H.3.2	Tripping device and monitoring voltage		
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		
H.3.2.2	Tripping device		
H.3.2.3	Monitoring voltage (V)		
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		
J.1	General		
	Winding wire insulation..... :		—
	Solid round winding wire, diameter (mm)		
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²)..... :		
J.2/J.3	Tests and Manufacturing	(See separate test report)	—
K	SAFETY INTERLOCKS		
K.1	General requirements		
	Instructional safeguard		

IS/IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K.2	Components of safety interlock safeguard mechanism		
K.3	Inadvertent change of operating mode		
K.4	Interlock safeguard override		
K.5	Fail-safe		
K.5.1	Under single fault condition		
K.6	Mechanically operated safety interlocks		
K.6.1	Endurance requirement		
K.7	Interlock circuit isolation		
K.7.1	Separation distance for contact gaps & interlock circuit elements		
	In circuit connected to mains, separation distance for contact gaps (mm)..... :		
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		
	Electric strength test before and after the test of K.7.2	(See appended table 5.4.9)	
K.7.2	Overload test, Current (A)		
K.7.3	Endurance test		
K.7.4	Electric strength test	(See appended table 5.4.9)	
L	DISCONNECT DEVICES		
L.1	General requirements		
L.2	Permanently connected equipment		
	Instructions for permanently connected equipment		
L.3	Parts that remain energized		
L.4	Single-phase equipment		
	Instructions for single pole disconnect device		
L.5	Three-phase equipment		
L.6	Switches as disconnect devices		
L.7	Plugs as disconnect devices		
	Instructions for pluggable equipment		—
L.8	Multiple power sources		
	Instructional safeguard		
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		
M.1	General requirements		

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Clause	Requirement + Test	Result - Remark	Verdict
M.2	Safety of batteries and their cells		
M.2.1	Batteries and their cells comply with relevant IEC standards..... :		
M.3	Protection circuits for batteries provided within the equipment		
M.3.1	Requirements		
M.3.2	Test method		
	Overcharging of a rechargeable battery		
	Excessive discharging		
	Unintentional charging of a non-rechargeable battery		
	Reverse charging of a rechargeable battery		
M.3.3	Compliance criteria	(See appended table M.3)	
M.4	Additional safeguards for equipment containing a secondary lithium battery		
M.4.1	General		
	IEC 62133-2 batteries used for sub-system power powering application..... :		
M.4.2	Charging safeguards		
M.4.2.1	Requirements		
M.4.2.2	Test		
M.4.2.2.1	General		
M.4.2.2.2	Abnormal operating conditions		
M.4.2.2.3	Single fault conditions		
M.4.2.3	Compliance criteria..... :	(See appended table M.4.2)	
M.4.3	Fire enclosure..... :		
M.4.4	Drop test of equipment containing a secondary lithium battery		
M.4.4.2	Preparation and procedure for the drop test		
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		
M.4.4.4	Check of the charge/discharge function		
M.4.4.5	Charge / discharge cycle test		
M.4.4.6	Compliance criteria		
M.5	Risk of burn due to short-circuit during carrying		
M.5.1	Requirement		

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

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Clause	Requirement + Test	Result - Remark	Verdict
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		
	Value of X (mm)..... :		—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		
P.1	General		
P.2	Safeguards against entry or consequences of entry of a foreign object		
P.2.1	General		
	Location and Dimensions (mm) :		—
P.2.2	Safeguard requirements		
	The ES3 and PS3 keep-out volume in Figure P.4 not applicable to transportable equipment		
	Transportable equipment with metalized plastic parts..... :		
P.2.3	Consequence of entry test :		
P.3	Safeguards against spillage of internal liquids		
P.3.1	General		
P.3.2	Determination of spillage consequences		
P.3.3	Spillage safeguards		
P.3.4	Compliance criteria		
P.4	Metallized coatings and adhesives securing parts		
P.4.1	General		
P.4.2	Tests		
	Conditioning, T _c (°C) :		—
	Duration (weeks) :		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		
Q.1	Limited power sources		
Q.1.1	Requirements		
	a) Inherently limited output		
	b) Impedance limited output		
	c) Regulating network limited output		
	d) Overcurrent protective device limited output		
	e) IC current limiter complying with G.9		
Q.1.2	Test method and compliance criteria :	(See appended table Q.1)	
	Current rating of overcurrent protective device (A) :		

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

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Clause	Requirement + Test	Result - Remark	Verdict
	Cheesecloth did not ignite		
S.4	Flammability classification of materials		
S.5	Flammability test for fire enclosure materials of 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..... :		—
	Measured distance from the centre of the fuel tablet (mm).....:		
T	MECHANICAL STRENGTH TESTS		
T.1	General		
T.2	Steady force test, 10 N :	(See appended table T.2, T.3, T.4, T.5)	
T.3	Steady force test, 30 N :	(See appended table T.2, T.3, T.4, T.5)	
T.4	Steady force test, 100 N :	(See appended table T.2, T.3, T.4, T.5)	
T.5	Steady force test, 250 N :	(See appended table T.2, T.3, T.4, T.5)	
T.6	Enclosure impact test	(See appended table T.6, T.9)	
	Fall test		
	Swing test		
T.7	Drop test :	(See appended table T.7)	
T.8	Stress relief test..... :	(See appended table T.8)	
T.9	Glass Impact Test..... :	(See appended table T.6, T.9)	
T.10	Glass fragmentation test		
	Number of particles counted		
T.11	Test for telescoping or rod antennas		
	Torque value (Nm)		
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		
U.1	General		
	Instructional safeguard		

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Clause	Requirement + Test	Result - Remark	Verdict
U.2	Test method and compliance for non-intrinsically protected CRTs		
U.3	Protective screen		
V	DETERMINATION OF ACCESSIBLE PARTS		
V.1	Accessible parts of equipment		
V.1.1	General		
V.1.2	Surfaces and openings tested with jointed test probes		
V.1.3	Openings tested with straight unjointed test probes		
V.1.4	Plugs, jacks, connectors tested with blunt probe		
V.1.5	Slot openings tested with wedge probe		
V.1.6	Terminals tested with rigid test wire		
V.2	Accessible part criterion		
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		
	Clearance..... :	(See appended table X)	
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		
Y.1	General		
Y.2	Resistance to UV radiation		
Y.3	Resistance to corrosion		
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by		
Y.3.2	Test apparatus		
Y.3.3	Water – saturated sulphur dioxide atmosphere		
Y.3.4	Test procedure		
Y.3.5	Compliance criteria		
Y.4	Gaskets		
Y.4.1	General		
Y.4.2	Gasket tests		
Y.4.3	Tensile strength and elongation tests, changes of tensile strength and elongation		
	Alternative test methods		
Y.4.4	Compression test		
Y.4.5	Oil resistance, change of swell / shrink (%)..... :		

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Clause	Requirement + Test	Result - Remark	Verdict
Y.4.6	Securing means	(See Clause P.4)	
Y.5	Protection of equipment within an outdoor enclosure		
Y.5.1	General		
Y.5.2	Protection from moisture		
	Relevant tests of IEC 60529 or Y.5.3 :		
Y.5.3	Water spray test		
Y.5.4	Protection from plants and vermin		
Y.5.5	Protection from excessive dust		
Y.5.5.1	General		
	Relevant tests of IEC 60529 or Y.5.5.2 or Y.5.5.3 . :		
Y.5.5.2	IP5X equipment		
Y.5.5.3	IP6X equipment		
Y.6	Mechanical strength of enclosures		
Y.6.1	General		
Y.6.2	Impact test..... :	(See appended table T.6, T.9)	

Reference source not found.

5.2		TABLE: Classification of electrical energy sources					
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.							
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							

5.4.1.8		TABLE: Working voltage measurement				
Location		Peak voltage (V)	RMS voltage (V)	Frequency (Hz)	Comments	
Supplementary information:						

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

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

Reference source not found.

5.4.2, 5.4.3 TABLE: Minimum Clearances/Creepage distance								
Clearance (cl) and creepage distance (cr) at/of/between:	U_p (V)	U_{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
Supplementary information:								
1) Only for frequency above 30 kHz								
2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)								

5.4.4.2 TABLE: Minimum distance through insulation				
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)
Supplementary information:				

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

5.4.9 TABLE: Electric strength tests			
Test voltage applied between:	Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No
Supplementary information:			

Reference source not found.

5.5.2.2	TABLE: Stored discharge on capacitors					
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (V _{pk})	ES Class	
Supplementary information:						
X-capacitors installed for testing:						
[] bleeding resistor rating:						
[] ICX:						
1) Normal operating condition (e.g., normal operation), SC= short circuit, OC= open circuit						

5.6.6	TABLE: Resistance of protective conductors and terminations					
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)		
Supplementary information:						

5.7.4	TABLE: Unearthed accessible parts					
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V _{rms} or V _{pk})	Current (A _{rms} or A _{pk})	Freq. (Hz)	
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						

5.7.5	TABLE: Earthed accessible conductive part					
Supply voltage (V)						—
Phase(s)	[] Single Phase; [] Three Phase: [] Delta [] Wye					
Power Distribution System	[] TN [] TT [] IT					
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment			
Supplementary Information:						

Reference source not found.

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

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

6.2.3.1							TABLE: Determination of Arcing PIS						
Location			Open circuit voltage after 3 s (Vpk)		Measured r.m.s current (A)		Calculated value		Arcing PIS? Yes / No				
Supplementary information:													

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

Reference source not found.

8.5.5	TABLE: High pressure lamp				
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No	
Supplementary information:					

Reference source not found.

9.6 TABLE: Temperature measurements for wireless power transmitters									
Supply voltage (V)								—	
Max. transmitting power (W).....								—	
Part A ¹⁾									
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	
Steel disc									
Aluminium ring									
Aluminium foil									
Measurement temperature T of part/at:	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	
Part B ²⁾									
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	
Steel disc									
Aluminium ring									
Aluminium foil									
Measurement temperature T of part/at:	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	
Supplementary information:									
1) The test is performed by powering up the transmitter and then placing each of the foreign objects specified in 9.6.2 in direct contact with the transmitter.									
2) The test is performed by first placing each of the foreign objects specified in 9.6.2 in direct contact with the transmitter and then powering up transmitter.									

Reference source not found.

5.4.1.4, 9.3, B.1.5, B.2.6		TABLE: Temperature measurements						
Supply voltage (V)							—	
Ambient temperature during test T_{amb} (°C)							—	
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max} (°C)	
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class	
Supplementary information:								

B.2.5		TABLE: Input test							
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
Supplementary information:									

Reference source not found.

B.2.5, E.3.1		TABLE: Input test for equipment containing audio amplifiers											
Operation Condition:		Signal type		Frequency (Hz)		Output loads (Ω)		Load setup					
A1		Sine wave input		1000				All channels driven, (maximum) non-clipped output power					
A2		Peak response frequency						All channels driven, (maximum) non-clipped output power					
B1		Sine wave input		1000				All channels driven, 1/8 non-clipped output power					
B2		Peak response frequency						All channels driven, 1/8 non-clipped output power					
C		Band-limited pink noise signal		N/A				All channels driven, 1/8 non-clipped output power					
D													
Input										Amplifier Output			
Cond.	U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Ch.	U (V)	P (W)	Load (Ω)	
Supplementary information:													

B.3, B.4		TABLE: Abnormal operating and fault condition tests										
Ambient temperature T_{amb} ($^{\circ}\text{C}$)												—
Power source for EUT: Manufacturer, model/type, outputrating ..												—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation						
Supplementary information:												

Reference source not found.

M.3	TABLE: Protection circuits for batteries provided within the equipment							
Is it possible to install the battery in a reverse polarity position?.....:							—	
Equipment Specification	Charging							
	Voltage (V)				Current (A)			
Manufacturer/type	Battery specification							
	Non-rechargeable batteries			Rechargeable batteries				
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)		
			Voltage (V)	Current (A)				
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.								
Specified battery temperature (°C)								
Component No.	Fault condition	Charge/discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation	
Supplementary information:								
Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.								

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

Reference source not found.

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

T.2, T.3, T.4, T.5	TABLE: Steady force test					
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Supplementary information:						

T.6, T.9	TABLE: Impact test			
Location/Part	Material	Thickness (mm)	Height (mm)	Observation
Supplementary information:				

T.7	TABLE: Drop test			
Location/Part	Material	Thickness (mm)	Height (mm)	Observation
Supplementary information:				

Reference source not found.

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

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

Reference source not found.

4.1.2	TABLE: Critical components information					
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
- Description:						
- Description:						
Supplementary information:						
1) Provided evidence ensures the agreed level of compliance. See OD-2039.						