



Test Report issued under the responsibility of:



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

Report Number..... : ISL-24LS0239CBC-2

Date of issue : 2025-05-07

Total number of pages : 50

Name of Testing Laboratory preparing the Report : International Standards Laboratory Corp. (ISL)

Applicant's name : Innolux Corp

Address : 160 Kesyue Rd, Jhunan Town Miaoli County 35053 (Jhunan Science Park), TAIWAN

Test specification:

Standard : IEC 62368-1:2018

Test procedure..... : CB Scheme

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

TRF template used : IECEE OD-2020-F1:2021, Ed.1.4

Test Report Form No. : IEC62368_1E

Test Report Form(s) Originator.... : UL(US)

Master TRF : Dated 2022-04-14

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This report is not valid as a CB Test Report unless signed by an approved CB 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.

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Test item description	LCD Module
Trade Mark(s)	 CHIMEI OPTOELECTRONICS or CHIMEI INNOLUX or INNOLux
Manufacturer	Same as applicant
Model/Type reference	R213TFE-LXX; R213RFE-LXX; R213UCE-LXX; R213ATE-LXX; R213TCE-LXX; R213RCE-LXX (X=0-9, A-Z or blank, X for marketing purpose and no impact safety related critical components and constructions)
Ratings	Optional, 12.6 Vdc max., 1.5 A max. or 13.2 Vdc max., 1.1 A max. for LCD Panel 26.4 Vdc max., 3.4 A max. or 13.2 Vdc max., 3.3 A max. for DC to DC converter

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	International Standards Laboratory Corp. (ISL)
Testing location/ address		No. 120, Lane 180, Hsin Ho Rd., Lung-Tan District, Tao Yuan City 325, Taiwan Chinese Taipei
Tested by (name, function, signature)		Joey Yu / Project Handler <i>Joey Yu</i>
Approved by (name, function, signature) ..		Dennis Lin / Reviewer <i>Dennis Lin</i>
☐	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
☐	Testing procedure: CTF Stage 2:	
Testing location/ address		
Tested by (name, function, 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):

- National Differences (82 pages)
- Attachment 1: Photo (65 pages)
- Attachment 2: Measurement Results (1 page)

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

- Classification of electrical energy sources (5.2)
- Temperature tests (5.4.1.4, 9.3, B.1.5, B.2.6)
- Input current (B.2.5)

All applicable tests as described in Test Case and Measurement Sections were performed.

- The load conditions used during testing:
 - The unit operated continuously with a full white pattern under the maximum brightness and contrast of the LCD backlight circuit.
 - Input testing measure at signal connector of panel control board (X-board).
 - All the tests are evaluated at input voltage 12.6 Vdc or 13.2 Vdc (for LCD panel) and 26.4 Vdc or 13.2 Vdc (for DC/DC converter)
 - All the tests are evaluated for powered by a DC power source (not DC mains) that provides double or reinforced insulation to primary circuit.
- The test samples were pre-production sample without serial numbers.

Testing location:

International Standards Laboratory Corp. (ISL)
No. 120, Lane 180, Hsin Ho Rd., Lung-Tan District,
Tao Yuan City 325, Taiwan Chinese Taipei

Summary of compliance with National Differences (List of countries addressed):

EU Group differences, United Kingdom (GB) (per customer's request shown separated), Canada (CA), United States of America (US), Australia (AU), New Zealand (NZ), Saudi Arabia (SA), Japan (JP), China (CN), Korea(KR) and Argentina(AR).

- ☒ The product fulfils the requirements of EN IEC 62368-1:2020+A11:2020, BS EN IEC 62368-1:2020+A11:2020
- ☒ The product fulfils the requirements of CSA/UL 62368-1:2019
- ☒ The product fulfils the requirements of AS/NZS 62368.1:2022
- ☒ The product fulfils the requirements of National standard SASO-IEC 62368-1:2020
- ☒ The product fulfils the requirements of J62368-1(2023)
- ☒ The product fulfils the requirements of GB 4943.1-2022
- ☒ The product fulfils the requirements of KC 62368-1(2021-08)
- ☒ The product fulfils the requirements of Special National Conditions for Argentina

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.

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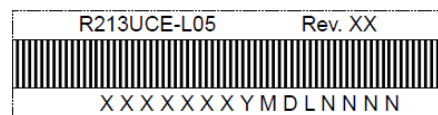
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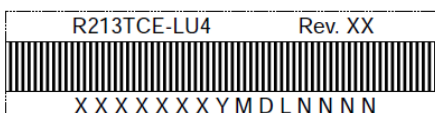
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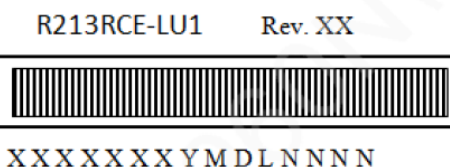
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Test item particulars:			
Product group	☐ end product	☒ built-in component	
Classification of use by	☐ Ordinary person ☐ Children likely present ☐ Instructed person ☐ Skilled person		
Supply connection	☐ AC mains ☐ DC mains ☒ not mains connected: ☒ ES1 ☐ ES2 ☐ ES3		
Supply tolerance	☐ +10%/-10% ☐ +20%/-15% ☐ + %/ - % ☒ None		
Supply connection – type	☐ pluggable equipment N160JME-GE1 - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☒ other: <u>not directly connected to the mains</u>		
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 ☒ other: <u>not directly connected to the mains, to be evaluated in the end product</u>		
Class of equipment	☐ Class I ☐ Class II ☒ Class III ☐ Not classified ☐		
Special installation location	☒ N/A ☐ restricted access area ☐ outdoor location ☐		
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3		
Manufacturer's specified T_{ma}	50 °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)	3.46 kg (max.)		

Possible test case verdicts: - test case does not apply to the test object.....: N/A - test object does meet the requirement.....: P (Pass) - test object does not meet the requirement.....: F (Fail)	
Testing: Date of receipt of test item: 2025-04-24 Date (s) of performance of tests: 2025-04-28	
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 IEC62368-2:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided:	☒ Yes ☐ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies).....:	1. Innolux Corp 3 Sec 1 Huanxi Rd, New City District (Tainan Science Park) Tainan 74147, TAIWAN 2. Innolux Corp 12 Nanke 8th Rd, Shanhua District (Tainan Science Park) Tainan 74147, TAIWAN 3. Foshan Innolux Optoelectronics Ltd Xingye North Rd, Nanhai Science & Technology Industry Park, Shishan Township Nanhai Area, Foshan Guangdong 528237, CHINA 4. Ningbo Innolux Optoelectronics Ltd 16 Yangzijiang North Rd, Ningbo Export Processing Zone, Ningbo Zhejiang 315800, CHINA 5. Ningbo Innolux Optoelectronics Ltd 6 Yangzijiang South Rd, Ningbo Export Processing Zone, Ningbo Zhejiang 315800, CHINA 6. Ningbo Innolux Display Ltd 8 Caoe River Rd, Ningbo free Trade South Zone, Ningbo Zhejiang, 315000, CHINA 7. CORETRONIC (NING BO) CO LTD 5 Guanshan Rd, Ningbo Export Processing Zone, Ningbo Zhejiang, CHINA

General product information and other remarks:
Product Description – The equipment under test (EUT) is a building-in type LCD Module supplied by ES1, intended to build into audio/video, information and communication technology equipment. Electric components are mounted on PWB incorporated with a 21.3 inch TFT-LCD panel with a LED backlight unit and panel control board.
Model Differences – All models are identical to each other except for model designation.
Additional application considerations – (Considerations used to test a component or sub-assembly) – The equipment shall be provided and evaluated electrical enclosure (for ES safeguard), fire enclosure (for PS safeguard), mechanical enclosure (for MS safeguard), and safeguard for thermal burn injury (for TS safeguard) in end product investigation. The accessibility for ordinary person shall be evaluated in the end product. The suitable Symbol/Markings/Instruction and Manual should be evaluated in end product investigation. Considered current rating of protective device as part of building or equipment installation: to be evaluated in the end product.
Additional Information – The test sample was a pre-production sample without serial number.
Description of change(s): This amendment report covered the following Technical amendment: 1. Add a panel control board (X), (Y) 2. 13.2 Vdc max., 3.0 A max. upgrade to 13.2 Vdc max., 3.3 A max. for DC to DC converter 3. Modify Summary of compliance and National Differences information.
History of amendments and modifications: Ref. No. ISL-24LS0239CBC, dated June 27, 2024 (original test report) Ref. No. ISL-24LS0239CBC-1, dated April 10, 2025 (modification test report)

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
ES2 (See appended table 5.2)	Ordinary Person	The accessibility for Ordinary person shall be evaluated in the end product	Not required	Not required
ES1: Other Circuits	Ordinary Person	Not required	Not required	Not required
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3	All combustible material and components	See 6.3	See 6.4.5, 6.4.6	N/A
PS3	PCB	See 6.3	V-1 or better	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
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8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
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9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: External accessible parts (only for LCD Panel front body, others shall be evaluated in end product)	Ordinary Person	Not required	Not required	Not required
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10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: LED Backlight	Ordinary Person	Not required	Not required	Not required
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Supplementary Information:

“B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard

ENERGY SOURCE DIAGRAM

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

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

☐ ES ☐ PS ☐ MS ☐ TS ☐ RS

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components		P
4.1.3	Equipment design and construction		P
4.1.4	Specified ambient temperature for outdoor use (°C) :		N/A
4.1.5	Constructions and components not specifically covered		P
4.1.8	Liquids and liquid filled components (LFC)		N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		N/A
4.4.3.1	General		N/A
4.4.3.2	Steady force tests		N/A
4.4.3.3	Drop tests		N/A
4.4.3.4	Impact tests		N/A
4.4.3.5	Internal accessible safeguard tests		N/A
4.4.3.6	Glass impact tests		N/A
4.4.3.7	Glass fixation tests	The equipment is for built-in, compliance shall be evaluated in the end product.	N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests		N/A
4.4.3.9	Air comprising a safeguard		N/A
4.4.3.10	Accessibility, glass, safeguard effectiveness		N/A
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks		N/A
4.5	General		N/A
4.5.1	General		N/A
4.5.2	No explosion during normal/abnormal operating condition		N/A
	No harm by explosion during single fault conditions		N/A
4.6	Fixing of conductors		N/A
	Fix conductors not to defeat a safeguard		N/A
	Compliance is checked by test..... :		N/A
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard .. :		N/A
4.7.3	Torque (Nm) :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General		N/A
4.8.2	Instructional safeguard :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		N/A
4.10	Component requirements		N/A
4.10.1	Disconnect Device		N/A
4.10.2	Switches and relays		N/A

5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits	(See appended table 5.2)	P
5.2.2.2	Steady-state voltage and current limits :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits :		N/A
5.2.2.4	Single pulse limits :		N/A
5.2.2.5	Limits for repetitive pulses :		N/A
5.2.2.6	Ringling signals		N/A
5.2.2.7	Audio signals		N/A
5.3	Protection against electrical energy sources		N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N/A
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits		N/A
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		N/A
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements		N/A
	Test with test probe from Annex V		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		N/A
5.4.1.2	Properties of insulating material		N/A
5.4.1.3	Material is non-hygroscopic		N/A
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4)	N/A
5.4.1.5	Pollution degrees		N/A
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat test.....		N/A
5.4.1.10.3	Ball pressure test		N/A
5.4.2	Clearances		N/A
5.4.2.1	General requirements		N/A
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance		N/A
	Temporary overvoltage		—
5.4.2.3	Procedure 2 for determining clearance		N/A
5.4.2.3.2.2	a.c. mains transient voltage		—
5.4.2.3.2.3	d.c. mains transient voltage		—
5.4.2.3.2.4	External circuit transient voltage.....		—
5.4.2.3.2.5	Transient voltage determined by measurement		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages		N/A
5.4.2.6	Clearance measurement		N/A
5.4.3	Creepage distances		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.3.1	General		N/A
5.4.3.3	Material group		—
5.4.3.4	Creepage distances measurement		N/A
5.4.4	Solid insulation		N/A
5.4.4.1	General requirements		N/A
5.4.4.2	Minimum distance through insulation		N/A
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs)		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs)		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)		N/A
	Alternative by electric strength test, tested voltage (V), K_R		N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance ($M\Omega$)		N/A
	Electric strength test		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%), temperature ($^{\circ}C$), duration (h)		—
5.4.9	Electric strength test		N/A
5.4.9.1	Test procedure for type test of solid insulation		N/A
5.4.9.2	Test procedure for routine test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test		N/A
5.4.10.2.3	Steady-state test.....		N/A
5.4.10.3	Verification for insulation breakdown for impulse test		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)		—
	Nominal voltage U_{peak} (V)		—
	Max increase due to variation ΔU_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
5.4.11.3	Test method and compliance		N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid		N/A
5.4.12.3	Compatibility of an insulating liquid		N/A
5.4.12.4	Container for insulating liquid		N/A
5.5	Components as safeguards		N/A
5.5.1	General		N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector		N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers		N/A
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPDs		N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable		N/A

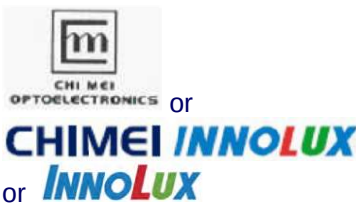
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA)..... :		—
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²) :		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²). :		—
5.6.4.2	Protective current rating (A)..... :		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :		N/A
	Terminal size for connecting protective bonding conductors (mm) :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method..... :		N/A
5.6.6.3	Resistance (Ω) or voltage drop..... :		N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm ²)..... :		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm) :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current		N/A
5.7.2.2	Measurement of voltage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	Equipment set-up, supply connections and earth connections		N/A
5.7.4	Unearthed accessible parts		N/A
5.7.5	Earthed accessible conductive parts		N/A
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA)		N/A
	Instructional Safeguard		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA)		N/A
	b) Equipment connected to unearthed external circuits, current (mA)		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES		N/A
	Air gap (mm)		N/A

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	(See appended table)	P
9.3.2	Test method and compliance		N/A
9.4	Safeguards against thermal energy sources		N/A
9.5	Requirements for safeguards		N/A
9.5.1	Equipment safeguard		N/A
9.5.2	Instructional safeguard		N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers	N/A	N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		N/A
B.3.1	General		N/A
B.3.2	Covering of ventilation openings		N/A
	Instructional safeguard		N/A
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector		N/A
B.3.5	Maximum load at output terminals		N/A
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		N/A
B.4	Simulated single fault conditions		P
B.4.1	General		N/A
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test		N/A
B.4.4	Functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnection of passive components		N/A
B.4.7	Continuous operation of components		N/A
B.4.8	Compliance during and after single fault conditions		P
B.4.9	Battery charging and discharging under single fault conditions		N/A

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Clause	Requirement + Test		Verdict
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings	R213TFE-LXX; R213RFE-LXX; R213UCE-LXX; R213ATE-LXX; R213TCE-LXX; R213RCE-LXX (X=0-9, A-Z or blank, X for marketing purpose and no impact safety related critical components and constructions)	P
F.3.2.1	Manufacturer identification	See copy of marking plate	—
F.3.2.2	Model identification	See page 2	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains		P
F.3.3.3	Nature of the supply voltage.....	Optional, IEC 60417 No. 5031 provided	—
F.3.3.4	Rated voltage	12.6 Vdc max. or 13.2 Vdc max. for LCD Panel 13.2 Vdc max. or 26.4 Vdc max. for DC to DC Converter (Optional)	—
F.3.3.5	Rated frequency	DC	—
F.3.3.6	Rated current or rated power	1.5 A max. or 1.1 A max. for LCD Panel 3.3 A max or 3.4 A max. for DC to DC Converter (Optional)	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.1	Mains appliance outlet and socket-outlet markings		N/A
F.3.5.2	Switch position identification marking		N/A
F.3.5.3	Replacement fuse identification and rating markings		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		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal.....		N/A
F.3.6.1.2	Protective bonding conductor terminals		N/A
F.3.6.2	Equipment class marking		N/A
F.3.6.3	Functional earthing terminal marking		N/A
F.3.7	Equipment IP rating marking		N/A
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings	See Attachment 2	P
F.4	Instructions		N/A
	a) Information prior to installation and initial use		N/A
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place		N/A
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard		N/A
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment		N/A
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.5	Instructional safeguards		N/A

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

5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
Measure at DC/DC converter board (A): model L213H1-2EA							
26.4 Vdc	Before L5 to earth	Normal	27.6 Vdc	--	SS	--	ES1
26.4 Vdc	After L6 to earth	Normal	38.8 Vpk	--	SS	--	ES1
26.4 Vdc	After R1 to earth	Normal	35.6 Vpk	--	SS	--	ES1
26.4 Vdc	After D2/C1 to earth	Normal	36.4 Vdc	--	SS	--	ES1
26.4 Vdc	After D2/C1 to earth	R1 short	36.4 Vdc	--	SS	--	ES1
26.4 Vdc	After D2/C1 to earth	C1 short	36.4 Vdc	--	SS	--	ES1
26.4 Vdc	After D2/C1 to earth	D2 pin 1-2 short	27.6 Vdc	--	SS	--	ES1
26.4 Vdc	After D2/C1 to earth	R4 short	27.6 Vdc	--	SS	--	ES1
26.4 Vdc	After D2/C1 to earth	R37 short	0 ^{1.}	--	SS	--	ES1
26.4 Vdc	After D2/C1 to earth	L6 short	27.6 Vdc	--	SS	--	ES1
Measure at DC/DC converter board (B): model L190M1-1EA							
26.4 Vdc	Before AL1 to earth	Normal	26.5 Vdc	--	SS	--	ES1
26.4 Vdc	After AL1 to earth	Normal	34.4 Vpk	--	SS	--	ES1
26.4 Vdc	After AL2 to earth	Normal	37.2 Vpk	--	SS	--	ES1
26.4 Vdc	After AR9 to earth	Normal	37.6 Vpk	--	SS	--	ES1
26.4 Vdc	After AC8/AD1 to earth	Normal	32.0 Vdc	--	SS	--	ES1
26.4 Vdc	After AC8/AD1 to earth	AR9 short	36.0 Vdc	--	SS	--	ES1
26.4 Vdc	After AC8/AD1 to earth	AC8 short	0 ^{1.}	--	SS	--	ES1
26.4 Vdc	After AC8/AD1 to earth	AD1 pin 1-2 short	26.4 Vdc	--	SS	--	ES1
26.4 Vdc	After AC8/AD1 to earth	AR16 short	35.6 Vdc	--	SS	--	ES1
Measure at DC/DC converter board (C): model L213H102EA (a type)							
26.4 Vdc	Before L75 to earth	Normal	24.6 Vdc	--	SS	--	ES1
26.4 Vdc	After L75 to earth	Normal	31.5 Vpk	--	SS	--	ES1

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
26.4 Vdc	After L76 to earth	Normal	40.0 Vpk	--	SS	--	ES1
26.4 Vdc	After R87 to earth	Normal	40.0 Vpk	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	Normal	37.1 Vdc	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	R94 short	24.5 Vdc	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	R95 short	24.6 Vdc	--	SS	--	ES1
Measure at DC/DC converter board (D): model L213C101EA							
26.4 Vdc	Before L75 to earth	Normal	26.6 Vdc	--	SS	--	ES1
26.4 Vdc	After L75 to earth	Normal	40.0 Vpk	--	SS	--	ES1
26.4 Vdc	After L76 to earth	Normal	46.4 Vpk	--	SS	--	ES2
26.4 Vdc	After R87 to earth	Normal	46.4 Vpk	--	SS	--	ES2
26.4 Vdc	After C88 / D75 to earth	Normal	38.5 Vdc	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	R94 short	0 ¹	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	R95 short	0 ¹	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	C88 short	26.4 Vdc	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	D75 pin 1, 3 to 2 short	26.4 Vdc	--	SS	--	ES1
Measure at panel control board with DC/DC Converter Circuit (G): model R213UCE-L01 (b type)							
13.2 Vdc	Before L601 to earth	Normal	13.2 Vdc	--	SS	--	ES1
13.2 Vdc	After L601 to earth	Normal	38.8 Vpk	--	SS	--	ES1
13.2 Vdc	After C644 / D601 to earth	Normal	36.4 Vdc	--	SS	--	ES1
13.2 Vdc	After C644 / D601 to earth	R602 short	13.2 Vdc	--	SS	--	ES1
13.2 Vdc	After C644 / D601 to earth	C644 short	0 ¹	--	SS	--	ES1
13.2 Vdc	After C644 / D601 to earth	D601 short	0 ¹	--	SS	--	ES1
Measure at DC/DC converter board (E): model L213H102EA (b type)							
26.4 Vdc	Before L75 to earth	Normal	26.8 Vdc	--	SS	--	ES1
26.4 Vdc	After L75 to earth	Normal	32.0 Vpk	--	SS	--	ES1
26.4 Vdc	After L76 to earth	Normal	34.4 Vpk	--	SS	--	ES1

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
26.4 Vdc	After R87 to earth	Normal	34.4 Vpk	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	Normal	32.2 Vdc	--	SS	--	ES1
26.4 Vdc	After R87 to earth	R94 short	26.5 Vdc	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	R95 short	26.6 Vdc	--	SS	--	ES1
Measure at panel control board with DC/DC Converter Circuit (H): model R213UCE-L04							
13.2 Vdc	Before L604 to earth	Normal	12.8 Vdc	--	SS	--	ES1
13.2 Vdc	After L604 to earth	Normal	47.2 Vpk	--	SS	--	ES2
13.2 Vdc	After D605 to earth	Normal	39.0 Vdc	--	SS	--	ES1
13.2 Vdc	After D605 to earth	D605 short	13.1 Vdc	--	SS	--	ES1
13.2 Vdc	After D605 to earth	R622 short	20.7 Vdc	--	SS	--	ES1
Measure at DC/DC converter board (F): model L213C202EA							
26.4 Vdc	Before L75 to earth	Normal	26.7 Vdc	--	SS	--	ES1
26.4 Vdc	After L75 to earth	Normal	38.4 Vpk	--	SS	--	ES1
26.4 Vdc	After L76 to earth	Normal	43.6 Vpk	--	SS	--	ES2
26.4 Vdc	After R87 to earth	Normal	43.6 Vpk	--	SS	--	ES2
26.4 Vdc	After C88 / D75 to earth	Normal	41.0 Vdc	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	D75 short	26.4 Vdc	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	C88 short	26.4 Vdc	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	R95 short	0 ¹	--	SS	--	ES1
Measure at panel control board with DC/DC Converter Circuit (K): model R213UCE-L02 (a type)							
13.2 Vdc	Before L601 to earth	Normal	13.2 Vdc	--	SS	--	ES1
13.2 Vdc	After L601 to earth	Normal	43.5 Vpk	--	SS	--	ES2
13.2 Vdc	After D601 to earth	Normal	35.5 Vdc	--	SS	--	ES1
13.2 Vdc	After D601 to earth	D601 short	13.2 Vdc	--	SS	--	ES1
13.2 Vdc	After D601 to earth	R602 short	13.6 Vdc	--	SS	--	ES1

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
Measure at panel control board with DC/DC Converter Circuit (L): model R213UCE-L05 (a type)							
13.2 Vdc	Before L601 to earth	Normal	13.2 Vdc	--	SS	--	ES1
13.2 Vdc	After L601 to earth	Normal	39.6 Vpk	--	SS	--	ES1
13.2 Vdc	After D601 to earth	Normal	31.5 Vdc	--	SS	--	ES1
13.2 Vdc	After D601 to earth	R602 short	13.2 Vdc	--	SS	--	ES1
Measure at DC/DC converter board (D): model L213C101EA							
26.4 Vdc	Before L75 to earth	Normal	26.5 Vdc	--	SS	--	ES1
26.4 Vdc	After L75 to earth	Normal	34.8 Vpk	--	SS	--	ES1
26.4 Vdc	After L76 to earth	Normal	40.8 Vpk	--	SS	--	ES1
26.4 Vdc	After R87 to earth	Normal	40.8 Vpk	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	Normal	41.6 Vdc	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	R94 short	0 ¹ .	--	SS	--	ES1
26.4 Vdc	After C88 / D75 to earth	R95 short	0 ¹ .	--	SS	--	ES1
Measure at DC/DC converter board (G): model L213C102EA							
26.4 Vdc	Before RP119/RP80 to earth	Normal	25.92 Vdc	--	SS	--	ES1
26.4 Vdc	After RP119/RP80 to earth	Normal	25.64 Vdc	--	SS	--	ES1
26.4 Vdc	After LP3 to earth	Normal	30.80 Vpk	--	SS	--	ES1
26.4 Vdc	After LP4 to earth	Normal	26.61 Vpk	--	SS	--	ES1
26.4 Vdc	After RP1 to earth	Normal	25.88 Vpk	--	SS	--	ES1
26.4 Vdc	After CP6/DP2 to earth	Normal	33.20 Vdc	--	SS	--	ES1
Measure at DC/DC converter board (H): model L213C202EA (b type)							
26.4 Vdc	Before RP119/RP80 to earth	Normal	26.3 Vdc	--	SS	--	ES1
26.4 Vdc	After RP119/RP80 to earth	Normal	26.3 Vdc	--	SS	--	ES1
26.4 Vdc	After LP3 to earth	Normal	36.4 Vpk	--	SS	--	ES1
26.4 Vdc	After LP4 to earth	Normal	41.6 Vpk	--	SS	--	ES1

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Clause	Requirement + Test			Result - Remark			Verdict
26.4 Vdc	After RP1 to earth	Normal	41.6 Vpk	--	SS	--	ES1
26.4 Vdc	After CP6/DP2/DP4/DP5 to earth	Normal	42.8 Vdc	--	SS	--	ES1
Measure at panel control board with DC/DC Converter Circuit (P): model R213RCE-LU1							
26.4 Vdc	Before L601 to earth	Normal	26.7 Vdc	--	SS	--	ES1
26.4 Vdc	After L601 to earth	Normal	26.9 Vdc	--	SS	--	ES1
26.4 Vdc	After L602 to earth	Normal	38.4 Vpk	--	SS	--	ES1
26.4 Vdc	After L603 to earth	Normal	41.2 Vpk	--	SS	--	ES1
26.4 Vdc	After L604 to earth	Normal	42.0 Vpk	--	SS	--	ES1
26.4 Vdc	After L609 to earth	Normal	35.6 Vpk	--	SS	--	ES1
26.4 Vdc	After RP100 to earth	Normal	35.6 Vpk	--	SS	--	ES1
26.4 Vdc	After CP105 to earth	Normal	6.8 Vpk	--	SS	--	ES1
26.4 Vdc	After DP39 to earth	Normal	34.5 Vdc	--	SS	--	ES1
Measure at panel control board with DC/DC Converter Circuit (Q): R213UCE-L01 (c type)							
13.2 Vdc	Before L604 to earth	Normal	13.6 Vdc	--	SS	--	ES1
13.2 Vdc	After L604 to earth	Normal	48.0 Vpk	--	SS	--	ES2
13.2 Vdc	After D605 to earth	Normal	38.3 Vdc	--	SS	--	ES1
13.2 Vdc	After D605 to earth	D605 short	13.3 Vdc	--	SS	--	ES1
Measure at panel control board with DC/DC Converter Circuit (R): R213UCE-L02 (b type)							
13.2 Vdc	Before L604 to earth	Normal	13.5 Vdc	--	SS	--	ES1
13.2 Vdc	After L604 to earth	Normal	48.0 Vpk	--	SS	--	ES2
13.2 Vdc	After D605 to earth	Normal	36.5 Vdc	--	SS	--	ES1
13.2 Vdc	After D605 to earth	D605 short	13.3 Vdc	--	SS	--	ES1
Measure at panel control board with DC/DC Converter Circuit (S): R213UCE-L05 (b type)							
13.2 Vdc	Before L604 to earth	Normal	13.2 Vdc	--	SS	--	ES1

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Clause	Requirement + Test			Result - Remark			Verdict
13.2 Vdc	After L604 to earth	Normal	44.0 Vpk	--	SS	--	ES2
13.2 Vdc	After D605 to earth	Normal	33.1 Vdc	--	SS	--	ES1
13.2 Vdc	After D605 to earth	D605 short	13.3 Vdc	--	SS	--	ES1
Measure at panel control board with DC/DC Converter Circuit (T): R213RFE-L01 (b type)							
26.4 Vdc	Before LP3 to earth	Normal	26.1 Vdc	--	SS	--	ES1
26.4 Vdc	After LP3 to earth	Normal	30.0 Vpk	--	SS	--	ES2
26.4 Vdc	After LP4 to earth	Normal	36.0 Vpk	--	SS	--	ES2
26.4 Vdc	After RP1 to earth	Normal	36.0 Vpk	--	SS	--	ES2
26.4 Vdc	After CP6/DP2 to earth	Normal	30.1 Vdc	--	SS	--	ES1
Measure at panel control board with DC/DC Converter Circuit (U): R213TCE-LU3							
26.4 Vdc	Before RP119/RP80 to earth	Normal	26.8 Vdc	--	SS	--	ES1
26.4 Vdc	After RP119/RP80 to earth	Normal	26.9 Vdc	--	SS	--	ES1
26.4 Vdc	After LP3 to earth	Normal	44.0 Vpk	--	SS	--	ES2
26.4 Vdc	After LP4 to earth	Normal	54.0 Vpk	--	SS	--	ES2
26.4 Vdc	After RP1 to earth	Normal	54.0 Vpk	--	SS	--	ES2
26.4 Vdc	After CP6/DP2/DP4 to earth	Normal	46.0 Vdc	--	SS	--	ES1
26.4 Vdc	After CP6/DP2/DP4 to earth	CP6/DP2/DP4 short	26.7 Vdc	--	SS	--	ES1
Measure at panel control board with DC/DC Converter Circuit (V): R213TCE-L1N							
26.4 Vdc	Before LP2 to earth	Normal	26.4 Vdc	--	SS	--	ES1
26.4 Vdc	After LP2 to earth	Normal	38.4 Vpk	--	SS	--	ES1
26.4 Vdc	After LP3 to earth	Normal	50.4 Vpk	--	SS	--	ES2
26.4 Vdc	After LP4 to earth	Normal	57.6 Vpk	--	SS	--	ES2
26.4 Vdc	After RP1 to earth	Normal	57.6 Vpk	--	SS	--	ES2
26.4 Vdc	After DP2/DP4/DP5 to earth	Normal	55.6 Vdc	--	SS	--	ES1
26.4 Vdc	After DP2/DP4/DP5 to earth	DP2/DP4/DP5 short	26.4 Vdc	--	SS	--	ES1

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Clause	Requirement + Test	Result - Remark	Verdict

Measure at panel control board with DC/DC Converter Circuit (X): R213UCE-L02 (c type)

13.2 Vdc	Before L604 to earth	Normal	13.6 Vdc	--	SS	--	ES1
13.2 Vdc	After L604 to earth	Normal	45.2 Vpk	--	SS	--	ES2
13.2 Vdc	After D605 to earth	Normal	37.0 Vdc	--	SS	--	ES1
13.2 Vdc	After D605 to earth	D605 short	12.4 Vdc.	--	SS	--	ES1

Measure at panel control board with DC/DC Converter Circuit (Y): R213UCE-L22 (b type)

13.2 Vdc	Before L601 to earth	Normal	13.6 Vdc	--	SS	--	ES1
13.2 Vdc	After L601 to earth	Normal	40.8 Vpk	--	SS	--	ES1
13.2 Vdc	After D601 to earth	Normal	34.1 Vdc	--	SS	--	ES1

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) * = unit shutdown

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements					P
Supply voltage (V).....:	See Below					—
Ambient temperature during test T_{amb} (°C).....:	--	--	--	--	—	
Maximum measured temperature T of part/at.....:	T (°C)					Allowed T_{max} (°C)
Measure at panel control board (A): model R213TFE-L53 and DC/DC converter board board (A): model L213H1-2EA						
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--	
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{\text{amb}} = 23.9$ °C	50.0	--	--	--	--	
L1 coil / control board	73.0	--	--	--	105	
L2 coil / control board	72.4	--	--	--	105	
U17 near PCB / control board	73.7	--	--	--	105	
U14 near PCB / control board	73.8	--	--	--	105	
U22 near PCB / control board	79.2	--	--	--	105	
C61 body / converter board	61.6	--	--	--	105	
L5 coil / converter board	65.5	--	--	--	105	
L6 coil / converter board	67.3	--	--	--	105	

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Clause	Requirement + Test		Result - Remark		Verdict
Q1 near PCB / converter board	74.3	--	--	--	105
D2 near PCB / converter board	69.9	--	--	--	105
Panel rear near label	64.5	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 23.9$ °C	25.0	--	--	--	--
Panel body	44.9	--	--	--	77
Measure at panel control board (B): model R213RFE-L01 (a type) and DC/DC converter board (B): model L190M1-1EA					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 23.7$ °C	50.0	--	--	--	--
PCB under U19 / control board	85.6	--	--	--	105
PCB under U26 / control board	85.7	--	--	--	105
L3 body / control board	89.5	--	--	--	105
L2 body / control board	88.4	--	--	--	105
PCB under U10 / converter board (Left)	86.3	--	--	--	105
AL1 body / converter board (Left)	81.6	--	--	--	105
AL2 body / converter board (Left)	82.2	--	--	--	105
PCB under AQP1 / converter board (Left)	85.7	--	--	--	105
AC29 body / converter board (Left)	78.1	--	--	--	105
PCB under U10 / converter board (Right)	87.0	--	--	--	105
AL1 body / converter board (Right)	83.1	--	--	--	105
AL2 body / converter board (Right)	83.8	--	--	--	105
PCB under AQP1 / converter board (Right)	86.1	--	--	--	105
AC29 body / converter board (Right)	77.8	--	--	--	105
LCD panel rear near label	77.1	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 23.6$ °C	25.0	--	--	--	--
LCD Panel front	49.4	--	--	--	77
Measure at panel control board (C): model R213TFE-L54 and DC/DC converter board board (A): model L213H1-2EA					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 23.9$ °C	50.0	--	--	--	--
PCB under U1 / converter board	77.7	--	--	--	105
PCB under Q1 / converter board	77.4	--	--	--	105
PCB under D2 / converter board	74.9	--	--	--	105
C5 body / converter board	66.8	--	--	--	105
L5 coil / converter board	67.0	--	--	--	105
L6 coil / converter board	69.8	--	--	--	105
PCB under U14 / control board	72.8	--	--	--	105

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Clause	Requirement + Test	Result - Remark			Verdict
PCB under U16 / control board	69.2	--	--	--	105
L3 coil / control board	84.5	--	--	--	105
L5 coil / control board	82.1	--	--	--	105
LCD Panel rear near Label	64.9	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 23.9$ °C	25.0	--	--	--	--
LCD Panel front body	52.7	--	--	--	77
Measure at panel control board (D): model R213UCE-L01 (a type)					
Supply Voltage (V)	13.2 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 23.1$ °C	50.0	--	--	--	--
L604 body / control board	81.0	--	--	--	105
L603 body / control board	85.7	--	--	--	105
PCB under U201 / control board	67.4	--	--	--	105
LP5 body / control board	66.0	--	--	--	105
LP6/LP8 body / control board	65.9	--	--	--	105
PCB under UP2 / control board	67.2	--	--	--	105
LCD Panel rear near Label	65.7	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 23.1$ °C	25.0	--	--	--	--
LCD Panel front body	37.3	--	--	--	77
Measure at panel control board (E): model R213TFE-L5B and DC/DC converter board (C): model L213H102EA (a type)					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 23.9$ °C	50.0	--	--	--	--
L1 body / control board	79.3	--	--	--	105
PCB under U17 / control board	82.1	--	--	--	105
L2 body / control board	80.0	--	--	--	105
PCB under U14 / control board	79.8	--	--	--	105
PCB under U22 / control board	84.7	--	--	--	105
PCB under U20 / control board	81.9	--	--	--	105
PCB under U16 / control board	76.2	--	--	--	105
L75 body / Converter board (Right)	75.6	--	--	--	105
L76 body / Converter board (Right)	75.1	--	--	--	105
PCB under D75 / Converter board (Right)	77.7	--	--	--	105
PCB under Q75 / Converter board (Right)	74.1	--	--	--	105
C92 body / Converter board (Right)	69.9	--	--	--	105
PCB under U1 / Converter board (Right)	74.1	--	--	--	105
L75 body / Converter board (Left)	75.9	--	--	--	105
L76 body / Converter board (Left)	70.0	--	--	--	105

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Clause	Requirement + Test	Result - Remark			Verdict
PCB under D75 / Converter board (Left)	77.7	--	--	--	105
PCB under Q75 / Converter board (Left)	73.4	--	--	--	105
C92 body / Converter board (Left)	70.2	--	--	--	105
PCB under U1 / Converter board (Left)	74.3	--	--	--	105
LCD Panel rear near Label	72.3	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 23.9$ °C	25.0	--	--	--	--
LCD Panel front body	48.4	--	--	--	77
Measure at panel control board (F): model R213ATE-LU1(a type) and DC/DC converter board (D): model L213C101EA					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 17.7$ °C	50.0	--	--	--	--
PCB under DM1 / control board	90.3	--	--	--	105
L4 body / control board	87.5	--	--	--	105
L5 body / control board	84.2	--	--	--	105
L75 body / Converter board (Right)	81.7	--	--	--	105
PCB under Q75 / Converter board (Right)	86.7	--	--	--	105
PCB under U75 / Converter board (Right)	81.9	--	--	--	105
L75 body / Converter board (Left)	81.0	--	--	--	105
PCB under Q75 / Converter board (Left)	86.3	--	--	--	105
PCB under U75 / Converter board (Left)	83.9	--	--	--	105
LCD Panel rear near Label	81.3	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 25.0$ °C	25.0	--	--	--	--
LCD Panel front body	54.5	--	--	--	77
Measure at panel control board (G): model R213UCE-L01 (b type)					
Supply Voltage (V)	13.2 Vdc / 13.2 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.2$ °C	50.0	--	--	--	--
PCB near U601 / control board	66.9	--	--	--	105
L601 body / control board	65.4	--	--	--	105
PCB under / control board	63.3	--	--	--	105
L604 body / control board	62.8	--	--	--	105
PCB under U605 / control board	70.6	--	--	--	105
PCB under UP2 / control board	67.6	--	--	--	105
LP5 body / control board	64.7	--	--	--	105
PCB under U22 / control board	68.1	--	--	--	105
LCD Panel rear near Label	58.2	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.2$ °C	25.0	--	--	--	--

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Clause	Requirement + Test	Result - Remark			Verdict
LCD Panel front body	33.3	--	--	--	77
Measure at panel DC/DC converter board (E): model L213H102EA (b type)					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 19.8$ °C	50.0	--	--	--	--
PCB under U19 / control board	83.9	--	--	--	105
PCB under U16 / control board	85.0	--	--	--	105
L4 body / control board	86.9	--	--	--	105
L3 body / control board	85.2	--	--	--	105
PCB under U1 / Converter board (Left)	83.0	--	--	--	105
L75 body / Converter board (Left)	77.8	--	--	--	105
PCB under Q75 / Converter board (Left)	80.9	--	--	--	105
PCB under U201 / Converter board (Right)	79.7	--	--	--	105
L76 body / Converter board (Right)	79.1	--	--	--	105
PCB under D75 / Converter board (Right)	88.6	--	--	--	105
LCD Panel rear near Label	73.6	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 25.0$ °C	25.0	--	--	--	--
LCD Panel front body	47.1	--	--	--	77
Measure at panel control board with DC/DC Converter Circuit (H): model R213UCE-L04					
Supply Voltage (V)	13.2 Vdc / 13.2 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.4$ °C	50.0	--	--	--	--
PCB under U602 / control board	72.7	--	--	--	105
L604 coil / control board	85.3	--	--	--	105
PCB under U604 / control board	76.1	--	--	--	105
L603 coil / control board	85.5	--	--	--	105
PCB under U7 / control board	66.5	--	--	--	105
PCB under U605 / control board	72.0	--	--	--	105
LP5 coil / control board	67.0	--	--	--	105
PCB under UP2 / control board	69.2	--	--	--	105
PCB under U22 / control board	70.0	--	--	--	105
PCB under Q5 / control board	62.3	--	--	--	105
PCB under U25 / control board	64.2	--	--	--	105
LCD Pane rear near Label	65.8	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.4$ °C	25.0	--	--	--	--
LCD Panel Front body	34.6	--	--	--	77
Measure at panel control board (I): model R213TCE-LU4 (a type) and DC/DC converter board (D): model L213C101EA					

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Clause	Requirement + Test	Result - Remark			Verdict
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 21.7$ °C	50.0	--	--	--	--
L4 body / control board	69.4	--	--	--	105
L3 body / control board	90.9	--	--	--	105
PCB under UT1 / control board	81.0	--	--	--	105
PCB under U19 / control board	83.0	--	--	--	105
PCB under L75 / Converter board	86.8	--	--	--	105
D75 core body / Converter board	81.9	--	--	--	105
PCB under AU3 / Converter board	92.3	--	--	--	105
C91 body / Converter board	72.6	--	--	--	105
LCD Panel rear near Label	74.7	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 21.7$ °C	25.0	--	--	--	--
LCD Panel front body	37.3	--	--	--	77
Measure at panel control board (J): model R213TCE-LU4 (b type) and DC/DC converter board (F): model L213C202EA					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 21.1$ °C	50.0	--	--	--	--
L4 body / control board	69.1	--	--	--	105
L3 body / control board	88.7	--	--	--	105
PCB under UT1 / control board	83.3	--	--	--	105
PCB under U19 / control board	79.9	--	--	--	105
PCB under L75 / Converter board	82.4	--	--	--	105
D75 core body / Converter board	83.7	--	--	--	105
PCB under AU3 / Converter board	86.6	--	--	--	105
C91 body / Converter board	71.8	--	--	--	105
LCD Panel rear near Label	75.2	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 21.1$ °C	25.0	--	--	--	--
LCD Panel front body	36.9	--	--	--	77
Measure at panel control board with DC/DC Converter Circuit (K): model R213UCE-L02 (a type)					
Supply Voltage (V)	13.2 Vdc / 13.2 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 21.5$ °C	50.0	--	--	--	--
PCB under U602 / control board	80.9	--	--	--	105
L604 coil / control board	89.8	--	--	--	105
PCB under U604 / control board	79.6	--	--	--	105
L603 coil / control board	88.4	--	--	--	105
PCB under U7 / control board	67.3	--	--	--	105

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Clause	Requirement + Test	Result - Remark			Verdict
PCB under U605 / control board	72.9	--	--	--	105
LP5 coil / control board	69.0	--	--	--	105
PCB under UP2 / control board	67.3	--	--	--	105
PCB under U22 / control board	73.3	--	--	--	105
PCB under Q5 / control board	65.5	--	--	--	105
PCB under U25 / control board	67.5	--	--	--	105
LCD Panel rear near Label	65.8	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 21.5$ °C	25.0	--	--	--	--
LCD Panel front body	39.8	--	--	--	77
Measure at panel control board with DC/DC Converter Circuit (L): model R213UCE-L05 (a type)					
Supply Voltage (V)	13.2 Vdc / 13.2 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 21.5$ °C	50.0	--	--	--	--
PCB under U602 / control board	84.6	--	--	--	105
L604 coil / control board	86.0	--	--	--	105
PCB under U604 / control board	79.6	--	--	--	105
L603 coil / control board	85.0	--	--	--	105
PCB under U7 / control board	66.7	--	--	--	105
PCB under U605 / control board	74.7	--	--	--	105
LP5 coil / control board	71.0	--	--	--	105
PCB under UP2 / control board	66.9	--	--	--	105
PCB under U22 / control board	72.2	--	--	--	105
PCB under Q5 / control board	63.7	--	--	--	105
PCB under U25 / control board	64.4	--	--	--	105
LCD Panel rear near Label	69.4	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 21.5$ °C	25.0	--	--	--	--
LCD Panel front body	38.3	--	--	--	77
Measure at panel control board (M): model R213ATE-LU1(b type) and DC/DC converter board (D): model L213C101EA					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 20.3$ °C	50.0	--	--	--	--
PCB near U19	92.6	--	--	--	105
PCB near U11	90.6	--	--	--	105
L5 body	91.7	--	--	--	105
PCB near U22	92.9	--	--	--	105
PCB near U21	98.4	--	--	--	105
L2 body	94.5	--	--	--	105
L1 body	94.6	--	--	--	105

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Clause	Requirement + Test		Result - Remark		Verdict
L3 body	96.0	--	--	--	105
L4 body	94.0	--	--	--	105
L75 body / Converter Board (R)	85.1	--	--	--	105
PCB near Q75 / Converter Board (R)	86.3	--	--	--	105
PCB near U75 / Converter Board (R)	84.3	--	--	--	105
L75 body / Converter Board (L)	85.0	--	--	--	105
PCB near Q75 / Converter Board (L)	86.0	--	--	--	105
PCB near U75 / Converter Board (L)	84.6	--	--	--	105
LCD Panel rear near label	82.2	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 20.3$ °C	25.0	--	--	--	--
LCD Panel front body	54.4	--	--	--	77
Measure at panel control board (N): model R213RFE-LU2 with one DC/DC converter board (G): model L213C102EA					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 21.5$ °C	50.0	--	--	--	--
PCB under L1 / control board	70.6	--	--	--	105
PCB under U22 / control board	72.6	--	--	--	105
PCB under L3 / control board	70.9	--	--	--	105
PCB under D4 / control board	71.4	--	--	--	105
PCB under U16 / control board	70.0	--	--	--	105
PCB under U26 / control board	68.1	--	--	--	105
PCB under U24 / control board	73.2	--	--	--	105
PCB under U19 / control board	68.7	--	--	--	105
PCB under LP4 / Converter Board	72.4	--	--	--	105
PCB under LP3 / Converter Board	72.5	--	--	--	105
CP10 body / Converter Board	67.2	--	--	--	105
PCB under TP2/ Converter Board	83.0	--	--	--	105
CP18 body/ Converter Board	68.0	--	--	--	100
PCB under UP2/ Converter Board	73.6	--	--	--	105
PCB under TP140/ Converter Board	75.8	--	--	--	105
PCB under TP139/ Converter Board	75.0	--	--	--	105
LCD Panel rear near label	68.6	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 21.5$ °C	25.0	--	--	--	--
LCD Panel front body	37.1	--	--	--	77
Measure at panel control board (N): model R213RFE-LU2 with two DC/DC converter board (G): model L213C102EA					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--

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Clause	Requirement + Test	Result - Remark			Verdict
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.1$ °C		50.0	--	--	--
PCB under L1 / control board		82.4	--	--	105
PCB under U22 / control board		85.7	--	--	105
PCB under L3 / control board		80.9	--	--	105
PCB under D4 / control board		83.4	--	--	105
PCB under U16 / control board		82.5	--	--	105
PCB under U26 / control board		81.5	--	--	105
PCB under U24 / control board		86.1	--	--	105
PCB under U19 / control board		80.9	--	--	105
PCB under LP4 / Converter Board (R)		80.6	--	--	105
PCB under LP3 / Converter Board (R)		78.8	--	--	105
CP10 body / Converter Board (R)		72.7	--	--	105
PCB under TP2/ Converter Board (R)		88.6	--	--	105
CP18 body/ Converter Board (R)		76.9	--	--	100
PCB under UP2/ Converter Board (R)		82.7	--	--	105
PCB under TP140/ Converter Board (R)		84.1	--	--	105
PCB under TP139/ Converter Board (R)		82.6	--	--	105
PCB under LP4 / Converter Board (L)		78.6	--	--	105
PCB under LP3 / Converter Board (L)		78.7	--	--	105
CP10 body / Converter Board (L)		72.1	--	--	105
PCB under TP2/ Converter Board (L)		86.7	--	--	105
CP18 body/ Converter Board (L)		71.6	--	--	100
PCB under UP2/ Converter Board (L)		82.8	--	--	105
PCB under TP140/ Converter Board (L)		85.3	--	--	105
PCB under TP139/ Converter Board (L)		82.8	--	--	105
LCD Panel rear near label		77.8	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.1$ °C		25.0	--	--	--
LCD Panel front body		46.7	--	--	77
Measure at panel control board (J): model R213TCE-LU4 (b type) with one DC/DC converter board (H): model L213C202EA (b type)					
Supply Voltage (V)		12.6 Vdc / 26.4 Vdc	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.1$ °C		50.0	--	--	--
PCB near U30		85.9	--	--	105
PCB near U19		80.2	--	--	105
PCB near U17		77.9	--	--	105
PCB near U29		76.2	--	--	105
PCB near L5		79.5	--	--	105

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Clause	Requirement + Test	Result - Remark			Verdict
PCB near LP4 / Converter Board	75.6	--	--	--	105
PCB near UP4 / Converter Board	71.5	--	--	--	105
PCB near TP139 / Converter Board	74.9	--	--	--	105
CP18 body / Converter Board	66.4	--	--	--	105
PCB near QP6 & QP5 / Converter Board	75.0	--	--	--	100
LCD Panel rear side near label	72.8	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.1$ °C	25.0	--	--	--	--
LCD Panel front body (Plastic)	35.7	--	--	--	77
Measure at panel control board with DC/DC Converter Circuit (O): model R213UCE-L22 (a type)					
Supply voltage (V)	13.2 Vdc / 13.2 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.1$ °C	50.0	--	--	--	--
PCB near LP6/Control board	74.9	--	--	--	105
PCB near U605/Control board	81.3	--	--	--	105
PCB near L602/Control board	86.7	--	--	--	105
LCD Panel rear near Label	66.2	--	--	--	105
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.1$ °C	25.0	--	--	--	--
LCD Panel front body (Plastic)	37.3	--	--	--	77
Measure at panel control board with DC/DC Converter Circuit (P): model R213RCE-LU1					
Supply voltage (V)	13.2 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 23.2$ °C	50.0	--	--	--	--
PCB near L4/Control board	81.8	--	--	--	105
PCB near U17/Control board	84.0	--	--	--	105
PCB near U3/Control board	84.8	--	--	--	105
PCB near L609	89.8	--	--	--	105
PCB near QP17	91.5	--	--	--	105
PCB near UP9	88.9	--	--	--	105
PCB near CR35	88.6	--	--	--	105
PCB near UP2	88.1	--	--	--	105
Label body	65.8	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.1$ °C	25.0	--	--	--	--
LCD Panel front body (Plastic)	44.2	--	--	--	77
Measure at panel control board (Q): model R213UCE-L01 (c type)					
Supply Voltage (V)	13.2 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.9$ °C	50.0	--	--	--	--
PCB near L604	75.3	--	--	--	105

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Clause	Requirement + Test	Result - Remark			Verdict
PCB near L603	71.3	--	--	--	105
PCB near U6	67.8	--	--	--	105
PCB near LP5	70.9	--	--	--	105
PCB near LP9	71.6	--	--	--	105
PCB near U21	75.0	--	--	--	105
PCB near Q4	67.8	--	--	--	105
LCD Panel rear near Label	60.1	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.9^{\circ}\text{C}$	25.0	--	--	--	--
LCD Panel front body (Plastic)	37.8	--	--	--	--
Measure at panel control board (R): model R213UCE-L02 (b type)					
Supply Voltage (V)	13.2 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.9^{\circ}\text{C}$	50.0	--	--	--	--
PCB near L604	75.4	--	--	--	105
PCB near L603	71.5	--	--	--	105
PCB near U6	67.7	--	--	--	105
PCB near LP5	71.3	--	--	--	105
PCB near LP9	72.0	--	--	--	105
PCB near U21	75.2	--	--	--	105
PCB near Q4	68.1	--	--	--	105
LCD Panel rear near Label	60.3	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.9^{\circ}\text{C}$	25.0	--	--	--	--
LCD Panel front body (Plastic)	38.1	--	--	--	77
Measure at panel control board (S): model R213UCE-L05 (b type)					
Supply Voltage (V)	13.2 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.4^{\circ}\text{C}$	50.0	--	--	--	--
PCB near L604	75.5	--	--	--	105
PCB near L603	71.6	--	--	--	105
PCB near U6	68.5	--	--	--	105
PCB near LP5	71.2	--	--	--	105
PCB near LP9	71.8	--	--	--	105
PCB near U21	75.6	--	--	--	105
PCB near Q4	68.1	--	--	--	105
LCD Panel rear near Label	60.9	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.4^{\circ}\text{C}$	25.0	--	--	--	--
LCD Panel front body (Plastic)	37.6	--	--	--	77
Measure at panel control board (T): model R213RFE-L01 (b type)					

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Clause	Requirement + Test	Result - Remark			Verdict
Supply Voltage (V)	12.6 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.5^{\circ}\text{C}$	50.0	--	--	--	--
CP10 body / D to D converter	67.3	--	--	--	105
PCB near LP3 and LP4 / D to D converter	73.4	--	--	--	105
PCB near QP1 / D to D converter	75.0	--	--	--	105
CP17 body / D to D converter	66.8	--	--	--	105
PCB near UP1 / D to D converter	75.8	--	--	--	105
PCB near U15 / Control board	81.3	--	--	--	105
PCB near U17 / Control board	79.2	--	--	--	105
PCB near L2 / Control board	79.2	--	--	--	105
PCB near U22 / Control board	80.4	--	--	--	105
LCD Panel rear near Label	70.9	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.5^{\circ}\text{C}$	25.0	--	--	--	--
LCD Panel front body (Plastic)	45.1	--	--	--	77
Measure at panel control board (U): model R213TCE-LU3					
Supply Voltage (V)	13.2 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.7^{\circ}\text{C}$	50.0	--	--	--	--
CP10 body / converter board	69.4	--	--	--	105
PCB near LP4 and LP3 / converter board	78.9	--	--	--	105
CP17 body / converter board	64.0	--	--	--	105
PCB near QP6 / converter board	77.8	--	--	--	105
PCB near UP4 / converter board	68.5	--	--	--	105
PCB near UP3 / converter board	72.6	--	--	--	105
PCB near L1 near L2 / control board	77.6	--	--	--	105
PCB near U16 / control board	74.6	--	--	--	105
PCB near U31 / control board	76.9	--	--	--	105
LCD Panel rear near label	71.9	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.7^{\circ}\text{C}$	25.0	--	--	--	--
LCD Panel front body (Plastic)	44.2	--	--	--	77
Measure at panel control board (V): model R213TCE-L1N					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 24.5^{\circ}\text{C}$	50.0	--	--	--	--
PCB near LP3 / converter board	60.6	--	--	--	105
PCB near LP4 / converter board	59.3	--	--	--	105
CP7 body / converter board	56.0	--	--	--	105

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Clause	Requirement + Test	Result - Remark			Verdict
PCB near QP6 and QP5 / converter board	59.8	--	--	--	105
PCB near L4 / control board	65.8	--	--	--	105
PCB near U16 / control board	65.5	--	--	--	105
PCB near U3 / control board	66.6	--	--	--	105
LCD Panel rear near label	55.9	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 24.5$ °C	25.0	--	--	--	--
LCD Panel front body (Plastic)	28.6	--	--	--	77
Measure at panel control board (W): model R213ATE-LU1(c type) and DC/DC converter board (G): model L213C102EA					
Supply Voltage (V)	12.6 Vdc / 26.4 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 24.6$ °C	50.0	--	--	--	--
PCB near LP4 and LP3 / converter board	82.5	--	--	--	105
CP17 and CP18 body / converter board	69.0	--	--	--	105
PCB near QP1 / converter board	81.9	--	--	--	105
PCB near UP2 / converter board	78.5	--	--	--	105
PCB near UP1 / converter board	80.8	--	--	--	105
PCB near L2 and L3 / control board	84.6	--	--	--	105
PCB near L6 / control board	83.8	--	--	--	105
PCB near U19 / control board	82.7	--	--	--	105
PCB near L5 / control board	83.2	--	--	--	105
LCD Panel rear near label	74.9	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 24.6$ °C	25.0	--	--	--	--
LCD Panel front body (Plastic)	49.2	--	--	--	77
Measure at panel control board (X): model R213UCE-L02 (c type)					
Supply Voltage (V)	13.2 Vdc	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.2$ °C	50.0	--	--	--	--
PCB near L604	73.5	--	--	--	105
CP17 and U5	64.3	--	--	--	105
PCB near LP9	66.3	--	--	--	105
PCB near LP5	68.3	--	--	--	105
LCD Panel rear near label	62.2	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.2$ °C	25.0	--	--	--	--
LCD Panel front body (Plastic)	30.0	--	--	--	77
Measure at panel control board (Y): model R213UCE-L22 (b type)					
Supply Voltage (V)	13.2 Vdc	--	--	--	--

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Clause	Requirement + Test			Result - Remark			Verdict
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.7$ °C		50.0	--	--	--	--	--
PCB near L603		79.0	--	--	--	--	105
CP17 and U5		66.1	--	--	--	--	105
PCB near LP9		68.4	--	--	--	--	105
PCB near LP5		71.5	--	--	--	--	105
LCD Panel rear near label		60.2	--	--	--	--	--
Max. ambient temperature T_{ma} (°C): Note: ambient air during test were $T_{amb} = 22.7$ °C		25.0	--	--	--	--	--
LCD Panel front body (Plastic)		34.6	--	--	--	--	77
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							

B.2.5		TABLE: Input test						P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Measure at panel control board (A): model R213TFE-L53 and DC/DC converter board (A): model L213H1-2EA								
12.6 Vdc	--	0.88	1.5	11.09	--	--	--	Max. Normal Load
26.4 Vdc	--	1.07	3.4	28.25	--	--	--	Max. Normal Load
Measure at panel control board (B): model R213RFE-L01 (a type) and DC/DC converter board (B): model L190M1-1EA								
12.6 Vdc	--	0.48	1.5	6.05	--	--	--	Max. Normal Load
26.4 Vdc	--	2.20	3.4	58.08	--	--	--	Max. Normal Load
Measure at panel control board (C): model R213TFE-L54 and DC/DC converter board (A): model L213H1-2EA								
12.6 Vdc	--	1.0	1.5	12.6	--	--	--	Max. Normal Load
26.4 Vdc	--	2.20	3.4	58.08	--	--	--	Max. Normal Load
Measure at panel control board (D): model R213UCE-L01 (a type)								
13.2 Vdc	--	0.22	1.1	2.9	--	--		Max. Normal Load
Measure at panel control board (E): model R213TFE-L5B and DC/DC converter board (C): model L213H102EA (a type)								
12.6 Vdc	--	1.11	1.5	14.0	--	--	--	Max. Normal Load
26.4 Vdc	--	2.26	3.4	59.7	--	--	--	Max. Normal Load
Measure at panel control board (F): model R213ATE-LU1(a type) and DC/DC converter board (D): model L213C101EA								
12.6 Vdc	--	0.39	1.5	4.9	--	--	--	Max. Normal Load

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Clause	Requirement + Test				Result - Remark			Verdict
26.4 Vdc	--	2.48	3.4	65.47	--	--	--	Max. Normal Load
Measure at panel control board with DC/DC Converter Circuit (G): model R213UCE-L01 (b type)								
13.2 Vdc	--	0.34	1.1	4.49	--	--	--	Max. Normal Load (for LCD Panel)
13.2 Vdc	--	1.06	3.3	14.0	--	--	--	Max. Normal Load (for Converter)
Measure at DC/DC Converter Circuit (E): model L213H102EA (b type)								
26.4 Vdc	--	1.0	3.4	26.4	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (H): model R213UCE-L04								
13.2 Vdc	--	0.35	1.1	4.62	--	--	--	Max. Normal Load (for LCD Panel)
13.2 Vdc	--	2.03	3.3	31.68	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board (I): model R213TCE-LU4 (a type)								
12.6 Vdc	--	1.06	1.5	13.36	--	--	--	Max. Normal Load (for LCD Panel)
Measure at panel control board (J): model R213TCE-LU4 (b type) and DC/DC converter board (F): model L213C202EA								
12.6 Vdc	--	1.03	1.5	12.98	--	--	--	Max. Normal Load (for LCD Panel)
26.4 Vdc	--	1.8	3.4	47.52	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (K): model R213UCE-L02 (a type)								
13.2 Vdc	--	0.39	1.1	5.14	--	--	--	Max. Normal Load (for LCD Panel)
13.2 Vdc	--	2.67	3.3	35.24	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (L): model R213UCE-L05 (a type)								
13.2 Vdc	--	0.34	1.1	4.49	--	--	--	Max. Normal Load (for LCD Panel)
13.2 Vdc	--	2.23	3.3	29.44	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board (M): model R213ATE-LU1(b type) and DC/DC converter board (D): model L213C101EA								
12.6 Vdc	--	1.02	1.5	12.852	--	--	--	Max. Normal Load (for LCD Panel)
26.4 Vdc	--	1.34	3.4	35.376	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board (N): model R213RFE-LU2 with one DC/DC converter board (G): model L213C102EA								
12.6 Vdc	--	0.52	1.5	6.552	--	--	--	Max. Normal Load (for LCD Panel)
26.4 Vdc	--	1.05	3.4	27.720	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board (N): model R213RFE-LU2 with two DC/DC converter board (G): model L213C102EA								
12.6 Vdc	--	0.51	1.5	6.426	--	--	--	Max. Normal Load (for LCD Panel)
26.4 Vdc	--	0.96	3.4	25.344	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board (J): model R213TCE-LU4 (b type) with one DC/DC converter board (H): model L213C202EA (b type)								

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Clause	Requirement + Test				Result - Remark			Verdict
12.6 Vdc	--	0.90	1.5	11.34	--	--	--	Max. Normal Load (for LCD Panel)
26.4 Vdc	--	1.76	3.4	46.46	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (O): model R213UCE-L22 (a type)								
13.2 Vdc	--	0.32	1.1	5.4	--	--	--	Max. Normal Load (for LCD Panel)
13.2 Vdc	--	2.24	3.3	29.6	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (P): model R213RCE-LU1								
12.6 Vdc	--	0.97	1.5	12.22	--	--	--	Max. Normal Load (for LCD Panel)
26.4 Vdc	--	1.59	3.4	41.98	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (Q): model R213UCE-L01 (c type)								
13.2 Vdc	--	0.35	1.1	4.62	--	--	--	Max. Normal Load (for LCD Panel)
13.2 Vdc	--	0.87	3.3	11.48	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (R): model R213UCE-L02 (b type)								
13.2 Vdc	--	0.35	1.1	4.62	--	--	--	Max. Normal Load (for LCD Panel)
13.2 Vdc	--	2.33	3.3	30.76	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (S): model R213UCE-L05 (b type)								
13.2 Vdc	--	0.35	1.1	4.62	--	--	--	Max. Normal Load (for LCD Panel)
13.2 Vdc	--	2.52	3.3	33.26	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (T): model R213RFE-L01 (b type)								
12.6 Vdc	--	0.514	1.5	6.476	--	--	--	Max. Normal Load (for LCD Panel)
26.4 Vdc	--	1.864	3.4	49.21	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (U): model R213TCE-LU3								
13.2 Vdc	--	0.69	1.1	9.108	--	--	--	Max. Normal Load (for LCD Panel)
26.4 Vdc	--	1.70	3.4	44.88	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board with DC/DC Converter Circuit (V): model R213TCE-L1N								
12.6 Vdc	--	0.59	1.5	7.434	--	--	--	Max. Normal Load (for LCD Panel)
26.4 Vdc	--	1.59	3.4	41.976	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board (W): model R213ATE-LU1(c type) and DC/DC converter board (G): model L213C102EA								
12.6 Vdc	--	1.03	1.5	12.978	--	--	--	Max. Normal Load (for LCD Panel)
26.4 Vdc	--	1.17	3.4	30.888	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board (X): model R213UCE-L02 (c type)								

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Clause	Requirement + Test				Result - Remark			Verdict
13.2 Vdc	--	0.33	1.1	4.356	--	--	--	Max. Normal Load (for LCD Panel)
13.2 Vdc	--	1.67	3.3	22.044	--	--	--	Max. Normal Load (for Converter)
Measure at panel control board (Y): model R213UCE-L22 (b type)								
13.2 Vdc	--	0.19	1.1	2.508	--	--	--	Max. Normal Load (for LCD Panel)
13.2 Vdc	--	1.13	3.3	14.916	--	--	--	Max. Normal Load (for Converter)
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured								

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Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: Critical components information					P
LCD Panel	INNOLUX	R213TFE-LXX; R213RFE-LXX (X=0-9, A-Z or blank, for marketing purpose and no impact safety related critical components and constructions)	21.3" TFT type LED backlight	--	--	
LCD Panel	INNOLUX	R213UCE-LXX (X=0-9, A-Z or blank, for marketing purpose and no impact safety related critical components and constructions)	21.3" TFT type LED backlight	--	--	
LCD Panel	INNOLUX	R213ATE-LXX (X=0-9, A-Z or blank, for marketing purpose and no impact safety related critical components and constructions)	21.3" TFT type LED backlight	--	--	
LCD Panel	INNOLUX	R213TCE-LXX (X=0-9, A-Z or blank, for marketing purpose and no impact safety related critical components and constructions)	21.3" TFT type LED backlight	--	--	
LCD Panel	INNOLUX	R213RCE-LXX (X=0-9, A-Z or blank, for marketing purpose and no impact safety related critical components and constructions)	21.3" TFT type LED backlight	--	--	
PCB material	Interchangeable	Interchangeable	V-1 min., 105°C min	UL796	UL	
DC/DC converter board	INNOLUX	L213H1-2EA	I/P: 26.4Vdc max, 1.5A max O/P: 43.2Vdc, 200mA (each one)	--	--	

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Clause	Requirement + Test		Result - Remark		Verdict
DC/DC converter board	INNOLUX	L190M1-1EA	I/P: 26.4Vdc max, 2.0A max O/P: 35Vdc, 150mA (each one)	--	--
DC/DC converter board	INNOLUX	L213H102EA	I/P: 26.4Vdc max, 1.5A max. O/P: 40.8Vdc max., 85mA (each one)	--	--
DC/DC converter board	INNOLUX	L213C101EA	I/P: 26.4Vdc max, 1.73A max. O/P: 43.2Vdc max., 144mA (each one)	--	--
DC/DC converter board	INNOLUX	L213C202EA	I/P: 26.4Vdc max, 2.3A max. O/P: 42.9Vdc max., 140mA (each one)	--	--
DC/DC converter board	INNOLUX	L213C102EA	I/P: 26.4Vdc max, 1.5A max. O/P: 35Vdc max., 120mA (each one)	--	--
DC/DC converter board	INNOLUX	L213C202EA	I/P: 26.4Vdc max, 2.3A max. O/P: 42.9Vdc max., 140mA (each one)	--	--
PCB material (for DC/DC converter)	Interchangeable	Interchangeable	V-1 min., 105°C min	UL796	UL
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) The CBTL has verified the component information. 3) In case of the publication year of component standards listed above is not noted, the component license shall be available upon request.					

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Customer's Testing Facility according to CTF stage 1 or CTF stage 2 procedure has been used.

Note: This page may be removed when CTF stage 1 or CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date

Statement of Measurement Uncertainty

The Test Report shall include a statement concerning the uncertainty of the measurement systems used for the tests conducted when it is required by the standard, client or other authorities.
In such cases, the table below is to be used for reporting U of M.

This page may be removed from the final Test Report when not required. See also clause 4.8 in OD 2020 for more details.

Clause #	Parameter/ Measurement / test method	Requirement % or k	Calculated U of M*

*Note: Calculations leading to the reported value are on file with the NCB

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 62368-1:2020+A11:2020			
Attachment Form No..... : EU_GD_IEC62368_1E			
Attachment Originator : UL(Demko)			
Master Attachment..... : 2021-02-04			
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	CENELEC COMMON MODIFICATIONS (EN)		—
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".		—
	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords		—
1	Modification to Clause 3.		—
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>		N/A
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.3	sound exposure, E A-weighted sound pressure (p) squared and integrated over a stated period of time, T Note 1 to entry: The SI unit is $\text{Pa}^2 \text{ s}$. $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	sound exposure level, SEL logarithmic measure of sound exposure relative to a reference value, E_0 , typically the 1 kHz threshold of hearing in humans. Note 1 to entry: SEL is measured as A-weighted levels in dB. $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.		N/A
3.3.19.5	digital signal level relative to full scale, dBFS levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.		N/A
2	Modification to Clause 10		—
10.6	Safeguards against acoustic energy sources Replace 10.6 of IEC 62368-1 with the following:		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.1.1	Introduction Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an ordinary person, that: – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible. Listening devices sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	The requirements do not apply to: – professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. – a player while connected to an external amplifier that does not allow the user to walk around while in use. For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply. The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		
10.6.1.2	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body mounted devices, attention is drawn to EN 50360 and EN 50566.		N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.2.1	General This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3. For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song. NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2) RS1 is a class 1 acoustic energy source that does not exceed the following: - for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the LAeq,T acoustic output shall be ≤ 85 dB when playing the fixed "programme simulation noise" described in EN 50332-1. - for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1. - The RS1 limits will be updated for all devices as per 10.6.3.2.		N/A
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3) RS2 is a class 2 acoustic energy source that does not exceed the following: - for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the LAeq,T acoustic output shall be ≤ 100 dB(A) when playing the fixed "programme simulation noise" as described in EN 50332-1. - for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed "programme simulation noise" as described in EN 50332-1.		N/A
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	Classification of devices (new)		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.		N/A
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: - for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the LAeq,T acoustic output shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. - for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.3.3	RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: - for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. - for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.		N/A
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.4.2	Protection of persons Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3. NOTE 1 Volume control is not considered a safeguard. Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use. The elements of the instructional safeguard shall be as follows: – element 1a: the symbol , IEC 60417-6044 (2011-01) – element 2: “High sound pressure” or equivalent wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off. The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time. NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed. NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off. A skilled person shall not be unintentionally exposed to RS3.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	General requirements Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause. The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration. The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		N/A
10.6.5.2	Dose-based warning and requirements When a dose of 100 % CSD is reached, and at least at every 100 % further increase of CSD, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1. The warning shall at least clearly indicate that listening above 100 % CSD leads to the risk of hearing damage or loss.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.5.3	Exposure-based requirements With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at. The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input With 94 dB $L_{Aeq T}$ acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed “programme simulation noise” as described in EN 50332-1 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices In cordless mode, - with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and - respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and - with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>		N/A
3	Modification to the whole document		—

IEC62368_1E - ATTACHMENT							
Clause	Requirement + Test				Result - Remark		Verdict
	Delete all the “country” notes in the reference document according to the following list:						P
	0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1	Note 2	
	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and 2	
	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and 3	
	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1	Note	
	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3	Note	
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3 and 4	
	5.6.8	Note 2	5.7.6	Note	5.7.7.1	Note 1 and Note 2	
	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3	Note 2	
	10.6.1	Note 3	F.3.3.6	Note 3	Y.4.1	Note	
	Y.4.5	Note					
4	Modification to Clause 1						—
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.						P
5	Modification to 4.Z1						—

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.21	Add the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		N/A
6	Modification to 5.4.2.3.2.4		—
5.4.2.3.2.4	Add the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.	No external circuits	N/A
7	Modification to 10.2.1		—
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.		N/A
8	Modification to 10.5.1		—

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 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 10 cm from the outer surface of the apparatus. 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 96/29/Euratom of 13 May 1996.		N/A
9	Modification to G.7.1		—
G.7.1	Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A
10	Modification to Bibliography		—

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Add the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		N/A
11	ADDITION OF ANNEXES		—
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		—
4.1.15	Denmark, Finland, Norway and Sweden To the end of the subclause the following is added: Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordnet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	United Kingdom To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A
5.2.2.2	Denmark After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.1 and Annex G	Finland and Sweden To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 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 60384-14:2005, subclass Y2.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	A capacitor classified Y3 according to EN 60384-14:2005, 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 5.4.11; - 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.		
5.5.2.1	Norway After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A, the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	France After the indent for pluggable equipment type A, the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm² to 1,5 mm² in cross-sectional area.		N/A
5.6.8	Norway To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment. See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.		N/A
5.7.6	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA.		N/A
5.7.7.1	Norway and Sweden To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.3	United Kingdom Add the following after the 2nd dash bullet in 3rd paragraph: An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.		N/A
B.3.1 and B.4	Ireland and United Kingdom The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32 A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Denmark To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a <i>Justification:</i> Heavy Current Regulations, Section 6c		N/A
G.4.2	United Kingdom To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	United Kingdom To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525:1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		—

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.2	Germany The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de		N/A
ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		—

IEC62368_1E - ATTACHMENT								
Clause	Requirement + Test	Result - Remark	Verdict					
	<table><tr><th rowspan="2">Type of flexible cord</th><th colspan="2">Code designations</th></tr><tr><th>IEC</th><th>CENELEC</th></tr></table>		Type of flexible cord	Code designations		IEC	CENELEC	—
	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						

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 U.S.A. AND CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to: CSA/UL 62368-1:2019			
TRF template used: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No: US_CA_ND_IEC62368_1E			
Attachment Originator: UL(US)			
Master Attachment: Dated 2022-03-04			
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IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits ($\leq 200V$ per conductor to earth).		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		P
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.		N/A
5.4.2.3.2 (5.4.2.3.2.1)	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.		N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.		N/A
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.		N/A
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked "W."		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.		N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.		N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20 A.		N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.		N/A
Annex DVA (10.3)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.4)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g.120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.		N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and maximum current, or maximum voltage and nominal current output for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centers, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.		P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.2.1)	For safe and reliable connection to a mains, permanently connected equipment is to be provided.		N/A
Annex DVH (DVH.2.2)	Additional considerations for D.C. mains.		N/A
Annex DVH (DVH.3.2.1)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
Annex DVH (DVH.3.2.3)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2.4)	All associated mains supply terminals are located in proximity to each other and to the main protective earthing terminal, if any.		N/A
Annex DVH (DVH.3.2.5)	Terminals are located, guarded or insulated so that, should a strand of a conductor escape when the conductor is fitted, there is no likelihood of accidental contact between such a strand and accessible conductive parts or unearthed conductive parts separated from accessible conductive parts by supplementary insulation only.		N/A
Annex DVH (DVH.3.3)	When field connection to an external circuit is via wires (example, free conductors), the wires are not smaller than 18 AWG (0.82 mm ²) and the free length of the wire inside an outlet box or wiring compartment is 150 mm or more.		N/A
Annex DVH (DVH.3.4)	Size of protective earthing conductors and terminals		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH.4.1)	Wire bending space		N/A
Annex DVH (DVH.4.2)	Volume of wiring compartment		N/A
Annex DVH (DVH.4.3)	Separation of circuits		N/A
Annex DVH (DVH.5)	Equipment markings and instructional safeguards		N/A
Annex DVH (DVH.5.1)	Identification of protective earthing terminal		N/A
Annex DVH (DVH.5.2)	Identification of terminal for earthed conductor (neutral)		N/A
Annex DVH (DVH.5.3)	Identification of terminals for aluminium conductors		N/A
Annex DVH (DVH.5.4)	Wire temperature ratings		N/A
Annex DVH (DVH.5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)			
Differences according to : AS/NZS 62368.1:2022			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : AU_NZ_ND_IEC62368_1E			
Attachment Originator : JAS-ANZ			
Master Attachment : 2022-07-01			
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	National Differences		—
Appendix ZZ	Variations to IEC 62368-1:2018 (ED. 3.0) for Australia and New Zealand		—
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2018 (ED. 3.0)		—
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		—
2	After the first paragraph, add the following: The Australian or Australian/New Zealand Standards listed below are modified adoptions of, or not equivalent to, the IEC normative references and are required for the application of this Standard. All references in the source text to those IEC normative references shall be replaced by references to the corresponding Australian or Australian/New Zealand Standards. Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably - AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i> - AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i> - AS/NZS 3191, <i>Electric flexible cords</i> - AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i> - IEC 60086-2 <i>Primary batteries — Part 2: Physical and electrical specifications</i> - AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i> - AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1:</i>		N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<i>General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i> - AS/NZS 60320.2.2, <i>Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i> - AS/NZS 60695.2.11, <i>Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i> - AS/NZS 60695.11.5, <i>Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i> - AS/NZS 60695.11.10, <i>Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i> - AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i> - AS/NZS 60950.1, <i>Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i> <i>IEC 61032:1997, Protection of persons and equipment by enclosures—Probes for verification</i> - AS/NZS 61558.1, <i>Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 3, MOD)</i> - AS/NZS 61558.2.16, <i>Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</i>		
4.7.2	Requirements Delete the text of the second paragraph and replace with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet conforming to AS/NZS 3112, shall conform to the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets. Conformity is checked by inspection and, if necessary, by the tests in AS/NZS 3112. NOTE: Equipment with plug portions for use in countries other than Australia and New Zealand will need to conform to other countries' requirements Note Additional AS/NZS 3112 Appendix J, TRF is appended to end of this TRF.		N/A

IEC 62368_1E ATTACHMENT					
Clause	Requirement + Test		Result - Remark		Verdict
4.7.3	Compliance Criteria Delete this clause				N/A
4.8.1	General After second list, add the following: NOTE: Refer to the Consumer Goods (Products Containing Button/Coin Batteries) Safety Standard 2020 and Consumer Goods (Products Containing Button/Coin Batteries) Information Standard 2020 for more information on button cell batteries in Australia.				N/A
5.4.10.2.1	General Delete the first paragraph and replace with the following: In Australia, the separation is checked by the test given in both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test given in either 5.4.10.2.2 or 5.4.10.2.3.				N/A
Table 28	Delete Table 28 and replace with the following:				N/A
Parts		Impulse test		Steady state test	
		New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) ^a		2.5 kV	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment.	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) ^b		1.5 kV ^c		1.0 kV	1.5 kV
^a Surge suppressors shall not be removed. ^b Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. ^c During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.					
5.4.10.2.2	Delete “NOTE” and replace with “NOTE 1”. After NOTE 1, add the following: NOTE 2: For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 3: For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.				N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.3	Delete "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 3: The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	Electrically-caused fire		P
6.6	After Clause 6.6, <i>add</i> the new Clauses 6.201 as follows: 6.201 External power supplies, docking stations and other similar devices (see special national conditions)		N/A
8.6	Stability of equipment		N/A
Table 36	Footnote ^a, after first sentence, add the following: Equipment having displays with moving images shall include "television sets and display devices".		N/A
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.201 Restraining Device fixing point (see special national conditions) 8.6.202 Restraining device (see special national conditions)		N/A
Annex F Paragraph F.3.3.4	Rated Voltage Delete "NOTE" and <i>replace</i> with NOTE1" After NOTE 1, <i>add</i> the following Equipment that is intended for connection to the supply mains in Australia and New Zealand shall be marked with: (a) A rated voltage of: • 230 V for single phase equipment • 400 V for poly phase equipment or (b) A rated voltage range that includes: • 230 V for single phase equipment • 400 V for poly phase equipment NOTE 2: equipment that is not rated as above is not suitable for direct connection to the supply mains in Australia or New Zealand.		N/A
Annex F.3.3.5	After the list, <i>add</i> the following Equipment that is intended for connection to supply mains in Australia or New Zealand shall be marked with a rated frequency of 50 Hz or a rated frequency range or nominal value which includes 50 Hz		N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F.3.8	After “The DC output of an external power supply”, insert “or docking stations and other similar external devices”		N/A
Annex G Paragraph G.4.2	Mains connectors 1 After “IEC 60320”, insert “or AS/NZS 60320 series”. 2 After “IEC 60906-1”, insert “or AS/NZS 3123” 3 <i>After</i> first paragraph add the following: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		N/A
Paragraph G.5.3.1	Transformers, General 1 Third dashed point <i>replace</i> ‘IEC 61558-1 and the relevant parts of IEC 61558-2’ with ‘AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2’ 2 Fourth dashed point <i>replace</i> ‘IEC 61558-2-16’ with ‘AS/NZS 61558.2.16’.		N/A
Annex G.7.1	Mains supply cords, General Fourth dashed paragraph, replace ‘IEC 60320-1’ with ‘AS/NZS 60320.1’		N/A
Table G.7	Sizes of conductors 1 First column, second row, <i>delete</i> “6” and <i>replace</i> with “7.5” 2 Second column, second row, <i>delete</i> ‘0,75’ and <i>replace</i> with ‘0.75 ^b ’ 3 <i>Delete</i> NOTE 1. 4 <i>Replace</i> ‘NOTE 2’ with ‘NOTE:’. 5 <i>Delete</i> ‘Footnote b’ and <i>replace</i> with the following: ^b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 Footnote c <i>replace</i> ‘IEC 60320-1’ with ‘AS/NZS 60320.1’ 7 Footnote d <i>replace</i> ‘IEC 60320-1’ with ‘AS/NZS 60320.1’		N/A
Annex M M 2.1	<i>Add</i> “IEC 60086-2” to the list		N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex M Paragraph M.3.2	Test method Delete "NOTE" and replace with "NOTE 1" After NOTE 1 add the following: NOTE 2: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of ES1 may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A
	Special national conditions (if any)		N/A
6.201	External power supplies, docking stations and other similar devices For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— (a)..at all ES1 outlets or connectors shall not increase by more than 10 % of the output rated voltage under normal operating conditions, measured after 3 s of introducing a single fault condition and after 3 s of introducing abnormal operating conditions; and (b)..of a USB outlet or connector shall not increase by more than 3 V or 10 % of the output rated voltage under normal operating conditions, whichever is higher, measured after 3 seconds of introducing a single fault condition and after 3 s of introducing abnormal operating conditions For equipment with multiple rated voltages at the output, the requirements apply with the equipment configured for each output rated voltage in turn NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. The 3 s measurement delay is based on IEC document 108/742/INF, <i>TC 108, Standards Interpretation Panel Question 15 — Output voltage</i> , in relation to similar requirements in IEC 62368-3:2017. Conformity shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single fault conditions of Annex B.4.	Considered	P

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.201	Restraining device fixing point Freestanding-capable MS2 and MS3 television sets and display devices shall be provided with a fixing point to facilitate the anchoring of the equipment from toppling The fixing point shall conform to Clause 8.7 where the fixing point uses a wall, ceiling or other structure mount. Alternatively, the fixing point shall be capable of withstanding a pull equal to the mass of the equipment in all directions without damage Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point		N/A
8.6.202	Restraining device MS2 and MS3 television sets and display devices shall be provided with a restraining device and associated hardware to attach to the television set or display device. The restraining device shall be capable of withstanding a pull equal to the mass of the equipment in all directions. Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point.		N/A

AS/NZS 3112:2017 Appendix J			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT AS_NZS_3112:2017_+A1:2021 Appendix J AUSTRALIAN / NEW ZEALAND NATIONAL DIFFERENCES (Approval and test specification—Plugs and socket-outlets)			
Differences according to.....: AS_NZS_3112:2017_Amendment 1:2021_Appendix J			
TRF template used:.....: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: AS_NZS_3112:2017_Appendix J			
Attachment Originator.....: JAS-ANZ			
Master Attachment.....: 2022-06			
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	Note: AS/NZS 3112 is NOT covered by IECEE Accreditation for Testing / Reporting Please State Laboratory Accreditation for this Standard		—
	Accreditation		—
	Accreditation Stamp		—

J1 SCOPE	General: This Appendix specifies additional dimensional and constructional requirements for detachable plug portions, or equipment incorporating integral supply pins or equipment incorporating detachable plug portions. This Appendix shall be read in conjunction with Section 2 of this Standard. For the purposes of this Appendix, where the term 'plug' is used in Section 2 it shall be taken to mean the plug portion of equipment or the detachable plug portion. The equipment shall comply with the relevant product Standard. The tests and requirements specified in this Appendix are in addition to any test and requirements of the relevant product Standard for the equipment. (AS/NZS 3112:2017/A1:2021)	N/A
J2	DEFINITION	N/A

AS/NZS 3112:2017 Appendix J			
Clause	Requirement + Test	Result - Remark	Verdict
J2.1	Detachable plug portion A plug portion that is detachable from the equipment and with connections including the following standardized outputs and other contacts (a) Type A (see Figure J1): A detachable plug portion with a connection intended for plugging directly into equipment. The connection being via the equipment group 1 appliance inlet within the scope of AS/NZS 60320.1. (b) Type B (see Figure J2): A detachable plug portion with a non-standardized connection intended for plugging directly into equipment (c) Type C (see Figure J3): A detachable plug portion with a connection intended for use with an adaptor connected to a flexible cord so as to replicate a supply plug and flexible cord configuration. the connection being via a group 1 appliance outlet within scope of AS/NZS 60320.2.2, which is integral with the plug portion (AS/NZS 3112:2017)		N/A
J2.2	Integral plug portion A plug portion that is integral to the equipment enclosure and is not detachable (AS/NZS 3112:2017)		N/A
J2.3	Plug portion A plug portion is that portion of equipment with pins for insertion into a socket-outlet, including the plug pins, terminals of the plug pins, external dimensions of the 'maximum projection' and any connections of a detachable plug portion. (AS/NZS 3112:2017/A1:2021)		N/A

J3	REQUIREMENTS FOR THE PLUG PORTION	N/A
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J3.1	General The following provisions apply to the dimensional and constructional requirements of plug portions of equipment and any detachable connection between the plug portion and the equipment:		N/A
(a)	For detachable plug portions intended for connection to the equipment in multiple orientations, the relevant tests are performed in the most onerous orientation.		N/A
(b)	For Type A detachable plug portion, the relevant requirements of AS/NZS 3105:2014 are applicable, in addition to conformance with relevant clauses of this Appendix	See Test Report xxx to AS/NZS 3105:2014 Test Report xxx to AS/NZS 60320.1 for the Group 1 appliance inlet portion.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(c)	For Type B detachable plug portions, the conformance is shown by the relevant clauses of this Appendix.		N/A
(d)	For Type C detachable plug portions, conformance is shown by assessment to Section 2 of this Standard (plugs) and relevant clauses of this Appendix (AS/NZS 3112:2017)	See also Test Report xxx to AS/NZS 60320.2.2 for the Group 1 appliance outlet portion.	N/A

J3.2	Plug pins of plug portions The requirements of Clause 2.2 are applicable for plug pins.	N/A
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2.2	PLUG PINS	N/A
2.2.1	Current carrying parts of plug pins of metal having sufficient mechanical strength, electrical conductivity and resistance to corrosion adequate for the intended use	N/A
	Plug pin material?	N/A

2.2.3	Plug pins adequately proportioned throughout and portion adjacent to the connection designed to not introduce a stress concentration which may lead to a fracture of the pin, and suitably shaped to prevent abrasion or cutting of conductor strands due to flexure in normal use	N/A
	Exposed ends of plug pins have a lead-in, bevel or radius to facilitate entry into socket-outlets and to operate shutters	N/A
	Flat-pins with the following profile are deemed to comply:	—
(a)	Flat-pins with a radius on the end with side bevels may have a width and thickness profile as specified in Figure 2.1(h)	N/A
(b)	Flat-pins square on the end with corner and side bevels may have a width and thickness profile as specified in Figure 2.1(i)	N/A
(c)	Flat-pins square on the end with corner bevels and a radius on the sides may have a width and thickness profile as specified in Figure 2.1(j)	N/A
	Contact portion of the pins smooth and free from openings or indentations	N/A
	Flat pin plugs having a longitudinal seam or opening in the contact portion of one face; width not exceeding 0.3 mm and	N/A
	Thickness not exceeding 1.58 mm	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Exposed portion of earthing pins and pins other than insulated pins free from any non-metallic coverings or coatings (AS/NZS 3112:2017)		N/A
2.2.4	Live parts of insulated pin plugs not exposed when plug is partially or fully engaged with associated socket		N/A
	Compliance by measurement to Figure 2.4	(see appended table)	N/A
	Lacquer, enamel or sprayed insulating coating not considered to be insulation material		N/A
	All live pins on low voltage plugs except for those shown in Figure 2.1 (a2), (b) and (g) of the insulated pin type		N/A
	Colour green or green / yellow not used for insulation of insulated pins (AS/NZS 3112:2017)		N/A

J3.3	Ratings and dimensions for low-voltage plug portions Requirements of clauses 2.8.1 and 2.8.4 apply for rating and dimensions	N/A
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2.8	Ratings and Dimensions of Low Voltage Plugs		—
2.8.1	Plugs with ratings up to and including 20A; shall conform to the appropriate dimensions shown in Figure 2.1	(see appended results)	N/A
	Rating of plug	___A	—
	Nominal dimensions covering disposition of pins checked by gauge of Appendix A		N/A
	Distance between live pin and edge of moulding to not less than 9 mm		N/A
	Measured distance	___mm	—
	No point on plug face protrudes more than 0.5 mm		N/A
	Measured protrusion	___mm	—
	Dimensional requirements of Figure 2.1(e2) did not applied to plugs with greater than three pins (AS/NZS 3112:2017)		N/A
2.8.4	Low voltage plugs comply with dimensions of Figure 2.1	(see appended table 2.8.1)	N/A
	Disposition of pins checked by gauge complying with Appendix A, B or F as appropriate		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Low voltage plug having rating up to 15 A and of the Figure 2.1 (a1), (c), (d), (f) or (g) type; comply with dimensional requirements of Figure 2.1 (e1 and e2)		N/A
	20 A plug of Figure 2.1 (a2) type complies with dimensional requirements of Figure 2.1 (e2)		N/A
	Plugs with insulated pins need not comply with dimension $R20.0 \pm 1$ mm requirement of Figure 2.1 (e3) provided there is at least 9mm from the edge of the live pins to the edge of the plug face Figure 2.1(e3). (AS/NZS 3112:2017)		N/A

J3.4	Internal connections for plug portions Requirements of clause 2.9 apply for internal connections, unless requirements contained in the relevant product standard (AS/NZS 3112:2017)	N/A
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2.9	INTERNAL CONNECTIONS	N/A
	Plug provided with earthing connections designed and constructed so that when plug is correctly wired and assembled:	N/A
(a)	Loose terminal screw or conductive material cannot bridge any live or earthed parts	N/A
(b)	Earthing parts effectively isolated from contact with live conductor which may become detached	N/A
(c)	Live parts effectively isolated from contact with any earthing conductor which may become detached	N/A
	Any connections for auxiliary devices comply with above requirements (AS/NZS 3112:2017)	N/A

J3.5	Arrangement of earthing connections for plug portions Requirements of clause 2.10 apply for arrangement of earthing connections	N/A
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2.10	Arrangement of earthing connections	N/A
	Earthing pin radial to the circle embracing the pins (AS/NZS 3112:2017)	N/A

J3.6	Configuration of plug portions Requirements of clause 2.12.6 apply for configuration of the plug portion (AS/NZS 3112:2017)	N/A
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Clause	Requirement + Test	Result - Remark	Verdict
2.12	Marking		—
2.12.6	Configuration of plugs		N/A
	Pins disposed so that configuration, as viewed from the pins, is earth, neutral and active in a clockwise direction		N/A
	Where there is no earthing pin; live pins conform to this configuration (AS/NZS 3112:2017)		N/A
J4	Tests		N/A
J4.1	General Plug portions of equipment shall be subjected to the following tests and unless stated otherwise, shall comply with the requirements specified in Section 2 for each test. The number of test samples shall be in accordance with Table J1 For equipment with a detachable plug portion, the assessment(s) of Table J1 tests 2, 3, 5, 10 and 11 shall be conducted on the— (a) assembled equipment with the detachable plug portion connected; and (b) the detachable plug portion after it has been separated from the equipment (AS/NZS 3112:2017/A1:2021)		N/A
J4.2	High voltage test The requirements of Clause 2.13.3 are applicable unless requirements are contained in the relevant product standard (AS/NZS 3112:2017)		N/A
2.13.3	Test No.1 - High voltage test		N/A
	Plug withstands without failure electric strength test as specified (AS/NZS 3112:2017)		N/A
J4.3	Mechanical strength		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
J4.3.1	Tumbling barrel test The tumbling barrel test is applied to determine the mechanical strength of the plug portions and equipment having integral or detachable plug portions. For equipment with a detachable plug portion, the detachable plug portion may become detached during the test. If this occurs the detachable plug portion shall be reassembled with the equipment when the pins are straightened as per (a) and (b) below. Three samples (Samples BCD in Table J1) that have not been subjected to any previous test are tested as specified in <u>Clause 2.13.7.1</u>, however the test is modified as follows:		N/A
	They are tested in a tumbling barrel as described in AS 60068.2.32 or test Free fall repeated – Procedure 2 in IEC 60068-2.31. The samples shall be dropped from a height of 500 mm onto a steel plate, 3 mm thick. The barrel shall be turned at a rate of 5 r/min, to yield 10 falls per minute. Only one sample shall be tested at a time. A sample is dropped— (a) 500 times if the mass of the specimen does not exceed 250 g. The pins being straightened after each 100 drops and at the completion of the test to pass through the appropriate gauge of <u>Figure A1</u>, <u>Figure B1</u> or <u>Figure F1</u>; and (b) 250 times if the mass of the specimen exceeds 250 g. The pins being straightened after each 25 drops and at the completion of the test to pass through the appropriate gauge of <u>Figures A1</u>, <u>Figure B1</u> or <u>Figure F1</u>. (AS/NZS 3112:2017/A1:2021)		N/A
	Mass of sample	_____ Grams	N/A
	Number of drops	500 / 250	N/A
	Compliance shall be checked by <u>Paragraph J4.3.3</u>	(See appended table)	N/A
J4.3.2	Test No.3 Impact test. Plug portions and equipment having integral plug portions or detachable plug portions shall withstand lateral impact forces. All samples that were subjected to the tests in <u>Paragraph J4.3.1</u> (Samples BCD in Table J1) shall be tested as follows:		N/A
	(a) The sample shall be positioned at the centre of a steel plate with a thickness of at least 6 mm. Apertures in the steel plate for the plug pins to pass through shall conform to the corresponding socket Standard. The sample shall be held against the steel plate by clamping all the pins.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	(b) Samples shall be subjected to blows, with an impact energy of 1.0 ± 0.05 J by any means having the same performance as the spring-operated impact-test apparatus of AS/NZS 3100.		N/A
	(c) Three blows shall be applied to every point that is most likely to directly or indirectly stress the enclosure joints of the sample		N/A
	Compliance shall be checked by Paragraph J4.3.3		N/A

J4.3.3	Specific compliance criteria This Paragraph provides the common compliance assessment criteria for tests specified in Paragraphs J4.3.1 and J4.3.2 .		N/A
	Following each test, the samples shall comply with Clause 2.13.7.1		N/A
(a)	assembled equipment with the detachable plug portion connected;		N/A
	After the test, samples show no damage	(See appended table)	N/A
	the detachable plug portion after it has been separated from the equipment.		N/A
(b)	After the test, samples show no damage	(See appended table)	N/A

4.3.4	Pin bending test The pins of the plug portion of three samples (Samples EFG in Table J1) not subjected to any previous tests shall be tested for compliance with the pin bending test of Clause 2.13.7.2 (AS/NZS 3112:2017/A1:2021)		N/A
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2.13.7.2	Test No.4 – Pin bending test		N/A
	All flat-pin plugs rated up to and including 15 A shall be subjected to the pin bending test		N/A
	Three samples are subjected by clamping the plug in a rigid holding block and applying the bending force as specified		N/A
	After the test the pins shall not be broken off. (AS/NZS 3112:2017)		N/A

J4.8.3	Test No.5 Plug portion detachment requirements		N/A
	For all Type B or C devices and for Type A devices where the outlet of the detachable plug portion is parallel to the plug supply pins, disengagement of the detachable plug portion from the equipment shall require at least two simultaneous independent actions or the use of a tool.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The plug portion and the equipment/adaptor shall be connected and disconnected 50 times (100 strokes).		N/A
	Compliance is verified by the plugging test, a force which, over a period of 10 s, shall be increased steadily to 60 ± 0.6 N and held at this value for a further 10 s, shall be applied evenly at the connecting equipment in a direction parallel to the pins. This procedure shall be conducted three times on the same plug portion, at intervals of 5 min, without disturbing the plug portions between tests		N/A
	During the test the plug portion shall not separate		N/A
	The test of AS/NZS 3112 'temperature rise test' for plugs shall be conducted immediately after the above test without disturbing the sample. Test No 6 Temperature Rise test J4.4 (AS/NZS 3112:2017/A1:2021)		N/A

J4.4	Temperature rise test The relevant requirements of Clause 2.13.8 are applicable for the temperature rise test, except that the test current shall be that specified in the relevant product standard		N/A
	The temperature rise of the pins shall not exceed 45 K irrespective of the temperature rise of parts specified in end-product standards.		N/A
	For detachable plug portions the temperature rise of terminals and contacts shall not exceed 45 K. (AS/NZS 3112:2017)		N/A

2.13.8	Test No.6 – Temperature rise test		N/A
	Plug tested in draught free environment as specified using clamping units as specified in Figure 2.10		N/A
	Test Current Relevant Product Standard	_____ Amps _____ (Standard?)	N/A
	Temperature of terminals and contacts of detachable plug portion not exceeding 45 K (AS/NZS 3112:2017)	(see appended table)	N/A

J4.5	Securement of pins of the plug portion The requirements of Clause 2.13.9 are applicable for the securement of pins. (AS/NZS 3112:2017)		N/A
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2.13.9	Test No.7. Securement of pins		N/A
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Clause	Requirement + Test	Result - Remark	Verdict
2.13.9.1	Movement of pins		N/A
	Plug pins clamped 5 ± 0.5 mm from pin face; test equipment and sample pre-conditioning for 1 h at 40 ± 1 °C		N/A
	Force of 18 ± 1 N applied to pin 14 ± 0.5 mm from plug face; applied gradually over 10 s and maintained for 10 s; applied in four directions		N/A
	Maximum deflection during test not exceeding 2.0 mm	(see appended results)	N/A
	Any distortion 5 minutes after test does not prevent insertion of plug into standard gauge(s) (AS/NZS 3112:2017 + A1:2021)		N/A
2.13.9.2	Fixing of pins		N/A
	Plug heated to 50 ± 2 °C for 1 h		N/A
	Force of 60 ± 0.6 N applied to each pin over 10 s and maintained for 10 minutes; applied in two directions along length of pin		N/A
	Maximum displacement during test not exceeding 2.4 mm		N/A
	Maximum measured displacement		—
	Pin returns to within 0.8 mm of nominal length within 5 minutes of removal of test force (AS/NZS 3112:2017)		N/A

J4.6	Tests on the insulation material of insulated pin-plug portions The requirements of Clause 2.13.13 are applicable for insulating material of insulated plug pins. (AS/NZS 3112:2017)	N/A
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2.13.13	Test No.8 Tests for insulation material of insulated pin plugs		N/A
2.13.13.1	Material of pin-insulation resistant to stresses at temperature likely to occur		N/A
2.13.13.2	Pressure test at high temperature		N/A
	Specimen tested as per Figure 2.5 with force of 2.5 N applied as specified; maintained for 2 h at 160 ± 5 °C; removed and cooled by immersion in water within 10 s		N/A
	Thickness of insulation at point of impression not reduced by more than 50 %		N/A
	Initial thickness	mm	—
	Thickness after test	mm	—
	No visible cracks on insulation material		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Dimension of insulating material not below minimum size in Figure 2.4 (AS/NZS 3112:2017)		N/A
2.13.13.3	Static damp heat test		N/A
	Specimen subjected to two damp heat cycles in accordance with IEC 60068-2-30; Db (12 + 12 h), 95 % RH, 25 ± 3 °C; 40 °C		N/A
	After this treatment and recovery to room temperature; specimen subjected to:		N/A
(a)	Insulation resistance test in accordance with clause 2.13.2 (e)	(see appended table)	N/A
(b)	High voltage test in accordance with clause 2.13.3	(see appended table)	N/A
(c)	Abrasion test in accordance with clause 2.13.13.6		N/A
2.13.13.4	Low temperature test		N/A
	Plug maintained at – 15 ± 2 °C for minimum of 24 h and returned to room temperature; after which specimen subjected to:		N/A
(a)	Insulation resistance test in accordance with clause 2.13.2 (e)	(see appended table)	N/A
(b)	High voltage test in accordance with clause 2.13.3	(see appended table)	N/A
(c)	Abrasion test in accordance with clause 2.13.13.6		N/A
2.13.13.5	Impact test at low temperature		N/A
	Specimen maintained at – 15 ± 2 °C for 24 h		N/A
	Specimen placed in position and subjected to impact test as per Figure 2.6; mass of 100 ± 1 g falling through 100 mm		N/A
	Four impacts applied; specimen rotated through 90° between impacts		N/A
	After return to room temperature; no visible cracks of insulating material		N/A
2.13.13.6	Abrasion test		N/A
	Plug held in clamp and tested as per Figure 2.7; pin loaded at 4 N; 20 000 movements		N/A
	After test; pins show no damage affecting safety or impairing further use of the plug		N/A
	Insulating sleeve not punctured or rucked up (AS/NZS 3112:2017)		N/A
J4.7	Test No.9 Equipment with a plug portion intended to be supported by the contacts of a socket-outlet		N/A
	Equipment with pins intended to be introduced into fixed socket-outlets not imposing undue strain on socket-outlet		N/A
	Applied torque not exceeding 0.25 Nm		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Measured torque (AS/NZS 3112:2017)	___ Nm	—

J4.8	Additional requirements for detachable plug portions		N/A
J4.8.1	Test No.10 Access to live parts		N/A
	Small test finger of Figure 13 of IEC 61032 was not possible to contact live parts with the force of 20 N		N/A
	incorrectly assemble the plug portion was not possible (AS/NZS 3112:2017)		N/A

J4.8.2	Test No.11 Construction of detachable contacts where the input current of the equipment exceeds 0.2 A		N/A
	Contacts of the equipment shall be such that they make and maintain, under normal service conditions, satisfactory electrical and mechanical contact with the corresponding contact of the detachable plug portion.		N/A
	For connections intended to accommodate pins, contact shall be made on two surfaces diametrically opposite, except if a single spring-assisted contact is used. (AS/NZS 3112:2017/A1:2021)		N/A
	Contacts shall not rely exclusively on the resilience of the contact material and shall have an opposite face of material other than thermoplastic or resilient insulating material. (AS/NZS 3112:2017/ A1:2021)		N/A
	The alignment and contact-making properties of contacts shall be independent of terminal screws		N/A
	The effectiveness of the contacts shall be independent of pressure from any thermoplastic or resilient moulding.		N/A
	A visual inspection is conducted to determine the existence of interference between the metal contacts and the thermoplastic or resilient moulding to provide supplementary contact pressure to the metal contacts.		N/A
	Conformance of the effectiveness of the contacts is checked by inspection and by the inspection and tests in J4.8.3 (AS/NZS 3112:2017)		N/A

J4.8.4	Resistance of insulating material to heat and fire		N/A
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Clause	Requirement + Test	Result - Remark	Verdict
J4.8.4.1	Test No.12 Resistance to heat For Type B detachable plug portions parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary insulation or reinforced insulation, shall be sufficiently resistant to heat if their deterioration could cause the appliance to fail to comply with this Standard.		N/A
	Ball pressure test conducted in accordance with IEC 60695-10-2		N/A
(a)	75 °C ± 2 °C, for external parts;		N/A
(b)	125 °C ± 2 °C, for parts supporting live parts.		N/A

J4.8.4.2	Test No.13 Resistance to fire Plug portions comply with resistance to fire requirements of AS/NZS 3100 Annex A as follows:		N/A
	The glow wire test temperature 'T' for 'retaining parts' of fixed socket outlets shall be 750 °C (AS/NZS 3112:2017)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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TABLES OF RESULTS

2.2.4	TABLE: Dimensions of insulation on insulated pin plugs		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase pin			8.7 ± 0.5
Neutral pin			8.7 ± 0.5

2.8.1	TABLE: Dimensions of plugs- 10A (a1)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			6.35 ± 0.15
Earth pin width (B)			6.35 ± 0.15
Pin thickness (C)			$1.63 + 0.15, -0.05$
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4
Earth pin length (G)			19.94 ± 0.8
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

2.8.1	TABLE: Dimensions of plugs- 15A (a1)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			6.35 ± 0.15
Earth pin width (B)			9.08 ± 0.15
Pin thickness (C)			$1.63 + 0.15, -0.05$
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4
Earth pin length (G)			19.94 ± 0.8
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

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Clause	Requirement + Test	Result - Remark	Verdict

2.8.1	TABLE: Dimensions of plugs-20A (a2)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			9.08 ± 0.15
Earth pin width (B)			9.08 ± 0.15
Pin thickness (C)			$1.63 + 0.15, -0.05$
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4
Earth pin length (G)			19.94 ± 0.8
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

2.8.1	TABLE: Projection from plug face centroid		N/A
Direction of projection		Measured (mm)	Allowed (mm)
Left			≤ 21.9 or ≥ 27.0
Right			≤ 21.9 or ≥ 27.0
Up			≤ 21.9 or ≥ 27.0
Down			≤ 21.9 or ≥ 27.0

2.13.3	TABLE: Test No. 1 – High voltage test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
All poles of the plug; taken in pairs		1000	Yes / No
Live poles of the plug and any external metal		3500	Yes / No
Live poles of the plug and the earthing terminal		1000	Yes / No
Live poles of the plug and a flexible electrode		3500	Yes / No
Live poles and metal foil applied around insulation on pins		1250	Yes / No

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Clause	Requirement + Test	Result - Remark	Verdict

2.13.7.1	Test No.2 – Tumbling barrel test		N/A
	Following the test, the samples shall comply with <u>Clause 2.13.7.1(a..e)</u>		N/A
	[a] Live parts shall not have become exposed to the standard test finger		N/A
	[b] For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained. AS/NZS 3100 Cl 8.5 The resistance shall not exceed 0.1 Ω	___ Ω .	N/A
	[c] Any other function affecting safety shall not be impaired		N/A
	[d] No live part shall have become detached or loosened, to the extent that a hazardous situation is created (see Clause 2.9)		N/A
	[e] The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test No.3 Impact test for assembled equipment with the detachable plug portion connected and for equipment with an integral plug portion.		N/A
	Following the test, the samples shall comply with <u>Clause 2.13.7.1 (a..e) as follows:</u>		N/A
	[a] Live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	[b] For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained so that the resistance between the earthing terminal of any socket-outlet provided with an earthing contact and the earthing terminal of the plug used for testing shall be of a low resistance. Compliance is by the test of earthing connection in AS/NZS 3100 Clause 8.5. The resistance shall not exceed 0.1 Ω	___ Ω .	N/A
	[c] Any other function affecting safety shall not be impaired		N/A
	[d] No live part shall have become detached or loosened, to the extent that a hazardous situation is created		N/A
	[e] The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		N/A
	Following the test, the samples shall conform to the 'Guarding of live parts' requirements of AS/NZS 3100:2015 cl 5.1 as follows:		N/A
	Except for equipment intended for use only in a position not accessible to unauthorized persons, all equipment shall be so designed and constructed that, when the equipment is standing, supported, or fixed, in a normal manner, no person can inadvertently come into contact with any live part		N/A
	If a hole giving access to preset controls is marked as such on the enclosure or reference made to it in the instructions and the setting of this control requires a screwdriver or other tool, the adjustment of the control shall not allow contact with any live parts. A metal test pin having a diameter of 2 mm and a length of 100 mm shall not become live when it is inserted through the hole in every position with a force of 10 N.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	In addition, the opening or removal of any cover or component, with or without tools, where such opening or removal is necessary as a normal operation of the equipment as distinct from maintenance, repairs, or adjustment, shall not expose live parts to inadvertent personal contact.		N/A
	Any metal cover or casing enclosing live parts shall be of a strength sufficient to ensure that it cannot be deformed readily so as to come into contact with live parts.		N/A
	Compliance is checked by inspection, test and checking that live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Class II equipment and class II constructions shall be constructed and enclosed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only.		N/A
	It shall only be possible to touch parts which are separated from live parts by double insulation or reinforced insulation.		N/A
	Compliance is checked by application of the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Following the test, the samples shall conform to the 'Separation of live parts from non-current-carrying conductive parts' requirements of AS/NZS 3100.CI 5.2.2 as follows:		N/A
	The support and insulation of every live part shall be such as will ensure that no live part can make contact with any non-current-carrying conductive part exposed to personal contact.		N/A
	In respect of terminals of components such as switches, adequate clearances shall be maintained or insulation shall be provided to prevent contact of the terminals, or loose strands of flexible cords intended to be terminated therein, with exposed conductive parts. Where necessary, provision shall be made to ensure that conductors protruding through terminals, when normally connected, will not contact exposed conductive parts.		N/A
	Compliance is checked by inspection.		N/A

	Test No.3 Impact test for the detachable plug portion after it has been separated from the equipment	N/A
	Following the test, the samples shall comply with <u>Clause 2.13.7.1 (a..e)</u>	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	[a] Live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	[b] For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained so that the resistance between the earthing terminal of any socket-outlet provided with an earthing contact and the earthing terminal of the plug used for testing shall be of a low resistance. Compliance is by the test of earthing connection in AS/NZS 3100 Clause 8.5. The resistance shall not exceed 0.1 Ω	___ Ω .	N/A
	[c] Any other function affecting safety shall not be impaired		N/A
	[d] No live part shall have become detached or loosened, to the extent that a hazardous situation is created		N/A
	[e] The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		N/A
	Following the test, the samples shall conform to the 'Guarding of live parts' requirements of AS/NZS 3100:2015 cl 5.1 as follows:		N/A
	Except for equipment intended for use only in a position not accessible to unauthorized persons, all equipment shall be so designed and constructed that, when the equipment is standing, supported, or fixed, in a normal manner, no person can inadvertently come into contact with any live part		N/A
	If a hole giving access to preset controls is marked as such on the enclosure or reference made to it in the instructions and the setting of this control requires a screwdriver or other tool, the adjustment of the control shall not allow contact with any live parts. A metal test pin having a diameter of 2 mm and a length of 100 mm shall not become live when it is inserted through the hole in every position with a force of 10 N.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	In addition, the opening or removal of any cover or component, with or without tools, where such opening or removal is necessary as a normal operation of the equipment as distinct from maintenance, repairs, or adjustment, shall not expose live parts to inadvertent personal contact.		N/A
	Any metal cover or casing enclosing live parts shall be of a strength sufficient to ensure that it cannot be deformed readily so as to come into contact with live parts.		N/A
	Compliance is checked by inspection, test and checking that live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Class II equipment and class II constructions shall be constructed and enclosed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only.		N/A
	It shall only be possible to touch parts which are separated from live parts by double insulation or reinforced insulation.		N/A
	Compliance is checked by application of the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Following the test, the samples shall conform to the 'Separation of live parts from non-current-carrying conductive parts' requirements of AS/NZS 3100.CI 5.2.2 as follows:		N/A
	The support and insulation of every live part shall be such as will ensure that no live part can make contact with any non-current-carrying conductive part exposed to personal contact.		N/A
	In respect of terminals of components such as switches, adequate clearances shall be maintained or insulation shall be provided to prevent contact of the terminals, or loose strands of flexible cords intended to be terminated therein, with exposed conductive parts. Where necessary, provision shall be made to ensure that conductors protruding through terminals, when normally connected, will not contact exposed conductive parts.		N/A
	Compliance is checked by inspection.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.13.8	TABLE: Test No. 6 - Temperature rise test		N/A
	Ambient temperature	°C	—
	Test current	A	—
Measured part		dT measured (K)	dT allowed (K)
Active (phase) terminal			45
Neutral terminal			45
Earthing terminal			45

2.13.9.1	TABLE: Movement of pins		N/A
	Earth and neutral pins clamped – phase pin loaded		—
Force direction		Measured deflection (mm)	Allowed deflection (mm)
Force towards neutral plane parallel to pin plane			2.0
Force from neutral plane parallel to pin plane			2.0
Force outwards at 90° to pin plane			2.0
Force inwards at 90° to pin plane			2.0

2.13.9.1	TABLE: Movement of pins		N/A
	Phase and neutral pins clamped – earth pin loaded		—
Force direction		Measured deflection (mm)	Allowed deflection (mm)
Force inwards parallel to pin plane			2.0
Force outwards parallel to pin plane			2.0
Force towards neutral			2.0
Force towards phase			2.0

2.13.9.1	TABLE: Movement of pins		N/A
	Phase and earth pins clamped – neutral pin loaded		—
Force direction		Measured deflection (mm)	Allowed deflection (mm)
Force towards phase plane parallel to pin plane			2.0
Force from phase plane parallel to pin plane			2.0
Force outwards at 90° to pin plane			2.0
Force inwards at 90° to pin plane			2.0

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Clause	Requirement + Test	Result - Remark	Verdict

2.13.13.3	TABLE: Test No.13(b) – Insulation resistance test after static damp heat test		N/A
Applied between:		Insulation resistance (MΩ)	Minimum required (MΩ)
Live poles and metal foil applied around insulation on pins			5

2.13.13.3	TABLE: Test No.1 – High voltage test after static damp heat test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
Live poles and metal foil applied around insulation on pins		1250	Yes / No

2.13.13.4	TABLE: Test No.1 – Insulation resistance test after low temperature test		N/A
Applied between:		Insulation resistance (MΩ)	Minimum required (MΩ)
Live poles and metal foil applied around insulation on pins			5

2.13.13.4	TABLE: Test No.1 – High voltage test after low temperature test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
Live poles and metal foil applied around insulation on pins		1250	Yes / No

J4.8.4.1	TABLE: Test No.12 Resistance to heat		N/A
Component tested		Temperature (°C)	Diameter of impression (mm)

Conformance is checked by subjecting the relevant part to the ball pressure test of IEC 60695-10-2.

J4.8.4.2	TABLE: Test No.13 Resistance to Fire		N/A
Plug portions shall comply with the requirements for resistance to fire in accordance with AS/NZS 3100:2017 Annex A.			
The glow-wire test temperature 'T' shall be 750 °C.			

Glow-wire testing was conducted in accordance with IEC 60695-2-11.

Test specimens arranged so that the surface in contact with the tip of the glow-wire was vertical and glow wire tip applied to surface of the specimen likely to be subjected to thermal stresses in normal use.

A layer of white pine board and wrapping tissue was placed beneath the sample at 200 mm ± 5 mm distance.

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SPECIMEN NUMBER	1	2	3	4	5	6	7	8
SPECIMEN DESCRIPTION								
Material								
Colour								
Test specimen								
Glow wire tip temperature (°C)	750	750	750	750	750	750	750	750
Duration of glow wire application (t _a) (s)	30	30	30	30	30	30	30	30
OBSERVATIONS								
Duration from beginning of glow-wire tip application to ignition of specimen or layer (t _i) (s)								
Duration from beginning of glow-wire tip application to when flames extinguish (t _e) (s)								
Maximum height of flames after initial 1s (to nearest 5 mm) (mm)								
Flame impingement on other parts								
Degree of tip penetration								
Degree of specimen distortion								
Scorching of pinewood board								

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EVALUATION CRITERIA								
Visible flame or sustained glowing								
Visible Flame Duration in Seconds during test.								
Duration of flaming or glowing after tip removal (max. allowable 30 s) (s)								
Surrounding parts burned away completely (not permitted)								
Ignition of wrapping tissue layer (not permitted)								
RESULTS If parts tested withstand the glow-wire test, but during the test produce a flame that persists for longer than 2 s, then the consequential needle flame test of AS/NZS 3100:2017 Annex A 6.1.5 applies.								

LEGEND:	CE Complete Equipment	SA Sub Assembly	SE Self Extinguished
	EBD Emitted Burning Droplets	SBD Specimen Burned and Distorted	SMD Specimen Melted and Distorted
	ME Manually Extinguished	SC Separate Component	SS Specimen Scorched
	NA Not Applicable	SCC Specimen Completely Consumed	WPNI Wall Penetrated but no Ignition
	NI No Ignition	X Flame Appeared for an Instant	

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TABLE: NEEDLE- FLAME TEST (NFT)					N/A
Object / Part No. / Material	Manufacturer / trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Supplementary information: - NFT not relevant (or applicable) for Parts of material classified as V-0 or V-1 - NFT not relevant (or applicable) for Base material of PCBs classified as V-0 or if relevant VTM-0					



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	PHOTOGRAPHS	
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IEC 62368-1 ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1:2018 SAUDI ARABIA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)			
Differences according to : National standard SASO-IEC 62368-1:2020			
TRF template used:..... : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : SA_ND_IEC62368_1E			
Attachment Originator : SASO			
Master Attachment..... : 2022-12-22			
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
	Plugs used for pluggable equipment comply with standard SASO-2203.		N/A
--	Frequency (Hz)		N/A
	60 Hz		N/A
--	Rated voltage (V)		N/A
	Single phase 230 V Three phase 400 V		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1:2018 JAPAN NATIONAL DIFFERENCES Audio/video, information and communication technology equipment – Part 1: Safety requirements			
Differences according to : J62368-1(2023)			
TRF template used: : IECEE OD-2020-F3:2022, Ed. 1.2			
Attachment Form No. : JP_ND_IEC62368_1E			
Attachment Originator : UL Solutions (JP)			
Master Attachment : Dated 2023-05-12			
Copyright © 2023 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this document or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		P
5.6.1	Mains socket-outlet and interconnection coupler shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A
5.6.2.1	Connection for protective conductor of class 0I equipment provided with instructional safeguard in accordance with Clause F.3.6.1A is considered to make earlier and break later than supply connection. Mains plug having a lead wire for protective earthing connection of class 0I equipment shall comply with all of the following: – Not to be used for equipment having a rated voltage of 150 V or more – Clip is not used for the earthing connection of the lead wire. – The lead wire for earthing is at least 10 cm long If class 0I equipment provides an independent main protective earthing terminal and is intended to be installed by ordinary person, earthing wire shall be provided in the package of the equipment.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.2	Internal earthing conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector need not be green-and-yellow.		N/A
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cab tire cable with 1.25 mm ² or more cross-sectional area		N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303, or that is provided with mains appliance outlet as specified in JIS C 8283 series for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.		N/A
5.7.5	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990:2016.		N/A
6.4.3.2	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. A fuse having time/current characteristics other than those specified in IEC 60127 shall be tested with the characteristics taken into account. In case of Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”.		N/A
8.5.4.3.1	Only three-phase stationary equipment rated more than AC 200 V can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.3.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.3.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A
8.5.4.3.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
F.3.5.1	When the mains socket-outlet is configured in accordance with JIS C 8282 series, JIS C 8300 or JIS C 8303, the assigned current or power shall be marked. If the voltage of the socket-outlet is the same as the mains voltage, the voltage need not be marked. Instructional safeguard of Class 0I equipment shall be provided with an instructional safeguard in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303 to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic shall be included.		N/A
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.2 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions shall be provided regarding the earthing connection. In addition to the above, for class 0I equipment, an instruction to connect earthing before and disconnect earthing after the connection of supply conductors shall be marked on the visible place of the main body or shall be in the text of an accompanying document.		N/A
F.3.6.2	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.8A	Attention marking for aging deterioration of CRT television Year of manufacture, standard usage period by design according to JIS C 9921-5 and cautionary statement for possible risks of aging deterioration when used beyond the specified period shall be marked on CRT television except for industrial use CRT television.		N/A
F.4	For audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A, the instructions shall require that the external wiring connected to these terminals shall be installed by a skilled person, or shall be connected by means of ready-made leads or cords that are constructed in a way that would prevent contact with any ES3 circuit. For class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided in the package of the equipment, if the protective earthing connection is made by instructed person or skilled person, the suitable installation instruction for the protective earthing connection shall be provided.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the applicable JIS or IEC standard in accordance with 4.1.2 or shall have equivalent or better properties. Such a protective device shall have adequate breaking (rupturing) capacity to interrupt the maximum fault current (including short-circuit current) that can flow.		N/A
G.4.1	This requirement does not apply to connectors covered in Clauses G.4.2 and G.4.2A.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Mains connectors, mains plugs and socket-outlets shall comply with JIS C 8283 series, JIS C 8285, IEC 60309 series, JIS C 8282 series, JIS C 8300, JIS C 8303, or have equivalent or better properties. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction shall prevent mechanical stress not to transmit to the soldering part of appliance inlet terminal. When an equipment is rated not more than 125 V and all of the following are met, Type C14 and C18 appliance inlet complying with JIS C 8283-3 can be considered as rated 15 A. – The temperature of appliance inlet does not exceed the value specified in JIS C 8283-1 under the most unfavourable normal operating condition as specified in Clause B.2.1. – "Use only designated cord set attached in this equipment" or equivalent text is described in the operating instruction. If the cord set is not provided in the package of the equipment, suitable information regarding to the cord set is described in the operating instruction.		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively		N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.		N/A
G.7.2 Table G.7	Cross-sectional area of equipment rated up to and including 3 A shall be 0.75 mm ² .		N/A
G.7.6.1 Table G.9	The cross-sectional area of mains cords according to JIS C 3010 may comply with relevant Japanese wiring regulation. For cables other than those complying with JIS C 3662 series or JIS C 3663 series, the terminals shall be suitable for the size of the intended cables.		N/A

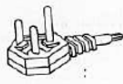
IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1:2018 CHINA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment -Part 1: Safety requirements)			
Differences according to : GB 4943.1-2022			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : CN_ND_IEC62368_1E			
Attachment Originator : CQC			
Master Attachment : 2025-02-25			
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	National Differences		—
4.1.2	Use of components Add a paragraph: A component used shall comply with related requirements corresponding altitude of the equipment.		P
4.11	Add clause 4.11, as follows: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except the device shall meet the all requirement of Fault conditions. If pluggable equipment type B or permanently connected equipment depends on protective devices outside the equipment for protection, this shall be stated in the installation instructions of the equipment, with requirements for short-circuit protection, over-current protection, or both if necessary.		N/A
5.3.2.2	Contact requirements Amend the 2 nd paragraph of table 8 to be: For equipment intended to be used at altitude of 2000 m to 5000 m, the values in this table are multiplied by the multiplication factor corresponding altitude of 5000 m.		N/A

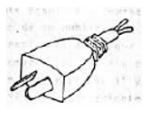
IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.5	Multiplication factors for altitudes higher than 2 000 m above sea level Amend the 1st paragraph to be: For equipment to be operated at more than 2000 m above sea level and up to 5000 m above sea level, the minimum CLEARANCE in tables 10, 11 and 14, and resistance test voltages required in table 15, shall meet the requirements of 5000 m above sea level. This is multiplied by the multiplication factor corresponding altitude of 5000 m in table 16. For equipment to be used at equal or less than 2000 m above sea level, the minimum CLEARANCE in tables 10, 11 and 14, and resistance test voltages required in table 15, shall meet the requirements of 2000 m above sea level. This is multiplied by the multiplication factor corresponding altitude of 2000 m in table 16. Delete note 2 of Clause 5.4.2.5.		N/A
5.4.5.1	General Delete the 2nd paragraph of Clause 5.4.5.1: This test does not apply to equipment where one antenna terminal on the equipment is connected to earth in accordance with 5.6.7. Add the following: The Insulation resistance between CATV antenna coaxial sockets and protective earth of apparatus shall comply with BASIC INSULATION. If it's possible that CLASS II apparatus with CATV antenna coaxial sockets connect with protective earth of another CLASS I apparatus by other terminals, the insulation resistance between them shall comply with BASIC INSULATION as well. If antenna cable separated from the protective earth before connection to the apparatus, there is no requirements of Insulation resistance between them but F.4 requirements shall be meet. Delete "NOTE" of Clause 5.4.5.1		N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.8	Humidity conditioning Amend clause 5.4.8 as follows: The humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature (40±2) °C and a relative humidity of (93±3) %. During this conditioning, the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value between 20 °C and 30 °C such that condensation does not occur. Add note: For equipment to be operated at 2000 m – 5000 m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered. Pre-processing conditions and requirements below 2000 m can be used until additional data is available.		N/A
6.4.9 Y.4.3	Delete references to ASTM and NEMA.		N/A
6.5.1	General requirements Delete the text of the Note “Wire complying with UL 2556 VW-1 is considered to comply with these requirements”.	Check it when the equipment marketed to China	N/A
F.1	Amend the second paragraph of annex F.1 to be: Unless symbols are used or otherwise specified, safety related equipment markings, instructions, and instructional safeguards shall be in normative Chinese.	Review it when the equipment marketed to China	N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.2.2	After the first paragraph of annex F.2.2, add the following: For apparatus intended to be used at altitude not exceeding 2000 m, a warning label containing the following or a similar appropriate wording or a symbol shown below shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000 m."  For apparatus intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording or a symbol shown below shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only symbol used, the explanation of the symbol shall be contained in the instruction manual. The statements above shall be given in a language acceptable to the regions where the apparatus is intended to be used.		N/A
F.3.3.4	After the last paragraph, Added: ...for single rated voltage, "220 V" or three-phase "380 V" shall be marked only. For a rating voltage range, 220 V or three-phase 380 V shall be covered. For multiple rated voltages, one of them shall be 220 V or three-phase 380 V and which default setting from manufacture shall be 220 V or three-phase 380 V as well.		N/A
F.3.3.5	After the last paragraph, Added: Rated frequency shall be 50 Hz or frequency range shall cover 50 Hz.		N/A
F.4	Instructions Added: – For apparatus incorporating antenna coaxial sockets which is non-separated with CATV network, a warning wording or a similar shall be given in the instruction manual: "A CATV cable intended to be connected to apparatus shall be separated with the protective earth of the apparatus, otherwise fire hazard might be caused."		N/A
F.5	Instructional safeguards In table F.2 , change 230 V to 220 V , change 400Y/230V 3Ø to 380 Y/220 V 3Ø		N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Amend clause G.4.2 as follows: Plugs connected to the MAINS in apparatus shall comply with GB/T 1002,GB/T 1003,GB/T 2099.1 or GB/T11918 (All parts) series. Appliance coupler shall comply with GB/T 17465 (All parts) series or GB/T 11918 (All parts) series.		N/A
	Special national conditions (if any)		—
0.12	Add clause 0.12 Description of relevant information.		N/A
1	GB 4943.1-2022 applies to equipment used at altitudes not exceeding 5000 m above sea level. For apparatus intended to be used at altitude not exceeding 2000 m. The requirements can be appropriately reduced, but warning instructions shall be provided. Revise the sixth paragraph of 1 as: In addition to specified by the manufacturer, this document assumes a maximum altitude of 5000 m		N/A
B.2.6.1	Amend T_{ma} as follows: T_{ma} is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, T_{ma} is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: For equipment to be operated at 2000 m - 5000 m above sea leave, its temperature test conditions and temperature limits are under consideration. temperature test conditions and temperature limits below 2000 m can be used until additional data is available.	Considered	P
Annex Z (normative)	Added annex Z: Instructions of the new safety warning labels.		N/A
Annex AA (informative)	Added annex AA: Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang Language and Uighur.	Review it when the equipment marketed to China	N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 ARGENTINA NATIONAL DIFFERENCES Audio/video, information and communication technology equipment - Part 1: Safety requirements			
Differences according to : Special National Conditions			
TRF template used:..... : IECEE OD-2020-F3:2022, Ed. 1.2			
Attachment Form No. : AR_ND_IEC62368_1_A			
Attachment Originator : IRAM – Instituto Argentino de Normalización y Certificación			
Master Attachment..... : 2024-06-06			
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	National Differences		N/A
	Not applicable		N/A
	Special national conditions (if any)		P
	- Appliances other than SELV, ratings shall cover 220 VAC - 50 Hz or 3x380 VAC – 50 Hz		N/A
	- Class 0 and Class 0I appliances are not allowed		N/A
	- Safety instructions and manuals shall be written in Spanish language	Review it when the equipment marketed to Argentina	N/A
	- Country of origin shall be shown on the marking plate	Marked	P
	- Class I appliances provided with plugs shall be provided with the label specified in sheet "Class I" IMPORTANTE PARA EL USUARIO Los aparatos de la Clase I, poseen ficha de 3 espigas planas con toma de tierra, para aumentar su seguridad.  NO LA ELIMINE colocando un adaptador o reemplazando la ficha por otra de 2 espigas. PARA SU SEGURIDAD, su instalación debe estar provista de conductor de tierra. De no ser así, realice la adecuación con personal especializado.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
	- Class II appliances provided with plugs shall be provided with the label specified in sheet "Class II" IMPORTANTE PARA EL USUARIO Los aparatos de la Clase II, que se identifican con el símbolo  poseen ficha de 2 espigas planas sin toma de tierra, pues poseen doble aislación o aislación reforzada en todas sus partes.  NO LA ELIMINE colocando un adaptador o reemplazando la ficha por otra de 2 espigas cilíndricas, ya que la misma es compatible con los tomacorrientes con toma de tierra. PARA SU SEGURIDAD, su instalación debe estar provista de conductor de tierra. De no ser así, realice la adecuación con personal especializado.		N/A
	- Plugs shall be in conformity with IRAM 2063 Standard for Class II appliances and IRAM 2073 Standard for Class I appliances		N/A
	- Appliances with detachable interchangeable plug pins must include with its products, written instructions to inform the customer about the type of interchangeable and detachable plug pins approved and suitable for use in Argentina.		N/A
	- Direct plug-in appliances or appliances provided with integrated plugs shall be according to geometry of IRAM 2063 standard for Class II appliances or IRAM 2073 standard for Class I appliances		N/A
	- Appliances with integrated socket outlet shall be according to geometry of IRAM 2071 standard.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1:2018 Republic of Korea NATIONAL DIFFERENCES Audio/video, information and communication technology equipment - Part 1: Safety requirements			
Differences according to.....: KC 62368-1(2021-08)			
TRF template used: IECEE OD-2020-F3, Ed. 1.2			
Attachment Form No. KR_ND_IEC62368_1E			
Attachment Originator KTL			
Master Attachment 2024-09-02			
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	National Differences		N/A
4.1.1	As of January 1, 2023, internal and external components and subassemblies that comply with IEC 60950-1 or IEC 60065 are not acceptable if those components and subassemblies mandates KC certification.	Checked	P
G.4.2	Plugs for the connection of the apparatus to the supply main shall comply with the Korean requirement (KS C 8305 or KC 60884-1 or KC 60799).		N/A
	Special national conditions (if any)		N/A
Voltage	The marking of rated voltage or rated voltage range, for appliances intended to be connected to the supply mains, shall include 110 V, 220 V or 380 V.		N/A
Frequency	Only appliances having supply frequency of 60 Hz or a frequency range including 60 Hz are accepted.		N/A
Instruction	Instruction manuals and appliance marking related safety, including nameplate shall be in Korean	Review it when the equipment marketed to Korea	N/A