Test Report issued under the responsibility of:

TEST REPORT
IEC 60335-2-89
Safety of household and similar electrical appliances
Part 2: Particular requirements for commercial refrigerating appliances with an incorporated or remote refrigerant condensing unit or compressor

Report Number. ..... :	GZES200301399532
Date of issue..... :	2020-10-14, Amendment 3: 2023-04-14
Total number of pages ..... :	134
Name of Testing Laboratory preparing the Report ..... :	SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch
Applicant's name..... :	Guangdong Sansheng Appliances Co., Ltd.
Address..... :	22 Xinhui Road, Shunde Science & Technology Industrial Park, Wusha, Daliang, Shunde, Foshan, Guangdong, China
Test specification:	
Standard ..... :	IEC 60335-2-89:2019 for use in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2010, AMD1:2013, COR1:2014, AMD2:2016, COR1:2016
Test procedure ..... :	SGS-CSTC
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60335_2_89K
Test Report Form(s) Originator.... :	IMQ S.P.A.
Master TRF..... :	Dated 2019-09-13

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description.....:	**Refrigerator for commercial use**
Trade Mark(s).....:	—
Original Product/Equipment Manufacturer .....:	Same as applicant
Branding Manufacturer(s).....:	—
Model/Type reference.....:	Series A: LG-108HE, LG-138HE, LG-148HE, LG-158HE, LG-168HE, LG-108HEB, LG-138HEB, LG-148HEB, LG-108HEC, LG-138HEC, LG-148HEC; Series B: LG-208HE, LG-208SE, LG-208HEB, LG-208SEB, LG-208HEC, LG-208SEC, LG-248HE, LG-248SE, LG-248HEB, LG-248SEB, LG-248HEC, LG-248SEC, LG-330HE, LG-330SE, LG-330HEB, LG-330SEB, LG-330HEC, LG-330SEC, LG-388HE, LG-388SE, LG-388HEB, LG-388SEB, LG-388HEC, LG-388SEC
Ratings.....:	220 V - 240 V; 50 Hz; Class I; Series A with comp. PZ80H1Y, EKZ80L: 120 W, 0,58 A; Series A with comp.SZ80E1J: 160 W, 0,95 A; Series B: 160 W, 0,78 A

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch	
Testing location/ address.....:		Building 1, European Industrial Park, No.1, Shunhe South Road, Wusha, Daliang, Shunde District, Foshan, Guangdong, China	
Tested by (name, function, signature).....:		Rooney Li / Project Engineer	
Approved by (name, function, signature)...:		Clause Wang / Reviewer	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature).:			

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

Attachment 1: 21 pages of Photo documentation.
Attachment 2: 14 pages of European group differences and national differences.
Attachment 3: 3 pages of EN 60335-1: A15: 2021.

Summary of testing:

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Tests performed (name of test and test clause): | **Testing location:**

Tests according to the following standards were carried out:

IEC 60335-2-89: 2019
IEC 60335-1: 2010 + A1: 2013 + A2: 2016

After reviewing, tests were arranged as below:

Model No.	Compressor	Fan	Test item
LG-168HE	PZ80H1Y	Evaporator and Condenser fan motor: SAD12038B12L	Full tests
LG-168HE	EKZ80L	Evaporator and Condenser fan motor: BL12038-0D012	10, 11, 13, 19, Annex AA
LG-388HE	PZ99H1X	Evaporator fan motor: SAD12038B12L and Condenser fan motor: ECM7112AAA	Full test
LG-388HE	PZ99H1X	Evaporator fan motor: BL12038-0D012 and Condenser fan motor: YZF5-13	10, 11, 13, 19, Annex AA
Amendment 1			
LG-388HE Alternative Electronic thermostat ECS-16	PZ99H1X	Evaporator fan motor: SAD12038B12L and Condenser fan motor: ECM7112AAA	10, 11, 13, 17, 22.5, 29, 30 and construction checking
Amendment 2			
LG-168HE Alternative compressor SZ80E1J, electronic thermostat XR02CX	SZ80E1J	Evaporator and Condenser fan motor: SAD12038B12L	10, 11, 13, 19, 22.5, 29, 30
LG-388HE alternative condenser fan motor YZ5-13,	PZ99H1X	Evaporator fan motor: SAD12038B12L and Condenser fan motor: YZ5-13	10, 11, 13, 19, 22.5, 29, 30 and Annex AA

See page 3

electronic thermostat XR02CX			
Amendment 3			
LG-388HE	PZ99H1X	Evaporator fan motor: SAD12038B12L and Condenser fan motor: ECM7112AAA	30, EMF and construction checking

The submitted appliances complied with the above standards.

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

EU Group Differences.

☒ **The product fulfils the requirements of**
EN 60335-2-89: 2010 + A1: 2016 + A2: 2017
EN 60335-1: 2012 + A11: 2014 + A13: 2017 + A1: 2019 + A14: 2019 + A2: 2019 + A15: 2021
EN 62233: 2008

Statement concerning the uncertainty of the measurement systems used for the tests

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

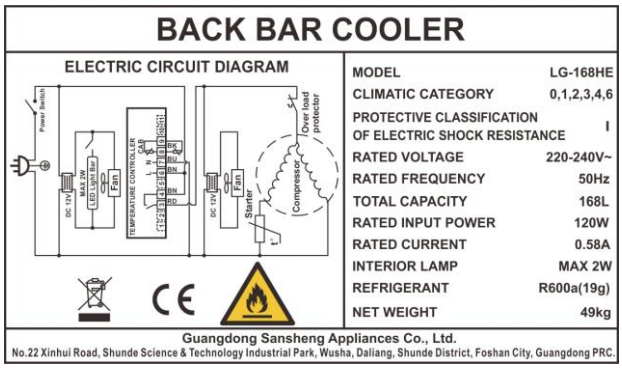
Procedure number, issue date and title:

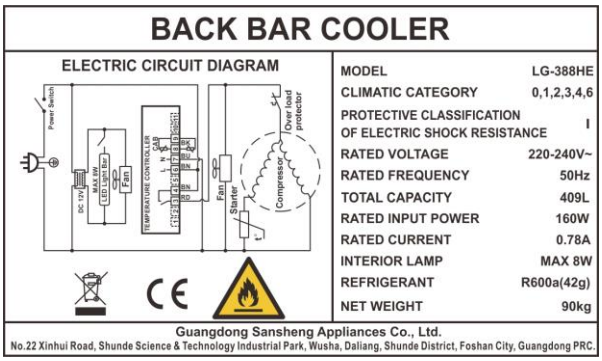
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☒ **Statement not required by the standard used for type testing**

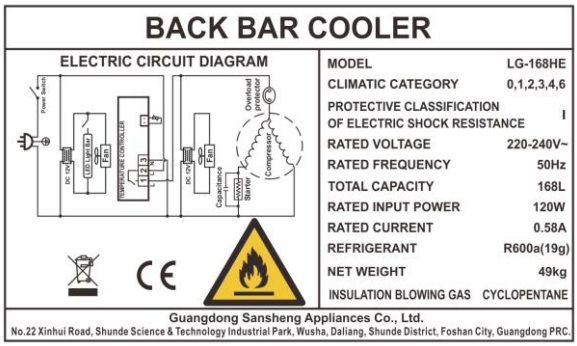
Copy of marking plate:
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

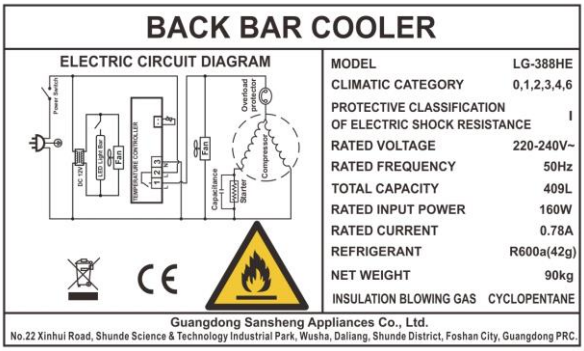
Series A, B:



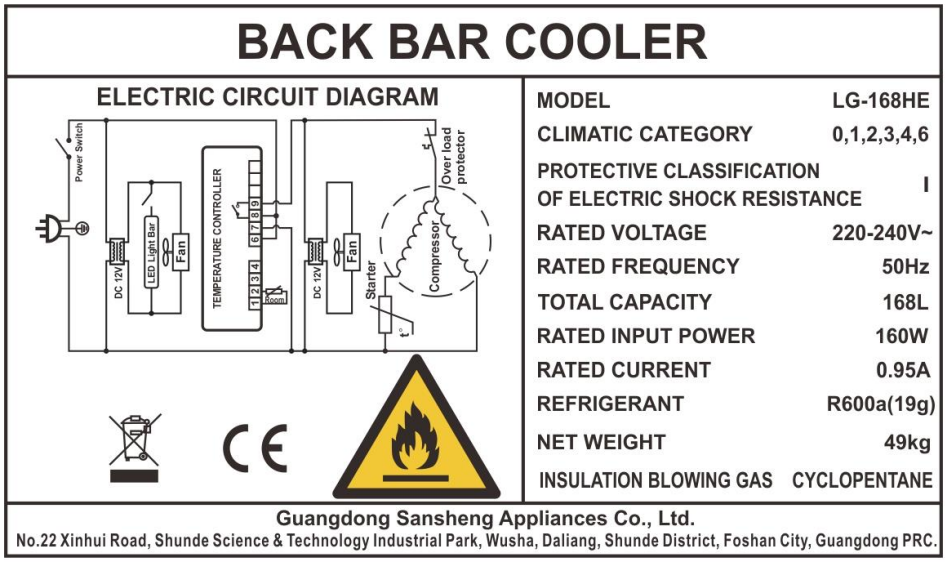


Series A, B with electronic thermostat ECS-16:

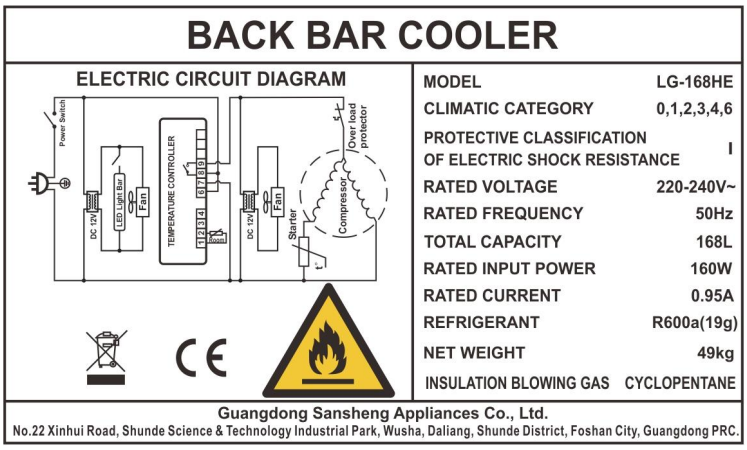




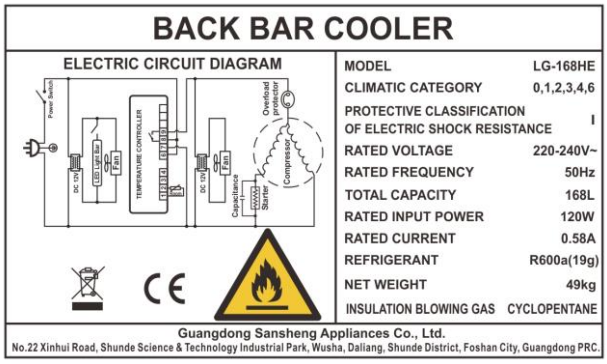
Series A with comp.SZ80E1J, Electronic thermostat ECS-16:

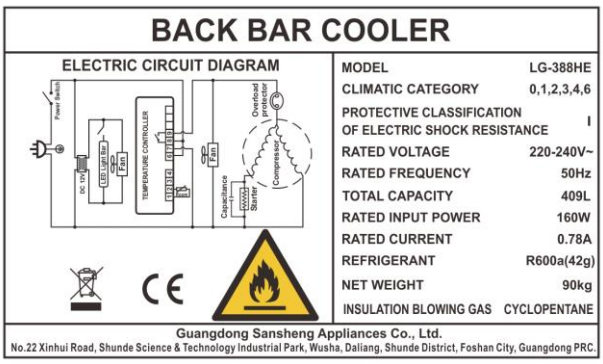


Series A with comp SZ80E1J, electronic thermostat XR02CX:

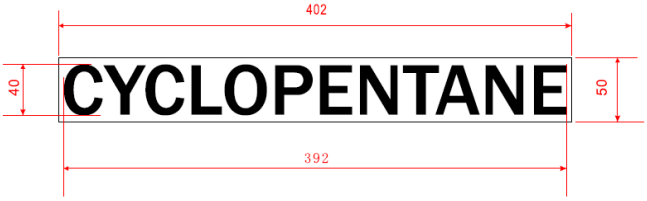


Series A, B with electronic thermostat XR02CX:





Remark:
Labels of series A were the same except the model name, weight and ratings.
Labels of series B were the same except the model name, weight and ratings.



The marking of insulation blowing gas for all models. Letter height: 40 mm.

The marking of risk of fire for all models. Letter height: 15 mm.

Remark:
1,. As declared by the applicant, the importer (and manufacturer, if it is different)'s name, registered trade name or registered trade mark and the postal address will be marked on the products before being place on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities.
2, Marking on the packaging or in a document accompanying the electrical equipment is only acceptable if it is not possible to place such markings on the product.

Test item particulars:	
Classification of installation and use.....:	Stationary appliance
Supply Connection .....:	Non-detachable cord fixed with plug
.....:	
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing:	
Date of receipt of test item..... :	2020-04-27, 2021-02-24, 2021-09-01; 2023-04-04
Date (s) of performance of tests ..... :	2020-04-27 to 2020-09-01; 2021-02-24 to 2021-03-29; 2021-09-01 to 2021-10-25; 2023-04-04 to 2023-04-13

General remarks:

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

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Manufacturer's Declaration per Subclause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**

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

Name and address of factory (ies).....: Same as applicant

General product information and other remarks:

Refrigerators for commercial and indoor use. The appliance is with wheels.
Refrigerant number is R600a.
Climatic class: 0, 1, 2, 3, 4, 6.
Models of Series A were with the same refrigeration/electrical system except the capacity.
Models of Series B were with the same refrigeration/electrical system except the capacity.

Amendment 1:

The original Test Report Ref. No. GZES200301399501, dated 2020-10-14 was additionally modified on 2021-03-29 to include the following changes and/or additions, which were considered technical modifications:

1, Add alternative Electronic thermostat. Details see the table 24.1 in bold.
2, Updated the CDF. Details see the table 24.1 in bold.

After reviewing, tests were carried out as following:

Model No.	Compressor	Fan	Test item	Remark
LG-388HE	PZ99H1X	Evaporator fan motor: SAD12038B12L and Condenser fan motor: ECM7112AAA	10, 11, 13, 17, 22.5, 29, 30 and construction checking	Alternative Electronic thermostat ECS-16

Amendment 2:

The original Test Report Ref. No. GZES200301399501, dated 2020-10-14 was additionally modified on 2021-12-04 to include the following changes and/or additions, which were considered technical modifications:

1, Add alternative compressor SZ80E1J for Series A.
2, Add alternative electronic thermostat XR02CX.
3, Add alternative condenser fan motor YZ5-13 for Series B.
Details see the table 24.1 in bold

After reviewing, tests were carried out as following:

Model No.	Compressor	Fan	Test item	Remark
LG-168HE	SZ80E1J	Evaporator and Condenser fan motor: SAD12038B12L	10, 11, 13, 19, 22.5, 29, 30	Alternative compressor SZ80E1J, electronic thermostat XR02CX
LG-388HE	PZ99H1X	Evaporator fan motor: SAD12038B12L and Condenser fan motor: YZ5-13	10, 11, 13, 19, 22.5, 29, 30 and Annex AA	Alternative condenser fan motor YZ5-13, electronic thermostat XR02CX

Amendment 3:
The original Test Report Ref. No. GZES200301399501, dated 2020-10-14 was additionally modified on 2023-04-14 to include the following changes and/or additions, which were considered technical modifications:

1, Corrected switch components in table 24.1. Details see the table 24.1 in bold.
2, Added alternative switch. Details see the table 24.1 in bold and Attachment 1.
3, Added EU national deviations.

After reviewing, tests were carried out as following:

Model No.	Compressor	Fan	Test item
LG-388HE	PZ99H1X	Evaporator fan motor: SAD12038B12L and Condenser fan motor: ECM7112AAA	30, EMF and construction checking

IEC 60335-2-89			
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	At least one additional specially prepared sample is required for the tests of 22.112 (IEC 60335-2-89)		P
	Unless the motor-compressor complies with IEC 60335-2-34, at least one additional specially prepared sample is required for the tests of 22.109 (IEC 60335-2-89)	motor-compressor complies with IEC 60335-2-34	N/A
	Unless the motor-compressor complies with IEC 60335-2-34, at least one additional specially prepared sample is required for the test of 19.1 (IEC 60335-2-89)		N/A
	At least one additional sample of the fan motor, thermal motor protector combination may be required for the test of 19.1 (IEC 60335-2-89)		P
	The tests of 22.7 and 22.108 may be performed on separate samples (IEC 60335-2-89)		P
	Due to the potentially hazardous nature of the tests of 22.111, 22.112, 22.113, 22.114 and 22.116, special precautions may need to be taken when performing the tests (IEC 60335-2-89)		P
5.3	Before starting the tests, the appliance shall be operated at rated voltage for at least 24 h, then switched off and left to stand for at least 12 h (IEC 60335-2-89)		P
5.7	For ice-makers, the tests in accordance with Clauses 10, 11 and 13 are performed at an ambient temperature of 32 °C ± 2 °C (IEC 60335-2-89)		N/A
	For other appliances, tests in accordance with Clauses 10, 11 and 13 are performed at an ambient temperature of: (IEC 60335-2-89)		—
	– 32 ± 2 °C on appliances of test room climatic class .....:	☒ 0, ☒ 1, ☒ 2, ☒ 3, ☒ 4, ☒ 6 or ☐ 8	P
	– 43 ± 2 °C on appliances of test room climatic class .....:	☐ 5 or ☐ 7	N/A
	Before starting the tests specified in 10, 11 and 13, the appliance, with the doors or lids open, is brought to the ambient specified temperature ± 2 K (IEC 60335-2-89)		P
	Other tests are performed at an ambient temperature of 20 °C ± 5 °C (IEC 60335-2-89)		P
5.10	A class III construction part of the appliance is tested connected to its detachable power supply part taking into account the instructions provided with the appliance (IEC 60335-1/A2)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	For appliances with a remote refrigerant unit, the refrigerant unit is connected to the cabinet in accordance with the instructions provided with the appliance before testing (IEC 60335-2-89)		N/A
	For the tests of 22.111, 22.112 and 22.113, the appliance is empty with doors or lids closed, or roller blinds closed or open, whichever is the more unfavourable, and is installed as follows (IEC 60335-2-89)		P
	Appliances, other than built-in appliances, are placed in a test enclosure, the walls of which enclose the appliance as closely as possible to all its sides and top surface, unless the manufacturer indicates in the instructions that a free distance shall be observed from the walls or the ceiling, in which case this distance is observed during the test. If the appliance has a remote refrigerant unit or motor-compressor, then only the refrigerated display and storage cabinet is installed in the test enclosure, the remote refrigerant unit or motorcompressor is placed on the floor of the test corner away from walls (IEC 60335-2-89)		P
	For appliances incorporating remote refrigerant units or remote motor-compressors, the refrigerant line between the refrigerant unit or motor-compressor and the refrigerated display and storage cabinet shall have a length of 5 m to 7,5 m. The refrigerant line shall be installed with thermal insulation applied in accordance with the instructions. If the appliance employs R-744 refrigerant in a transcritical refrigeration system, a pressure relief device shall be installed on the high-pressure side between the motor-compressor and the gas cooler unless it is pre-fitted to the motor-compressor (IEC 60335-2-89)		N/A
5.17	Appliances powered by rechargeable batteries that are recharged in the appliance are tested in accordance with Annex B (IEC 60335-1/A1)		N/A
	Battery-operated appliances powered by batteries that are non-rechargeable or not recharged in the appliance are tested in accordance with Annex S (IEC 60335-1/A1)		N/A
5.101	Appliances that use flammable refrigerants and that, according to the instructions, may be used with other electrical appliances inside a food/ice storage compartment are tested with such recommended appliances incorporated and in operation as they would be in normal use (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Ice-makers that use flammable refrigerants and that, according to the instructions, may be used in conjunction with accessories such as ice-bins are tested with such recommended accessories installed and in operation as they would be in normal use (IEC 60335-2-89)		N/A
6	**CLASSIFICATION**		—
6.1	Protection against electric shock: Class 0, 0I, I, II, III..... .....:	Class I	P
	If an appliance consists of a part of class III construction and a detachable power supply part, the complete appliance is classified as a class I appliance or class II appliance in accordance with the classification applicable to its detachable power supply part (IEC 60335-1/A2)		N/A
6.2	Protection against harmful ingress of water		P
6.101	Refrigerated display and storage cabinets shall be classified for at least one of the following test room climatic classes: (IEC 60335-2-89)		—
	– test room climate classes: 0, 1, 2, 3, 4, 5 ,6 ,7, 8...: (IEC 60335-2-89)	0, 1, 2, 3, 4, 6	P
7	**MARKING AND INSTRUCTIONS**		—
7.1	Rated voltage or voltage range (V).....:	220 V – 240 V	P
	Symbol for nature of supply, or.....:	~	P
	Rated frequency (Hz).....:	50 Hz	P
	Rated current (A).....: (IEC 60335-2-89)	Series A with comp. PZ80H1Y, EKZ80L: 0,58 A; Series A with comp.SZ80E1J: 0,95 A; Series B: 0,78 A	P
	Manufacturer's or responsible vendor's name, trademark or identification mark.....:	Guangdong Sansheng Appliances Co., Ltd.	P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Model or type reference..... :	Series A: LG-108HE, LG-138HE, LG-148HE, LG-158HE, LG-168HE, LG-108HEB, LG-138HEB, LG-148HEB, LG-108HEC, LG-138HEC, LG-148HEC; Series B: LG-208HE, LG-208SE, LG-208HEB, LG-208SEB, LG-208HEC, LG-208SEC, LG-248HE, LG-248SE, LG-248HEB, LG-248SEB, LG-248HEC, LG-248SEC, LG-330HE, LG-330SE, LG-330HEB, LG-330SEB, LG-330HEC, LG-330SEC, LG-388HE, LG-388SE, LG-388HEB, LG-388SEB, LG-388HEC, LG-388SEC	P
	Symbol IEC 60417-5172, for class II appliances		N/A
	IP number, other than IPX0.....:	IPX0	N/A
	Symbol IEC 60417-5180 (2003-02), for class III appliances, unless		N/A
	the appliance is operated by batteries only		N/A
	Symbol IEC 60417-5018, for class II and class III appliances incorporating a functional earth (IEC 60335-1/A1)		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
	Power input of heating systems, if greater than 100 W (W).....: (IEC 60335-2-89)		N/A
	Defrosting power input, if the current corresponding to the defrosting power input is greater than the rated current of the appliance (W).....: (IEC 60335-2-89)		N/A
	One or more of the numerals; 0, 1, 2, 3, 4, 5, 6, 7 or 8, indicating the test room climatic class for refrigerated display and storage cabinets.....: (IEC 60335-2-89)	0, 1, 2, 3, 4, 6	P
	For lamps, the rated wattage of the lamp (W).....: (IEC 60335-2-89)	Non-replaceable LED	N/A
	Refrigerant charge for each refrigerating circuit.....: (IEC 60335-2-89)	See rating General product information	P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	For a single component refrigerant, at least one of the following: (IEC 60335-2-89)		—
	- the chemical name.....:		N/A
	- the chemical formula.....:		N/A
	- the refrigerant number.....:	R600a	P
	For a blended refrigerant, at least one of the following: (IEC 60335-2-89)		—
	- the chemical name and nominal proportion of each of its components.....:		N/A
	- the chemical formula and nominal proportion for each of its components.....:		N/A
	- the refrigerant number and nominal proportion of each of its components.....:		N/A
	- the refrigerant number of the refrigerant blend.....:		N/A
	Chemical name or refrigerant number of the principal component of the insulation blowing gas.: (IEC 60335-2-89)	Cyclopentane	P
	Refrigerant numbers shall be designated in accordance with ISO 817 (IEC 60335-2-89)		P
	Appliances that use flammable refrigerants shall be marked with the warning sign ISO 7010-W021 (2011-05) (IEC 60335-2-89)		P
	Appliances having a refrigerant charge exceeding 150 g of flammable refrigerants within any refrigerating circuit shall be marked with the maximum allowable pressure for which the system is designed to withstand (IEC 60335-2-89)	Max, 42g	N/A
	Appliances having a refrigerant charge within any refrigerating circuit exceeding 4 times the lower flammability limit (LFL) for refrigerants having a flammability classification of Class A2 or Class A3 and exceeding 6 times the lower flammability limit (LFL) for refrigerants having a flammability classification of Class A2L, shall be marked with symbol IEC 60417-6412 (2019-03) (IEC 60335-2-89)		N/A
	Appliances employing R-744 in a transcritical refrigeration system shall be marked with the substance of the following: WARNING: The system contains refrigerant under high pressure. Do not tamper with the system. It must be serviced by suitable qualified persons only (IEC 60335-2-89)		N/A
	Appliances employing R-744 refrigerant in a transcritical refrigeration system shall be marked with symbol ISO 7000-1701 (2004-01) (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Appliances with a remote refrigerant unit employing R-744 refrigerant in a transcritical refrigeration system shall be marked with the design pressure, unless the appliance incorporates a pressure relief device pre-fitted to the high-pressure side of the motorcompressor (IEC 60335-2-89)		N/A
	Appliances without automatic liquid-level control and which are intended to be connected to the water supply mains or to be filled with liquid by the user shall be marked with the maximum liquid level (IEC 60335-2-89)		N/A
	Ice-makers intended to be connected to the water supply shall be marked with symbol IEC 60417-6375 (2017-03) or with the substance of the following warning: WARNING: Connect to potable water supply only (IEC 60335-2-89)		N/A
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		P
	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages or rated frequencies, the voltage or the frequency setting is clearly discernible (IEC 60335-1/A1)		N/A
	Requirement met if frequent changes are not required and the rated voltage or rated frequency to which the appliance is to be adjusted is determined from a wiring diagram (IEC 60335-1/A1)		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 or current are related to the arithmetic mean value of the rated voltage range		P
	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		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	Symbol IEC 60417-6375 (2017-03) “connection to potable water supply” (IEC 60335-2-89)		N/A
	Warning sign ISO 7010-W021 (2011-05) “warning; Risk of fire/flammable materials” (IEC 60335-2-89)		P
	Symbol ISO 7000-1701 (2004-01) “Pressure” (IEC 60335-2-89)		N/A
	Symbol IEC 60417-6412 (2019-03) “minimum room floor area” (IEC 60335-2-89)		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
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 of functional earthing terminals (symbol IEC 60417-5018) (IEC 60335-1/A1)		N/A
	- marking not placed on removable parts		P
7.9	Marking or placing of switches which may cause a hazard		N/A
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means..... .....:	Figures, letters and other visual means	P
	This applies also to switches which are part of a control		N/A
	If figures are used, the OFF position indicated by the figure 0		N/A
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N/A
7.11	Indication for direction of adjustment of controls		P
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance		P
	The instructions state that:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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		P
	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
	For appliances for altitudes exceeding 2 000 m, the maximum altitude is stated..... ..: (IEC 60335-1/A1)		N/A
	The instructions for appliances incorporating a functional earth states that the appliance incorporates an earth connection for functional purposes only		N/A
	The instructions shall contain information regarding the maximum loading of each type of shelf (IEC 60335-2-89)		P
	The instructions shall state the substance of the following: (IEC 60335-2-89)		—
	Do not store explosive substances such as aerosol cans with a flammable propellant in this appliance		P
	If symbol ISO 7000-1701 (2004-01) is used, its meaning shall be explained (IEC 60335-2-89)		N/A
	For appliances which use flammable refrigerants, the instructions shall include information pertaining to the handling, servicing and disposal of the appliance (IEC 60335-2-89)		P
	The instructions for appliances which use flammable refrigerants shall include the substance of the following warnings: (IEC 60335-2-89)		—
	WARNING: Keep clear of obstruction all ventilation openings in the appliance enclosure or in the structure for building-in		P
	WARNING: Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer		P
	WARNING: Do not damage the refrigerating circuit		P

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Clause	Requirement + Test	Result - Remark	Verdict
	WARNING: Do not use electrical appliances inside the food/ice storage compartments unless they are of the type recommended by the manufacturer		P
	For appliances which use flammable insulation blowing gases, the instructions shall include information regarding disposal of the appliance (IEC 60335-2-89)		P
	For appliances provided with double-capped fluorescent lamps, the instructions shall include the information that lamps have to be replaced by identical lamps only (IEC 60335-2-89)		N/A
	An explanation shall be given of the meaning of the alpha-numeric characters, indicating the test room climatic class of the appliance, that are marked on the appliance (IEC 60335-2-89)		P
	The instructions for split systems that use a flammable refrigerant shall include the substance of the following warning: (IEC 60335-2-89)		—
	WARNING: In order to reduce flammability hazards the installation of this appliance must only be carried out by a suitably qualified person		N/A
	If warning sign ISO 7010-W021 (2011-05) is used, its meaning shall be explained (IEC 60335-2-89)		P
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
	If different rated voltages or different rated frequencies are marked, the instructions state what action to be taken to adjust the appliance (IEC 60335-1/A1)		N/A
	For appliances with a remote refrigerant unit, the instructions shall include a statement containing the substance of the following: (IEC 60335-2-89)		—
	- The installation of the appliance and the refrigerant unit must only be made by the manufacturer's service personnel or suitably qualified person		N/A
	The information provided with an appliance with a remote refrigerant unit shall include: (IEC 60335-2-89)		—
	- information on the type of remote refrigerant unit to which the cabinet shall be connected;		N/A
	- an electrical diagram showing the electrical terminals for connections		N/A
	In appliances employing R-744 in a transcritical refrigeration system the instructions shall include the substance of the following: (IEC 60335-2-89)		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	WARNING: The refrigeration system is under high pressure. Do not tamper with it. Contact qualified service personal before disposal		N/A
	For appliances with a remote refrigerant unit employing R-744 refrigerant in a transcritical refrigeration system, unless the appliance incorporates a pressure relief device pre-fitted to the high-pressure side of the motor-compressor, the instructions shall include a statement containing the substance of the following: (IEC 60335-2-89)		—
	A pressure relief device shall be installed in the high-pressure side of the refrigeration system between the motor-compressor and the gas cooler. There shall be no shut off devices or other components except piping between the motor-compressor and the pressure relief device that could introduce a pressure drop		N/A
	The pressure relief device shall be mounted so that any refrigerant released from the system during its operation cannot cause harm to the user of the appliance. The aperture shall be located so that it is unlikely to be obstructed in normal use		N/A
	The installed pressure relief device shall have no provisions for setting by the end user		N/A
	The pressure setting of the installed pressure relief device shall be no higher than the design pressure of the high-pressure side		N/A
	For appliances intended for connection to a water supply for cooling purposes, the instructions shall contain information on the maximum permitted temperature of the inlet water consistent with safe operation of the appliance (IEC 60335-2-89)		N/A
	If symbol IEC 60417-6375:2017-03 is used, its meaning shall be explained (IEC 60335-2-89)		N/A
	If symbol IEC 60417-6412:2019-03 is used, its meaning shall be explained (IEC 60335-2-89)		N/A
	All site made joints in hermetically sealed systems shall be tested for leaks at a pressure of at least 0,25 × maximum allowable pressure using detection equipment with a sensitivity of at least 3 g/year of refrigerant (IEC 60335-2-89)		N/A
	If other fluid circuits, such as water heat exchangers, are connected to an appliance that uses flammable refrigerant, the instructions shall state the substance of the following: (IEC 60335-2-89)		—
	Any fluid circuits connected to the appliance shall safely release abnormal pressure. It shall not allow the release of flammable refrigerant into areas served by the other circuits if these do not comply with minimum room area limit		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
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		N/A
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
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		N/A
	Replacement cord instructions, type Y attachment		P
	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		N/A
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
7.12.9	Instructions specified in 7.12 and from 7.12.1 to 7.12.8 appear together before any other instructions supplied with the appliance (IEC 60335-1/A2)		P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	These instructions may be supplied with the appliance separately from any functional use booklet (IEC 60335-1/A2)		P
	They may follow the description of the appliance that identifies parts, or follow the drawings/sketches common to the languages of the instructions (IEC 60335-1/A2)		P
	In addition, instructions are also available in an alternative format such as on a website or in a format such as a DVD..... .....: (IEC 60335-1/A2)	Website	P
7.13	Instructions and other texts in an official language		P
7.14	Marking clearly legible and durable, rubbing test as specified		P
	Signal words WARNING, CAUTION, DANGER in uppercase having a height as specified.....: (IEC 60335-1/A2)		N/A
	Uppercase letter of the text explaining the signal word not smaller than 1,6 mm (IEC 60335-1/A2)		N/A
	Moulded in, engraved, or stamped markings either raised above or have a depth below the surface of at least 0,25 mm, unless (IEC 60335-1/A2)		N/A
	contrasting colours are used (IEC 60335-1/A2)		N/A
	Markings checked by inspection, measurement and rubbing test as specified (IEC 60335-1/A2)		P
	The height of the triangle in the symbol ISO 7010-W021:2011-05 shall be at least 15 mm (IEC 60335-2-89)		P
	The height of the letters used for the marking of the type of flammable insulation blowing gas shall be at least 40 mm (IEC 60335-2-89)		P
	The height of the rectangle in symbol IEC 60417-6412:2019-03 shall be at least 40 mm (IEC 60335-2-89)		N/A
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		P
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions		N/A

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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
	The symbol IEC 60417-5018 placed next to the symbol IEC 60417-5172 or IEC 60417-5180 (IEC 60335-1/A1)		N/A
	The marking of the wattage of illuminating lamps shall be easily discernible while the lamp is being replaced (IEC 60335-2-89)		N/A
	For appliances which use flammable refrigerant, the marking of the type of flammable refrigerant and of the flammable insulation blowing gas shall be visible when gaining access to the motor-compressors, and, in the case of appliances with a remote refrigerant unit, the pipe connections (IEC 60335-2-89)		P
	The warning sign ISO 7010-W021:2011-05 shall be placed on or adjacent to the nameplate of the unit near the declaration of the refrigerant type and refrigerant charge information. It shall be visible after installation of the appliance (IEC 60335-2-89)		P
	Symbol IEC 60417-6412:2019-03 shall be visible after installation of the appliance (IEC 60335-2-89)		N/A
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		N/A
7.101	Equipotential bonding terminals shall be indicated by the symbol IEC 60417-5021:2002-10 (IEC 60335-2-89)		N/A
	These indications shall not be placed on screws, removable washers or other parts which can be removed when conductors are being connected (IEC 60335-2-89)		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

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Clause	Requirement + Test	Result - Remark	Verdict
	Use of test probe B of IEC 61032 through openings, with a force of 20 N: no contact with live parts		P
	Where an appliance has parts that require adjustment under operating conditions by a qualified person after removal of non-detachable parts, live parts shall not be accessible and they shall be protected at least by basic insulation (IEC 60335-2-89)		N/A
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		P
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
	For a single switching action obtained by a switching device, requirements as specified (IEC 60335-1/A2)		N/A
	For appliances with a supply cord and without a switching device, the single switching action may be obtained by the withdrawal of the plug from a socket-outlet (IEC 60335-1/A2)		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		N/A
	- 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
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		—
	- built-in appliances		N/A
	- fixed appliances		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
9	**STARTING OF MOTOR-OPERATED APPLIANCES**		—
	This clause of part 1 is not applicable (IEC 60335-2-89)		N/A
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
	If the power input varies throughout the operating cycle and the maximum value of the power input exceeds, by a factor greater than two, the arithmetic mean value of the power input occurring during a representative period, the power input is the maximum value that is exceeded for more than 10 % of the representative period (IEC 60335-1/A1)		N/A
	Otherwise the power input is the arithmetic mean value		N/A
	Test carried out at upper and 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		P
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)	P
	If the current varies throughout the operating cycle and the maximum value of the current exceeds, by a factor greater than two, the arithmetic mean value of the current occurring during a representative period, the current is the maximum value that is exceeded for more than 10 % of the representative period (IEC 60335-1/A1)		N/A
	Otherwise the current is the arithmetic mean value		N/A
	Test carried out at upper and 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		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The appliance is operated for a period of 1 h and excluding starting current, the maximum value of the current, averaged over any 5 min period, is obtained. The interval between current measurements shall not exceed 30 s (IEC 60335-2-89)		P
10.101	The power input of a defrosting system shall not deviate from the defrosting power input marked on the appliance by more than the deviation shown in Table 1 (IEC 60335-2-89)		N/A
	Compliance is checked by operating the appliance at rated voltage for the duration of the defrosting period and measuring the maximum value of the power input, averaged over any representative 5 min period. The interval between power input measurements shall not exceed 30 s (IEC 60335-2-89)		N/A
11	**HEATING**		—
11.1	Appliances and their surroundings shall not attain excessive temperatures in normal use (IEC 60335-2-89)		P
	Compliance is checked by determining the temperature rise of the various parts under the conditions specified in 11.2 to 11.7 (IEC 60335-2-89)		P
	For appliances incorporating ancillary heating elements, compliance is also checked by the tests of 11.101 and 11.102 (IEC 60335-2-89)		N/A
11.2	Built-in appliances are installed in accordance with the instructions (IEC 60335-2-89)		N/A
	Other appliances are placed in a test enclosure with the walls and ceiling enclosing the appliance being as close as possible to all its sides and top surface. If the instructions state that the appliance is to be installed with a free distance between the appliance and the walls or the ceiling, then the appliance is installed in the test enclosure in accordance with these instructions. If the appliance has a remote refrigerant unit or motor-compressor, then only the refrigerated display and storage cabinet is installed in the test enclosure, the remote refrigerant unit or motor-compressor is placed on the floor of the test corner away from walls (IEC 60335-2-89)		P
	Dull black painted plywood approximately 20 mm thick is used for the test corner, the supports and for the installation of built-in appliances and the test enclosure for other appliances (IEC 60335-2-89)		P
11.3	Temperature rises, other than of windings, determined by thermocouples		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Temperature rises of windings determined by resistance method, unless	Fan motor	P
	the windings are non-uniform or it is difficult to make the necessary connections	Transformer	P
11.4	Heating appliances operated under normal operation at 1,15 times rated power input (W) .....:		N/A
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0,94 and 1.,6 times rated voltage (V) .....:	240 V x 1,06=254,4 V	P
	The appliance is operated under normal operation but with user adjustable temperature control devices set to give the lowest temperature (IEC 60335-2-89)		P
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0,94 and 1,06 times rated voltage (V) .....:		N/A
	The appliance is operated under normal operation but with user adjustable temperature control devices set to give the lowest temperature (IEC 60335-2-89)		N/A
11.7	The appliance is operated until steady conditions are established (IEC 60335-2-89)		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		P
	Protective devices do not operate, except		P
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
	During the test protective devices other than self-resetting thermal motor-protectors for motor-compressor shall not operate. When steady conditions are established, thermal motor-protectors for motor-compressors shall not operate (IEC 60335-2-89)		P
	During the test, sealing compound, if any, shall not flow out (IEC 60335-2-89)		P
	During the test, the temperature rises are monitored continuously (IEC 60335-2-89)		P
	For ice-makers and refrigerated display and storage cabinets of test room climatic classes 0, 1, 2, 3, 4, 6 or 8, the temperature rises shall not exceed the values given in Table 3 (IEC 60335-2-89)		P

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Clause	Requirement + Test	Result - Remark	Verdict
	For refrigerated display and storage cabinets of test room climatic class 5 or 7, the temperature rises shall not exceed the values given in Table 3, reduced by 7 K (IEC 60335-2-89)		N/A
	For motor-compressors not conforming to IEC 60335-2-34 (including its Annex AA), the temperatures of: (IEC 60335-2-89)		—
	- housing of motor-compressors and		N/A
	- windings of motor compressors		N/A
	shall not exceed the values given in Table 101		N/A
	For motor-compressors conforming to IEC 60335-2-34 (including its Annex AA), the temperatures of their: (IEC 60335-2-89)		—
	- housing of motor-compressors,		P
	- windings of motor compressors and		P
	- other parts such as its protection system and control system, and all other components that have been tested together with the motor-compressor during the tests of IEC 60335-2-34 and its Annex AA		P
	are not measured		P
	The entry in Table 3 relating to the temperature rise of the external enclosure of motor-operated appliances is applicable to all appliances covered by this standard. However, it is not applicable to those parts of the external enclosure of the appliance: (IEC 60335-2-89)		—
	- for built-in appliances, that are not accessible parts after installation in accordance with the instructions;		N/A
	- for other appliances, that are on that part of the appliance that, according to the instructions, is intended to be placed against a wall with a free distance not exceeding 75 mm		N/A
	The temperature of ballast windings and their associated wiring shall not exceed the values specified in 12.4 of IEC 60598-1:2008, when measured under the conditions stated (IEC 60335-2-89)		N/A
	For ice-makers, the temperature rises shall not exceed the values given in Table 3 (IEC 60335-2-89)		N/A
11.101	The appliance is supplied at the most unfavourable voltage between 0,94 and 1,06 times the rated voltage. If the defrosting time is controlled by an adjustable device, the device is set to the time given by the manufacturer (IEC 60335-2-89)		N/A
	If a control device is used that stops the defrosting at a given temperature or pressure, the defrosting period is automatically terminated when the control operates (IEC 60335-2-89)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The temperatures and temperature rises shall not exceed the values given in Tables 3 and 101 (IEC 60335-2-89)		N/A
11.102	Ancillary heating elements are energized with the refrigerating system switched off, if this is possible in normal use. They are supplied at 1,15 times their power input rating, until steady conditions are reached (IEC 60335-2-89)		N/A
	Temperature rises are measured by thermocouples fixed on the outside surface of the insulation of the ancillary heating element (IEC 60335-2-89)		N/A
	Temperature rises shall not exceed the values specified in 11.8 (IEC 60335-2-89)		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) ..... :		N/A
	Motor-operated appliances and combined appliances supplied at 1,06 times the rated voltage (V)..... :	240 V x 1,06=254,4 V	P
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A
13.2	The leakage current is measured by means of the circuit described in Figure 4 of IEC 60990:1999 (IEC 60335-1/A2)		P
	For class 0I appliances and class I appliances, except parts of class II construction, C may be replaced by a low impedance ammeter (IEC 60335-1/A2)		P
	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..... :		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict

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		N/A
	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in Clause 29		N/A
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529 .....:		N/A
	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		N/A
	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		N/A
	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		N/A
	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		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A

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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 be 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		P
	Spillage solution comprising water containing approximately 1 % NaCl and 0,6 % rinsing agent (IEC 60335-1/A1)		P
	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		P
	Overfilling test with additional amount of the solution, over a period of 1 min (l) .....:	0,3 L	P
	For appliances which are directly connected to the water supply, the water container, or that part of the appliance which serves as the container, is filled with water as in normal use. The inlet valve is then held open and the filling is continued for 5 min after the first evidence of spillage (IEC 60335-2-89)		N/A
	Where no spillage occurs due to the operation of a device that prevents such spillage, the inlet valve is held open for a further 5 min following the operation of this device (IEC 60335-2-89)		N/A
	The appliance withstands the electric strength test of 16.3		P
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in Clause 29		P
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		P
	Humidity test for 48 h in a humidity cabinet		P
	Reassembly of those parts that may have been removed		P
	The appliance withstands the tests of Clause 16		P

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Clause	Requirement + Test	Result - Remark	Verdict
15.101	Appliances subject to spillage of liquid from containers on the inside walls of the cabinet or compartment, or on the top of the cabinet, shall be constructed so that such spillage does not affect their electrical insulation (IEC 60335-2-89)		P
	Compliance is checked by the relevant tests of 15.102 and 15.103 (IEC 60335-2-89)		P
15.102	The apparatus shown in Figure 101 is filled with the solution as specified in 15.2 to the level of the lip. The displacement block is supported just above the water by means of any suitable release mechanism and bridge support (IEC 60335-2-89)		P
	All shelves and containers that can be removed without the use of a tool are removed and the appliance is disconnected from the supply. Lamp covers are not removed (IEC 60335-2-89)		P
	The apparatus is supported with its base horizontal, and so positioned and at such a height that the water is discharged over the back and side interior walls of the cabinet or compartment, including any electrical components mounted thereon, in the most unfavourable manner when the release mechanism is operated (IEC 60335-2-89)		P
	The test is made only once with the apparatus in any one position, but the test may be repeated as many times as necessary in different positions, provided that there is no residual water on parts wetted by a previous test (IEC 60335-2-89)		P
	Immediately after the test, the appliance shall withstand the electric strength test of 16.3 and inspection shall show that there is no trace of the solution on insulation which could result in a reduction of clearances and creepage distances below the values specified in Clause 29 (IEC 60335-2-89)		P
	Furthermore, if the inspection shows that the solution is in contact with the defrost heating element or its insulation, then the defrost heating element and its insulation shall withstand the test of 22.102 (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
15.103	Appliances, other than built-in appliances, are tilted at an angle of up to 2° to the position of normal use in the direction which is likely to be the most unfavourable for this test. The appliance is disconnected from the supply and the controls are set to the on position. From a height of approximately 50 mm, 0,5 l of the solution as specified in 15.2 is poured uniformly in approximately 60 s over any surface of the appliance with less than 2° inclination to the horizontal. Only surfaces measuring more than 60 mm in at least one direction, and less than 2,2 m above the floor are taken into consideration (IEC 60335-2-89)		P
	Immediately after the test, the appliance shall withstand the electric strength test of 16.3 and inspection shall show that there is no trace of the solution on insulation which could result in a reduction of clearances and creepage distances below the values specified in Clause 29 (IEC 60335-2-89)		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).....:	240 V x 1,06=254,4 V	P
	Three-phase appliances: test voltage 1,06 times rated voltage divided by √3 (V).....:		N/A
	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
	- 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 .....:		N/A
16.3	Electric strength tests according to Table 7.....:	(see appended table)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	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 .....:		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 Subclause 15.5 of IEC 61558-1		N/A
18	**ENDURANCE**		—
	This clause of part 1 is not applicable (IEC 60335-2-89)		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 .....:	Electronic controller, LED adapter	P
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and		N/A
	if the appliance also has a control that limit the temperature during Clause 11 it is subjected to the test of 19.4, and		N/A
	if applicable, to the test of 19.5		N/A
	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		P
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	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
	In addition, fan motors and their thermal motor-protectors, if any, are subjected to the test of Annex AA (IEC 60335-2-89)		P
	Motor-compressors not complying with IEC 60335-2-34 are subjected to the tests of 19.101 and 19.102 of IEC 60335-2-34:2012 and compliance with these tests is checked in accordance with 19.104 of that standard. Unless otherwise specified, compliance with the tests of Clause 19 is checked as described in 19.13, however winding temperatures of motorcompressors are not measured (IEC 60335-2-89)		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).....:		N/A
19.3	Test of 19.2 repeated; test voltage (V), power input of 1,24 times rated power input (W).....:		N/A
19.4	Test conditions as in Clause 11, any control limiting the temperature during tests of Clause 11 short-circuited		N/A
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		N/A
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	Locked rotor, capacitors open-circuited one at a time		N/A
	Test repeated with capacitors short-circuited one at a time, unless		N/A
	the capacitor is of class S2 or S3 of IEC 60252-1 (IEC 60335-1/A2)		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
	An electronic timer or programmer that operates to ensure compliance with the test before the maximum period under the conditions of Clause 11 is reached, is a protective electronic circuit (IEC 60335-1/A1)		N/A
	Other appliances supplied with rated voltage for a period as specified.....:	(see appended table)	P
	Winding temperatures not exceeding values specified in Table 8.....:	(see appended table)	P
19.8	Multi-phase motors operated at rated voltage with one phase disconnected		N/A
	Motor-compressors not complying with IEC 60335-2-34 are subjected to the tests of 19.101 and 19.102 of IEC 60335-2-34:2012 and compliance with these tests is checked in accordance with 19.104 of that standard. Unless otherwise specified, compliance with the tests of Clause 19 is checked as described in 19.13, however winding temperatures of motor-compressors are not measured (IEC 60335-2-89)		N/A
19.9	Not applicable (IEC 60335-2-89)		N/A
19.10	Series motor operated at 1,3 times rated voltage for 1 min (V) .....:		N/A
	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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	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		N/A
	- the appliance complies with the conditions specified in 19.13		N/A
	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4		N/A
	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:		—
	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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c) short circuit of capacitors, unless		N/A
	they comply with IEC 60384-14		N/A
	d) short circuit of any two terminals of an electronic component, other than integrated circuits		N/A
	This fault condition is not applied between the two circuits of an optocoupler		N/A
	e) failure of triacs in the diode mode		N/A
	f) failure of microprocessors and integrated circuits		N/A
	g) failure of an electronic power switching device		N/A
	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		N/A
19.11.3	If the appliance incorporates a protective electronic circuit that operates to ensure compliance with Clause 19, the appliance is tested as specified (IEC 60335-1/A2)		N/A
19.11.4	Appliances having a device with an OFF position obtained by electronic disconnection, or		N/A
	a device that can be placed in the stand-by mode,		N/A
	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		N/A
	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		N/A
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, at frequency ranges specified (IEC 60335-1/A2)		N/A
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		N/A
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5,		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	An open circuit test voltage of 2 kV is applicable for the line-to-line coupling mode, a generator having a source impedance of 2 Ω being used (IEC 60335-1/A1)		N/A
	An open circuit test voltage of 4 kV is applicable for the line-to-earth coupling a generator having a source impedance of 12 Ω being used (IEC 60335-1/A1)		N/A
	Earthed heating elements in class I appliances disconnected		N/A
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		N/A
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		N/A
	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		N/A
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		N/A
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) .....:	1000 V	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- supplementary insulation (V).....:	1750 V	P
	- reinforced insulation (V).....:	3000 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
	The appliance does not undergo a dangerous malfunction, and		N/A
	no failure of protective electronic circuits, if the appliance is still operable		N/A
	Appliances tested with an electronic switch in the OFF position, or in the stand-by mode:		—
	- do not become operational, or		N/A
	- 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
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		N/A
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time		N/A
	A relay or contactor operating only to ensure the appliance is energized for normal use is not short-circuited		P
	If more than one relay or contactor operates in Clause 11, they are short-circuited in turn		N/A
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	Ancillary heating elements dimensioned and located properly and comply with 19.13 during and after the test (IEC 60335-2-89)		N/A
19.102	Appliances shall be constructed so that they shall not cause any risk of fire, mechanical hazard or electric shock even in the case of abnormal operation (IEC 60335-2-89)		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Compliance is checked by applying any defect which may be expected in normal use, while the appliance is operated under conditions of normal operation at rated voltage. Only one fault condition is reproduced at a time. The tests are made consecutively (IEC 60335-2-89)		P
	During the tests, the temperatures of the windings of ice-makers, shall not exceed the values given in Table 8 (IEC 60335-2-89)		N/A
	During and after the tests, compliance is checked as described in 19.13 (IEC 60335-2-89)		P
19.103	Illuminating equipment does not cause a hazard (IEC 60335-2-89)		P
	Discharge lamps operated as specified in items a), d) and e) of Subclause 12.5.1 of IEC 60598-1:2008 (IEC 60335-2-89)		N/A
	During and after the test, the appliance shall comply with 19.13 (IEC 60335-2-89)		P
20	**STABILITY AND MECHANICAL HAZARDS**		—
20.1	Appliances having adequate stability		P
	Tilting test through an angle of 5°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn (IEC 60335-2-89)		P
	The test with the appliance tilted to 15° is not carried out (IEC 60335-2-89)		P
	The test is repeated with doors, lids and similar parts placed in the most unfavourable position; however, the appliance is only tilted to an angle of 5° (IEC 60335-2-89)		P
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury		P
	Protective enclosures, guards and similar parts are non-detachable, and		P
	have adequate mechanical strength		P
	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 closure		N/A
	Not possible to touch dangerous moving parts with the test probe described		P
21	**MECHANICAL STRENGTH**		—

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Clause	Requirement + Test	Result - Remark	Verdict
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	(see appended table)	P
	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
	NOTE 101 Covers of lamps within the appliance are considered likely to be damaged in normal use. Lamps are not tested (IEC 60335-2-89)		P
	For accessible glass panels which provide insulation for ancillary heating elements of other than class III construction, the blows applied to the panel are made with the hammer spring adjusted so that the impact energy is 2,00 J ± 0,05 J. For other accessible glass panels, the hammer spring is adjusted so that the impact energy is 1,00 J ± 0,05 J (IEC 60335-2-89)		P
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		P
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm		P
	The insulation is tested as specified, and does withstand the electric strength test of 16.3		N/A
21.101	Lamps liable to be accessible to users, subjected to impact test or be adequately protected against mechanical shock (IEC 60335-2-89)		N/A
21.102	Shelves for displaying or storing beverages shall have adequate mechanical strength (IEC 60335-2-89)		P
	Checked by uniformly loading each shelf in turn with a load/unit area of 25 kg/m^2 for 1 h (IEC 60335-2-89)		P
	During the test, the shelf deflection shall not exceed 3 mm/meter of shelf width (IEC 60335-2-89)		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Test repeated with a uniform load/unit area of 230 kg/m^2 or the maximum load specified by the manufacturer, whichever is the most onerous, for 1 h (IEC 60335-2-89)		P
	During the test, the shelf shall not fall out of position (IEC 60335-2-89)		P
	For appliances intended to display or store barrels, the test is repeated a further four times, the load being removed and then reapplied each time (IEC 60335-2-89)		N/A
	No damage. Compliance with Clauses 8,1, 15.1 and 29 not impaired (IEC 60335-2-89)		P
	If doubt, supplementary and reinforced insulation subjected to the electric strength test of 16.3 (IEC 60335-2-89)		N/A
21.103	For appliances having a refrigerant charge within any refrigerating circuit exceeding 150 g of flammable refrigerant, the refrigerant-containing parts shall be protected and shall not be an accessible part. Any external surface that is adjacent or in contact with parts containing refrigerant shall have adequate mechanical impact withstand strength (IEC 60335-2-89)		N/A
	Compliance is checked by inspection and by applying blows to the relevant outer surface in accordance with test Ehb of IEC 60068-2-75 (IEC 60335-2-89)		N/A
	The appliance is rigidly supported and three blows, having an impact energy of 5,00 J ± 0,05 J, are applied to points on the surface adjacent to parts containing refrigerant, which are likely to be weak (IEC 60335-2-89)		N/A
	After the test, the parts containing refrigerant shall remain not accessible parts and there shall be no visible deformation of the refrigerant-containing parts (IEC 60335-2-89)		N/A
	If there is doubt as to whether a defect has occurred by the application of the preceding blow, or the previous tests, this defect is neglected and the group of three blows is repeated to the same place on a new sample which shall then withstand the test (IEC 60335-2-89)		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

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Clause	Requirement + Test	Result - Remark	Verdict
22.2	Stationary appliance: means to ensure all-pole disconnection from the supply being provided:		—
	- a supply cord fitted with a plug, or		P
	- a switch complying with 24.3, or		N/A
	- 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
	Singe-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 0I and class I appliances, connected to the phase conductor		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		P
22.5	No risk of electric shock when touching pins, for appliances having a capacitor with rated capacitance equal to or greater than 0,1μF, the appliance being disconnected from the supply at the instant of voltage peak (IEC 60335-1/A2)		P
	Voltage not exceeding 34 V (V).....:	Max. 8 V	P
	If compliance relies on the operation of an electronic circuit, the electromagnetic phenomena tests of 19.11.4.3 and 19.11.4.4 are applied (IEC 60335-1/A1)		N/A
	The discharge test is then repeated three times, 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

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Clause	Requirement + Test	Result - Remark	Verdict
	Thermostats, except their temperature-sensitive parts, shall not be placed in contact with an evaporator unless they are adequately protected against the effects of condensation appearing on cold surfaces and against the effect of water formed during the defrosting process (IEC 60335-2-89)		N/A
22.7	Appliances, including protective enclosures of a protected cooling system, that use flammable refrigerants shall withstand: (IEC 60335-2-89)		—
	- a pressure of 3,5 times the saturated vapour pressure at 70 °C, or equal to 3.5 times the pressure at the critical temperature if this is lower than 70 °C;		P
	- a pressure of 5 times the saturated vapour pressure at 20 °C, or equal to 2.5 MPa (25 bar), whichever is the greater		P
	Appliances that use R-744 refrigerant in subcritical applications, shall withstand, for parts exposed to the: (IEC 60335-2-89)		—
	- high side pressure during normal use, 3,5 times the saturated vapour pressure of the refrigerant at 27 °C, rounded up to the next 0,5 MPa;		N/A
	- low side pressure during normal use, 5 times the saturated vapour pressure of the refrigerant at - 6,5 °C rounded up to the next 0,2 MPa		N/A
	Compliance is checked by the following test. The appropriate part of the appliance under test is subjected to a pressure that is gradually increased hydraulically until the required test pressure is reached. This pressure is maintained for 1 min. The part under test shall show no leakage (IEC 60335-2-89)		P
	NOTE 103 The test is not performed on motor-compressors complying with IEC 60335-2-34 (IEC 60335-2-89)		P
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		P
	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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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		P
22.12	Handles, knobs etc. fixed in a reliable manner, if loosening result in a hazard		P
	Removing or fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible, if resulting in a hazard		P
	A choking hazard does not apply to appliances for commercial use (IEC 60335-1/A2)		P
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		N/A
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		P
	If the part is removed and can be contained within the small parts cylinder, it is considered to be a choking hazard (IEC 60335-1/A2)		P
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
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
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 6 000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1 000 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
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		P
	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		P
	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		P
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		N/A
22.27	Parts connected by protective impedance separated by double or reinforced insulation		N/A

IEC 60335-2-89			
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		P
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 (IEC 60335-1/A1)		N/A
	Ceramic and similar porous material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation (IEC 60335-1/A1)		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, or		P
	unearthed metal parts separated from live parts by basic insulation only (IEC 60335-1/A1)		N/A
	Electrodes not used for heating liquids		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	the reinforced insulation consists of at least 3 layers		N/A
	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		P
	Heating conductors having only one layer of insulation are not in direct contact with water or ice during normal use (IEC 60335-2-89)		N/A
	NOTE 101 Frozen water is regarded as a conducting liquid (IEC 60335-2-89)		P
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		P
	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 and cordless 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 (IEC 60335-1/A1)		P
	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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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	Lampholders used only for the connection of lamps		N/A
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 cannot 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		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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
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		N/A
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation		N/A
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		N/A
	There is a visual indication showing that the appliance is adjusted for remote operation		N/A
	These requirements not necessary on appliances that can operate as follows, without giving rise to a hazard:		—
	- continuously, or		N/A
	- automatically, or		N/A
	- remotely		N/A
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
22.53	Class II appliances and class III appliances that incorporate functionally earthed parts have at least double insulation or reinforced insulation between live parts and the functionally earthed parts (IEC 60335-1/A1)		N/A
22.54	Button cells and batteries designated R1 not accessible without the aid of a tool, unless (IEC 60335-1/A1)		N/A
	the cover of their compartment can only be opened after at least two independent movements have been applied simultaneously (IE C60335-1/A1)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
22.55	Devices operated to stop the intended function of the appliance, if any, are be distinguished from other manual devices by means of shape, size, surface texture or position .....: (IEC 60335-1/A2)	By figure, letter	P
	The requirement concerning position does not preclude use of a push on push off switch (IEC 60335-1/A2)		N/A
	An indication when the device has been operated is given by: (IEC 60335-1/A2)		—
	– tactile feedback from the actuator or from the appliance, or		P
	– reduction in heat output; or		N/A
	– audible and visible feedback		N/A
22.56	Detachable power supply part provided with the part of class III construction (IEC 60335-1/A2)		N/A
22.57	The properties of non-metallic materials do not degrade from exposure to UV-C radiation, as specified in Annex T (IEC 60335-1/A2)		N/A
	This requirement does not apply to glass, ceramics or similar materials (IEC 60335-1/A2)		N/A
22.101	Lampholders properly fixed (IEC 60335-2-89)		N/A
	NOTE Normal use includes replacement of lamps (IEC 60335-2-89)		N/A
	Edison screw and bayonet lampholders are subjected for 1 min to the following torque: (IEC 60335-2-89)		—
	a) 0,15 Nm for E14 and B15 lampholders;		N/A
	b) 0,25 Nm for E27 and B22 lampholders.		N/A
	These lampholders shall then withstand a pull test with 50 N, applied for 1 min in the direction of the axis of the lampholder (IEC 60335-2-89)		N/A
	After the tests, the lampholders shall not have worked loose (IEC 60335-2-89)		N/A
	Lampholders for a fluorescent lamp shall comply with the test of 4.4.4 i) in IEC 60598-1:2008 (IEC 60335-2-89)		N/A
22.102	Insulated wire heaters and their joints protected against entry of water (IEC 60335-2-89)		N/A
	3 heating elements: 24 h immersion in water with 1 % NaCl; electric strength test between heating conductor and water (1 250 V 15 min) (IEC 60335-2-89)		N/A
22.103	Glass panels with an area having any two orthogonal dimensions exceeding 75 mm, that are accessible parts, shall be made from: (IEC 60335-2-89)		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	– glass that breaks in small pieces when it fractures; or		P
	– glass that is not released or dropped from its normal position when broken		N/A
	An example of an appliance that could contain glass panels with an area having any two orthogonal dimensions exceeding 75 mm, that are accessible parts, is an appliance incorporating one or more swing doors containing glass panels that incorporate glass sheets that are exposed to the user accessible area when the door is placed in the most unfavourable position that may occur in normal use (IEC 60335-2-89)		P
	The requirement is not applicable to: (IEC 60335-2-89)		—
	– for glass panels in stacker doors or sliding doors, the glass sheet that is exposed to refrigerated space;		N/A
	– for glass panels in doors containing more than two sheets of glass, the glass sheet sandwiched between the glass sheet exposed to the refrigerated space and the glass sheet exposed to the user accessible area		N/A
	Compliance is check by tests in a) or b) as applicable: (IEC 60335-2-89)		—
	a) the glass that breaks into small pieces when it fractures complies with the conditions specified		P
	b) the glass that is not released or dropped from its normal position when broken complies with the conditions specified		N/A
22.104	The interior of compartments, in appliances with a free space which is enclosed by sliding doors or sliding lids, shall be visible from the outside with the doors or lids closed (IEC 60335-2-89)		N/A
22.105	The doors and lids of compartments in appliances with a free space shall be capable of being opened from the inside (IEC 60335-2-89)		P
	This requirement is not applicable to sliding doors or lids (IEC 60335-2-89)		N/A
	The empty appliance is disconnected from the supply, placed on a horizontal support and levelled in accordance with the instructions for installation, with castors and rollers, if any, oriented, adjusted or blocked so as to prevent the appliance from moving. Locks, if any, on doors or lids are left unlocked (IEC 60335-2-89)		P
	Doors and lids are closed for a period of 15 min (IEC 60335-2-89)		P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	A force is then applied to a point, equivalent to an accessible inside point, of each appropriate door or lid of the appliance, at the midpoint of the edge furthest from the hinge axis in the direction perpendicular to the plane of the lid or door (IEC 60335-2-89)		P
	The force shall be applied at a rate not exceeding 15 N/s and the lid or door shall open before the force exceeds 70 N (IEC 60335-2-89)		P
22.106	Drawers that are only accessible after opening a door or lid shall not contain a free space (IEC 60335-2-89)		N/A
22.107	Drawers which are accessible without opening a door or lid and which contain a free space shall: (IEC 60335-2-89)		—
	– have an opening in their rear wall that has a height of at least 250 mm and a width of at least two-thirds of the inner width of the drawer;		N/A
	– be capable of being opened from the inside		N/A
	Compliance is checked by inspection and measurement and by the following test which is performed with a weight of 23 kg placed inside the drawer (IEC 60335-2-89)		N/A
	The empty appliance is disconnected from the supply, placed on a horizontal support and levelled in accordance with the instructions, with castors and rollers, if any, oriented, adjusted or blocked so as to prevent the appliance from moving. Locks, if any, on drawers are left unlocked (IEC 60335-2-89)		N/A
	Drawers shall be maintained closed for a period of 15 min (IEC 60335-2-89)		N/A
	The opening force is then applied to the drawer of the appliance at the geometrical centre of the front plane of the drawer equivalent to an accessible inside point, in the direction perpendicular to the front plane of the drawer (IEC 60335-2-89)		N/A
	The force shall be applied at a rate not exceeding 15 N/s (IEC 60335-2-89)		N/A
	The drawer shall open before the force exceeds 70 N (IEC 60335-2-89)		N/A
22.108	Appliances having a refrigerant charge within any refrigerating circuit exceeding 150 g of flammable refrigerant shall be constructed so that their operation does not cause excessive vibration or resonance points in the piping connected to the motor-compressor (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance is checked by the following test: The appliance is installed in accordance with the installation instructions. It is supplied at rated voltage or at the upper limit of the rated voltage range (IEC 60335-2-89)		N/A
	For motor-compressors, other than variable speed motor-compressors in the appliance, the supply frequency to the motor-compressor is varied in 1 Hz steps between 0,9 times and 1,1 times the rated frequency (IEC 60335-2-89)		N/A
	For variable speed motor-compressors in the appliance, the supply frequency from the inverter to the motor-compressor is increased in 1 Hz steps from minimum frequency to maximum frequency over the speed range in the appliance (IEC 60335-2-89)		N/A
	The vibration amplitude is measured at points in the piping with a large amplitude (IEC 60335-2-89)		N/A
	When measured with a low pass filter at 200 Hz, vibrations shall not exceed an acceleration of 0,3 g RMS in the refrigerant containing parts (IEC 60335-2-89)		N/A
	Care shall be taken that the measurement sensors do not influence the line vibration level (IEC 60335-2-89)		N/A
22.109	Appliances employing R-744 refrigerant in a transcritical refrigeration system shall in the high-pressure side of the refrigeration system include a pressure relief device on the compressor or between the compressor and the gas cooler. There shall be no shut off devices or other components except piping between the compressor and the pressure relief device, which could introduce a pressure drop (IEC 60335-2-89)		N/A
	The pressure relief device shall be mounted so that the refrigerant released from the system cannot cause any harm to the user of the appliance. The aperture shall be located so that it is unlikely to be obstructed in normal use. This requirement is not applicable where the pressure is controlled automatically by shutting down the motor-compressor (IEC 60335-2-89)		N/A
	The pressure relief device shall have no provisions for setting by the end user (IEC 60335-2-89)		N/A
	The operating pressure of the pressure relief device shall be no higher than the design pressure of the high-pressure side (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	The design pressure of the high-pressure side shall be not less than the minimum high side test pressure required in Table 101 of IEC 60335-2-34:2012/AMD2:2016, divided by 3 (IEC 60335-2-89)		N/A
	The refrigeration system, including all components, shall withstand the pressures expected in normal and abnormal use and during standstill (IEC 60335-2-89)		N/A
	Pressure testing has to be done on the complete refrigeration system, however it can be done separately for the low-pressure side and for the high-pressure side (IEC 60335-2-89)		N/A
	Pressure testing has to be done on the complete refrigeration system, however it can be done separately for the low-pressure side and for the high-pressure side (IEC 60335-2-89)		N/A
	Compliance is checked by inspection and by the following test: The pressure relief device is made inoperable and the test pressure is gradually increased hydraulically (IEC 60335-2-89)		—
	– for the high-pressure side, until a pressure not less than the minimum high side test pressure required in Table 101 of IEC 60335-2-34: 2012/AMD2:2016 is reached, however not less than 3 times the design pressure;		N/A
	– for the low-pressure side, until a pressure not less than the minimum low side test pressure required in Table 102 of IEC 60335-2-34:2012/AMD2:2016 is reached		N/A
	For a refrigeration system with an intermediate pressure between high-pressure side and low-pressure side, all parts subjected to the intermediate pressure are considered to be on the low-pressure side		N/A
	The pressure is maintained for one minute and the parts under test shall show no leakage		N/A
22.110	The refrigerant charge of flammable refrigerant in appliances with an incorporated refrigerant unit or motor-compressor shall not exceed 13 times the LFL of the flammable refrigerant or 1,2 kg in any refrigerating circuit, whichever is smaller. The LFL is expressed in kg/m3. The LFL values for refrigerants are given in Table 102 (IEC 60335-2-89)		P
	The refrigerant charge of flammable refrigerant in appliances with a remote refrigerant unit or motor-compressor (split system), shall not exceed 150 g in any refrigerating circuit (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	The molar mass of the refrigerant in appliances having a refrigerant charge exceeding 150 g of flammable refrigerant in any refrigerating circuit shall not be less than 30 kg/kmol (IEC 60335-2-89)		N/A
22.111	Appliances with a protected cooling system and which use flammable refrigerants shall be so constructed as to avoid any fire or explosion hazard in the event of leakage of the refrigerant from the cooling system (IEC 60335-2-89)		N/A
	Appliances with a protected cooling system are those (IEC 60335-2-89)		—
	– without any part of the cooling system inside a food storage compartment;		N/A
	– where any part of the cooling system which is located inside a food storage compartment is constructed so that the refrigerant is contained within an enclosure with at least two layers of metallic materials separating the refrigerant from the food storage compartment, each layer having a thickness of at least 0,1 mm. The enclosure has no joints other than the bonded seams of the evaporator where the bonded seam has a width of at least 6 mm;		N/A
	– where any part of the cooling system, which is located inside a food storage compartment, has the refrigerant contained in an enclosure that itself is contained within a separate protective enclosure. If leakage from the containing enclosure occurs, the leaked refrigerant is contained within the protective enclosure and the appliance will not function as in normal use. The protective enclosure shall also withstand the test of 22.7. No critical point in the protective enclosure shall be located within the food storage compartment		N/A
	Compliance is checked by inspection and by the tests of 22.111.1 and 22.111.2		N/A
22.111.1	A leakage is simulated at the most critical point of the cooling system (IEC 60335-2-89)		N/A
	The method for simulating a leakage is to inject the refrigerant vapour through a capillary tube at the critical point. The capillary tube shall have a diameter of 0,7 mm ± 0,05 mm and a length between 2 m and 3 m (IEC 60335-2-89)		N/A
	During this test, the appliance is tested with doors and lids closed, and is switched off or operated under normal operation at rated voltage, whichever gives the more unfavourable result (IEC 60335-2-89)		N/A
	During a test in which the appliance is operated, gas injection is started at the same time as the appliance is first switched on (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	The quantity of refrigerant of the type indicated by the manufacturer to be injected is equal to 80 % of the nominal refrigerant charge ±1,5 g or the maximum that can be injected in 1 h, whichever is the smaller (IEC 60335-2-89)		N/A
	The quantity injected is taken from the vapour side of a gas bottle which shall contain enough liquid refrigerant to ensure that, at the end of the test, there is still liquid refrigerant left in the bottle (IEC 60335-2-89)		N/A
	If a blend can fractionate, the test is performed using the fraction that has the smallest value of the lower flammability limit (IEC 60335-2-89)		N/A
	The gas bottle is kept at a temperature of: (IEC 60335-2-89)		—
	a) 32 °C ± 2 °C for leakage simulation on low-side pressure circuits;		N/A
	b) 70 °C ± 2 °C for leakage simulation on high-side pressure circuits		N/A
	The concentration of leaked refrigerant is measured at least every 30 s from the beginning of the test and for at least 1 h after injection of the gas has stopped, inside and outside the food storage compartment, as close as possible to electrical components which, during normal operation or abnormal operation, produce sparks or arcs (IEC 60335-2-89)		N/A
	The concentration is not measured close to (IEC 60335-2-89)		—
	– non-self-resetting protective devices necessary for compliance with Clause 19, even if they produce arcs or sparks during operation,		N/A
	– intentionally weak parts that become permanently open-circuited during the tests of Clause 19 even if they produce arcs or sparks during operation,		N/A
	– electrical apparatus that has been tested and found to comply with at least the requirements in Annex BB		N/A
	The instrument used for monitoring gas concentrations (such as those which use infra-red sensing techniques) shall have a fast response, typically 2 s to 3 s, and not unduly influence the result of the test (IEC 60335-2-89)		N/A
	If gas chromatography is to be used, the gas sampling in confined areas shall occur at a rate not exceeding 2 ml every 30 s (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	The measured value shall not exceed 75 % of the lower flammability limit of the refrigerant as specified in Table 102, and shall not exceed 50 % of the lower flammability limit of the refrigerant as specified in Table 102 for a period exceeding 5 min (IEC 60335-2-89)		N/A
22.111.2	All accessible surfaces of protected cooling system components, including accessible surfaces in intimate contact with the protected cooling system, are scratched using the tool the tip of which is shown in Figure 102 (IEC 60335-2-89)		N/A
	The tool is applied using the following parameters: (IEC 60335-2-89)		—
	– force at right angles to the surface to be tested..... 35 N ± 3 N;		N/A
	– force parallel to the surface to be tested..... not exceeding 250 N		N/A
	The tool is drawn across the surface to be tested at a rate of approximately 1 mm/s (IEC 60335-2-89)		N/A
	The surface to be tested is scratched at three different positions in a direction at right angles to the axis of the channel and at three different positions on the channel in a direction parallel to it. In the latter case, the length of the scratch shall be approximately 50 mm (IEC 60335-2-89)		N/A
	The scratches shall not cross each other (IEC 60335-2-89)		N/A
	The appropriate part of the appliance shall withstand the test of 22.7, the test pressure being reduced by 50 % (IEC 60335-2-89)		N/A
22.112	For compression-type appliances with unprotected cooling systems and which use flammable refrigerants, any electrical component, other than luminaires, located inside the food storage compartment, that during normal operation or abnormal operation produces arcs or sparks, shall be tested and found at least to comply with the requirements of Annex BB for group IIA gases or the refrigerant used (IEC 60335-2-89)		P
	This requirement does not apply to (IEC 60335-2-89)		—
	– non-self-resetting protective devices necessary for compliance with Clause 19, nor to		N/A
	– intentionally weak parts that become permanently open-circuited during the tests of Clause 19,		N/A
	even if they produce arcs or sparks during operation		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Refrigerant leakage into food storage compartments shall not result in an explosive atmosphere outside the food storage compartments in areas where luminaires and electrical components that produce arcs and sparks during normal operation or abnormal operation are mounted, when doors or lids remain closed or when opening or closing doors or lids, unless these electrical components, other than luminaries, have been tested and found at least to comply with Annex BB for group IIA gases or the refrigerant used (IEC 60335-2-89)		P
	This requirement does not apply to (IEC 60335-2-89)		—
	– non-self-resetting protective devices necessary for compliance with Clause 19, nor to		N/A
	– intentionally weak parts that become permanently open-circuited during the tests of Clause 19,		N/A
	even if they produce arcs or sparks during operation		N/A
	For luminaires compliance is checked by inspection and by the appropriate tests in 5.3 of IEC 60079-7:2015 (IEC 60335-2-89)		N/A
	For electrical components, other than luminaires, compliance is checked by inspection and by the appropriate tests of IEC 60079-15 and by the following test (IEC 60335-2-89)		P
	Test as described (IEC 60335-2-89)		P
	The concentration of leaked refrigerant is measured every 30 s from the beginning of the test, at positions as close as possible to electrical components. However, it is not measured at the positions of (IEC 60335-2-89)		—
	– non-self-resetting protective devices necessary for compliance with Clause 19, nor to		N/A
	– intentionally weak parts that become permanently open-circuited during the tests of Clause 19,		N/A
	even if they produce arcs or sparks during operation		N/A
	The concentration values are recorded until they tend to go down (IEC 60335-2-89)		P
	The measured value shall not exceed 75 % of the lower flammability limit of the refrigerant as specified in Table 102, and shall not exceed 50 % of the lower flammability limit of the refrigerant as specified in Table 102 for a period exceeding 5 min (IEC 60335-2-89)		P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	The above test is repeated except that the door or lid is subjected to an open/close sequence at a uniform rate in a time of between 2 s and 4 s, the door or lid being opened to an angle of 90° or to the maximum possible, whichever is less, and closed during the sequence (IEC 60335-2-89)		P
22.113	Compression-type appliances which use flammable refrigerants shall be constructed so that leaked refrigerant will not stagnate and thus cause a fire or explosion hazard in areas outside the food storage compartments where components producing arcs or sparks or luminaires are mounted (IEC 60335-2-89)		P
	This requirement does not apply to areas where (IEC 60335-2-89)		—
	– non-self-resetting protective devices necessary for compliance with Clause 19 or		N/A
	– intentionally weak parts that become permanently open circuited during the test of Clause 19		N/A
	are mounted, even if they produce arcs and sparks during operation		N/A
	Compliance is checked by the following test unless components that produce arcs and sparks during normal operation and which are mounted in the areas under consideration, have been tested and found at least to comply with the requirements in Annex BB for group II A gases or the refrigerant used and luminaires have been tested and found at least to comply with the requirements in 5.3 of IEC 60079-5 (IEC 60335-2-89)		P
	Test as described (IEC 60335-2-89)		P
	The concentration of leaked refrigerant as close as possible to the electrical component is measured continuously from the beginning of the test until it starts to decrease (IEC 60335-2-89)		P
	The measured value shall not exceed 75 % of the lower flammability limit of the refrigerant as specified in Table 102, and shall not exceed 50 % of the lower flammability limit of the refrigerant as specified in Table 102 for a period exceeding 5 min (IEC 60335-2-89)		P
22.114	Temperatures on surfaces that may be exposed to leakage of flammable refrigerants shall not exceed the auto-ignition temperature of the refrigerant as specified in Table 102, reduced by 100 K (IEC 60335-2-89)		P
	Compliance is checked by measuring the appropriate surface temperatures during the tests specified in Clauses 11 and 19 (IEC 60335-2-89)		P
	Temperatures of (IEC 60335-2-89)		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	– non-self-resetting protective devices that operate during the tests specified in Clause 19 or		N/A
	– intentionally weak parts that become permanently open-circuited during the tests specified in Clause 19		N/A
	are not measured during those tests specified in Clause 19 that cause these devices to operate		N/A
22.115	Split system appliances that use a flammable refrigerant shall not be fitted with pre-charged interconnection refrigerant piping (IEC 60335-2-89)		N/A
22.116	Appliances having a refrigerant charge exceeding 150 g of flammable refrigerant in any refrigerating circuit shall be constructed such that a leak of refrigerant shall not result in a flammable refrigerant concentration surrounding the appliance (IEC 60335-2-89)		N/A
	In the event of a leak from the appliance while energised, if airflow is required to meet these requirements, the airflow shall be guaranteed (IEC 60335-2-89)		N/A
	If airflow is not maintained at a level sufficient to comply with the requirements of Annex CC, the motor-compressors and heating elements shall be switched off within 5 minutes and an alarm shall be given. The motor-compressor and heating elements shall only be capable of restarting after the required airflow level has been reinstated (IEC 60335-2-89)		N/A
	The airflow shall be produced by components that are part of the appliance (IEC 60335-2-89)		N/A
	Compliance is checked by inspection and by the tests specified in Annex CC (IEC 60335-2-89)		N/A
	If compliance relies on the operation of an electronic circuit, the tests in Annex CC are repeated under the following conditions applied separately: (IEC 60335-2-89)		—
	– the fault conditions in a) to g) of 19.11.2 applied one at a time to the electronic circuit;		N/A
	– the electromagnetic phenomena tests of 19.11.4.2 and 19.11.4.5 applied to the appliance		N/A
	If the electronic circuit is programmable, the software shall contain measures to control the fault/error conditions specified in Table R.1 and is evaluated in accordance with the relevant requirements of Annex R (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
22.117	In appliances having a refrigerant charge exceeding 150 g of flammable refrigerant in any refrigerant circuit, the refrigerant tubing shall be protected from potential damage during normal use relocation, repositioning and user maintenance (IEC 60335-2-89)		N/A
22.118	Low-temperature solder alloys having melting point of less than 450 °C shall not be used for pipe connections in a refrigerating circuit, if the refrigerant charge exceeds 150 g of flammable refrigerant (IEC 60335-2-89)		N/A
	Compliance is checked by inspection and test (IEC 60335-2-89)		N/A
22.119	Capped valves and capped service ports fitted to hermetically sealed systems for the purposes of compliance with the requirements for permanent connections on systems containing flammable refrigerants shall comply with the requirements of ISO 14903, tightness control level A1 (IEC 60335-2-89)		P
	Compliance is checked by inspection and the test in ISO 14903 (IEC 60335-2-89)		P
22.120	Only hermetically sealed systems shall be used in appliances with flammable refrigerant (IEC 60335-2-89)		P
	All the connections in a hermetically sealed system shall comply with ISO 14903 tightness control level A1 (IEC 60335-2-89)		P
	Compliance is checked by inspection and the relevant tests (IEC 60335-2-89)		P
22.121	If symbol IEC 60417-6412:2019-03 is marked on the appliance, the value of A in the symbol shall be equal to or greater than the largest value of the room floor area limit A_{lim} that is determined from the following: $A_{lim} = \frac{M}{2{,}2 \times (0{,}25 \times LFL)}$		N/A
	where M is the refrigerant charge (kg); LFL is the lower flammability limit of the flammable refrigerant (kg/m^3); 2,2 is the assumed minimum room height (m); 0,25 coefficient that gives 25 % of LFL (IEC 60335-2-89)		
23	**INTERNAL WIRING**		—
23.1	Wireways smooth and free from sharp edges		P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well-rounded or provided with bushings		N/A
	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		N/A
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A
	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, 1 000 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
	Instead of the test being carried out while the appliance is in operation, it is carried out with the appliance disconnected from the supply (IEC 60335-2-89)		N/A
	The number of flexing for conductors flexed during normal use is increased to 200 000 (IEC 60335-2-89)		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		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	no breakdown when a voltage of 2 000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		P
	For class II construction, the requirements for supplementary insulation and reinforced insulation apply, except that (IEC 60335-1/A1)		P
	the sheath of a cord complying with IEC 60227 or IEC 60245 may provide supplementary insulation (IEC 60335-1/A1)		P
	A single layer of internal wiring insulation does not provide reinforced insulation		P
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or		P
	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 (IEC 60335-1/A1)		P
	List of components.....:	(see appended table)	P
	Motors not required to comply with IEC 60034-1, they are tested as part of the appliance (IEC 60335-1/A1)		P
	Relays tested as part of the appliance, or (IEC 60335-1/A1)		P
	alternatively according to IEC 60730-1, and meeting the additional requirements in IEC 60335-1 (IEC 60335-1/A1)		N/A
	The requirements of Clause 29 apply between live parts of components and accessible parts of the appliance (IEC 60335-1/A1)		P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Components can comply with the requirements for clearances and creepage distances for functional insulation in the relevant component standard		P
	30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections (IEC 60335-1/A1)		P
	Components that have not been previously tested to comply with the IEC standard for the relevant component are tested according to the requirements of 30.2 (IEC 60335-1/A1)		P
	Components that have been previously tested to comply with the resistance to fire requirements in the IEC standard for the relevant component need not be retested provided the specified conditions are met		P
	If these conditions are not satisfied, the component is tested as part of the appliance.		P
	Power electronic converter circuits not required to comply with IEC 62477-1, they are tested as part of the appliance		N/A
	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
	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		P
	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		P
	Motor-compressors are not required to be separately tested according to IEC 60335-2-34 nor are they required to meet the requirements of IEC 60335-2-34 if they meet the requirements of this standard (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, comply with IEC 60384-14		P
	If the capacitors have to be tested, they are tested according to Annex F		N/A
24.1.2	Transformers in associated switch mode power supplies comply with Annex BB of IEC 61558-2-16 (IEC 60335-1/A1)		N/A
	Safety isolating transformers comply with IEC 61558-2-6		N/A
	If they have to be tested, they are tested according to Annex G		N/A
24.1.3	Switches comply 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		N/A
	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
	The number of operations for other switches (IEC 60335-2-89):		—
	- quick-freeze switches.....:	300	N/A
	- manual and semi-automatic defrost switches.....:	300	N/A
	- door switches.....:	50 000	N/A
	- ON/OFF switches.....:	300	P
24.1.4	Automatic controls comply 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		N/A
	- timers.....: 3 000		N/A
	- energy regulators.....: 10 000		N/A
	- thermostats which control a motor-compressor.....: 100 000 (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- temperature limiters which control defrosting heaters.....: (IEC 60335-2-89)	100 000	N/A
	- motor-compressor starting relays.....: (IEC 60335-2-89)	100 000	N/A
	- self resetting thermal motor-protectors for motor-compressors, or the number of operations during the 15-day locked-rotor test, whichever is the greater.....: (IEC 60335-2-89)	min. 2 000	N/A
	- non-self-resetting thermal motor-protectors for motor-compressors.....: (IEC 60335-2-89)	50	N/A
	- other automatic thermal motor-protectors except for fan motors.....: (IEC 60335-2-89)	2 000	N/A
	- other manual reset thermal motor-protectors.....: (IEC 60335-2-89)	30	N/A
	- For pressure relief devices of the bursting disc type, three separate samples of the appropriate parts of the refrigeration system are tested and the bursting disc shall operate in the same way for each sample tested.....: (IEC 60335-2-89)	1	N/A
	- electrical pressure relief device (IEC 60335-2-89)		—
	● for automatic operation.....:	30 000	N/A
	● for manual reset..... :	300	N/A
	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		N/A
	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
	Thermal cut-outs of the capillary type comply with the requirements for type 2.K controls in IEC 60730-2-9 (IEC 60335-1/A1)		N/A
	Electrical pressure relief devices shall comply with IEC 60730-2-6 and (IEC 60335-2-89)		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	– shall be of type 2B and type 2N;		N/A
	– shall have a trip free mechanism of type 2E;		N/A
	– the deviation and drift shall not exceed + 0 %		N/A
	For mechanical pressure relief devices not falling under the scope of IEC 60730, the operating pressure must be no more than the setting of the device plus 10 % (IEC 60335-2-89)		N/A
	Pressure relief devices of the bursting disc type that are not certified to ISO 4126-2 shall be tested as part of the appliance to 14.3.4 of ISO 4126-2:2018. They shall be marked with: (IEC 60335-2-89)		—
	– name, trademark or identification mark of the manufacturer or responsible vendor;		N/A
	– model name or type reference		N/A
	Replaceable bursting discs in bursting disc assemblies need only be marked with their operating pressure (IEC 60335-2-89)		N/A
24.1.5	Appliance couplers comply with IEC 60320-1		N/A
	However, for class II appliances classified higher than IPX0, the appliance couplers comply with IEC 60320-2-3 (IEC 60335-1/A1)		N/A
	Interconnection couplers comply with IEC 60320-2-2		N/A
24.1.6	Small lampholders similar to E10 lampholders comply 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		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		N/A
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 .....:	1E5	P
24.2	Appliances not fitted with:		—
	- switches, automatic controls, power supplies and the like in flexible cords; (IEC 60335-1/A2)		P
	- devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance;		P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- thermal cut-outs that can be reset by soldering, unless		P
	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		N/A
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		P
	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	Rated: 450 V; Measured: Max. 299,7 V Limited: 495 V	P
	For starting capacitors, the voltage across the capacitors shall not exceed 1,3 times the rated voltage of the capacitor at 1.1xU_n (IEC 60335-2-89)		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
	For coupling nuts used with hose-sets marked 25 °C max, the 96-h ageing test is carried out at a temperature of (IEC 60335-2-89)		—
	● 32 °C ± 2 °C on hoses sets supplied with appliances of climatic class 0, 1, 2, 3, 4, 6 or 8;		N/A
	● 43 °C ± 2 °C on hoses sets supplied with appliances of climatic class 5 or 7		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		P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	One or more of the following conditions are to be met:		—
	- the capacitors are of class S2 or S3 according to IEC 60252-1; (IEC 60335-1/A2)		P
	- 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	Pressure relief devices shall be such that they are able to operate so that the pressure during abnormal operation of the appliance does not increase beyond the pressure setting of the pressure relief device, even if the compressor is operating (IEC 60335-2-89)		N/A
25	**SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS**		—
	This clause of part 1 is not applicable to those parts related to motor-compressors with facilities for connecting a supply cord, and complying with the appropriate requirements of IEC 60335-2-34 (IEC 60335-2-89)		P
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		—
	- supply cord fitted with a plug, the current rating and voltage rating of the plug being not less than the corresponding ratings of its associated appliance (IEC 60335-1/A1)		P
	- 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
25.2	Mains-operated appliances not provided with more than one means of connection to the supply unless (IEC 60335-2-89)		—
	- the appliance consists of two or more completely independent units built together in one enclosure		N/A
	- the relevant circuits are adequately insulated from each other		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;		N/A
	- a fitted supply cord;		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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;		N/A
	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		N/A
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to Table 10 (mm).....:		N/A
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in Clause 29		N/A
25.5	Method for assembling the supply cord to the appliance:		—
	- type X attachment;		N/A
	- type Y attachment;		P
	- 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		P
25.7	Supply cords, other than for class III appliances, being one of the following types:		—
	- rubber sheathed (at least 60245 IEC 53)		N/A
	- polychloroprene sheathed (at least 60245 IEC 57)		N/A
	- polyvinyl chloride sheathed. Not used if they are likely to touch metal parts having a temperature rise exceeding 75 K during the test of Clause 11		—
	• light polyvinyl chloride sheathed cord (60227 IEC 52), for appliances not exceeding 3 kg;		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	• ordinary polyvinyl chloride sheathed cord (60227 IEC 53), for other appliances	H05VV-F 60227 IEC 53	P
	- heat resistant polyvinyl chloride sheathed. Not used for type X attachment other than specially prepared cords		—
	• heat-resistant light polyvinyl chloride sheathed cord (60227 IEC 56), for appliances not exceeding 3 kg;		N/A
	• heat-resistant polyvinyl chloride sheathed cord (60227 IEC 57), for other appliances		N/A
	- halogen-free, low smoke, thermoplastic insulated and sheathed (IEC 60335-1/A2)		—
	• Light duty halogen-free low smoke flexible cable (62821 IEC 101) for circular cable and (62821 IEC 101f) for flat cable		N/A
	• Ordinary duty halogen-free low smoke flexible cable (62821 IEC 102) for circular cable and (62821 IEC 102f) for flat cable		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) .....:	Rated: 0,78 A; Cross-sectional area: 0,75 mm^2	P
25.9	Supply cords not in contact with sharp points or edges		P
25.10	Supply cord of class I appliances have a green/yellow core for earthing		P
	In multi-phase appliances, the colour of the neutral conductor of the supply cord is blue (IEC 60335-1/A1)		N/A
	Where additional neutral conductors are provided in the supply cord:		—
	– other colours may be used for these additional neutral conductors;		N/A
	– all of the neutral conductors and line conductors are identified by marking using the alpha numeric notation specified in IEC 60445;		N/A
	– the supply cord is fitted to the appliance		N/A
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless		P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
25.13	Inlet openings so constructed as to prevent damage to the supply cord		P
	If it is not evident that the supply cord can be introduced without risk of damage, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided (IEC 60335-1/A1)		N/A
	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:		—
	- fixed appliances: pull 100 N; torque (not on automatic cord reel) (Nm)..... :		N/A
	- other appliances: values shown in Table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm)..... :	100 N; 0,35 Nm	P
	Cord not damaged and max. 2 mm displacement of the cord	0,2 mm	P
25.16	Cord anchorages for type X attachments constructed and located so that:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
	- 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		P
25.18	Cord anchorages only accessible with the aid of a tool, or		P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
25.20	The conductors of the supply cord for type Y and Z attachment insulated from accessible metal parts		P
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;		N/A
	- so there is no risk of damage to the conductors or their insulation when fitting the cover;		N/A
	- 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 temperature 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:		—
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during Clause 11;		N/A
	- the thickness of the insulation may be reduced		N/A
	- for class I or class II appliance with class III construction, the cross sectional areas of the conductors need not comply with 25.8 if specified conditions are met (IEC 60335-1/A2)		N/A
	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		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict

26	**TERMINALS FOR EXTERNAL CONDUCTORS**		—
	This clause of part 1 is not applicable to those parts of motor-compressors with facilities for connecting a supply cord and complying with the appropriate requirements of IEC 60335-2-34 (IEC 60335-2-89)		P
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
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		N/A
	the connections are soldered		N/A
	Screws and nuts not used to fix any other component, except		N/A
	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		N/A
	Terminals fixed so that when the clamping means is tightened or loosened:		—
	- the terminal does not become loose;		N/A
	- internal wiring is not subjected to stress;		N/A
	- neither clearances nor creepage distances are reduced below the values in Clause 29		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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) .....:		N/A
	No deep or sharp indentations of the conductors		N/A
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
	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 (mm^2) .....:		N/A
	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		N/A
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		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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**		—
	Compliance is not checked on parts related to motor-compressors if the motor-compressor complies with IEC 60335-2-34 (IEC 60335-2-89)		P
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 protective earthing (IEC 60335-1/A1)		N/A
	Class II appliances and class III appliances can incorporate an earth for functional purposes (IEC 60335-1/A1)		N/A
	Safety extra-low voltage circuits not earthed, unless		N/A
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		P
	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
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IE C60335-1/A1)		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		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC 60335-1/A1)		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		P
	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
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC 60335-1/A1)		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
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC 60335-1/A1)		N/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω) .....:	0,09 Ω	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
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC 60335-1/A1)		N/A
28	**SCREWS AND CONNECTIONS**		—
	Compliance is not checked on parts related to motor-compressors if the motor-compressor complies with IEC 60335-2-34 (IEC 60335-2-89)		P

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Clause	Requirement + Test	Result - Remark	Verdict
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses		P
	Screws not of soft metal liable to creep, such as zinc or aluminium		P
	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		P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	- during installation		N/A
	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**		—
	Compliance is not checked on parts related to motor-compressors if the motor-compressor complies with IEC 60335-2-34. For motor-compressors not complying with IEC 60335-2-34, the additions and modifications specified in IEC 60335-2-34 are applicable (IEC 60335-2-89)		P
	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.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 1 500 V and above are increased by 0,5 mm and the impulse voltage test is not applicable		P
	For appliances intended for use at altitudes exceeding 2 000 m, the clearances in Table 16 is increased according to the relevant multiplier values in Table A.2 of IEC 60664-1 (IEC 60335-1/A1)		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 0I appliances, or		N/A
	- to appliances intended for use at altitudes exceeding 2 000 m		N/A
	Appliances are in overvoltage category II		P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P
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		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	- 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		P
	However, clearances are not specified if the appliance complies with Clause 19 with the functional insulation short-circuited		P
	Lacquered conductors of windings considered to be bare conductors		P
	However, clearances at crossover points are not measured		P
	Clearance between surfaces of PTC heating elements may be reduced to 1 mm		N/A
29.1.5	Appliances having higher working voltages than rated voltage, clearances for basic 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		P
	- 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

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Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	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		P
	Unless insulation is enclosed or located so that it is unlikely to be exposed to pollution by condensation due to normal use of the appliance, insulation in appliances is in Pollution Degree 3 and shall have a CTI value of not less than 250 (IEC 60335-2-89)		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
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
	- for insulation, other than single layer internal wiring insulation, by an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3, and (IEC 60335-1/A1)		N/A
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or (IEC 60335-1/A1)		N/A
	- by an assessment of the thermal quality of the material according to 29.3.3 combined with an electric strength test in accordance with 23.5, for each single layer internal wiring insulation touching each other, or (IEC 60335-1/A1)		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
29.3.1	Supplementary insulation have a thickness of at least 1 mm		P
	Reinforced insulation have a thickness of at least 2 mm		P

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Clause	Requirement + Test	Result - Remark	Verdict
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		P
	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 30.1)	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 30.1)	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 30.1)	N/A
	The ball pressure test is not applied to parts related to the motor-compressor if the motor-compressor complies with IEC 60335-2-34 (IEC 60335-2-89)		P
	The temperature rises attained during the test of 19.101 are not taken into account (IEC 60335-2-89)		N/A
	For accessible parts of non-metallic material within the food storage compartment, the temperature of 75 °C ± 2 °C is replaced by 65 °C ± 2 °C (IEC 60335-2-89)		P

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		N/A
	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		N/A
	For base material of printed circuit boards, 30.2.4 applies		P
	Following tests do not apply to parts related to the motor-compressor if the motor-compressor complies with IEC 60 335-2-34 with no ignition (IEC 60335-2-89)		P
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550°C	(see appended Table 30.2)	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
30.2.2	Not applicable (IEC 60335-2-89)		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.....:		N/A
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	(see appended Table 30.2)	P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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 the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended Table 30.2)	P
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		P
	- 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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	- 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:		—
	- 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	(see appended Table 30.2/30.4)	P
	Test not applicable to conditions as specified.....:		N/A
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**		—
	This clause of part 1 is not applicable (IEC 60335-2-89)		P
A	**ANNEX A (INFORMATIVE) ROUTINE TESTS**		—
	Description of routine tests to be carried out by the manufacturer		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
B	**ANNEX B (NORMATIVE)** **APPLIANCES POWERED BY RECHARGEABLE BATTERIES THAT ARE RECHARGED IN THE APPLIANCE**		—
	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance (IEC 60335-1/A1)		N/A
	Three forms of construction covered:		—
	a) Appliance supplied directly from the supply mains or a renewable energy source, the battery charging circuitry and other supply unit circuitry incorporated within the appliance (IEC 60335-1/A1)		N/A
	b) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the part of the appliance containing the battery (IEC 60335-1/A1)		N/A
	c) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the detachable supply unit (IEC 60335-1/A1)		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
	- 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 (V) and polarity of the terminals..... :		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006		N/A
	Appliances intending to be supplied from a detachable supply unit marked with symbol IEC 60417-6181 and its type reference along with symbol ISO 7000-0790 (2004-01), or (IEC 60335-1/A1)		N/A
	use only with <model designation> supply unit .....:		N/A
7.6	Additional symbols (IEC 60335-1/A1)		N/A
7.12	The instructions give information regarding charging		N/A
	Instructions for appliances incorporating batteries intended to be replaced by the user include required information		N/A
	Details about how to remove batteries containing materials hazardous to the environment given		N/A
	Instructions for appliances containing non-user-replaceable batteries state the substance of the following: (IEC 60335-1/A2)		—
	This appliance contains batteries that are only replaceable by skilled persons		N/A
	Instructions for appliances containing non-replaceable batteries shall state the substance of the following: (IEC 60335-1/A2)		—
	This appliance contains batteries that are non-replaceable		N/A
	For appliances intending to be supplied from a detachable supply unit for the purposes of recharging the battery, the type reference of the detachable supply unit is stated along with the following: (IEC 60335-1/A1)		—
	WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance (IEC 60335-1/A1)		N/A
	If the symbol for detachable supply unit is used, its meaning is explained (IEC 60335-1/A1)		N/A
7.15	Markings placed on the part of the appliance connected to the supply mains		N/A
	The type reference of the detachable supply unit is placed in close proximity to the symbol (IEC 60335-1/A1)		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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
11.7	The battery is charged for the period stated in the instructions or 24 h .....:		N/A
11.8	Temperature rise of the battery surface does not exceed the limit in the battery manufacturer's specification; measured (K); limit (K).....: (IEC 60335-1/A1)		N/A
	If no limit specified, the temperature rise does not exceed 20 K; measured (K) .....:		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
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
19.13	The battery does not rupture or ignite (IEC 60335-1/A1)		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 (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**		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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
	This annex does not apply to motor-compressors (IEC 60335-2-89)		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
	This annex does not apply to motor-compressors or condenser fan motors (IEC 60335-2-89)		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		N/A
	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		N/A
11	**Evaluation of test results**		—
	The duration of burning not exceeding 30 s		N/A
	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**		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
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**		—
7.1	Transformers for specific use marked with:		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
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**		—
	Clause 20 is applicable to clearances across full disconnection and micro-disconnection (IEC 60335-1/A1)		N/A
	It is also applicable to creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in Table 24 (IEC 60335-1/A1)		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**		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
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**		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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		—
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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		P
	- 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		P
10	**Determination of proof tracking index (PTI)**		—
10.1	Procedure		—
	The proof voltage is 100 V, 175 V, 400 V or 600 V (V).....:	250 V for thermostat knob, thermostat, evaporator fan motor bobbin, LED cover, connector, PVC tube	P
	The test is carried out on five specimens		P
	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**		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Modifications applicable for class 0 and 0I appliances having a rated voltage exceeding 150 V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332 (2015-06) (IEC 60335-1/A2)		—
	Modifications may also be applied to class I appliances having a rated voltage exceeding 150 V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332 (2015-06), if liable to be connected to a supply mains that excludes the protective earthing conductor (IEC 60335-1/A2)		—
5.7	The ambient temperature for the tests of Clauses 11 and 13 is 43 °C ± 1 °C (IEC 60335-2-89)		N/A
7.1	The appliance marked with symbol IEC 60417-6332 (2015-06) (IEC 60335-1/A2)		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 tropical climate, but may also be used in other countries		N/A
	If symbol IEC 60417-6332 (2015-06) is used, its meaning shall be explained (IEC 60335-1/A2)		N/A
11.8	The values of Table 3 are reduced by 18 K (IEC 60335-2-89)		N/A
13.2	The leakage current for class I appliances not exceeding 0,5 mA (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**		—
	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		N/A
R.1	Programmable electronic circuits using software		—

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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/A
R.2	Requirements for the architecture		—
	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/A
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:		—
	- single channel with periodic self-test and monitoring		N/A
	- dual channel (homogenous) with comparison		N/A
	- dual channel (diverse) with comparison		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in Table R.1 have one of the following structures:		—
	- single channel with functional test		N/A
	- single channel with periodic self-test		N/A
	- dual channel without comparison		N/A
R.2.2	Measures to control faults/errors		—
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/A
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/A
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/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 Tables R.1 and R.2 as appropriate		N/A
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, detection of a fault/error shall occur before compliance with Clause 19 and 22.116 is impaired (IEC 60335-2-89)		N/A
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions		N/A
R.2.2.7	Labels used for memory locations are unique		N/A
R.2.2.8	The software is protected from user alteration of safety-related segments and data		N/A
R.2.2.9	The software and safety-related hardware under its control shall be initialized and shall terminate before compliance with Clause 19 and 22.116 is impaired (IEC 60335-2-89)		N/A
R.3	Measures to avoid errors		—
R.3.1	General		—
	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		—
	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/A
R.3.2	Specification		—
R.3.2.1	Software safety requirements.....:	Software Id:	N/A
	The specification of the software safety requirements includes the descriptions listed		N/A
R.3.2.2	Software architecture		—

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Clause	Requirement + Test	Result - Remark	Verdict
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/A
R.3.2.2.2	The architecture specification is validated against the specification of the software safety requirements by static analysis		N/A
R.3.2.3	Module design and coding		—
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules		N/A
	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements		N/A
R.3.2.3.2	Software code is structured		N/A
R.3.2.3.3	Coded software is validated against the module specification by static analysis		N/A
	The module specification is validated against the architecture specification by static analysis		N/A
R.3.3.3	Software validation		—
	The software is validated with reference to the requirements of the software safety requirements specification		N/A
	Compliance is checked by simulation of:		—
	- input signals present during normal operation		N/A
	- anticipated occurrences		N/A
	- undesired conditions requiring system action		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TABLE R.1 [e] – GENERAL FAULT/ERROR CONDITIONS					N/A
Component [a]	**Fault/error**	**Acceptable measures [b, c]**	**Definitions**	**Document reference for applied measure**	**Document reference for applied test**	**Verdict**
1 Central processing unit (CPU)						N/A
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			N/A
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			N/A
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			N/A
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			N/A
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			N/A

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Clause	Requirement + Test	Result - Remark	Verdict

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			N/A
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			N/A
5 Internal data path	Stuck at	Word protection with single bit redundancy	H.2.19.8.2			N/A
5.1 VOID						—
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
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			N/A
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			N/A
	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			N/A
7.1 VOID						—
7.2 Analogy I/O						—

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Clause	Requirement + Test	Result - Remark	Verdict

7.2.1 A/D- and D/A- convertor	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13			N/A
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			N/A
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.						

S	**ANNEX S (NORMATIVE) BATTERY OPERATED APPLIANCES POWERED BY BATTERIES THAT ARE NON-RECHARGEABLE OR NOT RECHARGED IN THE APPLIANCE (IEC 60335-1/A1)**		—
	The following modifications to this standard are applicable for battery-operated appliances where the batteries are either non-rechargeable (primary batteries), or		N/A
	rechargeable batteries (secondary batteries) that are not recharged in the appliance		N/A
5.8.1	If the supply terminals for the connection of the battery have no indication of polarity, the more unfavourable polarity is applied		N/A
5.S.101	Appliances intended for use with a battery box are tested with the battery box supplied with the appliance or with the battery box recommended in the instructions		N/A
5.S.102	Appliances are tested as motor-operated appliances.		N/A
7.1	Appliances marked with the battery voltage (V) and the polarity of the terminals, unless .....…….:		N/A
	the polarity is irrelevant		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Appliances also marked with:		—
	– name, trade mark or identification mark of the manufacturer or responsible vendor .....::		N/A
	– model or type reference .....::		N/A
	– IP number according to degree of protection against ingress of water, other than IPX0 ..::		N/A
	– type reference of battery or batteries .....::		N/A
	If relevant, the positive terminal is indicated by the symbol IEC 60417-5005 and the negative terminal by the symbol IEC 60417-5006		N/A
	If appliances use more than one battery, they are marked to indicate correct polarity connection of the batteries		N/A
7.6	Additional symbols		N/A
7.12	The instructions contain the following, as applicable:		—
	– the types of batteries that may be used .. ..:		N/A
	– how to remove and insert the batteries;		N/A
	– non-rechargeable batteries are not to be recharged;		N/A
	– rechargeable batteries are to be removed from the appliance before being charged;		N/A
	– different types of batteries or new and used batteries are not to be mixed;		N/A
	– batteries are to be inserted with the correct polarity;		N/A
	– exhausted batteries are to be removed from the appliance and safely disposed of;		N/A
	– if the appliance is to be stored unused for a long period, the batteries are removed;		N/A
	– the supply terminals are not to be short-circuited		N/A
11.5	Appliances are supplied with the most unfavourable supply voltage between		—
	– 0,55 and 1,0 times the battery voltage, if the appliance can be used with non-rechargeable batteries		N/A
	– 0,75 and 1,0 times battery voltage, if the appliance is designed for use with rechargeable batteries only		N/A
	The values specified in Table S.101 for the internal resistance per cell of the battery is taken into account		N/A
19.1	The tests are carried out with the battery fully charged unless otherwise specified		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.13	The battery does not rupture or ignite		N/A
19.S.101	Appliances are supplied with the voltage specified in 11.5. The supply terminals having an indication of polarity are connected to the opposite polarity, unless		N/A
	such a connection is unlikely to occur due to the construction of the appliance		N/A
19.S.102	For appliances with provision for multiple batteries, one or more of the batteries are reversed and the appliance is operated, if reversal of batteries is allowed by the construction		N/A
25.5	The flexible leads or flexible cord used to connect an external battery or battery box in is connected to the appliance by a type X attachment		N/A
25.13	This requirement is not applicable to the flexible leads or flexible cord connecting external batteries or a battery box with an appliance		N/A
25.S.101	Appliances have suitable means for connection of the battery. If the type of battery is marked on the appliance, the means of connection is suitable for this type of battery		N/A
26.5	Terminal devices in an appliance for the connection of the flexible leads or flexible cord connecting an external battery or battery box are so located or shielded that there is no risk of accidental connection between supply terminals		N/A
30.2.3.2	There is no battery in the area of the vertical cylinder used for the consequential needle flame test, unless		N/A
	the battery is shielded by a barrier that meets the needle flame test of Annex E, or		N/A
	that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
T	**ANNEX T (NORMATIVE)** **UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS**		—
	Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the		N/A
	Does not apply to glass, ceramic and similar materials		N/A
	Tested as specified in ISO 4892-1 and ISO 4892-2, with the following modifications:		—
	Modifications to ISO 4892-1:		—
5.1	**Light source**		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.6	The UV-C emitter is a low pressure mercury lamp with a quartz envelope having a continuous spectral irradiance of 10 W/m^2 at 254 nm		N/A
	Subclause 5.1.6.1 and Table 1 are not applicable		N/A
5.2	**Temperature**		—
5.2.4	The black-panel temperature shall be 63 °C ± 3 °C		N/A
5.3	**Humidity and wetting**		—
5.3.1	Humidification of the chamber air is specified in part 2 when necessary		N/A
9	**Test report**		—
	This clause is not applicable		N/A
	Modifications to ISO 4892-2:		—
7	**Procedure**		—
7.1	**General**		—
	At least three test specimens are tested		N/A
	Ten samples of internal wiring is tested		N/A
7.2	**Mounting the test specimens**		—
	The specimens are attached to the specimen holders such that they are not subject to any stress		N/A
7.3	**Exposure**		—
	Apparatus prepared as specified		N/A
	The test specimens and, if used, the irradiance-measuring instrument are exposed for 1 000 h		N/A
7.4	**Measurement of radiant exposure**		—
	If used, a radiometer is mounted and calibrated such that it measures the irradiance at the exposed surface of the test specimen		N/A
7.5	**Determination of changes in properties after exposure**		—
	Material properties and test methods for parts providing mechanical support or impact resistance as specified in Table T.1		N/A
	Material properties and test method for electrical insulation of internal wiring as specified in Table T.2		N/A
8	**Exposure report**		—
	This clause is not applicable		N/A
AA	**ANNEX AA, (NORMATIVE) LOCKED-ROTOR TEST OF FAN MOTORS (IEC 60335-2-89)**		—

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Clause	Requirement + Test	Result - Remark	Verdict
	The winding of a fan motor does not reach excessive temperatures if the motor locks or fails to start		P
	The motor is supplied at rated voltage according to supply circuit Figure AA.1.		P
BB	**ANNEX BB (NORMATIVE) NON-SPARKING "N" ELECTRICAL APPARATUS (IEC 60335-2-89)**		—
	Where reference is made to IEC 60079-15, the following clauses are applicable as modified below		P
7	**Requirements for non-incendive components**		---
	Clause 7 is applicable		N/A
8	**Requirements for hermetically sealed devices**		---
	Clause 8 is applicable		N/A
9	**Requirements for sealed devices**		---
	All of the subclauses of Clause 9 are applicable, except 9.1 and 9.6, which are replaced by the following	For Relay	P
	Seals are tested using 11.2. However, if the device is tested in the appliance, then 11.2.1 and 11.2.2 are not applicable. After the tests of Clause 19 in IEC 60335-2-89, by inspection, no damage that could impair the type of protection shall be evident		P
9.6	**Requirements for sealed devices**		---
	The type tests described in 11.2 shall be performed where relevant		P
10	**Requirements for restricted-breathing enclosures**		N/A
	Clause 10 is applicable		N/A
CC	**ANNEX CC (NORMATIVE) TEST METHOD FOR DETERMINING GAS CONCENTRATION BEYOND THE BOUNDARY OF THE APPLIANCE (IEC 60335-2-89)**		—
CC. 1	**Arrangement**		—
	Test as described		N/A
CC. 2	**Release conditions**		—
	Test as described		N/A
CC. 3	**Measurement**		—
	Test as described		N/A
CC. 4	**Compliance**		—
	Test as described		N/A

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10.1	TABLE: Power input deviation				P
Input deviation of/at:	**P rated (W)**	**P measured (W)**	**Δ P**	**Required Δ P**	**Remark**
230 V / 50 Hz	120	119,7	-0,3 %	+20 %	LG-168HE with compressor: PZ80H1Y; Evaporator and Condenser fan motor: SAD12038B12L
230 V / 50 Hz	120	120,2	+0,2 %	+20 %	LG-168HE with compressor: EKZ80L; Evaporator and Condenser fan motor: BL12038-0D012
230 V / 50 Hz	160	158,8	-0,1 %	+20 %	LG-388HE with compressor: PZ99H1X; Evaporator fan motor: SAD12038B12 and Condenser fan motor: ECM7112AAA
230 V / 50 Hz	160	157,0	-1,9 %	+20 %	LG-388HE with compressor: PZ99H1X; Evaporator fan motor: BL12038-0D012 and Condenser fan motor: YZF5-13
230 V / 50 Hz	160	159,1	-0,6 %	+20 %	LG-388HE assembly with Electronic thermostat ECS-16
230 V / 50 Hz	160	161,8	+1,1 %	+20 %	LG-168HE with compressor SZ80E1J and electronic thermostat XR02CX
230 V / 50 Hz	160	185,9	+16,2 %	+20 %	LG-388HE with condenser fan motor YZ5-13 and electronic thermostat XR02CX.
Supplementary information:					

10.2	TABLE: Current deviation				P
Current deviation of/at:	**I rated (A)**	**I measured (A)**	**Δ I**	**Required Δ I**	**Remark**
230 V / 50 Hz	0,58	0,57	-1,7 %	+20 %	LG-168HE with compressor: PZ80H1Y; Evaporator and Condenser fan motor: SAD12038B12L
230 V / 50 Hz	0,58	0,58	0 %	+20 %	LG-168HE with compressor: EKZ80L; Evaporator and Condenser fan motor: BL12038-0D012
230 V / 50 Hz	0,78	0,78	0 %	+20 %	LG-388HE with compressor: PZ99H1X; Evaporator fan motor: SAD12038B12 and Condenser fan motor: ECM7112AAA
230 V / 50 Hz	0,78	0,77	-1,3 %	+20 %	LG-388HE with compressor: PZ99H1X; Evaporator fan motor: BL12038-0D012 and Condenser fan motor: YZF5-13

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230 V / 50 Hz	0,78	0,77	-1,3 %	+20 %	LG-388HE assembly with Electronic thermostat ECS-16
230 V / 50 Hz	0,95	0,94	-1,1 %	+20 %	LG-168HE with alternative compressor SZ80E1J and electronic thermostat XR02CX
230 V / 50 Hz	0,78	0,85	+9,0 %	+20 %	LG-388HE with alternative condenser fan motor YZ5-13 and electronic thermostat XR02CX.
Supplementary information:					

11.8-1	**TABLE: Heating test** LG-168HE with compressor: PZ80H1Y; Evaporator and Condenser fan motor: SAD12038B12L		P
	Test voltage (V).....:	240 x 1,06=254,4 V	—
	Ambient (°C) .....:	31,9 / 32,1	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
Power cord	12,7	50
Power cord box	12,8	For clause 30.1
Connector	2,3	For clause 30.1
Internal wire to compressor	13,3	50
Compressor housing	21,8	150°C
Discharge pipe of compressor	34,5	150°C
Compressor running capacitor	2,1	T70-25=45
LED cover	1,6	For clause 30.1
LED PCB	1,2	120
Switch	4,6	T55-25=30
Button for control panel	2,4	60
Enclosure surface	4,6	For clause 30.1
Test floor	1,1	60
Condenser fan motor	14,5	85 (Class B)
Evaporator fan motor 1#	1,5	85 (Class B)
LED driver	14,2	For clause 30.1
--Transformer	19,9	65
--X2 capacitor	15,8	45
--PCB	3,0	120
--Optocoupler	11,7	T110-25=85
Control panel box	35,3	For clause 30.1

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--PCB	31,2	120
--Relay	28,8	45
-Transformer	37,6	65
Supplementary information:		

11.8-1	**TABLE: Heating test, resistance method**					N/A
	Test voltage (V) .....:					—
	Ambient, t_1 (°C).....:					—
	Ambient, t_2 (°C).....:					—
Temperature rise of winding:		**R_1 (Ω)**	**R_2 (Ω)**	**ΔT (K)**	**Max. ΔT (K)**	**Insulation class**
Supplementary information:						

11.8-2	**TABLE: Heating test** LG-168HE with compressor: EKZ80L; Evaporator and Condenser fan motor: BL12038-0D012		P
	Test voltage (V)..... :	254,4 V	—
	Ambient (°C) ..... :	31,6 / 32,2	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
Power cord	11,8	50
Power cord box	11,9	For clause 30.1
Connector	2,3	For clause 30.1
Internal wire to compressor	12,3	50
Compressor housing	20,3	150°C
Discharge pipe of compressor	26,5	150°C
Compressor running capacitor	2,1	T70-25=45
LED cover	1,2 °C	For clause 30.1
LED PCB	3 °C	120
Switch	4,5	T55-25=30
Button for control panel	2,3	60
Enclosure surface	4,5	For clause 30.1
Test floor	1,1	60
Condenser fan motor	13,5	85 (Class B)
Evaporator fan motor 1#	0,3	85 (Class B)
LED driver	13,8	For clause 30.1
--Transformer	19,7	65

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--X2 capacitor	15,6	45
--PCB	4,8	120
--Optocoupler	23,4	T110-25=85
Control panel box	37,5	For clause 30.1
--PCB	32,4	120
--Relay	28,7	45
--Transformer	40,3	65
Supplementary information:		

11.8-2	**TABLE: Heating test, resistance method**					N/A
	Test voltage (V) .....:					—
	Ambient, t_1 (°C).....:					—
	Ambient, t_2 (°C).....:					—
Temperature rise of winding:	**R_1 (Ω)**	**R_2 (Ω)**	**ΔT (K)**	**Max. ΔT (K)**	**Insulation class**	
Supplementary information:						

11.8-3	**TABLE: Heating test** LG-388HE with compressor: PZ99H1X; Evaporator fan motor: SAD12038B12 and Condenser fan motor: ECM7112AAA		P
	Test voltage (V)..... :	254,4 V	—
	Ambient (°C) ..... :	32,9 / 32,4	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
Power cord	1,9	50
Power cord box	1,9	For clause 30.1
Connector	2,3	For clause 30.1
Internal wire to compressor	2,7	50
Compressor housing	8,5	150°C
Discharge pipe of compressor	18,8	150°C
Compressor running capacitor	2,3	T70-25=45
LED cover	-0,5 °C	For clause 30.1
LED PCB	3,4 °C	120
Switch	2,5	T55-25=30
Button for control panel	2,1	60
Enclosure surface	1,7	For clause 30.1
Test floor	0,4	60

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Condenser fan motor	2,2	85 (Class B)
Evaporator fan motor 1#	-2,8 °C	85 (Class B)
Evaporator fan motor 2#	-3,4 °C	For clause 30.1
LED driver	6,7	65
--Transformer	10,8	45
--X2 capacitor	8,3	120
--PCB	11,1	T110-25=85
--Optocoupler	12,2	For clause 30.1
Control panel box	16,0	120
--PCB	18,2	45
--Relay	22,9	65
-Transformer	28,9	50
Supplementary information:		

11.8-3	**TABLE: Heating test, resistance method**					P
	Test voltage (V) .....:			254,4		—
	Ambient, t_1 (°C).....:			32,9		—
	Ambient, t_2 (°C).....:			32,4		—
Temperature rise of winding:		**R_1 (Ω)**	**R_2 (Ω)**	**ΔT (K)**	**Max. ΔT (K)**	**Insulation class**
Condenser fan motor winding		377,1	426,14	26,3	95	B
Supplementary information:						

11.8-4	**TABLE: Heating test** LG-388HE with compressor: PZ99H1X; Evaporator fan motor: BL12038-0D012 and Condenser fan motor: YZF5-13		P
	Test voltage (V)..... :	254,4 V	—
	Ambient (°C) ..... :	32,1 / 31,4	—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
Power cord	3,2		50
Power cord box	3,2		For clause 30.1
Connector	2,8		For clause 30.1
Internal wire to compressor	4,0		50
Compressor housing	9,2		150°C
Discharge pipe of compressor	19,5		150°C
Compressor running capacitor	3,2		T70-25=45

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LED cover	-4,6 °C	For clause 30.1
LED PCB	-2,5 °C	120
Switch	2,8	T55-25=30
Button for control panel	4,0	60
Enclosure surface	1,3	For clause 30.1
Test floor	0,5	60
Condenser fan motor	8,4	85 (Class B)
Evaporator fan motor 1#	-4 °C	85 (Class B)
Evaporator fan motor 2#	4,4	For clause 30.1
LED driver	3,5	65
--Transformer	4,4	45
--X2 capacitor	5,1	120
--PCB	4,9	T110-25=85
--Optocoupler	6,7	For clause 30.1
Control panel box	34,8	120
--PCB	18,5	45
--Relay	21,0	65
--Transformer	34,6	50
Supplementary information:		

11.8-4	**TABLE: Heating test, resistance method**					P
	Test voltage (V) .....:			254,4 V		—
	Ambient, t_1 (°C) .....:			32,1		—
	Ambient, t_2 (°C) .....:			31,4		—
Temperature rise of winding:		**R_1 (Ω)**	**R_2 (Ω)**	**ΔT (K)**	**Max. ΔT (K)**	**Insulation class**
Condenser fan motor winding		331,15	405,89	51,57	95	B
Supplementary information:						

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11.8-5	**TABLE: Heating test**		P
	Test voltage (V)..... :	254,4 V	—
	Ambient (°C) ..... :	31,1 / 31,6	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
Power cord	5,4	50
Power cord box	6,0	For clause 30.1
Connector	5,0	For clause 30.1
Internal wire to compressor	7,4	50
Compressor housing	14,1	150°C
Discharge pipe of compressor	17,3	150°C
Compressor running capacitor	5,5	T70-25=45
LED cover	11,7 °C	For clause 30.1
LED PCB	4,9	120
Switch	3,5	T55-25=30
Button for control panel	1,9	60
Enclosure surface	2,2	50/ For clause 30.1
Test floor	1,7	60
Condenser fan motor	9,6	85 (Class B)
Evaporator fan motor 1#	5,1 °C	85 (Class B)
Evaporator fan motor 2#	3 °C	85 (Class B)
LED driver	19,4	clause 30.1
--Transformer	29,8	65
--X2 capacitor	17,8	45
--PCB	20,5	120
--Optocoupler	37,5	110
Enclosure for electronic temperature controller	1,7	For clause 30.1
Transformer on electronic temperature controller	14,1	65
Relay on electronic temperature controller	15,0	T85-25=60
PCB on electronic temperature controller	8,5	120

Supplementary information: LG-388HE assembly with Electronic thermostat ECS-16

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11.8-5	**TABLE: Heating test, resistance method**					N/A
	Test voltage (V) .....:					—
	Ambient, t_1 (°C).....:					—
	Ambient, t_2 (°C).....:					—
Temperature rise of winding:		**R_1 (Ω)**	**R_2 (Ω)**	**ΔT (K)**	**Max. ΔT (K)**	**Insulation class**
Supplementary information:						

11.8-6	**TABLE: Heating test**		P
	Test voltage (V).....:	254,4 V	—
	Ambient (°C).....:	31,1 / 33,6	—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
Power cord	6,0		50
Power cord box	6,3		For clause 30.1
Connector	5,4		For clause 30.1
Internal wire to compressor	6,3		50
Compressor housing	15,0		150°C
Discharge pipe of compressor	16,0		150°C
LED cover	0,6		For clause 30.1
LED PCB	7,4		120
Switch	2,1		T55-25=30
Button for control panel	5,1		60
Enclosure surface	0,5		48
Test floor	1,0		60
Condenser fan motor	9,4		85 (Class B)
Evaporator fan motor 1#	0,5		85 (Class B)
Adapter box	20,6		For clause 30.1
--Transformer	14,7		85
--X2 capacitor	10,9		T110-25=85
--PCB	20,6		120
Enclosure for electronic temperature controller	7,1		For clause 30.1
Transformer on electronic temperature controller	6,9		65
Relay on electronic temperature	11,8		T85-25=67

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controller		
PCB on electronic temperature controller	8,7	120
Supplementary information: LG-168H with alternative compressor SZ80E1J and electronic thermostat XR02CX.		

11.8-6	**TABLE: Heating test, resistance method**					P
	Test voltage (V) .....:		240 x 1,06=254,4 V			—
	Ambient, t_1 (°C) .....:		31,1			—
	Ambient, t_2 (°C) .....:		33,6			—
Temperature rise of winding:		**R_1 (Ω)**	**R_2 (Ω)**	**ΔT (K)**	**Max. ΔT (K)**	**Insulation class**
Condenser fan motor winding		417,8	543,74	80,63	95	B
Supplementary information:						

11.8-7	**TABLE: Heating test**		P
	Test voltage (V)..... :	254,4 V	—
	Ambient (°C) ..... :	33,0 / 33,0	—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
Power cord	4,6		50
Power cord box	4,9		For clause 30.1
Connector	4,7		For clause 30.1
Internal wire to compressor	4,9		50
Compressor housing	14,5		150°C
Discharge pipe of compressor	25,6		150°C
Compressor running capacitor	4,5		T70-25=45
LED cover	0,6 °C		For clause 30.1
LED PCB	10,8		120
Switch	1,8		T55-25=30
Button for control panel	0,7		60
Enclosure surface	0,2		For clause 30.1
Test floor	4,2		60
Condenser fan motor	18,8		85 (Class B)
Evaporator fan motor 1#	-5,1 °C		85 (Class B)
Evaporator fan motor 2#	-5,9 °C		85 (Class B)
Adapter cover	34,3		120
--Transformer	30,3		85

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--X2 capacitor	23,5	T110-25=85
--PCB	35,3	120
Enclosure for Electronic Temperature controller	0,6	For clause 30.1
Transformer on electronic temperature controller	20,4	65
Relay on electronic temperature controller	25,7	T85-25=60
PCB on electronic temperature controller	16,7	120

Supplementary information:
LG-388HE assembly with alternative condenser fan motor YZ5-13 and electronic thermostat XR02CX

11.8-7	**TABLE: Heating test, resistance method**					P
	Test voltage (V) .....:			240 x 1,06=254,4 V		—
	Ambient, t_1 (°C).....:			33,0		—
	Ambient, t_2 (°C).....:			33,0		—
Temperature rise of winding:	**R_1 (Ω)**	**R_2 (Ω)**	**ΔT (K)**	**Max. ΔT (K)**	**Insulation class**	
Condenser fan motor winding	338,09	443,79	83,59	95	B	
Supplementary information:						

13.2	**TABLE: Leakage current**		P
	Heating appliances: 1,15 x rated input (W)..... :	—	—
	Motor-operated and combined appliances: 1,06 x rated voltage (V).....:	240 x 1,06=254,4 V	—
Leakage current between:	**I (mA)**	**Max. allowed I (mA)**	
Live parts and accessible parts	Max. 0,02 peak	0,35 peak	
Live parts and earthed metal	Max. 0,32	3,5	
Supplementary information:			

13.3	**TABLE: Dielectric strength**		P
Test voltage applied between:	**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**	
Live parts and earthed metal	1000	No	
Internal wire and accessible surface	1750	No	
Live parts and accessible parts	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) .....:	240 x 1,06=254,4 V	—
	Three phase appliances 1,06 x rated voltage divided by √3 (V) .....:	—	—
Leakage current between:	**I (mA)**	**Max. allowed I (mA)**	
Live parts and accessible parts	Max. 0,021	0,25	
Live parts and earthed metal	Max. 0,344	3,5	
Supplementary information:			

16.3	TABLE: Dielectric strength		P
Test voltage applied between:	**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**	
Live parts and earthed metal	1250	No	
Internal wire and accessible surface	1750	No	
Live parts and accessible parts	3000	No	
Supplementary information:			

17	TABLE: Overload protection		N/A
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**	
Supplementary information:			

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17	**TABLE: Overload protection, resistance method**				N/A
	Test voltage (V).....:				—
	Ambient, t_1 (°C) .....:				—
	Ambient, t_2 (°C) .....:				—
Temperature of winding:	**R_1 (Ω)**	**R_2 (Ω)**	**Δ T (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	Supplied at rated voltage 240 V; Built up according to manual; Automatically controlled			
Are there “OFF” or “stand-by” position?			No	N/A			
The unintended operation of the appliance results in dangerous malfunction?			No	N/A			
Sub-clause	**Operating conditions description**	**Test results description**	**PEC description**	**EMP 19.11.4**	**Software type required**	**19.11.3 PEC**	**Final result**
19.2	-	-	-	-	-	-	-
19.3	-	-	-	-	-	-	-
19.4	-	-	-	-	-	-	-
19.5	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-
19.7	Supplied at rated voltage with motor locked	Until steady	-	-	-	-	P
19.8	-	-	-	-	-	-	-
19.9	-	-	-	-	-	-	-
19.10	-	-	-	-	-	-	-
19.11.2	-	-	--	--	--	--	-
19.11.4.8	-	-	-	-	-	-	P
19.103	Only LED operating	Until steady	-	-	-	-	P
Supplementary information:							

19.7	**TABLE: Abnormal operation, locked rotor/moving parts**					P
	Test voltage (V).....:		240 V			—
	Ambient, t_1 (°C) .....:		23,8/22,1/23,7/21,8/22,4/24,2/21,4/21,4/25,0			—
	Ambient, t_2 (°C) .....:		23,7/21,5/23,9/21,9/22,7/24,4/20,9/21,8/25,2			—
Temperature of winding:	**R_1 (Ω)**	**R_2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**	
Supplementary information: See table 19.13/19.7						

19.13/19.7	**TABLE: Abnormal operation, temperature rises** LG-168HE with compressor: PZ80H1Y; Evaporator and Condenser fan motor: SAD12038B12L			P
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	19.7 Lock Evaporator fan motor	19.7 Lock Condenser fan motor	19.103	
Power cord	5,7	2,8	0,7	150
LED cover	0,9	12,4 °C	1,7	For clause 30.1
Adapter cover	6,1	9,8	9,5	For clause 30.1
Control panel cover	30,4	34,3	5,3	For clause 30.1
Enclosure surface	5,7	14,1	1,0	For clause 30.1
Condenser fan motor	12,4	39,2	—	175-25=150
Evaporator fan motor	3,7	12,1 °C	—	175-25=150
Test floor	3,2	12,1	0,6	150
Supplementary information:				

19.13/19.7	**TABLE: Abnormal operation, temperature rises** LG-168HE with compressor: EKZ80L; Evaporator and Condenser fan motor: BL12038-0D012		P
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
	19.7 Lock Evaporator fan motor	19.7 Lock Condenser fan motor	
Power cord	5,0	7,0	150
LED cover	2,4	0,8	For clause 30.1
Adapter cover	5,9	24,2	For clause 30.1
Control panel cover	33,8	41,4	For clause 30.1
Enclosure surface	2,4	20,2	For clause 30.1

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Condenser fan motor	7,0	34,8	175-25=150
Evaporator fan motor	3,2	0,8	175-25=150
Test floor	5,4	6,5	150
Supplementary information:			

19.13	**TABLE: Abnormal operation, temperature rises** LG-388HE with compressor: PZ99H1X; Evaporator fan motor: SAD12038B12 and Condenser fan motor: ECM7112AAA	P

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	19.7 Lock Evaporator fan motor	19.7 Lock Condenser fan motor	19.103	
Power cord	2,2	7,7	2,1	150
LED cover	7,7 °C	4,8 °C	2,1	For clause 30.1
Adapter cover	6,9	20,3	1,5	For clause 30.1
Control panel cover	15,1	27,6	0,7	For clause 30.1
Enclosure surface	2,1	14,0	1,0	For clause 30.1
Condenser fan motor	1,7	21,2	—	175-25=150
Evaporator fan motor 1#	0,9	1,9	—	175-25=150
Evaporator fan motor 2#	1,2	3,8 °C	—	175-25=150
Test floor	0,7	7,0	0,7	150
Supplementary information:				

19.13	**TABLE: Abnormal operation, temperature rises** LG-388HE with compressor: PZ99H1X; Evaporator fan motor: BL12038-0D012 and Condenser fan motor: YZF5-13	P

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
	19.7 Lock Evaporator fan motor	19.7 Lock Condenser fan motor	
Power cord	3,4	2,5	150
LED cover	4,0	0,3	For clause 30.1
Adapter cover	4,5	11,5	For clause 30.1
Control panel cover	31,6	33,0	For clause 30.1
Enclosure surface	0,5	0,7	For clause 30.1
Condenser fan motor	18,4	66,4	175-25=150
Evaporator fan motor 1#	6,7	0,8	175-25=150
Evaporator fan motor 2#	11,1	5,9	175-25=150
Test floor	3,9	7,6	150

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Supplementary information:

19.13	TABLE: Abnormal operation, temperature rises LG-388HE with alternative condenser fan motor YZ5-13 and electronic thermostat XR02CX	P

Thermocouple locations:	Max. temperature rise measured, Δ T (K)	Max. temperature rise limit, Δ T (K)
Power cord	2,6	150
LED cover	3,3	For clause 30.1
Adapter cover	0,5	For clause 30.1
Control panel cover	0,4	For clause 30.1
Enclosure surface	0,3	For clause 30.1
Condenser fan motor	13,8	175-25=150
Evaporator fan motor 1#	1,5	175-25=150
Evaporator fan motor 2#	1,2	175-25=150
Test floor	0,7	150
Supplementary information: 19.7 Lock Condenser fan motor		

21.1	TABLE: Impact resistance			P
Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**	
3	Enclosure	0,5	No damage	
3	Fan guarding cover	0,5	No damage	
3	Accessible glass	1,0	No damage	
Supplementary information:				

24.1	TABLE: Critical components information				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity1)**
Compressor for A	Anhui Meizhi Compressor Co., Ltd.	PZ80H1Y	220-240V~; 50Hz; R600a	IEC 60335-1: 2010 + A1 IEC 60335-2-34: 2012 EN 60335-1 EN 60335-2-34	VDE 40033558
Compressor for A (Alternative)	Wanbao Group Compressor Co., Ltd.	EKZ80L	220-240V~; 50Hz; R600a	IEC 60335-1: 2010 + A1 IEC 60335-2-34: 2012 EN 60335-1 EN 60335-2-34	VDE 40046648

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Compressor for A (Alternative)	Anhui Meizhi Compressor Co., Ltd.	SZ80E1J	220-240V~; 50H; R600a	IEC 60335-1: 2010 + A1 IEC 60335-2-34: 2012 EN 60335-1 EN 60335-2-34	TUV NO B 076837 0053 Rev .00
Running capacitor for A	Anhui Feida Industry Stock Co., Ltd.	CBB65A-2	AC 450 V; 3μF; S3; 40/85/21	IEC 60252-1: 2010 + A1 EN 60252-1	VDE 40015353
Running capacitor for A (Alternative)	Shanghai Haoye Electric Co., Ltd.	CBB65D	AC 450 V; 3μF; S3; 25/070/21	IEC 60252-1: 2010 + A1 EN 60252-1	VDE 40023685
Running capacitor for A (Alternative)	Ning GuoYuhua Electrical Co., Ltd.	CBB65	AC 450 V; 3μF; S3; 25/070/21	IEC 60252-1: 2010 + A1 EN 60252-1	VDE 40024267
Compressor for B	Anhui Meizhi Compressor Co., Ltd.	PZ99H1X	220-240V~ 50Hz; R600a	IEC 60335-1: 2010 + A1 IEC 60335-2-34: 2012 EN 60335-1 EN 60335-2-34	VDE 40034245
Running capacitor for model B	Shanghai Haoye Electric Co., Ltd.	CBB65	AC 450 V; 4μF; S3; 40/85/21	IEC 60252-1: 2010 + A1 EN 60252-1	VDE 40018780
Evaporator fan motor for B Evaporator and Condenser fan motor for A	SHENZHEN SHIDAQIAN TECHNOLOGY CO., LTD	SAD12038B12L	DC 12V; 0,27 A; Class B	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance
Evaporator fan motor for B Evaporator and Condenser fan motor for A (Alternative)	SHENZHEN KELI MOTOR CO., LTD	BL12038-0D012	DC 12V; 0,4A; Class B	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance
Condenser fan motor for B	Hangzhou Weiguang Electronic Co., Ltd.	ECM7112AAA	220-240V; 50/60Hz; 0,24 A; 14/24 W; Class B	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance VDE 40038958
Condenser fan motor for B (Alternative)	Hangzhou Weiguang Electronic Co., Ltd.	YZF5-13	220-240V; 50/60Hz; 5/33W; Class B	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance VDE 40006187
Condenser fan motor for B (Alternative)	Hangzhou Saiwei Motor Co., Ltd.	YZ5-13	220-240V; 50/60Hz; 5/33W; Class B	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance VDE 40034694
Electronic thermostat	CAREL Electronic (Suzhou) Co., Ltd	RCBHS1H0E1K	230V; 50/60 Hz; 1E5	IEC/EN 60335-2-89 IEC/EN 60335-1 IEC 60730-1 IEC 60730-2-9	Tested with appliance CQC 09002036160

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Electronic thermostat (Alternative)	Jiangsu Jingchuang Electronics Co., Ltd.	ECS-16	230 V; 50/60 Hz; 1E4	IEC/EN 60335-2-89 IEC/EN 60335-1 IEC 60730-2-9 IEC 60730-1 GB/T 14536.1 GB/T 14536.10	Tested with appliance CQC 12002067120
Electronic thermostat (Alternative)	Emerson Climate Technologies-Solutions (Suzhou) Co., Ltd.	XR02CX	230 V; 50/60 Hz; 3E4	IEC/EN 60335-2-89 IEC/EN 60335-1 IEC 60730-2-9 IEC 60730-1 GB/T 14536.1 GB/T 14536.10	Tested with Appliance CQC 15002128035
Adapter for LED 1#	Zhongshan City Hengsheng Lighting Technology Co., Ltd.	EVS-A120100N-A0B	Input:100-240VAC 50/60Hz Output: DC 12V 1000mA	IEC/EN 60335-2-89 IEC/EN 60335-1 IEC 61347-1: 2015 + A1 IEC 61347-2-13: 2014 + A1 EN 61347-2-13 EN 61347-1	Tested with Appliance TUV SG PSB-LE-02875
Adapter for LED 2#	Zhongshan City Hengsheng Lighting Technology Co., Ltd.	EVS-A120150N-AOC	Input:100-240VAC 50/60Hz Output: DC 12V 1500mA	IEC/EN 60335-2-89 IEC/EN 60335-1 IEC 61347-1: 2015 + A1 IEC 61347-2-13: 2014 + A1 EN 61347-2-13 EN 61347-1	Tested with Appliance TUV SG PSB-LE-02875
Switch	Ningbo Yinxian Lihe Electronic Co Ltd	RL1	250V~ ;16(4)A; 1E4; **T125/55**	IEC 61058-1: 2016 EN 61058-1	Intertek SE/09127-05
Switch (Alternative)	Ningbo Yinzhou lihe Electronic Co Ltd	**RL3**	**250V~;6(2)A; 1E4; T125/55 or 250V~;10(4)A; 1E4; T125/55**	IEC 61058-1: 2016 EN 61058-1	Intertek SE/09127-14
Switch (Alternative)	**Ningbo Haishu Lihe Electronic Co Ltd**	**RL3**	**250V~ ;6(2)A; 1E4; T125/55 or 250V~; 10(4)A; 1E4; T125/55**	**IEC 61058-1: 2016 EN 61058-1**	**Intertek SE/18031-04**
Switch (Alternative)	**Ningbo Haishu Lihe Electronic Co Ltd**	**RL1**	**250V~ ;16(4)A; 1E4; T125/55**	**IEC 61058-1: 2016 EN 61058-1**	**Intertek SE/18031-02**

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Closed-end connector	Heavy Power Co Ltd	CE1, CE1X, CF2, CE2, CE2X, CE2R, CE5, CE5X, CE5V, CE8	T150 (2×AWG20+2×AWG18+ AWG12)	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance CQC03003007789
Closed-end connector (Alternative)	Yueqing Feide Electrical Co., Ltd	PCT-212, PCT-213, PCT-215	250V; 0,75-2,5mm²	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance
Plug for South Africa	Guangdong kaihua Electrical Appliance company Ltd.	KH-9907	250 V; 16 A	SANS 60799:2007 IEC 60884-1: 2002 + A1 + A2	SABS 8688/13707
Plug for IT	Guangdong kaihua Electrical Appliance company Ltd.	KH-9911	250 V; 10 A	CEI 23-50-2 Ed IEC 60884-1: 2002 + A1 + A2	IMQ CA02.01654
Plug for IL	Guangdong kaihua Electrical Appliance company Ltd.	KH-9905	250 V; 10 A	IEC 60884-1: 2002 + A1 + A2	39671
Plug for CH	Guangdong kaihua Electrical Appliance company Ltd.	KH-9953	250 V; 10 A	SN 441011-1 SN 441011-2-1 IEC 60884-1: 2002 + A1 + A2	111007
Plug for DK	Lian Dung Electric Wire Material Co., Ltd.	LT-609	250 V; 16 A	DS 60884-2-D1:2017 IEC 60884-1: 2002 + A1 + A2	D-064714788249104
Plug for EU	Guangdong Xiongrun Electrical Co., Ltd.	XR-322	250 V; 16 A	VDE 0620-2-1 IEC 60884-1: 2002 + A1 + A2	VDE 40006857
Plug for AU	Guangdong Xiongrun Electrical Co Ltd	XR-351A	250 V; 13 A	AS/NZS 3112 IEC 60884-1: 2002 + A1 + A2	SAA-193180-EA
Plug for BS	Guangdong Xiongrun Electrical Co Ltd	XR-318, XR-318A	250 V; 13 A	BS 1363-1 IEC 60884-1: 2002 + A1 + A2	ASTA 737
Plug for Italy	Guangdong Xiongrun Electrical. Co., Ltd.	XR-319	250 V; 16 A	CEI23-50 II IEC 60884-1: 2002 + A1 + A2	IMQ CA02.04185
Power cord	Zhongshan Guzhen Hongli Cable & Appliance Factory	H05VV-F 60227 IEC53	3G0,75 mm² or 1,0 mm²	IEC 60227-5: 2011 EN 50525-2-11	VDE 139259
Power cord (Alternative)	Guangdong KaiHua Electric Appliance Co., Ltd.	H05VV-F 60227 IEC53	3G0,75 mm² or 1,0 mm²	IEC 60227-5: 2011 EN 50525-2-11	VDE 40001903

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Power cord (Alternative)	Shun De Tian Ju Electrical Co., Ltd.	H05VV-F 60227 IEC 53	3G0,75 mm^2 or 1,0 mm^2	IEC 60227-5: 2011 EN 50525-2-11	VDE 40007540
Power cord (Alternative)	Guangdong Xiongrun Electrical Co., Ltd.	H05VV-F 60227 IEC 53	3G0,75 mm^2 or 1,0 mm^2	IEC 60227-5: 2011 EN 50525-2-11	VDE 40020627
Internal wire	Ningbo Qiaopu Electric Co., Ltd.	60227 08 (RV-90)	0,35-1,0 mm^2; 300V-500V	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance VDE 40035976
Internal wire (Alternative)	Guangdong KaiHua Electric Appliance Co., Ltd.	60227 08 (RV-90)	0,35-1,0 mm^2; 300V-500V	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance VDE 40001903
Internal wire (Alternative)	Guangdong Zhoushi Shenlong Wire Manufacture Co., Ltd.	60227 IEC 08 (RV-90)	0,35-1,0 mm^2; 300V-500V	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance CCC 20050101051 47089
Internal wire (Alternative)	Foshan City Shunde District Xinchengying Wire & Cable Co., Ltd.	60227 IEC 08 (RV-90)	0,35-1,0 mm^2; 300V-500V	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance CCC 20130101056 08343
Internal wire (Alternative)	Zhongshan Xinsheng Electric Co., Ltd.	60227 IEC 08 (RV-90)	0,35-1,0 mm^2; 300V-500V	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance CCC2010010 105421814
Internal wire (Alternative)	Zhongshan Heyi Electria Appliance Co., Ltd.	60227 IEC 08 (RV-90)	300/500 V; 0,35-1,0 mm^2	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance CCC2008010 105266434
Internal wire (Alternative)	Dong Guan Kelin Wire Co., Ltd.	KL-FEP 101	0,35-1,0 mm^2; 300V-500V	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance
Internal wire (Alternative)	Zhongshan Dongfeng Zhoushishenlong Electronic Wire Co., Ltd.	1015	16-22 AWG; 300 V	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance. UL E257280
Internal wire (Alternative)	Foshan City Shunde District Xinchengying Wire & Cable Co Ltd	1015	600 V; 16-22 AWG	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance UL E356964
Internal wire (Alternative)	Zhongshan Xinsheng Electric Co Ltd	1015	600 V; 16-22 AWG	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance UL E328303
Internal wire (Alternative)	Zhongshan He Yi Electrical Appliances Factory	1015	600 V; 16-22 AWG	IEC/EN 60335-2-89 IEC/EN 60335-1	Tested with appliance UL E313976

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Supplementary information:
1) Provided evidence ensures the agreed level of compliance. See OD-2039.

28.1	TABLE: Threaded part torque test			P
Threaded part identification:	**Diameter of thread (mm)**	**Column number (I, II, or III)**	**Applied torque (Nm)**	
Earthed screw	3,8	II	1,2	
Supplementary information:				

29	TABLE: Clearance and creepage distance measurements					P
Clearance cl and creepage distance dcr at/of:	**Up (V)**	**U r.m.s. (V)**	**Required cl (mm)**	**cl (mm)**	**Required dcr (mm)**	**dcr (mm)**
B/W fan motor coil and earthed enclosure	—	240 V	2,0	4,5	4,0	4,5
Internal wire to accessible surface	—	240 V	2,0	9,1	4,0	11,3
B/W live parts and accessible surface	—	240 V	3,5	10,5	8,0	14,5
B/W L and N	—	240 V	2,0	10,5	3,2	10,5
Between L and N on Electronic Temperature controller	—	240 V	2,0	2,3	2,0	2,3
Supplementary information:						

29.2	TABLE: Distance through insulation measurements				P
Distance through insulation di at/of:	**U r.m.s. (V)**	**Test voltage (V)**	**Required di (mm)**	**di (mm)**	
Adapter cover	240	1750	1,0	2,5	
LED cover	240	1750	1,0	2,3	
Electronic thermostat cover	240	1750	1,0	2,0	
Supplementary information:					

30.1	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm).....:		2		—
Object/part No./material	**Manufacturer/trademark**	**Test temperature (°C)**	**Impression diameter (mm)**	
LED cover	—	75	0,5	
Adapter cover	Zhongshan City Hengsheng Lighting Technology Co., Ltd.	75	0,9	
Electronic thermostat cover	CAREL Electronic (Suzhou) Co., Ltd	75	1,7	
Enclosure surface	—	75	1,1	
Fan motor bobbin *	Hangzhou Weiguang Electronic Co., Ltd.	125	1,03	
Transformer bobbin	CAREL Electronic (Suzhou) Co., Ltd	125	0,6	

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Switch cover	Ningbo Yinxian Lihe Electronic Co Ldt	75	0,8
Switch *	Ningbo Yinxian Lihe Electronic Co Ldt	125	1,45
Closed-end connector	Yueqing Feide Electrical Co., Ltd	125	1,2
Enclosure for Electronic Temperature controller*	Jiangsu Jingchuang Electronics Co., Ltd.	75	0,84
Transformer on Electronic Temperature controller*	Jiangsu Jingchuang Electronics Co., Ltd.	125	1,44
Button on Electronic Temperature controller	Jiangsu Jingchuang Electronics Co., Ltd.	75	0,98
Cover for Electronic Temperature controller (red) *	Jiangsu Jingchuang Electronics Co., Ltd.	75	0,80
Supplementary information: * Only the unfavourable result for this component was displayed.			

30.2	**TABLE: Resistance to heat and fire – Glow-wire tests**							P
Object/part No./material	**Manufacturer/trademark**	**Glow-wire test (GWT) (°C)**						**Verdict**
		550	**650**		**750**		**850**	
			te	**ti**	**te**	**ti**		
LED cover *	—	x						P
Adapter cover *	Zhongshan City Hengsheng Lighting Technology Co., Ltd.	x						P
Electronic thermostat cover*	CAREL Electronic (Suzhou) Co., Ltd	x						P
Enclosure surface *	—	x						P
Fan motor bobbin *	Hangzhou Weiguang Electronic Co., Ltd.				0 s	0 s	x	P
Transformer bobbin *	CAREL Electronic (Suzhou) Co., Ltd				0 s	0 s	x	P
Relay *	CAREL Electronic (Suzhou) Co., Ltd				0 s	0 s	x	P
Running capacitor *	Shanghai Haoye Electric Co., Ltd.				0 s	0 s	x	P
Closed-end connector *	Yueqing Feide Electrical Co., Ltd.				0 s	0 s	x	P
Switch cover *	Ningbo Yinxian Lihe Electronic Co., Ltd.	x						P
Switch body *	Ningbo Yinxian Lihe Electronic Co., Ltd.				0 s	0 s	x	P
Enclosure for Electronic Temperature controller	Jiangsu Jingchuang Electronics Co., Ltd.				0 s	0 s	x	P
Transformer on Electronic Temperature controller	Jiangsu Jingchuang Electronics Co., Ltd.				0 s	0 s	x	P

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Button on Electronic Temperature controller	Jiangsu Jingchuang Electronics Co., Ltd.	x						P
Cover for Electronic Temperature controller (red)	Jiangsu Jingchuang Electronics Co., Ltd.	x						P
Relay on Electronic Temperature controller	—				0 s	0 s	x	P
Object/part No./material	**Manufacturer/trademark**	**Glow-wire flammability index (GWFI) (°C)**				**GW ignition temp. (GWIT) (°C)**		**Verdict**
		550	**650**	**750**	**850**	**675**	**775**	
The test specimen passed the glow-wire test (GWT) with no ignition [(te – ti) ≤ 2 s] (Yes/No)…:								Yes
If no, then surrounding parts passed the needle-flame test of Annex E (Yes/No) ……:								N/A
The test specimen passed the test by virtue of most of the flaming material being withdrawn with the glow-wire (Yes/No)?.....:								N/A
Ignition of the specified layer placed underneath the test specimen (Yes/No)……:								No
Supplementary information: 550 °C GWT not relevant (or applicable) to parts of material classified at least HB40 or if relevant HBF. The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not relevant (or applicable) for attended appliances. * Only the unfavourable result for this component was displayed.								

30.2/30.2.4	**TABLE: Needle-flame test (NFT)**				P
Object/part No./ material	**Manufacturer/ trademark**	**Duration of application of test flame (ta); (s)**	**Ignition of specified layer Yes/No**	**Duration of burning (tb) (s)**	**Verdict**
PCB *	—	30	No	0,5	P
Supplementary information: NFT not relevant (or applicable) for parts of material classified as V-0 or V-1. NFT not relevant (or applicable) for base material of PCBs classified as V-0 or if relevant VTM-0. * Only the unfavourable result for this component was displayed.					

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AA	**TABLE: locked-rotor test of fan motors, windings temperature limit measurements**				P
	Ambient, t1 (°C):	240 V			—
	Ambient, t2 (°C):	25,0/21,2/22,1/23,2/21,3			—
	test voltage (V):	25,0/22,8/23,4/22,3/22,5			—
Temperature limit T of winding:	**R_1 (Ω)**	**R_2 (Ω)**	**ΔT (K)**	**T (°C)**	**Max. T (°C)**
Winding of fan motor (SAD12038B12L)	—	—	18,7	—	175 (Class B)
Winding of fan motor (BL12038-0D012)	—	—	18,4	—	175 (Class B)
Winding of fan motor (ECM7112AAA)	—	—	20,0	—	175 (Class B)
Winding of fan motor (YZF5-13)	—	—	19,7	—	175 (Class B)
Winding of fan motor (YZ5-13)	—	—	129	—	175 (Class B)
Supplementary information:					

	TABLE: Electric strength measurements		P
Test voltage applied between:		**Test voltage (V)**	**Breakdown Yes / No**
Windings and the body		1250	No
Supplementary information:			

	TABLE: Leakage current measurements		P
	A voltage equal to twice the rated voltage (V):	480	—
Leakage current I between:		**I (mA)**	**Required I (mA)**
Windings and the body		Max.0,054	2
Supplementary information:			

--- End of report ---

Type of equipment, model: **Refrigerator for commercial use**
Series A: LG-108HE, LG-138HE, LG-148HE, LG-158HE, LG-168HE, LG-108HEB, LG-138HEB, LG-148HEB, LG-108HEC, LG-138HEC, LG-148HEC;
Series B: LG-208HE, LG-208SE, LG-208HEB, LG-208SEB, LG-208HEC, LG-208SEC, LG-248HE, LG-248SE, LG-248HEB, LG-248SEB, LG-248HEC, LG-248SEC, LG-330HE, LG-330SE, LG-330HEB, LG-330SEB, LG-330HEC, LG-330SEC, LG-388HE, LG-388SE, LG-388HEB, LG-388SEB, LG-388HEC, LG-388SEC

Details of: Front view for LG-388HE

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Details of: Left view for LG-388HE

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Details of: Right view for LG-388HE

View:

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Details of: Back view for LG-388HE

View:

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Details of: Back view for LG-388HE

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Details of: Open door view for LG-388HE

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Details of: Fan motor view for LG-388HE

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Details of: Fan motor view for LG-388HE

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Details of: Fan motor view for LG-388HE

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Details of: Compressor view for LG-388HE

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Details of: Inner view for LG-388HE

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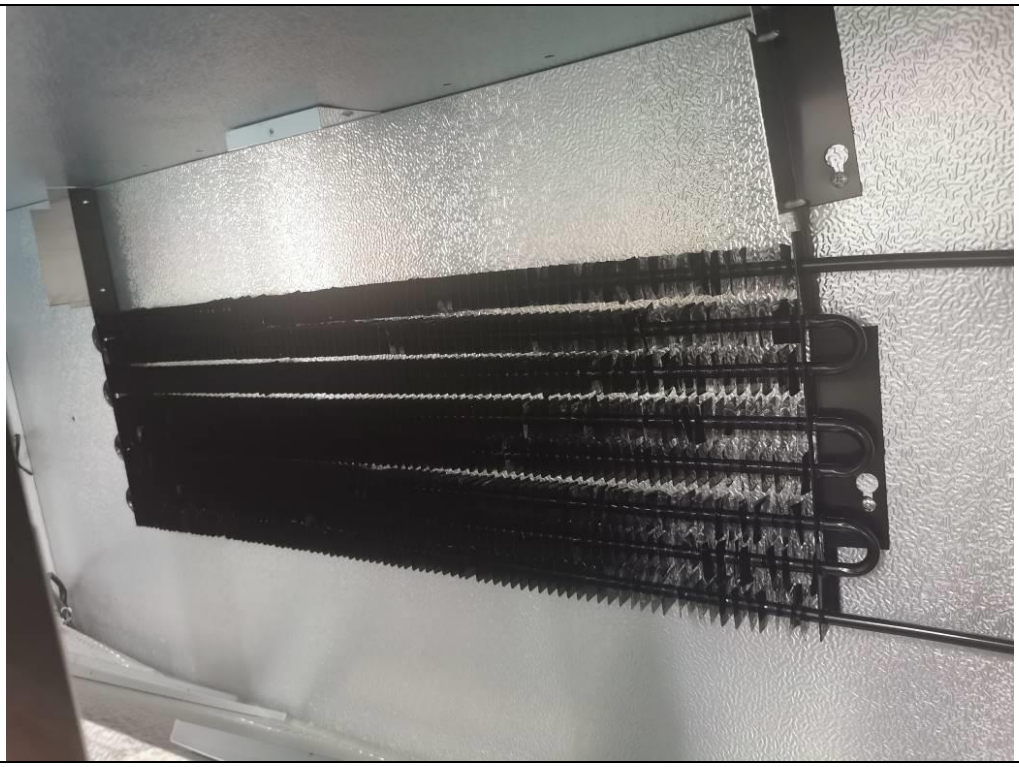

Details of: Earth view for LG-168HE

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Details of: Front view for LG-168HE

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Details of: Left view for LG-168HE

View:
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Details of: Right view for LG-168HE

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Details of: Back view for LG-168HE

View:

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Details of: Back view for LG-168HE

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Details of: Open door view for LG-168HE

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Details of: Fan motor view for LG-168HE

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Details of: Fan motor view for LG-168HE

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Details of: Compressor view for LG-168HE

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Details of: Compressor view for LG-168HE
Alternative

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Details of: Inner view for LG-168HE

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Details of: Earth view for LG-168HE

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Details of: Adapter view for all models

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Details of: Adapter view for all models

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Details of: Alternative electronic thermostat ECS-16 for all models

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Details of: Alternative electronic thermostat ECS-16 for all models

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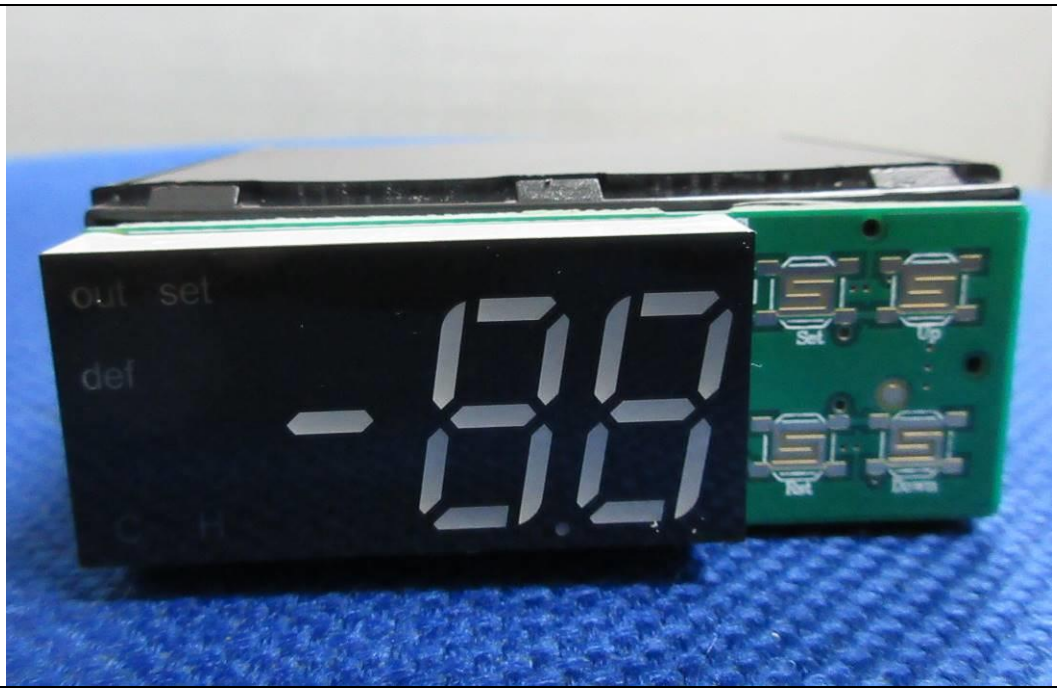

Details of: Alternative electronic thermostat ECS-16 for all models

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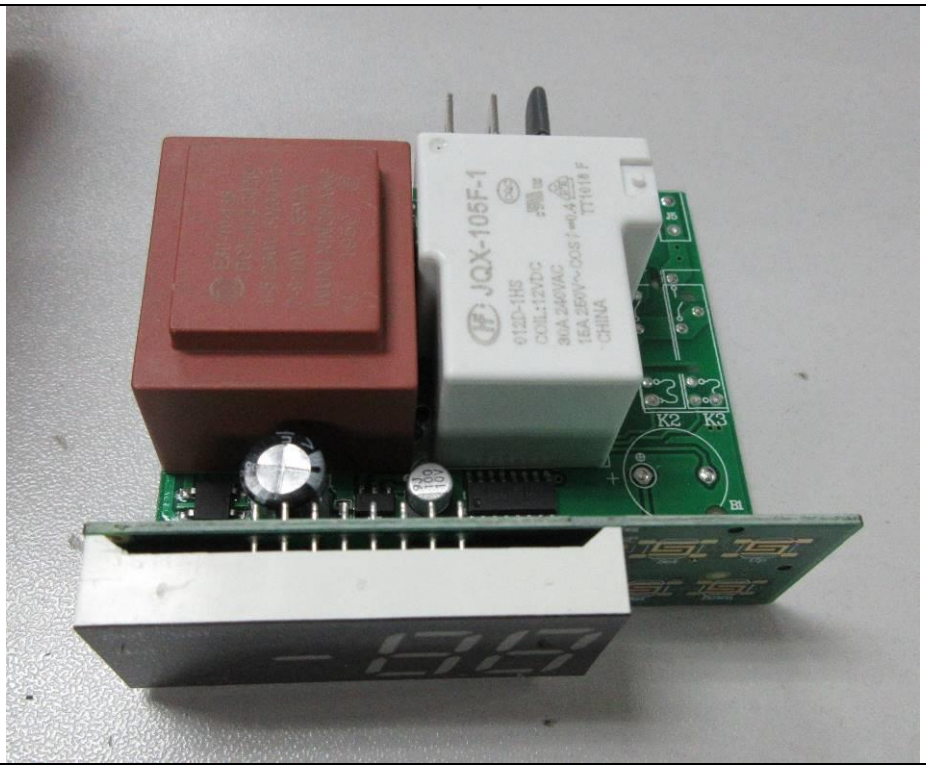

Details of: Alternative electronic thermostat ECS-16 for all models

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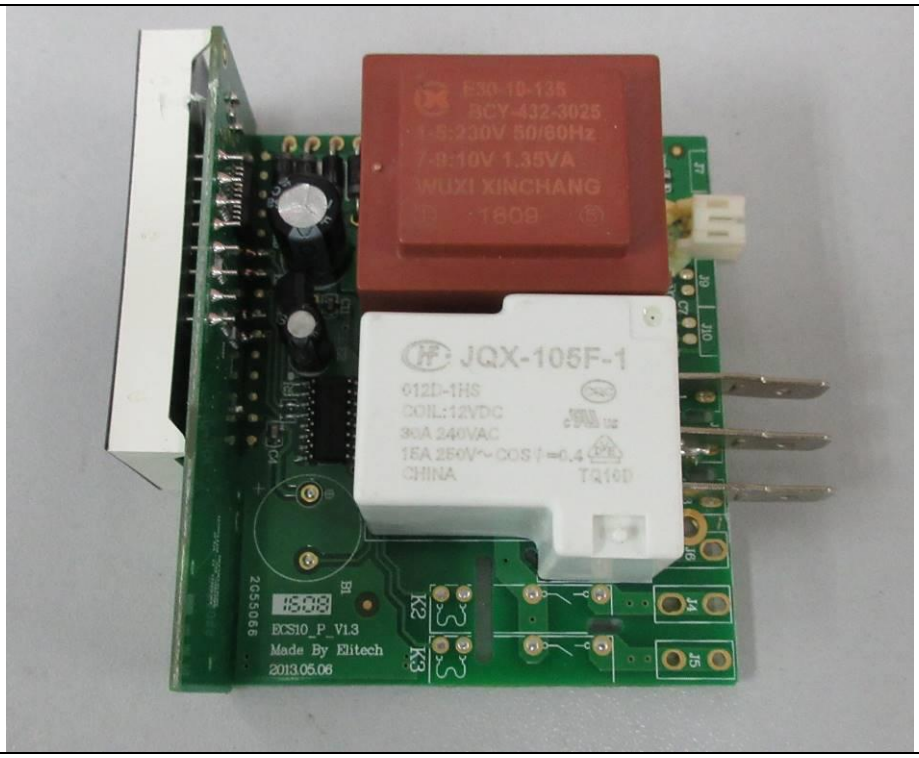

Details of: Alternative electronic thermostat ECS-16 for all models

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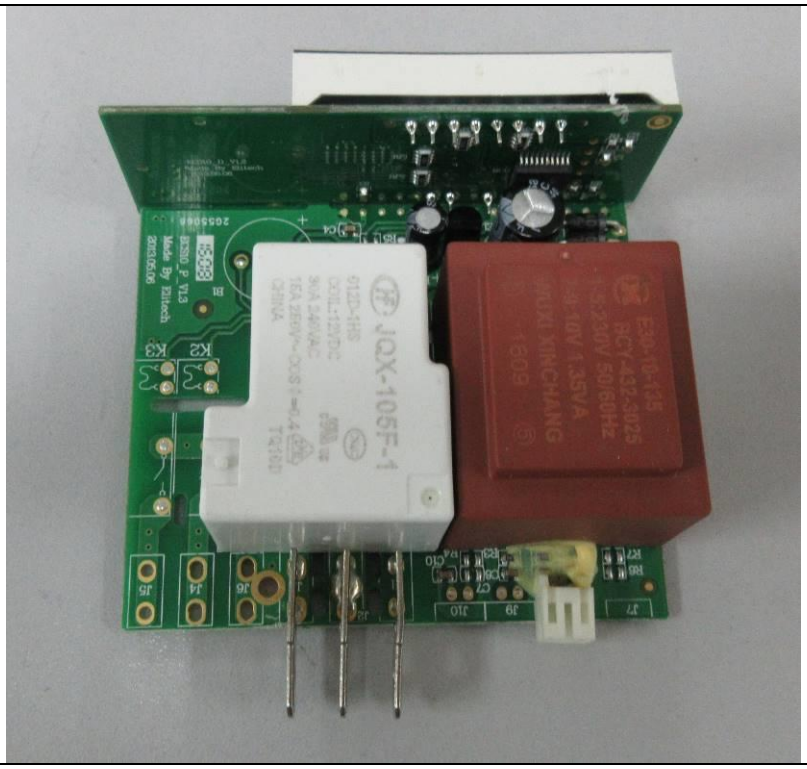

Details of: Alternative electronic thermostat ECS-16 for all models

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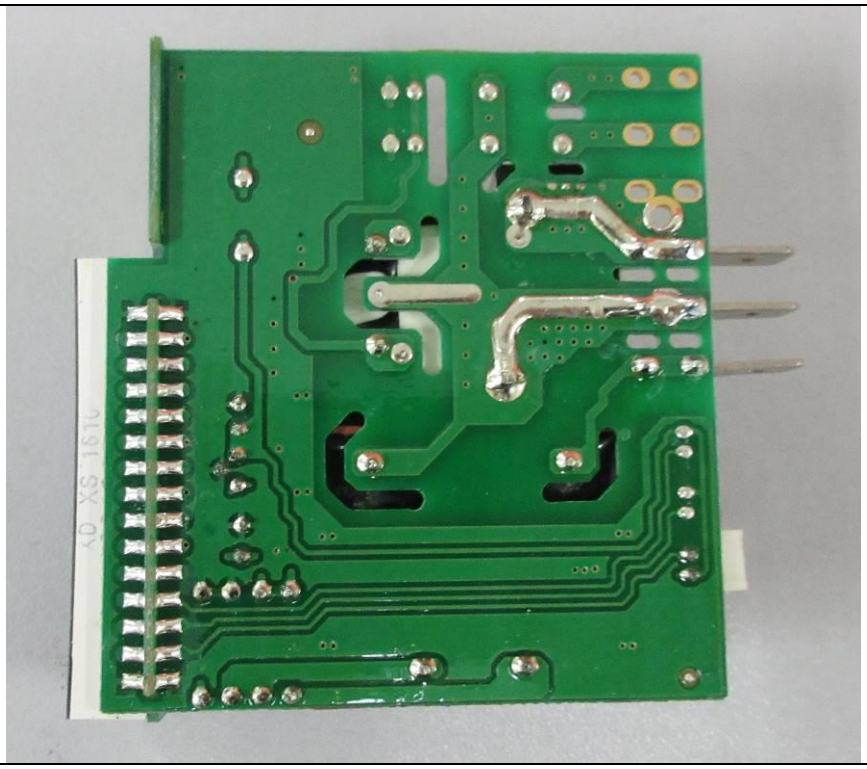

Details of: Alternative compressor SZ80E1J for model LG-168H

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Details of: Alternative compressor SZ80E1J for model LG-168H

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Details of: Alternative electronic thermostat XR02CX for all models

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Details of: Alternative electronic thermostat XR02CX for all models

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Details of: Alternative electronic thermostat XR02CX for all models

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Details of: Alternative condense fan motor YZ5-13 for model LG-388HE

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Details of: Alternative switch, RL1
Appearance view 1

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Details of: Alternative switch, RL1
Appearance view 2

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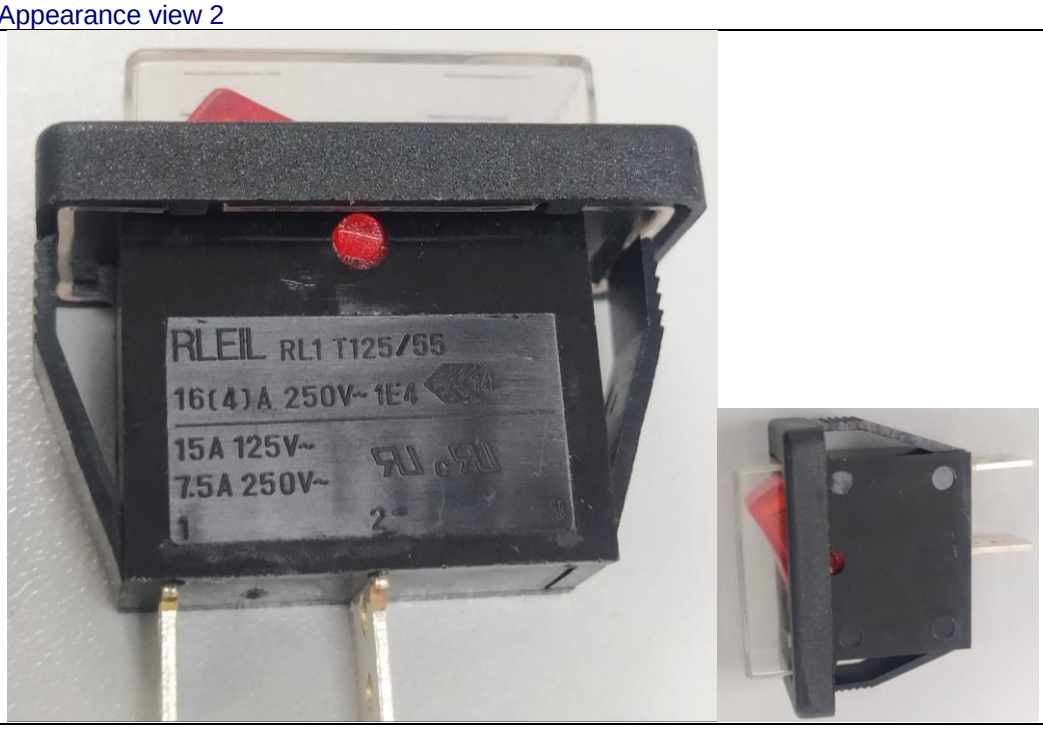

Details of: Alternative switch, RL3

Appearance view

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--- End of Attachment 1 ---

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60335-2-89
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Household and similar electrical appliances – Safety –

Part 2: Particular requirements for commercial refrigerating appliances with an incorporated or remote refrigerant condensing unit or compressor

Differences according to:	EN 60335-2-89: 2010 + A1: 2016 + A2: 2017 EN 60335-1: 2012 + A11: 2014 + A13: 2017 + A1: 2019 + A14: 2019 + A2: 2019 EN 62233:2008
Attachment Form No.:	EU_GD_IEC60335_2_89K
Attachment Originator:	SGS-CSTC
Master Attachment:	2020-06

	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		N/A
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

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	The height of the characters, measured on the capital letters, is at least 3 mm		P
	These instructions are also available in an alternative format, e.g. on a website		P
7.101	Delete the paragraphs starting with “Devices used to start/stop….” until the end of the requirement “……by vulnerable persons.”. This includes Notes Z1 and Z2.(EN 60335-1: 2012 /A2: 2019)		P
7.12.Z12	Delete the sub clause.		P
7.14.	Delete Note Z1.		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		P
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		N/A
11	**Heating**		—
11.8	Comment to be retained in the amendment: The deletion of the second sentence in the first paragraph was carried out in the existing common modifications.(EN 60335-1: 2012 /A1: 2019)		P
	In Table 3 delete footnotes za, zb, zc, zd.		P
11.8	Footnotes to “External enclosure of motor-operated appliances” to be taken into account		P
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

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
19.14	Add the content of the note to the requirement as follows: Appliances are operated under the conditions of Clause 11. Any contactor or relay contact that operates under the conditions of Clause 11 is short-circuited. If a relay or contactor with more than one contact is used, all contacts are short-circuited at the same time.		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		P
	Test probe 18 applied with a force of 2,5N on the appliance fully assembled		P
22	**Construction**		—
22.12	Delete Note Z1(EN 60335-1: 2012 /A2: 2019)		P
24	**Components**		—
	Comment to be retained in the amendment: The following text replaces common modification text in the existing standard by the IEC text including changes in A1. It also includes the paragraph from the EN 60335-1:2012 starting by “Plugs and socket-outlets and their connecting devices….” Replace the existing text by the following: (EN 60335-1: 2012 /A1: 2019)		P
24.1	Components shall comply with the safety requirements specified in the relevant EN standards as far as they reasonably apply.		P
	Compliance with the EN standard for the relevant component does not necessarily ensure compliance with the requirements of this standard.		P
	Motors are not required to comply with EN 60034-1. They are tested as part of the appliance according to this standard.		P
	Relays shall be tested as part of the appliance according to this standard. They may be alternatively tested to EN 60730-1, in which case they shall also meet the additional requirements in EN 60335-1.		P
	Unless otherwise specified, the requirements of Clause 29 of this standard apply between live parts of components and accessible parts of the appliance.		P
	Unless otherwise specified, components may comply with the requirements for clearances and creepage distances for functional insulation as specified in the relevant component standard.		P

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	Unless otherwise specified, 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 and shown to comply with the EN standard for the relevant component are tested according to the requirements of 30.2 of this standard.		P
	Components that have been previously tested and shown to comply with the resistance to fire requirements in the EN standard for the relevant component need not be retested provided that		N/A
	— the severity specified in the component standard is not less than the severity specified in 30.2 of this standard, and		N/A
	— unless the pre-selection alternatives in 30.2 are used, the test report for the component states the values of te and ti. as required by EN 60695-2-11.		N/A
	If the above two conditions are not satisfied, the component is tested as part of the appliance		P
	Power electronic converter circuits are not required to comply with EN 62477-1. They are tested as part of the appliance according to this standard.		N/A
	Unless components have been previously tested and found to comply with the relevant EN standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9. For components mentioned in 24.1.1 to 24.1.9, no additional tests specified in the relevant EN standard for the component are necessary other than those specified in 24.1.1 to 24.1.9.		P
	Components that have not been separately tested and found to comply with the relevant EN standard and components that are not marked or not used in accordance with their marking, are tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard.		P
	Lamp-holders and starter-holders that have not been previously tested and found to comply with the relevant EN standard are tested as a part of the appliance and shall additionally comply with the gauging and interchangeability requirements of the relevant EN standard under the conditions occurring in the appliance. Where the relevant EN standard specifies these gauging and interchangeability requirements at elevated temperatures, the temperatures measured during the tests of Clause 11 are used.		N/A

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	There are no additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of EN 60320-1 and EN 60309, unless they are specifically mentioned in the text of this standard.		P
	Plugs and socket-outlets and other connecting devices of interconnection cords shall not be 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 EN 60320-1, if direct supply to these parts from the supply mains could give rise to a hazard.		N/A
	When an EN standard does not exist for a component, there are no additional tests specified.		P
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
24.Z1	Replacement (EN 60335-1: 2012 /A2: 2019)		—
	Type S2 and S3 capacitors according to EN 60252-1 are not required to undergo the testing as required by 30.2.2 and 30.2.3.1.		P
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..... :	C4	P
	- 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:		—

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	• 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
25.7	Modification: Add the content of NOTE 1 to the requirement as follows: Their properties shall be at least those of ordinary tough rubber sheathed cords (code designation 60245 IEC 53). These cords are not suitable for appliances intended to be used outdoors or when they are liable to be exposed to significant amounts of ultraviolet radiation.		N/A
	Add the following text after the last dash and before the paragraph regarding “Supply cords for class III appliances”:		N/A
	-Halogen-free thermoplastic compound sheathed. Their properties shall be at least those of :		N/A
	halogen-free thermoplastic compound sheathed cords (code designation H03Z1Z1H2-F, H03Z1Z1-F), for appliances having a mass not exceeding 3 kg;		N/A
	halogen-free thermoplastic compound sheathed cords (code designation H05Z1Z1H2-F,H05Z1Z1-F), for other appliances;		N/A
	-Cross-linked halogen-free compound sheathed. Their properties shall be at least those of cross-linked halogen-free compound sheathed cords(code designation H07ZZ-F)		N/A
25.7[3]	Delete the existing text starting “Halogen free thermoplastic……..” until ”……..designation H07ZZ-F). “(EN 60335-1: 2012 /A2: 2019)		N/A
26.2	Modification: Change the note into a requirement		N/A
26.11	Modification: Change the note into a requirement		P
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		P

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
29.1	Modification: Replace Note 6 by: NOTE 6 Attention is drawn on the fact that for appliances intended for use at altitudes exceeding 2 000 m, the altitude Correction factors, relevant to the intended altitude, for clearances specified in Table A.2 of EN 60664-1 may need to be taken into account.		N/A
29.2	Modification: Change NOTE 6 into a requirement.		N/A
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
32	**RADIATION, TOXICITY AND SIMILAR HAZARDS**		—
	Add at the end: Compliance regarding electromagnetic fields is checked according to EN 50366 or 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		—
Annex ZC	**Normative references to international publications with their corresponding European publications** (EN 60335-1: 2012 /A2: 2019)	--	N/A
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		P
	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

IEC 60335_2_89K - 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		P
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		P
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
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

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	- 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
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

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	• 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
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

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	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
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

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
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
	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:		—

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	- 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
22.ZE.9	Appliances fitted with means to isolate them from all energy sources		N/A
	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)..... :	MD	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**		—

IEC 60335_2_89K - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	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
ANNEX ZE (informative)	**SPECIFIC ADDITIONAL REQUIREMENTS FOR APPLIANCES AND MACHINES INTENDED FOR COMMERCIAL USE**		N/A
	Evaluation should be done if applicable		N/A
ANNEX ZF (informative)	**CRITERIA APPLIED FOR THE ALLOCATION OF PRODUCTS COVERED BY STANDARDS IN THE EN 60335 SERIES UNDER LVD OR MD**		P
	Evaluation should be done if applicable		P
ANNEX ZZ (informative)	**COVERAGE OF ESSENTIAL REQUIREMENTS OF EC DIRECTIVES**		N/A
	Evaluation should be done if applicable		N/A

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.: 4,02 %	P

--- End of this Attachment 2 ---

EN 60335-1:2012/A15:2021			
Clause	Requirement - Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60335-1 Household and similar electrical appliances – Safety – Part 1: General requirements	
Differences according to:	EN 60335-1:2012/A15:2021
Attachment Form No.:	EN 60335-1/A15
Attachment Originator:	SGS-CSTC
Master Attachment:	Date 2021-07

20	**STABILITY AND MECHANICAL HAZARDS**		**—**
20.2	Replace “dangerous” with “hazardous” (twice).		**—**
22	**CONSTRUCTION**		**—**
22.44	In sub Clause 22.44, replace the text by the following:		**—**
	An appliance is child-appealing if one of the following criteria is present:		**—**
	— appliance decorated using faces, cartoon like characters, or similar images;	no used such decorated	N/A
	— appliance using shapes representing animals, characters, persons or scale models.	no such shapes	N/A
	An appliance is child-appealing if more than one of the following criteria are present:		**—**
	— using non-functional light (functional light is e.g. illumination of an object or area, signal indicating status of an appliance);	functional indicator	N/A
	— using non-functional sound (e.g. music);		N/A
	— using non-functional movement.		N/A
	If the appliance is child-appealing, has a mass less than 4 kg or is mounted or normally intended for use at a height less than 850 mm, the following conditions shall be met:		N/A
	— No surface (both **functional surfaces** and non-functional) that are accessible by means of test probe 19 of IEC 61032 located at a height less than 850 mm shall exceed the temperature rises stated below: *Temperature rise* *– of bare metal* 38K *– of coated metal* 42K *– of glass and ceramic* 51K *– of plastic having a thickness exceeding 0,4 mm* 58K		N/A
	— Hazardous **moving parts** shall not be accessible by means of test probe 19 of IEC 61032 under the conditions specified for test probe 18 in Clause 20.2.		N/A

EN 60335-1:2012/A15:2021			
Clause	Requirement - Test	Result - Remark	Verdict
	— **Live parts** shall not be accessible by means of test probe 19 of IEC 61032 under the conditions specified for test probe 18 in Clause 8.1.1.		N/A
	— Liquid in the appliance shall not exceed 38 °C in normal use when it is accessible by means of test probe 19 under the conditions specified for test probe 18 in Clause 20.2 or can get out of the appliance hen positioned in different positions. Vessels in which two independent and sequential actions are eeded to access the liquid are considered to meet the requirement.		N/A
	— The requirement of 22.12 is applicable for all accessible parts of the appliance.		N/A
	The requirement is not applicable to appliances where there is a toy shaped like the appliance.		N/A
	Compliance is checked by inspection and appropriate tests.		N/A
24	**COMPONENTS**		—
24.1	In the note, replace the word “NOTE Z3” with “NOTE Z1”		—
24.1.7	Replace the sub clause with the following:		—
	If the **remote operation** of the appliance is via a telecommunication network, the relevant standard for the elecommunication interface circuitry in the appliance is IEC 62151.		N/A
Annex ZA	**Special national conditions**		—
	Modify the reference for Clause 25.8 by adding Cyprus to the countries listed		N/A
Annex ZB	**A-deviations**		—
	Delete the second paragraph, including the note, starting with: “This European standard/Harmonization Document ….”		—
Annex ZC	**Normative references to international publications with their corresponding European publications**		—
	The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.		P
Annex ZF	**Criteria applied for the allocation of products covered by standards in the EN 60335 series under LVD or MD**		—
	Replace in the eighth bullet the “Directive 2006/95/EC” with “Directive 2014/35/EU”		P
Annex ZH	**Common plug and socket-outlet types in CENELEC countries**		—
ZH.1 **General**	After the first paragraph, add the following note:		—
	NOTE: The dimensions of the plugs are purely for information. The exact dimensions of the plugs can be found in the relevant national standards.		P

EN 60335-1:2012/A15:2021			
Clause	Requirement - Test	Result - Remark	Verdict
ZH.3.2 **Cyprus**	Replace the text as follows:		—
	Only plugs according to standard sheets GB1, GB6 and GB7 of IEC/TR 60083 are allowed. They correspond with plug designations: EU9, EU6 and EU10.		N/A
ZH.3.4 **Finland**	Replace the first paragraph as follows:		—
	Plugs according to Publications SFS 5610 and SFS-EN 50075 are allowed. Plugs according to Publications SFS 5215 and SFS-EN 60309 are allowed.		N/A
ZH.3.9 **Netherlands**	Only plugs according to NEN 1020:2019 are allowed, standard sheets:		—
	16 A 250 V class I plug (L+N+PE) with side earthing EU2		N/A
	16 A 250 V class I plug (L+N+PE) with dual (side and pin) earthing EU4		N/A
	2,5 A 250 V class II plug EU5		N/A
	16 A 250 V class II plug EU7		N/A
	16 A 400/230 V class I plug EU8		N/A
	Or plug according EN 50075 is allowed, standard sheet:		—
	2,5 A 250 V class II plug EU6		N/A
ZH.3.14 **Switzerland**	Replace the clause by following:		—
	Supply cords of portable household and similar electrical appliances having a rated current not exceeding 16 A shall be provided with a plug complying with SN 441011-1:2019.		N/A
	The Table A is applicable for Plug with IP20		N/A
	Table B is applicable for plug with IP55.		N/A

--- End of this Attachment 3 ---