IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-030139

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product Produit	AIR CONDITIONER
Name and address of the applicant Nom et adresse du demandeur	LG Electronics Inc. Changwon Plant 2 76, Seongsan-dong, Changwon Gyeongsangnam-do 641-713, Rep. of Korea
Name and address of the manufacturer Nom et adresse du fabricant	LG Electronics Inc. Changwon Plant 2 76, Seongsan-dong, Changwon Gyeongsangnam-do 641-713, Rep. of Korea
Name and address of the factory Nom et adresse de l'usine	See additional page(s)
Rating and principal characteristics Valeurs nominales et caractéristiques principales	AC 220-240V; 50Hz; 1650W; 7.0A; Class I IPX4 (Outdoor unit only) Refrigerant: R410A
Trade mark (if any) Marque de fabrique (si elle existe)	LG
Model/type Ref. Ref. de type	AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED
Additional information (if necessary) Information complémentaire (si nécessaire)	Testing location: TMP For model differences, refer to the test report.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60335-2-40:2002+A1+A2 IEC 60335-1:2001+A1+A2 National differences see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	13603119 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜVRheinland®

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku
Yokohama 224-0021 Japan
Phone + 81 45 914-3888
Fax + 81 45 914-3354
Mail: info@jpn.tuv.com
Web: www.tuv.com

Date: 21.12.2009

Signature: Löffler

Dipl.-Ing. D. Löffler

IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-030139

1. LG Electronics Inc.
   Changwon Plant 2
   76, Seongsan-dong, Changwon
   Gyeongsangnam-do 641-713
   Rep. of Korea

2. Sung Chull Co., Ltd.
   66, Seongsan-dong,
   Chang-woni, Gyeongsangnam-do,
   Rep. of Korea

3. Daeyoung Electronics Co., Ltd.
   117-2, Sinchon-dong,
   Changwon, Gyeongsangnam-do 641-370
   Rep. of Korea

Additional information (if necessary)
Information complémentaire (si nécessaire)

Date: 21.12.2009

Signature: Dipl.-Ing. D. Löffler

Test Report issued under the responsibility of:

TÜVRheinland®
Precisely Right.

TEST REPORT
IEC 60335-2-40 / EN 60335-2-40
Safety of household and similar electrical appliances
Part 2: Particular requirements for electrical heat pumps, air conditioners and dehumidifier

Report Reference No. .....:	13603119 001
Date of issue .....:	15.12.2009
Total number of pages	98 Pages
CB/CCA Testing Laboratory.....:	TÜV Rheinland Korea Ltd., Test Center
Address .....:	4F, E&C Venture Dream Tower 6, 197-28, Guro-dong, Guro-gu, Seoul, 152-719, Republic of Korea
Applicant's name.....:	LG Electronics Inc. Changwon Plant 2
Address .....:	76, Seongsan-dong, Changwon, Gyeongsangnam-do, 641-713, Rep. of Korea
Test specification:	
Standard.....:	☒ IEC 60335-2-40:2002 (Edition 4) + A1:2005 + A2:2005 with ☒ IEC 60335-1:2001 (incl. Corrigendum 1:2002) + A1:2004 and/or ☒ EN 60335-2-40:2003 + A11:2004 + A12: 2005 + A1:2006 with ☒ EN 60335-1:2002 + A11:2004 + A1:2004 and ☒ EN 50366:2003
Test procedure .....:	CB
Non-standard test method……..:	N/A
Test Report Form No. .....:	IECEN60335_2_40B
Test Report Form(s) Originator.....:	VDE
Master TRF .....:	Dated 2006-11

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.
This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

If this Test Report Form is used by non-CCA members, the CIG logo and the reference to the CCA Procedure shall be removed.
This report is not valid as a CCA Test Report unless signed by an approved CCA Testing Laboratory and appended to a CCA Test Certificate issued by an NCB in accordance with CCA

Test item description .....:	AIR CONDITIONER
Trade Mark .....:	LG
Manufacturer .....:	LG Electronics Inc. Changwon Plant 2 76, Seongsan-dong, Changwon, Gyeongsangnam-do, 641-713, Rep. of Korea
Model/Type reference .....:	AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED
Ratings .....:	220-240V~ 50Hz, R410A, 1.0kg 1300W, 5.5A (cooling mode); 1650W, 7.0A (heating mode)

Testing procedure and testing location:

☐ **CB/CCA Testing Laboratory:**

Testing location/ address .....:

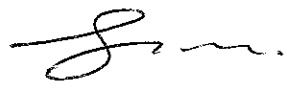
☐ **Associated CB Laboratory:**

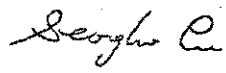
Testing location/ address .....:

Tested by (name + signature) .....:

Approved by (+ signature) .....:

☒ Testing procedure: TMP

Tested by (name + signature) .....: J. M. Kim 

Approved by (+ signature) .....: S. H. Lee 

Testing location/ address .....: LG Electronics Inc. Changwon Plant 2
76, Seongsan-dong, Changwon, Gyeongsangnam-do, 641-713, Rep. of Korea

☐ Testing procedure: WMT

Tested by (name + signature) .....:

Witnessed by (+ signature) .....:

Approved by (+ signature) .....:

Testing location/ address .....:

☐ Testing procedure: SMT

Tested by (name + signature) .....:

Approved by (+ signature) .....:

Supervised by (+ signature) .....:

Testing location/ address .....:

☐ Testing procedure: RMT

Tested by (name + signature) .....:

Approved by (+ signature) .....:

Supervised by (+ signature) .....:

Testing location/ address .....:

Summary of testing:

1) Prototype

2) Products fulfilled according to below standards
IEC 60335-2-40:2002 (Edition 4)+A1:2005+A2:2005
IEC 60335-1:2001(incl. Corrigendum 1:2002)+A1:2004+A2:2006
EN 60335-2-40:2003+A11:2004+A12:2005 + A1:2006 + A2:2009
EN 60335-1:2002+A11:2004+A1:2004+A12:2006+A2:2006
EN 50366:2003+A1:2006

Tests performed (name of test and test clause):

The following test items are conducted;

1. Cl. 7: Marking and instruction
2. Cl. 8: Protection against access to live parts
3. Cl. 10: Power input and current
4. Cl. 11: Heating
5. Cl. 13: Leakage current and electric strength
6. Cl. 15: Moisture resistance
7. Cl. 16: Leakage current and electric strength
8. Cl. 17: Overload protection, temperature rise
9. Cl. 19: Abnormal operation
10. Cl. 20: Stability and mechanical hazards
11. Cl. 21: Mechanical strength
12. Cl. 22: Construction
13. Cl. 23: Internal wiring
14. Cl. 24: Components
15. Cl. 25: Supply connection and external flexible cords
16. Cl. 26: Terminals for external conductors
17. Cl. 27: Provision for earthing
18. Cl. 28: Screws and connections
19. Cl. 29: Clearance, creepage distance and solid insulation
20. Cl. 30: Resistance to heat and fire
21. Cl. 31: Resistance to rusting
22. Cl. 32: Radiation, toxicity and similar hazards

Testing location:
LG Electronics Inc. Changwon Plant 2

76, Seongsan-dong, Changwon,
Gyeongsangnam-do, 641-713, Rep. of Korea

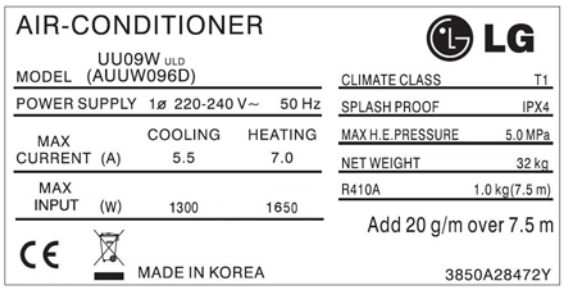
As an optional function the indoor unit may incorporate an ionizer (HVB) for air purifying. The air purifier was tested in the appliance according to IEC 60335-2-65:2002+A1

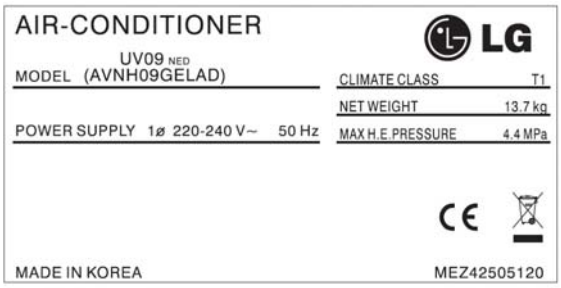
Clause	Requirement – Test	Result	Verdict
7	MARKING AND INSTRUCTIONS		——
7.12	Instructions for safe use provided including details for cleaning and other user maintenance of the appliance (IEC 60335-2-65)		P
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		——
8.1.4	- for peak values over 15 kV, discharge not exceeding 350 mJ (IEC 60335-2-65)		N/A
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		——
16.101	High-voltage transformers must have adequate internal insulation. The duration of the test is ... sec. (IEC 60335-2-65)	Input of HV circuit is provided from DC power. Transformer is for SMPS type and within epoxy molding	N/A
22	CONSTRUCTION		——
22.101	Appliance has no openings on the underside that would allow small items to penetrate and touch live parts (IEC 60335-2-65)		P
22.102	Interlock switches preventing access to live parts during user maintenance are connected in the input circuit and preventing unintentional operation (IEC 60335-2-65)		N/A
24	COMPONENTS		——
24.101	Interlock switches preventing access to live parts during user maintenance - disconnect all poles - contact separation in accordance with IEC 61058-1 (IEC 60335-2-65)		N/A
32	RADIATION, TOXICITY AND SIMILAR HAZARDS		——
	The ozone concentration produced by ionization is not excessive and shall not exceed 5 x 10/-8 (IEC 60335-2-65)	0.002ppm	P

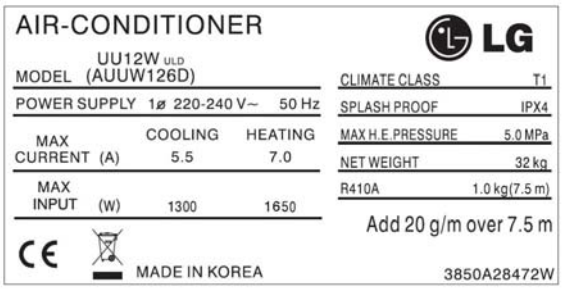
Summary of compliance with National Differences:

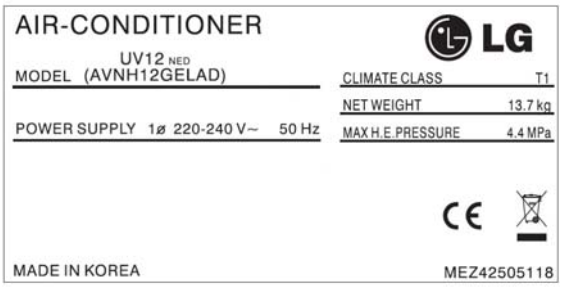
- EU Group Differences, EU Special National Conditions, EU A-Deviations

Copy of marking plate (Representative)









Test item particulars ..... :	
Classification of installation and use ..... :	Class I
Supply Connection ..... :	Type Y
..... :	
..... :	
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 ..... :	02.12.2009
Date (s) of performance of tests ..... :	03.12.2009 ~ 07.12.2009

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
Note: EN Group Differences together with National Differences and Special National Conditions, if any, are in the Appendix to the main body of this TRF.
Throughout this report a point is used as the decimal separator.

Note: The Requirements of IEC 60335-2-40 and EN 60335-2-40 in clause 15 are by identical content different numbered. For better handling the column "Clause" contains an additional Information "IEC" or "EN".

General product information:

The appliance, AUUW126D (Outdoor unit) / AVNH12GELAD (Indoor unit), is Convertible type Room Air Conditioner for household or similar use, which is divided into outdoor unit (OU) and indoor unit (IU).

The appliance is for cooling and heating mode of operation
Test has been conducted with heat pump model, AUUW126D (OU) / AVNH12GELAD (IU), as representative.

The provided installation manual describes the correct installation and the use of a sufficient circuit breaker and power cable.

Model differences:

- Model AUUW096D (OU) / AVNH09GELAD (IU) is identical to model AUUW126D (OU) / AVNH12GELAD (IU) except model name.
- Model UU12W ULD (OU) / UV12 NED (IU) is identical to model AUUW126D (OU) / AVNH12GELAD (IU) except model name.
- Model UU09W ULD (OU) / UV09 NED (IU) is identical to model AUUW096D (OU) / AVNH09GELAD (IU) except model name.

Factories:

1. LG Electronics Inc. Changwon Plant 2
   76, Seongsan-dong, Changwon, Gyeongsangnam-do, 641-713, Rep. of Korea
2. Daeyoung Electronics Co., Ltd.
   117-2, Sinchon-dong, Changwon, Gyeongsangnam-do, 641-370, Rep. of Korea
3. Sung Chull Co., Ltd.
   66, Seongsan-dong, Chang-won-si, Gyeongsangnam-do, Rep. of Korea

Manufacturer declares that the sample submitted for evaluation is representative of the products from each factory.

Attachment(s):

1. Photo Documents : 9 pages
2. Measurement and test equipment list

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
5	GENERAL CONDITIONS FOR THE TESTS		——
	Tests performed according to cl. 5, e.g. nature of supply, sequence of testing, etc.		P
5.2	If the test of Annex D has to be carried out, an additional appliance may be used. (IEC/EN 60335-1/A1)		N/A
	The testing of Clause 21 to be carried out on separate samples. The testing of Clauses 11, 19 and 21 required that pressure measurements be made at various points in the refrigerating system. (IEC/EN 60335-2-40/A1)		P
	At least one additional specially prepared sample is required for the tests of Annex FF (Leak simulation tests), if that test option is selected (IEC/EN 60335-2-40/A1)		P
	The temperatures on the refrigerant piping is measured during the test of Clause 11. (IEC/EN 60335-2-40/A1)		P
5.3	The tests of Clause 14 and 21.2 and 22.24 are carried out after the tests of Clause 29. (IEC/EN 60335-1/A1)		P
5.6	Appropriate controls rendered inoperative during the test (IEC/EN 60335-2-40)		P
5.10	For split-package units, the refrigerant lines shall be installed in accordance with the installation instructions.. IEC 60335-2-40:2002)		P
	The refrigerant line length shall be the maximum length stated in the installation instructions or 7,5 m, whichever is the shorter. (IEC/EN 60335-2-40)	Tested at 7.5m	P
	The thermal insulation of the refrigerant lines shall be applied in accordance with the installation instructions. (IEC/EN 60335-2-40)		P
5.14	NOTE: Guidance is given in Annex P for enhanced requirements that may be used to ensure an acceptable level of protection against electrical and thermal hazards for particular types of appliances used in an installation without a protective earthing conductor in countries that have warm damp equable climates. (IEC/EN 60335-1/A1)		N/A
5.101	Motor-compressor comply with IEC 60335-2-34 (IEC/EN 60335-2-40)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Motor-compressor subjected to the relevant test (IEC/EN 60335-2-40)	Inverter type compressor used	P
5.102	Motor compressors that are tested and comply with IEC 60335-2-34 need not be additionally tested for Clause 21. (IEC/EN 60335-2-40/A1)		N/A

6	CLASSIFICATION		——
6.1	Protection against electric shock: Class I, II, III (IEC/EN 60335-2-40)	Class I	P
6.2	Protection against harmful ingress of water, IP degree in accordance with IEC 60529 (IEC/EN 60335-2-40)		P
	Appliance for outdoor use (IEC/EN 60335-2-40)	IPX4 (outdoor unit)	P
	Appliance for indoor use (IEC/EN 60335-2-40)	Indoor unit: no precaution	N/A
	Appliance for laundry rooms (IEC/EN 60335-2-40)		N/A
6.101	Degree of accessibility (accessible/not accessible to the general public) (IEC/EN 60335-2-40)	Accessible to general public	P

7	MARKING AND INSTRUCTIONS		——
7.1	Rated voltage or voltage range (V)	220-240V	P
	Symbol for nature of supply including number of phases, unless for single phase operation (IEC/EN 60335-2-40).....		N/A
	Rated frequency (Hz).....	50Hz	P
	Rated power input (W).....	See rating label	P
	Rated current (A)	See rating label	P
	Manufacturer's or responsible vendor's name, trademark or identification mark.....	LG	P
	Model or type reference.....	See cover page	P
	Symbol 5172 of IEC 60417, for Class II appliances		N/A
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose-sets for connection of an appliance to the water mains (IEC/EN 60335-1/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Mass of the refrigerant or of each refrigerant in a blend (except for azeotropic type) (IEC/EN 60335-2-40):	See rating label	P
	Refrigerant identification (IEC/EN 60335-2-40)	See rating label	P
	Permissible excessive operating pressure for sanitary hot water heat pumps (IEC/EN 60335-2-40):		N/A
	the maximum operating pressure for the heat exchanger for hydronic fan coil/air handling units; (IEC 60335-2-40/A2) ..		N/A
	Excessive operating pressure of the refrigerant circuit for suction and discharge, if they differ (IEC/EN 60335-2-40).....		N/A
	Symbol for degree of protection against ingress of water, other than IPX0 (IEC/EN 60335-2-40):	IPX4 (outdoor unit)	P
	Separate marking of the appliances with all the rated characteristics of the supplementary heaters (IEC/EN 60335-2-40):	No supplementary heater	N/A
	Marking of the direction of the fluid flow (IEC/EN 60335-2-40):		N/A
	The flame symbol and the instruction manual symbol of 7.6 is visible when a flammable refrigerant is employed and the following conditions exist: (IEC/EN 60335-2-40/A1)		——
	– accessing parts expected to be subjected to maintenance or repair;	No flammable refrigerant	N/A
	– observing the appliance under sale or installed conditions;		N/A
	– observing the appliance packaging, if the appliance is charged with refrigerant.		N/A
	If a flammable refrigerant is used, the symbols for reading the user manual, the repair manual and the installation manual (symbols 3084, 3038 and 1785 of ISO 7000) shall be placed on the appliance in a location visible to the persons required to know the information. The perpendicular height shall be at least 10 mm. (IEC/EN 60335-2-40/A1)		N/A
	An additional warning symbol (flame symbol: B.3.2 of ISO 3864) shall be placed on the nameplate of the unit near the declaration of the refrigerant type and charge information. The perpendicular height shall be at least 10 mm, and the symbol need not be in colour. (IEC/EN 60335-2-40/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	The following warning shall also be applied to the appliance when a flammable refrigerant is employed. WARNING Appliance shall be installed, operated and stored in a room with a floor area larger than 'X' m2 (only applies to appliances that are not fixed appliances). (IEC/EN 60335-2-40/A1)		N/A
	For appliances, which are not fixed appliances, the minimum room size X shall be specified on the appliance. The X in the marking shall be determined in m^2 by the procedure described in paragraph 2 of Annex GG for unventilated areas and the X in the marking shall be 4 if the refrigerant charge of the appliance is less than m_1 (see Annex GG, paragraph 1.1). (IEC/EN 60335-2-40/A1)		N/A
	The maximum allowable pressure for the low-pressure side and the high-pressure side is marked on the product. (IEC/EN 60335-2-40/A1)		P
	If not already visible when accessing a service port and if a service port is provided, the service port shall be marked to identify the type of refrigerant. If the refrigerant is flammable, symbol B.3.2 of ISO 3864, shall be included, without specifying the colour. (IEC/EN 60335-2-40/A1)		N/A
7.2	Warning for stationary appliances for multiple supply	No 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	220-240V	P
	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages, the voltage setting is clearly discernible		N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless		N/A
	the power input is related to the mean value of the rated voltage range		N/A
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
7.6	Correct symbols used	No flammable refrigerant	N/A
	When a flammable refrigerant is employed, a warning symbol B.3.2 of ISO 3864, including colour and format, shall be permanently placed on the appliance. The perpendicular height of the triangle containing the "Caution, risk of fire" symbol shall be at least 30 mm. (IEC/EN 60335-2-40/A1)		N/A
	When a flammable refrigerant is employed, a symbol requiring reference to the manual [B.3.2 of ISO 3864], including colour and format, shall be permanently placed on the appliance. (IEC/EN 60335-2-40/A1)		N/A
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply		N/A
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows:		——
	- marking of terminals exclusively for the neutral conductor (N)		P
	- marking of protective earthing terminals (symbol 5019 of IEC 60417)		P
	- marking not placed on removable parts		P
7.9	Marking or placing of switches which may cause a hazard		N/A
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means	At remote control and indoor unit	P
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		P
7.11	Indication for direction of adjustment of controls		P
7.12	Instructions for safe use provided	Installation manual and user manual provided	P
	Classification of 6.101 included, for appliances not accessible to general public (IEC/EN 60335-2-40)	Accessible to general public	N/A
	For appliances using flammable refrigerants, an installation, service and operation manual, either separate or combined manuals, shall be provided and include the information given in Annex DD. (IEC/EN 60335-2-40/A1)	No flammable refrigerant	N/A
7.12.1	Sufficient details for installation or maintenance supplied (IEC/EN 60335-2-40):		——

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	- national wiring regulations for installation		P
	- dimensions of space for installation		P
	- minimum clearance from appliances with supplementary heaters to combustible surfaces	No supplementary heater	N/A
	- wiring diagram		P
	- range of external static pressures (only heat pumps and appliances with electric resistance heaters)		N/A
	- method of connection to the electrical supply and interconnection of separate components		P
	- indication of suitable parts for outdoor use		P
	- type and rated characteristics of fuses	Installation manual specifies a required circuit breaker	P
	- details of supplementary heating elements, including fitting instructions		N/A
	- maximum and minimum water or brine operating temperatures		N/A
	- maximum and minimum water or brine operating pressures		N/A
	- indication of open water storage tanks		N/A
	For appliances not accessible to the general public and which are intended to be permanently connected to fixed wiring and which may have leakage currents exceeding 10 mA, the installation instructions shall specify the rating of the residual current device (RCD) to be installed. (EN 60335-2-40/A12)		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	Installation manual	P
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions stating that the fixed wiring must be protected		N/A
7.12.4	Instructions for built-in appliances:		——
	- dimensions of space		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	- dimensions and position of supporting means		P
	- distances between parts and surrounding structure		P
	- dimensions of ventilation openings and arrangement		P
	- connection to supply mains and interconnection of separate components		P
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless (IEC/EN 60335-1/A1)	Installation manual specifies a required circuit breaker	P
	a switch complying with 24.3 (IEC/EN 60335-1/A1)		N/A
	The disconnection may be achieved by having the plug accessible or by incorporating a switch in the fixed wiring in accordance with the wiring rules. (IEC/EN 60335-1/A1)		P
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord	Type Y	N/A
	Replacement cord instructions, type Y attachment		P
	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for heating appliances with a non-self resetting thermal cut-out (IEC/EN 60335-1/A1)		N/A
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed (IEC/EN 60335-1/A1)		P
7.12.8	Instructions for appliances connected to the water mains: (IEC/EN 60335-1/A1)		——
	- max. inlet water pressure (Pa) (IEC/EN 60335-1/A1):		N/A
	- min. inlet water pressure, if necessary (Pa) (IEC/EN 60335-1/A1):		N/A
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets (IEC/EN 60335-1/A1)		N/A
7.13	Instructions and other texts in an official language		P
7.14	Marking clearly legible and durable		P
7.15	Marking on a main part		P
	Marking clearly discernible from the outside, if necessary after removal of a cover		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	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	Indoor and outdoor unit	P
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions	Indoor and outdoor unit	P
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading		P
	Marking on panel allowed, provided panel in place for intended operation of appliance (IEC/EN 60335-2-40)		N/A
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link	Rating of fuse link clearly marked on PCB, Replaceable by service only	P
7.101	Marking of fuses and overload protective devices, if replaceable (IEC/EN 60335-2-40):		——
	- fuse rated current in amperes, type and rated voltage (IEC/EN 60335-2-40)		P
	- manufacturer and model of the overload protective device (IEC/EN 60335-2-40)	Overload protective device to be installed during installation by service as described in the installation manual	N/A
7.102	Marking for connection with aluminium wire, if necessary (IEC/EN 60335-2-40)		N/A

8	PROTECTION AGAINST ACCESS TO LIVE PARTS		——
8.1	Adequate protection against accidental contact with live parts	No accidental contact with live parts	P
8.1.1	Requirement applies for all positions, detachable parts removed		P
	Insertion or removal of lamps, protection against contact with live parts of the lamp cap		N/A
	Use of test probe B of IEC 61032: no contact with live parts	No contact with live parts	P
8.1.2	Use of test probe 13 of IEC 61032 through openings in class 0 appliances and class II appliances/ constructions: no contact with live parts		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		N/A
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032: no contact with live parts of visible glowing heating elements		N/A
8.1.4	Accessible part not considered live if:		——
	- safety extra-low a.c. voltage: peak value not exceeding 42.4 V	No SELV	N/A
	- safety extra-low d.c. voltage: not exceeding 42.4 V		N/A
	- or separated from live parts by protective impedance	High voltage parts for plasma filter can be touched during cleaning	P
	If protective impedance: d.c. current not exceeding 2 mA, and		P
	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		P
	The quantity of electricity in the discharge is measured using a resistor having a nominal non-inductive resistance of 2 000 Ω (IEC/EN 60335-1/A1)		P
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		——
	- built-in appliances		N/A
	- fixed appliances		P
	- appliances delivered in separate units	Indoor unit and outdoor unit	P
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 construction provides sufficient protection Metal parts connected to PE	P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P

9	STARTING OF MOTOR-OPERATED APPLIANCES		——
	Not applicable (IEC/EN 60335-2-40)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
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		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)	P
11	HEATING		——
11.1	No excessive temperatures in normal use (IEC/EN 60335-2-40)		P
	Compliance is checked by the tests of Annex C, if (IEC/EN 60335-2-40):		——
	- temperature of motor winding exceeds values shown in Table 3 (IEC/EN 60335-2-40)		N/A
	- there is no doubt about the classification of the insulation system of the motor (IEC/EN 60335-2-40)		N/A
11.2	Placing and mounting of appliance (IEC/EN 60335-2-40):		——
	- clearances to adjacent surfaces	According to installation manual	P
	- flow rates for liquid source or sink equipment, except for fan coils where the flow rates and liquid temperatures shall be the maximum specified in the manufacturer's instructions; (IEC 60335-2-40/A2)		N/A
	- static pressures		N/A
	- adjustable limit controls set at the maximum cut-out setting and the minimum differential		P
	For appliances with supplementary heaters, use test casing of 11.9 (IEC/EN 60335-2-40)	No supplementary heater	N/A
11.2.1	For appliances with supplementary heaters, an inlet duct is connected to the inlet air opening (IEC/EN 60335-2-40)	No supplementary heater	N/A
11.2.2	Air outlet duct if necessary (IEC/EN 60335-2-40)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
11.3	Temperature rise determine by thermocouples or resistance method (IEC/EN 60335-2-40)	Thermocouples used	P
11.4	Test performed at supply voltage between 0,94 and 1.06 times the rated voltage (IEC/EN 60335-2-40)		P
	Heating appliances operated under normal operation at 1.15 times rated power input (IEC/EN 60335-2-40)		N/A
11.5	Test conducted in the heating mode and in the cooling mode, if both exist (IEC/EN 60335-2-40)	Cooling and heating mode	P
	All supplementary heating elements operative simultaneously (IEC/EN 60335-2-40)	No supplementary heater	N/A
11.6	Defrost test in the most unfavourable conditions, if needed (IEC/EN 60335-2-40)		N/A
11.7	Appliances operated continuously until steady conditions except for defrost tests (IEC/EN 60335-2-40)		P
11.8	Monitored temperatures not exceeding the values of Table 3 (IEC/EN 60335-2-40)	(see appended table)	P
	Protective devices do not operate (IEC/EN 60335-2-40)		P
	However, components in protective electronic circuits are allowed to operate provided they are tested for the number of cycles of operation specified in 24.1.4 (IEC/EN 60335-1/A1)		N/A
	The temperature rise limit does not apply to switches or controls tested in accordance with the conditions occurring in the appliance. (IEC/EN 60335-1/A1)		N/A
	Sealing compound not flowing out (IEC/EN 60335-2-40)		P
	Temperature of the air in the outlet duct not exceeding 90°C (IEC/EN 60335-2-40)		N/A
11.9	Test casing and installation of the rest of the appliances in accordance with the manufacturer's instructions (IEC/EN 60335-2-40)	In accordance with the installation manual	P
	Glass fibre insulation for appliances without indication of minimum clearances according to the manufacturer; the thermocouple in contact with the enclosure (IEC/EN 60335-2-40)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
13	LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE		——
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1.15 times rated power input		N/A
	Motor-operated appliances and combined appliances supplied at 1.06 times rated voltage...		P
	Protective impedance and radio interference filters disconnected before carrying out the tests		P
13.2	Leakage current measured by means of the circuit described in figure 4 of IEC 60990		P
	Leakage current measurements		P
13.3	The appliance is disconnected from the supply and the insulation is immediately subjected to a voltage having a frequency of 50 Hz or 60 Hz for 1 min, in accordance with IEC 61180-1. (IEC/EN 60335-1/A1)		P
	The high-voltage source used for the test is to be capable of supplying a short circuit current Is between the output terminals after the output voltage has been adjusted to the appropriate test voltage.(IEC/EN 60335-1/A1)		P
	The overload release of the circuit is not to be operated by any current below the tripping current Ir. The values of Is and Ir are given in Table 5 for various high-voltage sources. (IEC/EN 60335-1/A1)		P
	No breakdown during the tests	(see appended table)	P
14	TRANSIENT OVERVOLTAGES		——
	Appliances withstand the transient overvoltages to which they may be subjected		N/A
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6		N/A
	No flashover during the test, unless of functional insulation		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	In case of flashover of functional insulation, the appliance complies with clause 19 with the clearance short circuited		N/A

15	MOISTURE RESISTANCE		——
15.1 (IEC)	Enclosure provides the degree of moisture protection against the ingress of water (rain, overflow from the drain pan or defrosting, tests of 15.2, 15.3, 11.6 and Cl. 16) (IEC/EN 60335-2-40)	IPX4 (outdoor unit)	P
(IEC)	Motor-compressor not operated and detachable parts are removed during 15.2 and 15.3 (IEC 60335-2-40/A2)		P
(EN)	Enclosure provides the degree of moisture protection against the ingress of water (rain, overflow from the drain pan or defrosting, tests of 15.1.1, 15.1.2, 15.2, 11.6 and Cl. 16) (EN 60335-2-40)		P
(EN)	After test, water inside the enclosure has not reduced the creepage distances and clearances below the values of Cl. 29 (EN 60335-2-40)		P
(EN)	Water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains are subjected to the test specified for IPX7 appliances. (IEC/EN 60335-1/A1)		N/A
15.1.2 (EN)	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support that is constructed to prevent water spraying onto its top surface. The pivot axis of the oscillating tube is located at the same level as the underside of the support and aligned centrally with the appliance. The spray is directed upwards. (IEC/EN 60335-1/A1)		N/A
(EN)	For IPX4 appliances, the movement of the tube is limited to two times 90º from the vertical for a period of 5 min. (IEC/EN 60335-1/A1)		N/A
15.2 (IEC) 15.1.1 (EN)	Tests in accordance with IEC 60529 in appliances other than IPX0, as specified (IEC/EN 60335-2-40)	Outdoor unit	P
	Spillage of liquid does not affect the electrical insulation (EN 60335-2-40)		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Appliances with type X attachment fitted with a flexible cord as described (EN 60335-2-40)	Type Y	N/A
	Appliances incorporating an appliance inlet tested with or without an connector, whichever is most unfavourable (EN 60335-2-40)		N/A
	Detachable parts removed (EN 60335-2-40)		P
	Overfilling test with additional amount of water, over a period of 1 min (l)..... (EN 60335-2-40)		P
	The appliance withstands the electric strength test of 16.3 (EN 60335-2-40)		P
	No trace of water on insulation that can result in a reduction of clearances and creepage distances below values specified in clause 29 (EN 60335-2-40)		P
	Drain pan filled to brim and subjected to continuous overflow and fan(s) switched on (EN 60335-2-40)		P
15.3 (IEC) 15.2 (EN)	Drain pan filled to brim and subjected to continuous overflow and fan(s) switched on (IEC/EN 60335-2-40)		P
15.101 (IEC)	Spillage test as specified (IEC 60335-2-40/A2)		P

16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		——
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests		N/A
16.2	Single-phase appliances: test voltage 1.06 times rated voltage.....		P
	Three-phase appliances: test voltage 1.06 times rated voltage divided by √3.....		N/A
	Leakage current measurements	(see appended table)	P
16.3	Electric strength tests according to table 7	(see appended table)	P
	No breakdown during the tests		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS		——
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use	(see appended table)	P
	Appliance supplied with 1.06 or 0.94 times rated voltage and the most unfavourable short-circuit or overload likely to occur in normal use applied.....		P
	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	No SELV	N/A
	Temperature of the winding not exceeding the value specified in table 8,		P
	however limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
18	ENDURANCE		——
	Not applicable (IEC/EN 60335-2-40)		N/A
19	ABNORMAL OPERATION		——
19.1	The risk of fire or mechanical damage under abnormal or careless operation obviated (tests 19.2-19.13) (IEC/EN 60335-2-40)		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe (electric shock, fire or mechanical hazard, dangerous malfunction) (test 19.11 and 19.12) (IEC/EN 60335-2-40)		P
19.2	Test of appliance with motor rotors, other than motor-compressors, operated for 15 days (360h) or until a protection device opens the circuit (IEC/EN 60335-2-40)	BLDC motor used Protected by electronic circuit	N/A
	Insulation of motor windings (IEC/EN 60335-2-40).....	(see appended table)	N/A
	Temperature of enclosure does not exceed (°C) (IEC/EN 60335-2-40):		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Temperature of the windings does not exceed the values shown in the table ; temperature (°C) (IEC/EN 60335-2-40).....		N/A
	Electric strength test as specified in 16.3, 72h after the beginning of the test (IEC/EN 60335-2-40)		N/A
	A 30mA residual current device does not open (IEC/EN 60335-2-40)		N/A
	At the end, the leakage current between the windings and the enclosure does not exceed 2mA (IEC/EN 60335-2-40)		N/A
19.3	Motor-compressor complies with IEC 60335-2-34 (IEC/EN 60335-2-40).....		N/A
	Test of the motor-compressor with the rotor locked as specified in 19.101 of IEC 60335-2-34 (IEC/EN 60335-2-40)	Compressor protected by electronic circuits (Inverter type)	N/A
19.4	Test of three-phase motors operated under the conditions of Cl. 11 with one phase disconnected until steady conditions (IEC/EN 60335-2-40)		N/A
19.5	Test of appliance with heat transfer medium flow of the outdoor heat exchanger restricted or shut off when reaching steady conditions (IEC/EN 60335-2-40)		P
	Test of appliance with heat transfer flow of the indoor heat exchanger restricted or shut off when reaching steady conditions (IEC/EN 60335-2-40)		P
	Disconnection of the motor common to both the outdoor and the indoor heat exchangers when reaching steady conditions (IEC/EN 60335-2-40)		N/A
19.6	Test of appliances using water as heat transfer medium (IEC/EN 60335-2-40)		N/A
19.7	The test of air to air appliances at rated voltage or at the upper limit of the rated voltage range. The dry-bulb temperature is 5K below the values specified by the manufacturer (IEC/EN 60335-2-40)		P
	Test with the dry-bulb temperature 10K over the values specified by the manufacturer (IEC/EN 60335-2-40)		P
19.8	Test of appliances with supplementary electric heaters (IEC/EN 60335-2-40)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
19.9	Test at a temperature permitting continuous operation of the motor-compressor and the electric heating elements at the same time (IEC/EN 60335-2-40)		N/A
19.10	Test of the appliance with any defect which may be expected during normal use (IEC/EN 60335-2-40)		P
19.10.1	Test of 19.10 is repeated on class 01 appliances and class 1 appliances incorporating tubular sheathed or embedded heating elements. (IEC/EN 60335-2-40/A1)		N/A
	However, controls are not short-circuited but one end of the element is connected to the sheath of the heating element. (IEC/EN 60335-2-40/A1)		N/A
	The test is repeated with the polarity of the supply to the appliance reversed and with the other end of the element connected to the sheath. (IEC/EN 60335-2-40/A1)		N/A
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where all-pole disconnection occurs during the test of 19.10. (IEC/EN 60335-2-40/A1)		N/A
19.10.101	The test of 19.10 is repeated on class 0I appliances and class I appliances incorporating tubular sheathed or embedded heating elements. (IEC 60335-2-40/A2)		N/A
	However, controls are not short-circuited but one end of the element is connected to the sheath of the heating element. (IEC 60335-2-40/A2)		N/A
	The test is repeated with the polarity of the supply to the appliance reversed and with the other end of the element connected to the sheath. (IEC 60335-2-40/A2)		N/A
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.10. (IEC 60335-2-40/A2)		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 they comply with the conditions specified in 19.11.1 (IEC/EN 60335-2-40)		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Appliances incorporating a protective electronic circuit are subjected to the tests of 19.11.3 and 19.11.4. (IEC/EN 60335-1/A1)	Not applicable to air conditioner	N/A
	Appliances having a switch with an off position obtained by electronic disconnection, or a switch that can place the appliance in a stand-by mode, are subjected to the tests of 19.11.4. (IEC/EN 60335-1/A1)		N/A
	Windings temperature not exceeding values shown in Table 6 (IEC/EN 60335-2-40)		P
	Appliance shall comply with the conditions of 19.14 (IEC/EN 60335-2-40)		P
	Appliance withstands the test : a conductor becomes open circuited and three conditions are met (IEC/EN 60335-2-40)		N/A
19.11.1	Before applying the fault conditions a) to f) in 19.11.2, it is checked if circuits or parts of circuit meet both of the following conditions (IEC/EN 60335-2-40):		——
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15W according to the tests specified (IEC/EN 60335-2-40)		N/A
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction in other parts of the appliance does not rely on the correct functioning of the electronic circuit (IEC/EN 60335-2-40)		N/A
19.11.2	Fault conditions applied one at a time, the appliance operated under conditions specified in Cl.11, but supplied at rated voltage, the duration of the tests as specified (IEC/EN 60335-2-40):		——
	a) short circuit of creepage distances and clearances between live parts of different potential, if these distances are less than the values specified in 29.1, unless the relevant part is adequately encapsulated (IEC/EN 60335-2-40)		P
	b) open circuit at the terminals of any component (IEC/EN 60335-2-40)		P
	c) short circuit if capacitors, unless they comply with IEC 60384-14 (IEC/EN 60335-2-40)		P
	d) short circuit of any two terminals of an electronic component, other than integrated circuits. This fault condition is not applied between the circuits of an optocoupler (IEC/EN 60335-2-40)		P
	e) failure of triacs in the diode mode (IEC/EN 60335-2-40)		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	f) failure of an integrated circuit. (IEC/EN 60335-1/A1)		P
	Short-circuit of low-power circuits (IEC/EN 60335-2-40)		N/A
	In each case, the test is ended if a non-self-resetting interruption of the supply occurs within the appliance. (IEC/EN 60335-1/A1)		N/A
	The duration of the tests (IEC/EN 60335-2-40) :		——
	- as specified in 11.7 but only for one operating cycle (in case the fault cannot be recognised by user) (IEC/EN 60335-2-40)		P
	- as specified in 19.2, if fault can be recognised by user (IEC/EN 60335-2-40)		P
	- until steady conditions are established (IEC/EN 60335-2-40)		P
	Test ended if interruption of supply occurs within the appliance (IEC/EN 60335-2-40)		P
	Fault condition f) applied to encapsulated or similar components (IEC/EN 60335-2-40)		P
	PTC's, NTC's and VDR's resistors not short-circuited if used as specified by manufacturer (IEC/EN 60335-2-40)		P
19.11.4	Appliances having a switch with an off position obtained by electronic disconnection, or a switch that can be placed in the stand-by mode, are subjected to the tests of 19.11.4.1 to 19.11.4.7. The tests are carried out with the appliance supplied at rated voltage, the switch being set in the off position or in the stand-by mode. (IEC/EN 60335-1/A1)		N/A
	Appliances incorporating a protective electronic circuit are subjected to the tests of 19.11.4.1 to 19.11.4.7. The tests are carried out after the protective electronic circuit has operated during the relevant tests of Clause 19 except 19.2, 19.6 and 19.11.3. However, appliances that are operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena. (IEC/EN 60335-1/A1)		N/A
	The tests are carried out with surge arresters disconnected, unless they incorporate spark gaps (IEC/EN 60335-1/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4 being applicable. Ten discharges having a positive polarity and ten discharges having a negative polarity are applied at each preselected point (IEC/EN 60335-1/A1)		N/A
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, test level 3 being applicable. (IEC/EN 60335-1/A1)		N/A
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4. Test level 3 s applicable for signal and control lines. Test level 4 is applicable for the power supply lines. The bursts are applied for 2 min with a positive polarity and for 2 min with a negative polarity (IEC/EN 60335-1/A1)		N/A
19.11.4.4	The power supply terminals of the appliance are subjected to voltage surges in accordance with IEC 61000-4-5, five positive impulses and five negative impulses being applied at the selected points. Test level 3 is applicable for the line-to-line coupling mode, a generator having a source impedance of 2 Ω being used. Test level 4 is applicable for the line-to-earth coupling mode, a generator having a source impedance of 12 Ω being used. (IEC/EN 60335-1/A1)		N/A
	Earthed heating elements in class I appliances are disconnected during this test (IEC/EN 60335-1/A1)		N/A
	For appliances having surge arresters incorporating spark gaps, the test is repeated at a level that is 95 % of the flashover voltage (IEC/EN 60335-1/A1)		N/A
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3 being applicable. During the test, all frequencies between 0,15 MHz to 80 MHz are covered. (IEC/EN 60335-1/A1)		N/A
19.11.4.6	The appliance is subjected to voltage dips and interruptions in accordance with IEC 61000-4-11. The durations specified in Table 1 of IEC 61000-4-11 are applied to each test level, the dips and interruptions being applied at zero crossing of the supply voltage (IEC/EN 60335-1/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2 being applicable (IEC/EN 60335-1/A1)		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 but with fuse-link replaced by an ammeter (IEC/EN 60335-2-40)		P
	Current ≤ 2,1 times rated current of fuse-link, circuit not adequately protected (fuse-link short-circuited) (IEC/EN 60335-2-40)		N/A
	Current ≥ 2,75 times rated current of fuse-link, circuit adequately protected (IEC/EN 60335-2-40)		P
	Current ≥ 2,1 and ≤ 2,75 times rated current, fuse-link short-circuited and test carried out during specified time (IEC/EN 60335-2-40)		N/A
19.13	Test of appliances with PTC heating elements (IEC/EN 60335-2-40)		N/A
19.13	The appliance shall not undergo a dangerous malfunction, and there shall be no failure of protective electronic circuits if the appliance is still operable. (IEC/EN 60335-1/A1)		P
	Appliances tested with an electronic switch in the off position, or in the stand-by mode, shall not become operational (IEC/EN 60335-1/A1)		N/A
	Temperature rise shall not exceed the values shown in Table 9 (IEC/EN 60335-2-40)	(see appended table)	P
	Electric strength test, the test voltage as specified in Table 4 (IEC/EN 60335-2-40)		P
19.14	During the tests of 19.2 to 19.10.1 and 19.11, 19.12 and 19.13 if appropriate, the appliances not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts (IEC 60335-2-40/A2)		P
19.101	All appliances provided with supplementary heaters and with free air discharge are subjected to the specified test in each mode of operation. (IEC 60335-2-40/A2)		N/A
	During the test the temperature shall not exceed 150 °C but an overshoot of 25 °C is permitted during the first hour. (IEC 60335-2-40/A2)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
20	STABILITY AND MECHANICAL HAZARDS		——
20.1	Adequate stability		P
	Tilting test through an angle of 10° (appliance placed on an inclined plane/horizontal plane); appliance does not overturn	Fixed to ceiling / ground	N/A
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		N/A
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9		N/A
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury		P
	Protective enclosures, guards and similar parts are non-detachable		P
	Adequate mechanical strength and fixing of protective enclosures		P
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard, by unexpected reclosure		P
	Not possible to touch dangerous moving parts with test probe		P
21	MECHANICAL STRENGTH		——
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	Safety requirements of ISO 5149 applied (IEC 60335-2-40/A2)		P
	Safety requirements specified in Annex EE applied. The pressure test in Annex EE applies to parts other than pressure vessels. (IEC/EN 60335-2-40/A1)		P
	Checked by applying blows to the appliance in accordance with test Ehb of IEC 60068-2-75, spring hammer test, impact energy 0.5J (IEC/EN 60335-1/A1)		P
	If necessary, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	If necessary, repetition of groups of three blows on a new sample		N/A
21.2	Accessible parts of solid insulation shall have sufficient strength to prevent penetration by sharp implements. (IEC/EN 60335-1/A1)		N/A
	Compliance is checked by subjecting the insulation to the following test, unless the thickness of supplementary insulation is at least 1 mm and that of reinforced insulation is at least 2 mm. (IEC/EN 60335-1/A1)		N/A
	The insulation is raised to the temperature measured during the test of Clause 11. (IEC/EN 60335-1/A1)		N/A
	The surface of the insulation is then scratched by means of a hardened steel pin, the end of which has the form of a cone with an angle of 40°: Its tip is rounded with a radius of 0,25 mm ± 0,02 mm. (IEC/EN 60335-1/A1)		N/A
	The pin is held at an angle of 80° - 85° to the horizontal and loaded so that the force exerted along its axis is 10 N ± 0,5 N. (IEC/EN 60335-1/A1)		N/A
	The scratches are made by drawing the pin along the surface of the insulation at a speed of approximately 20 mm/s. Two parallel scratches are made. (IEC/EN 60335-1/A1)		N/A
	They are spaced sufficiently apart so that they are not affected by each other, their length covering approximately 25 % of the length of the insulation. (IEC/EN 60335-1/A1)		N/A
	Two similar scratches are made at 90o to the first pair without crossing them. (IEC/EN 60335-1/A1)		N/A
	The test fingernail of Figure 7 is then applied to the scratched surface with a force of approximately 10 N. No further damage, such as separation of the material, shall occur. The insulation shall then withstand the electric strength test of 16.3. (IEC/EN 60335-1/A1)		N/A
	The hardened steel pin is then applied perpendicularly with a force of 30 N ±0,5 N to an unscratched part of the surface. The insulation shall then withstand the electric strength test of 16.3 with the pin still applied and used as one of the electrodes. (IEC/EN 60335-1/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
22	CONSTRUCTION		——
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled		P
22.2	Stationary appliance: means to provide all-pole disconnection from the supply provided, the following means being available:		——
	- a supply cord fitted with a plug		N/A
	- a switch complying with 24.3		N/A
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided	Statement regarding disconnection device in provided in the installation manual	P
	- 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 I appliances, connected in 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 rotating does not impair compliance with the 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	The appliance is supplied at rated voltage. Any switch is then placed in the off position and the appliance is disconnected from the supply mains at the instant of voltage peak. One second after disconnection, the voltage between the pins of the plug is measured with an instrument that does not appreciably affect the value to be measured. (IEC/EN 60335-1/A1)		N/A
	The voltage shall not exceed 34 V		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
22.6	Electrical insulation not affected by condensing water or leaking liquid		P
	Electrical insulation of Class II appliances not affected in case of a hose rupture or seal leak		N/A
	Electrical insulation not affected by snow penetration to the appliance enclosure (IEC/EN 60335-2-40)		P
22.7	Adequate safeguards against the risk of excessive pressure in appliances provided with steam-producing devices		N/A
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and that are likely to be cleaned in normal use		P
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances		P
	Adequate insulating properties of oil or grease to which insulation is exposed		N/A
22.10	Not possible to reset voltage-maintained non-self-resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance (IEC/EN 60335-1/A1)		N/A
	Non-self resetting thermal motor protectors have a trip-free action, unless (IEC/EN 60335-1/A1)		N/A
	they are voltage maintained (IEC/EN 60335-1/A1)		N/A
	Location or protection of reset buttons of non-self-resetting controls is so that accidental resetting is unlikely (IEC/EN 60335-1/A1)		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts		N/A
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		N/A
	Tests as described		P
22.12	Handles, knobs etc. fixed in a reliable manner		N/A
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		N/A
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		N/A
22.13	Unlikely that handles, when gripped as in normal use, make the operators hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		N/A
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		N/A
	No exposed pointed ends of self tapping screws etc., liable to be touched by the user in normal use or during user maintenance		N/A
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, 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
22.18	Current-carrying parts and other metal parts resistant to corrosion under normal conditions of use		P
22.19	Driving belts not used as electrical insulation		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless material used is non-corrosive, non-hygroscopic and non-combustible	No thermal insulation	N/A
	Compliance is checked by inspection and, if necessary, by appropriate test		N/A
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless impregnated	Not used	P
22.22	Appliances not containing asbestos	Not used	P
22.23	Oils containing polychlorinated biphenyl (PCB) not used	Not used	P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
22.24	Bare heating elements adequately supported to prevent contact with accessible metal parts in case of rupture or sagging (IEC/EN 60335-2-40)	No heating elements	N/A
	Bare heating elements only used with metal enclosures (wood or composite enclosures not allowed) (IEC/EN 60335-2-40)		N/A
22.25	Sagging heating conductors cannot come into contact with accessible metal parts	No heating conductors	N/A
22.26	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		P
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water: separated from live parts by double or reinforced insulation		N/A
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation		N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		P
	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		P
22.31	Clearances and creepage distances over supplementary and reinforced insulation not reduced below values specified in clause 29 as a result of wear		P
	Clearances and creepage distances between live parts and accessible parts not reduced below values for supplementary insulation, if wires, screws etc. become loose		P
22.32	Supplementary and reinforced insulation designed or protected against deposition of dirt or dust		P
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.2	Not used	N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Ceramic material not tightly sintered, similar material or beads alone not used as supplementary or reinforced insulation		N/A
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N/A
22.33	Conductive liquids that are or may become accessible in normal use are not in direct contact with live parts	No conductive liquids	N/A
	Electrodes not used for heating liquids		N/A
	For class II constructions, conductive liquids that are or may become accessible in normal use, not in direct contact with basic or reinforced insulation		N/A
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless the shaft is not accessible when the part is removed		N/A
22.35	Handles, levers and knobs, held or actuated in normal use, not becoming live in the event of an insulation fault		N/A
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of an insulation fault, they are either adequately covered by insulation material, or their accessible parts are separated from their shafts or fixings by supplementary insulation		N/A
	This requirement does not apply to handles, levers and knobs on stationary appliances other than those of electrical components, provided they are either reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		N/A
22.36	Handles continuously held in the hand in normal use are so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless 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, unless complying with 22.42		N/A
	Metal casings of capacitors in Class II appliances separated from accessible metal parts by supplementary insulation, unless complying with 22.42		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
22.38	Capacitors not connected between the contacts of a thermal cut-out		P
22.39	Lamp holders used only for the connection of lamps	No lamp holders	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	Fixed appliances	N/A
22.41	No components, other than lamps, containing mercury	Not used	P
22.42	Protective impedance consisting of at least two separate components		P
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited		P
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur	Not adjustable	N/A
22.44	Appliances are not allowed to have an enclosure that is shaped and decorated so that the appliance is likely to be treated as a toy by children		P
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.4 due to deformation as a result of an external force applied to the enclosure		P
22.46	Software used in protective electronic circuits is software class B or C (IEC/EN 60335-1/A1):		N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use (IEC/EN 60335-1/A1)		N/A
	No leakage from any part, including any inlet water hose (IEC/EN 60335-1/A1)		N/A
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water (IEC/EN 60335-1/A1)		N/A
22.101	Appliances intended to be fixed, securely fixed (IEC/EN 60335-2-40)		P
22.102.1	Double thermal cut-out in appliances with supplementary heating elements for air (the first one shall be a self-resetting and the other a non-self-resetting thermal cut-out) (IEC 60335-2-40/A2)	No supplementary heater	N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Thermal cut-outs comply with 24.3 (switches) (IEC/EN 60335-2-40)		N/A
	Thermal cut-outs operating in Cl. 19 shall be of the non-self-resetting type (IEC/EN 60335-2-40)		N/A
22.102.2	Appliances provided with supplementary heaters for water incorporate a non-self-resetting thermal cut-out, providing all-pole disconnection that operates separately from water thermostats. (IEC 60335-2-40/A2)	No supplementary heater	N/A
	However, for appliances intended to be connected to fixed wiring, the neutral conductor need not be disconnected. (IEC 60335-2-40/A2)		N/A
22.102.3	Thermal cut-outs of the capillary type open in the event of leakage of the capillary tube (IEC 60335-2-40/A2)		N/A
22.103	Non-self-resetting cut-outs independent of other control devices (IEC/EN 60335-2-40)		N/A
22.104	Containers of sanitary hot water heat pumps withstand twice the permissible pressure in closed containers of 0,15MPa in open containers, without leakage or rupture (IEC/EN 60335-2-40)		N/A
22.105	Air or vapour cushion in closed containers not exceeding the 10% (IEC/EN 60335-2-40)		N/A
22.106	Pressure relief devices operating at 0,1MPa over the permissible pressure (IEC/EN 60335-2-40)		N/A
22.107	Water outlet systems of open containers free from obstruction causing over-pressure (IEC/EN 60335-2-40)		N/A
	Vented containers of sanitary hot water heat pumps always open to the atmosphere through appropriate aperture (IEC/EN 60335-2-40)		N/A
22.108	Not vented open containers are subjected to a test in accordance with 22.104 to a vacuum of 33kPa for 15 min (IEC/EN 60335-2-40)		N/A
22.109	Replacement of non-self-resetting thermal cut-outs does not damage other connections (IEC/EN 60335-2-40)		N/A
22.110	Non-self-resetting thermal cut-outs operate without short-circuiting live parts of different potential and without causing contact between live parts and the enclosure (IEC/EN 60335-2-40)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Test repeated five times without blowing a 3 A fuse which connects the appliance to earth (IEC/EN 60335-2-40)		N/A
	Electric strength test as specified in 16.3 for supplementary heating elements (IEC/EN 60335-2-40)		N/A
22.111	Manual resetting of thermostats not necessary after power supply interruption (IEC/EN 60335-2-40)		N/A
22.112	The construction of the refrigerating system comply with the requirements of Section 3 of ISO 5149. (IEC/EN 60335-2-40/A1)		P
22.113	When a flammable refrigerant is used, refrigerant tubing is protected or enclosed to avoid mechanical damage. (IEC/EN 60335-2-40/A1)	No flammable refrigerant	N/A
	The tubing is protected to the extent that it will not be handled or used for carrying during moving of the product (IEC/EN 60335-2-40/A1)		N/A
	Tubing located within the confines of the cabinet is considered to be protected from mechanical damage. (IEC/EN 60335-2-40/A1)		N/A
22.114	When a flammable refrigerant is used, low temperature solder alloys, such as lead/tin alloys, are not acceptable for pipe connections. (IEC/EN 60335-2-40/A1)		N/A
22.115	The total refrigerant mass (M) of all refrigerating systems within the appliance employing flammable refrigerants, not exceed m_3 as defined in Annex GG. (IEC/EN 60335-2-40/A1)		N/A
22.116	Appliances using flammable refrigerants constructed so that any leaked refrigerant will not flow or stagnate so as to cause a fire or explosion hazard in areas within the appliance where electrical components, which could be a source of ignition and which could function under normal conditions or in the event of a leak, are fitted. (IEC/EN 60335-2-40/A1)		N/A
	Separate components, such as thermostats, which are charged with less than 0,5 g of a flammable gas are not considered to cause a fire or explosion hazard in the event of leakage of the gas within the component itself. (IEC/EN 60335-2-40/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	All electrical components that could be a source of ignition and which could function under normal conditions or in the event of a leak, comply with one of the following: (IEC/EN 60335-2-40/A1)		——
	– IEC 60079-15:2001, Clauses 9 to 26, for group IIA gases or the refrigerant used or an applicable standard that makes electrical components suitable for use in Zone 2, 1 or 0 as defined in IEC 60079-14. (IEC/EN 60335-2-40/A1)		N/A
	– Not be located in an area where a potentially flammable gas mixture will accumulate as demonstrated by the test of Annex FF (IEC/EN 60335-2-40/A1)		N/A
	– Be located in an enclosure. The enclosure containing the electrical components comply with IEC 60079-15:2001 for enclosures suitable for use with group IIA gases or the refrigerant used. (IEC/EN 60335-2-40/A1)		N/A
22.117	Temperatures on surfaces that may be exposed to leakage of flammable refrigerants shall not exceed the auto-ignition temperature of the refrigerant reduced by 100 K; some typical values are given in Annex BB. (IEC/EN 60335-2-40/A1)		N/A
22.118	When a flammable refrigerant is used, all appliances charged with refrigerant at the manufacturing location or charged on site as recommended by the manufacturer. (IEC/EN 60335-2-40/A1)		N/A
	A part of an appliance that is charged on site, which requires brazing or welding in the installation shall not be shipped with a flammable refrigerant charge. Joints made in the installation between parts of the refrigerating system, with at least one part charged, made in accordance with the following. (IEC/EN 60335-2-40/A1)		N/A
	– A brazed, welded, or mechanical connection shall be made before opening the valves to permit refrigerant to flow between the refrigerating system parts. A vacuum valve shall be provided to evacuate the interconnecting pipe and/or any uncharged refrigerating system part. (IEC/EN 60335-2-40/A1)		N/A
	– Reusable mechanical connectors and flared joints are not allowed indoors. (IEC/EN 60335-2-40/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	– Refrigerant tubing shall be protected or enclosed to avoid damage. (IEC/EN 60335-2-40/A1)		N/A
	Flexible refrigerant connectors (such as connecting lines between the indoor and outdoor unit) that may be displaced during normal operations shall be protected against mechanical damage. (IEC/EN 60335-2-40/A1)		N/A

23	INTERNAL WIRING		——
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.	No damage	P
	Wire holes in metal well rounded or provided with bushings		P
	Wiring effectively prevented from coming into contact with moving parts		P
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges or corners		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	Electrical connections and internal conductors not movable	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 100 flexings for conductors flexed during user maintenance		N/A
	Electric strength test, 1000 V between live parts and accessible metal parts		N/A
23.4	Bare internal wiring sufficiently rigid and fixed	No bare wiring	N/A
23.5	The insulation of internal wiring withstanding the electrical stress likely to occur in normal use		P
	No breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by positive means		N/A
23.7	The colour combination green/yellow used only for earthing conductors		P
23.8	Aluminium wires not used for internal wiring	Not used	P
23.9	No lead-tin soldering of stranded conductors where they are subject to contact pressure, unless		P
	clamping means so constructed that there is no risk of bad contact due to cold flow of the solder		N/A
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52) (IEC/EN 60335-1/A1)		N/A

24	COMPONENTS		——
24.1	Components comply with safety requirements in relevant IEC standards	Components comply with safety requirements of the relevant component standards	P
	List of components	(see appended table)	P
	Components not tested and found to comply with relevant IEC standard for the number of cycles specified are tested in accordance with 24.1.1 to 24.1.6		P
	Components not tested and found to comply with relevant IEC standard, components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance	All components were tested under the conditions occurring in the appliances as given with this standard	P
	Motor-compressors not tested according to IEC 60335-2-34 (not necessary to meet all requirements of IEC 60335-2-34) (IEC/EN 60335-2-40)		P
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, complying with IEC 60384-14, or		P
	tested according to annex F		N/A
24.1.2	Safety isolating transformers complying with IEC 61558-2-6, or	Transformer not considered as safety isolating transformer	N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	tested according to annex G		N/A
24.1.3	Switches complying with IEC 61058-1, the number of cycles of operation being at least 10 000, or		P
	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
24.1.4	Automatic controls complying with IEC 60730-1 with relevant part 2. The number of cycles of operation being:		——
	- thermostats: 10 000		N/A
	- temperature limiters: 1 000		N/A
	- self-resetting thermal cut-outs (IEC/EN 60335-2-40): 3 000		N/A
	- voltage maintained non-self-resetting thermal cut-outs: 1000		N/A
	- other non-self-resetting thermal cut-outs: (IEC/EN 60335-2-40): 300		N/A
	- timers: 3 000		N/A
	- energy regulators :10 000		N/A
	- thermostats which control motor-compressor (IEC/EN 60335-2-40): 100 000		N/A
	- motor-compressor starting relays (IEC/EN 60335-2-40): 100 000		N/A
	- automatic thermal motor-protectors for hermetic and semi-hermetic type motor-compressors (IEC/EN 60335-2-40): min 2 000		N/A
	- manual reset thermal motor-protectors for hermetic and semi-hermetic type motor-compressors (IEC/EN 60335-2-40): 50		N/A
	- other automatic thermal motor protectors (IEC/EN 60335-2-40): 2 000		N/A
	- other manual reset thermal motor protectors (IEC/EN 60335-2-40): 30		N/A
	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D (IEC/EN 60335-1/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7 (IEC/EN 60335-1/A1)		N/A
24.1.5	Appliance couplers complying with IEC 60320-1	No appliance couplers	N/A
	However, appliances classified higher than IPX0, the appliance couplers complying with IEC 60320-2-3 (IEC/EN 60335-1/A1)		N/A
	Interconnection couplers complying with IEC 60320-2-2		N/A
24.1.6	Small lamp holders similar to E10 lampholders complying with IEC 60238, the requirements for E10 lampholders being applicable	No lamp holder	N/A
24.2	No switches or automatic controls in flexible cords		N/A
	No devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		P
	No thermal cut-outs that can be reset by soldering		P
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and having a contact separation in all poles, providing full disconnection under overvoltage category III conditions	All pole disconnection device requested by installation manual	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 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1		N/A
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance and used accordingly		P
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		P
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 42V.		N/A
	In addition, the motors are complying with the requirements of Annex I		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
24.7	Hose-sets for connection of appliances to the water mains, complying with IEC 61770 and supplied with the appliance (IEC/EN 60335-1/A1)		N/A
24.101	Replaceable parts of thermal control devices identified by marking (IEC/EN 60335-2-40)		N/A

25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		——
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		——
	- pins for insertion into socket-outlets	Intended for connection to fixed wiring	N/A
	- supply cord fitted with a plug may be provided, if (IEC/EN 60335-2-40):		N/A
	• the appliance is only for indoor use		N/A
	• it is marked with a rating of 25 A or less		N/A
	• it complies with the code requirements of the country where it will be used		N/A
	Appliance inlet not allowed (IEC/EN 60335-2-40)		N/A
25.2	Appliance not provided with more than one means of connection to the supply mains	No multiple supply	P
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown		N/A
25.3	Connection of supply conductors for appliance intended to be permanently connected to fixed wiring possible after the appliance has been fixed to its support		P
	Appliance provided with a set of terminals for the connection of cables or fixed wiring, cross-sectional areas specified in 26.6		N/A
	Appliance provided with a set of terminals allowing the connection of a flexible cord		P
	Appliance provided with a set of supply leads accommodated in a suitable compartment		N/A
	Appliance provided with a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate type of cable or conduit		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimensions according to table 10		N/A
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in 29		N/A
25.5	Method for assemble supply cord with the appliance:		——
	- type X attachment		N/A
	- type Y attachment		P
	- type Z attachment, if allowed in part 2		N/A
	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords		N/A
25.6	Plugs fitted with only one flexible cord		N/A
25.7	Supply cord not lighter than:		——
	- braided cord (60245 IEC 51)		N/A
	- ordinary tough rubber sheathed cord (60245 IEC 53)		N/A
	- ordinary polychloroprene sheathed flexible cord (60245 IEC 57) (IEC/EN 60335-1/A1)		N/A
	- flat twin tinsel cord (60227 IEC 41)		N/A
	- light polyvinyl chloride sheathed cord (60227 IEC 52), appliance not exceeding 3 kg		N/A
	- ordinary polyvinyl chloride sheathed cord (60227 IEC 53), appliance exceeding 3 kg		N/A
	Temperature rise of external metal parts exceeding 75 K, PVC cord not used, unless		N/A
	appliance so constructed that the supply cord is not likely to touch external metal parts in normal use, or		N/A
	the supply cord is appropriate for higher temperatures, type Y or type Z attachment used		N/A
	Supply cords for outdoor use not lighter than polychloroprene sheathed flexible cord (60245 IEC 57) (IEC/EN 60335-2-40)	Installation manual requires H05RN-F for OU and connecting cable	P
25.8	Nominal cross-sectional area of supply cords according to table 11; rated current (A); cross-sectional area (mm²).....	Installation manual contains about proper cross-sectional area	P
25.9	Supply cord not in contact with sharp points or edges		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
25.10	Green/yellow core for earthing purposes in Class I appliance		P
25.11	Conductors of supply cords not consolidated by lead-tin soldering where they are subject to contact pressure, unless		P
	clamping means so constructed that there is no risk of bad contacts due to cold flow of the solder		N/A
25.12	Moulding the cord to part of the enclosure does not damage the insulation of the supply cord		N/A
25.13	Inlet opening so shaped as to prevent damage to the supply cord		P
	Unless the enclosure at the inlet opening is of insulation material, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided		P
	If unsheathed supply cord, a similar additional bushing or lining is required, unless		N/A
	the appliance is class 0		N/A
25.14	Supply cords adequately protected against excessive flexing	Appliance not intended to be moved during operation	N/A
	Flexing test:		——
	- applied force (N)		N/A
	- number of flexings		N/A
	The test does not result in:		——
	- short circuit between the conductors		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, within the meaning of the standard, to the cord or the cord guard		N/A
	- broken strands piercing the insulation and becoming accessible		N/A
25.15	Conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage	Cord anchorage used at IU and OU	P
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Pull and torque test of supply cord, values shown in table 10: pull (N); torque (not on automatic cord reel) (Nm).....	100N 0.35Nm	P
	Max. 2 mm displacement of the cord, and conductors not moved more than 1 mm in the terminals		P
	Creepage distances and clearances not reduced below values specified in 29.1		P
25.16	Cord anchorages for type X attachments constructed and located so that:		——
	- replacement of the cord is easily possible		N/A
	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A
	- they are suitable for different types of cord		N/A
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless 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 part of a specially prepared cord		N/A
	- screws which have to be operated when replacing the cord do not fix any other component, if applicable		N/A
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N/A
	- for Class 0, 0I and I appliances: they are of insulating material or are provided with an insulating lining, unless 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 if of metal, they are insulated from accessible metal parts by supplementary insulation		N/A
25.17	Adequate cord anchorages for type Y and Z attachment		P
25.18	Cord anchorages only accessible with the aid of a tool, or		P
	so constructed that the cord can only be fitted with the aid of a tool		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	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	Conductors of the supply cord for type Y and Z attachment adequately additionally insulated		P
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed to permit checking of conductors with respect to correct positioning and connection before fitting any cover, no risk of damage to the conductors when fitting the cover, no contact with accessible metal parts if a conductor becomes loose, etc.		P
	For portable appliances, the uninsulated end of a conductor prevented from any contact with accessible metal parts, unless the end of the cord is such that the conductors are unlikely to slip free		N/A
25.22	Appliance inlet:		——
	- live parts not accessible during insertion or removal		N/A
	- connector can be inserted without difficulty		N/A
	- the appliance is not supported by the connector		N/A
	- is not for cold conditions if temp. rise of external metal parts exceeds 75 K, unless the supply cord is not likely to touch such metal parts		N/A
25.23	Interconnection cords comply with the requirements for the supply cord, except as specified		P
	If necessary, electric strength test of 16.3		N/A
25.24	Interconnection cords not detachable without the aid of a tool if compliance with the standard is impaired when they are disconnected		P
25.25	Dimensions of pins compatible with the dimensions of the relevant socket-outlet. Dimensions of pins and engagement face in accordance with the relevant plug in IEC 60083		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
26	TERMINALS FOR EXTERNAL CONDUCTORS		——
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors	Terminal blocks at IU and OU provided	P
	Terminals only accessible after removal of a non-detachable cover		P
	However, 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 (IEC/EN 60335-1/A1)		N/A
26.2	Appliances with type X attachment and appliances for connection to fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless the connections are soldered	By screws	P
	Screws and nuts serve only to clamp supply conductors, except		P
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N/A
	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone		N/A
	Soldering alone used, barriers provided, clearances and creepage distances satisfactory if the conductor becomes free at the soldered joint		N/A
26.3	Terminals for type X attachment and for connection to fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure and without damaging the conductor		N/A
	Terminals for type X attachment and those for connection to fixed wiring so fixed that when tightening or loosening the clamping means:		——
	- the terminal does not loosen		P
	- internal wiring is not subjected to stress		P
	- clearances and creepage distances are not reduced below the values in 29		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Compliance checked by inspection and by the test of subclause 8.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified. Nominal diameter of thread (mm); screw category; torque (Nm)		P
26.4	Terminals for type X attachment, except those with a specially prepared cord, and those for connection to fixed wiring, no special preparation of conductors required, and so constructed or placed that conductors prevented from slipping out	Cord anchorage provided	P
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, 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 to fixed wiring suitable for connection of conductors with required cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm²) ..		P
	Terminals only suitable for a specially prepared cord		N/A
26.7	Terminals for type X attachment accessible after removal of a cover or part of the enclosure		N/A
26.8	Terminals for the connection to fixed wiring, including the earthing terminal, located close to each other		P
26.9	Terminals of the pillar type constructed and located as specified		N/A
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless conductors ends fitted with a device suitable for screw terminals		P
	Pull test of 5 N to the connection		N/A
26.11	For type Y and Z attachment: soldered, welded, crimped and similar connections may be used		N/A
	For Class II appliances: the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	For Class II appliances: soldering, welding or crimping alone used, barriers provided, clearances and creepage distances satisfactory if the conductor becomes free		N/A

27	PROVISION FOR EARTHING		——
27.1	Accessible metal parts of Class 0I and I appliances, permanently and reliably connected to an earthing terminal or contact of the appliance inlet		P
	Earthing terminals not connected to neutral terminal		P
	Class 0, II and III appliance have no provision for earthing		N/A
	Safety extra-low voltage circuits not earthed, unless protective extra-low voltage circuits		N/A
27.2	Clamping means adequately secured against accidental loosening	Adequately secured	P
	Terminals used for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm², and		N/A
	do not provide earthing continuity between different parts of the appliance		N/A
	Conductors cannot be loosened without the aid of a tool		P
27.3	For detachable parts that are plugged into another part of the appliance, and having an earth connection, the earth connection made before and separated after current-carrying connections when removing the part (IEC/EN 60335-1/A1)		N/A
	For appliances with supply cord, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		P
27.4	No risk of corrosion resulting from contact between metal of earthing terminal and other metal		P
	Adequate resistance to corrosion of coated or uncoated parts providing earthing continuity, other than parts of a metal frame or enclosure		P
	Parts of steel providing earthing continuity provided at the essential areas with an electroplated coating, thickness at least 5 µm		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P
	In case of aluminium alloys precautions taken to avoid risk of corrosion		N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P
	This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided that clearances of basic insulation are based on the rated voltage of the appliance		N/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test	0.06 Ω	P
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand held appliances		N/A
	They may be used in other appliances if:		——
	- at least two tracks are used with independent soldering points and the appliance complies with requirements of 27.5 for each circuit		N/A
	- the material of the printed circuit board complies with IEC 60249-2-4 or IEC 60249-2-5		N/A

28	SCREWS AND CONNECTIONS		——
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses	Reliably fixed	P
	Screws not of soft metal liable to creep, such as zinc or aluminium		P
	Diameter of screws of insulating material min. 3 mm		N/A
	Screws of insulating material not used for any electrical connection or connections providing earthing continuity	Not used	N/A
	Screws used for electrical connections or connections providing earthing continuity screw into metal	Screw into metal	P
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	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 can impair basic insulation		N/A
	For screws and nuts; test as specified	(see appended table)	P
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure not transmitted through insulating material liable to shrink or distort, unless shrinkage or distortion compensated	Not transmitted through insulating material	P
	This requirement does not apply to electrical connections in circuits carrying a current not exceeding 0.5A		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 only used for electrical connections if they generate a full form standard machine screw thread		P
	Such screws not used if they are likely to be operated by the user or installer unless the thread is formed by a swaging action		N/A
	Thread-cutting and space-threaded screws may be used in connections providing earthing continuity, provided unnecessary to disturb the connection and at least two screws are used for each connection		N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity		N/A
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if subjected to torsion		N/A

29	CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION		——
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type A) or to provide basic insulation (Type B), annex J applies (IEC/EN 60335-1/A1)		N/A
	The microenvironment is pollution degree 1 under Type A coating (IEC/EN 60335-1/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	No creepage distance or clearance requirements under Type B coating (IEC/EN 60335-1/A1)		N/A
	For motor-compressor complies with IEC 60335-2-34, parts related not checked (IEC/EN 60335-2-40)		N/A
	For motor-compressor not complying with IEC 60335-2-34, additions and modifications as specified (IEC/EN 60335-2-40)		P
29.1	Clearances not less than the values specified in Table 16, taking into account the rated impulse voltage for the overvoltage categories of Table 15, unless (IEC/EN 60335-1/A1)		P
	for basic insulation and functional insulation, they comply with the impulse voltage test of clause 14 (IEC/EN 60335-1/A1)		N/A
	However, if construction is affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0.5mm and the impulse voltage test is not applicable (IEC/EN 60335-1/A1)		N/A
	Impulse voltage test not applicable: (IEC/EN 60335-1/A1)		——
	- when the microenvironment is pollution degree 3 (IEC/EN 60335-1/A1)		N/A
	- for basic insulation of class 0 and class 0I appliances (IEC/EN 60335-1/A1)		N/A
	Appliances are in overvoltage category II		P
	Compliance is checked by inspection and measurements as specified		P
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		P
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors (IEC/EN 60335-1/A1)		P
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16		N/A
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, but using the next higher step for rated impulse voltage		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
29.1.4	For functional insulation, the values of table 16 are applicable, unless		P
	the appliance complies with clause 19 with the functional insulation short-circuited		P
	Lacquered conductors of windings considered to be bare conductors (IEC/EN 60335-1/A1)		P
	However, clearances at crossover points are not measured		P
	Clearance between surfaces of PTC heating elements may be reduced to 1mm		N/A
	Lacquered conductors of windings assumed to be bare conductors, but the clearances specified in table 16 are reduced by 0.5mm for rated impulse voltages of at least 1500V		N/A
29.1.5	Appliances having higher working voltage than rated voltage, the voltage used for determining clearances from table 16 is the sum of the rated impulse voltage and the difference between the peak value of the working voltage and the peak value of the rated voltage		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 based on the working voltage used as the rated voltage in table 15		P
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree		P
	Pollution degree 2 applies, unless	Pollution degree 2 assumed	P
	precautions taken to protect the insulation; pollution degree 1		N/A
	insulation subjected to conductive pollution; pollution degree 3		N/A
	Compliance is checked by inspection and measurements as specified		P
	Insulation located in airflow, pollution degree 3 unless (IEC/EN 60335-2-40)	No insulation in airflow	N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Insulation enclosed or located so that unlikely to be exposed to pollution due to normal use (IEC/EN 60335-2-40)		P
29.2.1	Creepage distances of basic insulation not less than specified in table 17		P
	For pollution degree 1, 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 as specified for basic insulation in table 17		N/A
29.2.3	Creepage distances of reinforced insulation at least double as specified for basic insulation in table 17		P
29.2.4	Creepage distances of functional insulation not less than specified in table 18		P
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		P
29.3	Supplementary and reinforced insulation having adequate thickness, or a sufficient number of layers, to withstand the electrical stresses (IEC/EN 60335-1/A1)		N/A
	Compliance checked by:		——
	- measurement, in accordance with 29.3.1, or		N/A
	- an electric strength test in accordance with 29.3.2, or		N/A
	- an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3		N/A
(EN)	- an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3 for accessible refinforece insulation of consisting of a single layer, measurement in accordance with 29.3.Z1 (EN 60335-1/A12)		N/A
29.3.1	Supplementary insulation having a thickness of at least 1mm (IEC/EN 60335-1/A1)		N/A
	Reinforced insulation having a thickness of at least 2mm (IEC/EN 60335-1/A1)		N/A
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation (IEC/EN 60335-1/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Supplementary insulation consisting of at least 2 layers (IEC/EN 60335-1/A1)		N/A
	Reinforced insulation consisting of at least 3 layers		N/A
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by (IEC/EN 60335-1/A1)		N/A
	the electric strength of 16.3 (IEC/EN 60335-1/A1)		N/A
	If the temperature rise during the tests of Clause 19 does not exceed the value specified in Table 3, the test of IEC 60068-2-2 is not carried out (IEC/EN 60335-1/A1)		N/A

30	RESISTANCE TO HEAT AND FIRE		——
30.1	External parts of non-metallic material,	IU enclosure	P
	parts supporting live parts, and		P
	thermoplastic material providing supplementary or reinforced insulation,		P
	sufficiently resistant to heat		P
	Ball-pressure test according to IEC 60695-10-2		P
	External parts: 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)	75°C	P
	Parts supporting live parts: 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).....	125°C	P
	Parts of thermoplastic material providing supplementary or reinforced insulation, 25°C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C).....		N/A
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire		P
30.2.1	Glow-wire test of IEC 60695-2-11 at 550 °C, unless		P
	the material is classified at least HB40 according to IEC 60695-11-10		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Parts for which the glow-wire test cannot be carried out meet the requirements in ISO9772 for category HBF material (IEC/EN 60335-1/A1)		N/A
30.2.2	Not applicable (IEC/EN 60335-2-40)		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		P
	Test not applicable to conditions as specified		N/A
30.2.3.1	Parts of insulating material supporting connections carrying a current exceeding 0.2A during normal operation, and		P
	parts of insulating material within a distance of 3mm,		P
	having a glow-wire flammability index of at least 850°C according to IEC 60695-2-12		P
30.2.3.2	Parts of insulating material supporting current-carrying connections, and		P
	parts of insulating material within a distance of 3mm,		P
	subjected to glow-wire test of IEC 60695-2-11		N/A
	Test not carried out on material having a glow-wire ignition temperature according to IEC 60695-2-13 as specified		N/A
	Glow-wire test of IEC 60695-2-11, the temperature being:		——
	-750°C, for connections carrying a current exceeding 0,2A during normal operation		P
	-650°C, for other connections		N/A
	Parts that during the test produce a flame persisting longer than 2 s, tested as specified		P
	If a flame persists longer than 2 s during the test, parts above the connection, as specified, subjected to the needle-flame test of annex E, unless		N/A
	the material is classified as V-0 or V-1 according to IEC 60695-11-10	Flammable parts enclosed by control box (more than V-1) (IU) or metal enclosure (OU)	P
30.2.4	Base material of printed circuit boards subjected to needle-flame test of annex E	PCB, V-0	P
	Test not applicable to conditions as specified		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
31	RESISTANCE TO RUSTING		——
	Relevant ferrous parts adequately protected against rusting		P
	Salt mist test of IEC 60068-2-52, severity 2 (IEC/EN 60335-2-40)		N/A
	Before test, coatings are scratched by means of a harden steel pin as specified (IEC/EN 60335-2-40)		N/A
	Five scratches made at least 5mm apart and at least 5mm from the edges (IEC/EN 60335-2-40)		N/A
	Appliance not deteriorated to such an extent that compliance with cl. 8 and cl. 27 is impaired (IEC/EN 60335-2-40)		N/A
	Coating not be broken and not loosened from the metal surface (IEC/EN 60335-2-40)		N/A
32	RADIATION, TOXICITY AND SIMILAR HAZARDS		——
	Appliance does not emit harmful radiation		P
	Appliance does not present a toxic or similar hazard		P
A	ANNEX A (INFORMATIVE) ROUTINE TESTS		——
	Description of routine tests to be carried out by the manufacturer		P
B	ANNEX B (NORMATIVE) APPLIANCES POWERED BY RECHARGEABLE BATTERIES		——
	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance		N/A
	This annex does not apply to battery chargers		N/A
3.1.9	Appliance operated under the following conditions:		——
	-the appliance, supplied by its fully charged battery, operated as specified in relevant part 2		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	-the battery is charged, the battery being initially discharged to such an extent that the appliance cannot operate		N/A
	-if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2		N/A
	If the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed		N/A
3.6.2	Part to be removed in order to discard the battery is not considered to be detachable		N/A
5.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances		N/A
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage and polarity of the terminals		N/A
7.12	The instructions for appliances incorporating batteries intended to be replaced by the user includes required information		N/A
	Details about how to remove batteries containing materials hazardous to the environment given		N/A
7.15	Markings placed on the part of the appliance connected to the supply mains		N/A
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment		N/A
	If the appliance can be operated without batteries, double or reinforced insulation required		N/A
11.7	The battery is charged for the period described		N/A
19.1	Appliances subjected to tests of 19.101, 19.102 and 19.103		N/A
19.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		N/A
19.102	Short-circuiting of the terminals of the battery, being fully charged, for appliances having batteries that can be removed without the aid of a tool		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
19.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
21.101	Appliances having pins for insertion into socket-outlets have adequate mechanical strength, checked according to procedure 2 of IEC 68-2-32		N/A
	Part of the appliance incorporating the pins subjected to the free fall test, procedure 2, of IEC 60068-2-32, the number of falls being:		——
	- 100, the mass of part does not exceed 250 g		N/A
	- 50, the mass of part exceeds 250 g		N/A
	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met		N/A
22.3	Appliances having pins for insertion into socket-outlets tested as fully assembled as possible		N/A
25.13	An additional lining or bushing not required for interconnection cords operating at safety extra-low voltage		N/A
30.2	For parts of the appliance connected to the supply mains during the charging period, 30.2.3 applies		N/A
	For other parts, 30.2.2 applies		N/A

C	ANNEX C (NORMATIVE) AGEING TEST ON MOTORS		——
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding		N/A

D	ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS	N/A

E	ANNEX E (NORMATIVE) NEEDLE-FLAME TEST	——
	Needle-flame test carried out in accordance with IEC 60695-2-2, with the following modifications:	——
5	Severities	——

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	The duration of application of the test flame is 30 s ± 1 s		N/A
8	Test procedure		——
8.2	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1		N/A
8.4	The first paragraph does not apply		N/A
	If possible, the flame is applied at least 10 mm from a corner		N/A
8.5	The test is carried out on one specimen		N/A
	If the specimen does not withstand the test, the test may be repeated on two further specimens, both withstanding the test		N/A
10	Evaluation of test results		——
	The duration of burning not exceeding 30 s		N/A
	However, for printed circuit boards, the duration of burning not exceeding 15 s		N/A

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	Terminology		——
1.5.3	Class X capacitors tested according to subclass X2		N/A
1.5.4	This subclause is applicable		N/A
1.6	Marking		——
	Items a) and b) are applicable		N/A
3.4	Approval testing		——
3.4.3.2	Table II is applicable as described		N/A
4.1	Visual examination and check of dimensions		——
	This subclause is applicable		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
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 IX 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 applicable		N/A
4.14.7	Only insulation resistance and voltage proof are checked		N/A
	Visual examination, no visible damage		N/A
4.17	Passive flammability test		——
	This subclause is applicable		N/A
4.18	Active flammability test		——
	This subclause is applicable		N/A

G	ANNEX G (NORMATIVE) SAFETY ISOLATING TRANSFORMERS	——
	The following modifications to this standard are applicable for safety isolating transformers:	——
7	Marking and instructions	——
7.1	Transformers for specific use marked with:	——

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	-name, trademark or identification mark of the manufacturer or responsible vendor		N/A
	-model or type reference		N/A
17	Overload protection of transformers and associated circuits		——
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		——
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		N/A
29	Clearances, creepage distances and solid insulation		——
29.1, 29.2 and 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply		N/A

H	ANNEX H (NORMATIVE) SWITCHES		——
	Switches comply with the following clauses of IEC 61058-1, as modified:		——
	-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, switches that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference		N/A
13	Mechanism		——
	The tests may be carried out on a separate sample		N/A
15	Insulation resistance and dielectric strength		——
15.1	Not applicable		N/A
15.2	Not applicable		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
15.3	Applicable for full disconnection and micro-disconnection		N/A
17	Endurance		——
	Compliance is checked on three separate appliances or switches		N/A
	For 17.2.4.4, the number of cycles is 10 000, unless 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 switches operated by hand that are interlocked so that they cannot be operated under load, are not subjected to the tests		N/A
	Subclause 17.2.2 and 17.2.5.2 are 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
	Temperature rise of the terminals not more than 30 K above the temperature rise measured in clause 11 of IEC 60335-1		N/A
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies		——
	This clause is applicable to clearances and creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in table 24		N/A

I	ANNEX I (NORMATIVE) MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE	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:		——
6.6	Climatic sequence		——
	When production samples are used, three samples of the printed circuit board are tested		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
6.6.1	Cold		——
	The test is carried out at -25°C		N/A
6.6.3	Rapid change of temperature		——
	Severity 1 is specified		N/A
6.8.6	Partial discharge extinction voltage		——
	Type A coatings not subjected to a partial discharge test		N/A
6.9	Additional tests		——
	This subclause is not applicable		N/A

K	ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES		——
	The information on overvoltage categories is extracted from IEC 60664-1		P
	Overvoltage category is a numeral defining a transient overvoltage condition		P
	Equipment of overvoltage category IV is for use at the origin of the installation		N/A
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements		N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation		P
	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies		N/A
	Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriate low level		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
L	ANNEX L (INFORMATIVE) GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES		——
	Sequences for the determination of clearances and creepage distances		N/A
M	ANNEX M (NORMATIVE) POLLUTION DEGREE		——
	The information on pollution degrees is extracted from IEC 60664-1		P
	Pollution		——
	The microenvironment determines the effect of pollution on the insulation, taking into account the microenvironment		N/A
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		N/A
	Minimum clearances specified where pollution may be present in the microenvironment		N/A
	Degrees of pollution in the microenvironment		——
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		——
	- pollution degree 1: no pollution or only dry, non-conductive pollution occurs. The pollution has no influence		N/A
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected		P
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected		N/A
	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
N	ANNEX N (NORMATIVE) PROOF TRACKING TEST		——
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		——
7	Test apparatus		——
7.3	Test solutions		——
	Test solution A is used		N/A
10	Determination of proof tracking index (PTI)		——
10.1	Procedure		——
	Proof voltage is 100V, 175V, 400V or 600V		N/A
	Last paragraph of clause 3 applies		N/A
	The test is carried out on five specimens		N/A
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100		N/A
10.2	Report		——
	The report stating if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		N/A
O	ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30		——
	Description of tests for determination of resistance to heat and fire		P
P	ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN WARM DAMP EQUABLE CLIMATES		——
	Modifications applicable for class 0 and 0I appliances having a rated voltage exceeding 150V, intended to be used in countries having a warm damp equable climate and that are marked WDaE		——

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Modifications may also be applied to class I appliances having a rated voltage exceeding 150V, intended to be used in countries having a warm damp equable climate and that are marked WDaE, if liable to be connected to a supply mains that excludes the protective earthing conductor		——
5	General conditions for the tests		——
5.7	The ambient temperature for the tests of Clauses 11 and 13 is $40\ ^{+3}_{0}$ °C		N/A
7	Marking and instructions		——
7.1	The appliance marked with the letters WDaE		N/A
7.12	The instructions state that the appliance is to be supplied through a RCD having a rated residual operating current not exceeding 30mA		N/A
	The instructions state that the appliance is considered to be suitable for use in countries having a warm damp equable climate, but may also be used in other countries		N/A
11	Heating		——
11.8	The values of Table 3 are reduced by 15K		N/A
13	Leakage current and electric strength at operating temperature		——
13.2	The leakage current for class I appliances not exceeding 0.5mA		N/A
15	Moisture resistance		——
15.3	The value of t is 37°C		N/A
16	Leakage current and electric strength		——
16.2	The leakage current for class I appliances not exceeding 0.5mA		N/A
19	Abnormal operation		——
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
Q	ANNEX Q (INFORMATIVE) SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS		——
	Description of tests for appliances incorporating electronics circuits		——
R	ANNEX R (NORMATIVE) SOFTWARE EVALUATION		——
	Software evaluated in accordance with the following clauses of Annex H of IEC 60730-1, as modified:		——
H.2	Definitions		N/A
	Only definitions H.2.16 to H.2.20 applicable		N/A
H.7	Information		N/A
	Only footnotes 12) to 18) of Table 7.2, as modified, applicable		N/A
H.11.12	Controls using software		N/A
	All the subclauses of H.11.12, as modified, except H.11.12.6 and H.11.12.6.1, applicable		N/A
H.11.12.7	Delete text		N/A
H.11.12.7.1	For appliances using software class C having a single channel with self-test and monitoring structure, the manufacturer provides the measures necessary to address the fault/errors in safety related segments and data		N/A
H.11.12.8	Software fault/error detection occurs before compliance with 19.13 of IEC 60335-1 is impaired		N/A
H.12.8.1	Replace text		N/A
H.12.13	Software and safety related hardware under its control initializes and terminates before compliance with 19.13 of IEC 60335-1 is impaired		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
AA	ANNEX AA (INFORMATIVE) **Examples for operating temperatures of the appliance**		——
BB	ANNEX BB (NORMATIVE) **Selected information about refrigerants**		——
CC	ANNEX BB (INFORMATIVE) **Transportation, marking and storage for units that employ flammable refrigerants**		——
CC.1	Transport of equipment containing flammable refrigerants	No flammable refrigerant	N/A
CC.2	Marking of equipment using signs		N/A
CC.3	Disposal of equipment using flammable refrigerants		N/A
CC.4	Storage of equipment/appliances		N/A
CC.5	Storage of packed (unsold) equipment		N/A
DD	ANNEX DD (NORMATIVE) **Service operations**		——
DD.1	Generals	No flammable refrigerant	N/A
DD.2	Symbols		N/A
DD.3	Information in manual		N/A
DD.4	Information on servicing		N/A
DD.5	Repairs to sealed components		N/A
DD.6	Repair to intrinsically safe components		N/A
DD.7	Cabling		N/A
DD.8	Detection of flammable refrigerants		N/A
DD.9	Leak detection methods		N/A
DD.10	Removal and evacuation		N/A
DD.11	Charging procedures		N/A
DD.12	Decommissioning		N/A
DD.13	Labelling		N/A
DD.14	Recovery		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
EE	ANNEX EE (NORMATIVE) **Pressure Tests**		——
EE.1	General		P
EE.2	Pressure test value determined under testing carried out in Clause 11		P
EE.3	Pressure test value determined under testing carried out in Clause 19.		P
EE.4	Pressure test value determined under testing carried out under standstill conditions		P
EE.5	Fatigue test option for Clauses EE.1 and EE.4.1		N/A
FF	ANNEX FF (NORMATIVE) **Leak simulation tests**		——
FF.1	General		P
FF.2	Test methods		P
GG	ANNEX GG (NORMATIVE) **Charge limits, ventilation requirements and requirements for secondary circuits**		——
GG.1	Requirements for charge limits in ventilated areas	No flammable refrigerant	N/A
GG.2	Requirements for charge limits in unventilated areas		N/A
GG.3	Requirements for charge limits in areas with mechanical ventilation		N/A
GG.4	Requirements for mechanical ventilation within the appliance enclosure		N/A
GG.5	Requirements for mechanical ventilation for rooms complying with ISO 5149		N/A
GG.6	Requirements for refrigeration systems employing secondary heat exchangers		N/A
GG.7	The appliance shall then be tested with a maximum water flow under the conditions described in g).		N/A

APPENDIX IEC 60335-1+A2:2006:			
To complete the assessment according to IEC/EN 60335-1+A2:2006 the following requirements are considered as well :			
IEC / EN 60335-2-40			
Clause	Requirement – Test	Result - Remark	Verdict
5	GENERAL CONDITIONS FOR THE TESTS		—
	The test of 19.14 is carried out before the tests of 19.11 (IEC 60335-1/A2)		N/A
7	MARKING AND INSTRUCTIONS		—
7.6	three-phase alternating current (IEC 60335-1/A2)	3 ~	N/A
	three-phase alternating current with neutral (IEC 60335-1/A2)	3N ~	N/A
	operator's manual; operating instructions (IEC 60335-1/A2)		N/A
	read operator's manual (IEC 60335-1/A2)		N/A
7.12	Children should be supervised to ensure that they do not play with the appliance (IEC 60335-1/A2)		P
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		—
8.1.4	– for voltages having a peak value over 15 kV, the energy in the discharge shall not exceed 350 mJ. (IEC 60335-1/A2)		N/A
	The quantity of electricity and energy in the discharge is measured using a resistor having a nominal non-inductive resistance of 2 000 Ω (IEC 60335-1/A2)		P
10	POWER INPUT AND CURRENT		—
10.1	The permissible deviations apply for both limits of the range for appliances marked with a rated voltage range having limits differing by more than 10 % of the arithmetic mean value of the range. (IEC 60335-1/A2)		N/A

10.2	The permissible deviations apply for both limits of the range for appliances marked with a rated voltage range having limits differing by more than 10 % of the arithmetic mean value of the range. (IEC 60335-1/A2)		N/A

19	ABNORMAL OPERATION		—
19.1	Appliances incorporating contactors or relays are subjected to the test of 19.14. (IEC 60335-1/A2)		N/A
19.11	Appliances incorporating an electronic circuit are subjected to the tests of 19.11.3 and 19.11.4. (IEC 60335-1/A2)	Not applicable to air conditioner	N/A
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly are subjected to the test of 19.11.4.8, unless restarting at any point in the operating cycle after interruption of operation due to a supply voltage dip will not result in a hazard. (IEC 60335-1/A2)		N/A
	The test is carried out after removal of all batteries and other components intended to maintain the programmable component supply voltage during mains supply voltage dips, interruptions and variations. (IEC 60335-1/A2)		N/A
	Appliances having a device with an off position obtained by electronic disconnection, or a device that can place the appliance in a stand-by mode, are subjected to the tests of 19.11.4. (IEC 60335-1/A2)		N/A
	During and after each test the following is checked:		—
	- the temperature rise of the windings do not exceed the values specified in table 8		N/A
	- the appliance complies with the conditions specified in 19.13		N/A
	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4		N/A
	If a conductor of a printed board becomes open-circuited, the appliance is considered to have withstood the particular test, provided both of the following conditions are met: (IEC 60335-1/A2)		—
	- the material of the printed circuit board withstands the burning test of annex E		N/A
	- any loosened conductor does not reduce the clearances or creepage distances between live parts and accessible metal parts below the values specified in cl. 29		N/A

19.11.2	g) failure of an electronic power switching device in a partial turn-on mode with loss of gate (base) control. During this test, winding temperatures shall not exceed the values given in 19.7. (IEC 60335-1/A2)		N/A
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or a device that can be placed in the stand-by mode, are subjected to the tests of 19.11.4.1 to 19.11.4.7. The tests are carried out with the appliance supplied at rated voltage, the device being set in the off position or in the stand-by mode. (IEC 60335-1/A2)		N/A
	The tests are carried out with surge protective devices disconnected, unless they incorporate spark gaps (IEC 60335-1/A2)		N/A
19.11.4.6	The appliance is subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11. The values specified in Table 1 and Table 2 of IEC 61000-4-11 are applied at zero crossing of the supply voltage (IEC 60335-1/A2)		N/A
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After approximately 60 s, the power supply voltage is reduced to a level such that the appliance ceases to respond to user inputs or parts controlled by the programmable component cease to operate, whichever occurs first. This value of supply voltage is recorded. (IEC 60335-1/A2)		N/A
	The appliance is supplied at rated voltage and operated under normal operation. The voltage is then reduced to a value of approximately 10 % less than the recorded voltage. It is held at this value for approximately 60 s and then increased to rated voltage. The rate of decrease and increase of the power supply voltage is to be approximately 10 V/s. (IEC 60335-1/A2)		N/A
	The appliance shall continue to either operate normally from the same point in its operating cycle at which the voltage decrease occurred or a manual operation shall be required to restart it. (IEC 60335-1/A2)		N/A
19.13	After the tests, and when the appliance has cooled to approximately room temperature, compliance with Clause 8 shall not be impaired and the appliance shall comply with 20.2 if it can still be operated. (IEC 60335-1/A2)		N/A
	After the operation or interruption of a control, clearances and creepage distances across the functional insulation shall withstand the electric strength test of 16.3, the test voltage, however, being twice the working voltage. (IEC 60335-1/A2)		N/A

	Appliances tested with an electronic switch in the off position, or in the stand-by mode, shall (IEC 60335-1/A2)		—
	– not become operational, or (IEC 60335-1/A2)		N/A
	– if they become operational, not result in a dangerous malfunction during or after the tests of 19.11.4. (IEC 60335-1/A2)		N/A
19.14	Appliances are operated under the conditions of Clause 11. Any contactor or relay contact that operates under the conditions of Clause 11 is short-circuited. (IEC 60335-1/A2)		N/A

22	CONSTRUCTION		—
22.2	Single-pole switches and single-pole protective devices that disconnect heating elements from the supply mains in single-phase, permanently connected class 0I appliances and class I appliances shall be connected to the phase conductor. (IEC 60335-1/A2)	No heating elements	N/A
22.5	The appliance is supplied at rated voltage. Any switch is then placed in the off position and the appliance is disconnected from the supply mains at the instant of voltage peak. One second after disconnection, the voltage between the pins of the plug is measured with an instrument that does not appreciably affect the value to be measured. (IEC 60335-1/A2)		N/A
22.21	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements (IEC 60335-1/A2)	No heating elements	N/A
22.32	Insulating material in which heating conductors are embedded is considered to be basic insulation and not reinforced insulation. (IEC 60335-1/A2)		N/A
22.35	For constructions other than those of class III, handles, levers and knobs that are held or actuated in normal use shall not become live in the event of a failure of basic insulation (IEC 60335-1/A2)		N/A
	If these handles, levers and knobs are of metal and if their shafts or fixings are likely to become live in the event of a failure of basic insulation, they shall be adequately covered by insulating material or their accessible parts shall be separated from their shafts or fixings by supplementary insulation. (IEC 60335-1/A2)		N/A

22.40	Unless the appliance can operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation shall be fitted with a switch for stopping the operation of the appliance. The actuating member of this switch shall be easily visible and accessible. (IEC 60335-1/A2)	Fixed appliance	N/A
22.44	Appliances shall not have an enclosure that is shaped or decorated like a toy. (IEC 60335-1/A2)		P
22.49	For remote operation, the duration of operation shall be set before the appliance can be started unless the appliance switches off automatically at the end of a cycle or it can operate continuously without giving rise to a hazard. (IEC 60335-1/A2)	Operate continuously	N/A
22.50	Controls incorporated in the appliance, if any, shall take priority over controls actuated by remote operation. (IEC 60335-1/A2)		P
22.51	A control on the appliance shall be manually adjusted to the setting for remote operation before the appliance can be operated in this mode. There shall be a visual indication on the appliance showing that the appliance is adjusted for remote operation. The manual setting and the visual indication of the remote mode are not necessary on appliances that can - operate continuously, or - operate automatically, or - be operated remotely, without giving rise to a hazard. (IEC 60335-1/A2)	Operate continuously	N/A
22.52	Socket-outlets on appliances accessible to the user shall be in accordance with the socket-outlet system used in the country in which the appliance is sold. (IEC 60335-1/A2)		N/A

24	COMPONENTS		—
24.1	Components not tested and found to comply with relevant IEC standard for the number of cycles specified are tested in accordance with 24.1.1 to 24.1.9 (IEC 60335-1/A2)		P
	Lampholders and starterholders that have not been previously tested and found to comply with the relevant IEC standard are tested as a part of the appliance and shall additionally comply with the gauging and interchangeability requirements of the relevant IEC standard under the conditions occurring in the appliance. (IEC 60335-1/A2)	No lamp holder	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 IEC 62151 (IEC 60335-1/A2)		N/A

24.1.8	The relevant standard for thermal links is IEC 60691. Thermal links that do not comply with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19. (IEC 60335-1/A2)		N/A
24.1.9	Relays, other than motor starting relays, are tested as part of the appliance. However, they are also tested in accordance with Clause 17 of IEC 60730-1 under the maximum load conditions occurring in the appliance for at least the number of operations in 24.1.4 selected according to the relay function in the appliance. (IEC 60335-1/A2)		N/A

25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		—
25.7	Supply cords shall be one of the following types: (IEC 60335-1/A2)		—
	– Rubber sheathed. Their properties shall be at least those of ordinary tough rubber sheathed cords (code designation 60245 IEC 53); (IEC 60335-1/A2)		N/A
	– Polychloroprene sheathed. Their properties shall be at least those of ordinary polychloroprene sheathed cords (code designation 60245 IEC 57); (IEC 60335-1/A2)		N/A
	– Cross-linked polyvinyl chloride sheathed. Their properties shall be at least those of cross-linked polyvinyl chloride sheathed cords (code designation 60245 IEC 87); (IEC 60335-1/A2)		P
	– Polyvinyl chloride sheathed. These cords shall not be used if they are likely to touch metal parts having a temperature rise exceeding 75 K during the test of Clause 11. Their properties shall be at least those of (IEC 60335-1/A2)		—
	• light polyvinyl chloride sheathed cord (code designation 60227 IEC 52), for appliances having a mass not exceeding 3 kg; (IEC 60335-1/A2)		N/A
	• ordinary polyvinyl chloride sheathed cord (code designation 60227 IEC 53), for other appliances; (IEC 60335-1/A2)		N/A
	– Heat resistant polyvinyl chloride sheathed. These cords shall not be used for type X attachment other than specially prepared cords. Their properties shall be at least those of (IEC 60335-1/A2)		—
	• heat-resistant light polyvinyl chloride sheathed cord (code designation 60227 IEC 56), for appliances having a mass not exceeding 3 kg; (IEC 60335-1/A2)		N/A

	• heat-resistant polyvinyl chloride sheathed cord (code designation 60227 IEC 57), for other appliances. (IEC 60335-1/A2)		N/A

26	TERMINALS FOR EXTERNAL CONDUCTORS		P
26.3	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. Nominal diameter of thread (mm); screw category; torque (Nm) (IEC 60335-1, A2)		P

27	PROVISION FOR EARTHING		—
27.6	The printed conductors of printed circuit boards shall not be used to provide earthing continuity in hand-held appliances. (IEC 60335-1/A2)		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. (IEC 60335-1/A2)		N/A

28	SCREWS AND CONNECTIONS		—
28.3	Thread-cutting (self-tapping) screws and thread rolling screws shall only be used for electrical connections if they generate a full form standard machine screw thread. However, threadcutting (self-tapping) screws shall not be used if they are likely to be operated by the user or installer. (IEC 60335-1/A2)		N/A
	Thread-cutting, thread rolling and space-threaded screws may be used in connections providing earthing continuity provided it is not necessary to disturb the connection (IEC 60335-1/A2)		—
	– in normal use, (IEC 60335-1/A2)		N/A
	– during user maintenance, (IEC 60335-1/A2)		N/A
	– when replacing a supply cord having a type X attachment, or (IEC 60335-1/A2)		N/A
	– during installation. (IEC 60335-1/A2)		N/A
	At least two screws must be used for each connection providing earthing continuity unless the screw forms a thread having a length of at least half the diameter of the screw. (IEC 60335-1/A2)		N/A

29	CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION		—
	If coatings are used on printed circuit boards to protect the microenvironment (Type 1 coating) or to provide basic insulation (Type 2 coating), Annex J applies. The microenvironment is pollution degree 1 under Type 1 coating. There are no creepage distance or clearance requirements under Type 2 coating. (IEC 60335-1/A2)		N/A

30	RESISTANCE TO HEAT AND FIRE		—
30.2.2	Appliances operated while attended, parts of non-metallic material supporting current-carrying connections and parts within a distance of 3mm subjected to the glow-wire test of IEC 60695-2-11		N/A
	However, the glow-wire test is not carried out on parts of material classified as having a glowwire flammability index according to IEC 60695-2-12 of at least: (IEC 60335-1/A2)		—
	- 750°C, for connections carrying a current exceeding 0,5A during normal operation (IEC 60335-1/A2)		N/A
	- 650°C, for other connections (IEC 60335-1/A2)		N/A
	If the glow-wire flammability index is not available for a sample with a thickness within ± 0,1 mm of the relevant part, then the test sample shall have a thickness equal to the nearest preferred value specified in IEC 60695-2-12 that is no thicker than the relevant part. (IEC 60335-1/A2)		N/A
	Where a non-metallic material is within 3 mm of a current carrying connection, but is shielded from the connection by a different material, the glow-wire test of IEC 60695-2-11 is carried out at the relevant temperature with the tip of the glow-wire applied to the interposed shielding material with the shielded material in place and not directly to the shielded material. (IEC 60335-1/A2)		N/A
	When the glow-wire test of IEC 60695-2-11 is carried out, the temperatures are (IEC 60335-1/A2)		—
	– 750 °C, for connections that carry a current exceeding 0,5 A during normal operation, (IEC 60335-1/A2)		N/A
	– 650 °C, for other connections. (IEC 60335-1/A2)		N/A
	Test not applicable to conditions as specified (IEC 60335-1/A2)		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2(IEC 60335-1/A2)		P

	Test not applicable to conditions as specified (IEC 60335-1/A2)		P
30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0.2A during normal operation, and (IEC 60335-1/A2)		P
	parts of non-metallic material within a distance of 3mm, (IEC 60335-1/A2)		P
	having a glow-wire flammability index of at least 850°C according to IEC 60695-2-11 (IEC 60335-1/A2)		P
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index of at least 850 °C according to IEC 60695-2-12. (IEC 60335-1/A2)		P
	If the glow-wire flammability index is not available for a sample with a thickness within ± 0,1 mm of the relevant part, then the test sample shall have a thickness equal to the nearest preferred value specified in IEC 60695-2-12 that is no thicker than the relevant part. (IEC 60335-1/A2)		P
	The glow-wire test is not carried out on small parts that comply with the needle-flame test of Annex E or on small parts of material classified as V-0 or V-1 according to IEC 60695-11-10 provided that the test sample used for the classification was no thicker than the relevant part of the appliance. (IEC 60335-1/A2)		P
	Where a non-metallic material is within 3 mm of a current carrying connection, but is shielded from the connection by a different material, the glow-wire test of IEC 60695-2-11 is carried out at the relevant temperature with the tip of the glow-wire applied to the interposed shielding material with the shielded material in place and not directly to the shielded material. (IEC 60335-1/A2)		P
30.2.3.2	Parts of non-metallic material supporting current-carrying connections, and (IEC 60335-1/A2)		P
	parts of non-metallic material within a distance of 3mm, (IEC 60335-1/A2)		P
	subjected to glow-wire test of IEC 60695-2-11 (IEC 60335-1/A2)		N/A
	Test not carried out on material having a glow-wire ignition temperature according to IEC 60695-2-13 as specified (IEC 60335-1/A2)		N/A
	Glow-wire test of IEC 60695-2-13, the temperature being: (IEC 60335-1/A2)		—
	- 775°C, for connections carrying a current exceeding 0,2A during normal operation (IEC 60335-1/A2)		N/A

	- 675°C, for other connections (IEC 60335-1/A2)		N/A
	When the glow-wire test of IEC 60695-2-11 is carried out, the temperatures are (IEC 60335-1/A2)		—
	– 750 °C, for connections that carry a current exceeding 0,2 A during normal operation, (IEC 60335-1/A2)		P
	– 650 °C, for other connections. (IEC 60335-1/A2)		N/A
	Parts that during the test produce a flame persisting longer than 2 s, tested as specified		P
	If a flame persists longer than 2 s during the test, parts above the connection, as specified, subjected to the needle-flame test of annex E, unless		N/A
	the material is classified as V-0 or V-1 according to IEC 60695-11-10	Flammable parts enclosed by control box (IU) (metal) control box (OU) (more than V-1)	P
30.2.4	Base material of printed circuit boards subjected to needle-flame test of annex E	PCB, V-0	P
	Test not applicable to conditions as specified		N/A

E	ANNEX E (NORMATIVE) NEEDLE-FLAME TEST (IEC 60335-1/A2)		—
	Needle-flame test carried out in accordance with IEC 60695-2-2, with the following modifications:		N/A
7	Severities		—
	The duration of application of the test flame is 30 s ± 1 s		N/A
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		N/A
9.2	The first paragraph does not apply		N/A
	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		N/A
	If the specimen does not withstand the test, the test may be repeated on two further specimens, both withstanding the test		N/A
11	Evaluation of test results		—
	The duration of burning not exceeding 30 s		N/A

	However, for printed circuit boards, the duration of burning not exceeding 15 s		N/A

J	ANNEX J (NORMATIVE) COATED PRINTED CIRCUIT BOARDS (IEC 60335-1/A2)		—
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:		N/A
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

APPENDIX 1:			
To complete the assessment according to EN 60335-1 the following requirements are considered as well :			
GROUP DIFFERENCES to IEC 60335-1, 4th ed (CB Bulletin 109B)			
6.1	Protection against electric shock: Class ~~0, 0I (IEC 60335-1)~~, I, II, III	Class I	P
7.1	Rated voltage or voltage range shall cover -230 V for single-phase appliances -400 V for multi-phase appliances		P
25.6	Supply cords of single-phase portable appliances having a rated current not exceeding 16 A shall be provided with a plug complying with the following standard sheets of IEC 60083 : 1975:		——
25.6	-for Class I appliances (standard sheet C2b, C3b or C4)	Not provided	N/A
25.6	-for Class II appliances (standard sheet C5 or C6)		N/A
25.7	Add -ordinary polychloroprene sheathed flexible cord (code designation 60245 IEC 57) (H05RN-F)		P
	When supply cords having high flexibility are used, they shall not be lighter than :		—
	- rubber insulated and sheathed cord (code designation 60245 IEC 86) (H03RR-H);		N/A
	- rubber insulated, crosslinked PVC sheathed cord (code designation 60245 IEC 87) (H03RV4-H);		N/A
	- crosslinked PVC insulated and sheathed cord (code designation 60245 IEC 88) (H03V4V4-H).		N/A
	NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		P

ANNEX ZC (normative)	Normative references to international publications with their corresponding European publications		P

ANNEX ZD (informative)	IEC and CENELEC code designations for flexible cords		P

ZA	**ANNEX ZA, SPECIAL NATIONAL CONDITIONS** (EN 60335-1:2002)		——
7.12	DENMARK: requirements regarding marking tag of power supply cord and connecting of earthing wire	Should be evaluated for national approval	N/A
19.5	NORWAY: the test is also applicable to appliances intended to be permanently connected to fixed wiring		P
22.2	FRANCE, NORWAY: The second paragraph of this subclause dealing with single-phase Class I permanently connected appliances with heating elements is not applicable due to the supply system		N/A
25.6	BELGIUM, FRANCE, SPAIN , UNITED KINGDOM: plugs according to Standard Sheet C2b not allowed		N/A
	AUSTRIA, FINLAND, GERMANY, ICELAND, IRELAND, ITALY, LUXEMBOURG, NETHERLANDS, NORWAY, PORTUGAL, SPAIN, SWEDEN, SWITZERLAND, UNITED KINGDOM: plugs according to Standard C3b not allowed		N/A
	DENMARK: Supply cords of single-phase portable appliances having a rated current not exceeding 13 A provided with a plug according to the following:		——
	- Class I appliances: Section 107-2-D1 Standard Sheet DK2-1a		N/A
	For appliances covered by a Part 2 of EN 60 335, also plugs in accordance with Section 107-2-D1 Standard Sheet C2b, C3b or C4 are allowed		N/A
	- Class II appliances: Section 107-2-D1, Standard Sheet C1b ,C5, C6, DKA2-1a and DKA2-1b		N/A
	Stationary single-phase appliances, having a rated current not exceeding 13 A, and provided with a plug, the plug is in accordance with the requirements above		N/A
	Multi-phase appliances and single-phase appliances having a rated current exceeding 13 A, and provided with a plug, the plug is in accordance with the requirements below:		——
	- Class I appliances: Section 107-2-D1, Standard Sheet DK6-1a/EN 60 309-2, Standard Sheet 2-II, 2-IV		N/A
	- Class II appliances: Section 107-2-D1, Standard Sheet DK6-1a*/2-II, 2-IV*		N/A

	For max. allowed current values see EN 60335-1		N/A
	IRELAND: plug is in accordance with Standard Sheets B2 and C2b (see annex ZB as well)		N/A
	ITALY: Only plugs listed in CENELEC Report ROBT-005:2001 are allowed		N/A
	SPAIN: For household appliances the following plugs only are allowed:		——
	- UNE 20315:ESC 10-1b, C2b, C4, C6, or ESB 25-5b;		N/A
	- UNE-EN 50075		N/A
	SWITZERLAND: supply cords of portable household and similar electrical appliances, rated current not exceeding 10 A, provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:		——
	SEV 6532-2:1991 plug type 15 3P+N+PE 250/400 V, 10 A		N/A
	SEV 6533-2:1991 plug type 11 L+N 250 V, 10 A		N/A
	SEV 6534-2:1991 plug type 12 L+N+PE 250 V, 10 A		N/A
	UNITED KINGDOM: plug according to Standard Sheet B2 or C5 used (refer to Annex ZB)		N/A
25.8	IRELAND, UNITED KINGDOM: replacement of figures (rated current/cross-sectional area) in the table		P

ZB	**ANNEX ZB, A-DEVIATIONS** (EN 60335-1:2002)		——
4	SWITZERLAND: information about batteries	On remote controller	P
7.1	ITALY: the voltage is 220 V/380 V		P
	SPAIN: the voltages are 127 V/220 V and 220 V/380 V		N/A
25.6	IRELAND / UNITED KINGDOM: regulations concerning plugs to be fitted to domestic appliances		N/A

ZAA	**ANNEX ZAA** (informative**)** (EN 60335-2-40/A11:2004)		——
	Refrigerating systems having a pressure greater than 0,05 MPa are considered to be assemblies falling within the scope of the Pressure Equipment Directive, 97/23/EC. However, according to Article 1, item 3.6 of the directive, equipment classified no higher than category I and covered by the low voltage directive is excluded from its scope.		N/A
	According to guideline 1/39 of the directive, this exclusion applies to both components and assemblies (refrigerant circuits). This applies to appliances containing vessels (e.g. compressors, receivers) or piping with limits in accordance with the following:		N/A
	vessels		N/A
	– dangerous refrigerants (Annex II, Table 1):		N/A
	• volume not exceeding 1 l, or		N/A
	• pressure x volume not exceeding 5 MPa l.		N/A
	– non-dangerous refrigerants (Annex II, Table 2):		N/A
	• volume not exceeding 1 l, or		N/A
	• pressure x volume not exceeding 20 MPa l.		N/A
	Piping		N/A
	–dangerous refrigerants (Annex II, Table 6):		N/A
	• numerical designation not exceeding 25, or		N/A
	• pressure not exceeding 1 MPa and numerical designation not exceeding 100, or		N/A
	• pressure exceeding 1 MPa and pressure x numerical designation not exceeding 100 MPa.		N/A
	– non-dangerous refrigerants (Annex II, Table 7):		N/A
	• numerical designation not exceeding 100, or		N/A
	• pressure x numerical designation not exceeding 350 MPa.		N/A
	For other components, the most onerous limit of the two applies.		N/A
	The volume is the internal volume of the vessel and includes the volume of pipework up to the first connection. It excludes the volume of fixed internal parts.•		N/A

ANNEX EMF			
	The Tested product also complies to the requirements of EN 50366:2003 + A1:2006		—
	Limit ……100%	Measured max. 1.547%	P

Tables:

10.1	TABLE: Power input deviation				P
Input deviation of/at:	P rated (W)	P measured (W)	dP	Required dP	Remark
Cooling mode at maximum condition	1300	1316	1.2%	+15%	--
Heating mode at maximum condition	1650	1698	2.9%	+15%	

10.2	TABLE: Current deviation				P
Current deviation of/at:	I rated (A)	I measured (A)	dI	Required dI	Remark
Cooling mode at maximum condition	5.5	5.62	2.4%	+15%	-
Heating mode at maximum condition	7.0	7.18	2.6%	+15%	-

11.8	TABLE: Heating test, thermocouples		P
	Cooling mode (DB/WB) .....:	32/23°C (IU) 43/26°C (OU)	—
	Heating mode (DB/WB) .....:	27/20°C (IU) 24/18°C (OU)	
	Test voltage (V) .....:	254.4V	—

Thermocouple locations	T (°C) (Cooling / Heating)	Max. T (°C)
Indoor unit		
Motor enclosure	39.4/35.5	150
Internal wiring for motor	34.7/36.1	85
Stepping motor	23.5/39.2	150
Relay	32.7/40.6	60
SMPS transformer	42.3/45.4	105
Terminal block	33.0/35.8	85
Enclosure	30.7/30.8	85
Outdoor unit		

Compressor top	70.4/56.0	150
Compressor side	70.6/56.7	150
Internal wiring for compressor	47.1/36.6	85
Motor enclosure	56.3/18.5	150
Internal wiring for motor	49.1/29.1	85
Relay	58.0/43.9	60
SMPS transformer	68.3/51.7	105
Terminal block	43.7/24.2	85
Supply cord	31.9/26.9	75
Enclosure	43.8/24.0	85

11.8	TABLE: Heating test, resistance method				N/A
	Cooling mode (DB/WB) .....:		32/23°C (IU) 43/26°C (OU)		—
	Heating mode (DB/WB) .....:		27/20°C (IU) 24/18°C (OU)		—
	Test voltage (V) .....:		254.4V		—
Temperature of winding	R_1 (Ω)	R_2 (Ω)	T (°C)	Max. T (°C)	Insulation class
Fan Motor (IU)			*)	115	E
Fan Motor (OU)			*)	115	E
Compressor			*)	130	Cellulosic
*) Measured by thermocouple because of BLDC motor and Inverter type compressor					

13.2	TABLE: Leakage current		P
	Heating appliances: 1.15 x rated input.....:		—
	Motor-operated and combined appliances: 1.06 x rated voltage .....:	254.4V	—
Leakage current between		I (mA)	Max. allowed I (mA)
Metal parts - Live conductor		0.81	3.5
Metal part - Neutral conductor		0.90	3.5

13.3	TABLE: Electric strength		P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)
Primary and earthed metal enclosure		1000	~~Yes~~ / No
Primary and control panel wrapped by aluminium foil		3000	~~Yes~~ / No

14	TABLE: Transient overvoltages					N/A
Clearance between:		Cl (mm)	Required Cl (mm)	Rated impulse voltage (V)	Impulse test voltage (V)	Flashover (Yes/No)

16.2	TABLE: Leakage current		P
	Single phase appliances: 1.06 x rated voltage .....:	254.4V	—
	Three phase appliances 1.06 x rated voltage divided by √3: .....:		—

Leakage current between	I (mA)	Max. allowed I (mA)
Live parts and accessible parts (basic insulation)	0.91	3.5
Live parts and accessible parts (reinforced insulation)	0.01	0.25

16.3	TABLE: Electric strength		P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)
Primary and earthed metal enclosure		1000	~~Yes~~ / No
Primary and control panel wrapped by aluminium foil		3000	~~Yes~~ / No

17	TABLE: Overload protection, temperature rise		P
Temperature rise of part/at:		dT (K)	Max. dT (K)
Winding of transformer_ 6170A90026A		92.5°C	165°C
Winding of transformer_ RM1515		52.7°C	165°C

19.14	TABLE: Abnormal operation			P
	OU airflow reduced at 240V/50Hz	Cooling mode	25 / 25 (IU / OU)	
	IU airflow reduced at 240V/50Hz	Cooling mode	25 / 25 (IU / OU)	
	Max. temp. + 10K at 240V/50Hz	Cooling mode	42 / 53 (IU / OU)	
Temperature T of part / at :		T (°C)	Required T (°C)	
Indoor unit				
Motor enclosure		49.7	150	
Internal wiring for motor		44.6	-	
Stepping motor		33.8	150	
Relay		42.1	-	
SMPS transformer		52.0	-	
Terminal block		43.3	-	
Enclosure		40.8	175	

Outdoor unit		
Compressor top	80.0	150
Compressor side	80.1	150
Internal wiring for compressor	57.4	-
Motor enclosure	64.7	150
Internal wiring for motor	57.9	-
Relay	59.6	-
SMPS transformer	79.3	-
Terminal block	53.9	-
Supply cord	41.2	175
Enclosure	53.9	175

24.1	TABLE: Components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity
Outdoor unit					
Compressor	Matsushita	5RS102XAA**	DC220V Class E	IEC/EN 60335-2-40	Tested in appl.
Motor	Shibaura or SCD or Panasonic or LG	4681A20122A	DC280V Class E	IEC/EN 60335-2-40	Tested in appl.
(Alt.)	Matsushita	EAU44031201	DC280V Class E	IEC/EN 60335-2-40	Tested in appl.
Reversing Coil	Sanhua	SQ Series	220-240V 50 Hz	IEC/EN 60335-2-40	Tested in appl.
(Alt.)	Ranco Co.	LB Series	220-240V 50 Hz	IEC/EN 60335-2-40	Tested in appl.
(Alt.)	Dunan	DXQ	220-240V 50 Hz	IEC/EN 60335-2-40	Tested in appl.
Terminal Block	Dong-A	DFC series	32A, 600V	IEC/EN 60335-2-40	Tested in appl.
(Alt.)	Yu-qiu	TB series	32A, 600V	IEC/EN 60335-2-40	Tested in appl.
Case for PCB	LG CHEM LTD.	AF-305	UL94 5VA	IEC/EN 60335-2-40	Tested in appl.
Connector for compressor	Molex Co. Ltd.	35151-0310	300V 15A V-0	VDE 0627/06	TUV
Fuse_line	Littelfuse Triad	218P series	250V 5A	IEC/EN 60127	VDE
Main PCB for outdoor unit					
Varistor#1×3	Samwha Co.	SVC 471D	470V 700pF	CECC 42000	VDE

(Alt.)	Thinking	TVR series	470V 700pF	CECC 42000	VDE
(Alt.)	Amotech	INR series	470V 700pF	CECC 42000	VDE
Varistor#2	Samwha Co.	SVC 182D	1.8kV 200pF	CECC 42000	VDE
(Alt.)	Thinking	TVR series	1.8kV 200pF	CECC 42000	VDE
(Alt.)	Amotech	INR series	1.8kV 200pF	CECC 42000	VDE
Varistor#3	Samwha Co.	SVC 102D	1.0kV 350pF	CECC 42000	VDE
(Alt.)	Thinking	TVR series	1.0kV 350pF	CECC 42000	VDE
(Alt.)	Amotech	INR series	1.0kV 350pF	CECC 42000	VDE
Fuse	Littelfuse Triad	325 series	T15A 250V	IEC/EN 60335-2-40	Tested in appl.
SMPS Transformer	TAMURA	µRM1515	In dc 220~390V Out dc 15V	IEC/EN 60335-2-40	Tested in appl.
Relay for power	Omron Co.	G4A-1A	250VAC 20.0A	DIN VDE 0435	VDE
(Alt.)	Tyco Electronics	PCF series	250VAC 20.0A	DIN VDE 0435	VDE
Relay for reversing	Omron Co.	G5NB-1A	250VAC 3.0A	DIN VDE 0435	VDE
X Capacitor #1×2	Pilkor Co.	PCX2 335	1.0 ㎌ 275V	IEC 60384-14	ENEC
(Alt.)	TEAPO	XG	1.0 ㎌ 275V	IEC 60384-14	VDE
(Alt.)	SUNG HO	CMPP	1.0 ㎌ 275V	IEC 60384-14	VDE
Y Capacitor×6	Samwha Co. or Samyoung	SCE2E	4.7nF 250V	IEC 60384-14	VDE
(Alt.)	Samwha Co. or Samyoung	HEG OEM(TIANJIN)	4.7nF 250V	IEC 60384-14	VDE
Optocoupler×3	Toshiba	TLP421	-	EN 60474-5-1 (VDE 0884-1)	VDE
(Alt.)	KODENSHI KOREA CORP	PC-17K	-	EN 60474-5-1 (VDE 0884-1)	VDE
Indoor unit					
Fan Motor	Shibaura or SCD or Panasonic or LG	4681A20168B or 4681A20168E	DC 280V Class E	IEC/EN 60335-2-40	Tested in appl.
Stepping Motor#1	Lei Li	24BYJ	DC12V class A	IEC/EN 60335-2-40	Tested in appl.
(Alt.)	Motor&Technology Co., Ltd.	GSP	DC12V class A	IEC/EN 60335-2-40	Tested in appl.
(Alt.)	Lei Li	35BYJ	DC12V class A	IEC/EN 60335-2-40	Tested in appl.
Drain pump	Daihankoki Co. or Fujikoki Co.	PKD series	220-240V 50 Hz	IEC/EN 60335-2-40	Tested in appl.
(Alt.)	SHIN HAN	SEC series	220-240V 50 Hz	IEC/EN 60335-2-40	Tested in appl.

(Alt.)	SAGINOMIYA	PJV series	220-240V 50 Hz	IEC/EN 60335-2-40	Tested in appl.
(Alt.)	IL-DONG	IDP series	220-240V 50 Hz	IEC/EN 60335-2-40	Tested in appl.
Terminal Block	Dong-A	DFC series	32A, 600V	IEC/EN 60335-2-40	Tested in appl.
(Alt.)	Yu-qiu	TB series	32A, 600V	IEC/EN 60335-2-40	Tested in appl.
Case for PCB	LG CHEM LTD.	AF-305	UL94 5VA	IEC/EN 60335-2-40	Tested in appl.
Enclosure	LG CHEM LTD.	SG-970NU	UL94 HB	IEC/EN 60335-2-40	Tested in appl.
Main PCB					
Varistor	Samwha Co.	SVC 561D	560V	CECC 42000	VDE
(Alt.)	Thinking	TVR series	560V	CECC 42000	VDE
(Alt.)	Amotech	INR series	560V	CECC 42000	VDE
Fuse	Littelfuse	218 series	250V 3.15A	IEC/EN 60127-1	VDE
SMPS Transformer	Namyang Co. or Jeong San Co.	6170A90026A	In dc 220~390V Out dc 15V	IEC/EN 60335-2-40	Tested in appl.
X Capacitor #1×2	Pilkor Co.	PCX2 335	0.33 ㎌ 275V	IEC 60384-14	ENEC
(Alt.)	TEAPO	XG	0.33 ㎌ 275V	IEC 60384-14	VDE
(Alt.)	SUNG HO	CMPP	0.33 ㎌ 275V	IEC 60384-14	VDE
X Capacitor #2	Pilkor Co. or	PCX2 335	0.01 ㎌ 275V	IEC/EN 60335-2-40	Tested in appl.
(Alt.)	TEAPO	XG	0.01 ㎌ 275V	IEC 60384-14	VDE
(Alt.)	SUNG HO	CMPP	0.01 ㎌ 275V	IEC/EN 60335-2-40	Tested in appl.
Y Capacitor #1	Samwha Co. or Samyoung	SC series	2.2nF 250V	IEC 60384-14	VDE
(Alt.)	Dusan	CKF series	2.2nF 250V	IEC 60384-14	VDE
Y Capacitor #2	Samwha Co. or Samyoung	SC series	4.7nF 250V	IEC 60384-14	VDE
(Alt.)	Dusan	CKF series	4.7nF 250V	IEC 60384-14	VDE
Y Capacitor #3 ×2	Samwha Co. or Samyoung	SC series	0.47nF 250V	IEC 60384-14	VDE
(Alt.)	Dusan	CKF series	0.47nF 250V	IEC 60384-14	VDE
Optocoupler #1×3	Toshiba	TLP181	-	EN 60474-5-1 (VDE 0884-1)	VDE
Optocoupler #2×3	Toshiba	TLP421	-	EN 60474-5-1 (VDE 0884-1)	VDE
For air purifying function (optional)					

HVB	Wooritec Co., Ltd	6609A	IN DC 12 V OUT DC 4.8 kV	IEC/EN 60335-2-40 IEC/EN 60335-2-65	Tested in appl.
Resistor (inside HVB)	Pilkor Electronics	SR25	4.7 kΩ 0.25W	IEC/EN 60335-2-40 IEC/EN 60335-2-65	Tested in appl.
Limit Switch	Omron	SS series	250V 3 A	IEC/EN 61058-1	TUV
(Alt.)	Daesung	DSA series	250V 3 A	IEC/EN 61058-1	TUV
[1)] An asterisk indicates a mark which assures the agreed level of surveillance					

28.1	TABLE: Threaded part torque test		P
Threaded part identification	Diameter of thread (mm)	Column number (I, II, or III)	Applied torque (Nm)
Metal screw	>3,6 and =4,1	II	1,2

29.1	TABLE: Clearances					P
	Overvoltage category ...:	II				—
		Type of insulation:				
Rated impulse voltage (V):	Min. cl (mm)	Basic	Functional	Supplementary	Reinforced	Verdict / Remark
330	0,5					
500	0,5					
800	0,5					
1 500	0,5					
2 500	1,5	1.5 [1)]	1.5 [2)]			P
4 000	3,0				3.0 [3)]	P
6 000	5,5					
8 000	8,0					
10 000	11,0					
Location: 1) Measured from metal enclosure and live part of outdoor unit. 2) Measured from live and neutral line on the main PCB. 3) Measured from plastic enclosure and live part of indoor unit						

29.2	TABLE: Creepage distances, basic, supplementary and reinforced insulation	P
Working voltage (V)	Creepage distance (mm) Pollution degree	

	1	2			3			Type of insulation			
		Material group			Material group						
		I	II	IIIa/IIIb	I	II	IIIa/IIIb	B*)	S*)	R*)	Verdict
≤50	0,2	0,6	0,9	1,2	1,5	1,7	1,9		—	—	
≤50	0,2	0,6	0,9	1,2	1,5	1,7	1,9	—		—	
≤50	0,4	1,2	1,8	2,4	3,0	3,4	3,8	—	—		
>50 and ≤125	0,3	0,8	1,1	1,5	1,9	2,1	2,4		—	—	
>50 and ≤125	0,3	0,8	1,1	1,5	1,9	2,1	2,4	—		—	
>50 and ≤125	0,6	1,6	2,2	3,0	3,8	4,2	4,8	—	—		
>125 and ≤250	0,6	1,3	1,8	**2,5**	3,2	3,6	4,0		—	—	P
	Location) Measured from metal enclosure and live part of outdoor unit.										
>125 and ≤250	0,6	1,3	1,8	2,5	3,2	3,6	4,0	—		—	
>125 and ≤250	1,2	2,6	3,6	**5,0**	6,4	7,2	8,0	—	—		P
	Location) Measured from plastic enclosure and live part indoor unit										
>250 and ≤400	1,0	2,0	2,8	4,0	5,0	5,6	6,3		—	—	
>250 and ≤400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—		—	
>250 and ≤400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—		
>400 and ≤500	1,3	2,5	3,6	5,0	6,3	7,1	8,0		—	—	
>400 and ≤500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—		—	
>400 and ≤500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	—	—		
>500 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		—	—	
>500 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—		—	
>500 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	—	—		
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5		—	—	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—		—	
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	—	—		
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0		—	—	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—		—	
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	—	—		
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0		—	—	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—		—	
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	—	—		
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		—	—	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—		—	
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—	—		

>2000 and ≤2500	7,5	10,0	14,0	20,0	25, 0	28,0	32,0		—	—	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25, 0	28,0	32,0	—		—	
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—	—		
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0		—	—	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—		—	
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0	—	—		
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0		—	—	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—		—	
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0	—	—		
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0		—	—	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—		—	
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	—	—		
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0		—	—	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—		—	
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0	—	—		
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0		—	—	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—		—	
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	—	—		
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0		—	—	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—		—	
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0	—	—		
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0		—	—	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—		—	
>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0	—	—		
*), B=Basic, S=Supplementary and R=Reinforced											

29.2	TABLE: Creepage distances, functional insulation							P
Working voltage (V)	Creepage distance (mm) Pollution degree							
	1	2			3			
		Material group			Material group			
		I	II	IIIa/IIIb	I	II	IIIa/IIIb	Verdict / Remark
≤50	0,2	0,6	0,8	1,1	1,4	1,6	1,8	
>50 and ≤125	0,3	0,7	1,0	1,4	1,8	2,0	2,2	

>125 and ≤250	0,4	1,0	1,4	**2,0**	2,5	2,8	3,2	P
	Location) Measured from live and neutral line on the main PCB.							
>250 and ≤400	0,8	1,6	2,2	3,2	4,0	4,5	5,0	
>400 and ≤500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	
>500 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	

TABLE 30 RENSISTANCE TO HEAT, FIRE AND TRACKING (appended table)

Component	Manufacturer	Type	Ball pressure test				Tracking test [CTI/ PTI]	Glow wire test					Needle-flame test	Verdict
			75°C	cl. 11 +40°C	125°C	cl. 19 +25°C		GWT 550°C	GWT 650°C	GWT 750°C	GWFI 850°C	GWIT		
Case for PCB (OU)	*)	*)	X				-	X					-	P
Terminal block	*)	*)			X		-			X	X		-	P
Relay	*)	*)			X		-			X	X		1)	P
Connector	*)	*)			X		-			X	X		1)	P

*) refer to component list
1) surrounding parts are subjected to the needle-flame test of Annex E

Photo Documentation

Report No.: 13603119 001

Manufacturer: LG Electronics Inc.

Models: AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED
AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED

TÜVRheinland®
Precisely Right.

Indoor unit

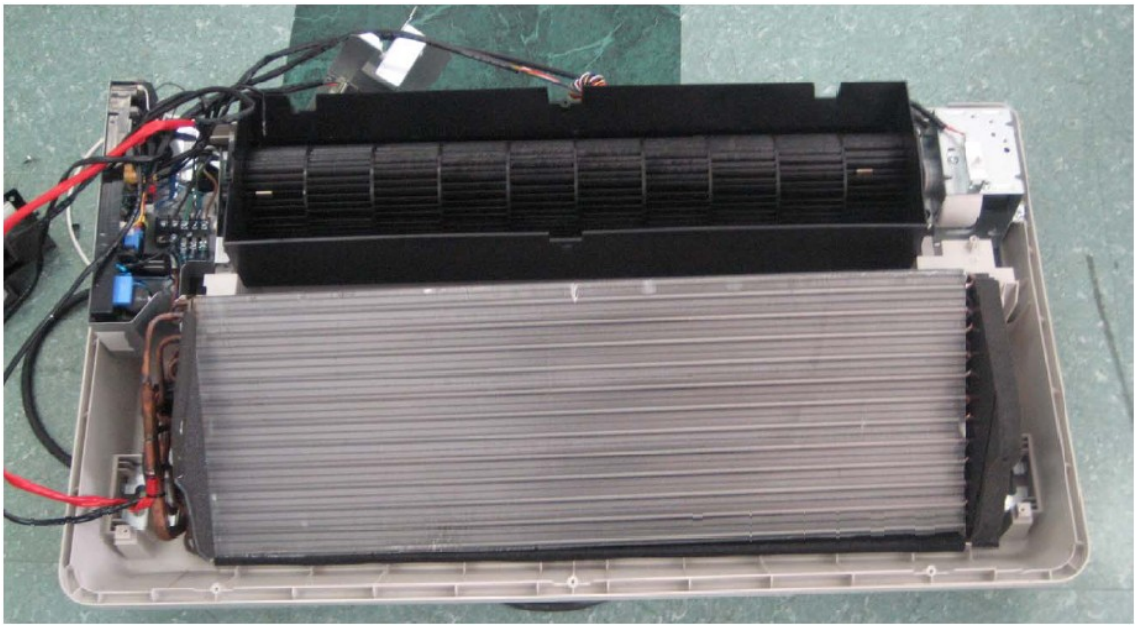


Photo Documentation

Report No.: 13603119 001

Manufacturer: LG Electronics Inc.

Models: AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED
AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED

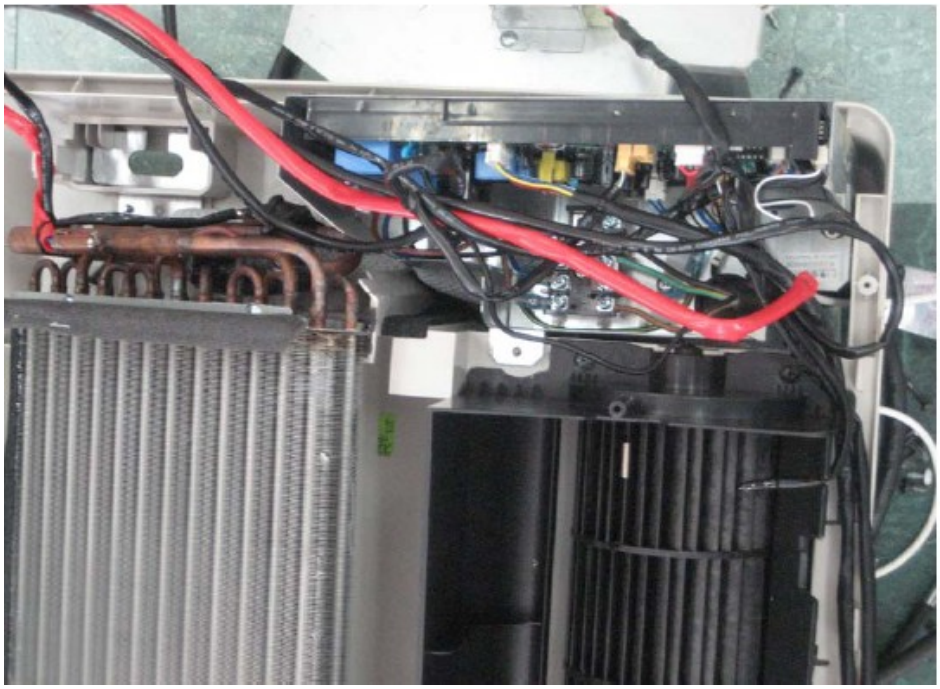


Photo Documentation

Report No.: 13603119 001

Manufacturer: LG Electronics Inc.

Models: AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED
AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED

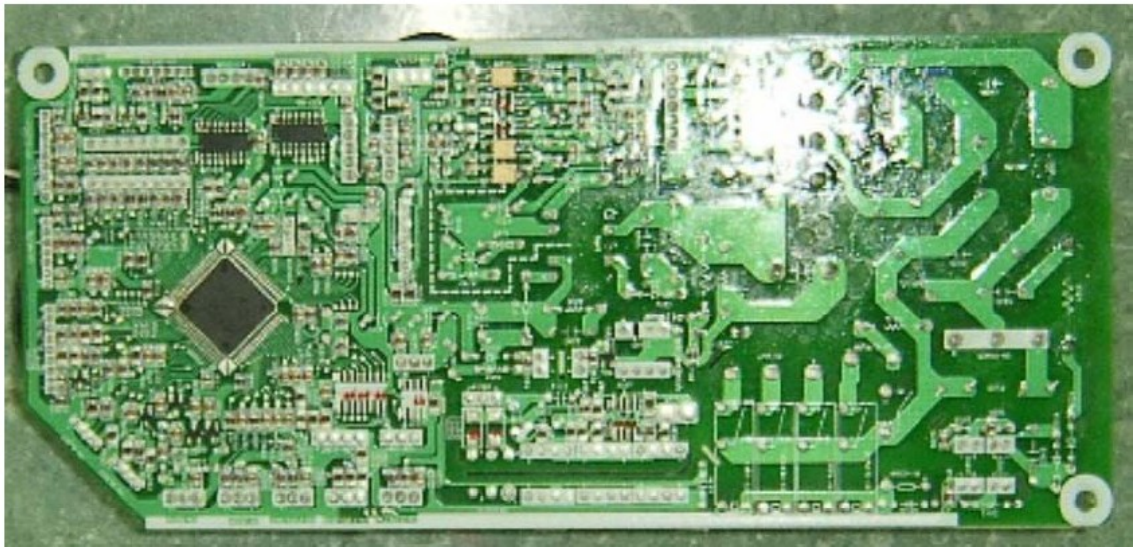


Photo Documentation

Report No.: 13603119 001

Manufacturer: LG Electronics Inc.

Models: AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED
AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED

TÜVRheinland®
Precisely Right.

Outdoor unit

Photo Documentation

Report No.: 13603119 001

Manufacturer: LG Electronics Inc.

Models: AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED
AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED

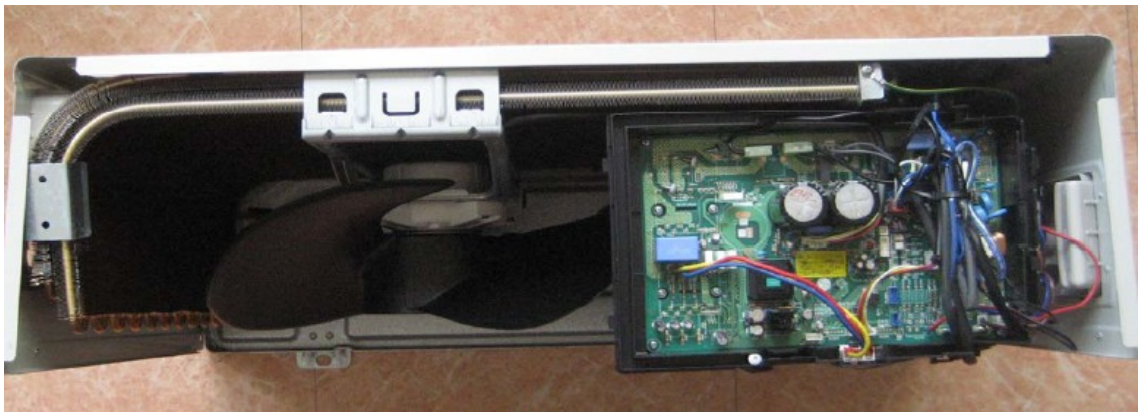
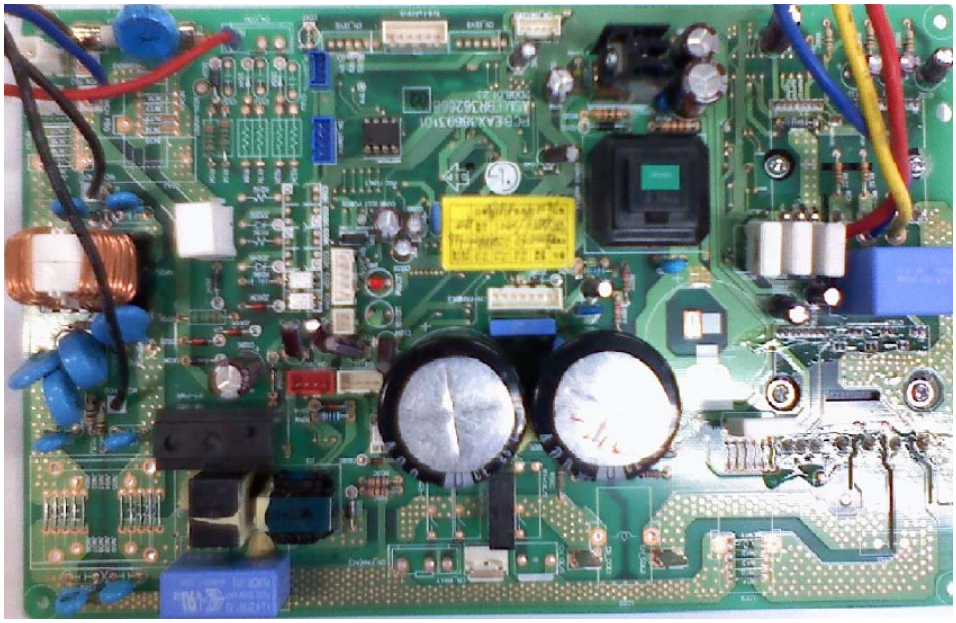


Photo Documentation

Report No.: 13603119 001

Manufacturer: LG Electronics Inc.

Models: AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED
AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED



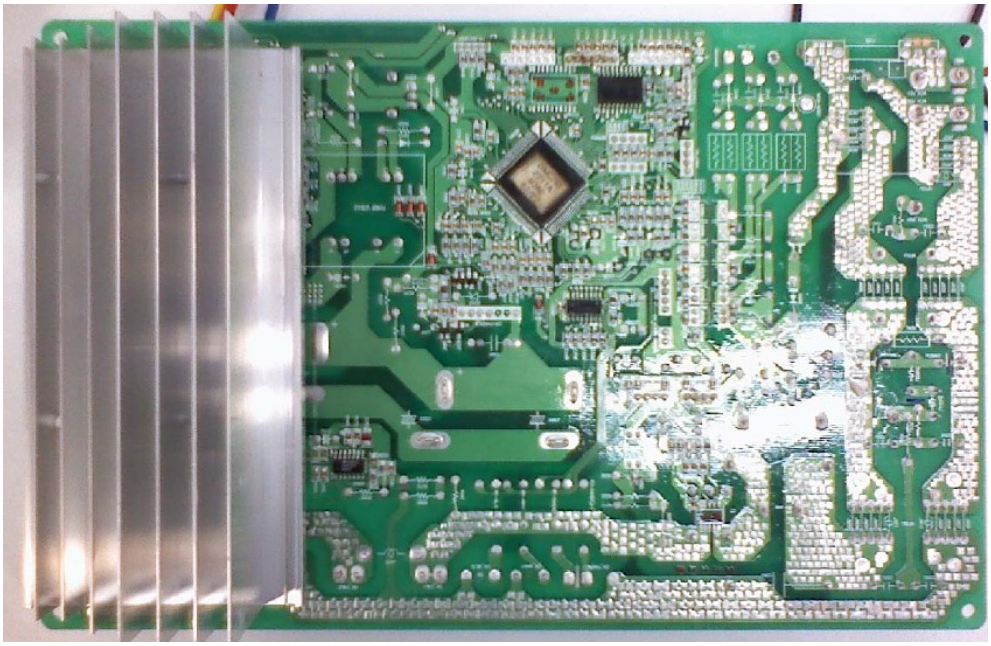


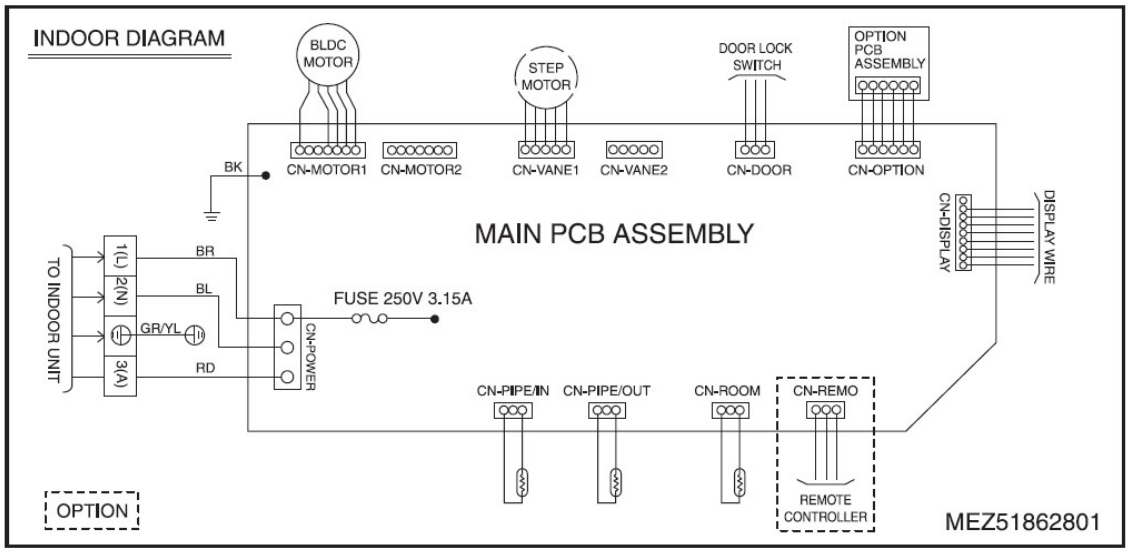
Photo Documentation

Report No.: 13603119 001

Manufacturer: LG Electronics Inc.

Models: AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED
AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED

Wiring diagram (indoor unit)



Wiring diagram (outdoor unit)

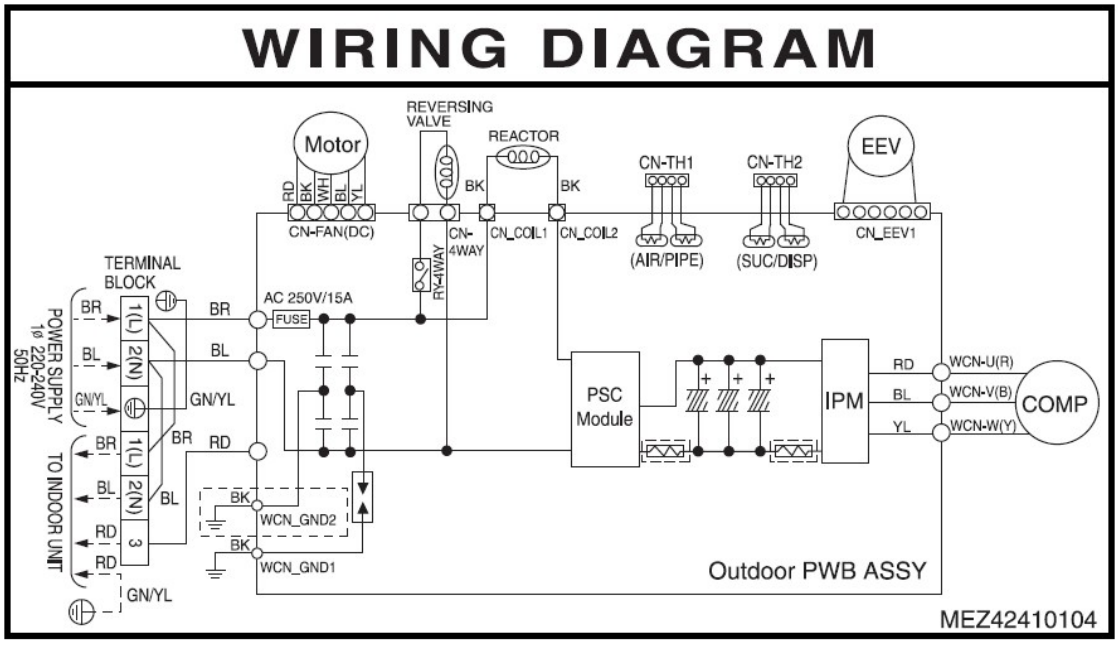


Photo Documentation

Report No.: 13603119 001

Manufacturer: LG Electronics Inc.

Models: AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED
AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED

TÜVRheinland®
Precisely Right.

PCB Circuit diagram (indoor unit)

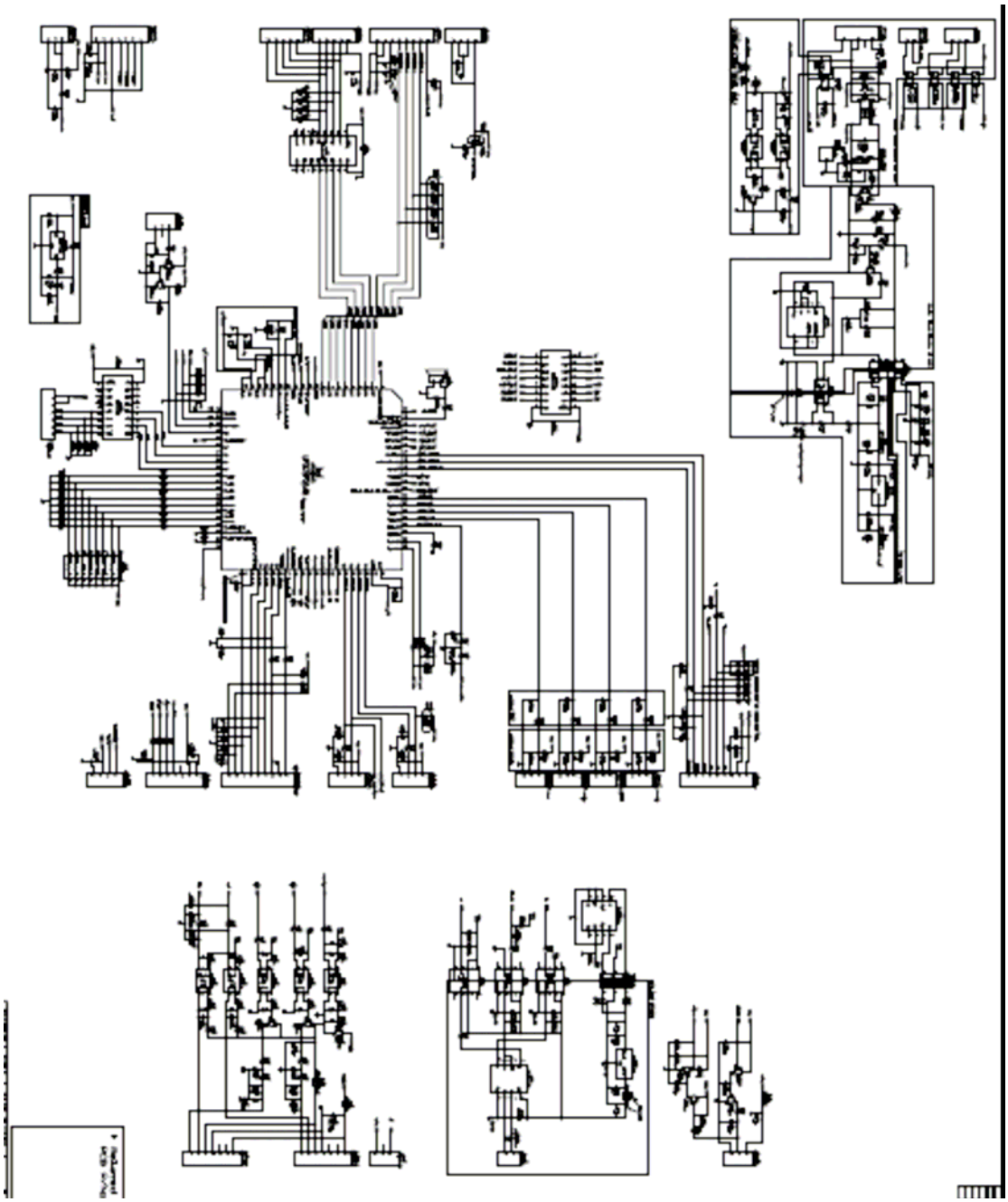


Photo Documentation

Report No.: 13603119 001

Manufacturer: LG Electronics Inc.

Models: AUUW126D, AVNH12GELAD, UU12W ULD, UV12 NED
AUUW096D, AVNH09GELAD, UU09W ULD, UV09 NED

TÜVRheinland®
Precisely Right.

PCB Circuit diagram (outdoor unit)