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.....: ARJX-19MY1971DTQDP-R1

This test report replaces and cancels previous test report No. ARJX-

19MY1971DTQDP dataed on 2019-09-11

Date of issue.....: 2019-09-27

Total number of pages 139

Name of Testing Laboratory LCIE CHINA Company limited

preparing the Report Building 4, No. 518, XinZhuan Road, CaoHejingSongjiang High-

Tech Park, Shanghai, P.R.C(201612)

Address: No.70, Jinsheng One Road Jihongtan street, Chengyang District,

Qingdao City, Shandong Province 266111, P.R.China

Test specification:

with IEC60335-1:2010, AMD1:2013, AMD2:2016

Test procedure: CE

Non-standard test method: N/A

Test Report Form No.....: IEC60335_2_891

Test Report Form(s) Originator.....: IMQ S.p.A.

Master TRF.....: Dated 2017-09

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

The Accreditation only attests the technical capability of the testing laboratory for the tests covered by the accreditation

Trade Mark	Test item description:	Comm	ercial Freezer		
Model/Type reference	Trade Mark:	N/A			
Ratings	Manufacturer:	Qingdao Dashang Electric Appliance Co.,Ltd.			
gas: C _c H ₁₀ . For BF60CP-76: 5,0A, Defrosting 550W, Refrigerant R290/146g; For BF120CP-76: 5,5A, Defrosting 1100W, Refrigerant R290/148g; For BF180CP-76: 7,5A, Defrosting 1800W, Refrigerant R290/150g*2; Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): Testing Laboratory:	Model/Type reference:	BF60C	BF60CP-76, BF120CP-76, BF180CP-76		
For BF60CP-76: 5,0A, Defrosting 550W, Refrigerant R290/146g; For BF120CP-76: 5,5A, Defrosting 1100W, Refrigerant R290/148g; For BF180CP-76: 5,5A, Defrosting 1100W, Refrigerant R290/150g*2; Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): LCIE CHINA Company limited Testing location/ address	Ratings:				
For BF120CP-76: 5,5A, Defrosting 1100W, Refrigerant R290/148g; For BF180CP-76: 7,5A, Defrosting 1800W, Refrigerant R290/150g*2; Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): Testing Laboratory:					
R290/148g; For BF180CP-76: 7,5A, Defrosting 1800W, Refrigerant R290/150g*2; Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): Testing Laboratory: LCIE CHINA Company limited Testing location/ address					
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): Testing Laboratory:		R290/1	148g;		
Testing Laboratory: Testing location/ address				ing 1800W, Refrigerant	
Testing Laboratory: Testing location/ address					
Testing location/ address	Responsible Testing Laboratory (as	applicat	ole), testing procedure	and testing location(s):	
High-Tech Park, Shanghai P.R.C (201612) Tested by (name, function, signature): Project engineer Jony Zhang Approved by (name, function, signature): Product Line Manager: Yi ZONG Testing procedure: CTF Stage 1: Tested by (name, function, signature): Approved by (name, function, signature): Testing procedure: CTF Stage 2: Testing procedure: CTF Stage 2: Testing location/ address: Witnessed by (name, function, signature): Witnessed by (name, function, signature): Testing procedure: CTF Stage 3: Testing procedure: CTF Stage 4: Testing procedure: CTF Stage 4: Testing location/ address: Witnessed by (name, function, signature): Witnessed by (name, function, signature)			LCIE CHINA Company	limited	
Approved by (name, function, signature) .: : Product Line Manager: Yi ZONG Testing procedure: CTF Stage 1: Testing location/ address	Testing location/ address:				
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Tested by (name, function, signature): Witnessed by (name, function, signature).: Approved by (name, function, signature):					
Witnessed by (name, function, signature).: Approved by (name, function, signature):	Testing location/ address	:			
Approved by (name, function, signature):	Tested by (name, function, signature):			
	Witnessed by (name, function, signate	ture).:			
Supervised by (name function signature):	Approved by (name, function, signate	ure) :			
Supervised by (Hame, Hundrich, Signature).	Supervised by (name, function, signa	ature) :			

List of Attachments (including a total number of Appendix 1: IEC60335-2-89-ATTACHMENT (Page 1 Appendix 2: Pictures of sample (Page 122 - Page 13	09 - Page 121)
Summary of testing:	
The products were tested according to: EN 60335-2-89:2010 + A1:2016 + A2:2017 EN 60335-1:2012 + A11:2014 + A13:2017 EN 62233:2008	
Tests performed (name of test and test	Testing location:
clause):	
Full test were performed on BF180CP-76, Clause 6-8,10, 11, 13 and 20-29 were performed on BF120CP-76 Clause 6-8, 10 and 20-29 were carried on BF60CP-76.	LCIE CHINA Company limited Building 4, No. 518, Xin Zhuan Road, CaoHejing Songjiang High-Tech Park, Shanghai P.R.C (201612)
The test results were found complying with the standards mentioned above.	
Summary of compliance with National Difference	25:
2	
EU Group Differences were checked.	

Copy of marking plate:

Qingdao Dashang Electric Appliance Co.,Ltd.

NO.70, Jinsheng One Road Jihongtan street, Chengyang District, Qingdao City, Shandong Province 266111, P.R. China



Model: BF60CP-76 COMMERCIAL FREEZER

Serial no:

Climatic Classification: 3

Refrigerant type: R290/146g

Voltage: 220-240 V/50Hz

Current: 5.0A

Temperature: -20~-15 °C

Led lamp: 16W

Defrost power: 550W

Heating glass power: 110W

Foaming agent: C_5H_{10}





Qingdao Dashang Electric Appliance Co.,Ltd.

NO.70, Jinsheng One Road Jihongtan street, Chengyang District, Qingdao City, Shandong Province 266111, P.R. China



Model: BF120CP-76 COMMERCIAL FREEZER

Serial no:

Climatic Classification: 3

Refrigerant type: R290/148g

Voltage: 220-240 V/50Hz

Current: 5.5A

-20~-15 °C Temperature:

Led lamp: 34W

Defrost power: 1100W

Heating glass power:

110W*2

Foaming agent: C₅H₁₀





Qingdao Dashang Electric Appliance Co.,Ltd.

NO.70, Jinsheng One Road Jihongtan street, Chengyang District, Qingdao City, Shandong Province 266111, P.R. China

Model: BF180CP-76 COMMERCIAL FREEZER

Serial no:

Climatic Classification:

Refrigerant type: R290/150g*2

Voltage: 220-240 V/50Hz

Current: 7.5A

-20~-15 °C Temperature:

Led lamp: 40W

Defrost power: 1800W

Heating glass power: 110W*3 Foaming agent: C₅H₁₀





- 1) The label shall be clearly discernible from the outside of the appliance but can be after open the door. At least the name or trademark or identification mark of the manufacturer or responsible vendor and the model or type reference shall be visible when the appliance is installed as in normal use.
- 2) The label shall be provided the name, registered trade name or registered trade mark and the postal address of the importer or authorised representatives. The postal address shall be a single point at which the importer or authorised representatives can be contacted and in the European Union countries.
- 3) A separate label bears a type, batch or serial number or other element allowing its identification shall be on the enclosure and clearly discernible.



C5H10

- 4) The height of the triangle in above symbol shall be at least 15 mm.
- 5))The height of the letters C5H10 on above marking of the type of flammable insulation blowing gas shall be at least 40 mm, and the marking shall be on the external enclosure.

Test item particulars:	Commercial Freezer
Classification of installation and use:	Stationary appliance
Supply Connection:	Supply cord fixed with a plug (Type Y attachment)
:	
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:	2019-08-01
Date (s) of performance of tests:	2019-08-01 - 2019-08-27
General remarks:	
"(See Enclosure #)" refers to additional information ap "(See appended table)" refers to a table appended to the	
Throughout this report a ⊠ comma / ☐ point is u	sed as the decimal separator.
Manufacturer's Declaration per sub-clause 4.2.5 of	IECEE 02:
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	☐ Yes ☑ Not applicable
When differences exist; they shall be identified in t	he General product information section.
Name and address of factory (ies):	Qingdao Dashang Electric Appliance Co.,Ltd.
	No.70, Jinsheng One Road Jihongtan street, Chengyang District, Qingdao City, Shandong Province 266111, P.R.China
General product information and other remarks:	
 The products covered in the report are freezer for c by thermostat. BF120CP-76 is similar with BF180CP-76 except for BF180CP-76 except for the size. BF180CP-76 used tw and BF60CP-76 used one. BF120CP-76 is similar with BF60CP-76 except for the size models used same inner fan motor, but BF180C fan motors, BF60CP-76 used one fan motor. 	the size and compressor, BF60CP-76 is similar with to independent refrigeration circuit, while BF120CP-76 ne size and compressor.
R1 of ARJX-19MY1971DTQDP	
This report is based on original report ARJX-19MY1971	DTQDP to correct the date of issue.

	IEC 60335-2-89		
Clause Re	equirement + 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.		Р
5.3	Before starting the tests:		Р
	- the appliance shall be operated at rated voltage for 24 h then switched off for 12 h		Р
5.7	Tests according to sub-clause 10, 11 and 13 at ambient temperature of :		Р
	(32 ± 2) °C Climatic class	0, 1, 2 <u>, 3</u> ,4, 6 or 8	Р
	(43 ± 2) °C Climatic class	5 or 7	N/A
5.17	Appliances powered by rechargeable batteries that are recharged in the appliance are tested in accordance with Annex B. (IEC60335-1/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. (IEC60335-1/A1)		N/A
6	CLASSIFICATION		_
6.1	Protection against electric shock: Class 0, 0I, I, II, III	I	Р
	For a class III construction with a detachable power supply part the appliance is classified according to the detachable power supply part		N/A
6.2	Protection against harmful ingress of water		N/A
6.101	Refrigerated display and storage cabinets shall be at least of one of the following climatic classes: 0, 1, 2, 3, 4, 5, 6, 7, 8 (IEC 60335-2-89)	3	Р
7	MARKING AND INSTRUCTIONS		_
7.1	Rated voltage or voltage range (V)	See copy of marking	Р
	Symbol for nature of supply, or		N/A
	Rated frequency (Hz)	See copy of marking	Р
	Rated power input (W), or		N/A
	Rated current (A)	See copy of marking	Р
	Manufacturer's or responsible vendor's name, trademark or identification mark	See copy of marking	Р
	Model or type reference	See copy of marking	Р
	Symbol IEC 60417-5172, for class II appliances		N/A
	IP number, other than IPX0:	IPX0	N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Symbol IEC 60417-5180, 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 hosesets 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)	See copy of marking	Р
	Defrosting input, in W, if the current corresponding to the defrosting power input is greater than the rated current of the appliance (W) (IEC 60335-2-89)		Р
	Climatic class of the appliance (one or more of the numerals 0, 1, 2, 3, 4, 5, 6, 7 or 8) (IEC 60335-2-89)	3	Р
	Maximum rated input of incandescent lamps (W) (IEC 60335-2-89)		N/A
	Rated input of discharge lamps (W) (IEC 60335-2-89)		N/A
	Total mass of the refrigerant for each separate refrigerant circuit (IEC 60335-2-89)	See copy of marking	Р
	For a single component refrigerant, at least one of the	e following (IEC 60335-2-89):	_
	- the chemical name		N/A
	- the chemical formula		N/A
	- the refrigerant number	R290	Р
	For a blended refrigerant, at least one of the following	(IEC 60335-2-89):	_
	- the chemical name and nominal proportion of each of the components		N/A
	- the chemical formula and nominal proportion for each of the components		N/A
	- the refrigerant numbers and nominal proportion of each of the components		N/A
	- the refrigerant number of the refrigerant blend		N/A
	The chemical name or refrigerant number of the insulation blowing gas (IEC 60335-2-89)	C ₅ H ₁₀	Р
	Compression-type appliances flammable which use refrigerants shall be marked with the symbol ISO 7010 W021 (IEC 60335-2-89/A2)		Р

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Appliances employing R-744 in a transcritical refrigeration system shall be marked with the substance of the following: WARNING: System contains refrigerant under high pressure. Do not tamper with the system. It must be serviced by qualified persons only (IEC 60335-2-89)		N/A
	Appliances employing R-744 in a transcritical refrigeration system shall be marked with symbol ISO 7000-1701 (2004-01) (IEC 60335-2-89)		N/A
	For appliances without automatic liquid-level control, marking of maximum liquid level (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		Р
	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 (IEC60335-1/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 (IEC60335-1/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		Р
	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		Р
	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		Р
	Symbol ISO 7010 W021 for "Caution: Risk of fire / flammable materials" (IEC 60335-2-89)		Р

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Symbol ISO 7000-1701 for "Pressure"		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 as follows:	n to the supply mains indicated	_
	- marking of terminals exclusively for the neutral conductor (letter N)		N/A
	- marking of protective earthing terminals (symbol IEC 60417-5019)		Р
	- marking of functional earthing terminals (symbol IEC 60417-5018) (IEC60335-1/A1)		N/A
	- marking not placed on removable parts		Р
7.9	Marking or placing of switches which may cause a hazard		Р
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means	By use of figures and letters	Р
	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	0 indicates the temperature	Р
7.11	Indication for direction of adjustment of controls		Р
7.12	Instructions for safe use provided		Р
	Details concerning precautions during user maintenance		Р
	The instructions state that:		
	 the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction 	Not required for IEC 60335-2-89.	N/A
	- children being supervised not to play with the appliance		N/A
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided		N/A

	IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict	
	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 2000 m, the maximum altitude is stated (IEC60335-1/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	
	Details concerning precautions during user maintenance (IEC 60335-2-89)		Р	
	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 (IEC 60335-2-89)		N/A	
	Instructions for class III appliances state that it must only be supplied at SELV, unless (IEC 60335-2-89)		N/A	
	it is a battery-operated appliance, the battery being charged outside the appliance (IEC 60335-2-89)		N/A	
	The instructions shall contain information about max. loading of shelves (IEC 60335-2-89)		Р	
	The instructions shall contain the following (IEC 60335-2-89)		Р	
	Do not store explosive substances such as aerosol cans with a flammable propellant inside the appliance		Р	
	If symbol ISO 7000-1701 is used, its meaning shall be explained (IEC 60335-2-89)		Р	
	For compression-type appliances which use flammable refrigerants, instructions shall include information pertaining to the handling, servicing and disposal (IEC 60335-2-89)		Р	
	The instructions shall include the warnings (IEC 60335-2-89)		Р	
	WARNING – Keep clear of obstruction all ventilation openings in the appliance enclosure or in the structure for building-in (IEC 60335-2-89)		Р	
	WARNING – Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer (IEC 60335-2-89)		Р	

	IEC 60335-2-89			
Clause	Requirement + Test Result - Remark	Verdict		
	WARNING – Do not damage the refrigerant circuit (IEC 60335-2-89)	Р		
	WARNING – Do not use electrical appliances inside the food storage compartments of the appliance, unless they are of the type recommended by the manufacturer (IEC 60335-2-89)	Р		
	Appliances which use flammable insulation blowing gases, instructions shall include information regarding disposal of the appliance (IEC 60335-2-89)	Р		
	For appliances with double-capped fluorescent lamps, information about lamp replacement (IEC 60335-2-89)	N/A		
	Explanation is given of the meaning of the alphanumeric characters, indicating the climatic of the appliance (IEC 60335-2-89)	Р		
	Instructions for split-systems those use a flammable refrigerant shall include the substance of the followings warnings: (IEC 60335-2-89)	N/A		
	WARNING: In order to reduce flammability hazards the installation of this appliance must only be carried out by a suitably qualified person (IEC 60335-2-89)	N/A		
7.12.1	Sufficient details for installation supplied	Р		
	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 (IEC60335-1/A1)	N/A		
	Instructions for appliances with a separate refrigerant condensing unit (IEC 60335-2-89):	_		
	- installation to be made by manufacturer's service personnel or similarly skilled person	N/A		
	- type of separate refrigerant condensing unit	N/A		
	- a diagram showing the electrical connections	_		
	Instructions for appliances employing R-744 in a transcritical refrigeration system shall include the substance of the following (IEC 60335-2-89):	_		
	WARNING: The refrigeration system is under high pressure. Do not tamper with it. Contact qualified service personal before disposal	N/A		
	Instructions for appliances intended for connection to the water supply mains (IEC 60335-2-89):	_		

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- maximum permissible inlet water pressure		N/A
	- minimum permissible inlet water pressure for the safe operation of the appliance		N/A
	Instructions for appliances intended for connection to purposes (IEC 60335-2-89):	a water supply for cooling	_
	- maximum permitted temperature of inlet water consistent with safe operation of the appliance		N/A
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:	1	_
	- 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		Р
	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 ma	nins:	_

7.12.9 Ins ap de 7.12.9 Ins 1// Th ap bo Th tha (IE	max. inlet water pressure (Pa)	Result - Remark	N/A N/A N/A P
7.12.9 Ins ap de 7.12.9 Ins 1// Th ap bo Th tha (IE	min. inlet water pressure, if necessary (Pa)		N/A N/A
7.12.9 Ins ap de 7.12.9 Ins 1// Th ap bo Th tha (IE	min. inlet water pressure, if necessary (Pa)		N/A N/A
7.12.9 Ins ap de 7.12.9 Ins 1// Th ap bo Th tha (IE	nstructions concerning new and old hose-sets for ppliances connected to the water mains by etachable hose-sets instructions specified in 7.12 and from 7.12.1 to .12.8 appear together before any other instructions supplied with the appliance (IEC60335-/A2)		N/A
ap de 7.12.9 Ins 7.′ ins 1// Th ap bo Th tha (IE	ppliances connected to the water mains by etachable hose-sets estructions specified in 7.12 and from 7.12.1 to .12.8 appear together before any other estructions supplied with the appliance (IEC60335-/A2)		
7. ins 1// Th ap bo Th tha (IE	.12.8 appear together before any other astructions supplied with the appliance (IEC60335-/A2)		Р
ap bo Th tha (IE In alt	hase instructions may be supplied with the		
tha (IE In alt	ppliance separately from any functional use ooklet (IEC60335-1/A2)		Р
alt	hey may follow the description of the appliance nat identifies parts, or follow the drawings/sketches EC60335-1/A2)		Р
	n addition, instructions are also available in an lternative format such as on a website or on equest from the user in a format such as a DVD EC60335-1/A2)		Р
alt for	n addition, instructions are also available in an lternative format such as on a website or in a primat such as a DVD		Р
7.13 Ins	nstructions and other texts in an official language	English	Р
7.14 Ma	farking clearly legible and durable:		_
up	ignal words WARNING, CAUTION, DANGER in ppercase having a height as specified EC60335-1/A2)	>3,5mm	Р
wo	Ippercase letter of the text explaining the signal vord not smaller than 1,6 mm	>1,6mm	Р
rai	foulded in, engraved, or stamped markings either aised above or have a depth below the surface of t least 0,25 mm, unless (IEC60335-1/A2)		Р
со	ontrasting colours are used (IEC60335-1/A2)		Р
	Markings checked by inspection, measurement and ubbing test as specified (IEC60335-1/A2)		Р
	he height of the triangle in the symbol " ISO 7010 V021 shall be at least15 mm. (IEC 60335-2-89/A2)		Р
typ	he height of the letters was a fauther would be a ful		ח
7.15 Ma	he height of the letters used for the marking of the ppe of flammable insulation blowing gas hall be at least 40 mm. (IEC 60335-2-89/A1)		P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Marking clearly discernible from the outside, if necessary after removal of a cover		Р
	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		Р
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions		N/A
	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		Р
	The symbol IEC 60417-5018 placed next to the symbol IEC 60417-5172 or IEC 60417-5180 (IEC60335-1/A1)		N/A
	Max. rated input of lamps discernible (IEC 60335-2-89)		N/A
	The marking of the type of flammable refrigerant and of the flammable insulation blowing gas, is visible when gaining access to the motor-compressors, and, in the case of remote condensing unit, the pipe connections (IEC 60335-2-89)		Р
	The symbol "ISO 7010 W021" is placed on the nameplate of the unit near the declaration of the refrigerant and charge information, and (IEC 60335-2-89/A2)		Р
	remain visible after installation of the appliance (IEC 60335-2-89)		Р
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		N/A
8	PROTECTION AGAINST ACCESS TO LIVE PARTS	3	_
8.1	Adequate protection against accidental contact with live parts		Р
8.1.1	Requirement applies for all positions, detachable parts removed		Р
	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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Use of test probe B of IEC 61032, with a force not exceeding 1 N: no contact with live parts		Р
	Use of test probe B of IEC 61032 through openings, with a force of 20N: no contact with live parts		Р
	Where an appliance has parts which require adjustment under operating conditions by a skilled 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
	Adjustment under operating conditions, protection against contact with live parts (IEC 60335-2-89)		Р
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		Р
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		Р
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 (IEC60335-1/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 (IEC60335-1/A2)		N/A
8.1.4	Accessible part not considered live if:	1	_
	- 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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- for peak values over 15kV, 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
	- 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	Class II constructions	Р
	Only possible to touch parts separated from live parts by double or reinforced insulation		Р
9	STARTING OF MOTOR-OPERATED APPLIANCES		_
	Requirements and tests are specified in part 2 when necessary		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)	N/A
	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 (IEC60335-1/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		N/A
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2	(see appended table)	Р
	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 (IEC60335-1/A1)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Otherwise the current is the arithmetic mean value		N/A
			N/A N/A
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		IN/A
	the rated current is related to the arithmetic mean value of the range		Р
	The appliance is operated for 1 h. The max. value of the current averaged over any 5 min period is obtained. The interval shall not exceed 30s. Starting after 1 min (IEC 60335-2-89)		Р
10.101	The power input of the defrosting system, deviation shown in table 1 (IEC 60335-2-89)		Р
11	HEATING		_
11.1	No excessive temperatures in normal use		Р
	If the temperature rise of any part exceeds the values given in 11.8, compliance is checked by the test of 11.101(IEC 60335-2-89)		N/A
11.2	Placing and mounting of appliance as described (IEC	60335-2-89):	_
	- according to instructions for installation		N/A
	- test enclosure		Р
	- in a test corner		N/A
11.3	Temperature rises, other than of windings, determined by thermocouples		Р
	Temperature rises of windings determined by resistance method, unless		Р
	the windings are non-uniform or it is difficult to make the necessary connections	Transformer on PCB	Р
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 1.06 times rated voltage (V)	(see appended table)	Р
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V)		N/A
11.7	Operation duration corresponding to the most unfavourable conditions of normal use		Р
11.8	Temperature rises monitored continuously and not exceeding the values in table 3	(see appended table)	Р
	If the temperature rise of a motor winding exceeds the value of table 3, or		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	if there is doubt with regard to classification of insulation,		N/A
	tests of Annex C are carried out		N/A
	During the test protective devices other than self- resetting thermal motor-protectors for motor- compressor do not operate (IEC 60335-2-89)		Р
	At steady conditions thermal motor-protectors for motor-compressors do not operate (IEC 60335-2-89)		Р
	Sealing compound does not flow out		Р
	Protective devices do not operate, except		Р
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
	During the test temperatures are monitored continuously (IEC 60335-2-89)		Р
	For 0, 1, 2, 3, 4, 6 or 8 climatic class, the temperature rises not exceeding values in table 3 (IEC 60335-2-89)	3	Р
	For 5 or 7 climatic class, the temperature rises not exceeding values in table 3 reduced by 7K (IEC 60335-2-89)		N/A
	For motor-compressors not conforming to IEC 60335-the temperatures of (IEC 60335-2-89)	-2-34 (including its Annex AA),	_
	- housing of motor-compressors		N/A
	- windings of motor compressors		N/A
	Max. temperature specified in table 101		N/A
	For motor-compressors conforming to IEC 60335-2-3 temperatures of (IEC 60335-2-89)	4 (including its Annex AA), the	_
	- housing of motor-compressors		Р
	- windings of motor compressors		Р
	- 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		Р
	are not measured		Р
	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 (IEC 60335-2-89).		Р
	However, it is not applicable to those parts of the externation that are (IEC 60335-2-89):	ernal enclosure of the appliance	_

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
	- for built-in appliances, not accessible parts after installation in accordance with the instructions for installation		N/A
	- for other appliances, on that part of the appliance that according to the instructions for installation is intended to be placed against a wall a free distance not exceeding 75 mm		N/A
	Temperature of ballast windings and their associated wiring not exceeding values in 12.4 of IEC 60598-1, when measured under the conditions stated		N/A
11.101	If the temperatures exceed the limits, the test is carried	d out again (IEC 60335-2-89):	_
	- winding temperatures at the end of a running cycle not higher than the limits given in table 101		N/A
11.102	Any defrosting system, temperature rises don't exceed the values given in tables 3 and 101 (IEC 60335-2-89)		Р
11.103	Ancillary heating elements, temperature rises don't exceed the values given in 11.8 (IEC 60335-2-89)		Р
13	LEAKAGE CURRENT AND ELECTRIC STRENGTH TEMPERATURE	AT OPERATING	_
13.1	Leakage current not excessive and electric strength adequate		Р
	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)	254,4	Р
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A
13.2	For class 0, class II and class III appliances, and class II constructions, leakage current measured by means of the circuit described in figure 4 of IEC 60990 (IEC60335-1/A1)	class II constructions	Р
	For class 0I appliances and class I appliances, except parts of class II construction, C may be replaced by a low impedance ammeter (IEC60335-1/A2)		Р
	Leakage current measurements	(see appended table)	Р
13.3	The appliance is disconnected from the supply		Р
	Electric strength tests according to table 4	(see appended table)	Р
	No breakdown during the tests		Р
14	TRANSIENT OVERVOLTAGES		_

IEC 60335-2-89			
Requirement + Test	Result - Remark	Verdict	
Appliances withstand the transient over-voltages to which they may be subjected		N/A	
Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6	(see appended table)	N/A	
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	
MOISTURE RESISTANCE		_	
Enclosure provides the degree of moisture protection according to classification of the appliance	IPX0	Р	
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	
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	
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 withstand the transient over-voltages to which they may be subjected Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6	Appliances withstand the transient over-voltages to which they may be subjected Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6	

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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
	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		Р
	Spillage solution comprising water containing approximately 1 % NaCl and 0,6 % rinsing agent (IEC60335-1/A1)		Р
	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		Р
	Overfilling test with additional amount of the solution, over a period of 1 min (I)	0,25l	Р
	The appliance withstands the electric strength test of 16.3		Р
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29		Р
15.3	Appliances proof against humid conditions		Р
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78	93%R.H, 23°C	Р
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part		Р
	Humidity test for 48 h in a humidity cabinet		Р
	Reassembly of those parts that may have been removed		Р
	The appliance withstands the tests of clause 16		Р

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
15.101	Spillage of liquid from inside does not affect their electrical insulation (IEC 60335-2-89)		Р
	The relevant tests of 15.102 and 15.103 are carried out (IEC 60335-2-89)		Р
15.102	The apparatus shown in figure 101 is filled with water containing 1% NaCl and 0,6% of acid rinsing agent (IEC 60335-2-89)		Р
15.103	Appliances, other than built-in appliances, are tilted at an angle of up to 2° (IEC 60335-2-89)		Р
	Test with 0,5 I water containing 1% NaCl and 0,6% of acid rinsing agent over horizontal surfaces (IEC 60335-2-89)		Р
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		
16.1	Leakage current not excessive and electric strength adequate		Р
	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		Р
16.2	Single-phase appliances: test voltage 1.06 times rated voltage (V)	254,4	Р
	Three-phase appliances: test voltage 1.06 times rated voltage divided by $\sqrt{3}$ (V)		N/A
	Leakage current measurements	(see appended table)	Р
	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:	(see appended table)	N/A
16.3	Electric strength tests according to table 7	(see appended table)	Р
	Test voltage applied between the supply cord and inlet bushing and cord guard and cord anchorage as specified	(see appended table)	Р
	No breakdown during the tests		Р
17	OVERLOAD PROTECTION OF TRANSFORMERS	AND ASSOCIATED CIRCUITS	_

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use	(see appended table)	Р
	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)	(see appended table)	Р
	Basic insulation is not short-circuited		Р
	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		Р
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
18	ENDURANCE		_
	Requirements and tests are specified in part 2 when necessary		N/A
19	ABNORMAL OPERATION		_
19.1	The risk of fire, mechanical damage or electric shock under abnormal or careless operation obviated		Р
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe	(see appended table)	Р
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and		Р
	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and		Р
	if applicable, to the test of 19.5		Р
	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		Р
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		Р
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11		Р
	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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	until steady conditions are established		Р
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample		Р
	In addition, fan motors and their thermal motor- protectors, if any, are subjected to the test of Annex AA. (IEC 60335-2-89)		Р
	Motor compressors not complying with IEC 60335-2-34 are subjected to the tests specified in IEC 60335-2-34 19.101, 19.102 and 19.104 (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)	(see appended table)	Р
19.3	Test of 19.2 repeated; test voltage (V), power input of 1.24 times rated power input (W)	(see appended table)	Р
19.4	Test conditions as in clause 11, any control limiting the temperature during tests of clause 11 short-circuited		Р
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		Р
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		Р
	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		Р
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions		N/A
	The working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1.5 times working voltage or until the PTC heating element ruptures (V)		N/A
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque, or		Р
	locking moving parts of other appliances		Р
	Locked rotor, capacitors open-circuited one at a time		N/A
	Test repeated with capacitors short-circuited one at a time, unless		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	the capacitor is of class S2 or S3 of IEC 60252-1		N/A
	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed		N/A
	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 (IEC60335-1/A1)		N/A
	Other appliances supplied with rated voltage for a period as specified	Until steady condition established	Р
	Winding temperatures not exceeding values specified in table 8	(see appended table)	Р
19.8	Multi-phase motors operated at rated voltage with one phase disconnected		N/A
	Three-phase motor compressors operated at rated voltage with one phase disconnected, unless complying with IEC 60335-2-34 (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		Р
	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		Р
	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		Р
	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		Р
	During and after each test the following is checked:		_
	- the temperature of the windings do not exceed the values specified in table 8		Р

IEC 60335-2-89			
Clause	ause Requirement + Test Result - Remark		Verdict
	- the appliance complies with the conditions specified in 19.13		Р
	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4		Р
	If a conductor of a printed board becomes open-circul to have withstood the particular test, provided both of 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 meeting both of the following conditions:	circuits or parts of circuits	_
	- 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		Р
	b) open circuit at the terminals of any component	Weaken part or fuse protected the circuit	Р
	c) short circuit of capacitors, unless		Р
	they comply with IEC 60384-14		Р
	d) short circuit of any two terminals of an electronic component, other than integrated circuits		Р
	This fault condition is not applied between the two circuits of an optocoupler		Р
	e) failure of triacs in the diode mode		Р
	f) failure of microprocessors and integrated circuits		Р
	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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
19.11.3	If the appliance incorporates a protective electronic circuit which operates to ensure compliance with clause 19, the relevant test is repeated with a single fault simulated, as indicated in a) to g) of 19.11.2		N/A
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or		Р
	a device that can be placed in the stand-by mode,		Р
	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 (IEC60335-1/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
	An open circuit test voltage of 2 kV is applicable for the line-to-line coupling mode, a generator having a source impedance of 2Ω being used(IEC60335-1/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 12Ω being used(IEC60335-1/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

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
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 60s 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)	Rated 4A, Measured >15A	P
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		Р
	Temperature rises not exceeding the values shown in table 9	(see appended table)	Р
	Compliance with clause 8 not impaired		Р
	If the appliance can still be operated it complies with 20.2		Р
	Insulation, other than of class III appliances or class II contain live parts, withstands the electric strength test specified in table 4:		_
	- basic insulation (V)	1000	Р
	- supplementary insulation (V)	1750	Р
	- reinforced insulation (V)	3000	Р
	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		Р
	The appliance does not undergo a dangerous malfunction, and		Р

IEC 60335-2-89			
Clause	Requirement + Test R	Result - Remark	Verdict
	no failure of protective electronic circuits, if the appliance is still operable		Р
	Appliances tested with an electronic switch in the off pomode:	sition, or in the stand-by	_
	- 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		Р
	If the appliance contains lids or doors that are controlled one of the interlocks may be released provided that:	d by one or more interlocks,	_
	- 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		Р
	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		N/A
	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)		Р
19.102	Appliances so constructed that they do not cause any risk and comply with 19.13 during and after the tests (IEC 60335-2-89)		Р
19.103	Illuminating equipment does not cause a hazard (IEC 60335-2-89)		Р
	Discharge lamps operated as specified in items a), d) and e) of subcl. 12.5.1 of IEC 60598-1 (IEC 60335-2-89)		Р
	During and after the test, the appliance shall comply with 19.13 (IEC 60335-2-89)		Р
20	STABILITY AND MECHANICAL HAZARDS		_
20.1	Appliances having adequate stability		Р

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn	Modified in IEC 60335-2-89	N/A
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		N/A
	The appliance is tested empty when tilted through an angle of 5° instead of an angle of 10°. (IEC 60335-2-89)		Р
	The test with the appliance tilted to 15° is not carried out. (IEC 60335-2-89)		Р
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9		N/A
	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)		Р
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury		Р
	Protective enclosures, guards and similar parts are non-detachable, and		Р
	have adequate mechanical strength		Р
	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		Р
	Not possible to touch dangerous moving parts with the test probe described		Р
21	MECHANICAL STRENGTH		_
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		Р
	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)	Р
	The appliance shows no damage impairing compliance with this standard, and		Р
	compliance with 8.1, 15.1 and clause 29 not impaired		Р

	IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict	
	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	
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		Р	
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm		Р	
	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/A1)		Р	
	Checked by uniformly loading each shelf in turn with a load/unit area of 25 kg/m² for 1 h (IEC 60335-2-89/A1)		Р	
	During the test, the shelf deflection shall not exceed 3 mm/meter of shelf width (IEC 60335-2-89/A1)		Р	
	Test repeated with a uniform load/unit area of 230 kg/m² or the maximum load specified by the manufacturer, whichever is the most onerous, for 1 h (IEC 60335-2-89/A1)		P	
	During the test, the shelf shall not fall out of position (IEC 60335-2-89/A1)		Р	
	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/A1)		Р	
	No damage, Compliance with clauses 8,1, 15.1 and 29 not impaired (IEC 60335-2-89/A1)		Р	
	If doubt, supplementary and reinforced insulation subjected to the electric strength test of 16.3 (IEC 60335-2-89/A1)		Р	
22	CONSTRUCTION		_	
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled	IPX0	N/A	
22.2	Stationary appliance: means to ensure all-pole discon provided:	nnection from the supply being	_	

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- a supply cord fitted with a plug, or		Р
	- 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 01 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 50N 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 1mm		N/A
	Each pin subjected to a torque of 0.4Nm; the pins are not rotating, unless		N/A
	rotating does not impair compliance with this standard		N/A
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets		N/A
22.5	No risk of electric shock when touching the pins of the plug, for appliances having a capacitor with rated capacitance equal to or greater than $0.1\mu F$, the appliance being disconnected from the supply at the instant of voltage peak		Р
	Voltage not exceeding 34 V (V)	9,0 V	Р
	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 (IEC60335-1/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		Р
	Electrical insulation of Class II appliances not affected if a hose ruptures or seal leaks	Class II construction	Р
	In case of doubt, test as described (IEC 60335-2-89)		Р

IEC 60335-2-89			
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)		Р
22.7	Compression-type appliances, including protective en system, using flammable refrigerants shall withstand		_
	- 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		Р
	- a pressure of 5 times the saturated vapour pressure at 20 °C, or equal to 2.5 MPa (25 bar), whichever is the greater		Р
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		Р
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless		Р
	the substance has adequate insulating properties		Р
22.10	Not possible to reset voltage-maintained non-self- resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance, if:		N/A
	- a non-self-resetting thermal cut-out is required by the standard, and		N/A
	- a voltage maintained non-self-resetting thermal cut- out is used to meet it		N/A
	Non-self-resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained		N/A
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts		Р
	Obvious locked position of snap-in devices used for fixing such parts		Р

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing	Not removed during installation or servicing	N/A
	Tests as described	50N pull and push applied to enclosure, switch and grille; 50N push and 30N pull applied to control panel	Р
22.12	Handles, knobs etc. fixed in a reliable manner, if loosening result in a hazard		Р
	Removing or fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible, if resulting in a hazard (IEC60335-1/A2)		N/A
	A choking hazard does not apply to appliances for commercial use (IEC60335-1/A2)		N/A
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied (IEC60335-1/A2)		N/A
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied (IEC60335-1/A2)		Р
	If the part is removed and can be contained within the small parts cylinder, it is considered to be a choking hazard (IEC60335-1/A2)		N/A
22.13	Unlikely that handles, when gripped as in normal use, make the operator's hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		Р
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		Р
	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		Р
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N/A
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts		N/A
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1000 V applied		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
22.18	Current-carrying parts and other metal parts resistant to corrosion		Р
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		Р
	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		Р
	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		Р
22.23	Oils containing polychlorinated biphenyl (PCB) not used		Р
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
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		Р

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark V	/erdict
	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		Р
	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose		Р
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		Р
	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 (IEC60335-1/A1)		N/A
	Ceramic and similar porous material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation (IEC60335-1/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		Р
	unearthed metal parts separated from live parts by basic insulation only (IEC60335-1/A1)		Р
	Electrodes not used for heating liquids		Р
	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		Р
	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		Р

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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		Р
	Heating conductors having only one layer of insulation are not in direct contact with water or ice during normal use (IEC 60335-2-89)		Р
	NOTE: Frozen water is regarded as a conducting liquid (IEC 60335-2-89)		Р
22.34	Shafts of operating knobs, handles, levers etc. not live, unless		Р
	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		Р
	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 (IEC60335-1/A1)		Р
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation		N/A
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless		N/A
	they are separated from live parts by double or reinforced insulation		N/A
22.37	Capacitors in Class II appliances not connected to accessible metal parts and their casings, if of metal, separated from accessible metal parts by supplementary insulation, unless		N/A
	the capacitors comply with 22.42		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
22.38	Capacitors not connected between the contacts of a thermal cut-out		Р
22.39	Lamp holders 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	Not intended to be moved while in operation, or having accessible moving parts	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	No remote operation	N/A
22.41	No components, other than lamps, containing mercury		Р
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		Р
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		Р
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
	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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
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 giving rise to a hazard:	t can operate as follows, without	_
	- 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 (IEC60335-1/A1)		N/A
22.54	Button cells and batteries designated R1 not accessible without the aid of a tool, unless (IEC60335-1/A1)		N/A
	the cover of their compartment can only be opened after at least two independent movements have been applied simultaneously (IEC60335-1/A1)		N/A
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		Р

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	The requirement concerning position does not preclude use of a push on push off switch (IEC60335-1/A2)		Р
	An indication when the device has been operated is	given by:	_
	- tactile feedback from the actuator or from the appliance, or (IEC60335-1/A2)		Р
	- reduction in heat output; or (IEC60335-1/A2)		Р
	- audible and visible feedback (IEC60335-1/A2)		N/A
22.56	Detachable power supply part provided with the part of class III construction (IEC60335-1/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 (IEC60335-1/A2)		N/A
	This requirement does not apply to glass, ceramics or similar materials (IEC60335-1/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 lamp holders: Test with torque of (IEC 60335-2-89):		N/A
	Fluorescent lamp holders: Test of 4.4.4 i) in IEC 60598-1 (IEC 60335-2-89)		N/A
22.102	Insulated wire heaters and their joints protected against entry of water (IEC 60335-2-89)		Р
	3 heating elements: 24 h immersion in water with 1% NaCl; electric strength test between heating conductor and water (1250 V 15 min) (IEC 60335-2-89)		Р
22.103	Appliances employing a transcritical refrigeration system shall in the high pressure side of the refrigeration system (IEC 60335-2-89)		N/A
	include a pressure relief device on the compressor or (IEC 60335-2-89)		N/A
	include a pressure relief device between the compressor and the gas cooler (IEC 60335-2-89)		N/A
	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

IEC 60335-2-89			
Clause	Requirement + Test Result - Remark	Verdict	
	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/A2)	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	
	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	
	The pressure relief device is made inoperable and the test pressure is gradu increased hydraulically (IEC 60335-2-89)	ally —	
	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 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 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	
22.104	Accessible glass panels with an area having any two orthogonal dimensions exceeding 75 mm shall be made from (IEC 60335-2-89/A2)	_	
	- glass that shatters breaks in small pieces when broken it fractures; or	Р	
	- glass that is not released or dropped from its normal position when broken.	Р	
	Test as specified	Р	
22.105	The mass of refrigerant (flammable refrigerant) shall not exceed 150g (IEC 60335-2-89)	Р	

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
22.106	Appliances with a protected cooling system and which use flammable refrigerants shall be constructed to avoid any fire or explosion hazard, in the event of leakage of the cooling system (IEC 60335-2-89)		N/A
22.106.1	A leakage is simulated at the most critical point of the cooling system (method as specified) (IEC 60335-2-89)		N/A
	The measured value shall not exceed 75% LEL of the refrigerant (table 102) and shall not exceed 50% LEL for a period exceeding 5 min. (IEC 60335-2-89)		N/A
	The concentration is not measured close to (IEC 603)	35-2-89):	_
	 non self-resetting 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 in to comply with at least the requirements in Annex BB		N/A
22.106.2	All accessible surfaces of protected cooling system components, are scratched using the tool whose tip is shown in figure 102 (IEC 60335-2-89)		N/A
	The tool is applied using the following parameters (IEC 60335-2-89):		N/A
	- force at right angles to the surface to be tested 35 N + 3 N		N/A
	- force parallel to the surface to be tested 250 N		N/A
	The appropriate part shall withstand the test of 22.7 reduced by 50%		N/A
22.107	Compression-type appliances with unprotected cooling systems and which use flammable refrigerants, any electrical apparatus located inside the food storage compartment, which during normal operation or abnormal operation produces arcs or sparks, use luminaries, is tested and comply with the requirements of Annex BB for group IIA gases or the refrigerant used (IEC 60335-2-89).		N/A
	This requirements does not apply to (IEC 60335-2-89)):	_
	- non self-resetting protective devices necessary for compliance with Clause 19, nor to		Р
	- intentionally weak parts that become permanently open-circuited during the tests of Clause 19,		Р

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	even if they produce arcs or sparks during operation		N/A
	Refrigerant leakage into food storage shall not result in an explosive atmosphere outside the food storage compartment in areas where electrical components that produce arcs and sparks during normal operation or abnormal operation, or luminaries are mounted, when doors or lids remain closed or when opening or closing doors or lids, unless these components have been tested and in conformity with Annex BB for group IIA gases or the refrigerant used (IEC 60335-2-89)		P
22.108	Compression-type appliance which use flammable refrigerants is 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 luminaries are mounted (IEC 60335-2-89)		Р
	This requirements does not apply to areas where (IEC 60335-2-89)		Р
	- 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		Р
	are mounted, even if they produce arcs and sparks during operation (IEC 60335-2-89)		N/A
	Compliance is checked by the following test unless luminaries and components that produce arcs and sparks during normal operation and which are mounted in the areas under consideration, have been tested and comply with the requirements in Annex BB for group IIA gases or the refrigerant used (IEC 60335-2-89)		Р
	Test: A quantity equal to $50\% \pm 1,5g$ of the refrigerant charge is injected into the considered area (IEC 60335-2-89)		Р
	The measured value shall not exceed 75% LEL of the refrigerant (table 102) and shall not exceed 50% LEL for a period exceeding 5 min (IEC 60335-2-89)		Р
22.109	Temperatures on surfaces that may be exposed to leakage of flammable refrigerants shall not exceed the auto-ignition temperature (table 102) reduced by 100 K (IEC 60335-2-89/A2)		Р
22.110	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 doors or lids closed (IEC 60335-2-89)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
22.111	Doors and lids of compartments in appliances with a free space, others than those with sliding doors or lids, shall be capable of being opened from the inside (IEC 60335-2-89)		N/A
	The door shall open before the force exceeds 70 N (IEC 60335-2-89)		N/A
22.112	Drawers which are only accessible after openings a door or lid shall not contain a free space (IEC 60335-2-89)		N/A
22.113	Drawers which are accessible without opening a door and which contain a free space shall have an opening in their rear wall and be capable of being opened from the inside (IEC 60335-2-89)		N/A
	The drawers shall open before the force exceeds 70 N (IEC 60335-2-89)		N/A
22.114	Split-system appliances that use a flammable refrigerant are not be fitted with precharged interconnection refrigerant piping (IEC 60335-2-89)		N/A
23	INTERNAL WIRING		_
23.1	Wireways smooth and free from sharp edges		Р
	Wires protected against contact with burrs, cooling fins etc.		Р
	Wire holes in metal well-rounded or provided with bushings		Р
	Wiring effectively prevented from coming into contact with moving parts		Р
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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts		N/A
	Not more than 10% of the strands of any conductor broken, and		N/A
	not more than 30% for wiring supplying circuits that consume no more than 15W		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		Р
	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or		Р
	no breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		Р
	For class II construction, the requirements for supplementary insulation and reinforced insulation apply, (IEC60335-1/A1)		Р
	except that the sheath of a cord complying with IEC 60227 or IEC 60245 may provide supplementary insulation. (IEC60335-1/A1)		N/A
	A single layer of internal wiring insulation does not provide reinforced insulation		Р
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or		Р
	be such that it can only be removed by breaking or cutting		Р
23.7	The colour combination green/yellow only used for earthing conductors		Р
23.8	Aluminium wires not used for internal wiring	No aluminium wire used	Р
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		Р
	the contact pressure is provided by spring terminals		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
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 (IEC60335-1/A1)		Р
	List of components:	(see appended table)	Р
	Motors not required to comply with IEC 60034-1, they are tested as part of the appliance (IEC60335-1/A1)		Р
	Relays tested as part of the appliance, or (IEC60335-1/A1)		Р
	alternatively acc. to IEC 60730-1, and meeting the additional requirements in IEC 60335-1 (IEC60335-1/A1)		Р
	The requirements of Clause 29 apply between live parts of components and accessible parts of the appliance (IEC60335-1/A1)		Р
	Components can comply with the requirements for clearances and creepage distances for functional insulation in the relevant component standard		Р
	30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections (IEC60335-1/A1)		Р
	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 (IEC60335-1/A1)		Р
	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		Р
	If these conditions are not satisfied, the component is tested as part of the appliance.		Р
	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		P

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		Р
	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		Р
	Lampholders and starterholders that have not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard		N/A
	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309		N/A
	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)	Approved compressor used	Р
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		Р
	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 (IEC60335-1/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		Р
	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

IEC 60335-2-89				
Clause	Requirement + Test		Result - Remark	Verdict
	If the switch only operates a motor staring recomplying with IEC 60730-2-10 with the nurcycles of a least 10 000 as specified, the conswitching system need not be tested	nber of		N/A
	The number of operations for other switches	(IEC 603	335-2-89):	
	- quick-freeze switches:		300	N/A
	- manual and semi-automatic defrost switch	es	300	N/A
	-door switches		50 000	N/A
	-on/off switches		300	Р
24.1.4	Automatic controls comply with IEC 60730-1 cycles of operation being at least:	1 with the	relevant part 2. The number of	
	- 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 (IEC 60335-2-89):	100 000		N/A
	- 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)	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

IEC 60335-2-89				
Clause	Requirement + Test		Result - Remark	Verdict
	- 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 clause 11 need not be declared, if the applia meets the requirements of this standard who are short-circuited	ince	For electronic thermostat for compressor	Р
	Thermal motor protectors are tested in comb with their motor under the conditions specific Annex D			N/A
	For water valves containing live parts and the incorporated in external hoses for connection appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IE 60730-2-8 is IPX7	n of an		N/A
	Thermal cut-outs of the capillary type comply the requirements for type 2.K controls in IEC 2-9 (IEC60335-1/A1)			N/A
	Electrical pressure relief devices shall comple 2B and type 2N (IEC 60335-2-89);	ly with IE	C 60730-2-6 and shall be of type	_
	- shall have a trip free mechanism of type 2l	Ε;		N/A
	- the deviation and drift shall not exceed + 0	%.		N/A
	For mechanical pressure relief devices not faunder the scope of IEC 60730, the operating pressure must be no more than the setting of device plus 10 % (IEC 60335-2-89).)		N/A
	Pressure relief devices of the bursting disc ty are not certified to ISO 4126-2 shall be teste of the appliance to 14.3.4 of ISO 4126-2 and marked with (IEC 60335-2-89/A1):	d as part I shall be n		N/A
	ame, trademark or identification manufacturer or responsible vendor			
	odel name or type reference			
24.1.5	Appliance couplers comply with IEC 60320-	1		N/A

IEC 60335-2-89				
Clause	Requirement + Test	Result - Remark	Verdict	
	However, for class II appliances classified higher than IPX0, the appliance couplers comply with IEC 60320-2-3 (IEC60335-1/A1)		N/A	
	Interconnection couplers comply with IEC 60320-2-2		N/A	
24.1.6	Small lamp holders 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		Р	
	Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19		Р	
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance		Р	
	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	See table 24.1	Р	
24.2	Appliances not fitted with:		_	
	- switches, automatic controls or power supplies in flexible cords (IEC60335-1/A2)		Р	
	 devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance 		Р	
	- thermal cut-outs that can be reset by soldering, unless		Р	
	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		N/A	

IEC 60335-2-89				
Clause	Requirement + Test	Result - Remark	Verdict	
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N/A	
	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)		Р	
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 carried out at a temperature of (IEC 60335-2-89/A2):	max, the 96 h ageing test is	_	
	32 °C \pm 2 °C on hoses sets supplied with appliances of climatic class 0, 1, 2, 3, 4, 6 or 8;		N/A	
	43 °C \pm 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		N/A	
	One or more of the following conditions are to be met	:	_	
	- the capacitors are of class S2 or S3 according to IEC 60252-1		N/A	
	- the capacitors are housed within a metallic or ceramic enclosure		N/A	
	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm		N/A	
	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of Annex E		N/A	
	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695-11-10		N/A	

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
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/A2).		N/A
25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE	E CORDS	_
	This clause of part 1 is not applicable to those parts of motor-compressors with facilities for connecting a supply cord and complying with IEC 60335-2-34 (IEC 60335-2-89)		N/A
25.1	Appliance not intended for permanent connection to fix connection to the supply:	xed wiring, means for	_
	- 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 (IEC60335-1/A1)		Р
	- 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		_
25.2	Mains-operated appliances not provided with more than one means of connection to the supply unless (IEC 60335-2-89)		Р
	- 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 fix the following means for connection to the supply main:		_
	- a set of terminals allowing the connection of a flexible cord		N/A
	- a fitted supply cord		N/A
	- a set of supply leads accommodated in a suitable compartment		N/A
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A

IEC 60335-2-89				
Clause	Requirement + Test Result - Remark	Verdict		
	- 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	Р		
	- 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	Р		
25.7	Supply cords, other than for class III appliances, being one of the following type	es: —		
	- 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 ha temperature rise exceeding 75 K during the test of clause 11	ving a —		
	light polyvinyl chloride sheathed cord (60227 IEC 52), for appliances not exceeding 3 kg	N/A		
	ordinary polyvinyl chloride sheathed cord (60227 IEC 53), for other appliances H05VV-F	Р		
	- heat resistant polyvinyl chloride sheathed. Not used for type X attachment oth than specially prepared cords	ner —		
	heat-resistant light polyvinyl chloride sheathed cord (60227 IEC 56), for appliances not exceeding 3 kg	N/A		

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	 heat-resistant polyvinyl chloride sheathed cord (60227 IEC 57), for other appliances 		N/A
	- halogen-free, low smoke, thermoplastic insulated a	ind sheathed	_
	light duty halogen-free low smoke flexible cable (62821 IEC 101) for circular cable and (62821 IEC 101f) for flat cable (IEC60335-1/A2)		N/A
	 Ordinary duty halogen-free low smoke flexible cable (62821 IEC 102) for circular cable and (62821 IEC 102f) for flat cable (IEC60335-1/A2) 		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 (mm²)	1,5mm ² used	Р
25.9	Supply cords not in contact with sharp points or edges		Р
25.10	Supply cord of class I appliances have a green/yellow core for earthing		Р
	In multi-phase appliances, the colour of the neutral conductor of the supply cord is blue		N/A
	Where additional neutral conductors are provided in	the supply cord:	_
	 other colours may be used for these additional neutral conductors; (IEC60335-1/A2) 		N/A
	 all of the neutral conductors and line conductors are identified by marking using the alpha numeric notation specified in IEC 60445 (IEC60335-1/A2) 		N/A
	- the supply cord is fitted to the appliance (IEC60335-1/A2)		N/A
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless		Р
	the contact pressure is provided by spring terminals		N/A
25.12	Insulation of the supply cord not damaged when moulding the cord to part of the enclosure		N/A
25.13	Inlet openings so constructed as to prevent damage to the supply cord		Р

IEC 60335-2-89				
Clause	Requirement + Test	Result - Remark	Verdict	
	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 (IEC60335-1/A1)		Р	
	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		Р	
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		Р	
	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)		Р	
	Pull and torque test of supply cord, values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm)	100N, 0,35Nm	Р	

	IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict	
	Cord not damaged and max. 2 mm displacement of the cord	<2,0mm	Р	
25.16	Cord anchorages for type X attachments constructed	and located so that:	_	
	- replacement of the cord is easily possible		N/A	
	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A	
	- they are suitable for different types of supply cord		N/A	
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless		N/A	
	they are separated from accessible metal parts by supplementary insulation		N/A	
	- 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, 0l and l 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	type Y	Р	
25.18	Cord anchorages only accessible with the aid of a tool, or		Р	
	Constructed so that the cord can only be fitted with the aid of a tool		N/A	

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N/A
	Tying the cord into a knot or tying the cord with string not used		N/A
25.20	The conductors of the supply cord for type Y and Z attachment insulated from accessible metal parts	type Y	Р
25.21	Space for supply cord for type X attachment or for corconstructed:	nnection of fixed wiring	
	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 temp. rise of external metal parts exceeds 75 K during clause 11, unless		N/A
	the supply cord is unlikely to touch such metal parts		N/A
25.23	Interconnection cords comply with the requirements	for the supply cord, except that:	
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11 (IEC60335-1/A2)		N/A
	- the thickness of the insulation may be reduced (IEC60335-1/A2)		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 (IEC60335-1/A2)		N/A
	If necessary, electric strength test of 16.3 (IEC60335-1/A2)		N/A

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
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
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 IEC 60335-2-34 (IEC 60335-2-89)		N/A
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors		Р
	Terminals only accessible after removal of a non-detachable cover, except		Р
	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

IEC 60335-2-89				
Clause	Requirement + Test	Result - Remark	Verdict	
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 t	ightened 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	
	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 (mm²)		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	

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
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		Р
	conductors ends fitted with means suitable for screw terminals		N/A
	Pull test of 5 N to the connection		Р
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used	Type Y	Р
	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)		Р
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		Р
	Earthing terminals and earthing contacts not connected to the neutral terminal		Р
	Class 0, II and III appliances have no provision for protective earthing (IEC60335-1/A1)		N/A
	Class II appliances and class III appliances can incorporate an earth for functional purposes (IEC60335-1/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		Р
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm², and		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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 (IEC60335-1/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		Р
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC60335-1/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		Р
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		Р
	If of steel, these parts provided with an electroplated coating with a thickness at least 5 μm		Р
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		Р
	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		Р
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC60335-1/A1)		N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		Р
	This requirement does not apply to connections providing earthing continuity in the protective extralow 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 (IEC60335-1/A1)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω)	Max.0,04	Р
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 (IEC60335-1/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)		Р
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses		Р
	Screws not of soft metal liable to creep, such as zinc or aluminium		Р
	Diameter of screws of insulating material min. 3 mm	No screws of insulating material	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		Р
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		Р
	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)	Р
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		Р
	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material		Р

		EC 60335-2-89	
Clause	Requirement + Test	Result - Remark	Verdict
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	This requirement does not apply to electrical connecti which:	ons in circuits of appliances for	
	30.2.2 is applicable and that carry a current not exceeding 0,5 A		N/A
	 30.2.3 is applicable and that carry a current not exceeding 0,2 A 		N/A
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together		N/A
	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread		N/A
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer		N/A
	Thread-cutting, thread rolling and space threaded screen connections providing earthing continuity provided it is connection:		_
	- in normal use,		Р
	- during user maintenance,		Р
	- when replacing a supply cord having a type X attachment, or	Type Y	N/A
	- during installation		Р
	At least two screws being used for each connection providing earthing continuity, unless		Р
	the screw forms a thread having a length of at least half the diameter of the screw		Р
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity		Р
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or		Р
	if an alternative earthing circuit is provided		Р
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion		Р
29	CLEARANCES, CREEPAGE DISTANCES AND SO	LID INSULATION	_
	Compliance is not checked on parts related to motor-compressors if the motor-compressor complies with IEC 60335-2-34 (IEC 60335-2-89)		N/A
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IEC 60335-2-89				
Clause	Requirement + Test	Result - Remark	Verdict	
	Clearances, creepage distances and solid insulation withstand electrical stress		Р	
	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	
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)	Р	
	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 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable		Р	
	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 (IEC60335-1/A1)		N/A	
	Impulse voltage test is not applicable:		_	
	- when the microenvironment is pollution degree 3, or		Р	
	- for basic insulation of class 0 and class 01 appliances, or		N/A	
	- to appliances intended for use at altitudes exceeding 2 000 m		N/A	
	Appliances are in overvoltage category II		Р	
	A force of 2 N is applied to bare conductors, other than heating elements		Р	
	A force of 30 N is applied to accessible surfaces		Р	
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		Р	

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	The values of table 16 or the impulse voltage test of clause 14 are applicable	(see appended table)	Р
	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		Р
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16:	(see appended table)	Р
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)	Р
	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		Р
29.1.4	Clearances for functional insulation are the largest va	lues determined from:	_
	- table 16 based on the rated impulse voltage:	(see appended table)	Р
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		Р
	- 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		Р
	the distances can be affected by wear, distortion, movement of the parts or during assembly		Р
	However, clearances are not specified if the appliance complies with clause 19 with the functional insulation short-circuited		Р
	Lacquered conductors of windings considered to be bare conductors		Р
	However, clearances at crossover points are not measured		Р
	Clearance between surfaces of PTC heating elements may be reduced to 1mm		N/A
29.1.5	Appliances having higher working voltages than rated insulation are the largest values determined from:	l voltage, clearances for basic	
	- table 16 based on the rated impulse voltage:		Р
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		Р
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	IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict	
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A	
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1 or Clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation		N/A	
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A	
	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		N/A	
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N/A	
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15		Р	
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)	Р	
	Pollution degree 2 applies, unless		Р	
	- precautions taken to protect the insulation; pollution degree 1		N/A	
	- insulation subjected to conductive pollution; pollution degree 3		Р	
	A force of 2 N is applied to bare conductors, other than heating elements		Р	
	A force of 30 N is applied to accessible surfaces		Р	
	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		Р	
	Insulation in refrigeration appliances and ice-makers is in pollution degree 3 and shall have a CTI value of 250 unless the insulation to be protected to pollution by condensation (IEC 60335-2-89)		Р	

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
29.2.1	Creepage distances of basic insulation not less than specified in table 17	(see appended table)	Р
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17		N/A
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14		N/A
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or	(see appended table)	Р
	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)	Р
	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)	Р
	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		Р
29.3	Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		Р
	Compliance checked:		_
	- by measurement, in accordance with 29.3.1, or		Р
	- by an electric strength test in accordance with 29.3.2, or		Р
	- 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 (IEC60335-1/A1)		P

	IEC 60335-2-89		
Clause	Requirement + Test Re	Result - Remark	Verdict
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or (IEC60335-1/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 (IEC60335-1/A1)		Р
	- 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		Р
	Reinforced insulation have a thickness of at least 2 mm		Р
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		Р
	Supplementary insulation consist of at least 2 layers		Р
	Reinforced insulation consist of at least 3 layers		Р
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		Р
	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		Р
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,		Р
	parts supporting live parts, and		Р
	parts of thermoplastic material providing supplementary or reinforced insulation		Р
	sufficiently resistant to heat		Р
	Ball-pressure test according to IEC 60695-10-2		Р
	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)	Р

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	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)	Р
	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
	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)		Р
	Following tests do not apply to parts related to the motor-compressor if the motor-compressor complies with IEC 60335-2-34 (IEC 60335-2-89)		Р
30.2	Parts of non-metallic material resistant to ignition and spread of fire		Р
	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		Р
	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		Р
	Compliance checked by the test of 30.2.1, and in addition:		Р
	- for attended appliances, 30.2.2 applies		N/A
	- for unattended appliances, 30.2.3 applies		Р
	For appliances for remote operation, 30.2.3 applies		N/A
	For base material of printed circuit boards, 30.2.4 applies		Р
	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)		Р
30.2.1	Parts of non-metallic material subjected to the glowwire test of IEC 60695-2-11 at 550°C	(see appended table 30.2)	Р
	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

	IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict	
	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	Appliances operated while attended, parts of non- metallic material supporting current-carrying connections, and		N/A	
	parts of non-metallic material within a distance of 3mm of such connections,		N/A	
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended table 30.2)	N/A	
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		N/A	
	- 650 °C, for other connections		N/A	
	Glow-wire applied to an interposed shielding material, if relevant		N/A	
	The glow-wire test is not carried out on parts of mater wire flammability index according to IEC 60695-2-12 (5 5	_	
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		N/A	
	- 650 °C, for other connections		N/A	
	The glow-wire test is also not carried out on small par	ts. These parts are to:	_	
	- 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	(see appended table 30.2/30.4)	N/A	
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A	
	Glow-wire test not applicable to conditions as specified		N/A	
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		Р	
	The tests are not applicable to conditions as specified		Р	
30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and		Р	
	parts of non-metallic material, other than small parts, within a distance of 3 mm,		Р	
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C	(see appended table 30.2)	Р	

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	Glow-wire applied to an interposed shielding material, if relevant		Р
	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		Р
30.2.3.2	Parts of non-metallic material supporting connections, and		Р
	parts of non-metallic material within a distance of 3mm,		Р
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended table 30.2)	Р
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		Р
	- 650 °C, for other connections		Р
	Glow-wire applied to an interposed shielding material, if relevant		Р
	However, the glow-wire test of 750 °C or 650 °C as a parts of material fulfilling both or either of the following		_
	- 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 par	ts. 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 applience of a point encroach within the vertical cylinder placed above the and on top of the non-metallic parts supporting currer parts of non-metallic material within a distance of 3 m parts are those:	e centre of the connection zone nt-carrying connections, and	_
	- 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 glowwire 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 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)	Р
	Test not applicable to conditions as specified:		N/A
31	RESISTANCE TO RUSTING		_
	Relevant ferrous parts adequately protected against rusting		Р
	Tests specified in part 2 when necessary		N/A
32	RADIATION, TOXICITY AND SIMILAR HAZARDS		
	Appliance does not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use		Р
	Compliance is checked by the limits or tests specified in part 2, if relevant		N/A

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

Α	ANNEX A (INFORMATIVE) ROUTINE TESTS	_
	Description of routine tests to be carried out by the manufacturer	N/A
AA	ANNEX AA, (NORMATIVE) LOCKED-ROTOR TEST OF FAN MOTORS (IEC 60335-2-89)	
	The winding of a fan motor does not reach excessive temperatures if the motor locks or fails to start	Р
	The motor is supplied at rated voltage according to supply circuit fig. AA.1.	Р
В	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 (IEC60335-1/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 (IEC60335-1/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 (IEC60335-1/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 (IEC60335-1/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

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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
	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 (IEC60335-1/A1)		N/A
	use only with <model designation=""> supply unit:</model>		N/A
7.6	Additional symbols (IEC60335-1/A1)		N/A
7.12	The instructions give information regarding charging (IEC60335-1/A2)		N/A
	Instructions for appliances incorporating batteries intended to be replaced by the user include required information (IEC60335-1/A2)		N/A
	Instructions for appliances containing non-user-repla substance of the following:	aceable batteries state the	N/A
	This appliance contains batteries that are only replaceable by skilled persons (IEC60335-1/A2)		N/A
	Instructions for appliances containing non-replaceab substance of the following:	le batteries shall state the	N/A
	This appliance contains batteries that are non-replaceable (IEC60335-1/A2)		N/A
	For appliances intending to be supplied from a detact purposes of recharging the battery, the type reference is stated along with the following:		N/A
	WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance (IEC60335-1/A2)		N/A
	If the symbol for detachable supply unit is used, its meaning is explained (IEC60335-1/A2)		N/A

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
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 (IEC60335-1/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
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) (IEC60335-1/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 (IEC60335-1/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 of IEC 60068-2-31, the number of falls being:	to the free fall test, procedure 2,	_
	- 100, if the mass of the part does not exceed 250 g (g)		N/A
	- 50, if the mass of the part exceeds 250 g		N/A
	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met		N/A

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
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
ВВ	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		N/A
11	All of subclauses of Clause 11 are applicable, except 11.2.4.1, 11.2.4.5, 11.2.5, 11.2.6, 11.2.7, 11.3.4, 11.3.5, 11.3.6 and 11.4		N/A
16	Clause 16 is applicable		N/A
17	Clause 17 is applicable		N/A
18	Clause 18 is applicable		N/A
19	All of the subclauses of 19 are applicable, except 19.1 and 19.6, which are replaced by the following		N/A
19.1	Seals are tested using 22.5		N/A
	However, if the device is tested in the appliance, then 22.5.1 and 22.5.2 are not applicable.		N/A
	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		N/A
19.6	The type tests described in 22.5 shall be performed where relevant		N/A
20	Clause 20 is applicable		N/A
С	ANNEX C (NORMATIVE) AGEING TEST ON MOTORS		_
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding		N/A
	Test conditions as specified		N/A
	This annex does not apply to motor-compressors (IEC 60335-2-89)		N/A
D	ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS		

	IEC 60335-2-89	
Clause	Requirement + Test Result - Remark	Verdict
	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	Р
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	Р
9.2	The first paragraph does not apply	Р
	If possible, the flame is applied at least 10 mm from a corner	N/A
9.3	The test is carried out on one specimen	Р
	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	Р
	However, for printed circuit boards, the duration of burning not exceeding 15 s	Р
F	ANNEX F (NORMATIVE) CAPACITORS	_
	Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or voltage dividing, comply with the following clauses of IEC 60384-14, with the following modifications:	_
1.5	Terms and definitions	_
1.5.3	Class X capacitors tested according to subclass X2	N/A
1.5.4	This subclause is applicable	N/A
1.6	Marking	_
	Items a) and b) are applicable	N/A
3.4	Approval testing	_

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
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 approximately transformers:	olicable for safety isolating	_
7	Marking and instructions		_
7.1	Transformers for specific use marked with:		
	-name, trademark or identification mark of the manufacturer or responsible vendor:	Not for specific use	N/A
	-model or type reference:		N/A
17	Overload protection of transformers and associated	circuits	_

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
	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
Н	ANNEX H (NORMATIVE) SWITCHES		_
	Switches comply with the following clauses of IEC 610	058-1, 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
l	Not applicable		N/A
15.2			
15.3	Applicable for full disconnection and micro- disconnection		N/A

	IEC 60335-2-89	
Clause	Requirement + Test Result - Remark	Verdict
	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 (IEC60335-1/A1)	N/A
	It is also applicable to creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in Table 24 (IEC60335-1/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	_
11.3	The temperature rise of the body of the motor is determined instead of the temperature rise of the windings	N/A

IEC 60335-2-89			
Clause	Requirement + Test Result - Remark	Verdict	
11.8	The temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material	N/A	
16	Leakage current and electric strength	_	
16.3	Insulation between live parts of the motor and its other metal parts is not subjected to the test	N/A	
19	Abnormal operation	_	
19.1	The tests of 19.7 to 19.9 are not carried out	N/A	
19.I.101	Appliance operated at rated voltage with each of the following fault conditions:	_	
	- short circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit	N/A	
	- short circuit of each diode of the rectifier	N/A	
	- open circuit of the supply to the motor	N/A	
	- open circuit of any parallel resistor, the motor being in operation	N/A	
	Only one fault simulated at a time, the tests carried out consecutively	N/A	
22	Construction	_	
22.I.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation	N/A	
	Compliance checked by the tests specified for double and reinforced insulation	N/A	
J	ANNEX J (NORMATIVE) COATED PRINTED CIRCUIT BOARDS	_	
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:	_	
5.7	Conditioning of the test specimens	_	
	When production samples are used, three samples of the printed circuit board are tested	N/A	
5.7.1	Cold	_	
	The test is carried out at -25 °C	N/A	
5.7.3	Rapid change of temperature	_	
	Severity 1 is specified	N/A	
5.9	Additional tests		
	This subclause is not applicable	N/A	
К	ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES	_	

IEC 60335-2-89			
Clause	Requirement + Test	Result - Remark	Verdict
	The information on overvoltage categories is extracted from IEC 60664-1		Р
	Overvoltage category is a numeral defining a transient overvoltage condition		Р
	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		Р
	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 CLEAR DISTANCES	RANCES AND CREEPAGE	_
	Information for the determination of clearances and creepage distances		Р
М	ANNEX M (NORMATIVE) POLLUTION DEGREE		_
	The information on pollution degrees is extracted from IEC 60664-1		Р
	Pollution	1	_
	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment		Р
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		Р
	Minimum clearances specified where pollution may be present in the microenvironment		Р
	Degrees of pollution in the microenvironment		_
	For evaluating creepage distances, the following deg microenvironment are established:	rees of pollution in the	_
	- pollution degree 1: no pollution or only dry, non- conductive pollution occurs. The pollution has no influence		N/A

	IEC 60335-2-89		
Clause	Requirement + Test Result - Remark	Verdict	
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected	Р	
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected	Р	
	- 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	T —	
	Test solution A is used	Р	
10	Determination of proof tracking index (PTI)	_	
10.1	Procedure		
	The proof voltage is 100V, 175V, 400V or 600V:	Р	
	The test is carried out on five specimens	Р	
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100	Р	
10.2	Report	<u> </u>	
	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	
0	ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30	_	
	Description of tests for determination of resistance to heat and fire	Р	
P	ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN WARM DAMP EQUABLE CLIMATES	_	
	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332	_	
	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332, if liable to be connected to a supply mains that excludes the protective earthing conductor	_	

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
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 (IEC60335-1/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 warm damp equable climate, but may also be used in other countries		N/A
	If symbol IEC 60417-6332 is used, its meaning is explained		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		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	F ELECTRONIC CIRCUITS	_
	Description of tests for appliances incorporating electr	onic circuits	Р
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	'	_
	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		_

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 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 inc the fault/error conditions specified in table R.2 have on		—	
	- 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 inc the fault/error conditions specified in table R.1 have on		_	
	- 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	
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate		N/A	

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 is impaired		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	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 is impaired		N/A
R.3	Measures to avoid errors		_
R.3.1	General		_
	For programmable electronic circuits with functions re measures to control the fault/error conditions specified following measures to avoid systematic fault in the so	d in table R.1 or R.2, the	_
	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:	_
	The specification of the software safety requirements includes the descriptions listed		N/A
R.3.2.2	Software architecture		_
R.3.2.2.1	The specification of the software architecture includes the aspects listed	Document ref. No:	N/A
	 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		

Page 88 of 139

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

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

	T	ABLE R.1 e – GENERAL FAULT	ERROR CON	DITIONS		
Component a	Fault/error	Acceptable measures b, c	Definitions	Document reference for applied measure	Document reference for applied test	Ver- dict
1 CPU						N/A
1.1	Ctuals at	Franking of took on	110405			
Registers	Stuck at	Functional test, or	H.2.16.5			
		periodic self-test using either:	H.2.16.6			
		static memory test, or	H.2.19.6			
		word protection with single bit redundancy	H.2.19.8.2			
1.2 VOID						N/A
1.3	Stuck at	Functional test, or	H.2.16.5			N/A
Programme		Periodic self-test, or	H.2.16.6			
counter		Independent time-slot monitoring, or	H.2.18.10.4			
		Logical monitoring of the programme sequence	H.2.18.10.2			
2	No interrupt	Functional test, or	H.2.16.5			N/A
Interrupt handling and execution	or too frequent interrupt	time-slot monitoring	H.2.18.10.4			
3	Wrong	Frequency monitoring, or	H.2.18.10.1			N/A
Clock	frequency (for quartz synchroniz ed clock: harmonics/ sub- harmonics only)	time slot monitoring	H.2.18.10.4			
4. Memory						N/A
4.1	All single	Periodic modified checksum, or	H.2.19.3.1			
Invariable memory	bit faults	multiple checksum, or	H.2.19.3.2			
momory		word protection with single bit redundancy	H.2.19.8.2			
4.2	DC fault	Periodic static memory test, or	H.2.19.6			N/A
Variable memory		word protection with single bit redundancy	H.2.19.8.2			

		IEC 60335-2-8	9	
Clause	Requirement -	+ Test	Result - Remark	Verdict
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				N/A
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2	N/A
6 External	Hamming distance 3	Word protection with multi-bit redundancy, or	H.2.19.8.1	N/A
communicati		CRC – single work, or	H.2.19.4.1	
on		Transfer redundancy, or	H.2.18.2.2	
		Protocol test	H.2.18.14	
6.1 VOID				N/A
6.2 VOID				N/A
6.3	Wrong	Time-slot monitoring, or	H.2.18.10.4	N/A
Timing	point in	scheduled transmission	H.2.18.18	
	time	Time-slot and logical monitoring, or	H.2.18.10.3	
		comparison of redundant communication channels by either:		
		reciprocal comparison	H.2.18.15	
		independent hardware comparator	H.2.18.3	
	Wrong	Logical monitoring, or	H.2.18.10.2	
	sequence	time-slot monitoring, or	H.2.18.10.4	
		Scheduled transmission	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				N/A
	1		1	<u> </u>

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

7.2 Analog I/O					N/A
7.2.1 A/D and D/A- converter	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13		
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13		N/A
8 VOID					N/A
9 Custom chips d e.g. ASIC, GAL, gate array	Any output outside the static and dynamic functional specificatio n	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 (IEC60335- 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	

IEC 60335-2-89				
Clause	Requirement + Test	Result - Remark	Verdict	
7.1	Appliances marked with the battery voltage (V) and the polarity of the terminals, unless:		N/A	
	the polarity is irrelevant		N/A	
	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 s	upply 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	

IEC 60335-2-89					
Clause	Requirement + Test	Result - Remark	Verdict		
	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		
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		
Т	ANNEX T (NORMATIVE) UV-C RADIATION EFFECT ON NON-METALLIC N	IATERIALS	_		
	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 (IEC60335-1/A2)		N/A		

	IEC 60335-2-89		
Clause	Requirement + Test	Result - Remark	Verdict
	Does not apply to glass, ceramic and similar materials (IEC60335-1/A2)		N/A
	Tested as specified in ISO 4892-1 and ISO 4892-2,	with the following modifications:	
	Modifications to ISO 4892-1:		
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/m2 at 254 nm (IEC60335-1/A2)		N/A
	Subclause 5.1.6.1 and Table 1 are not applicable (IEC60335-1/A2)		N/A
5.2.4	The black-panel temperature shall be 63 °C +/- 3 °C (IEC60335-1/A2)		N/A
5.3.1	Humidification of the chamber air is specified in part 2 when necessary (IEC60335-1/A2)		N/A
9	This clause is not applicable (IEC60335-1/A2)		N/A
	Modifications to ISO 4892-2:		_
7.1	At least three test specimens are tested (IEC60335-1/A2)		N/A
	Ten samples of internal wiring is tested (IEC60335-1/A2)		N/A
7.2	The specimens are attached to the specimen holders such that they are not subject to any stress (IEC60335-1/A2)		N/A
7.3	Apparatus prepared as specified (IEC60335-1/A2)		N/A
	The test specimens and, if used, the irradiance-measuring instrument are exposed for 1 000 h (IEC60335-1/A2)		N/A
7.4	If used, a radiometer is mounted and calibrated such that it measures the irradiance at the exposed surface of the test specimen (IEC60335-1/A2)		N/A
7.5	Material properties and test methods for parts providing mechanical support or impact resistance as specified in Table T.1 (IEC60335-1/A2)		N/A
	Material properties and test method for electrical insulation of internal wiring as specified in Table T.2 (IEC60335-1/A2)		N/A
8	This clause is not applicable (IEC60335-1/A2)		N/A

10.101	10.101 TABLE: Power input deviation : For defrosting heater					
Input deviation of/at:		P rated (W)	P measured (W)	ΔΡ	Required Δ P	Remark
230V, 50Hz Model: BF60		550	529	-3,8%	+10%/-10%	Р
230V, 50Hz Model: BF12		1100	1135	+3,2%	+10%/-10%	Р
230V, 50Hz Model: BF180CP-76		1800	1860	+3,3%	+10%/-10%	Р
Supplementary information:						

10.2	TABLE: Curre	ABLE: Current deviation					
Current deviation of/at:		I rated (A)	I measured (A)	ΔΙ	Required Δ I	R	emark
230V, 50Hz Model: BF60	0CP-76	5,0	3,3	-34,0%	+15%		Р
230V, 50Hz Model: BF12	20CP-76	5,5	5,45	-0,1%	+15%		Р
230V, 50Hz Model: BF18	30CP-76	7,5	7,45	-0,1%	+15%		Р
Supplement	ary information:	1	1	1	1		

11.8-1	TABLE: Heating test (Model: BF180C	TABLE: Heating test (Model: BF180CP-76)				
	Test voltage (V):		206,8 & 254,4		_	
	Ambient (°C)	:	32	2,0	_	
Thermocouple locations:			perature rise ded, Δ T (K) Max. tempera			
Compress	sor	74	4,6℃	370 ℃		
Starting ca	apacitor	9,1		55(T70)		
Power cord		5,5		50		
Internal w	ire	8,0		50		
connector		7,1		For 30.1		
Transform	ner	26,3		80(Class 120)		
Inductor		9,5		80(Class 120)		
X capacito	or	10,5		75(T100)		
Y capacitor			5,5	100(T12	5)	
PCB		25,9		120		
Relay		2	23,1	60(T85)		

Enclosure	5,2	59
Display panel	2,7	74
Test enclosure	3,3	60
Fan bobbin	24,0	For 30,1

11.102 &11.103	TABLE: Heating test, the	TABLE: Heating test, thermocouple measurements (Model: BF180CP-76)				
	Test voltage (V)	:	254,4		_	
	Ambient (°C)	:	32,0		_	
Thermocou	ple locations	Max. temperature rise dT (K)	e measured,	Max. temperat	ure rise	
Defrosting h	eater surface	269,2℃		370℃	C	
Glass surfac	e	6,3		65		
Power cord		5,5		50		
Thermal cut-	out for defrost heater	0		For refer	ence	
Internal wire	for defrosting	0		50		

11.8-2	TABLE: Heating test (Model: BF120CP-76)			Р	
	Test voltage (V)		206,8 & 254,4		_
	Ambient (°C):		32,0		_
Thermocouple locations:		Max. temi	perature rise	Max. temperat	ure rise

Thermocouple locations:	Max. temperature rise measured, Δ T (K)	Max. temperature rise limit, Δ T (K)
Compressor	69,9℃	370℃
Power cord	4,2	50
Internal wire	11,1	50
Compressor capacitor	12,1	55(T70)
Enclosure	4,3	59
Connector	6,0	For 30.1
Test enclosure	4,2	60

11.102 &11.103	TABLE: Heating test, thermocouple measurements (Model: BF120CP-76)				Р
	Test voltage (V):		254,4		_
	Ambient (°C):		32,0		_
Thermocouple locations		Max. temperature rise measured, dT (K)		Max. temperatu limit, dT (K)	ire rise
Defrosting heater surface		254,0℃		370℃	
Glass surface		5,9		65	

Power cord	4,2	50
Thermal cut-out for defrost heater	0	For reference
Internal wire for defrosting	0	50

11.8-3	TABLE: Heating test	TABLE: Heating test, resistance method					
	Test voltage (V)	Test voltage (V):			254,4		_
	Ambient, t1 (°C):			:	32,0		
	Ambient, t2 (°C):				32,0		_
Temperature rise of winding:		R1 (Ω)	R2 (Ω)	Δ T (K)	Max. Δ T (K)		ulation class
Condenser fan motor winding		176,3	210,0	50,9	95	С	lass B
Evaporator fan motor winding 252,0 264,0		264,0	12,7	95	С	lass B	
Supplementary information: Most unfavourable values recorded.							

13.2	TABLE: Leakage current				
	Heating appliances: 1.15 x rated input (W):	N/A		_	
	Motor-operated and combined appliances: 1.06 x rated voltage (V):	254,4			
Leakage cu	rrent between:	I (mA)	Max. allowe	ed I (mA)	
Parts isolate	ed with basic insulation	1,58	3,5		
Parts isolate	ed with reinforced insulation	0,051	0,35 p	eak	
Supplement	ary information:				

13.3	TABLE: Dielectric strength				
Test voltag	e applied between:	Test potential applied (V)	Breakdown / flashover (Yes/No)		
Parts isolate	ed with basic insulation	1000V	No		
Parts isolate	ed with supplementary insulation	1750V	No		
Parts isolate	ed with reinforced insulation	3000V	No		
Supplement	ary information:	•			

14	TABLE: Transient overvoltages						
Clearance between:		CI (mm)	Required CI (mm)	Rated impulse voltage (V)	Impulse test voltage (V)		ashover /es/No)
Supplementa	ary information:						

16.2	TABLE: Leakage current			
	Single phase appliances: 1.06 x rated voltage (V) 254,4		_	
	Three phase appliances 1.06 x rated voltage divided by √3 (V):	N/A		_
Leakage cu	rrent between:	I (mA)	Max. allowe	ed I (mA)
Parts isolate	ed with basic insulation	1,62	3,5	
Parts isolate	ed with reinforced insulation	0,058	0,25	5
Supplement	ary information:			

16.3	TABLE: Dielectric strength					
Test voltag	e applied between:	Test potential applied (V)	Breakdown / flashover (Yes/No)			
Parts isolate	ed with basic insulation	1250V	No			
Parts isolate	ed with supplementary insulation	1750V	No			
Parts isolate	ed with reinforced insulation	3000V	No			
Supplement	ary information:	·				

17	TABLE: Overload protection			Р
Thermocou	ple locations:	Max. temperature rise measured, Δ T (K)	Max. temperate limit, Δ T	

17	TABLE: Overload pro	TABLE: Overload protection, resistance method					
	Test voltage (V):				254,4		
	Ambient, t1 (°C):			23			_
Ambient, t2 (°C):			23			_	
Temperatu	re of winding:	R1 (Ω)	R2 (Ω)	Δ T (K)	T (°C)	Ma	x. T (°C)
Transforme	r (BCY-432-3025)	-	-	-	97,2	215	(Class E)
Transformer (BCY-432-3010)		-	-	-	94,4 215		(Class E)
Transforme	r (BCY-432-30241JC)	-	-	-	93,8	215	(Class E)

Supplementary information: For switch mode transformer, Secondary of transformer was short-circuited and the input to transformer was cut off automatically.

19	19 Abnormal operation conditions				
Operationa	Operational characteristics YES/NO Operational conditions				
Are there ele	Are there electronic circuits to control the YES All operational conditions are considered		ered		

appliance o	peration?						
Are there "d	off" or "stand-by" po	osition?	No				
	nded operation of t angerous malfunct		No				
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		Worked until steady condition established	N/A	N/A	N/A	N/A	Р
19.3		Worked until steady condition established	N/A	N/A	N/A	N/A	P
19.4			N/A	N/A	N/A	N/A	Р
19.5			N/A	N/A	N/A	N/A	Р
19.6	N/A	N/A	N/A	N.A	N/A	N/A	N/A
19.7	Fan motor lock	Worked until steady condition established	N/A	N/A	N/A	N/A	Р
19.8							N/A
19.9							N/A
19.10							N/A
19.11.2	Some electronic parts on PCB shorted or open	Working or not working, no hazard	N/A	N/A	N/A	N/A	P
19.11.4.8							N/A
19.10X	1) Heater worked at 264,4V, compressor and fan motor not worked. 2) LED lamp worked 12h, refrigerant unit not worked	1) For defrosting system, thermal protector open circuit; For glass heater, worked until steady condition established No hazard 2) Work until steady condition established.					P

		No hazard.			
Supplement	ary information:				

19.7	TABLE: Abnormal of	ABLE: Abnormal operation, locked rotor/moving parts						
	Test voltage (V)	Test voltage (V):					_	
	Ambient, t1 (°C)		25		_			
	Ambient, t2 (°C)		:		25		_	
Tempera	ature of winding:	R1 (Ω)	R2 (Ω)	Δ T (K)	T (°C)	Ma	ax. T (°C)	
Condens	Condenser fan motor winding 172,1 245 109,9 134,9					175(B)		
Supplem	entary information: For ev	vaporator fan m	otor, refer to Ar	nex AA, which	n is more unfav	ourab	le.	

19.9	TABLE: Abnormal operation, running overload						N/A
	Test voltage (V):						_
	Ambient, t1 (°C):						_
	Ambient, t2 (°C)		:				_
Temperatu	Temperature of winding: R1 (Ω) R2 (Ω)			Δ T (K)	T (°C)	Ма	x. T (°C)

19.13	TABLE: Abnormal operation	TABLE: Abnormal operation, temperature rises							
Thermoco	uple locations:	Max. temperature rise measured, Δ T (K)	Max. temperature rise limit, Δ T (K)						
Power cord		7,2	150						
Connector		8,2	For 30.1						
Defrosting h	neater surface	320,0℃	370℃						
LED lamp surface		69,0℃	370℃						
LED cover		20,2	For 30.1						
Transforme	er bobbin	45,2	For 30.1						
Fan bobbin		92,6	For 30.1						
Control pan	el box	3,2	For 30.1						
Compresso	or enclosure	81,9℃	370℃						
Supplementary information: Most unfavourable value recorded									

21.1	21.1 TABLE: Impact resistance								
Impacts p	pacts per surface Surface tested		Impact energy (Nm)	Commer	nts				
3	3	Enclosure	0,5J	Р					
3	3	Control panel	0,5J	Р					

3	Glass enclosure	2,0J	Р
Supplementary information	on:		

24.1	TABLE: Component	Р			
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity
Plug	Scolmore International Ltd.	SW-102	250V, 16A	DIN VDE 0620-1: 2010	VDE 40004330
-Alt.	QINGDAO XINZHONGYUAN CABLE & ELECTRICAL CO.,LTD.	ZJ-01	250V, 16A	DIN VDE 0620-1: 2013	VDE 40042798
-Alt.	Ningbo Qiaopu Electric Co., Ltd	D03	250V, 16A	DIN VDE 0620-1	VDE or other Europe mark
Power cord	Chau's Electrical Co.,Ltd.	H05VV-F	3G1,5mm²	EN 50525-2-11: 2011	VDE 40022055
-Alt.	QINGDAO XINZHONGYUAN CABLE & ELECTRICAL CO.,LTD.	H05VV-F	3G1,5mm ² EN 50525-2-11:		EN 50525-2- 11: 2011
-Alt.	Ningbo Liansheng Wwire& cable Co., Ltd	H05VV-F	3G1,5mm²	EN 50525-2-11: 2011	EN 50525-2- 11: 2011
Internal wire	QINGDAO XINZHONGYUAN CABLE & ELECTRICAL CO.,LTD.	H05VV-F	3X0,75mm²	EN 50525-2-11: 2011	VDE 40041548
-Alt.	Ningbo Liansheng Wwire& cable Co., Ltd	H05VV-F	3X0,75mm²	EN 50525-2-11: 2011	VDE or other Europe mark
Compressor for BF180CP- 76 and BF60CP-76	Secop GmbH	SC18CNX.2	18('NIX')		VDE 40028154
Starting capacitor for SC18CNX.2	KEMET Electronics (Suzhou) Co., Ltd.	Series MD 22	AC 300V, 80uF 50Hz/60Hz, T70		
Compressor for BF120CP- 76	Secop GmbH	SC21CNX.2	220-240V, 50Hz, R290, Class I	EN 60335-1: 2012+A11 EN 60335-2-34: 2013	VDE 40028154
Starting capacitor for SC21CNX.2	KEMET Electronics (Suzhou) Co., Ltd.	Series MD 22	AC 300V, 125uF, 50Hz/60Hz,T70	EN 60252-2: 2011+A1	VDE 40018329

LED lamp	SHENZHEN TIANCHENG LIGHTING CO.,LTD	5050	DC24V, 14W DC24V, 20W DC24V, 22W	EN-62471: 2008	BSTDG1508 664001SC-2 Tested with appliance
Evaporator fan motor	Ebm-papst Motor (Shanghai) Co.,Ltd.	M4Q045- CA01-01/A30	230V-50Hz 0.20A 31/7W, Class B	IEC/EN 60335-1 IEC/EN 60335-2- 89	VDE 40026129 Tested with appliance
Condenser fan motor	Hangzhou Weiguang Electronic Co.,Ltd.	YZF series	220-240V 0.25A 7.2/35W, Class B	IEC/EN 60335-1 IEC/EN 60335-2- 89	DEKRA DW2016CE1 61 Tested with appliance
Transformer in electronic thermostat	WUXI XINCHANG ELECTRONIC CO.,LTD	BCY-432- 3025	220-240V 50/60Hz, Class B, CQC17001173661	IEC/EN 60335-1 IEC/EN 60335-2- 89	Tested with appliance
-Alt.	WUXI XINCHANG ELECTRONIC CO.,LTD	BCY-432- 3010	220-240V 50/60Hz, Class B, CQC17001173661	IEC/EN 60335-1 IEC/EN 60335-2- 89	Tested with appliance
-Alt.	WUXI XINCHANG ELECTRONIC CO.,LTD	BCY-432- 30241JC	220-240V 50/60Hz, Class B, CQC17001173661	IEC/EN 60335-1 IEC/EN 60335-2- 89	Tested with appliance
Relay in electronic thermostat	WangRong Electronics (Shenzhen) Co. Ltd.	RF-SS- 112DM-J(20A 2HP)	AC 250V, 3E4, T85	EN 61810-1: 2015	VDE 40032929
-Alt.	Xiamen Hongfa Electroacoustic Co., Ltd.	HF3FF/012- 1HST ROHS	AC 250V, 10A, 5E4, T85	EN 61810-1: 2015	VDE 40025218
-Alt.	Xiamen Hongfa Electroacoustic Co., Ltd.	HF3FF/012- 1HS ROHS	AC 250V, 10A, 5E4, T85	EN 61810-1: 2015	VDE 40025218
PCB in electronic thermostat	ZHEJIANG ZAPON ELECTRONIC TECHNOLOGY CO.,LTD	Power Box mini_V1.1_20 190216	PTI175V	IEC/EN 60335-1 IEC/EN 60335-2- 89	Tested with appliance
Capacitor for glass heater	ANHUI SAFE ELECTRONICS CO.,LTD	CBB65 series	450VAC, 35uF, T70, S2	EN 60252-1: 2011+A1	TUV Rheinland R 50303031
Defrosting Heater for BF60CP-76	Yangzhou City Tianxiong Electic Appliance Co.,Ltd.	BF60CP-76	230V 480W	IEC/EN 60335-1 IEC/EN 60335-2- 89	Tested with appliance
Defrosting Heater for BF120CP-76	Yangzhou City Tianxiong Electic Appliance Co.,Ltd.	BF120CP-76	230V 1000W	IEC/EN 60335-1 IEC/EN 60335-2- 89	Tested with appliance
Defrosting Heater for BF180CP-76	Yangzhou City Tianxiong Electic Appliance Co.,Ltd.	BF180CP-76	230V 1600W	IEC/EN 60335-1 IEC/EN 60335-2- 89	Tested with appliance

Door frame heating wire	Yangcheng Yongdan Electric Appliance Co.,Ltd		220-240V, 10W/m 40W/84W/125W	IEC/EN 60335-1 IEC/EN 60335-2- 89	Tested with appliance
Thermal Link for defrosting heater	Sung Woo Industrial Co., Ltd.	SW-105T	AC250V, 10A, Tf77	EN 60691: 2016	VDE 40026132
-Alt	NEC SCHOTT Components Corporation	SF76E	AC 250V, 10A, cut-off 77°C	EN 60691:2016	VDE 40006568
Power supply	MEAN WELL Enterprises Co., Ltd.	LRS-100-24	Input 100-240V, 2,1A 50/60Hz, Output 24VDC, 4,5A	EN 62233: 2008 EN 60335-1: 2012+A11	TUV R 50309622

Supplementary information:
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.

28.1 TABLE: Threaded part torque test								
Threaded part identification:		Diameter of thread (mm)	Column number (I, II, or III)	Applied torqu	ie (Nm)			
Earthing screw		3,9	II	1,2				
Supplementa	ary information:							

29.1	TABLE: Clearances						Р
	Overvoltage categor	y:				II	_
		Type of	insulation:				
Rated impulse voltage (V):	Min. cl (mm)	Basic (mm)	Supplementary (mm)	Re	einforced (mm)	Functional (mm)	Verdict / Remark
330	0,2* / 0,5 / 0,8**						N/A
500	0,2* / 0,5 / 0,8**						N/A
800	0,2* / 0,5 / 0,8**						N/A
1 500	0,5 / 0,8** / 1,0***						N/A
2 500	1,5 / 2,0***	>3,0	>3,0			1,6	Р
4 000	3,0 / 3,5***				>5,0		Р
6 000	5,5 / 6,0***						N/A
8 000	8,0 / 8,5***						N/A
10 000	11,0 / 11,5***						N/A

Supplementary information: *) For tracks on printed circuit boards if pollution degree 1 and 2 **) For pollution degree 3

***) If the construction is affected by wear, distortion, movement of the parts or during assembly

Page 104 of 139

	ΓABLE: nsulatio	BLE: Creepage distances, basic, supplementary and sulation							ced		Р
Working voltage (V)		epage dis lution deg		nm)							
	1	2		3			Type of insulation				
		Mater	ial grou	ıb	Materi	Material group					
		ı	II	IIIa/III b	ı	II	Illa/IIIb*	B**)	S**)	R**)	Verdict
≤50	0,18	3 0,6	0,85	1,2	1,5	1,7	1,9		_	_	N/A
≤50	0,18	3 0,6	0,85	1,2	1,5	1,7	1,9	_			N/A
≤50	0,36	3 1,2	1,7	2,4	3,0	3,4	3,8	_	_		N/A
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4			_	N/A
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4	_			N/A
125	0,56	3 1,5	2,1	3,0	3,8	4,2	4,8	_			N/A
250	0,56	3 1,25	1,8	2,5	3,2	3,6	4,0	Х	_	_	Р
250	0,56	3 1,25	1,8	2,5	3,2	3,6	4,0	_	Х	_	Р
250	1,12	2 2,5	3,6	5,0	6,4	7,2	8,0	_	_	х	Р
400	1,0	2,0	2,8	4,0	<u>5,0</u>	5,6	6,3	Х	_	_	Р
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	_		_	N/A
400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	_	_	х	Р
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0			_	N/A
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	_		_	N/A
500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	_	_		N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		_	_	N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	_		_	N/A
>630 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0		_		N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5			_	N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	_		_	N/A

TRF No. IEC60335_2_89I

Page 105 of 139

000 1 11000	4.0	0.0	44.0	40.0	20.0	00.0	05.0				NI/A
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	_	_		N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0		_	_	N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0			_	N/A
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0		_		N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0		_		N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	_		_	N/A
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	_	_		N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		_	_	N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0			_	N/A
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0				N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0		_		N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	_			N/A
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	_	_		N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0		_		N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0				N/A
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0				N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0			_	N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0			_	N/A
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0				N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0			_	N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0				N/A
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0				N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0			_	N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0				N/A
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0				N/A

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

0,08	M: I 0,4	2 aterial (epage dis (mm) ollution de group	gree	3			
0,08	I	aterial (1	N				
	I	Ш	1	N	lateria			
			IIIa/IIIb		alena	group		
	0,4	0.4		I	II	IIIa/IIIb*)	Verdict / Rema	ark
0,16		0,4	0,4	1,0	1,0	1,0	N/A	
	0,56	0,8	1,1	1,4	1,6	1,8	N/A	
0,25	0,71	1,0	1,4	1,8	2,0	2,2	N/A	
0,42	1,0	1,4	2,0	2,5	2,8	3,2	Р	
0,75	1,6	2,2	3,2	4,0	4,5	5,0	N/A	
1,0	2,0	2,8	4,0	5,0	5,6	6,3	N/A	
1,8	3,2	4,5	6,3	8,0	9,0	10,0	N/A	
2,4	4,0	5,6	8,0	10,0	11,0	12,5	N/A	
3,2	5,0	7,1	10,0	12,5	14,0	16,0	N/A	
4,2	6,3	9,0	12,5	16,0	18,0	20,0	N/A	
5,6	8,0	11,0	16,0	20,0	22,0	25,0	N/A	
7,5	10,0	14,0	20,0	25,0	28,0	32,0	N/A	
10,0	12,5	18,0	25,0	32,0	36,0	40,0	N/A	
12,5	16,0	22,0	32,0	40,0	45,0	50,0	N/A	
16,0	20,0	28,0	40,0	50,0	56,0	63,0	N/A	
20,0	25,0	36,0	50,0	63,0	71,0	80,0	N/A	
matior	n: *) Ma	terial gr	oup IIIb is	allowe	ed if the	e working voltaç	ge does not exceed	50 V
LE: Ba	II Press	sure Te	st of The	rmopla	astics			Р
4 5 7 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	i,2 i,6 i,6 i,5 i,0 2,5 i,0 2,5 i,0 20,0 matior E: Ba	6,3 6,6 8,0 7,5 10,0 0,0 12,5 2,5 16,0 6,0 20,0 20,0 25,0 mation: *) Ma E: Ball Press	6,3 9,0 6,6 8,0 11,0 7,5 10,0 14,0 0,0 12,5 18,0 2,5 16,0 22,0 6,0 20,0 28,0 20,0 25,0 36,0 mation: *) Material gr E: Ball Pressure Te	6,3 9,0 12,5 6,6 8,0 11,0 16,0 7,5 10,0 14,0 20,0 0,0 12,5 18,0 25,0 2,5 16,0 22,0 32,0 6,0 20,0 28,0 40,0 20,0 25,0 36,0 50,0 mation: *) Material group IIIb is E: Ball Pressure Test of The	1,2 6,3 9,0 12,5 16,0 16,6 8,0 11,0 16,0 20,0 17,5 10,0 14,0 20,0 25,0 10,0 12,5 18,0 25,0 32,0 2,5 16,0 22,0 32,0 40,0 10,0 20,0 25,0 36,0 50,0 63,0 10,0 12,5 Material group IIIb is allowed. E: Ball Pressure Test of Thermopla	1,2 6,3 9,0 12,5 16,0 18,0 16,6 8,0 11,0 16,0 20,0 22,0 17,5 10,0 14,0 20,0 25,0 28,0 10,0 12,5 18,0 25,0 32,0 36,0 2,5 16,0 22,0 32,0 40,0 45,0 16,0 20,0 25,0 36,0 50,0 56,0 17,0 18,0 18,0 18,0 18,0 18,0 18,0 18,0 18	4,2 6,3 9,0 12,5 16,0 18,0 20,0 6,6 8,0 11,0 16,0 20,0 22,0 25,0 7,5 10,0 14,0 20,0 25,0 28,0 32,0 0,0 12,5 18,0 25,0 32,0 36,0 40,0 2,5 16,0 22,0 32,0 40,0 45,0 50,0 6,0 20,0 25,0 36,0 63,0 71,0 80,0 mation: *) Material group IIIb is allowed if the working voltage. E: Ball Pressure Test of Thermoplastics	1,2 6,3 9,0 12,5 16,0 18,0 20,0 N/A 1,6 8,0 11,0 16,0 20,0 22,0 25,0 N/A 1,5 10,0 14,0 20,0 25,0 28,0 32,0 N/A 1,5 16,0 22,0 32,0 36,0 40,0 N/A 1,5 16,0 22,0 32,0 40,0 45,0 50,0 N/A 1,0 20,0 25,0 36,0 50,0 63,0 71,0 80,0 N/A 1,5 18,0 25,0 36,0 50,0 63,0 71,0 80,0 N/A 1,6 1,6 1,6 1,6 1,6 1,6 1,6 1,6 1,6 1,6

TRF No. IEC60335_2_89I

Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Connector		125	1,6
Transformer bobbin		125	1,2
Inductor bobbin		125	1,2
Fan bobbin		125	1,3
Control panel box		75	1,0
Inner enclosure		65	0,9
LED lamp cover		65	0,9
Supplementary information:		•	

30.2	TAI	BLE: Res	istance to	heat and	fire – Glo	w wire tests	;	Р
Object/ Part No./ Material	Manufacturer	Glow wire test (GWT); (°C)						
	trademark	550	650		7	'50	950	Verdict
		550	te	ti	te	ti	850	
Connector					0	0	Х	Р
Transformer bobbin					0	0	Х	Р
Inductor bobbin					0	0	Х	Р
Relay					0	0	Х	Р
Fan bobbin					0	0	Х	Р
Control panel box		Х						Р
PCB box		Х						Р
Inner enclosure		Х						Р
LED lamp cover		Χ						Р
Object/ Part No./ Material	Manufacturer /	Glow-wire flammability index (GWFI), °C		index	GW ignition temp. (GWIT), °C		Verdict	
	trademark	550	650	750	850	675	775	
								N/A
The test specimen passed the glow wire test (GWT) with no ignition [(te − ti) ≤ 2s] (Yes/No):							Yes	
If no, then surrounding parts passed the needle-flame test of annex E (Yes/No):						No		
	men passed the wire (Yes/No)?							No
Ignition of the	specified layer p	laced und	erneath th	ne test spe	cimen (Yes	s/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

30.2/30.4 TABLE: Needle- flame test (NFT)						Р
		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	Р

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

Annex AA	TABLE: locked-rotor test of fan motors, windings temperature limit measurements					Р	
	Ambient, t1 (°C): 25,0					_	
	Ambient, t2 (°C):				25,0		_
	test voltage (V):				240		_
temperature limit T of winding:		R1 (Ω)	R2	(Ω)	T °C)	required T (°C)	insulation class
Condenser fan motor winding		172,1	24	4,5	130,2	175	Class B
Evaporator fan motor winding		246,2	328	8,0	111,2	175	Class B

	TABLE: electric strength measurements			
test voltage applied between:		test voltage (V)	est voltage (V) breakdo Yes / ľ	
L/N & metal	enclosure	1250		No

	TABLE: leakage current measurements			
	a voltage equal to twice the rated voltage (V): 480		_	
leakage cur	rent I between :	I (mA)	required I (mA)	
Motor enclosure & motor winding		Max. 0,12	2	

	Appendix 2: IEC60335-2-89I-ATTACHMENT		
Clause	Requirement + Test	Result - Remark	Verdict

 IEC60335_2_89I - 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 2-89: PARTICULAR REQUIREMENTS FOR COMMERCIAL REFRIGERATING APPLIANCES WITH AN INCORPORATED OR REMOTE REFRIGERANT CONDENSING UNIT OR COMPRESSOR

EN 60335-2-89:2010 + A1:2016 + A2:2017 used in conjunction with

Differences according to EN 60335-1:2012 + A11:2014 + A13:2017

EN 62233:2008

Attachment Form No. EU_GD_IEC60335_2_89I

Attachment Originator.....: TÜV SÜD Product Service GmbH

Master Attachment.....: 2019-05-03

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Appendix 2: IEC60335-2-89I-ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	CENELEC COMMON MODIFICATIONS (EN)	
6.1	Delete "class 0" and "class 01"	Р
7.1	Single-phase appliances to be connected to the supply mains: 230 V covered	Р
	Multi-phase appliances to be connected to the supply mains: 400 V covered	N/A
	Replace the fourth and fifth dashes items in part 1 by: (EN 60335-2-89/A1)	
	- business name and full address of the manufacturer and, where applicable, his authorized representative (EN 60335-2-89/A1):	Р
	- model or type reference, serial number, if any, and production year (EN 60335-2-89/A1):	Р
	Add a new dashed item: (EN 60335-2-89/A1)	Р
	- designation of the appliance (EN 60335-2-89/A1) See copy of marking	Р
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.	Р
	An indication that the device has been operated is given by:	Р
	a tactile feedback, or	Р
	an audible and visual feedback	Р
7.12	The instructions include the substance of the following:	Р
	- 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	Р
	- children shall not play with the appliance	Р
	- cleaning and user maintenance shall not be made by children without supervision	Р
	The instruction shall contain the following: (EN 60335-2-89/A1)	Р
	- business name and full address of the manufacturer (EN 60335-2-89/A1):	Р
	and, where applicable, his authorized representative (EN 60335-2-89/A1):	Р
	- model or type reference of the appliance as marked on the appliance itself, except for the serial number (EN 60335-2-89/A1)	Р

Appendix 2: IEC60335-2-89I-ATTACHMENT			
Clause I	Requirement + Test	Result - Remark	Verdict
	- designation of the appliance as marked on the appliance itself, except for the serial number (EN 60335-2-89/A1)		Р
	- a general description of the appliance, when needed due to the complexity of the appliance (EN 60335-2-89/A1):		Р
	- specific precautions if required during installation, operation, adjusting, user maintenance, cleaning, repairing or moving (EN 60335-2-89/A1)		Р
	- when needed drawings, diagrams, descriptions and explanations necessary for the safe use and user maintenance of the appliance (EN 60335-2- 89/A1)		Р
	- the possible reasonably foreseeable misuse and, whenever relevant, a warning against the effects it may have on the safe use of the appliance (EN 60335-2-89/A1)		Р
	The words "Original instructions" shall appear on the language version(s) verified by the manufacturer or by the authorized representative (EN 60335-2-89/A1)		Р
	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" has to appear in the relevant instructions delivered with the appliance (EN 60335-2-89/A1)		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 (EN 60335-2-89/A1)		N/A
	The instructions shall indicate the type and frequency of inspections and maintenance required for safe operation including the preventive maintenance measures (EN 60335-2-89/A1)		Р
	Add the new following sup-clauses: (EN 60335-2-89	9/A1)	Р
7.12.Z101	Information shall be given:		Р
	- 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 (EN 60335-2-89/A1)		Р

Appendix 2: IEC60335-2-89I-ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	- on how to maintain adequate mechanical stability when in use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance (EN 60335-2-89/A1)		Р
	- on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided (EN 60335-2-89/A1)		Р
	- 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 (EN 60335-2-89/A1)		Р
	- on the specifications on the spare parts to be used, when these affect the health and safety of the operator (EN 60335-2-89/A1)		Р
	- that the A-weighted emission sound pressure level is below 70 dB(A) (EN 60335-2-89/A1)		Р
7.12.1. Z102	Instructions shall be given, when necessary, concerning safe handling and transportation on the packed appliance or have to be delivered together with the package (EN 60335-2-89/A1)		Р
7.12.1. Z103	If the installation instructions state that appliance can be placed on top of another appliance, they shall state which appliances are suitable. Instructions shall be given for the assembly of the appliances. The instructions shall state how to obtain any fixing attachments required, unless they are supplied with the appliance (EN 60335-2-89/A1)		N/A
7.12.Z104	The instructions shall include a warning that the appliance shall be disconnected from its power source during cleaning or maintenance and when replacing parts. If the removal of the plug is foreseen, it shall be 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 (EN 60335-2-89/A1)		Р
	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 shall be provided. (EN 60335-2-89/A1)		N/A
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		Р
	The height of the characters, measured on the capital letters, is at least 3 mm		Р

Appendix 2: IEC60335-2-89I-ATTACHMENT			
Clause R	Requirement + Test	Result - Remark	Verdict

	These instructions are also available in an alternative format, e.g. on a website	P
8.1.1	Also test probe 18 of EN 61032 is applied	Р
	The appliance being in every possible position during the test	Р
	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	Р
	The text of A1 should read "Delete the modification in Part 2" (EN 60335-2-89/A1)	Р
8.2	Compliance is checked by applying the test probes of EN 61032	Р
	For built-in appliances and fixed appliances, the test probe B and probe 18 of EN 61032 are applied only after installation	N/A
11.8	Footnotes to table 3 "External enclosure of motor- operated appliances" to be taken into account	Р
15.1.2	Appliances with an automatic cord reel tested with the cord in the most unfavourable position so that the reeling of the wet cord may affect electrical insulation during operation, the cord not being dried before reeling	N/A
20.1.Z101	Appliances and their components and fittings shall have adequate mechanical stability during transportation, assembly, dismantling and any other action involving the appliance (EN 60335-2-89/A1)	Р
20.2	When using the test probe similar to test probe B with a circular stop face, the accessories and detachable covers are removed	Р
	Test probe 18 applied with a force of 2,5N on the appliance fully assembled	Р
	Add after the second paragraph: (EN 60335-2-89/A1) P
	Dangerous moving transmission parts shall be safeguarded either by design or guards (EN 60335-2-89/A1)	Р

Appendix 2: IEC60335-2-89I-ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	When guards are used, they shall be fixed guards NOTE Z101 Parts of the enclosure can fulfil the guarding function (EN 60335-2-89/A1)		Р
21.1	Add before the "Addition": (EN 60335-2-89/A1)		
	Replace the first paragraph of Part 1 by: (EN 60335	5-2-89/A1)	
	Appliances and their components and fittings shall have adequate mechanical strength and be 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 (EN 60335-2-89/A1)		Р
22.104	Add the following text at the end of the first paragra (EN 60335-2-89/A2)	ph, after the two bullet points:	
	In refrigerators with swing glass door(s) constructed from a two-pane or three-pane glass, the inside pane (the one at the side of the refrigerated space) is considered as an accessible glass panel (EN 60335-2-89/A2)		N/A
	In refrigerators with sliding glass doors that are superposed on each other when opened, the inside pane (the one at the side of the refrigerated space) is not considered as an accessible glass panel (EN 60335-2-89/A2)		Р
	In refrigerators with glass door(s) made from a three pane glass, the middle pane is not considered as an accessible glass panel (EN 60335-2-89/A2)		N/A
	Add the following new sub-clauses: (EN 60335-2-8	9/A1)	Р
22.Z101	For appliances provided with separate devices for the start and the stop functions, the stop function shall be unambiguously identifiable and shall always override the start function (EN 60335-2- 89/A1)		N/A
	For appliances provided with one device performing the start and the stop function, the stop function shall be unambiguously identifiable and shall always override the start function (EN 60335-2-89/A1)		Р
22.Z102	Appliances shall be designed in such a way that incorrect mounting is avoided, if this can lead to an unsafe situation. If this is not possible, information on the correct mounting shall be given directly on the part and/or the enclosure (EN 60335-2-89/A1)		Р

	Appendix 2: IEC60335-2-89I-ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict	
22.Z103	Where the weight, size or shape prevents empty appliances from being moved manually, they shall be fitted with attachments for lifting gear or (EN 60335-2-89/A1)		N/A	
	be designed so they can be fitted with such attachments, or (EN 60335-2-89/A1)		N/A	
	be shaped in such a way that standard lifting gear can easily be used (EN 60335-2-89/A1)		N/A	
	Appliances to be moved manually shall be constructed or shall be equipped so that they can be moved easily and safely (EN 60335-2-89/A1)		Р	
22.Z104	The fixing systems of fixed guards which prevent access to dangerous moving parts shall only be removable with the use of tools (EN 60335-2-89/A1)		Р	
	If such guards have to be removed by the user for routine cleaning or maintenance their fixing systems must remain attached to the fixed guards or to the appliance after removal (EN 60335-2-89/A1)		N/A	
	Where possible, guards must be incapable of remaining in place without their fixings (EN 60335-2-89/A1)		N/A	
	The requirement in the above paragraph does not apply if after removal of the screws, or if the component is incorrectly repositioned, the appliance becomes inoperative (EN 60335-2-89/A1)		Р	
22.Z105	In case of interruption, re-establishment after an interruption or fluctuation in whatever manner of the power supply, the appliance shall not restart (EN 60335-2-89/A1)		Р	
	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 (EN 60335-2-89/A1)		Р	
22.Z106	Appliances shall be fitted with means to isolate them from all energy sources (e.g. hot water, steam, compressed air) (EN 60335-2-89/A1)		N/A	
	Such isolators must be clearly identified (EN 60335-2-89/A1)		N/A	
	They shall be capable of being locked if reconnection could endanger persons (EN 60335-2-89/A1)		N/A	

Appendix 2: IEC60335-2-89I-ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	Such means may be part of the fixed installation external to the appliance (EN 60335-2-89/A1)	N/A
	After the energy source is disconnected, it shall be possible to dissipate any energy remaining or stored in the circuits of the appliance without risk to persons (EN 60335-2-89/A1)	N/A
22.Z107	If the instructions state that an appliance can be placed on top of a other appliance, this shall be possible without tilting or falling of the above appliance (EN 60335-2-89/A1)	N/A
22.Z108	Appliances shall comply with the hygiene requirements of EN ISO 14159 (EN 60335-2-89/A1)	Р
22.Z109	Appliances shall comply with the ergonomic principles of EN 614-1 and EN 614-2 (EN 60335-2-89/A1)	Р
24.1	Components comply with the safety requirements specified in the relevant standards as far as they reasonably apply	Р
	The requirements of Clause 29 of this standard apply between live parts of components and accessible parts of the appliance.	Р
	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	Р
	Components that have not been previously tested or do not comply with the standard for the relevant component are tested according to the requirements of 30.2	Р
	Components that have been previously tested and sl resistance to fire requirements in the standard for the not be retested provided that:	
	- the severity specified in the component standard is not less than the severity specified in 30.2, and	Р
	- the test report for the component states whether it complied with the standard for the relevant component with or without flame, flames not exceeding 2 s during the test are ignored	Р
	Unless components have been previously tested and found to comply with the relevant standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9	Р

	Appendix 2: IEC60335-2-89I-ATT	ACHMENT	
Clause	Requirement + Test	Result - Remark	Verdict
	For components mentioned in 24.1.1 to 24.1.9, no additional tests specified in the relevant standard for the component are necessary other than those specified in 24.1.1 to 24.1.9		Р
	Components that have not been separately tested and found to comply with the relevant standard, and		Р
	components that are not marked or not used in accordance with their marking,		N/A
	are tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard		Р
	Lamp holders and starter holders that have not been previously tested and found to comply with the relevant standard are tested as a part of the appliance and additionally comply with the gauging and interchangeability requirements of the relevant standard under the conditions occurring in the appliance		N/A
	Where the relevant standard specifies these gauging and interchangeability requirements at elevated temperatures, the temperatures measured during the tests of Clause 11 are used		N/A
	Plugs and socket-outlets and other connecting devices of interconnection cords are not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1, or		N/A
	with connectors and appliance inlets complying with the standard sheets of IEC 60320-1,		N/A
	if direct supply to these parts from the supply mains gives rise to a hazard		N/A
24.1.4	Delete the addition from IEC 60335-2-89:2010/A2:2 89/A2)	015 (EN 60335-2-	
	Add the following third dashed item to the last paragraph IEC 60335-2-89:2010/A1:2012) 89/A2)	graph (cf. the addition in (EN 60335-2-	
	- for replaceable bursting discs in bursting disc assemblies their operating pressure (EN 60335-2-89/A2)		N/A
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

Appendix 2: IEC60335-2-89I-ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	Compliance with Clause 8 of this standard is not impaired by connecting the appliance to a device covered by EN 41003	N/A
24.Z1	For motor running capacitors (IEC 60252-1 type P2) with a metallic enclosure having an overpressure fuse the flame testing of internal plastic parts supporting current carrying connections as required in 30.2.2 and 30.2.3.1 is not necessary	N/A
25.6	Supply cords of single-phase portable appliances having a rated current not exceeding 16 A, fitted with a plug complying with the following standard sheets of IEC/TR 60083:	
	- for Class I appliances: standard sheet C2b, C3b or C4:	N/A
	- for Class II appliances: standard sheet C5 or C6:	N/A
25.7	Rubber sheathed cords (60245 IEC 53) are not suitable for appliances intended to be used outdoors or when they are liable to be exposed to significant amount of ultraviolet radiation	N/A
	Halogen-free thermoplastic compound sheathed supply cords have properties at least those of:	
	halogen-free thermoplastic compound sheathed cords (H03Z1Z1H2-F or H03Z1Z1-F), for appliances having a mass not exceeding 3 kg	N/A
	halogen-free thermoplastic compound sheathed cords (H05Z1Z1H2-F or H05Z1Z1-F), for other appliances	N/A
	Cross-linked halogen-free compound sheathed supply cords have properties at least those of cross-linked halogen-free compound sheathed cords (H07ZZ-F)	N/A
26.11	Conductors connected by soldering are not considered to be positioned or fixed so that reliance is not placed upon the soldering alone to maintain them in position unless they are held in place near the terminals independently of the solder	N/A
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	This clause of Part 1 is applicable (EN 60335-2-89/A1)	Р

Appendix 2: IEC60335-2-89I-ATTACHMENT				
Clause	Requirement + Test	Result - Remark	Verdic	
	T	EN 60000		
	Compliance regarding electromagnetic fields is checked according to EN 62233	EN 62233	Р	
Annex I, 19.I.101	The appliance is supplied at rated voltage and operated under normal operation with each of the fault conditions specified		N/A	
	The duration of the test is as specified in 19.7		N/A	
ZA	ANNEX ZA (NORMATIVE)			
	SPECIAL NATIONAL CONDITIONS			
	Norway			
19.5	The test is also applicable to appliances intended to be permanently connected to fixed wiring		N/A	
	Norway			
22.2	The second paragraph of this subclause, dealing with single-phase, permanently connected class I appliances having heating elements, is not applicable due to the supply system		N/A	
	All CENELEC countries			
25.6 and 25.25			Р	
	Ireland and United Kingdom			
05.0			N1/A	
25.8	In the table, the lines for 10 A and 16 A are replaced to the lines for 10 A are replaced	sea by:	N/A	
	> 10 and ≤ 13 1,25		N/A	
	> 13 and ≤ 16 1,5		N/A	
ZB	ANNEX ZB (INFORMATIVE) A-DEVIATIONS			
	Ireland			

N/A

This test report replaces and cancels previous test report No. ARJX-19MY1971DTQDP dataed on 2019-09-11

Appendix 2: IEC60335-2-89I-ATTACHMENT				
Verdict	Result - Remark	quirement + Test	Clause	
N/A		These regulations apply to all plugs for domestic se at a voltage of not less than 200 V and in leneral allow only plugs complying with I.S. 01:1997, or equivalent, to be fitted to domestic appliances	25.6	
		Inited Kingdom		
N/A	to	These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in the leneral allow only plugs to BS 1363 to be fitted to lomestic appliances. It also allows plugs to BS 573 and EN 50075 to be fitted to shavers and pothbrushes	25.6	
s with	ANNEX ZC (NORMATIVE) NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS		ZC	
Р		a list of referenced documents in this standard		
 PS	OR FLEXIBLE COR	NNEX ZD (INFORMATIVE) EC and CENELEC CODE DESIGNATIONS FOR		
Р		table with IEC and CENELEC code lesignations for flexible cords		
 D	ANNEX ZE (INFORMATIVE) SPECIFIC ADDITIONAL REQUIREMENTS FOR APPLIANCES AND MACHINES INTENDED FOR COMMERCIAL USE		ZE	
Р		his annex of Part 1 is not applicable EN 60335-2-89/A1)		
VERED BY	ANNEX ZF (INFORMATIVE) CRITERIA APPLIED FOR THE ALLOCATION OF PRODUCTS COVERED BY STANDARDS IN THE EN 60335 SERIES UNDER LVD OR MD		ZF	
Р		his annex of Part 1 is not applicable EN 60335-2-89/A1)		
11	OR APPLIANCES AI	ANNEX ZD (INFORMATIVE) EC and CENELEC CODE DESIGNATIONS FOR A table with IEC and CENELEC code designations for flexible cords ANNEX ZE (INFORMATIVE) EPECIFIC ADDITIONAL REQUIREMENTS FOR MACHINES INTENDED FOR COMMERCIAL US This annex of Part 1 is not applicable EN 60335-2-89/A1) ANNEX ZF (INFORMATIVE) ERITERIA APPLIED FOR THE ALLOCATION OF ETANDARDS IN THE EN 60335 SERIES UNDER This annex of Part 1 is not applicable	ZE	

ZG

ANNEX ZG (NORMATIVE)
UV APPLIANCES

The following modifications to this standard apply to appliances having UV emitters

Appendix 2: IEC60335-2-89I-ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	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 DIRECTIVE 2006/42/EU (EN 60335-2-89/A1)		
	This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Annex I of the EU Directive 2006/42/EU. (EN 60335-2-89/A1)		P

Annex EN 62233:2008			
Clause	Requirement + Test	rement + Test Result - Remark	
EMF- ELECTROMAGNETICS FIELDS			
٦	The tested product also complies with the requirements of EN 62233:2008		
L	_imit100%	Measured max. : 1,830%	Р

Appendix 2: Pictures of sample

Front view for BF180CP-76



Front view for BF120CP-76



TRF No. IEC60335_2_89I





Appendix 2: Pictures of sample



Top LED lamp view for BF120CP-76



LED lamp view for BF180CP-76 and BF120CP-76





Appendix 2: Pictures of sample



Appendix 2: Pictures of sample

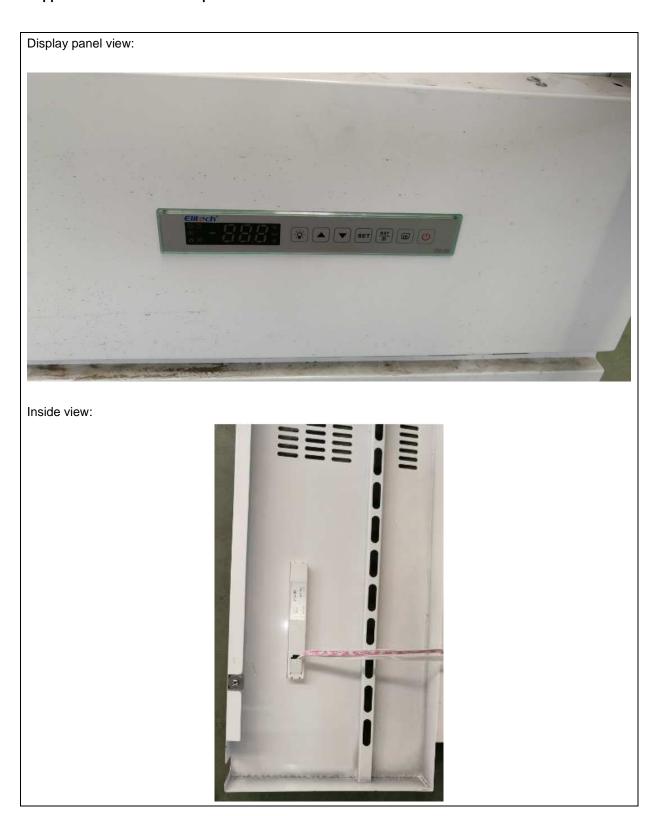


Noted: BF180CP-76 used three inner fan motors, BF120CP-76 used two fan motors, BF60CP-76 used one fan motor.

Defrosting heater view:



Appendix 2: Pictures of sample



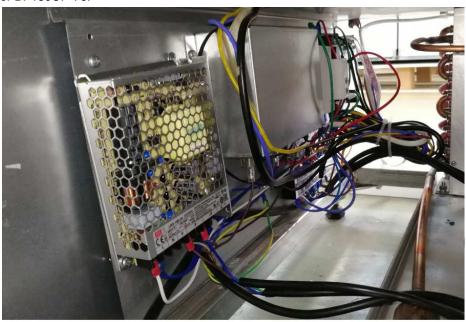


Appendix 2: Pictures of sample



Appendix 2: Pictures of sample

Inside view for BF180CP-76:





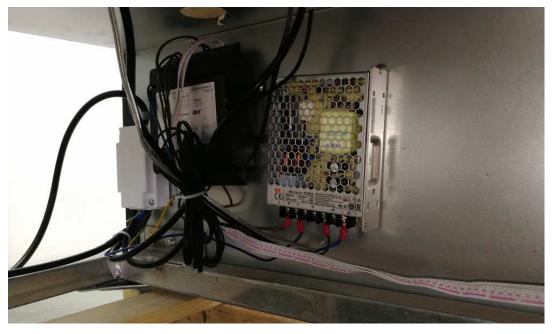
Appendix 2: Pictures of sample



Appendix 2: Pictures of sample

Inside view for BF120CP-76 and BF60CP-76





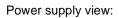
Appendix 2: Pictures of sample

Inside view:

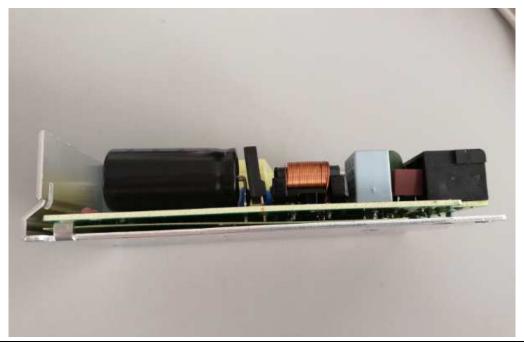


Inside view:







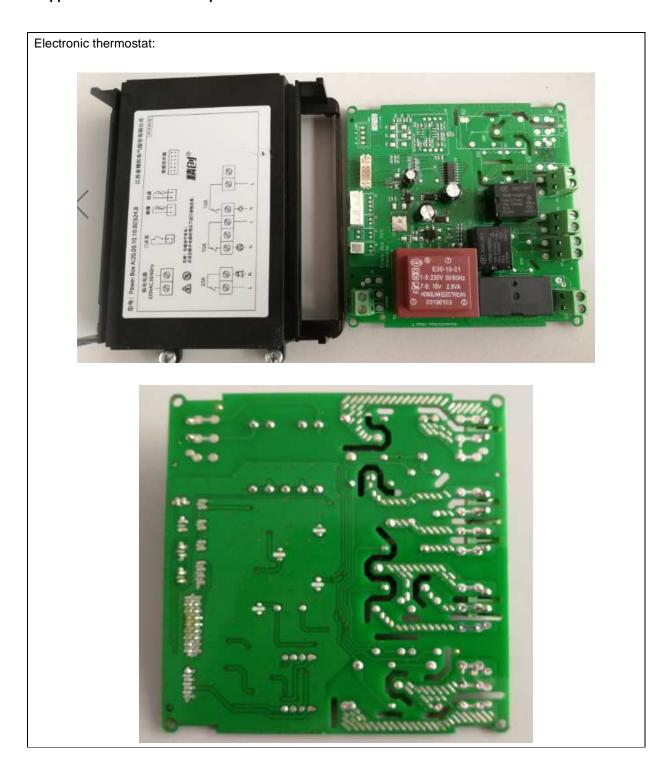


Appendix 2: Pictures of sample

Power supply:







*** End of test report ***