Test Report issued under the responsibility of:

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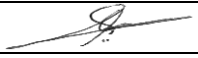
TEST REPORT
IEC 60335-2-53
Part 1: Safety of household and similar electrical appliances
Part 2: Particular requirements for sauna heating appliances

Report Number.....:	1610950STO-001
Date of issue.....:	2022-06-08
Total number of pages.....:	107
CB Testing Laboratory.....:	Intertek Semko AB
Address.....:	Torshamnsgatan 43, SE-164 22 Kista, SWEDEN
Applicant's name.....:	Sauna360 AB
Address.....:	Svarvaregatan 6 302 50 Halmstad SWEDEN
Test specification:	
Standard.....:	IEC 60335-2-53:2011 (Fourth edition) in conjunction with IEC 60335-1:2010 (Fifth edition), and IEC 62233:2005 (First edition)
Test procedure .....:	STR
Non-standard test method……..:	N/A
Test Report Form No.....:	IEC60335_2_53C_ modified
Test Report Form(s) Originator .....:	Inertek
Master TRF.....:	2021-06

Test item description .....:	Sauna aggregate		
Trade Mark .....:	TYLÖ		
Manufacturer .....:	Sauna360 AB		
Model/Type reference .....:	See general product information		
Ratings .....:	See general product information		
Testing procedure and testing location:			
☒ **CB Testing Laboratory:**	Intertek Semko AB		
Testing location/ address.....:	Torshamnsgatan 43 SE-164 22 Kista SWEDEN		
☐ **Associated CB Laboratory:**			
Testing location/ address.....:			
Compiled by (name + signature):	Leith Aldahan		
Approved by (name + signature) :	Anders Åhman		
☐ Testing procedure: TMP	Sauna360 AB		
Testing location/ address.....:	Svarvaregatan 6 302 50 Halmstad, Sweden		
Tested by (name + signature) ..:	Leith Aldahan		
Approved by (name + signature) :	Anders Åhman		
☐ Testing procedure: WMT			
Testing location/ address.....:			
Tested by (name + signature) ..:			
Witnessed by (name + signature) :			
Approved by (name + signature) :			
☐ Testing procedure: SMT			
Testing location/ address.....:			
Tested by (name + signature) ..:			
Approved by (name + signature) :			
Supervised by (name + signature) .....:			
☐ Testing procedure: RMT			
Testing location/ address.....:			
Tested by (name + signature) ..:			
Approved by (name + signature) :			
Supervised by (name + signature) .....:			

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

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

EN 60335 1:2012 + A11:2014 and EN 62233:2008, page 89–101

Photographs: pages 102 to 106.

Summary of testing: See general product information

Tests performed (name of test and test clause):

Intertek Semko AB

Clause 10: Power input

Clause 13: Leakage current/ Electric strength

Clause 16: Leakage current/ Electric strength

Clause 28: Screws and Connections

Clause 29: Clearances, Creepage

Clause 30: Resistance to heat and fire

Sauna360 AB

Clause 11: Heating

Clause 19: Abnormal operation

Testing location:

Intertek Semko AB
Torshamnsgatan 43
SE-164 22 Kista
SWEDEN

Sauna360 AB
Svarvargatan 6
302 50 Halmstad
Sweden

Summary of compliance with National Differences

List of countries addressed:

European group

EN 60335-2-53 are not included

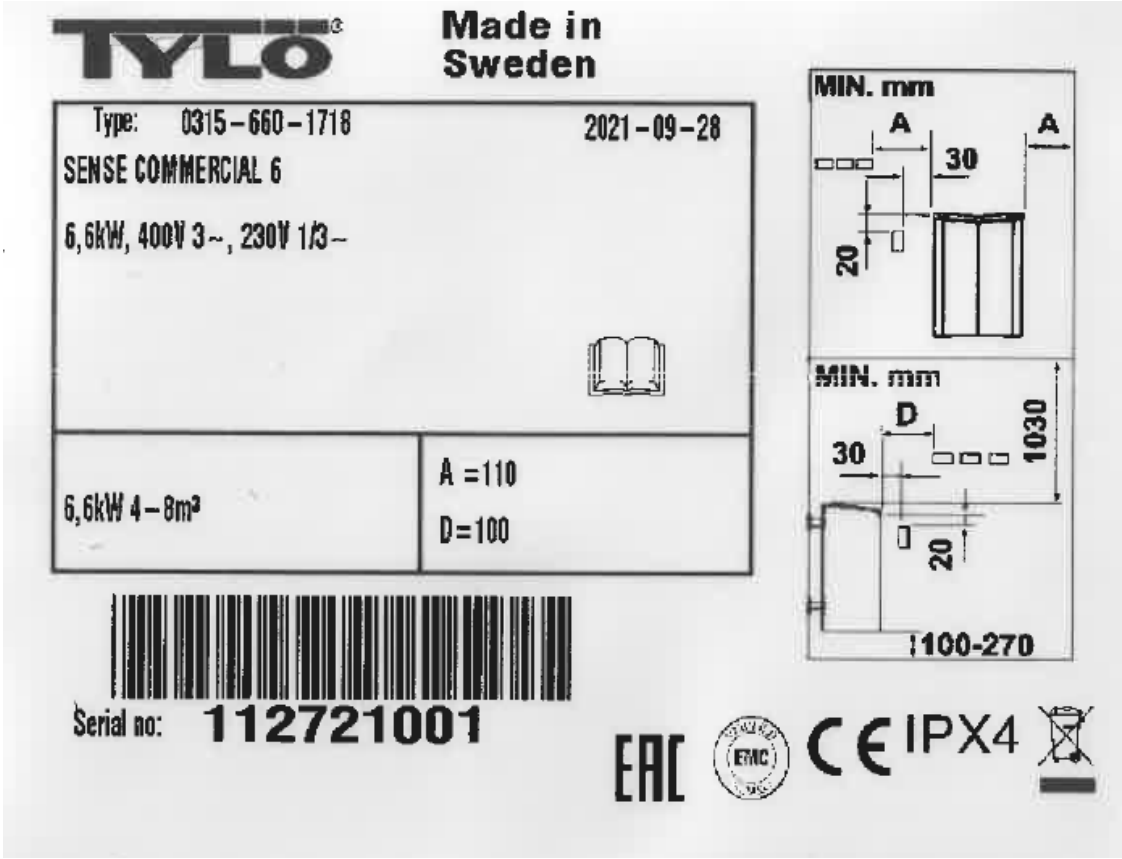
☒ **The product fulfils the requirements of**

EN 60335 1:2012 + A11:2014

EN 62233:2008

Copy of marking plate:

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



Test item particulars ..... :	
Supply connection ..... :	Fixed
Nature of supply ..... :	a.c.
Class of protection against electric shock ..... :	I
Degree of protection against moisture ..... :	IPX4
Type of cord attachment ..... :	Mains terminal
Sauna heater ..... :	☒
for public saunas ..... :	☒
for adjacent installation ..... :	☒
for wall mounting ..... :	☒
for floor standing ..... :	☐
of thermal storage type ..... :	☐
rock container detachable ..... :	☐
Sauna heating appliance ..... :	☒
for public saunas ..... :	☐
Prefabricated sauna ..... :	☐
Humidifier unit ..... :	☐
Ventilating fan operates independently of heating element :	☐
Luminaires ..... :	☐
Switch ..... :	☒
Thermostat ..... :	☒
Thermostat without an OFF position ..... :	☒
Non-self-resetting thermal cut-out ..... :	☒
Contact opening > 3 mm in each pole ..... :	☐
Thermal link ..... :	☒
Electronic circuit ..... :	☒
with software class ..... :	A / No
Protective electronic circuit ..... :	☒
with software class ..... :	No
Programmer, timer, switching devices ..... :	☒
Remote operation	☐
Stand-by mode	☒
Appliances ..... - with supply cord :	☐
- with supply cord fitted with a plug ..... :	☐
Motor with capacitor in auxiliary winding ..... :	☐
Series motors incorporated ..... :	☐
Detachable part with earth connector ..... :	☐
Mercury switch provided ..... :	☐
Appliances intended to be operated unattended ..... :	☒
Protection against effects of covering ..... :	☐
Used in vehicles or on board ships or aircraft, additional requirements may be necessary ..... :	☐
..... :	☐

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 .....: 2016-09-15 – 2021-9-15

Date of receipt of test item .....:

Date (s) of performance of tests .....:

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(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 6.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:

☐ Yes

☒ Not applicable

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) .....: Sauna360 AB
Svarvargatan 6
302 50 Halmstad
Sweden

General product information:

The difference between the models are the rated power and the volume of the sauna room where the sauna heater is installed.

Model	Ratings	Relay Box	Control panel type
Sense Commercial 6	6,6kW, 400V3~ ,230V1/3~, 4-8m³	RB Commercial Lite	TS-30, Pure or Elite
Sense Commercial 8	8kW, 400V3~ ,230V1/3~, 6-12m³	RB Commercial Lite	TS-30, Pure or Elite
Sense Commercial 10	10,7kW, 400V3~ ,230V1/3~, 10-18m³	RB Commercial Lite	TS-30, Pure or Elite
Sense Commercial 16	16kW, 230V3~, 15-35m³	RB Commercial	TS-30, Pure or Elite
Sense Commercial 20	20kW, 230V3~, 22-43m³	RB Commercial	TS-30, Pure or Elite

Test according to 19.101 is not performed as the intention from the manufacturer is to comply with 22.108 instead. However, the product does not comply with clause 22.108 as it depends on a programmable electronic circuit in which the software is not evaluated according to Annex R. This test report does not contain results according to IEC/EN 62233
The test has been performed on the largest model (Sense Commercial 20) and representing all models unless otherwise specified.

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
5	**GENERAL CONDITIONS FOR THE TESTS**		
	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.		P
5.2	Appliance with more than one sauna heater or more than one infrared emitter are tested together.(IEC 60335-2-53)		N/A
5.3	Appliances where sauna and humidifying operation is possible, the tests for sauna operation are made first (IEC 60335-2-53)		N/A
	followed immediately by the tests for humidifying. (IEC 60335-2-53)		N/A
	Thermostats and humidity controls are initially set to their maximum setting. (IEC 60335-2-53)		N/A
5.101	Ventilating fan which operates independently of the heating element, the tests are carried out with or (IEC 60335-2-53)		N/A
	without the fan in operation, whichever is more unfavourable. (IEC 60335-2-53)		N/A
5.102	Combination of sauna-heating appliances and infrared emitting units is to be tested under the most unfavourable conditions. (IEC 60335-2-53)		N/A
6	**CLASSIFICATION**		
6.1	Protection against electric shock: Class I, II, III.....: (IEC 60335-2-53)	Class I	P
6.2	Protection against harmful ingress of water		P
	Appliances, controls, protective devices and control boards intended to be mounted inside a sauna room are at least IPX4. (IEC 60335-2-53)		P
	Electrical components of prefabricated saunas are at least IPX4. (IEC 60335-2-53)		N/A
	Infrared emitters, controls and protective devices intended to be mounted inside a cabin are at least IPX2. (IEC 60335-2-53)		N/A
	Infrared emitters, controls and protective devices intended to be mounted inside a cabin in combination with a sauna-heating appliance are at least IPX4. (IEC 60335-2-53)		N/A
7	**MARKING AND INSTRUCTIONS**		
7.1	Rated voltage or voltage range (V) .....:	See General information	P
	Symbol for nature of supply, or .....:	~	P
	Rated frequency (Hz) .....:		N/A
	Rated power input (W), or .....:	See General information	P
	Rated current (A) .....:		N/A
	Manufacturer's or responsible vendor's name, trademark or identification mark.....:		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Model or type reference .....:	See General information	P
	Symbol IEC 60417-5172, for class II appliances		N/A
	IP number, other than IPX0.....:	IPX4	P
	Symbol IEC 60417-5180, for class III appliances, unless		N/A
	the appliance is operated by batteries only		N/A
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose-sets for connection of an appliance to the water mains, if the working voltage exceeds extra-low voltage		N/A
	Sauna heaters and infrared emitters are marked with symbol ISO 7000-0790 (2004-01) or with the substance of the following:.....: (IEC 60335-2-53)		
	Read operators manual. (IEC 60335-2-53)		P
	- the minimum distance between the top of the heater and the ceiling of the sauna room; (IEC 60335-2-53)		P
	- the minimum distance between the bottom of the heater and the floor of the sauna room, unless (IEC 60335-2-53)		P
	- distance is determined by the construction of the heater; (IEC 60335-2-53)		N/A
	- the minimum horizontal distance between the heater and any combustible material of the sauna room, including a protective rail, unless (IEC 60335-2-53)		P
	- these distances are determined by the construction of the heater; (IEC 60335-2-53)		N/A
	- the maximum depth and minimum width of the recess for sauna heaters intended to be installed in a recess. (IEC 60335-2-53)		N/A
	Sauna heaters and infrared emitters are marked with symbol IEC 60417-5641 (2002-10) combined with the prohibition sign of ISO 3864-1, except for colours, or with the substance of the following: .....: (IEC 60335-2-53)		N/A
	WARNING: Do not cover. (IEC 60335-2-53)		P
	Inside wall of prefabricated saunas or prefabricated infrared cabins are marked near the sauna heater or infrared emitter with the substance of the following.....: (IEC 60335-2-53)		N/A
	WARNING: Covering the heater or infrared emitter causes fire risk (IEC 60335-2-53)		N/A
	Sauna heaters are marked with the substance of the following: (IEC 60335-2-53)		
	WARNING: An inadequately filled rock container causes fire risk (IEC 60335-2-53)		P
	NOTE 101 This warning is not required if the sauna heater complies with Clause 11 without rocks in the container. (IEC 60335-2-53)		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
7.2	Warning for stationary appliances for multiple supply		N/A
	Warning placed in vicinity of terminal cover		N/A
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen		N/A
	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages, the voltage setting is clearly discernible		N/A
	Requirement met if frequent changes are not required and the rated voltage to which the appliance is to be adjusted is determined from a wiring diagram		N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless		N/A
	the power input is related to the arithmetic mean value of the rated voltage range		N/A
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		N/A
7.6	Correct symbols used		P
	Symbol for nature of supply placed next to rated voltage		P
	Symbol for class II appliances placed unlikely to be confused with other marking		N/A
	Units of physical quantities and their symbols according to international standardized system		P
	- Do not cover (IEC 60335-2-53)		N/A
	NOTE 101 Symbol incorporates symbol IEC 60417-5641(2002-10) combined with the prohibition sign of ISO 3864-1, except for colours. (IEC 60335-2-53)		N/A
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless		N/A
	correct mode of connection is obvious		N/A
	Control boards connection diagram gives details of electrical connections for controls and protective devices (IEC 60335-2-53)	Connection diagram on inside of the Relay Box.	P
	NOTE 101 The connection diagram may also show connections, other than those required, provided the additional information does not cause confusion. (IEC 60335-2-53)		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	NOTE 102 If more than one control board is provided, the connection diagram may be divided so that each control board has its own connection diagram and a reference to the other control boards. (IEC 60335-2-53)		N/A
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows.....:		
	- marking of terminals exclusively for the neutral conductor (letter N)		N/A
	- marking of protective earthing terminals (symbol IEC 60417-5019)		P
	- marking not placed on removable parts		P
7.9	Marking or placing of switches which may cause a hazard		P
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means.....:	Control Panel	P
	This applies also to switches which are part of a control		P
	If figures are used, the off position indicated by the figure 0	RB Commercial or RB Commercial Lite	P
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		P
7.11	Indication for direction of adjustment of controls	Control Panel	P
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance		P
	The instructions state that.....:		
	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction		P
	- children being supervised not to play with the appliance		N/A
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided		N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless		N/A
	it is a battery-operated appliance, the battery being charged outside the appliance		N/A
	Instructions for sauna heaters state how to fill the rock container. (IEC 60335-2-53)		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Instructions for appliances for public saunas that do not have a timer state that the appliance is to be continuously attended. (IEC 60335-2-53)	Timer.	N/A
	Instructions for other sauna heating appliances and infrared emitting units state that the sauna room or cabin is to be inspected before either restarting the timer or by switching on the appliance by a separate remote-control system. (IEC 60335-2-53)		P
	Unless the sauna heater for public saunas complies with the test of 19.101, the instructions for sauna heaters for public saunas and sauna heating appliances and infrared emitting units for public saunas that switched on by a separate remote-control system state that the sauna room or cabin is to be inspected before setting the appliance to a standby mode for a delayed start. (IEC 60335-2-53)		P
	Instructions for prefabricated infrared cabins and the instructions for prefabricated saunas incorporating infrared emitters state that cleaning with steam cleaners, high pressure cleaners and spraying water is not allowed. (IEC 60335-2-53)		N/A
	If the appliances are marked with the symbol IEC 60417-5641 (2002-10) combined with the prohibition sign of ISO 3864-1 except for colours, their meaning is explained. (IEC 60335-2-53)		N/A
	Instructions for infrared emitters include the substance of the following: .....: (IEC 60335-2-53)		
	- it is recommended that the infrared cabin is not used within 24 h after UV radiation exposure from artificial sources or sun-bathing; (IEC 60335-2-53)		N/A
	- individuals who may be at risk from hyperthermia, such as individuals suffering from cardiovascular disease, should seek medical advice before use of infrared warming cabins; (IEC 60335-2-53)		N/A
	- when persistent erythema (reddening of the skin lasting more than a day) and netlike colour changes persist after regular exposure to infrared radiation, exposure should not be repeated and medical advice should be sought to prevent development of erythema ab igne; (IEC 60335-2-53)		N/A
	- if you are a person with compromised heat pain sensation or under the influence of alcohol or tranquilizers you should not use infrared warming cabins. (IEC 60335-2-53)		N/A
7.12.1	Sufficient details for installation supplied		P
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Installation instructions of sauna heaters intended for a recessed installation give details of the proper installation in a recessed area and state that means that prevent combustible objects being placed on the top of the heater have to be installed in the air channel above the heater. (IEC 60335-2-53)		N/A
	NOTE 101 For example, an air outlet grill or guard spaced a minimum 40 mm from any heated surfaces beneath, whose dimensions of the opening do not exceed 53 mm × 20 mm or 126 mm × 12 mm, is considered to be a suitable means. (IEC 60335-2-53)		N/A
	Installation instructions for prefabricated saunas and prefabricated infrared cabins give details on how to assemble the appliance. (IEC 60335-2-53)		N/A
	Installation instructions for sauna heating appliances and infrared emitting units include the following details: (IEC 60335-2-53):		
	- minimum and maximum volume, in cubic metres, of the sauna room or cabin in which the sauna heater or infrared emitter is intended to be installed; (IEC 60335-2-53)		P
	- minimum height of the sauna room or cabin; (IEC 60335-2-53)		P
	- materials to be used for the walls and the ceiling of the sauna room or cabin; (IEC 60335-2-53)		P
	- arrangement of the separate protective rail, if applicable; (IEC 60335-2-53)		P
	- means of ventilating the sauna room or cabin; (IEC 60335-2-53)		P
	- the installation of adjacent sauna heaters or infrared emitters or a statement that the sauna heater or infrared emitter must be used alone; (IEC 60335-2-53)		P
	- the connection and position of controls in the sauna room or cabin; (IEC 60335-2-53)		P
	- that thermostat sensors have to be installed so that they are not influenced by incoming air; (IEC 60335-2-53)		P
	- the installation of the control board, including a statement that the control board must be mounted outside the sauna room or cabin (not necessary if the control board is at least IPX4); (IEC 60335-2-53)		P
	- the type of cable for supplying of the sauna heater or infrared emitter. (IEC 60335-2-53)		P
	Instructions for infrared emitters state: (IEC 60335-2-53):		
	- the minimum distance between the top of an infrared emitter and the ceiling of the cabin; (IEC 60335-2-53)		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	- the minimum distance between the bottom of an infrared emitter and the floor of the cabin, unless this distance is determined by the construction of the infrared emitter; (IEC 60335-2-53)		N/A
	- the minimum horizontal distance between an infrared emitter and any combustible material of the cabin, including a protective rail, unless these distances are determined by the construction of the infrared emitter; (IEC 60335-2-53)		N/A
	- the minimum distance between adjacent infrared emitters (IEC 60335-2-53)		N/A
	Installation instructions for appliances for public saunas or infrared cabins that do not have a timer state that a pilot lamp showing that the heater or infrared emitter is switched on is to be installed in the attendant's room. (IEC 60335-2-53)	Timer.	N/A
	Unless sauna heater for public saunas complies with clause 19.101, (IEC 60335-2-53)		N/A
	the installation instructions for sauna heating appliances or infrared emitting units that incorporate a stand-by mode setting for remote operation state that the door of the sauna room or cabin is fitted with an interlock such that the stand-by mode setting for remote operation is disabled if the sauna door or cabin door is opened when the stand-by mode setting for remote operation is set. (IEC 60335-2-53)		P
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules		P
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions state that the fixed wiring must be protected		P
7.12.4	Instructions for built-in appliances.....:		
	- dimensions of space		N/A
	- dimensions and position of supporting and fixing		N/A
	- minimum distances between parts and surrounding structure		N/A
	- minimum dimensions of ventilating openings and arrangement		N/A
	- connection to supply mains and interconnection of separate components		N/A
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		N/A
	a switch complying with 24.3		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		N/A
	Replacement cord instructions, type Y attachment		N/A
	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard		N/A
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed		P
7.12.8	Instructions for appliances connected to the water mains .....:		
	- max. inlet water pressure (Pa) :		N/A
	- min. inlet water pressure, if necessary (Pa) :		N/A
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N/A
7.13	Instructions and other texts in an official language	Swedish checked	P
7.14	Marking clearly legible and durable, rubbing test as specified		P
	Marking of distances to combustible material of the sauna room or cabin is clearly visible from the outside of the sauna heater or infrared emitter without removing covers. (IEC 60335-2-53)		P
	Warnings concerning fire risks are visible after the sauna heater or infrared emitter is installed and (IEC 60335-2-53):		P
	lettering have a height of at least (IEC 60335-2-53):		
	- 5 mm, for headings; (IEC 60335-2-53)		P
	- 3 mm, for other lettering.(IEC 60335-2-53)		P
	NOTE 101 These warnings may be placed on a recessed low part of the sauna heater or infrared emitter. (IEC 60335-2-53)		P
7.15	Markings on a main part		P
	Marking clearly discernible from the outside, if necessary after removal of a cover		P
	For portable appliances, cover can be removed or opened without a tool		N/A
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation		N/A
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading		P
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		P
7.101	Appliance is marked with instruction to replace infrared emitters with the exact same manufacturer and model of emitter. (IEC 60335-2-53)		N/A
8	**PROTECTION AGAINST ACCESS TO LIVE PARTS**		
8.1	Adequate protection against accidental contact with live parts		P
8.1.1	Requirement applies for all positions, detachable parts removed		P
	Lamps behind a detachable cover not removed, if conditions met		N/A
	Insertion or removal of lamps, protection against contact with live parts of the lamp cap		N/A
	Use of test probe B of IEC 61032, with a force not exceeding 1 N: no contact with live parts		P
8.1.2	Use of test probe 13 of IEC 61032, with a force not exceeding 1 N, through openings in class 0 appliances and class II appliances/constructions: no contact with live parts		P
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		N/A
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032, with a force not exceeding 1 N: no contact with live parts of visible glowing heating elements		N/A
8.1.4	Accessible part not considered live if .....:		
	- safety extra-low a.c. voltage: peak value not exceeding 42,4 V		N/A
	- safety extra-low d.c. voltage: not exceeding 42,4 V	SELV in transformer	P
	- or separated from live parts by protective impedance		N/A
	If protective impedance: d.c. current not exceeding 2 mA, and		N/A
	a.c. peak value not exceeding 0,7 mA		N/A
	- for peak values over 42,4 V up to and including 450 V, capacitance not exceeding 0,1 μF		N/A
	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 μC		N/A
	- for peak values over 15 kV, the energy in the discharge not exceeding 350 mJ		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
8.1.5	Live parts protected at least by basic insulation before installation or assembly.....:		
	- built-in appliances		N/A
	- fixed appliances		P
	- appliances delivered in separate units		N/A
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only		P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P
10	**POWER INPUT AND CURRENT**		
10.1	Power input at normal operating temperature, rated voltage and normal operation not deviating from rated power input by more than shown in table 1 ..:	(see appended table)	P
	Test carried out at upper an lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated power input is related to the arithmetic mean value		N/A
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2.....:	(see appended table)	N/A
	Test carried out at upper an lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated current is related to the arithmetic mean value of the range		N/A
11	**HEATING**		
11.1	No excessive temperatures in normal use		P
11.2	The appliance is held, placed or fixed in position as described.....:	Sense Commercial 20kW with Volume 22m^3, Sense Commercial 10kW with Volume 4m^3	P
	Test is also carried out with the rock container empty unless (IEC 60335-2-53)		N/A
	the sauna heater is marked with the warning concerning an inadequately filled rock container. (IEC 60335-2-53)		P
	Appliances normally placed on a floor in use, are placed on the floor as near to the walls as possible, taking into account the instructions. (IEC 60335-2-53)		N/A
11.3	Temperature rises, other than of windings, determined by thermocouples		P
	Temperature rises of windings determined by resistance method, unless		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	the windings are non-uniform or it is difficult to make the necessary connections		N/A
	Temperature rises in front of the sauna heater are measured on a movable wooden rod painted dull black placed vertically on the floor. Rod has dimensions approximately 20 mm by 20 mm and has sufficient length to extend at least 400 mm above the highest point of the sauna heater or for sauna heaters containing rocks, the highest point of the rocks. (IEC 60335-2-53)		P
	Distance between the rod and the heater is the minimum horizontal distance marked on the heater. (IEC 60335-2-53).....:		P
	For infrared emitters, the vertical distance between the rod and the emitter is varied so as to attain the highest temperature. (IEC 60335-2-53)		N/A
	Horizontal distance between the rod and the emitter is the minimum horizontal distance stated in the instructions. (IEC 60335-2-53)		N/A
	NOTE 101 If it is indicated that the minimum horizontal distance varies with the height from the floor, the measurements are made accordingly. (IEC 60335-2-53)		P
11.4	Heating appliances operated under normal operation at 1,15 times rated power input (W) .....:		P
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0,94 and 1,06 times rated voltage (V).....:		N/A
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0,94 and 1,06 times rated voltage (V).....:		N/A
11.7	Appliances are operated until steady conditions are established. (IEC 60335-2-53)		P
11.8	Temperature rises monitored continuously and not exceeding the values in table 3 .....:	(see appended table)	P
	If the temperature rise of a motor winding exceeds the value of table 3, or		N/A
	if there is doubt with regard to classification of insulation,		N/A
	tests of annex C are carried out		N/A
	Sealing compound does not flow out		N/A
	Protective devices do not operate, except		N/A
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
	Temperature rise of the wooden rod, walls, ceiling and floor of the sauna room or of the prefabricated sauna does not exceed 115 K. (IEC 60335-2-53)		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Air outlet grill or guard of heaters for recessed installations does not exceed 130 K rise, if of metal. (IEC 60335-2-53)		P
	In the sauna room or cabin, the temperature rises of handles, knobs, grips and similar parts that are held for short periods only, are increased by 20 K. (IEC 60335-2-53)		P
	NOTE 101 The ambient temperature is the temperature of the air outside the sauna room. (IEC 60335-2-53)		P
	For appliances provided with a humidifier, while the humidifier is in operation, the temperature of the sauna room or cabin is reduced step by step by adjusting the temperature control. (IEC 60335-2-53)		N/A
	Values of temperature and relative humidity at a point located 300 mm below the centre of the ceiling in the sauna room do not exceed the permissible range in Figure 101. (IEC 60335-2-53)		N/A
13	**LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE**		
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1,15 times the rated power input (W) .....:	23kW	P
	Motor-operated appliances and combined appliances supplied at 1,06 times the rated voltage (V) .....:		N/A
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A
	Sauna heaters of the thermal storage type, the tests are carried out at the end of the charging period. (IEC 60335-2-53)		N/A
13.2	For class 0, class II and class III appliances, leakage current measured by means of the circuit described in figure 4 of IEC 60990		N/A
	For other appliances, a low impedance ammeter may be used		N/A
	Leakage current measurements .....:	(see appended table)	P
13.3	The appliance is disconnected from the supply		P
	Electric strength tests according to table 4 .....:	(see appended table)	P
	No breakdown during the tests		P
14	**TRANSIENT OVERVOLTAGES**		
	Appliances withstand the transient over-voltages to which they may be subjected		N/A
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6 .....:	(see appended table)	N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	No flashover during the test, unless		N/A
	of functional insulation if the appliance complies with clause 19 with the clearance short-circuited		N/A
15	**MOISTURE RESISTANCE**		
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance		P
	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3		P
	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in clause 29		P
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529 .....:	IPX4	P
	Water valves containing live parts in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances		N/A
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		N/A
	Built-in appliances installed according to the instructions		N/A
	Appliances placed or used on the floor or table placed on a horizontal unperforated support		N/A
	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board		P
	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube		N/A
	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube, and		P
	for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube		N/A
	Wall-mounted appliances, take into account the distance to the floor stated in the instructions		P
	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and		N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min		P
	Appliances with type X attachment fitted with a flexible cord as described		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Detachable parts subjected to the relevant treatment with the main part		N/A
	However, if a part has to removed for user maintenance and a tool is needed, this part is not removed		N/A
15.2	Spillage of liquid does not affect the electrical insulation		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Appliances incorporating an appliance inlet tested with or without an connector, whichever is most unfavourable		N/A
	Detachable parts are removed		N/A
	Overfilling test with additional amount of water, over a period of 1 min (l) .....:		N/A
	The appliance withstands the electric strength test of 16.3		N/A
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.3	Appliances proof against humid conditions		P
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		P
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part		N/A
	Humidity test for 48 h in a humidity cabinet		P
	Reassembly of those parts that may have been removed		N/A
	The appliance withstands the tests of clause 16		P
16	**LEAKAGE CURRENT AND ELECTRIC STRENGTH**		
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests		N/A
	Tests carried out at room temperature and not connected to the supply		P
16.2	Single-phase appliances: test voltage 1,06 times rated voltage (V).....:		N/A
	Three-phase appliances: test voltage 1,06 times rated voltage divided by √3 (V).....:	245V	P
	Leakage current measurements .....:	(see appended table)	P
	Limit values doubled if.....:		
	- all controls have an off position in all poles, or		N/A
	- the appliance has no control other than a thermal cut-out, or		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	- all thermostats, temperature limiters and energy regulators do not have an off position, or		N/A
	- the appliance has radio interference filters		N/A
	With the radio interference filters disconnected, the leakage current do not exceed limits specified .....:	(see appended table)	N/A
16.3	Electric strength tests according to table 7 .....:	(see appended table)	P
	Test voltage applied between the supply cord and inlet bushing and cord guard and cord anchorage as specified.....:	(see appended table)	P
	No breakdown during the tests		P
17	**OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS**		
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use .....:	(see appended table)	N/A
	Appliance supplied with 1,06 or 0,94 times rated voltage under the most unfavourable short-circuit or overload likely to occur in normal use (V) .....:		N/A
	Basic insulation is not short-circuited		N/A
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		N/A
	Temperature of the winding not exceeding the value specified in table 8		N/A
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
19	**ABNORMAL OPERATION**		
19.1	The risk of fire, mechanical damage or electric shock under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe .....:	(see appended table)	P
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and		P
	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and		P
	if applicable, to the test of 19.5		P
	Appliances incorporating PTC heating elements are also subjected to the test of 19.6		N/A
	Appliances incorporating motors subjected to the tests of 19.7 to 19.10, as applicable		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		P
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11		P
	Appliances incorporating voltage selector switches subjected to the test of 19.15		N/A
	Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates, or		P
	until steady conditions are established		P
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample		N/A
	Tests of clause 19.2 to 19.4 and 19.101 are carried out in the sauna room of Annex AA, volume being maximum specified in instructions or (IEC 60335-2-53)		P
	volume shown in table 101, whichever is greater (IEC 60335-2-53)		N/A
	NOTE 101: Not applicable to prefabricated saunas (IEC 60335-2-53)		P
	≤ 3,5 kW 5 m³ (IEC 60335-2-53)		N/A
	> 3,5 and ≤ 5 kW 6 m³ (IEC 60335-2-53)		N/A
	> 5 and ≤ 8 kW 10 m³ (IEC 60335-2-53)		N/A
	> 8 and ≤ 10 kW 12 m³ (IEC 60335-2-53)		N/A
	> 10 and ≤ 13 kW 16 m³ (IEC 60335-2-53)		N/A
	> 13 and ≤ 16 kW 20 m³ (IEC 60335-2-53)		N/A
	> 16 and ≤ 20 kW 25 m³ (IEC 60335-2-53)		N/A
	Intermediate values of rated power input (kW), volume (m³) of sauna room is determined by interpolation (IEC 60335-2-53) .....:		N/A
	Test of 19.101 is carried out on sauna heaters intended to be used in public saunas unless (IEC 60335-2-53)	See general product information	F
	they form part of a sauna heating appliance or (IEC 60335-2-53)		N/A
	prefabricated sauna complying with 22.108 or (IEC 60335-2-53)	See general product information	F
	are supplied with the instructions for sauna heaters for public saunas that are switched on by a separate remote-control system. (IEC 60335-2-53)		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Test of 19.101 is also carried out on sauna heaters intended for household use and that incorporate a stand-by mode setting for remote operation, unless (IEC 60335-2-53)	See general product information	F
	they form part of a sauna heating appliance or prefabricated sauna complying with 22.108. (IEC 60335-2-53)	See general product information	F
	Sauna heaters intended for a recessed installation and having air outlets in the wall of the sauna room are also subjected to the test of 19.102. (IEC 60335-2-53)		N/A
	Infrared emitters are also subjected to the test of 19.103. (IEC 60335-2-53)		N/A
19.2	Test of appliances with heating elements with restricted heat dissipation; test voltage (V), power input of 0,85 times rated power input (W) .....:		P
	Rock container is detachable or (IEC 60335-2-53)		N/A
	supplied separately, (IEC 60335-2-53)		N/A
	test is carried out without the container. (IEC 60335-2-53)		N/A
	Test is carried out with any lid placed in the most unfavourable position. (IEC 60335-2-53)		N/A
	For appliances provided with a humidifier, while the humidifier is in operation, the quantity of air per hour drawn through the test sauna room is reduced to three times the volume of the room. (IEC 60335-2-53)		N/A
	Thermostats and humidity controls are initially set to their maximum setting. (IEC 60335-2-53)		P
	Temperature of the sauna room is reduced step by step by adjusting the temperature control. (IEC 60335-2-53)		P
	Values of temperature and relative humidity at a point located 300 mm below the centre of the ceiling in the sauna room do not exceed the permissible range in Figure 102. (IEC 60335-2-53)		N/A
	Test is repeated with the humidity control inoperative. (IEC 60335-2-53)		N/A
19.3	Test of 19.2 repeated; test voltage (V), power input of 1,24 times rated power input (W) .....:		P
	Appliances are operated as specified in Clause 11 but under the conditions of 19.101, power input of 1,24 times rated power input. (IEC 60335-2-53)	See general product information	N/A
19.4	Test conditions as in clause 11, any control limiting the temperature during tests of clause 11 short-circuited		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
19.5	Test of 19.4 repeated on class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the sheath		N/A
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		N/A
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4		P
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions		N/A
	The working voltage of the PTC heating element is increased by 5 % and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1,5 times working voltage or until the PTC heating element ruptures (V).....:		N/A
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque, or		N/A
	locking moving parts of other appliances		N/A
	Locked rotor, capacitors open-circuited one at a time		N/A
	Test repeated with capacitors short-circuited one at a time, unless		N/A
	capacitor is of class P2 of IEC 60252-1		N/A
	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed.....:		N/A
	Other appliances supplied with rated voltage for a period as specified .....:		N/A
	Winding temperatures not exceeding values specified in table 8.....:	(see appended table)	N/A
19.8	Multi-phase motors operated at rated voltage with one phase disconnected		N/A
19.9	Running overload test on appliances incorporating motors intended to be remotely or automatically controlled or liable to be operated continuously		N/A
	Motor-operated and combined appliances for which 30.2.3 is applicable and that use overload protective devices relying on electronic circuits to protect the motor windings, are also subjected to the test		N/A
	Winding temperatures not exceeding values as specified .....:	(see appended table)	N/A
19.10	Series motor operated at 1,3 times rated voltage for 1 min (V) .....:		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	During the test, parts not being ejected from the appliance		N/A
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless		P
	they comply with the conditions specified in 19.11.1		N/A
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless		N/A
	restarting does not result in a hazard		N/A
	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4		P
	If the safety of the appliance under any of the fault conditions depends on the operation of a miniature fuse-link complying with IEC 60127, the test of 19.12 is carried out		N/A
	During and after each test the following is checked.....:		
	- the temperature of the windings do not exceed the values specified in table 8		P
	- the appliance complies with the conditions specified in 19.13		P
	-any current flowing through protective impedance not exceeding the limits specified in 8.1.4		P
	If a conductor of a printed board becomes open-circuited, the appliance is considered to have withstood the particular test, provided both of the following conditions are met.....:		
	- the base material of the printed circuit board withstands the test of annex E		N/A
	- any loosened conductor does not reduce clearance or creepage distances between live parts and accessible metal parts below the values specified in clause 29		N/A
19.11.1	Fault conditions a) to g) in 19.11.2 are not applied to circuits or parts of circuits meeting both of the following conditions .....:		
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N/A
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction of other parts of the appliance does not rely on the correct functioning of the electronic circuit		N/A
19.11.2	Fault conditions applied one at a time, the appliance operating under conditions specified in clause 11, but supplied at rated voltage, duration of the tests as specified .....:		

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in clause 29		N/A
	b) open circuit at the terminals of any component		P
	c) short circuit of capacitors, unless		P
	they comply with IEC 60384-14		N/A
	d) short circuit of any two terminals of an electronic component, other than integrated circuits		P
	This fault condition is not applied between the two circuits of an optocoupler		P
	e) failure of triacs in the diode mode		P
	f) failure of microprocessors and integrated circuits		P
	g) failure of an electronic power switching device		P
	Each low power circuit is short-circuited by connecting the low-power point to the pole of the supply source from which the measurements were made		P
19.11.3	If the appliance incorporates a protective electronic circuit which operates to ensure compliance with clause 19, the relevant test is repeated with a single fault simulated, as indicated in a) to g) of 19.11.2		N/A
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or		P
	a device that can be placed in the stand-by mode,		P
	subjected to the tests of 19.11.4.1 to 19.11.4.7, the device being set in the off position or in the stand-by mode		P
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that		N/A
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.		N/A
	Surge protective devices disconnected, unless		N/A
	They incorporate spark gaps		N/A
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		P
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, test level 3		P
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified		P
	Earthed heating elements in class I appliances disconnected		P
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		P
19.11.4.6	Appliances having a rated current not exceeding 16 A are subjected to the class 3 voltage dips and interruptions in accordance with IEC 61000-4-11		P
	Appliances having a rated current exceeding 16 A are subjected to the class 3 voltage dips and interruptions in accordance with IEC 61000-4-34		P
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		P
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60 s the power supply is reduced to a level such that the appliance ceases to respond or parts controlled by the programmable component cease to operate		N/A
	The appliance continues to operate normally, or		N/A
	requires a manual operation to restart		N/A
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A).....:		N/A
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P
	Temperature rises not exceeding the values shown in table 9 .....:	(see appended table)	P
	Compliance with clause 8 not impaired		P
	If the appliance can still be operated it complies with 20.2		P
	Insulation, other than of class III appliances or class III constructions that do not contain live parts, withstands the electric strength test of 16.3, the test voltage as specified in table 4.....:		
	- basic insulation (V) .....:		P
	- supplementary insulation (V).....:		P
	- reinforced insulation (V) .....:		P
	After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	The appliance does not undergo a dangerous malfunction, and		P
	no failure of protective electronic circuits, if the appliance is still operable		P
	Appliances tested with an electronic switch in the off position, or in the stand-by mode.....:		
	- do not become operational, or		P
	- if they become operational, do not result in a dangerous malfunction during or after the tests of 19.11.4		N/A
	If the appliance contains lids or doors that are controlled by one or more interlocks, one of the interlocks may be released provided that .....:		
	- the lid or door does not move automatically to an open position when the interlock is released, and		N/A
	- the appliance does not start after the cycle in which the interlock was released		N/A
	Temperature rise of the surfaces of walls, ceiling and floor of the sauna room and wooden rod not exceed 140 K. (IEC 60335-2-53)		N/A
	Compliance criteria relating to interlocks are not applicable. (IEC 60335-2-53)		N/A
	During the test of 19.101, the temperature rises of the surfaces of the sauna heater under the blanket not exceed 180 K.		N/A
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited		P
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time		P
	A relay or contactor operating only to ensure the appliance is energized for normal use is not short-circuited		N/A
	If more than one relay or contactor operates in clause 11, they are short-circuited in turn		P
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied		N/A
19.101	Woollen blanket having a specific mass of approximately 470 g/m2 and having the same width as the sauna heater is placed from the wall, over the top surface and down the entire front surface of the heater. (IEC 60335-2-53)		N/A
	NOTE The blanket between the wall and the heater is allowed to drop behind the heater. Care is to be taken to ensure that the blanket is not held away from the front of the heater. (IEC 60335-2-53)		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Temperature rise of the surfaces of the sauna heater under the blanket is determined. (IEC 60335-2-53)		N/A
19.102	Sauna heaters intended for a recessed installation having air outlets in the wall of the sauna room are operated as specified in Clause 11 with the air outlet covered. (IEC 60335-2-53)		N/A
	Covering and test setup is made as specified. (IEC 60335-2-53)		N/A
	Strips are applied to each half of the air outlet in turn and then to the complete air outlet. (IEC 60335-2-53)		N/A
	Thermal controls that operate during the test of Clause 11 are allowed to operate. (IEC 60335-2-53)		N/A
	Temperature rise of the strips not exceed 150 K but an overshoot of 25 K is allowed during the first hour. (IEC 60335-2-53)		N/A
19.103	Infrared emitters are operated as specified in Clause 11 but at rated power input. (IEC 60335-2-53)		N/A
	Tested as specified (IEC 60335-2-53)		N/A
	Flannelette does not smoulder or ignite within 10 s. (IEC 60335-2-53)		N/A
	NOTE If smouldering has started, a hole will have formed in the material with its edge glowing red. Blackening without smouldering is ignored. (IEC 60335-2-53)		N/A
19.104	Sauna heaters or infrared emitters do not emit excessive heat radiation that could damage combustible material of the sauna room or cabin. (IEC 60335-2-53)		P
	Sauna heater or infrared emitter is installed as specified for normal operation but the volume of the sauna room is the maximum specified in the instructions. (IEC 60335-2-53)		P
	Quantity of sand is sprinkled through the rock container so that heat-reflecting surfaces are covered as far as possible, before filling the container with rocks. (IEC 60335-2-53)		P
	Wooden rod is placed in front of the heater, as specified in 11.3. (IEC 60335-2-53)		P
	Sauna heater operated at 1,24 times rated power input (kW) (IEC 60335-2-53) .....:		P
	Door of the room is opened as necessary to maintain the temperature just above 90 °C at a point located 300 mm below the centre of the ceiling. (IEC 60335-2-53)		P
	Test is continued until steady conditions are established. (IEC 60335-2-53)		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Infrared-emitters are operated at 1,24 times rated power input (kW) (IEC 60335-2-53) .....:		N/A
	Door of the cabin is opened as necessary to maintain the temperature rise just above 90 % of the temperature rise measured during the tests of Clause 11 at a point located 300 mm below the centre of the ceiling. (IEC 60335-2-53)		N/A
	Test is continued until steady conditions are established. (IEC 60335-2-53)		N/A
	Temperature of the surfaces of walls, ceiling and floor of the sauna room or cabin and wooden rod not exceed 140 °C. (IEC 60335-2-53)		P
	NOTE 1 Fans are not to be used for evacuating heat from the room. (IEC 60335-2-53)		P
	NOTE 2 Heating elements are replaced if they rupture during the test. (IEC 60335-2-53)		P
20	**STABILITY AND MECHANICAL HAZARDS**		
20.1	Appliances having adequate stability	Fixed appliance	N/A
	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn		N/A
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		N/A
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9		N/A
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury	No moving parts	N/A
	Protective enclosures, guards and similar parts are non-detachable, and		N/A
	have adequate mechanical strength		N/A
	Enclosures that can be opened by overriding an interlock are considered to be detachable parts		N/A
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard, by unexpected reclosure		N/A
	Not possible to touch dangerous moving parts with the test probe described		N/A
21	**MECHANICAL STRENGTH**		
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	Checked by applying 3 blows to every point of the enclosure like to be weak, in accordance with test Ehb of IEC 60068-2-75, spring hammer test, with an impact energy of 0,5 J		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	The appliance shows no damage impairing compliance with this standard, and		P
	compliance with 8.1, 15.1 and clause 29 not impaired		P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	If necessary, repetition of groups of three blows on a new sample		N/A
	Appliances with live parts that are in direct contact with panels made of glass, ceramic or similar material that are accessible parts, the impact energy of the blows applied to the panel is 2,00 J. (IEC 60335-2-53)		N/A
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		N/A
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm		N/A
	The insulation is tested as specified, and does withstand the electric strength test of 16.3		N/A
21.101	Fireguards have adequate strength. (IEC 60335-2-53)		N/A
	Compliance is checked by test as specified. (IEC 60335-2-53)		N/A
	After the test, the fireguard shows no significant permanent deformation or does not have become detached. (IEC 60335-2-53)		N/A
21.102	Suspension means of sauna heaters and infrared emitters for ceiling mounting have adequate strength. (IEC 60335-2-53)		N/A
	Compliance is checked by test as specified. (IEC 60335-2-53)		N/A
	Suspension means show no significant deformation or do not have become detached. (IEC 60335-2-53)		N/A
22	**CONSTRUCTION**		
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled		N/A
22.2	Stationary appliance: means to ensure all-pole disconnection from the supply being provided.....:		
	- a supply cord fitted with a plug, or		N/A
	- a switch complying with 24.3, or		P
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided, or		N/A
	- an appliance inlet		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Singe-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor		N/A
	For sauna heating appliances and infrared emitting units, means to be provided to ensure all-pole disconnection from the supply mains. (IEC 60335-2-53)		P
	Such means are one of the following: (IEC 60335-2-53).....:		
	- a switch complying with 24.3; (IEC 60335-2-53)		P
	- a supply cord fitted with a plug (only for single-phase appliances with a current not exceeding 16 A). (IEC 60335-2-53)		N/A
22.3	Appliance provided with pins: no undue strain on socket-outlets		N/A
	Applied torque not exceeding 0;25 Nm		N/A
	Pull force of 50 N to each pin after the appliance has being placed in the heating cabinet; when cooled to room temperature the pins are not displaced by more than 1 mm		N/A
	Each pin subjected to a torque of 0;4 Nm; the pins are not rotating, unless		N/A
	rotating does not impair compliance with this standard		N/A
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets		N/A
22.5	No risk of electric shock when touching the pins of the plug, for appliances having a capacitor with rated capacitance exceeding 0,1 μF, the appliance being disconnected from the supply at the instant of voltage peak		N/A
	Voltage not exceeding 34 V (V).....:		N/A
22.6	Electrical insulation not affected by condensing water or leaking liquid		P
	Electrical insulation of class II appliances not affected if a hose ruptures or seal leaks		N/A
	In case of doubt, test as described		N/A
22.7	Adequate safeguards against the risk of excessive pressure in appliances containing liquid or gases or having steam-producing devices		N/A
	If steam is emitted through steam-producing devices, the electrical insulation is not affected and (IEC 60335-2-53)		N/A
	the user is not exposed to a hazard. (IEC 60335-2-53)		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and that are likely to be cleaned in normal use		P
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless		N/A
	the substance has adequate insulating properties		N/A
22.10	Not possible to reset voltage-maintained non-self-resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance, if .....:		N/A
	-a non-self-resetting thermal cut-out is required by the standard, and		N/A
	- a voltage maintained non-self-resetting thermal cut-out is used to meet it		N/A
	Non-self resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained		N/A
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts		N/A
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		N/A
	Tests as described		N/A
22.12	Handles, knobs etc. fixed in a reliable manner		P
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		P
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		P
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		N/A
22.13	Unlikely that handles, when gripped as in normal use, make the operator’s hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		N/A
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		P
	No exposed pointed ends of self tapping screws or other fasteners, likely to be touched by the user in normal use or during user maintenance		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N/A
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts		N/A
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1000 V applied		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N/A
	Heat shields are fixed so that it is not possible to remove them without the aid of a tool. (IEC 60335-2-53)		N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion		P
22.19	Driving belts not relied upon to provide the required level of insulation, unless		N/A
	constructed to prevent inappropriate replacement		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless		N/A
	material used is non-corrosive, non-hygroscopic and non-combustible		N/A
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless		N/A
	impregnated		N/A
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		N/A
22.22	Appliances not containing asbestos		P
22.23	Oils containing polychlorinated biphenyl (PCB) not used		N/A
22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported		N/A
	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts		N/A
22.25	Sagging heating conductors, except in class III appliances or class III constructions that do not contain live parts, cannot come into contact with accessible metal parts		N/A
22.26	For class III constructions the insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		P
22.27	Parts connected by protective impedance separated by double or reinforced insulation		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
22.28	Metal parts of class II appliances conductively connected to gas pipes or in contact with water, separated from live parts by double or reinforced insulation		N/A
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation		N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		P
	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		N/A
22.31	Neither clearances nor creepage distances over supplementary and reinforced insulation reduced below values specified in clause 29 as a result of wear		P
	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose		P
22.32	Supplementary and reinforced insulation constructed or protected against pollution so that clearances or creepage distances are not reduced below the values in clause 29		P
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.2		N/A
	Ceramic material not tightly sintered, similar materials or beads alone not used as supplementary or reinforced insulation		N/A
	Insulating material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation		N/A
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N/A
22.33	Conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts are not in direct contact with live parts		N/A
	Electrodes not used for heating liquids		N/A
	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts, not in direct contact with basic or reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid		N/A
	Construction of the appliance prevents a direct contact with the steam (IEC 60335-2-53)		N/A
	or hot water outlet. (IEC 60335-2-53)		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless		P
	the shaft is not accessible when the part is removed		N/A
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation		N/A
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of a failure of basic insulation, are either adequately covered by insulation material or their accessible parts are separated from their shafts or fixings by supplementary insulation		N/A
	This requirement does not apply to handles, levers and knobs on stationary appliances, other than those of electrical components, provided they are reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		N/A
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation		N/A
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless		N/A
	they are separated from live parts by double or reinforced insulation		N/A
22.37	Capacitors in class II appliances not connected to accessible metal parts and their casings, if of metal, separated from accessible metal parts by supplementary insulation, unless		N/A
	the capacitors comply with 22.42		N/A
22.38	Capacitors not connected between the contacts of a thermal cut-out		P
22.39	Lamp holders used only for the connection of lamps		N/A
	Insulating parts of lampholders for the heat lamps in infrared emitters are ceramic. (IEC 60335-2-53)		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible		N/A
	If the appliance can not operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch for stopping the operation. The actuating member of the switch being easily visible and accessible		N/A
22.41	No components, other than lamps, containing mercury		P
22.42	Protective impedance consisting of at least two separate components		N/A
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited		N/A
	Resistors checked by the test of 14.1 a) in IEC 60065		N/A
	Capacitors checked by the tests for class Y capacitors in IEC 60384-14		N/A
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		N/A
22.44	Appliances not having an enclosure that is shaped or decorated like a toy		P
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.3 due to deformation as a result of an external force applied to the enclosure		P
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1	See general product information	F
	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards		N/A
	These requirements are not applicable to software used for functional purpose or compliance with clause 11		N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use		N/A
	No leakage from any part, including any inlet water hose		N/A
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
22.49	For remote operation, the duration of operation is to be set before the appliance can be started, unless		N/A
	the appliance switches off automatically or can operate continuously without hazard	Switches of after max 6 hours	P
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation		P
22.51	There is a control on the appliance manually adjusted to the setting for remote operation before the appliance can be operated in this mode		P
	There is a visual indication showing that the appliance is adjusted for remote operation		P
	These requirements not necessary on appliances that can operate as follows, without giving rise to a hazard.....:		
	- continuously, or		P
	- automatically, or		P
	- remotely		P
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold		N/A
22.101	Sauna heaters for wall mounting are constructed so that they are fixed securely to a wall, independent of any connection to the water mains. (IEC 60335-2-53)		P
	Fixing means have adequate mechanical strength. (IEC 60335-2-53)		P
	NOTE Keyhole slots, hooks and similar means without any further provision to prevent the heater from being inadvertently lifted off the wall are not considered to be adequate means for fixing the heater securely to the wall. (IEC 60335-2-53)		P
	Compliance is checked by inspection and by the following test as specified. (IEC 60335-2-53)		P
	Heater remains securely fixed to the wall and the fixing means show no appreciable deformation. (IEC 60335-2-53)		P
22.102	Terminal compartment of the supply for the sauna heater has a drain hole at least 5 mm in diameter or (IEC 60335-2-53)		P
	20 mm^2 in area with a width of at least 3 mm. (IEC 60335-2-53)		P
22.103	Appliances, other than those for installation in public saunas, are provided with a timer. (IEC 60335-2-53)		P
	Appliances use in blocks of flats, hotels and similar locations, the operating period of the sauna heater or infrared emitter is limited to 12 h with a minimum rest period of 6 h before any automatic restarting. (IEC 60335-2-53)	Max 6 hours.	P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	For other appliances, the operating period of the timer is limited to 6 h, automatic restarting not being allowed. (IEC 60335-2-53)	Max 6 hours.	P
22.104	Appliances are supplied with sufficient rocks to fill the container. (IEC 60335-2-53)		P
	NOTE This does not apply if the appliance complies with Clause 11 without rocks. (IEC 60335-2-53)		P
22.105	Sauna heating appliances which consist of more than one sauna heater are constructed so that the heaters can be installed adjacent to each other and (IEC 60335-2-53)		N/A
	controlled by common controls and protective devices. (IEC 60335-2-53)		N/A
	Infrared emitting units which consist of more than one infrared emitter are constructed so that the infrared emitters can be installed adjacent to each other and (IEC 60335-2-53)		N/A
	controlled by common controls and protective devices. (IEC 60335-2-53)		N/A
22.106	Luminaires inside prefabricated saunas are controlled independently from the main switch controlling the sauna heating appliance. (IEC 60335-2-53)		N/A
22.107	Contacts and sensing elements of thermostats and thermal cut-outs operate independently of each other and (IEC 60335-2-53)		P
	not control the same contactor. (IEC 60335-2-53)		P
22.108	For prefabricated saunas that incorporate a stand-by mode setting for remote operation incorporate an interlock such that the stand-by mode setting for remote operation is disabled if the door of the sauna in which the sauna heating appliance is installed is opened when the stand-by mode setting for remote operation is set. (IEC 60335-2-53)		N/A
	Sauna heating appliances that incorporate a stand-by mode setting for remote operation incorporate an interlock such that the stand-by mode setting for remote operation is disabled if the door of the sauna in which the sauna heating appliance is installed is opened when the stand-by mode setting for remote operation is set. (IEC 60335-2-53)		P
	Control on the appliance has to be manually adjusted to reselect the stand-by mode setting for remote operation. (IEC 60335-2-53)		P
	Requirements are not applicable if the sauna heater complies with the test of 19.101. (IEC 60335-2-53)		N/A
	If compliance relies on the operation of an electronic circuit, the appliance is further tested as follows. (IEC 60335-2-53)		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Stand-by mode setting for remote operation is set, the appliance being operated under the conditions of Clause 11 but supplied at rated voltage. (IEC 60335-2-53)		P
	Following conditions are then applied separately: .....: (IEC 60335-2-53)		
	- the fault conditions in a) to g) of 19.11.2 applied one at a time to the electronic circuit; (IEC 60335-2-53)		P
	- the electromagnetic phenomena tests of 19.11.4.1 to 19.11.4.7 applied one at a time to the appliance. (IEC 60335-2-53)		P
	After each test, the door of the sauna is opened and the stand-by mode setting for remote operation is disabled. (IEC 60335-2-53)		P
	Software of programmable electronic circuits contains measures to control the fault/error conditions specified in Table R.1 and (IEC 60335-2-53)	See general product information	F
	is evaluated in accordance with the relevant requirements of Annex R. (IEC 60335-2-53)		N/A
22.109	Panels made of glass, ceramic or similar material that are accessible parts and that are in direct contact with live parts withstand thermal shock. (IEC 60335-2-53)		N/A
	Compliance is checked and tested as specified (IEC 60335-2-53)		N/A
	Panel is not damaged. (IEC 60335-2-53)		N/A
23	**INTERNAL WIRING**		
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well-rounded or provided with bushings		P
	Wiring effectively prevented from coming into contact with moving parts		P
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges		N/A
	Beads inside flexible metal conduits contained within an insulating sleeve		N/A
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		N/A
	Flexible metallic tubes not causing damage to insulation of conductors		N/A
	Open-coil springs not used		P
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	No damage after 10 000 flexings for conductors flexed during normal use, or		N/A
	100 flexings for conductors flexed during user maintenance		N/A
	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts		N/A
	Not more than 10 % of the strands of any conductor broken, and		N/A
	not more than 30 % for wiring supplying circuits that consume no more than 15 W		N/A
23.4	Bare internal wiring sufficiently rigid and fixed		N/A
23.5	The insulation of internal wiring subjected to the supply mains voltage withstanding the electrical stress likely to occur in normal use		P
	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or		P
	no breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		P
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or		N/A
	be such that it can only be removed by breaking or cutting		N/A
23.7	The colour combination green/yellow only used for earthing conductors		P
23.8	Aluminium wires not used for internal wiring		P
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		P
	the contact pressure is provided by spring terminals		N/A
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)		N/A
24	**COMPONENTS**		
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components .....:	(see appended table)	P
	If components have not been tested and found to comply with relevant IEC standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		P
	Components not tested and found to comply with relevant IEC standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		N/A
	Lampholders and starterholders that have not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard		N/A
	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309		N/A
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, complying with IEC 60384-14		P
	If the capacitors have to be tested, they are tested according to annex F		N/A
24.1.2	Safety isolating transformers complying with IEC 61558-2-6		P
	If they have to be tested, they are tested according to annex G		N/A
24.1.3	Switches complying with IEC 61058-1, the number of cycles of operation being at least 10 000		P
	If they have to be tested, they are tested according to annex H		N/A
	If the switch operates a relay or contactor, the complete switching system is subjected to the test		P
	If the switch only operates a motor staring relay complying with IEC 60730-2-10 with the number of cycles of a least 10 000 as specified, the complete switching system need not be tested		N/A
24.1.4	Automatic controls complying with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least.....:		
	- thermostats:..... 10 000		N/A
	- temperature limiters: 1 000		N/A
	- self-resetting thermal cut-outs: 300		N/A
	- voltage-maintained non-self-resetting thermal cut-outs:..... 1 000		N/A
	- other non-self-resetting thermal cut-outs: 30		P
	- timers:..... 3 000		N/A
	- energy regulators: 10 000		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	The number of cycles for controls operating during clause 11 need not be declared, if the appliance meets the requirements of this standard when they are short-circuited		P
	Thermal motor protectors are tested in combination with their motor under the conditions specified in annex D		N/A
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7		N/A
24.1.5	Appliance couplers complying with IEC 60320-1		N/A
	However, for appliances classified higher than IPX0, the appliance couplers complying with IEC 60320-2-3		N/A
	Interconnection couplers complying with IEC 60320-2-2		N/A
24.1.6	Small lamp holders similar to E10 lampholders complying with IEC 60238, the requirements for E10 lampholders being applicable		N/A
24.1.7	For remote operation of the appliance via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151	Only Wifi for remote operation	N/A
24.1.8	The relevant standard for thermal links is IEC 60691		N/A
	Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of clause 19		P
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance		P
	They are also tested in accordance with clause 17 of IEC 60730-1, the number of cycles of operations in 24.1.4 selected according to the contactor or relay function in the appliance.....:		P
24.2	Appliances not fitted with.....:		
	- switches or automatic controls in flexible cords		P
	- devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		P
	- thermal cut-outs that can be reset by soldering, unless		N/A
	the solder has a melding point of at least 230 °C		N/A
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and have a contact separation in all poles, providing full disconnection under overvoltage category III conditions		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1		N/A
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance, and used accordingly		N/A
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N/A
24.6	Working voltage of motors connected to the supply mains and having basic insulation that is inadequate for the rated voltage of the appliance, not exceeding 42 V		N/A
	In addition, the motors comply with the requirements of annex I		N/A
24.7	Detachable hose-sets for connection of appliances to the water mains comply with IEC 61770		N/A
	They are supplied with the appliance		N/A
	Appliances intended to be permanently connected to the water mains not connected by a detachable hose-set		N/A
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure		N/A
	One or more of the following conditions are to be met .....:		
	- the capacitors are of class P2 according to IEC 60252-1		N/A
	- the capacitors are housed within a metallic or ceramic enclosure		N/A
	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm		N/A
	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of annex E		N/A
	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695-11-10		N/A
24.101	Thermal cut-outs are not self-resetting and disconnect all heating elements of the sauna heater. (IEC 60335-2-53)		P
	For infrared emitters, the thermal cut-outs are selfresetting. (IEC 60335-2-53)		N/A
24.102	Controls and protective devices for mounting inside the sauna room, and (IEC 60335-2-53)		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	luminaires of prefabricated saunas, are suitable for use at the highest temperature measured during the test of Clause 11 or (IEC 60335-2-53)		N/A
	125 °C, whichever is higher. (IEC 60335-2-53)		P
	Controls and protective devices for mounting inside the cabin, and (IEC 60335-2-53)		N/A
	luminaires of prefabricated infrared cabins, are suitable for use at the highest temperature measured during the test of Clause 11. (IEC 60335-2-53)		N/A
25	**SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS**		
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply.....:		N/A
	- supply cord fitted with a plug,		N/A
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance, or		N/A
	- pins for insertion into socket-outlets		N/A
	- Appliance inlets are not allowed for prefabricated saunas. (IEC 60335-2-53)		N/A
25.2	Appliance not provided with more than one means of connection to the supply mains		N/A
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown		N/A
25.3	Appliance intended to be permanently connected to fixed wiring provided with one of the following means for connection to the supply mains:		
	- a set of terminals allowing the connection of a flexible cord		P
	- a fitted supply cord		N/A
	- a set of supply leads accommodated in a suitable compartment		N/A
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support		P
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to table 10 (mm) .....:		P
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in clause 29		P
25.5	Method for assembling the supply cord to the appliance.....:		
	- type X attachment		N/A
	- type Y attachment		N/A
	- type Z attachment, if allowed in relevant part 2		N/A
	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords		N/A
	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is assembled to the appliance by type Y attachment		N/A
25.6	Plugs fitted with only one flexible cord		N/A
25.7	Supply cords are polychloroprene sheathed and (IEC 60335-2-53)		N/A
	not lighter polychloroprene-sheathed flexible cord (code designation 60245 IEC 66). (IEC 60335-2-53)		N/A
	Supply cords for class III appliances adequately insulated		N/A
	Test with 500 V for 2 min for supply cords of class III appliances that contain live parts		N/A
25.8	Nominal cross-sectional area of supply cords not less than table 11; rated current (A); cross-sectional area (mm^2).....:		N/A
25.9	Supply cords not in contact with sharp points or edges		N/A
25.10	Supply cord of class I appliances have a green/yellow core for earthing		N/A
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless		N/A
	the contact pressure is provided by spring terminals		N/A
25.12	Insulation of the supply cord not damaged when moulding the cord to part of the enclosure		N/A
25.13	Inlet openings so constructed as to prevent damage to the supply cord		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	If the enclosure at the inlet opening is not of insulating material, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided		P
	If unsheathed supply cord, a similar additional bushing or lining is required, unless the appliance is		N/A
	class 0, or		N/A
	a class III appliance not containing live parts		N/A
25.14	Supply cords moved while in operation adequately protected against excessive flexing		N/A
	Flexing test, as described.....:		
	- applied force (N).....:		N/A
	- number of flexings.....:		N/A
	The test does not result in.....:		
	- short-circuit between the conductors, such that the current exceeds a value of twice the rated current		N/A
	-breakage of more than 10 % of the strands of any conductor		N/A
	- separation of the conductor from its terminal		N/A
	- loosening of any cord guard		N/A
	- damage to the cord or the cord guard		N/A
	- broken strands piercing the insulation and becoming accessible		N/A
25.15	For appliances with supply cord and appliances to be permanently connected to fixed wiring by a flexible cord, conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage		P
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		P
	Pull and torque test of supply cord, values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm).....:	>4kg; 100N; 0,35Nm	P
	Cord not damaged and max. 2 mm displacement of the cord		P
25.16	Cord anchorages for type X attachments constructed and located so that .....:		
	- replacement of the cord is easily possible		N/A
	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A
	- they are suitable for different types of supply cord		N/A
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless		N/A
	they are separated from accessible metal parts by supplementary insulation		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	- the cord is not clamped by a metal screw which bears directly on the cord		N/A
	- at least one part of the cord anchorage securely fixed to the appliance, unless		N/A
	It is part of a specially prepared cord		N/A
	- screws which have to be operated when replacing the cord do not fix any other component, unless		N/A
	the appliance becomes inoperative or incomplete or the parts cannot be removed without a tool		N/A
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N/A
	- for class 0, 0I and I appliances they are of insulating material or are provided with an insulating lining, unless		N/A
	failure of the insulation of the cord does not make accessible metal parts live		N/A
	- for class II appliances they are of insulating material, or		N/A
	If of metal, they are insulated from accessible metal parts by supplementary insulation		N/A
	After the test of 25.15, under the conditions specified, the conductors have not moved by more than 1 mm in the terminals		N/A
25.17	Adequate cord anchorages for type Y and Z attachment, test with the cord supplied with the appliance		N/A
25.18	Cord anchorages only accessible with the aid of a tool, or		N/A
	Constructed so that the cord can only be fitted with the aid of a tool		N/A
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N/A
	Tying the cord into a knot or tying the cord with string not used		N/A
25.20	The insulated conductors of the supply cord for type Y and Z attachment additionally insulated from accessible metal parts		N/A
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed ..... :		
	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover		P
	- so there is no risk of damage to the conductors or their insulation when fitting the cover		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	- for portable appliances, so that the uninsulated end of a conductor, if it becomes free from the terminal, prevented from contact with accessible metal parts		N/A
	2 N test to the conductor for portable appliances; no contact with accessible metal parts		N/A
25.22	Appliance inlets .....:		
	- live parts not accessible during insertion or removal		N/A
	Requirement not applicable to appliance inlets complying with IEC 60320-1		N/A
	- connector can be inserted without difficulty		N/A
	- the appliance is not supported by the connector		N/A
	- not for cold conditions if temp. rise of external metal parts exceeds 75 K during clause 11, unless		N/A
	the supply cord is unlikely to touch such metal parts		N/A
25.23	Interconnection cords comply with the requirements for the supply cord, except that .....:		P
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11		P
	- the thickness of the insulation may be reduced		P
	If necessary, electric strength test of 16.3		N/A
25.24	Interconnection cords not detachable without the aid of a tool if compliance with this standard is impaired when they are disconnected		P
25.25	Dimensions of pins that are inserted into socket-outlets compatible with the dimensions of the relevant socket-outlet.		N/A
	Dimensions of pins and engagement face in accordance with the dimensions of the relevant plug in IEC/TR 60083		N/A
26	**TERMINALS FOR EXTERNAL CONDUCTORS**		
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors		P
	Terminals only accessible after removal of a non-detachable cover, except		P
	for class III appliances that do not contain live parts		N/A
	Earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
26.2	Appliances with type X attachment and appliances for the connection of cables to fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless		P
	the connections are soldered		N/A
	Screws and nuts not used to fix any other component, except		P
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N/A
	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone, unless		N/A
	barriers provided so that neither clearances nor creepage distances between live parts and other metal parts reduced below the values for supplementary insulation if the conductor becomes free at the soldered joint		N/A
26.3	Terminals for type X attachment and for connection of cables of fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure but without damaging the conductor		P
	Terminals fixed so that when the clamping means is tightened or loosened.....:		
	- the terminal does not become loose		P
	- internal wiring is not subjected to stress		P
	- neither clearances nor creepage distances are reduced below the values in clause 29		P
	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified (Nm).....:	Separately approved terminal block	P
	No deep or sharp indentations of the conductors		P
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and		N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard		N/A
	Stranded conductor test, 8 mm insulation removed		N/A
	No contact between live parts and accessible metal parts and,		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm²).....:	>25 and ≤32; 4 to 10	P
	If a specially prepared cord is used, terminals need only be suitable for that cord		N/A
26.7	Terminals for type X attachment, except in class III appliances not containing live parts, accessible after removal of a cover or part of the enclosure		N/A
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, located close to each other		P
26.9	Terminals of the pillar type constructed and located as specified		N/A
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless		N/A
	conductors ends fitted with means suitable for screw terminals		N/A
	Pull test of 5 N to the connection		N/A
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used		N/A
	For class II appliances, the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N/A
	If soldering, welding or crimping alone used, barriers provided so that clearances and creepage distances between live parts and other metal parts are not reduced below the values for supplementary insulation if the conductor becomes free		N/A
27	**PROVISION FOR EARTHING**		
27.1	Accessible metal parts of class 0I and I appliances permanently and reliably connected to an earthing terminal or earthing contact of the appliance inlet		P
	Earthing terminals and earthing contacts not connected to the neutral terminal		P
	Class 0, II and III appliances have no provision for earthing		N/A
	Safety extra-low voltage circuits not earthed, unless		P
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2,5 to 6 mm², and		N/A
	do not provide earthing continuity between different parts of the appliance, and		N/A
	conductors cannot be loosened without the aid of a tool		N/A
27.3	For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part		N/A
	For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		N/A
27.4	No risk of corrosion resulting from contact between parts of the earthing terminal and the copper of the earthing conductor or other metal		P
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		N/A
	If of steel, these parts provided with an electroplated coating with a thickness at least 5 µm		N/A
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		N/A
	In the body of the earthing terminal is a part of a frame or enclosure of aluminium or aluminium alloys, precautions taken to avoid risk of corrosion		N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P
	This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided the clearances of basic insulation are based on the rated voltage of the appliance		N/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω) .....:	0,01Ω	P
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand-held appliances.		N/A
	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		N/A
28	**SCREWS AND CONNECTIONS**		
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	Screws not of soft metal liable to creep, such as zinc or aluminium		N/A
	Diameter of screws of insulating material min. 3 mm		N/A
	Screws of insulating material not used for any electrical connections or connections providing earthing continuity		N/A
	Screws used for electrical connections or connections providing earthing continuity screwed into metal		P
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N/A
	For type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw impairs basic insulation		N/A
	For screws and nuts; torque-test as specified in table 14.....:	(see appended table)	P
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless		P
	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material		N/A
	This requirement does not apply to electrical connections in circuits of appliances for which .....:		
	- 30.2.2 is applicable and that carry a current not exceeding 0,5 A		N/A
	- 30.2.3 is applicable and that carry a current not exceeding 0,2 A		N/A
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together		N/A
	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread		N/A
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer		N/A
	Thread-cutting, thread rolling and space threaded screws may be used in connections providing earthing continuity provided it is not necessary to disturb the connection .....:		
	- in normal use,		N/A
	- during user maintenance,		N/A
	- when replacing a supply cord having a type X attachment, or		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	- during installation		P
	At least two screws being used for each connection providing earthing continuity, unless		N/A
	the screw forms a thread having a length of at least half the diameter of the screw		N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity		P
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or		P
	If an alternative earthing circuit is provided		N/A
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion		N/A
29	**CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION**		
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), annex J applies .....:		N/A
	The microenvironment is pollution degree 1 under type 1 protection		N/A
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3		N/A
	These values apply to functional, basic, supplementary and reinforced insulation .....:		P
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for the overvoltage categories of table 15, unless .....:	(see appended table)	P
	for basic insulation and functional insulation they comply with the impulse voltage test of clause 14		N/A
	However, if the distances are affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500 V and above are increased by 0,5 mm and the impulse voltage test is not applicable		N/A
	Impulse voltage test is not applicable .....:		
	- when the microenvironment is pollution degree 3, or		N/A
	- for basic insulation of class 0 and class 01 appliances		N/A
	Appliances are in overvoltage category II		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	A force of 2 N is applied to bare conductors, other than heating elements		N/A
	A force of 30 N is applied to accessible surfaces		N/A
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		P
	The values of table 16 or the impulse voltage test of clause 14 are applicable.....:	(see appended table)	P
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1,0 mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors		N/A
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16 :	(see appended table)	P
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, using the next higher step for rated impulse voltage .....:	(see appended table)	P
	For double insulation, with no intermediate conductive part between basic and supplementary insulation, clearances are measured between live parts and the accessible surface, and the insulation system is treated as reinforced insulation		P
29.1.4	Clearances for functional insulation are the largest values determined from .....:		
	- table 16 based on the rated impulse voltage :	(see appended table)	P
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If values of table 16 are largest, the impulse voltage test of clause 14 may be applied instead, unless		N/A
	the microenvironment is pollution degree 3, or		N/A
	the distances can be affected by wear, distortion, movement of the parts or during assembly		N/A
	However, clearances are not specified if the appliance complies with clause 19 with the functional insulation short-circuited		N/A
	Lacquered conductors of windings considered to be bare conductors		N/A
	However, clearances at crossover points are not measured		N/A
	Clearance between surfaces of PTC heating elements may be reduced to 1mm		N/A
29.1.5	Appliances having higher working voltages than rated voltage, clearances for basic insulation are the largest values determined from .....:		

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	- table 16 based on the rated impulse voltage .....:		N/A
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1 or clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A
	If clearances for basic insulation are selected from clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		N/A
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N/A
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15		N/A
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree.....:	(see appended table)	P
	Pollution degree 2 applies, unless		P
	- precautions taken to protect the insulation; pollution degree 1		N/A
	- insulation subjected to conductive pollution; pollution degree 3		N/A
	A force of 2 N is applied to bare conductors, other than heating elements		N/A
	A force of 30 N is applied to accessible surfaces		P
	In a double insulation system, the working voltage for both the basic and supplementary insulation is taken as the working voltage across the complete double insulation system		N/A
	Appliances incorporating a humidifier, the microenvironment is pollution degree 3 unless (IEC 60335-2-53)		N/A
	the insulation is enclosed or (IEC 60335-2-53)		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	located so that it is unlikely to be exposed to pollution during normal use of the appliance. (IEC 60335-2-53)		N/A
29.2.1	Creepage distances of basic insulation not less than specified in table 17.....:	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17 .....:		N/A
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14 .....:		N/A
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or .....:	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable .....:		N/A
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or .....:	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable .....:		N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18.....:	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18 .....:		N/A
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		P
29.3	Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		P
	Compliance checked .....:		
	- by measurement, in accordance with 29.3.1, or		P
	- by an electric strength test in accordance with 29.3.2, or		P
	- by an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3, and		N/A
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or		N/A
	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
29.3.1	Supplementary insulation have a thickness of at least 1 mm		N/A
	Reinforced insulation have a thickness of at least 2 mm	RB Commercial or RB Commercial Lite	P
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		N/A
	Supplementary insulation consist of at least 2 layers		N/A
	Reinforced insulation consist of at least 3 layers		N/A
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by		N/A
	the electric strength test of 16.3		N/A
	If the temperature rise during the tests of clause 19 does not exceed the value specified in table 3, the test of IEC 60068-2-2 is not carried out		N/A
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19.....:		N/A
30	**RESISTANCE TO HEAT AND FIRE**		
30.1	External parts of non-metallic material,		P
	parts supporting live parts, and		P
	parts of thermoplastic material providing supplementary or reinforced insulation		P
	sufficiently resistant to heat		P
	Ball-pressure test according to IEC 60695-10-2		P
	External parts tested at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C).....:	(see appended table)	P
	Parts supporting live parts tested at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 125 °C, whichever is the higher; temperature (°C).....:	(see appended table)	P
	Parts of thermoplastic material providing supplementary or reinforced insulation tested at 25 °C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C) .....:	(see appended table)	P
30.2	Parts of non-metallic material resistant to ignition and spread of fire		P
	This requirement does not apply to.....:		
	parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		P
	Compliance checked by the test of 30.2.1, and in addition.....:		P
	- for attended appliances, 30.2.2 applies		N/A
	- for unattended appliances, 30.2.3 applies		P
	For appliances for remote operation, 30.2.3 applies		P
	For base material of printed circuit boards, 30.2.4 applies		P
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550 °C		P
	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 550 °C, or		N/A
	the material is classified at least HB40 according to IEC 60695-11-10		N/A
	Parts for which the glow-wire test cannot be carried out need to meet the requirements in ISO 9772 for material classified HBF		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		P
	The tests are not applicable to conditions as specified .....:		P
30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and		P
	parts of non-metallic material, other than small parts, within a distance of 3 mm,		P
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C		P
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 850 °C		N/A
30.2.3.2	Parts of non-metallic material supporting connections, and		P
	parts of non-metallic material within a distance of 3 mm,		P
	subjected to glow-wire test of IEC 60695-2-11		P
	The test severity is .....:		
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	- 650 °C, for other connections		P
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	However, the glow-wire test of 750 °C or 650 °C as appropriate, is not carried out on parts of material fulfilling both or either of the following classifications.....:		
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least .....:		N/A
	- 775 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 675 °C, for other connections		N/A
	- a glow-wire flammability index according to IEC 60695-2-12 of at least .....:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to.....:		
	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of annex E, or		N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
	The consequential needle-flame test of annex E applied to non-metallic parts that encroach within the vertical cylinder placed above the centre of the connection zone and on top of the non-metallic parts supporting current-carrying connections, and parts of non-metallic material within a distance of 3 mm of such connections if these parts are those .....:		
	- parts that withstood the glow-wire test of IEC 60695-2-11 of 750 °C or 650 °C as appropriate, but produce a flame that persist longer than 2 s, or		P
	- parts that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts, that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts for which the needle-flame test of annex E was applied, or		N/A
	- small parts for which a material classification of V-0 or V-1 was applied		N/A
	However, the consequential needle-flame test is not carried out on non-metallic parts, including small parts, within the cylinder that are:		

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10, or		N/A
	- parts shielded by a flame barrier that meets the needle-flame test of annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
30.2.4	Base material of printed circuit boards subjected to the needle-flame test of annex E		P
	Test not applicable to conditions as specified.....:		P
31	**RESISTANCE TO RUSTING**		
	Relevant ferrous parts adequately protected against rusting		P
	Tests specified in part 2 when necessary		N/A
32	**RADIATION, TOXICITY AND SIMILAR HAZARDS**		
	Appliance does not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use		P
	Compliance is checked by the limits or tests specified in part 2, if relevant		N/A
32.101	Infrared emitters in prefabricated infrared cabins not emit radiation in hazardous amounts. (IEC 60335-2-53)		N/A
	Compliance is checked by measurement as specified in Annex BB. (IEC 60335-2-53)		N/A
	Irradiance measured not exceed 1 000 W/m2 at any point in the usable area of the prefabricated infrared cabin. (IEC 60335-2-53)		N/A
A	**ANNEX A (INFORMATIVE) ROUTINE TESTS**		
	Description of routine tests to be carried out by the manufacturer		P
B	**ANNEX B (NORMATIVE) APPLIANCES POWERED BY RECHARGEABLE BATTERIES**		
	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance		N/A
	This annex does not apply to battery chargers		N/A
3.1.9	Appliance operated under the following conditions.....:		
	- the appliance, supplied by its fully charged battery, operated as specified in relevant part 2		N/A
	- the battery is charged, the battery being initially discharged to such an extent that the appliance cannot operate		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	- if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2		N/A
	- if the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed		N/A
3.6.2	Part to be removed in order to discard the battery is not considered to be detachable		N/A
5.B.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances		N/A
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage and polarity of the terminals		N/A
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006		N/A
7.6	Symbols 60417-5005 and IEC 60417-5006		N/A
7.12	The instructions give information regarding charging		N/A
	The instructions for appliances incorporating batteries intended to be replaced by the user includes required information		N/A
	Details about how to remove batteries containing materials hazardous to the environment given		N/A
7.15	Markings placed on the part of the appliance connected to the supply mains		N/A
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment		N/A
	If the appliance can be operated without batteries, double or reinforced insulation required		N/A
11.7	The battery is charged for the period stated in the instructions or 24 h .....:		N/A
19.1	Appliances subjected to tests of 19.B.101, 19.B.102 and 19.B.103		N/A
19.10	Not applicable		N/A
19.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		N/A
19.B.102	For appliances having batteries that can be removed without the aid of a tool, short-circuit of the terminals of the battery, the battery being fully charged,		N/A

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
21.B.101	Appliances having pins for insertion into socket-outlets have adequate mechanical strength		N/A
	Part of the appliance incorporating the pins subjected to the free fall test, procedure 2, of IEC 60068-2-31, the number of falls being .....:		
	- 100, if the mass of the part does not exceed 250 g (g) .....:		N/A
	- 50, if the mass of the part exceeds 250 g .....:		N/A
	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met		N/A
22.3	Appliances having pins for insertion into socket-outlets tested as fully assembled as possible		N/A
25.13	An additional lining or bushing not required for interconnection cords in class III appliances or class III constructions operating at safety extra-low voltage not containing live parts		N/A
30.2	For parts of the appliance connected to the supply mains during the charging period, 30.2.3 applies		N/A
	For other parts, 30.2.2 applies		N/A
C	**ANNEX C (NORMATIVE) AGEING TEST ON MOTORS**		
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding		N/A
	Test conditions as specified		N/A
D	**ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS**		
	Applicable to appliances having motors that incorporate thermal motor protectors necessary for compliance with the standard		N/A
	Test conditions as specified		N/A
E	**ANNEX E (NORMATIVE) NEEDLE-FLAME TEST**		
	Needle-flame test carried out in accordance with IEC 60695-11-5, with the following modifications.....:		
7	Severities		
	The duration of application of the test flame is 30 s ± 1 s		P
9	Test procedure		
9.1	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1		P
9.2	The first paragraph does not apply		P

IEC 60335-2-53			
Clause	Requirement - Test	Result - Remark	Verdict
	If possible, the flame is applied at least 10 mm from a corner		P
9.3	The test is carried out on one specimen		P
	If the specimen does not withstand the test, the test may be repeated on two additional specimens, both withstanding the test		P
11	Evaluation of test results		
	The duration of burning not exceeding 30 s		P
	However, for printed circuit boards, the duration of burning not exceeding 15 s		P

F	**ANNEX F (NORMATIVE)** **CAPACITORS**		
	Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or voltage dividing, comply with the following clauses of IEC 60384-14, with the following modifications .....:		
1.5	Terms and definitions		
1.5.3	Class X capacitors tested according to subclass X2		N/A
1.5.4	This subclause is applicable		N/A
1.6	Marking		
	Items a) and b) are applicable		N/A
3.4	Approval testing		
3.4.3.2	Table 3 is applicable as described		N/A
4.1	Visual examination and check of dimensions		
	This subclause is applicable		N/A
4.2	Electrical tests		
4.2.1	This subclause is applicable		N/A
4.2.5	This subclause is applicable		N/A
4.2.5.2	Only table 11 is applicable		N/A
	Values for test A apply		N/A
	However, for capacitors in heating appliances the values for test B or C apply		N/A
4.12	Damp heat, steady state		
	This subclause is applicable		N/A
	Only insulation resistance and voltage proof are checked		N/A
4.13	Impulse voltage		
	This subclause is applicable		N/A
4.14	Endurance		
	Subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7 are applicable		N/A

4.14.7	Only insulation resistance and voltage proof are checked		N/A
	No visible damage		N/A
4.17	Passive flammability test		
	This subclause is applicable		N/A
4.18	Active flammability test		
	This subclause is applicable		N/A
G	**ANNEX G (NORMATIVE)** **SAFETY ISOLATING TRANSFORMERS**		
	The following modifications to this standard are applicable for safety isolating transformers .....:		
7	Marking and instructions		N/A
7.1	Transformers for specific use marked with .....:		N/A
	- name, trademark or identification mark of the manufacturer or responsible vendor .....:		N/A
	- model or type reference .....:		N/A
17	Overload protection of transformers and associated circuits		
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		N/A
29	Clearances, creepage distances and solid insulation		
29.1, 29.2, 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply		N/A
	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances		N/A
	For windings providing reinforced insulation, the distance specified in item 2c of table 13 of IEC 61558-1 is not assessed		N/A
	For safety isolating transformers subjected to periodic voltages with a frequency exceeding 30 kHz, the clearances, creepage distances and solid insulation values specified in IEC 60664-4 are applicable, if greater than the values specified in items 2a, 2c and 3 in table 13 of IEC 61558-1		N/A
H	**ANNEX H (NORMATIVE)** **SWITCHES**		
	Switches comply with the following clauses of IEC 61058-1, as modified below:		
	The tests of IEC 61058-1 carried out under the conditions occurring in the appliance		N/A
	Before being tested, switches are operated 20 times without load		N/A
8	Marking and documentation		
	Switches are not required to be marked		N/A

	However, a switch that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference		N/A
13	Mechanism		
	The tests may be carried out on a separate sample		N/A
15	Insulation resistance and dielectric strength		
15.1	Not applicable		N/A
15.2	Not applicable		N/A
15.3	Applicable for full disconnection and micro-disconnection		N/A
17	Endurance		
	Compliance is checked on three separate appliances or switches		N/A
	For 17.2.4.4, the number of cycles declared according to 7.1.4 is 10 000, unless		N/A
	otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335.....:		N/A
	Switches for operation under no load and which can be operated only by a tool, and		N/A
	switches operated by hand that are interlocked so that they cannot be operated under load,		N/A
	are not subjected to the tests		N/A
	However, switches without this interlock are subjected to the test of 17.2.4.4 for 100 cycles of operation		N/A
	Subclauses 17.2.2 and 17.2.5.2 not applicable		N/A
	The ambient temperature during the test is that occurring in the appliance during the test of clause 11 in IEC 60335-1		N/A
	The temperature rise of the terminals not more than 30 K above the temperature rise measured in clause 11 of IEC 60335-1 (K) .....:		N/A
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies		
	This clause is applicable to clearances and creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in table 24		N/A
I	**ANNEX I (NORMATIVE)** **MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE**		
	The following modifications to this standard are applicable for motors having basic insulation that is inadequate for the rated voltage of the appliance:		
8	Protection against access to live parts		
8.1	Metal parts of the motor are considered to be bare live parts		N/A
11	Heating		

11.3	The temperature rise of the body of the motor is determined instead of the temperature rise of the windings		N/A
11.8	The temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material		N/A
16	Leakage current and electric strength		
16.3	Insulation between live parts of the motor and its other metal parts is not subjected to the test		N/A
19	Abnormal operation		
19.1	The tests of 19.7 to 19.9 are not carried out		N/A
19.I.101	Appliance operated at rated voltage with each of the following fault conditions.....:		
	- short circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit		N/A
	- short circuit of each diode of the rectifier		N/A
	- open circuit of the supply to the motor		N/A
	- open circuit of any parallel resistor, the motor being in operation		N/A
	Only one fault simulated at a time, the tests carried out consecutively		N/A
22	Construction		
22.I.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation		N/A
	Compliance checked by the tests specified for double and reinforced insulation		N/A
J	**ANNEX J (NORMATIVE)** **COATED PRINTED CIRCUIT BOARDS**		
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:		
5.7	Conditioning of the test specimens		
	When production samples are used, three samples of the printed circuit board are tested		N/A
5.7.1	Cold		
	The test is carried out at -25 °C		N/A
5.7.3	Rapid change of temperature		
	Severity 1 is specified		N/A
5.9	Additional tests		
	This subclause is not applicable		N/A
K	**ANNEX K (NORMATIVE)** **OVERVOLTAGE CATEGORIES**		
	The information on overvoltage categories is extracted from IEC 60664-1		P

	Overvoltage category is a numeral defining a transient overvoltage condition		P
	Equipment of overvoltage category IV is for use at the origin of the installation		N/A
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements		N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation		P
	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies		N/A
	Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriate low level		N/A
L	**ANNEX L (INFORMATIVE)** **GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES**		
	Information for the determination of clearances and creepage distances		P
M	**ANNEX M (NORMATIVE)** **POLLUTION DEGREE**		
	The information on pollution degrees is extracted from IEC 60664-1		P
	Pollution		
	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment		P
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		N/A
	Minimum clearances specified where pollution may be present in the microenvironment		P
	Degrees of pollution in the microenvironment		P
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established .....:		
	- pollution degree 1: no pollution or only dry, non-conductive pollution occurs. The pollution has no influence		N/A
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected		P
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected		N/A

	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow		N/A
N	**ANNEX N (NORMATIVE)** **PROOF TRACKING TEST**		
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications .....:		
7	Test apparatus		
7.3	Test solutions		
	Test solution A is used		N/A
10	Determination of proof tracking index (PTI)		
10.1	Procedure		
	The proof voltage is 100 V, 175 V, 400 V or 600 V:		N/A
	The test is carried out on five specimens		N/A
	In case of doubt, additional test with proof voltage reduced by 25 V, the number of drops increased to 100		N/A
10.2	Report		
	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		N/A
O	**ANNEX O (INFORMATIVE)** **SELECTION AND SEQUENCE OF THE TESTS OF clause 30**		
	Description of tests for determination of resistance to heat and fire		P
P	**ANNEX P (INFORMATIVE)** **GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN WARM DAMP EQUABLE CLIMATES**		
	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150 V, intended to be used in countries having a warm damp equable climate and that are marked WDaE		
	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150 V, intended to be used in countries having a warm damp equable climate and that are marked WDaE, if liable to be connected to a supply mains that excludes the protective earthing conductor		
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40 +3/0 °C		N/A
7.1	The appliance marked with the letters WDaE		N/A
7.12	The instructions state that the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA		N/A
	The instructions state that the appliance is considered to be suitable for use in countries having a warm damp equable climate, but may also be used in other countries		N/A
11.8	The values of Table 3 are reduced by 15 K		N/A
13.2	The leakage current for class I appliances not exceeding 0,5 mA		N/A

15.3	The value of t is 37 °C		N/A
16.2	The leakage current for class I appliances not exceeding 0,5 mA (mA):		N/A
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3		N/A
Q	**ANNEX Q (INFORMATIVE)** **SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS**		
	Description of tests for appliances incorporating electronic circuits		
R	**ANNEX R (NORMATIVE)** **SOFTWARE EVALUATION**		N/C
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 validated in accordance with the requirements of this annex	See general product information	N/C
R.1	Programmable electronic circuits using software		N/C
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 constructed so that the software does not impair compliance with the requirements of this standard		N/C
R.2	Requirements for the architecture		N/C
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 use measures to control and avoid software-related faults/errors in safety-related data and safety-related segments of the software		N/C
R.2.1.1	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.2 have one of the following structures.....:		N/C
	- single channel with periodic self-test and monitoring		N/C
	- dual channel (homogenous) with comparison		N/C
	- dual channel (diverse) with comparison		N/C
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 have one of the following structures.....:		N/C
	- single channel with functional test		N/C
	- single channel with periodic self-test		N/C
	- dual channel without comparison		N/C
R.2.2	Measures to control faults/errors		N/C
R.2.2.1	When redundant memory with comparison is provided on two areas of the same component, the data in one area is stored in a different format from that in the other area		N/C

R.2.2.2	Programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.2 and that use dual channel structures with comparison, have additional fault/error detection means for any fault/errors not detected by the comparison		N/C
R.2.2.3	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, means are provided for the recognition and control of errors in transmissions to external safety-related data paths		N/C
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate		N/C
R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 and Subclause 22.108 is impaired. (IEC 60335-2-53)		N/C
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions		N/C
R.2.2.7	Labels used for memory locations are unique		N/C
R.2.2.8	The software is protected from user alteration of safety-related segments and data		N/C
R.2.2.9	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 and Subclause 22.108 is impaired. (IEC 60335-2-53)		N/C
R.3	Measures to avoid errors		N/C
R.3.1	General		N/C
	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the following measures to avoid systematic fault in the software are applied		N/C
	Software that incorporates measures used to control the fault/error conditions specified in table R.2 is inherently acceptable for software required to control the fault/error conditions specified in table R.1		N/C
R.3.2	Specification		N/C
R.3.2.1	Software safety requirements:	Software Id:	N/C
	The specification of the software safety requirements includes the descriptions listed		N/C
R.3.2.2	Software architecture		N/C

R.3.2.2.1	The specification of the software architecture includes the aspects listed - techniques and measures to control software faults/errors (refer to R.2.2); - interactions between hardware and software; - partitioning into modules and their allocation to the specified safety functions; - hierarchy and call structure of the modules (control flow); - interrupt handling; - data flow and restrictions on data access; - architecture and storage of data; - time-based dependencies of sequences and data	Document ref. No:	N/C
R.3.2.2.2	The architecture specification is validated against the specification of the software safety requirements by static analysis		N/C
R.3.2.3	Module design and coding		N/C
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules		N/C
	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements		N/C
R.3.2.3.2	Software code is structured		N/C
R.3.2.3.3	Coded software is validated against the module specification by static analysis		N/C
	The module specification is validated against the architecture specification by static analysis		N/C
R.3.3.3	Software validation		N/C
	The software is validated with reference to the requirements of the software safety requirements specification		N/C
	Compliance is checked by simulation of:		N/C
	- input signals present during normal operation		N/C
	- anticipated occurrences		N/C
	- undesired conditions requiring system action		N/C
AA	**ANNEX AA (NORMATIVE)** **SAUNA ROOM FOR TESTING SAUNA HEATING APPLIANCES (IEC 60335-2-53)**		
	Sauna room is shown in Figure AA.1 and has adjustable dimensions. (IEC 60335-2-53)		P
	Ceiling height can be adjusted to 1 900 mm, 2 100 mm or 2 300 mm and depends upon the minimum vertical distance marked on the sauna heater. Width is 2 500 mm and the length is adjustable by moving one of the walls. (IEC 60335-2-53)		P
	If a smaller sauna room is required, a partition wall having a length of 1 200 mm is installed. (IEC 60335-2-53)		P

	Walls, ceiling and floor of the sauna room are made of plywood approximately 20 mm thick. Walls and ceiling are insulated using insulation having a thermal resistance of 1,875 m² K/W to 2,5 m² K/W (IEC 60335-2-53)		P
	Floor is installed 30 mm above the supporting surface. (IEC 60335-2-53)		P
	Sauna room is ventilated by air having a temperature of 20 °C ± 5 °C passing through an inlet opening in the fixed wall. (IEC 60335-2-53)		P
	Opening is at floor level and has dimensions of 150 mm x 150 mm. (IEC 60335-2-53)		P
	Opening moved in the horizontal direction so that it is located symmetrically behind the sauna heater. (IEC 60335-2-53)		P
	An air outlet having approximately the same area is positioned in the opposite wall 300 mm below the ceiling and at least 1 000 mm from the fixed wall. (IEC 60335-2-53)		P
	Forced ventilation is used to provide six air changes per hour. (IEC 60335-2-53)		P
BB	**ANNEX BB (NORMATIVE)** **ESTIMATION OF THE INFRARED RADIATION (IEC 60335-2-53)**		
	Description of measurement of the radiation in the infrared-cabin.. (IEC 60335-2-53)		N/A

EMF			
	Tested product also comply to requirements of IEC 62233		
	Measuring distance (cm).....:		P
	Background level (%).....:		P
	Limit 100%	Measured max.: See general product information %	N/C

TABLE R.1 [e] – GENERAL FAULT/ERROR CONDITIONS				
Component [a]	Fault/error	Acceptable measures [b,c]	Definitions See IEC 60730-1	Verdict
1 Central processing unit (CPU)				
1.1 Registers	Stuck at	Functional test, or periodic self-test using either: - static memory test, or - word protection with single bit redundancy	H.2.16.5 H.2.16.6 H.2.19.6 H.2.19.8.2	
1.2 VOID				
1.3 Programme counter	Stuck at	Functional test, or Periodic self-test, or Independent time-slot monitoring, or Logical monitoring of the programme sequence	H.2.16.5 H.2.16.6 H.2.18.10.4 H.2.18.10.2	
2 Interrupt handling and execution	No interrupt or too frequent interrupt	Functional test, or time-slot monitoring	H.2.16.5 H.2.18.10.4	
3 Clock	Wrong frequency (for quartz synchronized clock: harmonics/sub-harmonics only)	Frequency monitoring, or time slot monitoring	H.2.18.10.1 H.2.18.10.4	
4 Memory				
4.1 Invariable memory	All single bit faults	Periodic modified checksum, or multiple checksum, or word protection with single bit redundancy	H.2.19.3.1 H.2.19.3.2 H.2.19.8.2	
4.2 Variable memory	DC fault	Periodic static memory test, or word protection with single bit redundancy	H.2.19.6 H.2.19.8.2	
4.3 Addressing (relevant to variable and invariable memory)	Stuck at	Word protection with single bit redundancy including the address	H.2.19.8.2	
5 Internal data path	Stuck at	Word protection with single bit redundancy	H.2.19.8.2	

5.1 VOID				
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2	
6 External communication	Hamming distance 3	Word protection with multi-bit redundancy, or CRC – single work, or Transfer redundancy, or Protocol test	H.2.19.8.1 H.2.19.4.1 H.2.18.2.2 H.2.18.14	
6.1 VOID				
6.2 VOID				
6.3 Timing	Wrong point in time	Time-slot monitoring, or scheduled transmission Time-slot and logical monitoring, or Comparison of redundant communication channels by either: - reciprocal comparison - independent hardware comparator	H.2.18.10.4 H.2.18.18 H.2.18.10.3 H.2.18.15 H.2.18.3	
	Wrong sequence	Logical monitoring, or time-slot monitoring, or Scheduled transmission	H.2.18.10.2 H.2.18.10.4 H.2.18.18	
7 Input/output periphery	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13	
7.1 VOID				
7.2 Analog I/O				
7.2.1 A/D and D/A-converter	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13	
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13	
8 VOID				
9 Custom chips [d] e.g. ASIC, GAL, gate array	Any output outside the static and dynamic functional specification	Periodic self test	H.2.16.6	
NOTE A Stuck-at fault model denotes a fault model representing an open circuit or a non-varying signal level. A DC fault model denotes a stuck-at fault model incorporating short circuit between signal lines.				

[a] For fault/error assessment, some components are divided into their sub-functions.

[b] For each sub-function in the table, the Table R.2 measure will cover the software fault/error.

[c] Where more than one measure is given for a sub-function, these are alternatives.

[d] To be divided as necessary by the manufacturer into sub-functions.

[e] Table R.1 is applied according to the requirements of R.1 to R.2.2.9 inclusive.

10.1	TABLE: Power input deviation				P
Input deviation of/at:	P rated (W)	P measured (W)	ΔP (W, %)	Required ΔP (W, %)	Remark
Sense Commercial 20	20kW	19,6	-2%	+5/-10%	P
Sense Commercial 8	8kW	8,1	+1%	+5/-10%	P
Supplementary information:					

10.2	TABLE: Current deviation				N/A
Current deviation of/at:	I rated (A)	I measured (A)	ΔI (A, %)	Required ΔI (A, %)	Remark
Supplementary information:					

11.8	TABLE: Heating test, thermocouple measurements		P
	Test voltage (V) ..... :	445	—
	Ambient (°C) .....:	23	—

Thermocouple locations	Max. temperature rise measured, ΔT (K)	Max.temperature rise limit, ΔT (K)
Relay box		
Relay	27	60
Transformer	38	85
Sauna aggregate (Sense Commercial 20)		
Supply terminal	37	60
Thermal cut-out	35	55(T80)
Internal wiring	37	50
Wood, sauna room	97	115
Wood, movable wooden rod	87	115
Sauna aggregate (Sense Commercial 10)		
Supply terminal	39	60
Thermal cut-out	29	55(T80)
Internal wiring	35	50
Wood, sauna room	92	115
Wood, movable wooden rod	77	115

Supplementary information:

- The test has been performed on the largest model (Sense Commercial 20) with the smallest volume for Sense Commercial 16
- The test has been performed on the largest model (Sense Commercial 10) with the smallest volume for Sense Commercial 6

11.8	TABLE: Heating test, resistance method		N/A
	Test voltage (V) .....:		—
	Ambient, t1 (°C).....:		—
	Ambient, t2 (°C).....:		—

Temperature rise of winding	R1 (Ω)	R2 (Ω)	ΔT (K)	Max. ΔT (K)	Insulation class

Supplementary information:

13.2	TABLE: Leakage current		P
	Heating appliances: 1,15 x rated input (W).....:	23kW	—
	Motor-operated and combined appliances: 1,06 x rated voltage (V).....:	-	—

Leakage current between	I (mA)	Max. allowed I (mA)
Neutral and earth	0,6	5,0
Phase L1 interrupted	3,4	5,0
Phase L2 interrupted	3,6	5,0
Phase L3 interrupted	3,8	5,0

Supplementary information: The test has been performed on the largest model Sense Commercial 20

13.3	TABLE: Electric strength	P

Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)
Live parts and accessible metal parts over basic insulation	1000	No
Live parts and accessible metal parts over reinforced insulation	3000	No

Supplementary information:

14	TABLE: Transient overvoltages	N/A

Clearance between:	Cl (mm)	Required Cl (mm)	Rated impulse voltage (V)	Impulse test voltage (V)	Flashover (Yes/No)

Supplementary information:

16.2	TABLE: Leakage current		P
	Single phase appliances: 1,06 x rated voltage (V) .....:	-	—
	Three phase appliances 1,06 x rated voltage divided by √3 (V) .....:	244	—

Leakage current between	I (mA)	Max. allowed I (mA)
Live parts and accessible metal parts over basic insulation	1,5	5,0
Supplementary information: The test has been performed on the largest model Sense Commercial 20		

16.3	TABLE: Electric strength		P

Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)
Live parts and accessible metal parts over basic insulation	1250	No
Live parts and accessible metal parts over reinforced insulation	3000	No
Supplementary information:		

17	TABLE: Overload protection, thermocouple measurements		N/A

Temperature rise of part/at:	ΔT (K)	Max. ΔT (K)
Supplementary information:		

17	TABLE: Overload protection, resistance method		N/A
	Test voltage (V) .....:		—
	Ambient, t1 (°C).....:		—
	Ambient, t2 (°C).....:		—

Temperature of winding	R1 (Ω)	R2 (Ω)	ΔT (K)	T (°C)	Max. T (°C)
Supplementary information:					

19	Abnormal operation conditions	P

Operational characteristics	YES/NO	Operational conditions
Are there electronic circuits to control the appliance operation?	YES	
Are there “off” or “stand-by” position?	YES	
The unintended operation of the appliance results in dangerous malfunction?	NO	

Sub-clause	Operating conditions description	Test results description	PEC desc.	EMP 19.11.4	Software type required	19.11.3 PEC	Final result
19.2	0,85 x rated power, max volume acc to table 101	No hazard or exceeded temp limits	-	-	-	-	P
19.3	1,24 x rated power, max volume acc to table 101	No hazard or exceeded temp limits	-	-	-	-	P
19.4	As Cl.11, temp regulation disabled	No hazard or exceeded temp limits	-	-	-	-	P
19.5			-	-	-	-	N/A
19.6			-	-	-	-	N/A
19.7			-	-	-	-	N/A
19.8			-	-	-	-	N/A
19.9			-	-	-	-	N/A
19.10			-	-	-	-	N/A
19.11.2	Short circuit and open circuit	No hazard	-	-	-	-	p
19.11.4.8			-	-	-	-	N/A
19.104	1,24 x rated power, max volume acc to table 101,	No hazard or exceeded temp limits	-	-	-	-	P
Supplementary information: The test has been performed on the largest model Sense Commercial 20 which applies the other models							

19.7	TABLE: Abnormal operation, locked rotor/moving parts		N/A
	Test voltage (V) .....:		—
	Ambient, t1 (°C) .....:		—
	Ambient, t2 (°C) .....:		—

Temperature of winding	R1 (Ω)	R2 (Ω)	ΔT (K)	T (°C)	Max. T (°C)
Supplementary information:					

19.9	TABLE: Abnormal operation, running overload		N/A
	Test voltage (V) .....:		—
	Ambient, t1 (°C).....:		—
	Ambient, t2 (°C).....:		—

Temperature of winding	R1 (Ω)	R2 (Ω)	ΔT (K)	T (°C)	Max. T (°C)
Supplementary information:					

19.13	TABLE: Abnormal operation, temperature rises	P

Thermocouple locations	Max. temperature rise measured, ΔT (K)	Max.temperature rise limit, ΔT (K)
Walls, ceiling , floor of sauna test room	132	140
Wooden rod	92	140
Supplementary information:		

24.1	TABLE: Components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1])
Terminal	TIANLI	TLB-500	750V, 76A, 16mm^2	EN 60998-1	VDE
Thermal cut-out	Thermodisc	55.31522T	250V, 40A, 400V, 30A,130-18^{o}C	EN 60730-1	VDE
Heating element Sense Commercial 6	TYLÖ	47000818	400V, 24.7 Ω	EN 60335-1	Tested in appliance
Heating element Sense Commercial 8	TYLÖ	47000807	400V, 19.9 Ω	EN 60335-1	Tested in appliance
Heating element Sense Commercial 10, 16	TYLÖ	47041755	400V, 31 Ω	EN 60335-1	Tested in appliance
Heating element Sense Commercial 20	TYLÖ	47041770	400V, 24 Ω	EN 60335-1	Tested in appliance
Realy unit					
Mains terminal	WECO	327	750V,16mm^2, T80	EN 60999-1	VDE
Auxiliary terminal	WECO	323	450V, 2.5mm^2, T80	EN 60999-1	VDE
Mains switch	Arcoelectric	C1550AT	250V,16(4)A,T125	EN 61058	DEMKO
Fuse holder	Schurter	FPG3	250VAC, 10A, 2.5W	IEC 60127-6	VDE

Fuse	Schurter	FST	5x20,T500mA, 250V,	IEC 60691	VDE 40016601
Internal wiring	Amokabel AB	H05V2 / H07V2	Min 300VAC, min temp 90ºC, min 1,5–2,5mm^2	EN 50525-2-31	Semko
Internal connector	AMP	UMNL-Series	400VAC, 28A	EN 61984	VDE
TRM08 PCB:					
PCB	HX CIRCUIT TECHNOLOGY	5215, HX-2	94-V0, 130ºC	EN 60335-1	Tested in appliance
Transformer T200	Hahn	BV EI 602 1118	230V, 50-60Hz, 70ºC, Max. 28VA, Class B	EN 61558-2-6	VDE
X-Capacitor C205	Panasonic	ECQUA104	275VAC, 100nF	EN 60384-14	ENEC
X-Capacitor C221	Panasonic	ECQUL	275V, 0,68uF	EN 60384-14	VDE
Fuse F200	TE	0603SFS250F /32-2	2,5A, 32V	EN 60335-1	Tested in appliance
Relay	Panasonic	ALE 1 PB12	250V, 16A, T85	IEC 61810-1	VDE, TÜV
Add on PCB:					
PCB		BRN1516	94V-0	EN 60335-1	Tested in appliance
Power relay	TE	T9AS1D22-12	240VAC, 30A, T105	IEC 61810-1	VDE

28.1	**TABLE: Threaded part torque test**	P

Threaded part identification	Diameter of thread (mm)	Column number (I, II, or III)	Applied torque (Nm)
Screws for enclosure	4,0	II	1,2
Supplementary information:			

29.1	**TABLE: Clearances**					P
	Overvoltage category..... ... :		II			—
		Type of insulation:				
Rated impulse voltage (V):	Min. cl (mm)	Basic (mm)	Supplementary (mm)	Reinforced (mm)	Functional (mm)	Verdict / Remark
330	0,2* / 0,5 / 0,8**					
500	0,2* / 0,5 / 0,8**					
800	0,2* / 0,5 / 0,8**					
1 500	0,5 / 0,8** / 1,0***					
2 500	**1,5 / 2,0*** **	**X**	**X**	**X**		P
4 000	**3,0 / 3,5*** **				**X**	P
6 000	5,5 / 6,0***					
8 000	8,0 / 8,5***					
10 000	11,0 / 11,5***					

Supplementary information:

*) For tracks on printed circuit boards if pollution degree 1 and 2
**) For pollution degree 3
***) If the construction is affected by wear, distortion, movement of the parts or during assembly

29.2	TABLE: Creepage distances, basic, supplementary and reinforced insulation										P
Working voltage (V)	Creepage distance (mm) Pollution degree										
	1	2			3			Type of insulation			
		Material group			Material group						
		I	II	IIIa/IIIb	I	II	IIIa/IIIb*)	B**)	S**)	R**)	Verdict
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9		—	—	
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9	—		—	
≤50	0,36	1,2	1,7	2,4	3,0	3,4	3,8	—	—		
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4		—	—	
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4	—		—	
125	0,56	1,5	2,1	3,0	3,8	4,2	4,8	—	—		
250	0,56	1,25	1,8	**2,5**	3,2	3,6	4,0	**X**	—	—	P
250	0,56	1,25	1,8	**2,5**	3,2	3,6	4,0	—	**X**	—	P
250	1,12	2,5	3,6	**5,0**	6,4	7,2	8,0	—	—	**X**	P
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3		—	—	
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—		—	
400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—		
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0		—	—	
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—		—	
500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	—	—		
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		—	—	
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—		—	
>630 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	—	—		
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5		—	—	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—		—	
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	—	—		
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0		—	—	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—		—	
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	—	—		
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0		—	—	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—		—	
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	—	—		
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		—	—	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—		—	
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—	—		
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0		—	—	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	—		—	

>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—	—		
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0		—	—	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—		—	
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0	—	—		
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0		—	—	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—		—	
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0	—	—		
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0		—	—	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—		—	
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	—	—		
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0		—	—	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—		—	
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0	—	—		
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0		—	—	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—		—	
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	—	—		
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0		—	—	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—		—	
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0	—	—		
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0		—	—	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—		—	
>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0	—	—		

Supplementary information:

*) Material group IIIb is allowed if the working voltage does not exceed 50 V
**) B = Basic insulation, S = Supplementary insulation, R = Reinforced insulation

29.2	TABLE: Creepage distances, functional insulation							P
Working voltage (V)	Creepage distance (mm) Pollution degree							
	1	2			3			
		Material group			Material group			
		I	II	IIIa/IIIb	I	II	IIIa/IIIb*)	Verdict / Remark
≤10	0,08	0,4	0,4	0,4	1,0	1,0	1,0	
50	0,16	0,56	0,8	1,0	1,4	1,6	1,8	
125	0,25	0,71	1,0	1,4	1,8	2,0	2,2	
250	0,42	1,0	1,4	2,0	2,5	2,8	3,2	
400	0,75	1,6	2,2	**3,2**	4,0	4,5	5,0	P
500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	

Supplementary information:

*) Material group IIIb is allowed if the working voltage does not exceed 50 V

30	**TABLE: Resistance to heat and fire**																			
Object/ part No.	Manufacturer / trademark	Type/ model	Ball pressure test °C				Glow wire test (GWT) °C						Glow-wire flammability index (GWFI) °C				Glow-wire ignition temp. (GWIT) °C		Needle - flame test (NFT)	Verdict
			75	125	cl. 11 +40	cl. 19 +25	550	650		750		850	550	650	750	850	675	775		
								te	ti	te	ti									
Cord anchorage			X																	P
Mains switch	Arcolectric	C1550		X						30	3	X								P
Mains switch internal	Arcolectric	C1550								10	3	X								P
Mains switch push button	Arcolectric	C1550	X																	P
Internal plastic of Relay	TE	T9AS		X						6	2	X							X	P
Enclosure of relay	TE	T9AS		X						29	2	X							X	P
RJ45 PCB connector				X						30	1	X							X	P
RJ45 connector white part										-	-	X							X	P

30	**TABLE: Resistance to heat and fire**																			
Object/ part No.	Manufacturer / trademark	Type/ model	Ball pressure test °C				Glow wire test (GWT) °C						Glow-wire flammability index (GWFI) °C				Glow-wire ignition temp. (GWIT) °C		Needle - flame test (NFT)	Verdict
			75	125	cl. 11 +40	cl. 19 +25	550	650		750		850	550	650	750	850	675	775		
								te	ti	te	ti									
RJ45 connector transparent part				X						-	-	X							X	P
White socket				X						4	1	X							X	P
Transparent socket				X				-	-	7	1	X							X	P
Connector 3A				X				-	-										X	P
Connector 3B				X				-	-											P
Auxiliary terminal	Weco	323		X				-	-	17	1	X							X	P
Mains terminal	Weco	327		X						30	1	X								P
Fuse holder	Schurter	FPG3																		

30	**TABLE: Resistance to heat and fire**																			
Object/ part No.	Manufacturer / trademark	Type/ model	Ball pressure test °C				Glow wire test (GWT) °C						Glow-wire flammability index (GWFI) °C				Glow-wire ignition temp. (GWIT) °C		Needle - flame test (NFT)	Verdict
			75	125	cl. 11 +40	cl. 19 +25	550	650		750		850	550	650	750	850	675	775		
								t_e	t_i	t_e	t_i									
Terminal	TIANLI	TLB-500																		
Switch	Arcolectric	8600																		
Relay bottom part	Panasonic	ALE 1 PB 12		X						-	-	X								P
Relay enclosure	Panasonic	ALE 1 PB 12								-	-	X								P
Control PCB																			X	P

Supplementary information:

[1] Parts of material classified at least HB40 or if relevant HBF
[2] Parts of material classified as V-0 or V-1
[3] Flame persisting longer than 2 s (= $t_e - t_i$) need only be reported for unattended appliances
[4] Surrounding parts subjected to the needle-flame test of annex E
[5] Base material classified as V-0 or if relevant VTM-0
[6] The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not applicable for attended appliances

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60335-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Household and similar electrical appliances – Safety –
Part 1: GENERAL REQUIREMENTS

Differences according to :	EN 60335-1:2012 + A11:2014 EN 62233:2008
Attachment Form No.:	EU_GD_IEC60335_1T_II
Attachment Originator :	Nemko AS
Master Attachment:	2014-09

	CENELEC COMMON MODIFICATIONS		
6.1	Delete “class 0” and “class 01”		P
7.1	Single-phase appliances to be connected to the supply mains: 230 V covered		P
	Multi-phase appliances to be connected to the supply mains: 400 V covered		P
7.10	Devices used to start/stop operational functions of the appliance distinguished from other manual devices by means of shape, size, surface texture, position, etc.		P
	An indication that the device has been operated is given by:		
	• a tactile feedback, or		N/A
	• an audible and visual feedback		P
7.12	The instructions include the substance of the following:		
	- this appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved		P
	- children shall not play with the appliance		P
	- cleaning and user maintenance shall not be made by children without supervision		P
7.12.Z1	The specific instructions related to the safe operation of this appliance is collated together in the front section of the user instructions		P
	The height of the characters, measured on the capital letters, is at least 3 mm		P

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	These instructions are also available in an alternative format, e.g. on a website	Website	P
8.1.1	Also test probe 18 of EN 61032 is applied		P
	The appliance being in every possible position during the test		P
	The force on the probe in the straight position is increased to 10 N when probe 18 is used		P
	When using test probe 18 the appliance is fully assembled as in normal use without any parts removed, and		P
	parts intended to be removed for user maintenance are also not removed		N/A
8.2	Compliance is checked by applying the test probes of EN 61032		P
	For built-in appliances and fixed appliances, the test probe B and probe 18 of EN 61032 are applied only after installation		P
11.8	Footnotes to “External enclosure of motor-operated appliances” to be taken into account		N/A
15.1.2	Appliances with an automatic cord reel tested with the cord in the most unfavourable position so that the reeling of the wet cord may affect electrical insulation during operation, the cord not being dried before reeling		N/A
20.2	When using the test probe similar to test probe B with a circular stop face, the accessories and detachable covers are removed		N/A
	Test probe 18 applied with a force of 2,5N on the appliance fully assembled		N/A
24.1	Components comply with the safety requirements specified in the relevant standards as far as they reasonably apply		P
	The requirements of Clause 29 of this standard apply between live parts of components and accessible parts of the appliance.		P
	The requirements of 30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections inside components		P
	Components that have not been previously tested or do not comply with the standard for the relevant component are tested according to the requirements of 30.2		N/A

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	Components that have been previously tested and shown to comply with the resistance to fire requirements in the standard for the relevant component need not be retested provided that:		
	- the severity specified in the component standard is not less than the severity specified in 30.2, and		N/A
	- the test report for the component states whether it complied with the standard for the relevant component with or without flame, flames not exceeding 2 s during the test are ignored		N/A
	Unless components have been previously tested and found to comply with the relevant standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		N/A
	For components mentioned in 24.1.1 to 24.1.9, no additional tests specified in the relevant standard for the component are necessary other than those specified in 24.1.1 to 24.1.9		N/A
	Components that have not been separately tested and found to comply with the relevant standard, and		N/A
	components that are not marked or not used in accordance with their marking,		N/A
	are tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard		N/A
	Lamp holders and starter holders that have not been previously tested and found to comply with the relevant standard are tested as a part of the appliance and additionally comply with the gauging and interchangeability requirements of the relevant standard under the conditions occurring in the appliance		N/A
	Where the relevant standard specifies these gauging and interchangeability requirements at elevated temperatures, the temperatures measured during the tests of Clause 11 are used		N/A
	Plugs and socket-outlets and other connecting devices of interconnection cords are not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1, or		N/A
	with connectors and appliance inlets complying with the standard sheets of IEC 60320-1,		N/A
	if direct supply to these parts from the supply mains gives rise to a hazard		N/A

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
24.1.7	If the remote operation of the appliance is via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is EN 41003		N/A
	Compliance with Clause 8 of this standard is not impaired by connecting the appliance to a device covered by EN 41003		N/A
24.Z1	For motor running capacitors (IEC 60252-1 type P2) with a metallic enclosure having an overpressure fuse the flame testing of internal plastic parts supporting current carrying connections as required in 30.2.2 and 30.2.3.1 is not necessary		N/A
25.6	Supply cords of single-phase portable appliances having a rated current not exceeding 16 A, fitted with a plug complying with the following standard sheets of IEC/TR 60083:		
	- for Class I appliances: standard sheet C2b, C3b or C4 .... :		N/A
	- for Class II appliances: standard sheet C5 or C6 .... :		N/A
25.7	Rubber sheathed cords (60245 IEC 53) are not suitable for appliances intended to be used outdoors or when they are liable to be exposed to significant amount of ultraviolet radiation		N/A
	Halogen-free thermoplastic compound sheathed supply cords have properties at least those of:		
	• halogen-free thermoplastic compound sheathed cords (H03Z1Z1H2-F or H03Z1Z1-F), for appliances having a mass not exceeding 3 kg		N/A
	• halogen-free thermoplastic compound sheathed cords (H05Z1Z1H2-F or H05Z1Z1-F), for other appliances		N/A
	Cross-linked halogen-free compound sheathed supply cords have properties at least those of cross-linked halogen-free compound sheathed cords (H07ZZ-F)		N/A
26.11	Conductors connected by soldering are not considered to be positioned or fixed so that reliance is not placed upon the soldering alone to maintain them in position unless they are held in place near the terminals independently of the solder		N/A

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
29.3.Z1	Appliance constructed so that if there is a possibility of damaging the insulation during installation, the insulation withstands the scratch and penetration test of 21.2		N/A
32	Compliance regarding electromagnetic fields is checked according to EN 62233		P
Annex I, 19.I.101	The appliance is supplied at rated voltage and operated under normal operation with each of the fault conditions specified		N/A
	The duration of the test is as specified in 19.7		N/A
ZA	**ANNEX ZA** (NORMATIVE) **SPECIAL NATIONAL CONDITIONS**		
	Norway		
19.5	The test is also applicable to appliances intended to be permanently connected to fixed wiring		N/A
	Norway		
22.2	The second paragraph of this subclause, dealing with single-phase, permanently connected class I appliances having heating elements, is not applicable due to the supply system		N/A
	All CENELEC countries		
25.6 and 25.25	Information concerning National plug and socket-outlets is available from the CENELEC website. Normative national requirements concerning plug and socket-outlets are shown in the relevant National standard		N/A
	Ireland and United Kingdom		
25.8	In the table, the lines for 10 A and 16 A are replaced by:		
	> 10 and ≤ 13 1,25		N/A
	> 13 and ≤ 16 1,5		N/A

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
ZB	**ANNEX ZB** (INFORMATIVE) **A-DEVIATIONS**		
	Ireland		
25.6	These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs complying with I.S. 401:1997, or equivalent, to be fitted to domestic appliances		N/A
	United Kingdom		
25.6	These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs to BS 1363 to be fitted to domestic appliances. It also allows plugs to BS 4573 and EN 50075 to be fitted to shavers and toothbrushes		N/A
ZC	**ANNEX ZC** (NORMATIVE) **NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS**		
	A list of referenced documents in this standard		P
ZD	**ANNEX ZD** (INFORMATIVE) **IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS**		
	A table with IEC and CENELEC code designations for flexible cords		N/A
ZE	**ANNEX ZE** (INFORMATIVE) **SPECIFIC ADDITIONAL REQUIREMENTS FOR APPLIANCES AND MACHINES INTENDED FOR COMMERCIAL USE**		
7.1	Business name and full address of the manufacturer and, where applicable, his authorized representative.....:		N/A
	Model or type reference .....:		N/A
	Serial number, if any .....:		N/A
	Production year		N/A
	Designation of the appliance.....:		N/A

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
7.12	Instructions provided with the appliance so that the appliance can be used safely		N/A
	The instructions contain at least the following information:		
	- the business name and full address of the manufacturer and, where applicable, his authorized representative		N/A
	- model or type reference of the appliance as marked on the appliance itself, except for the serial number		N/A
	- the designation of the appliance together with its explanation in case it is given by a combination of letters and/or numbers		N/A
	- the general description of the appliance, when needed due to the complexity of the appliance		N/A
	- specific precautions if required during installation, operation, adjusting, user maintenance, cleaning, repairing or moving		N/A
	- when needed drawings, diagrams, descriptions and explanations necessary for the safe use and user maintenance of the appliance		N/A
	- the possible reasonably foreseeable misuse and, whenever relevant, a warning against the effects it may have on the safe use of the appliance		N/A
	The words “Original instructions” appear on the language version(s) verified by the manufacturer or by the authorized representative		N/A
	When a translation of the original instructions has been provided by a person introducing the appliance on the market; the meaning of the sentence “Translation of the original instructions” appear in the relevant instructions delivered with the appliance		N/A
	The instructions for maintenance/service to be done by specialized personnel, mandated by the manufacturer or the authorized representative may be supplied in only one Community language which the specialized personnel understand		N/A
	The instructions indicate the type and frequency of inspections and maintenance required for safe operation including the preventive maintenance measures		N/A

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
7.12.ZE1	If needed for specific appliances, the following information to be given:		
	• on use, transportation, assembly, dismantling when out of service, testing or foreseeable breakdowns, if these operations have consequences on stability of the appliance in order to avoid overturning, falling or uncontrolled movements of the appliance or of its component parts		N/A
	• on how to maintain adequate mechanical stability when in use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance		N/A
	• on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided		N/A
	• on the operating method to be followed in the event of accident or breakdown; if a blockage is likely to occur the operating method to safely unblock the appliance		N/A
	• on the specifications on the spare parts to be used, when these affect the health and safety of the operator		N/A
	• on airborne noise emissions, determined and declared in accordance with the relevant Part 2, which includes:		
	- the A-weighted emission sound pressure level at workstations, where this exceeds 70 dB(A) .....;		N/A
	- where this level does not exceed 70 dB(A), this fact is indicated		N/A
	- the peak C-weighted instantaneous sound pressure value at workstations, where this exceeds 63 Pa (130 dB in relation to 20 µPa).....:		N/A
	- the A-weighted sound power level emitted by the machinery, where the A-weighted emission sound pressure level at workstations exceeds 80 dB(A).....:		N/A

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
7.12.ZE2	The instructions includes a warning to disconnect the appliance from its power source during service and when replacing parts		N/A
	If the removal of the plug is foreseen, it is clearly indicated that the removal of the plug has to be such that an operator can check from any of the points to which he has access that the plug remains removed		N/A
	If this is not possible, due to the construction of the appliance or its installation, a disconnection with a locking system in the isolated position is provided		N/A
19.11.4.8	The appliance continues to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage fluctuation occurred, or		N/A
	a manual operation is required to restart it		N/A
20.1	Appliances and their components and fittings have adequate mechanical stability during transportation, assembly, dismantling and any other action involving the appliance		N/A
20.2	Dangerous moving transmission parts safeguarded either by design or guards		N/A
	When guards are used, they are fixed guards, interlocking movable guards or protective devices		N/A
	Moving parts directly involved in the function of the appliance which cannot be made completely inaccessible fitted with:		
	- fixed guards or interlocking movable guards preventing access to those sections of the parts that are not used in the work, and		N/A
	- adjustable guards restricting access to those sections of the moving parts where access is necessary		N/A
	Interlocking movable guards used where frequent access is required		N/A
21.1	Appliances and their components and fittings have adequate mechanical strength and is constructed to withstand such rough handling that may be expected in normal use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance		N/A
22.ZE.1	For appliances provided with a seat, the seat gives adequate stability		N/A
	The distance between the seat and the control devices capable of being adapted to the operator		N/A

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
22.ZE.2	For appliances provided with separate devices for the start and the stop functions, the stop function is unambiguously identifiable and does always override the start function		N/A
	For appliances provided with one device performing the start and the stop function, the stop function is unambiguously identifiable and does always override the start function		N/A
22.ZE.3	Appliances designed in such a way that incorrect mounting is avoided, if this can lead to an unsafe situation		N/A
	If this is not possible, information on the correct mounting is given directly on the part and/or the enclosure		N/A
22.ZE.4	Where the weight, size or shape prevents appliances from being moved manually, they are fitted with attachments for lifting gear, or		N/A
	so designed that they can be fitted with such attachments, or		N/A
	be shaped in such a way that standard lifting gear can easily be used		N/A
	Appliances to be moved manually are constructed or equipped so that they can be moved easily and safely		N/A
22.ZE.5	The fixing systems of fixed guards which prevent access to dangerous moving transmission parts only removable with the use of tools		N/A
	If such guards have to be removed by the user for routine cleaning or maintenance their fixing systems remain attached to the fixed guards or to the machine after removal		N/A
	Where possible, guards are incapable of remaining in place without their fixings		N/A
	This does not apply if, after removal of the screws, or if the component is incorrectly repositioned, the appliance becomes inoperative		N/A
	Movable guards are interlocked		N/A
	The interlocking devices prevent the start of hazardous appliance functions until the guards are fixed in their position, and give a stop command whenever they are no longer closed		N/A

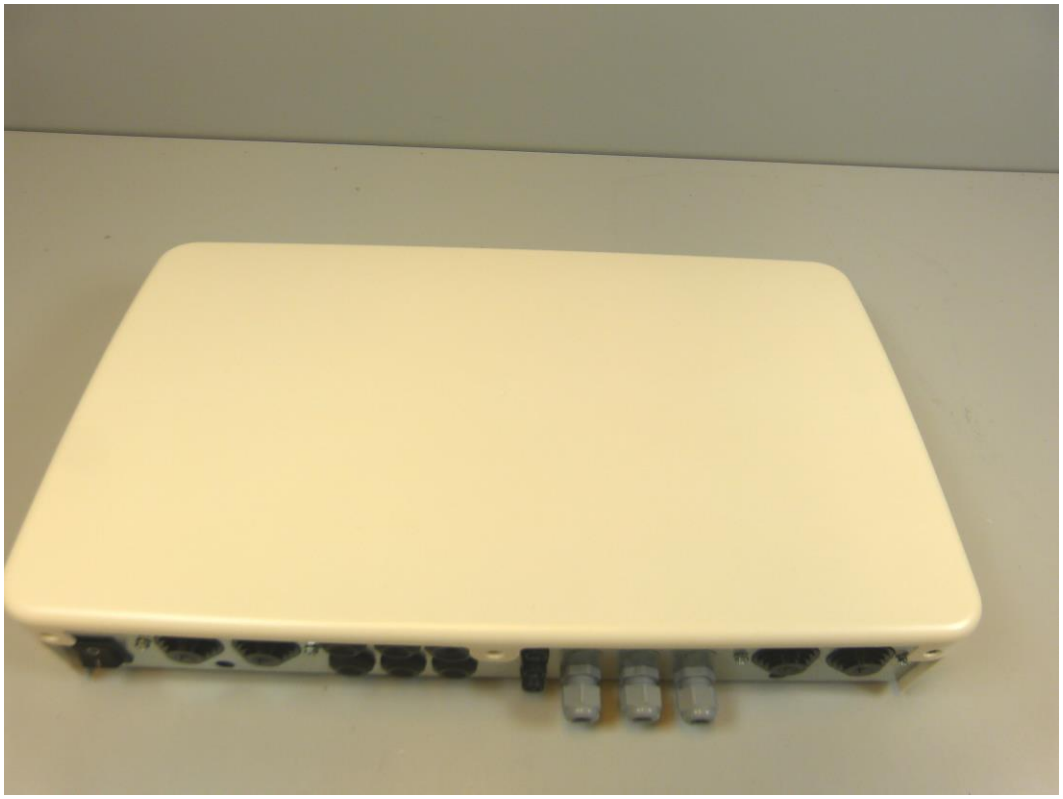
IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	Where it is possible for an operator to reach the danger zone before the risk due to hazardous appliance functions has ceased, movable guards associated with a guard locking device in addition to an interlocking device that:		
	- prevents the start of hazardous appliance functions until the guard is closed and locked, and		N/A
	- keeps the guard closed and locked until the risk of injury from the hazardous appliance functions has ceased		N/A
	Interlocking movable guards remain attached to the appliance when open, and		N/A
	they are designed and constructed in such a way that they can be adjusted only by means of an intentional action		N/A
22.ZE.6	Interlocking movable guards designed in such a way that the absence or failure of one of their components prevents starting or stops the hazardous appliance functions		N/A
	The guard is opened to the extent needed to cause the interlocking to operate and is then closed, the number of operations being defined in the specific Part 2 .....:		N/A
	After this test any defect that may be expected in normal use is applied to the interlock system, including interruption of the supply, only one defect being simulated at a time		N/A
	After these tests the interlock system is fit for further use		N/A
22.ZE.7	Adjustable guards restricting access to areas of the moving parts strictly necessary for the work are:		
	- adjustable manually or automatically, depending on the type of work involved, and		N/A
	- readily adjustable without the use of tools		N/A
22.ZE.8	In case of interruption, re-establishment after an interruption or fluctuation in whatever manner of the power supply, the appliance does not restart		N/A
	However, automatic restarting of the operation is allowed if the appliance may continue to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage interruption or fluctuation occurred		N/A

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
22.ZE.9	Appliances fitted with means to isolate them from all energy sources		
	Such isolators are clearly identified, and		N/A
	they are capable of being locked if reconnection endanger persons		N/A
	After the energy source is disconnected, it is possible to dissipate any energy remaining or stored in the circuits of the appliance without risk to persons		N/A
ZF	**ANNEX ZF** (INFORMATIVE) **CRITERIA APPLIED FOR THE ALLOCATION OF PRODUCTS COVERED BY STANDARDS IN THE EN 60335 SERIES UNDER LVD OR MD**		
	List of standards under CENELEC/TC61 with the allocation under the LVD (Low Voltage Directive) or the MD (Machinery Directive).....:		P
ZG	**ANNEX ZG** (NORMATIVE) **UV APPLIANCES**		
	The following modifications to this standard apply to appliances having UV emitters		N/A
	This annex is not applicable to appliances covered by the scopes of IEC 60335-2-27, IEC 60335-2-59 or IEC 60335-2-109		N/A
7.12.ZG	The instructions for appliances incorporating UVC emitters include the substance of the following: WARNING — This appliance contains a UV emitter. Do not stare at the light source		N/A
32	For appliances incorporating UV emitters the manufacturer delivers a declaration providing evidence that the plastic material exposed to the radiation is UV resistant		N/A
ZZ	**ANNEX ZZ** (INFORMATIVE) **COVERAGE OF ESSENTIAL REQUIREMENTS OF EC DIRECTIVES**		
	Description of the relation between this European standard and the LVD (Low Voltage Directive, 2006/95/EC) and the MD (Machinery Directive, 2006/42/EC)		P

IEC60335_1T - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

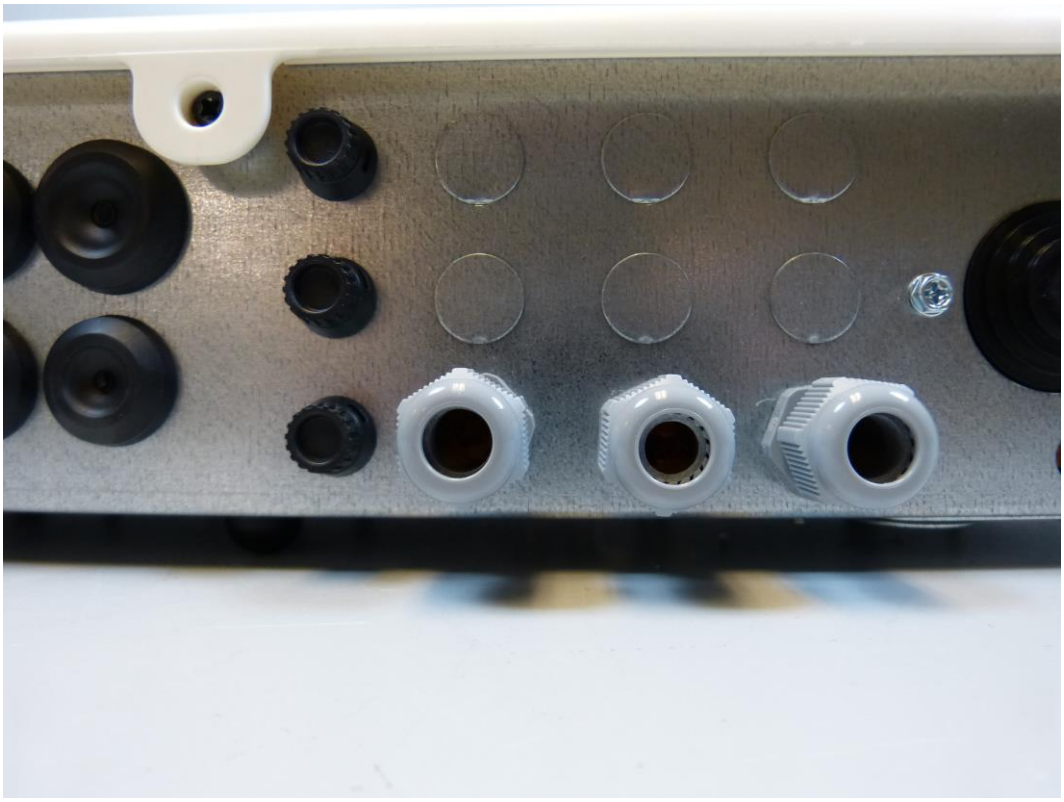
Annex EN 62233:2008			
Clause	Requirement + Test	Result - Remark	Verdict
EMF- ELECTROMAGNETICS FIELDS			
	The tested product also complies with the requirements of EN 62233:2008		
	Limit ……100%	Measured max.: See general product information %	N/C

Pictures



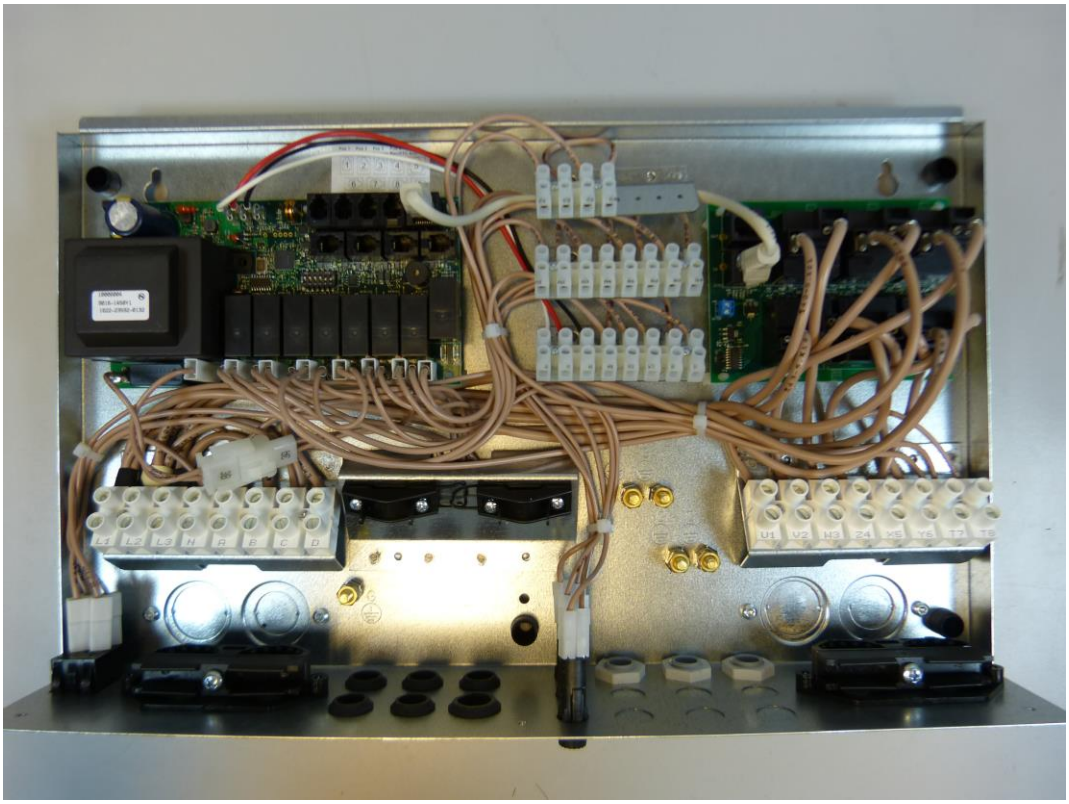
Pictures

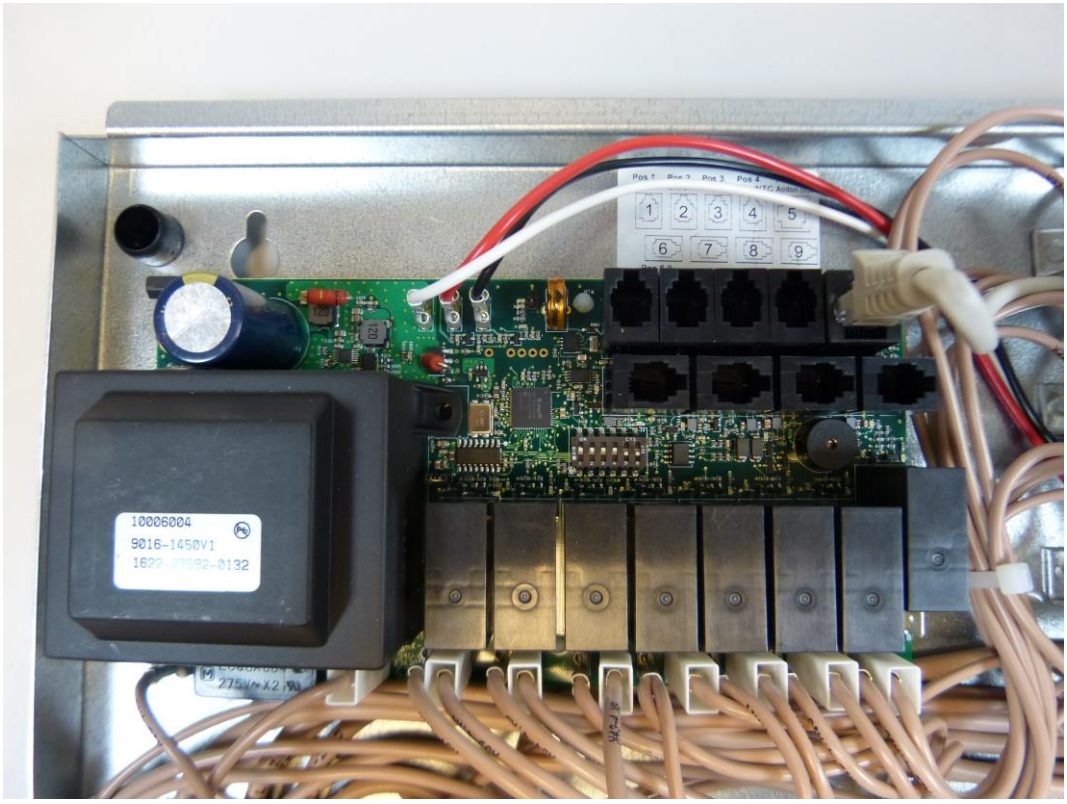
Pictures




TYLÖ
2016-06-08
Made in Sweden
RB E
Max 29A 400V 3N~
Max 47A/31A 200-240V 1/3~
Serial no: *406200005*
CE
EMC
Warning! Several supply circuits. Check that there is no current in the unit before carrying out any work.
Warnung! Mehere Versorgungskreise. Gerät vor einem Eingriff auf Spannunsfreitheit prufen.
Varning! Flera matningskretsar. Kontrollera att apparaten är strömlös före ingrepp.
Attention! Plusieurs circuits d´alimentation. Vérifiez que l´appareil est débranché avant toute intervention.
¡ Atención! Varois circuitos de alimentación. Controlar que el aparato no tieme corrinte antes de efectuar trabajos en él.
Advarsel! Flere materkretsar. Kontrollér at apparaten ikke er strömförende för arbeid påbegynnes.
Attenzione! Molti circuit di alimentazione. Controllare che lápparecchio sia staccato dalla presa di corente prima di intervenire.
Variotus! Useita syöttöpiirejä. Tarkista ennen leitteen osiin koskemista, että se on virraton.

Pictures





Pictures