



CE LVD REPORT

Prepared For :	
Product Name:	6-in-1 music camping lights
Model :	BY1006
Prepared By :	Shenzhen BST Technology Co., Ltd. Building No.23-24, Zhiheng Industrial Park, Guankouer Road, Nantou, Nanshan District,Shenzhen,Guangdong,China
Test Date:	Dec. 19- 27, 2016
Date of Report :	Dec. 27, 2016
Report No.:	BSTDG1612657910001SR-2



LVD Report EN60950-1 Information technology equipment - Safety - Part 1: General requirements	
Testing laboratory	: Shenzhen BST Technology Co.,Ltd.
Address	: Building No.23-24, Zhiheng Industrial Park, Guankouer Road, Nantou, Nanshan District, Shenzhen, Guangdong, China
Testing location	: Shenzhen BST Technology Co.,Ltd.
Applicant	:
Address	:
Standard	: EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
Test Result	: Compliance with EN60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
Procedure deviation	: N/A.
Non-standard test method	: N/A.
Type of test object	: 6-in-1 music camping lights
Trademark	:
Model/type reference	: BY1006
Rating	: DC5V
Manufacturer	:
Address	:
Test item particulars : Equipment mobility : transportable equipment Operation condition : Continuous Class of equipment : Class III Protection against ingress of water . : IP20	



Possible test case verdicts :

test case does not apply to the test object : N(.A.)

test object does meet the requirement : P(ass)

test object does not meet the requirement : F(ail)



Name and address of the testing laboratory : Shenzhen BST Technology Co.,Ltd.

Building No.23-24, Zhiheng Industrial Park,

Guankouer Road, Nantou, Nanshan

District,Shenzhen,Guangdong,China

Test by : Apple Li Dec. 27, 2016
Signature Date
Technician
Title

Review by : Mei Dec. 27, 2016
Signature Date
Project Engineer
Title

Approved by : Andy Yan Dec. 27, 2016
Signature Date
Andy Yan/ Manager
Name and Title



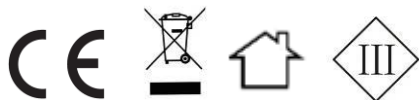
General remarks: "(see remark #)" refers to a remark appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a comma is used as the decimal separator. The test results presented in this report relate only to the object tested. This report shall not be reproduced except in full without the written approval of the testing laboratory.	Attached with: A. photo documentation
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Artwork of Marking Label

6-in-1 music camping lights

Model : BY1006

Rated : DC5V





EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General	See below.	P
	Comply with EN 60950 or relevant component standard	Components which were found to affect safety aspects comply with the requirements of this standard or with the safety aspects of the relevant IEC/EN component standards (see appended table 1.5.1).	P
1.5.2	Evaluation and testing of components	Components that are certified to IEC and /or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	No such components	N/A
1.5.4	Transformers	No isolating transformer in the equipment.	N/A
1.5.5	Interconnecting cables	No interconnecting cables.	N/A
1.5.6	Capacitors in primary circuits	Class III equipment.	N/A
1.5.7	Double insulation or reinforced insulation bridged by components	Class III equipment.	N/A
1.5.7.1	General	Refer to below	—
1.5.7.2	Bridging capacitors	Class III equipment.	N/A
1.5.7.3	Bridging resistors	Class III equipment.	N/A
1.5.7.4	Accessible parts	Class III equipment.	N/A
1.5.8	Components in equipment for IT power systems	Class III equipment.	N/A
1.6	Power interface		P
1.6.1	AC power distribution systems	DC supplied.	N/A
1.6.2	Input current		P
1.6.3	Voltage limit of hand-held equipment		P
1.6.4	Neutral conductor	Connected to SELV only, class III equipment.	N/A



EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
1.7	Marking and instructions		P
1.7.1	Power rating	All relevant markings are provided on a label.	P
	Rated voltage(s) or voltage range(s) (V)	DC5V	—
	Symbol for nature of supply, for d.c. only	IEC 60417-1, symbol No. 5031, is used.	P
	Rated frequency or rated frequency range (Hz) ..	DC supplied.	—
	Rated current (mA or A)		—
	Manufacturer's name or trademark or identification mark	YuRoad	P
	Type/model or type reference	BY1006	P
	Symbol for Class II equipment only	Class III equipment.	N/A
	Other symbols	The additional marking does not give rise to misunderstandings.	P
	Certification marks	See copy of marking plates for details.	P
1.7.2	Safety instructions	Safety instructions in English. Other languages will be provided when submitted for national approval.	P
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment:	No voltage selector.	N/A
1.7.5	Power outlets on the equipment	No standard power outlet.	N/A
1.7.6	Fuse identification	Class III equipment.	N/A
1.7.7	Wiring terminals	Refer below:	—
1.7.7.1	Protective earthing and bonding terminals	Class III equipment.	N/A
1.7.7.2	Terminal for a.c. mains supply conductors	Class III equipment.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	Class III equipment.	N/A
1.7.8	Controls and indicators		P
1.7.8.1	Identification, location and marking		P
1.7.8.2	Colours :		N/A
1.7.8.3	Symbols according to IEC 60417	There are no switches in the equipment.	N/A
1.7.8.4	Markings using figures	No controls.	N/A
1.7.9	Isolation of multiple power sources	Class III equipment.	N/A
1.7.10	IT power distribution systems	Class III equipment.	N/A
1.7.11	Thermostats and other regulating devices	No such components	N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
1.7.12	Language	Rating marking in English. User's manual was provided in English language, version in other languages will be provided applied for other national certificates.	—
1.7.13	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 s and then again for 15 s with the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling or lifting of the label edge.	P
1.7.14	Removable parts	No removable parts.	N/A
1.7.15	Replaceable batteries		N/A
	Language	English	—
1.7.16	Operator access with a tool.....	All areas containing hazards are inaccessible to the operator.	N/A
1.7.17	Equipment for restricted access locations	Equipment not intended for installation in RAL.	N/A

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	Supplied from SELV only	P
2.1.1.1	Access to energized parts	The EUT is Class III equipment, and no internal wiring at ELV.	N/A
	Test by inspection		—
	Test with test finger		—
	Test with test pin		—
	Test with test probe	No TNV circuits provided.	N/A
2.1.1.2	Battery compartments		P
2.1.1.3	Access to ELV wiring	No ELV wiring.	N/A
	Working voltage (V); minimum distance (mm) through insulation		—
2.1.1.4	Access to hazardous voltage circuit wiring	No internal wiring at hazardous voltage circuit.	N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
2.1.1.5	Energy hazards		N/A
2.1.1.6	Manual controls	No shafts of knobs etc.	N/A
2.1.1.7	Discharge of capacitors in equipment	Class III equipment.	N/A
	Time-constant (s); measured voltage (V).....:		—
2.1.2	Protection in service access areas		P
2.1.3	Protection in restricted access locations	Equipment not intended for installation in RAL.	N/A
2.2	SELV circuits		P
2.2.1	General requirements	Class III equipment.	P
2.2.2	Voltages under normal conditions (V)		—
2.2.3	Voltages under fault conditions (V):		—
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	Class III equipment.	N/A
2.2.3.2	Separation by earthed screen (method 2)	Class III equipment.	N/A
2.2.3.3	Protection by earthing of the SELV circuit (method 3)	Class III equipment.	N/A
2.2.4	Connection of SELV circuits to other circuits	SELV circuits are only connected to other SELV circuits.	P
2.3	TNV circuits		N/A
2.3.1	Limits	Refer below.	N/A
	Type of TNV circuits	No TNV circuits in the equipment.	—
2.3.2	Separation from other circuits and from accessible parts		N/A
	Insulation employed.....:		—
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed.....:		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed.....:		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	Limited current circuits		N/A
2.4.1	General requirements	No limited current circuit	N/A
2.4.2	Limit values		N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
	Frequency (Hz)		—
	Measured current (mA)		—
	Measured voltage (V)		—
	Measured capacitance (μF)		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	Limited power sources		N/A
	Inherently limited output		N/A
	Impedance limited output		N/A
	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault conditio		N/A
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N/A
	Output voltage (V), output current (A), apparent power (VA)..... :	See appended table 2.5	—
	Current rating of overcurrent protective device (A)		—
2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing	2.6.1 – 2.6.5.7 Class III equipment.	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		—
2.6.3.1	General		—
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.3	Size of protective bonding conductors		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A)..... :		N/A
2.6.3.5	Colour of insulation..... :		N/A
2.6.4	Terminals		—
2.6.4.1	General		—
2.6.4.2	Protective earthing and bonding terminals		—



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
	Rated current (A), type and nominal thread diameter (mm)		N/A
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		—
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	Overcurrent and earth fault protection in primary circuits		N/A
2.7.1	Basic requirements	2.7.1 – 2.7.6 Class III equipment.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel.....		N/A
2.8	Safety interlocks		N/A
2.8.1	General principles	2.8.1 – 2.8.8 No safety interlocks	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm)		N/A
2.8.7.2	Overload test		N/A



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Cl.	Requirement – Test	Result	Verdict
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	Electrical insulation		P
2.9.1	Properties of insulating materials		P
2.9.2	Humidity conditioning		—
	Humidity (%) : 95%		—
	Temperature (°C) : 25°C		—
2.9.3	Grade of insulation		P
2.10	Clearances, creepage distances and distances through insulation		N/A
2.10.1	General	2.10.1 – 2.10.10 Class III equipment. Only functional insulation complying with Cl. 5.3.4.	N/A
2.10.2	Determination of working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		—
2.10.3.2	Clearances in primary circuit		N/A
2.10.3.3	Clearances in secondary circuits		N/A
2.10.3.4	Measurement of transient voltage levels		N/A
2.10.4	Creepage distances		N/A
	CTI tests..... :		—
2.10.5	Solid insulation		N/A
2.10.5.1	Minimum distance through insulation		N/A
2.10.5.2	Thin sheet material		N/A
	Number of layers (pcs)..... :		—
	Electric strength test		N/A
2.10.5.3	Printed boards		N/A
	Distance through insulation		N/A
	Electric strength test for thin sheet insulating material		—
	Number of layers (pcs)..... :		N/A
2.10.5.4	Wound components		N/A
	Number of layers (pcs)..... :		—



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.6	Coated printed boards		N/A
2.10.6.1	General		N/A
2.10.6.2	Sample preparation and preliminary inspection		N/A
2.10.6.3	Thermal cycling		N/A
2.10.6.4	Thermal ageing (°C).....		N/A
2.10.6.5	Electric strength test		—
2.10.6.6	Abrasion resistance test		N/A
	Electric strength test		—
2.10.7	Enclosed and sealed parts		N/A
	Temperature $T_1=T_2 = T_{ma} - T_{amb} + 10K$ (°C).....		N/A
2.10.8	Spacings filled by insulating compound		N/A
	Electric strength test		—
2.10.9	Component external terminations		N/A
2.10.10	Insulation with varying dimensions		N/A

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection		P
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring		P
3.1.4	Insulation of conductors		P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure	No screw.	N/A
3.1.7	Insulating materials in electrical connections	Class III equipment.	N/A
3.1.8	Self-tapping and spaced thread screws	No screw.	N/A
3.1.9	Termination of conductors	No applicable.	N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring	No sleeving.	N/A

3.2	Connection to an a.c. mains supply or a d.c. mains supply		N/A
3.2.1	Means of connection	3.2.1 – 3.2.9 Class III equipment. No connection to mains supply.	N/A
3.2.1.1	Connection to an a.c. mains supply		N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter (mm) of cable and conduits		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		—
3.2.5.1	AC power supply cords		N/A
	Type.....		—
	Rated current (A), cross-sectional area (mm ²), AWG.....		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space		N/A
3.3	Wiring terminals for connection of external conductors.		N/A
3.3.1	Wiring terminals	3.3.1 – 3.3.8 Class III equipment.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm)		—
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	Disconnection from the mains supply		N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
3.4.1	General requirement	3.4.1 – 3.4.11 Class III equipment. No connection to mains supply.	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Single-phase equipment and d.c. equipment		N/A
3.4.7	Three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	Interconnection of equipment		P
3.5.1	General requirements	See below.	—
3.5.2	Types of interconnection circuits:	SELV circuit	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnections.	N/A
4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N/A
	Angle of 10°		N/A
	Test: force (N) :		N/A
4.2	Mechanical strength		P
4.2.1	General		N/A
4.2.2	Steady force test, 10 N		P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		P
4.2.5	Impact test		—
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test		P
4.2.7	Stress relief test		P
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified :		N/A
4.2.9	High pressure lamps		N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N):		N/A
4.3	Design and construction		P
4.3.1	Edges and corners		P
4.3.2	Handles and manual controls; force (N):	No knobs, grips, handles, lever etc.	N/A
4.3.3	Adjustable controls	No hazardous adjustable controls.	N/A
4.3.4	Securing of parts	Not applicable.	N/A
4.3.5	Connection of plugs and sockets	SELV connectors do not comply with IEC 60320-1 or IEC 60083	N/A
4.3.6	Direct plug-in equipment	Not applicable.	N/A
	Dimensions (mm) of mains plug for direct plug-in:		—
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N):		N/A
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries		P
4.3.9	Oil and grease	Insulation is not exposed to oil and grease etc.	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not contain flammable liquids or gases.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids:	The equipment does not contain flammable liquid.	N/A
	Quantity of liquid (l):		N/A
	Flash point (°C):		N/A
4.3.13	Radiation; type of radiation:	See below.	N/A
4.3.13.1	General	No ionizing radiation or laser or flammable liquids presents.	N/A
4.3.13.2	Ionizing radiation	No radiation.	N/A
	Measured radiation (pA/kg):		—
	Measured high-voltage (kV):		—
	Measured focus voltage (kV):		—
	CRT markings:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No UV radiation.	N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
	Part, property, retention after test, flammability classification		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation	No UV radiation.	N/A
4.3.13.5	Laser (including LEDs)		N/A
	Laser class	-	—
4.3.13.6	Other types	Not used.	N/A
4.4	Protection against hazardous moving parts		N/A
4.4.1	General	No moving parts.	N/A
4.4.2	Protection in operator access areas	No moving parts.	N/A
4.4.3	Protection in restricted access locations	Not intended for installation in RAL.	N/A
4.4.4	Protection in service access areas	Unintentional contact is not likely in service access areas.	N/A
4.5	Thermal requirements		P
4.5.1	Maximum temperatures	See appended table 4.5.1.	P
	Normal load condition per Annex L.....	Rated load with continuous operation.	—
4.5.2	Resistance to abnormal heat	No thermoplastic parts carrying hazardous voltages.	N/A
4.6	Openings in enclosures		N/A
4.6.1	Top and side openings		N/A
	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures		N/A
	Construction of the bottom		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C)/time (weeks).....		—
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Refer below:	—
	Method 1, selection and application of components wiring and materials	Use of materials with the required flammability classes.	P
	Method 2, application of all of simulated fault condition tests	Not applied for.	N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
4.7.2	Conditions for a fire enclosure	Refer below:	P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures		P
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures		P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage components.	N/A
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		N/A
5.1.1	General	5.1.1 – 5.1.7 Class III equipment.	—
5.1.2	Equipment under test (EUT)		N/A
5.1.3	Test circuit		—
5.1.4	Application of measuring instrument		—
5.1.5	Test procedure		—
5.1.6	Test measurements		—
	Test voltage (V)		—
	Measured touch current (mA)		N/A
	Max. allowed touch current (mA)		—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA)		—
5.1.7	Equipment with touch current exceeding 3.5 mA		N/A
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks	Not connected to telecommunication networks.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system	No TNV.	N/A
	Test voltage (V)		—



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks..... :	Not connected to a telecommunication network.	—
5.2	Electric strength		N/A
5.2.1	General	5.2.1 – 5.2.2 Class III equipment.	N/A
5.2.2	Test procedure		N/A
5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	see appended table 5.3	P
5.3.2	Motors		N/A
5.3.3	Transformers	No insulation transformer.	N/A
5.3.4	Functional insulation..... :	Complies with c), materials mounted on V-1 or better.	P
5.3.5	Electromechanical components	No electromechanical components in secondary circuits.	N/A
5.3.6	Simulation of faults	See the enclosed fault condition tests.	P
5.3.7	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs	N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions	No reduction of clearance and creepage distances. Electric strength test is made on double / reinforced insulation.	P
6	CONNECTION TO TELECOMMUNICATION NETWORKS <i>No TNV.</i>		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Test voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N/A



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Cl.	Requirement – Test	Result	Verdict

6.2	Protection of equipment users from overvoltages on telecommunication networks		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

6.3	Protection of the telecommunication wiring system from overheating		N/A
	Max. output current (A).....:		—
	Current limiting method		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.2	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.3	Insulation between primary circuits and cable distribution systems		N/A
7.3.1	General		N/A
7.3.2	Voltage surge test		N/A
7.3.3	Impulse test		N/A

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples	Equipment < 18kg.	—
	Wall thickness (mm).....:		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame		N/A
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—



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Cl.	Requirement – Test	Result	Verdict
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material.....:	All materials have suitable flame class, not testing required	—
	Wall thickness (mm).....:		—
A.2.2	Conditioning of samples		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame		N/A
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N/A
B.1	General requirements		N/A
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) :		—
	Electric strength test: test voltage (V) :		—



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Cl.	Requirement – Test	Result	Verdict
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	Test procedure		N/A
B.7.2	Alternative test procedure; test time (h).....:		N/A
B.7.3	Electric strength test		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V)		—
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N/A
	Position	No insulation transformer used.	—
	Manufacturer		—
	Type		—
	Rated values		—
	Method of protection.....:		—
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings.....:		N/A
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A
E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		N/A
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)..... :		N/A
G.2.1	AC mains supply		N/A
G.2.2	DC mains supply		N/A



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Cl.	Requirement – Test	Result	Verdict
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V) . :		N/A
G.5	Measurement of transient levels (V)		N/A
G.6	Determination of minimum clearances		N/A
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal used		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		N/A
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		N/A
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringling signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—



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Cl.	Requirement – Test	Result	Verdict
M.3.1.4	Single fault current (mA).....:		—
M.3.2	Tripping device and monitoring voltage.....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A
N	ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		P
Q	ANNEX Q, BIBLIOGRAPHY		P
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N/A
			—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		—
V.3	TT power systems		—
V.4	IT power systems		—
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A





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Cl.	Requirement – Test	Result	Verdict
W.1	Touch current from electronic circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current	See Annex C.1	N/A
X.2	Overload test procedure	--	N/A
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001)			P
General	C: Delete all the "country" notes in the reference document according to the following list: 1.1.5 Note 2 1.5.8 Note 2 1.6.1 Note 1.7.2 Note 4 1.7.12 Note 2 2.6 Note 2.2.3 Note 2.2.4 Note 2.3.2 Note 2, 7, 8 2.3.3 Note 1, 2 2.3.4 Note 2,3 2.7.1 Note 2.10.3.1 Note 4 3.2.1.1 Note 3.2.3 Note 1, 2 3.2.5.1 Note 2 4.3.6 Note 1,2 4.7.2.2 Note 4.7.3.1 Note 2 6.1.2.1 Note 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7 Note 4 7.1 Note G2.1 Note 1, 2 Annex H Note 2	Considered.	P
1.2.4.1	S (DK): Certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	Class III equipment.	N/A
1.5.1	A (SE, Ordinance 1990:944) and (CH, Ordinance on environmentally hazardous substances SR 814.013, Annex 3.2, Mercury): Add NOTE – Switches containing mercury such as thermostats, relays and level controllers are not allowed.	There are no components containing mercury in the equipment.	P
1.5.8	S (NO): Due to the IT power system used (see annex V, Fig. V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Class III equipment.	N/A
1.7.2	S (FI, NO, SE): CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows:	Class III equipment.	N/A
	FI: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan"	Ditto.	N/A
	NO: "Apparatet må tilkoples jordet stikkontakt"	Ditto.	N/A
	SE: "Apparaten skall anslutas till jordat uttag"	Ditto.	N/A



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Cl.	Requirement – Test	Result	Verdict
	<p>A (DK, Heavy Current Regulations): Supply cords of class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text:</p> <p>Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket</p> <p> eller </p> <p>If essential for the safety of the equipment, the tag must in addition be provided with a diagram which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende installationsvejledning."</p>	Class III equipment.	N/A
1.7.5	S (DK): Socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For stationary equipment the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	Class III equipment.	N/A
1.7.5	A (DK, Heavy Current Regulations): CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	Class III equipment.	N/A
1.7.12	<p>A (DE, Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}], of 23rd October 1992, Article 3, 3rd paragraph, 2nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des Gerätesicherheitsgesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10th January 1996, article 2, 4th paragraph item 2):</p> <p>Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language.</p> <p>NOTE: Of this requirement, rules for use even only by service personnel are not exempted.</p>	Must be considered before marketed in Germany.	—
1.7.15	A (CH, Ordinance on environmentally hazardous substances SR 814.013): Annex 4.10 of SR 814.013 applies for batteries.	There is no battery containing Cd or Hg in the equipment.	N/A
	A (DE, Regulation on protection against hazards by X-ray, of 8 th January 1987, Article 5 [Operation	This national difference was deleted by A11 of EN 60950-1.	N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
	<p>of X-ray emission source], clauses 1 to 4):</p> <p>a) A licence is required by those who operate an X-ray emission source.</p> <p>b) A licence in accordance with Cl. 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if</p> <p>1) the local dose rate at a distance of 0,1 m from the surface does not exceed 1 µSv/h and</p> <p>2) it is adequately indicated on the X-ray emission source that</p> <p>i) X-rays are generated and</p> <p>ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer.</p> <p>c) A licence in accordance with Cl. 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if</p> <p>1) the X-ray emission source has been granted a type approval and</p> <p>2) it is adequately indicated on the X-ray emission source that</p> <p>i) X-rays are generated</p> <p>ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and</p> <p>iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer.</p> <p>d) Furthermore, a licence in accordance with Cl. 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if</p> <p>1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6,</p> <p>2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical</p>		



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Cl.	Requirement – Test	Result	Verdict
	measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT.		
2.2.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	Not applied for.	N/A
2.3.2	S (NO): Requirements according to this annex, 6.1.2.1 apply.	Not applied for.	N/A
2.3.3 and 2.3.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	Not applied for.	N/A
2.6.3.3	S (GB): The current rating of the circuit shall be taken as 13 A, not 16 A.	Class III equipment.	N/A
2.7.1	C: Replace the subclause as follows: <i>Basic requirements</i> To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, 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 5.3 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.	Class III equipment.	N/A
	S (GB): To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT OF DIRECT PLUG-IN EQUIPMENT, protective device shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT.	Class III equipment.	N/A
2.7.2	C: Void.	Void.	N/A



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Cl.	Requirement – Test	Result	Verdict
2.10.2	C: Replace in the first line "(see also 1.4.7)" by "(see also 1.4.8)".	Replaced.	P
2.10.3.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage and will remain at 230 V in case of a single earth fault	Class III equipment.	N/A
3.2.1.1	<p>S (CH): Supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991, Plug type 15, 3P+N+PE 250/400 V, 10 A</p> <p>SEV 6533-2.1991, Plug type 11, L+N 250 V, 10 A</p> <p>SEV 6534-2.1991, Plug type 12, L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998, Plug type 25, 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998, Plug type 21, L+N 250 V, 16 A</p> <p>SEV 5934-2.1998, Plug type 23, L+N+PE 250 V, 16 A</p>	Class III equipment.	N/A
	<p>S (DK): Supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>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.</p> <p>If ply-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>	Ditto.	N/A



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Cl.	Requirement – Test	Result	Verdict
	<p>S (ES): Supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>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 UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	Ditto.	N/A
	<p>S (GB): Apparatus 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 and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 – The Plugs and Socket etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE – 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	Ditto.	N/A
	<p>S (IE): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 – National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.</p>	Ditto.	N/A
3.2.3	C: Delete Note 1 and in Table 3A, delete the conduit sizes in parentheses.	Deleted.	P



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Cl.	Requirement – Test	Result	Verdict
3.2.5.1	C: Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6		



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Cl.	Requirement – Test	Result	Verdict
6.1.2.1	<p>S (FI, NO, SE): Add the following text between the first and second paragraph:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none">- 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. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES AND CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none">- passes the tests and inspection criteria of 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5 kV), and- is subject to ROUTING TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none">- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950:2000, 6.2.2.1;- the additional testing shall be performed on all the test specimens as described in EN 132400;- the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.	No TNV-circuits provided.	N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
6.1.2.2	S (FI, NO, SE): The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a service person.	Ditto.	N/A
7.1	S (FI, NO, SE): Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	No cable distribution system.	N/A
G.2.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.	Class III equipment.	N/A
Annex H	C: Replace the last paragraph of this annex by: At any point 10 cm from the surface of the operator access area, the dose rate shall not exceed 1 μ Sv/h (0,1 mR/h) (see note). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete Note 2.	Replaced.	P
Annex P	C: Replace the text of this annex by: See annex ZA.	Replaced.	P
Annex Q	C: Replace the title of IEC 61032 by "Protection of persons and equipment by enclosures – Probes for verification". Add the following notes for the standards indicated: IEC 60127 NOTE Harmonized as EN 60127 (Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.		P



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict
Annex ZA	<p>C: NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR RELEVANT EUROPEAN PUBLICATIONS</p> <p>This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).</p> <p>NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.</p>		P
	—	IEC 60050-151	
	—	IEC 60050-195	
	EN 60065:1998 + corr. June 1999	IEC 60065 (mod):1998	
	EN 60073:1996	IEC 60073:1996	
	HD 566 S1:1990	IEC 60085:1984	
	HD 214 S2:1980	IEC 60112:1979	
	HD 611.4.1.S1:1992	IEC 60216-4-1:1990	
	HD 21 ¹⁾ Series	IEC 60227 (mod) Series	
	HD 22 ²⁾ Series	IEC 60245 (mod) Series	
	EN 60309 Series	IEC 60309 Series	
	EN 60317-43:1997	IEC 60317-43:1997	
	EN 60320 Series	IEC 60320 (mod) Series	
	HD 384.3 S2:1995	IEC 60364-3 (mod):1993	
	HD 384.4.41 S2:1996	IEC 60364-4-41 (mod):1992 ³⁾	
	EN 132400:1994 ⁴⁾ + A2:1998 + A3:1998 + A4:2001	IEC 60384-14:1993	
	EN 60417-1	IEC 60417-1	
	HD 625.1 S1:1996 + corr. Nov. 1996	IEC 60664-1 (mod):1992	
	EN 60695-2-2:1994	IEC 60695-2-2:1991	
	EN 60695-2-11:2001	IEC 60695-2-11:2000	
	—	IEC 60695-2-20:1995	
	—	IEC 60695-10-2:1995	
	—	IEC 60695-11-3:2000	
	—	IEC 60695-11-4:2000	
	EN 60695-11-10:1999	IEC 60695-11-10:1999	
	EN 60695-11-20:1999	IEC 60695-11-20:1999	
	EN 60730-1:2000	IEC 60730-1:1999 (mod)	



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Cl.	Requirement – Test	Result	Verdict
	EN 60825-1:1994 + corr. Febr. 1995 + A11:1996 + corr. July 1997	IEC 60825-1:1993	
	EN 60825-2:2000	IEC 60825-2:2000	
	—	IEC 60825-9:1999	
	EN 60851-3:1996	IEC 60851-3:1996	
	EN 60851-5:1996	IEC 60825-5:1996	
	EN 60851-6:1996	IEC 60851-6:1996	
	—	IEC 60885-1:1987	
	EN 60990:1999	IEC 60990:1999	
	—	IEC 61058-1:2000	
	EN 61965:2001	IEC 61965:2000	
	EN ISO 178:1996	ISO 178:1993	
	EN ISO 179 Series	ISO 179 Series	
	EN ISO 180:2000	ISO 180:1993	
	—	ISO 261:1998	
	—	ISO 262:1998	
	EN ISO 527 Series	ISO 527 Series	
	—	ISO 386:1984	
	EN ISO 4892 Series	ISO 4892 Series	
	—	ISO 7000:1989	
	EN ISO 8256:1996	ISO 8256:1990	
	—	ISO 9772:1994	
	EN ISO 9773:1998	ISO 9773:1998	
	—	ITU-T:1988 Recommendation K.17	
	—	ITU-T:2000 Recommendation K.21	
	1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series 2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series 3) IEC 60364-4-41:1992 is superseded by IEC 60364-4-41:2001 4) EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and its amendments are related to, but not directly equivalent to IEC 60384-14		



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Cl.	Requirement – Test	Result	Verdict

1.5.1	TABLE: list of critical components					P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
Enclosure	Various	Various	V-0	--	UL	
PCB	Various	Various	V2.2, 130°C	--	UL	
IC	Various	Various	BK3254QN32B, QFN32	--	--	
Battery	Various	Various	3.7V, 4500mAh	--	--	
Speaker	Various	Various	4Ω , 3W	--	--	

¹⁾ an asterisk indicates a mark which assures the agreed level of surveillance

1) Breaking time of all fuses when load with a current equal to 210% of the specified current rating are <120s.

2.1.1.5	TABLE: energy hazard test				N/A
Voltage (rated) (V)	Current (rated) (A)	Voltage (max) (V)	Current (max.) (A)	VA (max.) (VA)	
No energy hazard.					

2.1.1.7	TABLE : discharge test				N/A
Condition	τ (s)	T measured (s)	$t_u \rightarrow 0v$ (s)	comments	
Note(s):					
Test voltage:					
Overall capacity:					
Discharge resistor:					

2.2.2	TABLE: Hazardous voltage measurement					N/A
Connector	Location	Max. Voltage		Voltage limitation component		
		Vpeak	Vd.c			

2.2.3	TABLE: SELV voltage measurement					N/A
Location		Voltage (V)	Comments			

2.4.2	TABLE: limited current circuit measurement					N/A
-------	--	--	--	--	--	-----



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Cl.	Requirement – Test	Result	Verdict

Location		Voltage (V)	Current (mA)	Freq. (Hz)	Limit (mA)	Comments
Output measured with an 2kΩ resistor as load.						
2.5	TABLE: limited power source measurement					N/A
		Limits		Measured		Verdict
According to Table 2B (normal condition)						
current (in A)						Pass
apparent power (in VA)						Pass
According to Table 2B (Abnormal condition)						
current (in A)						Pass
apparent power (in VA)						Pass
Note(s):						

2.6.3.3	TABLE : ground continue test (Class III without test)				N/A
Location		Resistance measured (mΩ)			
--		--		--	

2.10.2	TABLE : working voltage measurement			N/A
Location		RMS Voltage (V)	--	Comments
--		--	--	--
Input voltage:				

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements						N/A
clearance cl and creepage distance dcr at/of:		Up (V)	--	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Note: Class III equipment not demand							

2.10.5	TABLE: distance through insulation measurements				N/A
distance through insulation di at/of:		U r.m.s. (V)	test voltage (V)	required di (mm)	di (mm)
--		--	--	--	--



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Note: Class III equipment not demand									
4.3.8	TABLE: batteries								P
The tests of 4.3.8 are applicable only when appropriate battery data is not available						--		--	
Is it possible to install the battery in a reverse polarity position?						--		--	
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	3670	4500	2150	4500	--	--
Max. current during fault condition	--	--	--	3673	--	5132	--	--	--
Test results:						Test result		Verdict	
- Chemical leaks						--		P	
- Explosion of the battery						--		P	
- Emission of flame or expulsion of molten metal						--		P	
- Electric strength tests of equipment after completion of tests						--		N	
Supplementary information:									

4.5.1	TABLE: temperature rise measurements			P
	test voltage (V)	5Vdc		—
	t1 (°C)	25.0		—
	t2 (°C)	25.5		—
rise T of part/at:		T (°C)		allowed T (°C)
Test Voltage:		5V	--	
Enclosure inside		34.2	--	90
Enclosure outside		31.7	--	90
PCB near U1		42.4	--	130
Battery body		38.7	--	60
Ambient		25.0	--	--



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Cl.	Requirement – Test	Result	Verdict

Note:

Having a specified maximum ambient temperature of 45°C for charging, 60°C for discharging. If no limit is stated, temperature is for reference only. Temp. limits are adjusted according to Cl. 1.4.12.3.

4.5.2	TABLE: ball pressure test of thermoplastic parts			P
	allowed impression diameter (mm) : ≤ 2 mm			—
Part	test temperature (°C)		impression diameter (mm)	
Enclosure	75		0.86	
---	--		-	

5.1.6	TABLE: Touch current measurement				N/A
Condition		L- terminal A (mA)	N-terminal A (mA)	Limit (mA)	Comments
Inputvoltage:					
Input frequency:					
Overall capacity: --					

5.2	TABLE: electric strength tests, impulse tests and voltage surge tests		P
test voltage applied between:		test voltage (V) a.c. / d.c.	breakdown Yes / No
Input –output		DC500V	No
supplementary information			
Note:			



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5.3	TABLE: fault condition tests		P
	ambient temperature (°C)	25.0°C	—
	model/type of power supply	See the first page	—
	manufacturer of power supply	See the first page	—
	rated markings of power supply	See the first page	—

com-ponent No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
U1	s-c	5Vdc	10min	--	--	Unit shut down immediately, no damage, no hazards
Battery	s-c	--	7hr	--	--	Battery is protected, no explosion, no fire, no leakage
Speaker	s-c	5Vdc	10min	--	--	Unit shut down immediately, no damage, no hazards

supplementary information

1) s-c = short circuit; o-c = open circuit; o-l = overload.



ANNEX A


IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Differences according to:EN 60950-1:2006/A11:2009/A1:2010/A12:2011			
Clause	Requirements + Test	Result-Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Normative references to international Publications with their corresponding European Publications Annex ZB (normative) Special national conditions		P
General	Delete all the country notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
General (A1:2010)	Delete all the country notes in the reference documents (IEC 60850-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P



IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirements + Test	Result-Remark	Verdict
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.		N/A
1.7.2.1 (A1:2010)	In addition , for a portable sound system , the instructions shall include a warning that excessive sound pressure from earphone and headphone can cause hearing loss.		N/A
1.7.2.1 (A12:2011)	In EN 60950-1:2006/A12:2011 Delete Note Z1 and the addition for portable sound System. Add the following clause and annex to the existing Standard and amendments. ZX Protection against excessive sound pressure from personal music player		N/A
	ZX.1 General A personal music player is portable equipment for personal use , that: -is designed to allow the user to listen to recorded or broadcast sound or video; and -primarily uses headphones or earphones that can be worn in or on or around while in use. A personal music player and earphone or headphones intended to be used with personal music player shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only.		N/A
	For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		N/A
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: -equipment provided as a package (personal music player with its listening device),where the acoustic output LAeq,T is ≤ 85 dBA measured while playing the fixed programme simulate noise as described in En 50332-1; and -a personal music player provided with an analogue electrical output socket for listening device, where the electrical output is ≤ 27 mV measured as		N/A



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Cl.	Requirement – Test	Result	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirements + Test	Result-Remark	Verdict
	<p>Described in EN 50332-1.</p> <p>All other equipment shall:</p> <p>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</p> <p>b) have a standard acoustic output level not exceeding those mentioned above, and</p> <p>c) Provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledged does not need to be repeated more than once every 20h of cumulative listening time.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <p>1) equipment provided as package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed “programme simulation noise” described in EN 50332-1; and</p> <p>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1.</p>		N/A
	<p>Zx.3 Warning</p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <p>the symbol of Figure 1 with a minimum height of 5 mm; and the following wording, or similar:</p> <p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p> <div style="text-align: center;">  </div> <p>Figure 1 – Warning label (IEC 60417-6044)</p>		N/A



EN 60950-1			
Cl.	Requirement – Test	Result	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirements + Test	Result-Remark	Verdict
	Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)	No earphone with the equipment.	N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output LAeq,T, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).		N/A
	Zx.4.2 Wired listening devices with digital Input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA.		NA
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.		N/A



ANNEX A:

Photo-documentation

Photo 1 General appearance of EUT



Photo 2 General appearance of EUT



Photo 3 General appearance of EUT

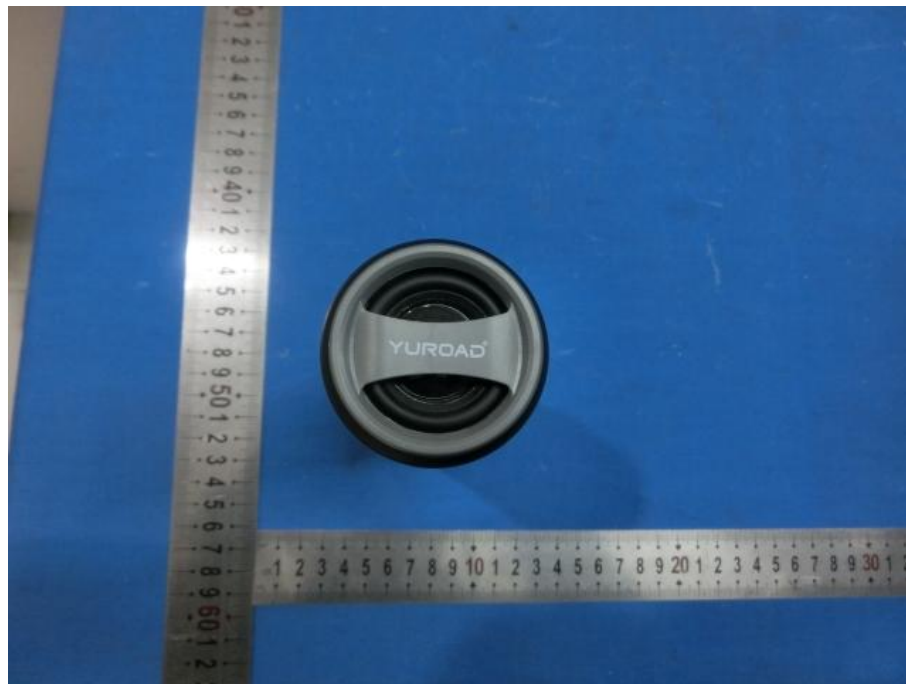


Photo 4 General appearance of EUT

