Test Report issued under the responsibility of:

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

Report Reference No. ..... :	GZES120600519303
Date of issue..... :	2013-06-13
Total number of pages	31 pages
CB Testing Laboratory ..... :	SGS-CSTC Standards Technical Services Co., Ltd. - E&E Lab Guangzhou
Address..... :	198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, Guangdong, China 510663
Applicant's name..... :	Gree Electric Appliances, Inc. of Zhuhai
Address..... :	Jinji West Road, Qianshan, Zhuhai, Guangdong, China
Test specification:	
Standard ..... :	IEC 60335-2-40:2002 (4. Edition) + A1:2005 (incl. Corr.1:2006) + A2:2005 with IEC 60335-1:2001 (4. Edition) (incl. Corr.1:2002) + A1:2004 (incl. Corr.1:2005) + A2:2006 (incl. Corr.1:2006) IEC 62233:2005 (1. Edition)
Test procedure ..... :	SGS-CSTC
Non-standard test method……..:	N/A
Test Report Form No. ..... :	IEC60335_2_40F
Test Report Form(s) Originator..... :	VDE Testing and Certification Institute
Master TRF..... :	Dated 2009-11

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Test item description.....:	Split-type air-conditioner
Trade Mark .....:	GREE
Manufacturer/Address.....:	Same as applicant
Factory/Address .....:	Same as applicant
Model/Type reference .....:	GWH18RC-K3DNA3C (GWH18RC-K3DNA3C/I, GWH18RC-K3DNA3C/O); GWH18RC-K3DNA2C (GWH18RC-K3DNA2C/I, GWH18RC-K3DNA3C/O); GWH18RC-K3DNA8C(GWH18RC-K3DNA8C/I, GWH18RC-K3DNA8C/O); GWH18RC-K3DNA6C (GWH18RC-K3DNA6C/I, GWH18RC-K3DNA3C/O); GWH18RC-K3DBA5E (GWH18RC-K3DBA5E/I, GWH18RC-K3DBA5E/O); GWH18RC-K3DBE1E (GWH18RC-K3DBE1E/I, GWH18RC-K3DBA5E/O); GWH18RC-K3DNA9C (GWH18RC-K3DNA9C/I, GWH18RC-K3DNA8C/O); GWH18RC-K3DNA5C (GWH18RC-K3DNA5C/I, GWH18RC-K3DNA8C/O); GWH18RC-K3DBA3E (GWH18RC-K3DBA3E/I, GWH18RC-K3DBA5E/O)
Ratings.....:	220-240 V~; 50 Hz; Cooling: 2450 W; Heating: 2500 W

Testing procedure and testing location:	
☒ **CB Testing Laboratory**:	SGS-CSTC Standards Technical Services Co., Ltd. - E&E Lab Guangzhou
Testing location/ address.....:	198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, Guangdong, China 510663
☐ **Associated CB Laboratory:**	N/A
Testing location/ address.....:	N/A
Tested by (name + signature).....:	
Approved by (+ signature).....:	
☒ Testing procedure: TMP	
Tested by (name + signature).....:	Gaven Deng
Approved by (+ signature).....:	Sean Jiang
Testing location/ address.....:	Gree Electric Appliances, Inc. of Zhuhai Jinji West Road, Qianshan, Zhuhai, Guangdong, China
☐ Testing procedure: WMT	N/A
Tested by (name + signature).....:	
Witnessed by (+ signature) .....:	
Approved by (+ signature).....:	
Testing location/ address.....:	
☐ Testing procedure: SMT	N/A
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Supervised by (+ signature) .....:	
Testing location/ address.....:	
☐ Testing procedure: RMT	N/A
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Supervised by (+ signature) .....:	
Testing location/ address.....:	

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
Tests according to the following standards were carried out: EN 60335-2-40: 2003 + A11: 2004 + A12: 2005 + A1: 2006 + A2: 2009 + A13: 2012 EN 60335-1: 2002 + A11: 2004 + A1: 2004 + A12: 2006 + A2: 2006 + A13: 2008 + A14: 2010 + A15: 2011 EN 62233: 2008 Tests of clause 10, 11, 13, 19.2, 24, 29 and 30 were conducted on model GWH18RC-K3DBA3E. The submitted sample was in compliance with above standards.	Tests of clause 10, 11, 13, 19.2 and 29 were carried out at: Gree Electric Appliances, Inc. of Zhuhai Jinji West Road, Qianshan, Zhuhai, Guangdong, China Other clauses were carried out at CBTL.

Summary of compliance with National Differences:

EU group differences were under consideration.

Copy of marking plate:

Rating label for GWH18RC-K3DNA9C (GWH18RC-K3DNA9C/I, GWH18RC-K3DNA8C/O):

Rating label for GWH18RC-K3DNA5C (GWH18RC-K3DNA5C/I, GWH18RC-K3DNA8C/O):

Rating label for GWH18RC-K3DBA3E (GWH18RC-K3DBA3E/I, GWH18RC-K3DBA5E/O):

Test item particulars ..... :	
Classification of installation and use ..... :	Fixed appliance
Supply Connection ..... :	Connected to fixed wiring by flexible power cord
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 ..... :	2013-05-24
Date (s) of performance of tests ..... :	From 2013-05-25 to 2013-06-08

General remarks:
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"(See appended table)" refers to a table appended to the report.
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The test report includes the following additional documents to the original TRF:

Annex I: 3 pages of photo documentation.
Annex II: 1 page of standard EN 60335-2-40: 2003 / A13: 2012
Annex III: 1 page of equipment list for TMP

General product information:

Split-type air-conditioner for household use only, refrigerant is R410A.
The air conditioner has cooling and heating functions.
Three models were all the same except appearance of indoor unit and main board.

Amendment 1

The original Test Report Ref. No. GZES120600519301, dated December 18, 2012 was modified on March 12, 2013 to include the following changes and additions, which were considered technical modifications:

1, Three new models GWH18RC-K3DNA6C, GWH18RC-K3DBA5E and GWH18RC-K3DBE1E were added.
2, New model GWH18RC-K3DNA6C was all the same as model GWH18RC-K3DNA2C except appearance of indoor unit.
3, New model GWH18RC-K3DBA5E was all the same as model GWH18RC-K3DNA8C except appearance of indoor unit and model GWH18RC-K3DBA5E has electrical heater in chassis, other one has no.
4, New model GWH18RC-K3DBE1E was all the same as model GWH18RC-K3DBA5E except appearance of indoor unit.
5, The alternative main board of model GWH18RC-K3DNA3C was all the same as original one except alternative one has been canceled the function of plasma Ion generator.
6, New Alternative power cord, interconnection cord, terminal board and main board were added, and bold in table 24.1.

After reviewing, test of described in **Summary of testing** was carried out.

Amendment 2

The original Test Report Ref. No. GZES120600519301, dated December 18, 2012 was modified on Jun. 09, 2013 to include the following additions, which were considered technical modifications:

1, Added three models: GWH18RC-K3DNA9C, GWH18RC-K3DNA5C, GWH18RC-K3DBA3E.

Models GWH18RC-K3DNA9C and GWH18RC-K3DNA5C were all the same as original model GWH18RC-K3DNA8C except for appearance of indoor unit plastic enclosure.

Model GWH18RC-K3DBA3E was all the same as original model GWH18RC-K3DBA5E except for appearance of indoor unit plastic enclosure and indoor unit main board. The difference for the two main boards was the connectors only.

2, Added alternative Y capacitor, swing motor, relay, 4-way valve for all models, details see components in bold in table 24.1.

3, Updated standard to EN 60335-2-40: 2003 / A13: 2012.

After reviewing, tests of clause 10, 11, 13, 19.2, 24, 29 and 30 were considered to be necessary.

IEC 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	(See appended table)	P
	Deviation of appliance with one or more rated voltage ranges (IEC 60335-1/A2)		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		N/A
	Deviation of appliance with one or more rated voltage ranges (IEC 60335-1/A2)		N/A

11	**HEATING**		—
11.1	No excessive temperatures in normal use (IEC 60335-2-40)		P
	Compliance is checked by the tests of annex C, if (IEC 60335-2-40):		N/A
	- temperature of motor winding exceeds values shown in table 3 (IEC 60335-2-40)		N/A
	- there is doubt about classification of insulation system of the motor (IEC 60335-2-40)		N/A
11.2	Placing and mounting of appliance (IEC 60335-2-40):		P
	- clearances to adjacent surfaces (IEC 60335-2-40);		P
	- flow rates for liquid source or sink equipment be minimum, except for fan coils where flow rates and liquid temperatures be maximum (IEC 60335-2-40/A2);		N/A
	- static pressures (IEC 60335-2-40);		N/A
	- means of adjusting the flow, flow for tests be minimum obtainable (IEC 60335-2-40);		N/A
	- adjustable limit controls set at maximum cut-out setting and minimum differential (IEC 60335-2-40).		P
	Appliances with supplementary heaters, use test casing of clause 11.9 (IEC 60335-2-40)		N/A
11.2.1	Appliances with supplementary heaters, inlet duct connected to inlet air opening (IEC 60335-2-40)		N/A
11.2.2	Appliance without supplementary heaters, air outlet used (IEC 60335-2-40)		N/A
11.3	Temperature rise determine by thermocouples or resistance method (IEC 60335-2-40)		P
11.4	Test performed at supply voltage between 0,94 and 1,06 times the rated voltage (IEC 60335-2-40)	240 V x 1,06 = 254,4 V	P
	Heating elements energized at voltage which gives an electrical input of 1,15 times maximum rated power input (IEC 60335-2-40)		N/A

IEC 60335-2-40			
Clause	Requirement – Test	Result	Verdict
11.5	Test conducted in heating mode and cooling mode, if both exist (IEC 60335-2-40)		P
	All supplementary heating elements operative simultaneously (IEC 60335-2-40)		N/A
11.6	Defrost test in most unfavourable conditions, if needed (IEC 60335-2-40)		N/A
11.7	Appliances operated continuously until steady conditions except for defrost tests (IEC 60335-2-40)		P
11.8	Temperatures not exceeding values of table 3 (IEC 60335-2-40/A2)	(See appended tables)	P
	Protective devices do not operate (IEC 60335-2-40)		P
	Sealing compound not flowing out (IEC 60335-2-40)		P
	Temperature of air in outlet duct not exceed 90 °C (IEC 60335-2-40)		N/A
11.9	Test casing and installation of appliances in accordance with manufacturer's instructions (IEC 60335-2-40)		N/A
	Glass fibre insulation for appliances without indication of minimum clearances according to manufacturer; thermocouple in contact with enclosure (IEC 60335-2-40)		N/A

13	**LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE**		—
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1,15 times rated power input .....:		N/A
	Motor-operated appliances and combined appliances supplied at 1,06 times rated voltage .....:	240 V x 1,06 = 254,4 V	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 (IEC 60335-2-40)	(See appended table)	P
13.3	Appliance disconnected from supply and insulation is immediately subjected to voltage having frequency of 50 Hz or 60 Hz for 1 min, in accordance with IEC 61180-1 (IEC 60335-1/A1)		P
	High-voltage source used for test is to be capable of supplying short circuit current Is between the output terminals after output voltage adjusted to appropriate test voltage (IEC 60335-1/A1)	(See appended table)	P

IEC 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Overload release of circuit is not to be operated by any current below tripping current Ir. Values of Is and Ir given in table 5 for various high-voltage sources (IEC 60335-1/A1)	(See appended table)	P
	No breakdown during the tests		P
19	**ABNORMAL OPERATION**		—
19.1	The risk of fire or mechanical damage under abnormal or careless operation obviated (tests 19.2-19.14) (IEC 60335-2-40)		P
	Failure of transfer medium flow or of any control device not result in a hazard (IEC 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 60335-2-40)		P
19.2	Test of appliance with motor rotors, other than motor-compressors, operated for 15 days (360 h) or until protection device opens circuit (IEC 60335-2-40)		P
	Insulation of motor windings (IEC 60335-2-40).....:		P
	Temperature of enclosure does not exceed (°C) (IEC 60335-2-40) .....:		P
	Temperature of the windings does not exceed the values shown in the table ; temperature (°C) (IEC 60335-2-40) .....:		P
	Electric strength test as specified in 16.3, 72 h after the beginning of the test (IEC 60335-2-40)		P
	30 mA residual current device does not open (IEC 60335-2-40)		P
	At the end, leakage current between windings and enclosure does not exceed 2 mA (IEC 60335-2-40)		P
19.14	During tests of clause 19.2 to 19.10.101 and 19.11, 19.12 and 19.13 if appropriate, appliances not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts (IEC 60335-2-40/A2)		P
	Enclosures not deform (IEC 60335-2-40)		P
	Temperature rise not exceed values shown in table 9 (IEC 60335-2-40)	(See appended table)	P
	Electric strength test, test voltage as specified in table 4 (IEC 60335-2-40)		P
24	**COMPONENTS**		—
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components	(See appended table)	P

IEC 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Components not tested and found to comply with relevant IEC standard for number of cycles specified, tested in accordance with clause 24.1.1 to 24.1.9 (IEC 60335-1/A2)		N/A
	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		P
	Lampholders and starterholders not being tested and found to comply with relevant IEC standard, tested as a part of appliance and additionally according to gauging and interchangeability requirements of relevant IEC standard (IEC 60335-1/A2)		N/A
	Motor-compressors not tested according to IEC 60335-2-34 (not necessary to meet all requirements of IEC 60335-2-34) (IEC 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		N/A
	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		N/A
	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: 1000		N/A
	- self-resetting thermal cut-outs (IEC 60335-2-40): 3000		N/A
	- voltage maintained non-self-resetting thermal cut-outs:..... 1000		N/A
	- other non-self-resetting thermal cut-outs (IEC 60335-2-40): 300		N/A
	- timers:..... 3000		N/A
	- energy regulators: 10 000		N/A
	- thermostats which control motor-compressor (IEC 60335-2-40): 100 000		N/A
	- motor-compressor starting relays (IEC 60335-2-40): 100 000		N/A

IEC 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	- automatic thermal motor-protectors for hermetic and semi-hermetic type motor-compressors (not less than number of operations during locked rotor test) (IEC 60335-2-40): ..... min 2000		P
	- manual reset thermal motor-protectors for hermetic and semi-hermetic type motor-compressors (IEC 60335-2-40): 50		N/A
	- other automatic thermal motor-protectors (IEC 60335-2-40): 2000		P
	- other manual reset thermal motor-protectors (IEC 60335-2-40): 30		N/A
	Thermal motor protectors are tested in combination with their motor under the conditions specified in annex D (IEC 60335-1/A1)		N/A
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7 (IEC 60335-1/A1)		N/A
24.1.5	Appliance couplers complying with IEC 60320-1		N/A
	However, appliances classified higher than IPX0, the appliance couplers complying with IEC 60320-2-3 (IEC 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		N/A
24.1.7	Remote operation of appliance via telecommunication network, relevant standard for telecommunication interface circuitry in appliance is IEC 62151 (IEC 60335-1/A2)		N/A
24.1.8	Standard for thermal links IEC 60691 (IEC 60335-1/A2)		N/A
	Thermal links not complying with IEC 60691 considered to be an intentionally weak part for purposes of clause 19 (IEC 60335-1/A2)		N/A
24.1.9	Relays, other than motor starting relays, tested as part of appliance (IEC 60335-1/A2)		P
	They also tested in accordance with clause 17 of IEC 60730-1, number of operations in clause 24.1.4 selected according to relay function in the appliance (IEC 60335-1/A2) .....:		N/A
24.2	No switches or automatic controls in flexible cords		P
	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		N/A

IEC 60335-2-40			
Clause	Requirement – Test	Result	Verdict
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		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	Indoor fan motor capacitor: 490 V (limit: 500 V x 1,1 = 550 V)	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 42 V		N/A
	In addition, the motors are complying with the requirements of annex I		N/A
24.7	Hose-sets for connection of appliances to the water mains, complying with IEC 61770 and supplied with the appliance (IEC 60335-1/A1)		N/A
24.101	Replaceable parts of thermal control devices identified by marking (IEC 60335-2-40)		N/A

29	**CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION**		—
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	Coatings used on printed circuits boards to protect microenvironment (Type 1 coating) or (IEC 60335-1/A2)		N/A
	to provide basic insulation (Type 2 coating), annex J applies (IEC 60335-1/A2)		N/A
	Microenvironment is pollution degree 1 under Type 1 coating (IEC 60335-1/A2)		N/A
	No clearance or creepage distance requirements under Type 2 coating (IEC 60335-1/A2)		N/A
	For motor-compressor complies with IEC 60335-2-34, parts related not checked (IEC 60335-2-40)		N/A
	For motor-compressor not complying with IEC 60335-2-34, additions and modifications as specified (IEC 60335-2-40)		P

IEC 60335-2-40			
Clause	Requirement – Test	Result	Verdict
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for overvoltage categories of table 15, unless (IEC 60335-1/A1)		P
	for basic insulation and functional insulation, they comply with the impulse voltage test of clause 14 (IEC 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 1 500 V and above are increased by 0,5 mm and the impulse voltage test is not applicable (IEC 60335-1/A1)		P
	Impulse voltage test not applicable (IEC 60335-1/A1):		N/A
	- when the microenvironment is pollution degree 3 (IEC 60335-1/A1)		N/A
	- for basic insulation of class 0 and class 0I appliances (IEC 60335-1/A1)		N/A
	Appliances are in overvoltage category II		P
	Compliance is checked by inspection and measurements as specified	(See appended table)	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 1 mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors (IEC 60335-1/A1)		P
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16		P
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
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		N/A
	Lacquered conductors of windings considered to be bare conductors (IEC 60335-1/A1)		P
	However, clearances at crossover points are not measured		P
	Clearance between surfaces of PTC heating elements may be reduced to 1 mm		N/A
	Lacquered conductors of windings assumed to be bare conductors, but the clearances specified in table 16 are reduced by 0,5 mm for rated impulse voltages of at least 1500 V		P

IEC 60335-2-40			
Clause	Requirement – Test	Result	Verdict
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		P
	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		N/A
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree		P
	Pollution degree 2 applies, unless	indoor and outdoor PCB	P
	precautions taken to protect the insulation; pollution degree 1		N/A
	insulation subjected to conductive pollution; pollution degree 3	Parts except indoor and outdoor PCB	P
	Compliance is checked by inspection and measurements as specified	(see appended table)	P
	Insulation located in airflow, pollution degree 3 unless (IEC 60335-2-40)		P
	insulation enclosed or located so that unlikely to be exposed to pollution due to normal use (IEC 60335-2-40)		N/A
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		P
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		N/A
29.3	Supplementary and reinforced insulation having adequate thickness, or a sufficient number of layers, to withstand the electrical stresses (IEC 60335-1/A1)		P

IEC 60335-2-40			
Clause	Requirement – Test	Result	Verdict

	Compliance checked by:		P
	- measurement, in accordance with 29.3.1, or		P
	- 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
29.3.1	Supplementary insulation having a thickness of at least 1 mm (IEC 60335-1/A1)	The thickness of sensor sheath on the outdoor unit: 1,01 mm; Plastic enclosure which cover the terminal block: 2,10 mm;	P
	Reinforced insulation having a thickness of at least 2 mm (IEC 60335-1/A1)		N/A
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation (IEC 60335-1/A1)		N/A
	Supplementary insulation consisting of at least 2 layers (IEC 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 60335-1/A1)		N/A
	the electric strength of 16.3 (IEC 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 60335-1/A1)		N/A

30	**RESISTANCE TO HEAT AND FIRE**		—
30.1	External parts of non-metallic material,		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) .....:		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) .....:		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

IEC 60335-2-40			
Clause	Requirement – Test	Result	Verdict
30.2	Parts of non-metallic material adequately resistant to ignition and spread of fire	(See appended table)	P
	Requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		P
	Compliance checked by test of clause 30.2.1. In addition:		—
	- attended appliances, clause 30.2.2		N/A
	- unattended appliances, clause 30.2.3 applies		P
	Appliances for remote operation, clause 30.2.3 applies (IEC 60335-1/A2)		N/A
	Base material of printed circuit board, clause 30.2.4 applies		P
30.2.1	Glow-wire test of IEC 60695-2-11 at 550 °C, unless		P
	material is classified at least HB40 according to IEC 60695-11-10 (IEC 60335-1/A2)		N/A
	Parts for which the glow-wire test cannot be carried out meet the requirements in ISO 9772 for category HBF material (IEC 60335-1/A1)		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 non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and (IEC 60335-1/A2)		P
	parts of non-metallic material within a distance of 3 mm, (IEC 60335-1/A2)		P
	subjected to glow-wire test of IEC 60695-2-11 with a test severity of 850 °C (IEC 60335-1/A2)		P
	However, glow-wire test 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)		N/A
	Glow-wire flammability index only used if in specified range of thickness (IEC 60335-1/A2)		N/A
	Glow-wire test not carried out on small parts comply with needle-flame test of annex E or on small parts of material classified as V-0 or (IEC 60335-1/A2)		N/A
	V-1 according to IEC 60695-1-10 (IEC 60335-1/A2)		N/A
	Classified V-0 or V-1 material only used if in specified range of thickness (IEC 60335-1/A2)		N/A
	Test as specified for an interposed shielding material (IEC 60335-1/A2)		N/A
30.2.3.2	Parts of non-metallic material supporting current-carrying connections, and (IEC 60335-1/A2)		P

IEC 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	parts of non-metallic material within a distance of 3 mm, (IEC 60335-1/A2)		P
	subjected to glow-wire test of IEC 60695-2-11		P
	However, glow-wire test not carried out on material having a glow-wire ignition temperature according to IEC 60695-2-13 of at least:		N/A
	Glow-wire test of IEC 60695-2-11, the temperature being:		N/A
	- 775 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 675 °C, for other connections		N/A
	Glow-wire ignition temperature only used if in specified range of thickness (IEC 60335-1/A2)		N/A
	Test as specified for an interposed shielding material (IEC 60335-1/A2)		N/A
	When glow-wire test of IEC 60695-2-11 carried out, temperatures are:		—
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation	(See appended table)	P
	- 650 °C, for other connections	(See appended table)	P
	If a flame persists longer than 2 s during test, then these parts and adjacent parts further subjected to needle-flame test of annex E, unless (IEC 60335-1/A1 corr.1)		N/A
	material is classified as V-0 or V-1 according to IEC 60695-11-10 (IEC 60335-1/A2)		N/A
	Classified V-0 or V-1 material only used if in specified range of thickness (IEC 60335-1/A2)		N/A
30.2.4	Base material of printed circuit boards subjected to needle-flame test of annex E (IEC 60335-1/A2)	(See appended table)	P
	Test not carried out by specified items.....:		N/A

10.1	TABLE: Power input deviation				P
Input deviation of/at:	P rated (W)	P measured (W)	dP	Required dP	Remark
230 V, 50 Hz	2450	1945,5	-20,6%	+15 %	GWH18RC-K3DBA3E (Cooling mode)
230 V, 50 Hz	2500	805,0	-67,8%	+15 %	GWH18RC-K3DBA3E (Heating mode)

11.8	TABLE: Heating test, thermocouples		P
	Test voltage (V) ..... :	240 V x 1,06 = 254,4 V	—
	Ambient, t (°C) .....:	Coolling: indoor: DB 32, WB 23; outdoor: DB 43, WB 26; Heating: indoor: DB 27, WB -; outdoor: DB 24, WB 18	—

Thermocouple locations	T (°C)		Max. T (°C)
	Cooling	Heating	
Indoor unit			
Power cord	40,0	32,4	75
Terminal block	33,6	29,1	85
Swing motor	44,9	40,9	90 (Class A)
Indoor fan motor enclosure	56,1	53,2	105 (Class E)
Main PCB	34,9	30,5	145
X capacitor	35,0	30,5	T100
Varistor	32,3	27,0	T85
High frequency transformer	44,6	40,2	110 (Class B)
Relay	40,3	34,0	T50
Outdoor unit			
Terminal block	46,0	24,0	85
Internal wire to compressor	58,2	46,1	75
Compressor top enclosure	86,3	75,6	Ref.
Discharge pipe of compressor	88,4	76,8	Ref.
Outdoor fan motor enclosure	71,4	36,0	105 (Class E)
4-way valve winding	56,2	67,4	110 (Class B)
Main PCB	46,2	28,4	145
Relay	53,0	28,9	T70
High frequency transformer	59,4	38,0	110 (Class B)

Test corner	49,3	22,9	90

11.8	TABLE: Heating test, resistance method					P
	Test voltage (V) ..... :		240 V x 1,06 = 254,4 V			—
	Ambient, t_1 (°C) .....:		25			—
	Ambient, t_2 (°C) .....:		Heating: indoor: DB 27, WB -; outdoor: DB 24, WB 18			—
Temperature of winding	R_1 (Ω)	R_2 (Ω)	T (°C)	Max. T (°C)	Insulation class	
4-way valve	2162,0	2605,0	78,3	120	B	
Remark: 4-way valve: SHF-7H-34U-PG (Sanhua)						

13.2	TABLE: Leakage current		P
	Heating appliances: 1.15 x rated input.....:	--	—
	Motor-operated and combined appliances: 1.06 x rated voltage .....:	240 V x 1,06 = 254,4 V	—
Leakage current between		I (mA)	Max. allowed I (mA)
L,N and earthed metal enclosure		1,17	3,5
L,N and plastic enclosure		0,09	0,25

13.3	TABLE: Electric strength		P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)
Live parts and earthed metal enclosure		1000	No
Live parts and plastic enclosure		3000	No

19.14	TABLE: Abnormal operation (Clause 19.2)		P
	Tested voltage .....:	DC 12 V	—
	t_1 (°C).....:	23,0	—
	t_2 (°C).....:	23,0	—
Temperature T of part / at:		T (°C)	Required T (°C)
Swing motor winding (MP28VB – Huilipu)		68,0	150

24.1	TABLE: Components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity

A1 stands for model GWH18RC-K3DNA2C A2 stands for model GWH18RC-K3DNA3C A3 stands for model GWH18RC-K3DNA8C A4 stands for model GWH18RC-K3DNA6C A5 stands for model GWH18RC-K3DBA5E A6 stands for model GWH18RC-K3DBE1E **A7 stands for model GWH18RC-K3DNA9C** **A8 stands for model GWH18RC-K3DNA5C** **A9 stands for model GWH18RC-K3DBA3E**					
Indoor unit					
Power cord	Guangdong Huasheng Electrical Appliances Co., Ltd.	H05VV-F 60227 IEC 53	3G1,5 mm^2	DIN VDE 0281-5 EN 60227-5	VDE 40005362
Power cord (Alternative)	Guangdong Huasheng Electrical Appliances Co., Ltd.	H07RN-F	3G1.5 mm^2	DIN VDE 0282-4 EN 60245-4	VDE 40016788
Power cord (Alternative)	Eastwire Industrial Limited	HO7RN-F	3G1.5 mm^2	DIN VDE 0282-4 EN 60245-4	VDE 40016464
Terminal block	Changzhou Changheng Kaidu Electric Appliance Co., Ltd.	JX-G-4C	250 V, 2,5 mm^2	EN60998-1 EN60998-2 EN 60335-1 EN 60335-2-40	Tested with appliance VDE 40020936
Terminal block (alternative)	Zhenjiang Honglian Electrician Co., Ltd.	JX1239	250 V, 2,5 mm^2	EN 60335-1 EN 60335-2-40	Tested with appliance
Terminal block (alternative)	Nantong Huaguan Electric Co., Ltd.	JXW-4-G1	250 V; 2,5 mm^2	EN60998-1 EN60998-2-1 EN 60335-1 EN 60335-2-40	Tested with appliance VDE 40013197
Plasma Ion Generator	Shangdong Xuesheng Technology Co., Ltd.	XS-PL-06	220-240 V, 50/60 Hz	EN 60335-1 EN 60335-2-65	TUV R50172899
Swing motor	Changzhou Leshileili Motor Co., Ltd.	MP28VB	12 VDC, Class A	EN 60335-2-40 EN 60335-1	Tested with appliance
Swing motor (alternative)	Jiangsu Huayang Electrical Appliance Co.; Ltd	MP28VB	12 VDC, Class A	EN 60335-2-40 EN 60335-1	Tested with appliance
Swing motor (alternative)	Changzhou Oukai Electrical Appliance Co.; Ltd	MP28VB	12 VDC, Class A	EN 60335-2-40 EN 60335-1	Tested with appliance
Swing motor (alternative)	**Zhongshan Huilipu Motor Co., Ltd.**	**MP28VB**	**12 VDC, Class A**	**EN 60335-2-40 EN 60335-1**	**Tested with appliance**

Indoor fan motor	Zhuhai City Tongde Electric Equipment Co., Ltd.	FN20V-PG	220-240 V,50 Hz, 20 W, Class E	EN 60335-2-40 EN 60335-1	Tested with appliance
Indoor fan motor (alternative)	Zhuhai Kaibang Motor Manufacturing Co., Ltd.	FN20V-PG	220-240 V,50 Hz, 20 W, Class E	EN 60335-2-40 EN 60335-1	Tested with appliance
Motor protector	Jiangsu Changsheng Electric Appliance Co. Ltd.	BR-B5D	250 V, 5 A, Tf 100℃	EN 60730-1 EN 60730-2-2	VDE 40015984
Motor protector (alternative)	Changzhou Changhong Tongli Electric Appliance Co., Ltd.	KW Series	250 V, 8 A, Tf 100℃	EN 60730-1 EN 60730-2-2	VDE 40020906
Motor protector (alternative)	Sensata Technologies Holland, B.V.	BRL Series	250 V, 8 A, Tf 100℃	EN 60730-1 EN 60730-2-2	KEMA 2089558.01
Fan motor capacitor	Wuxi Xixi Capacitor Co., Ltd.	CBB61	500 V, 50/60 Hz, 1,5 uF, T70	EN 60252-1	TUV R50128479
Fan motor capacitor (Alternative)	Zhuhai Gree Xinyuan Electronic Co., Ltd.	CBB61	500 V, 50/60 Hz, 1,5 uF, T70	EN 60252-1	TUV R50120798
Fan motor capacitor (Alternative)	Ningbo Shine Electrical Co., Ltd.	CBB61A	500 V, 50/60 Hz, 1,5 uF, T70	EN 60252-1	TUV R50065558
Main board for A1, A4	Gree Electric Appliances, Inc. of Zhuhai	M846F2UAJ	—	EN 60335-2-40 EN 60335-1	Tested with appliance
Main board for A2	Gree Electric Appliances, Inc. of Zhuhai	M846F2UJ	—	EN 60335-2-40 EN 60335-1	Tested with appliance
Main board for A2 (Alternative)	Gree Electric Appliances, Inc. of Zhuhai	M846F2SJ	—	EN 60335-2-40 EN 60335-1	Tested with appliance
Main board for A3, A5, A6, A7, A8	Gree Electric Appliances, Inc. of Zhuhai	M846F2UBJ	—	EN 60335-2-40 EN 60335-1	Tested with appliance
Main board for A9	**Gree Electric Appliances, Inc. of Zhuhai**	**M846F2VJ**	**—**	**EN 60335-2-40 EN 60335-1**	**Tested with appliance**
PCB	Shengyi Technology Co., Ltd.	S2130	94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E109769
PCB (Alternative)	Kingboard Laminates Ltd.	KB6160/P-138	94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E123995

PCB (Alternative)	Nan Ya Plastics Corp Ccl Dept Electronic Material Div	FR-4-86	94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E98983
PCB (Alternative)	Shengyi Technology Co., Ltd.	S1141	94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E109769
Fuse	Hollyland Company Limited	50CT	250 V, 3,15 A	EN60127-1 EN60127-2	VDE 40014896
Fuse (Alternative)	Walter Electronic Co., Ltd.	TSC	250 V, 3,15 A	EN60127-1 EN60127-2	VDE 40016670
Varistor	Chengdu Tieda Electronic Co., Ltd.	MYN15-621K	385 V, T85	EN61051-1	VDE 40008571
Varistor (Alternative)	Xianhua Advanced Sensitive Components Co., Ltd.	FNR-14K621	385 V, T85	EN61051-1	VDE 40008242
Rectifier	Shindengen Electric Mfg Co., Ltd.	NC 80	600 V, 1,5 A	EN 60335-2-40 EN 60335-1	Tested with appliance
X Capacitor	Xiamen Faratronic Co., Ltd.	MKP62	275 V, 0,1 µF, T110	EN60384-14	VDE 40000358
X Capacitor (Alternative)	Anhui Xinyang Electronics Co., Ltd.	MKP	275 V, 0,1 µF, T100	EN 60384-14	VDE 40024537
X Capacitor (Alternative)	Okaya Electric Industries Co., Ltd.	LE104	275 V, 0,1 µF, T100	EN 60384-14	ITS SE/0142-1D
Y1 Capacitor	TDK-EPC Corporation, Capacitors Group	CD472M	250 V, 4700 pF, T125	EN 60384-14	VDE 40029780
Y1 capacitor (Alternative)	**Murata Mfg. Co., Ltd. (Headquarters)**	**KX472M**	**AC 250 V, 472M, T125**	**EN 60384-14**	**VDE 40002831**
High Frequency Transformer	TDK TDK XIAMEN Co., Ltd.	ECO20-11P	Input: 70-265 V, 50 Hz, output: 12,5 VDC, 0,8 A, 15 VDC, 0,1 mA, Class B	EN 60335-1 EN 60335-2-40	Tested with appliance
High Frequency Transformer (alternative)	Shenzhen Yamaxi Electronics Co., Ltd.	ECO20-11P	Input: 70-265 V, 50 Hz, output: 12,5 VDC, 0,8 A, 15 VDC, 0,1 mA, Class B	EN 60335-1 EN 60335-2-40	Tested with appliance
Inductance	Hangzhou Ruichuang Industry And Trade Co.; Ltd.	200uH	200uH/2A	EN 60335-1 EN 60335-2-40	Tested with appliance
Inductance (Alternative)	XINJI ELECTRONICS COMPONENT(HANGZHOU) CO. LTD	200uH	200uH/2A	EN 60335-1 EN 60335-2-40	Tested with appliance
Inductance (Alternative)	Shenzhen Yamaxi Electronic Co.; Ltd.	T50-26	200uH/2A	EN 60335-1 EN 60335-2-40	Tested with appliance

Inductance (Alternative)	HUIZHOU JIAYANG ELECTRONIC NEW-TECH CO.;LTD	200uH/2A	200uH/2A	EN 60335-1 EN 60335-2-40	Tested with appliance
Inductance (Alternative)	Fenghua Advanced Technology(Holding) Co.; Ltd.	200uH/2A	200uH；2A	EN 60335-1 EN 60335-2-40	Tested with appliance
Inductance (Alternative)	Dongguan Dazhong Electronic Co.; Ltd.	200uH/2A	200uH；2A	EN 60335-1 EN 60335-2-40	Tested with appliance
Filter	Xinji Electronics Component (Hangzhou) Co., Ltd.	SF2022A-05220	250 V, 0,5 A	EN 60335-1 EN 60335-2-40	Tested with appliance
Filter (Alternative)	Shenzhen Yamaxi Electronics Co., Ltd.	SF2022A-05220	250 V, 0,5 A	EN 60335-1 EN 60335-2-40	Tested with appliance
Filter (Alternative)	Dazhong Electronic Co., Ltd.	SF2022A-05220	250 V, 0,5 A	EN 60335-1 EN 60335-2-40	Tested with appliance
Relay 1#	Xiamen Hongfa Electroacoustics Co., Ltd.	JZC-43F	250 V, 3 A, 12 VDC, T85, cycles: 10E4	EN61810-1 EN 60255-23	VDE 40002220
Relay 1# (Alternative)	OMRON Corporation	G5NB-1A	250 V, 3 A, 12 VDC, T85, cycles: 10E4	EN61810-1 EN 60255-23	VDE 137575
Relay 1# (Alternative)	Tyco Electronics (Shenzhen) Co., Ltd.	PCJ-112D3M	250 V, 3 A, 12 VDC, T90, cycles: 10E4	EN61810-1 EN 60255-23	VDE 40009151
Relay 2#	OMRON Relay & Devices Corporation	G4A-1A-E	250 V~, 20 A, , DC 12 V, T85 cycles: 10E4	EN61810-1	TUV R50214482
Relay 2# (Alternative)	OMRON Corporation	G4A-1A-E	250 V~, 20 A, , DC 12 V, T50 cycles: 10E4	EN 61810-1	VDE 107293
Relay 2# (Alternative)	Tyco Electronics (Shenzhen) Co., Ltd.	PCF-112D2M	250 V~, 20 A, , DC 12 V, T55 cycles: 10E4	EN 61810-1	TUV R50139097
Relay 3#	Dongguan Sanyou Electrical Appliances CO., Ltd.	SRB-S-112DM	277 V, 5 A, 12 VDC, T85 cycles: 10E4	EN 61810-1	TUV R50138320
Relay 3# (Alternative)	Song Chuan Precision Co., Ltd.	202N-1AC-C	250 V, 5 A, 12 VDC, cycles: 3E4, T85	EN 61810-1	VDE 40008369
Optical Isolator	Matsushita Electric Works Ltd.	AQH2223	250 A, 0,9 A, T85	EN 60950: 2000	VDE 40004928
Optocoupler	Sharp Corporation	PC817	If:50mA, Ic:50mA, Vceo:35-80V, Topr:-30-+100℃	EN60747-5-2	VDE 40008087
Optocoupler (Alternative)	Sharp Corporation	PC851	If:50mA, Ic:50mA, Vceo:35-80V, Topr:-30-+100℃	EN60747-5-2	VDE 40008087
Outdoor unit					

Interconnection cord	Guangdong Huasheng Electrical Appliances Co., Ltd.	H07RN-F 60245 IEC 57	4G1,5 mm^2	DIN VDE 0282-4 EN 60245-4	VDE 40016788
Interconnection cord (Alternative)	Guangdong Huasheng Electrical Appliances Co., Ltd.	S05RN-F 60245 IEC 57	4G0.75 mm^2	DIN VDE 0282-4 EN 60245-4	VDE 40015785
Terminal Board	Changzhou Changheng Kaidu Electric Appliance Co., Ltd.	JXD-3	450 V, 2,5 mm^2	EN 60335-1 EN 60335-2-40	Tested with appliance
Terminal Board (Alternative)	Nantong Huaguan Electric Co., Ltd.	JXW	450 V, 2,5 mm^2	EN 60335-1 EN 60335-2-40	Tested with appliance
Terminal board (Alternative)	Changzhou Changheng Kaidu Electric Appliance Co.; Ltd.	JX-G-5H	300 V, 4 mm^2	EN 60335-1 EN 60335-2-40	Tested with appliance
Terminal board (Alternative)	Nantong Huaguan Electric Co., Ltd.	JXW	300 V, 4 mm^2	EN 60335-1 EN 60335-2-40	Tested with appliance
Compressor	Zhuhai Landa Compressor Co., Ltd.	QXA-B141zF030A	260-350 Vdc, 15-120 Hz, 1440 W, 0,99 Ω, R410, Class B	EN 60335-1 EN 60335-2-40	Tested with appliance
Compressor Protector	Sensata technoloies (Baoying)Co., Ltd.	1NT11L-6233	Tf: 115 ℃	EN 60730-1 EN 60730-2-9	KEMA 2014531.16
Compressor Protector (Alternative)	Jiangsu Changheng (Group) Control Devices & Products Co., Ltd.	KSD	Tf: 115 ℃	EN 60730-1 EN 60730-2-9	VDE 40022995
Compressor Protector (Alternative)	Changzhou Changrong Electrical Appliance Co. Ltd	HPC	Tf: 115 ℃	EN 60730-1 EN 60730-2-9	VDE 40032296
Outdoor fan motor	Zhuhai Kaibang Motor Manufacturing Co., Ltd.	LW60M-ZL	200-370 VDC, 60 W, Class E	EN 60335-1 EN 60335-2-40	Tested with appliance
Main Board for A1,A2, A4	Gree Electric Appliances, Inc. of Zhuhai	W8433ADB	—	EN 60335-1 EN 60335-2-40	Tested with appliance
Main Board for A3	Gree Electric Appliances, Inc. of Zhuhai	W8433ADQ	—	EN 60335-1 EN 60335-2-40	Tested with appliance
Main board for A5, A6	Gree Electric Appliances, Inc. of Zhuhai	W8433ADC	—	EN 60335-1 EN 60335-2-40	Tested with appliance
PCB	Shengyi Technology Co., Ltd.	S2130	94V-0	EN 60335-1 EN 60335-2-40	Tested with appliance UL E109769

PCB (Alternative)	Kingboard Laminates Ltd.	KB6160/P-138	94V-0	EN 60335-1 EN 60335-2-40	Tested with appliance UL E123995
PCB (Alternative)	Nan Ya Plastics Corp Ccl Dept Electronic Material Div	FR-4-86	94V-0	EN 60335-1 EN 60335-2-40	Tested with appliance UL E98983
PCB (Alternative)	Shengyi Technology Co., Ltd.	S1141	94V-0	EN 60335-1 EN 60335-2-40	Tested with appliance UL E109769
Fuse 1#	Hollyland Co., Ltd.	65TS	T25 A, 250 V	EN 60335-1 EN 60335-2-40	Tested with appliance
Fuse 2#	Hollyland Co., Ltd.	50CT	T3,15 A, 250 V	EN 60127-1 EN 60127-2	VDE 40014896
Varistor	Chengdu Tieda Electronic Co. Ltd.	MYN15-621K	385 V, T85	EN61051-1	VDE 40008571
Varistor (Alternative)	Xianhua Advanced Sensitive Components Co.; Ltd.	FNR-14K621	385 V, T85	EN61051-1	VDE 40008242
PTC Resistance	Hubei Huagong Gaoli Electronic Co., Ltd.	MZ8Ⅰ EB500K	50 Ω	EN 60335-2-40 EN 60335-1	Tested with appliance
PTC Resistance (Alternative)	Dandong Guotong Electronic Components Co., Ltd.	MZ9250RM	50 Ω	EN 60335-2-40 EN 60335-1	Tested with appliance
Rectifier	Shanghai Microsemi Semiconductor Co., Ltd.	GBJ25J	600 V, 25 A	EN 60335-2-40 EN 60335-1	Tested with appliance
Rectifier (Alternative)	() SHINDENGEN ELECTRIC MFG Co,, Ltd.	D25XB 60	600 V, 25 A	EN 60335-2-40 EN 60335-1	Tested with appliance
IPM	Sanken Electric Co., Ltd.	SLA6868M	VDSS: 500 V, VCC: 20 V, I: 2,5 A, IP: 5 A: PD: 32,8 W	EN 60335-2-40 EN 60335-1	Tested with appliance
IPM (Alternative)	MITSUBISHI ELECTRIC CORP SEMICONDUCTOR DIV	PS219A5-ASTX	600 V, 20 A, Fsw=20 KHz, Viso=2500 V	EN 60335-2-40 EN 60335-1	Tested with appliance
IPM (Alternative)	MITSUBISHI ELECTRIC CORP SEMICONDUCTOR DIV	PS219A5-ASTX	600 V, 20 A, Fsw=20 KHz, Viso=2500 V	EN 60335-2-40 EN 60335-1	Tested with appliance
X Capacitor	Xiamen Faratronic Co., Ltd.	MKP62	275 V, 0,1 μF, T110	EN60384-14	VDE 40000358
X Capacitor (Alternative)	Anhui Xinyang Electronics Co., Ltd.	MKP	275 V, 0,1 μF, T100	EN60384-14	VDE 40024537
X Capacitor (Alternative)	Okaya Electric Industries Co., Ltd.	LE104	275 V, 0,1 μF, T100	EN60384-14	ITS SE/0142-1D

High Frequency Transformer	TDK TDK XIAMEN Co., Ltd.	EEH26-11P	Input: 70 V-265 V, 50/60 Hz, Output: 7,5 V, 150 mA, 12 V, 910 mA, 17 V, 130 mA, 17 V, 15 mA, 17 V, 15 mA, Class B	EN 60335-1 EN 60335-2-40	Tested with appliance
High Frequency Transformer (Alternative)	Shenzhen Yamaxi Electronics Co., Ltd.	EEH26-11P	Input: 250 V, 50/60 Hz, 12V 910 mA, 7,5V, 150 mA, 17 V, 15 mA, class B	EN 60335-1 EN 60335-2-40	Tested with appliance
Relay 1#	OMRON Relay & Devices Corporation	G4A-1A-E	250 V~, 20 A, DC 12 V, T85 cycles: 10E4	EN 61810-1	TUV R50214482
Relay 1# (Alternative)	Xiamen Hongfa Electroacoustics Co., Ltd.	JQX-102F	250 V~, 20 A, DC 12 V, T85 cycles: 10E4	EN 61810-1	VDE 40024142
Relay 1# (Alternative)	Dongguan Sanyou Electrical Appliances Co., Ltd.	SFK-112DM	250 V~, 20 A, , DC 12 V, T85 cycles: 10E4	EN 61810-1	VDE 40007481
Relay 1# (Alternative)	Song Chuan Precision Co., Ltd.	891WP-1A-C	250 V~, 20 A, DC 12 V, T85 cycles: 10E4	EN 61810-1	TUV R50003966
Relay 1# (Alternative)	Tyco Electronics(Shenzhen) Co., Ltd.	EF00-1A2-D012-F	250 V~, 20 A, DC 12 V, T85 cycles: 500E4,	EN 61810-1	TUV R50117320
Relay 2#	Xiamen Hongfa Electroacoustics Co., Ltd.	HF32F-G	250 V~, 10 A, DC 12 V, T85 cycles: 10E4	EN61810-1	VDE 40012204
Relay 2# (Alternative)	Dongguan Sanyou Electrical Appliances CO., Ltd.	SJ-S-112DM	250 V~, 10 A, DC 12 V, T85 cycles: 10E4	EN 61810-1	TUV R50142420
Relay 2# (Alternative)	Song Chuan Precision Co., Ltd.	835-1A-B-C	250 V~, 10 A, DC 12 V, T85 cycles: 5E4	EN 61810-1	VDE 40010643
Relay 2# (Alternative)	Tyco Electronics(Shenzhen) Co., Ltd.	OJE-SS-112HMF	250 V~, 10 A, DC 12 V, T70 cycles: 10E4	EN 61810-1	TUV R50139166
Relay (Alternative)	**Dongguan Churod Electronics Co., Ltd.**	**A1-S-112HAF**	**250 V~, 10 A, DC 12 V, T85, cycles: 10E4**	**EN 61810-1**	**TUV R50174892**
Relay 3#	Xiamen Hongfa Electroacoustics Co., Ltd.	JZC-32F	250 VAC, 5 A, 12 VDC, cycles: 10E4, T70	EN 61810-1	VDE 40012204
Relay 3# (Alternative)	Dongguan Sanyou Electrical Appliances Co., Ltd.	SJ-S-112DM	250 VAC, 5 A, 12 VDC, cycles: 10E4, T85	EN 61810-1: 2008; IEC 61810-1: 2008	TUV R50142420 VDE 40002146
Relay 3# (Alternative)	Songchuan Precision Co., Ltd.	307-1AH-C	250 VAC, 5 A, 12 VDC, cycles: 1E4, T85	EN 61810-1: 2004; IEC 61810-1: 2003	TUV R50128391
Relay 3# (Alternative)	Tyco Electronics (Shenzhen) Co., Ltd.	OJE-SS-112DM	250 VAC, 5 A, 12 VDC, cycles: 10E4, T70	EN 61810-1: 2004; IEC 61810-1: 2003	TUV R50139166

Optocoupler	Sharp Corporation	PC817	If:50mA, Ic:50mA, Vceo:35-80V, Topr:-30-+100℃	EN 60747-5-2	VDE 40008087
Optocoupler	Toshiba Corporation	TLP781	Vceo:80 V, If=60 mA, Ic:50 mA Topr:? ℃	VDE DIN EN 60747-5-2	VDE 40021173
Reactor	QINGDAO YUNLU ENERGY TECHNOLOGY CO LTD	R 315D	16 A, 3,5 mH, class H	EN 60335-1 EN 60335-2-40	Tested with appliance
Reactor (Alternative)	QINGDAO YUNLU ENERGY TECHNOLOGY CO LTD	R 315D	16 A, 3,5 mH, class H	EN 60335-1 EN 60335-2-40	Tested with appliance
4 way valve	Zhejiang Sanhua Climate and Appliance Controls Group Co., Ltd.	SHF-7H-34U-PG	220-240 V, 50/60 Hz, Class B	EN 60730-1	VDE 40003240
4 way valve (alternative)	Zhejiang Dunan Artificial Environmental Equipment Co., Ltd.	DSF-9-R410A	220-240 V, 50/60 Hz, Class B	EN 60730-1	VDE 40013212
4 way valve (alternative)	Zhejiang Dunan Artificial Environment Co., Ltd.	DSF-9-R410A	220-240 V, 50/60 Hz, Class B	EN 60730-1	TUV R50017212
4-way valve (alternative)	**Zhejiang Sanhua Climate and Appliance Controls Group Co., Ltd. (Zhejiang Sanhua Trading Co., Ltd.)**	**SHF-7H-34U-PG**	**AC 220-240 V, 50/60 Hz, 4,5/3,5 W, Class B**	**EN 60730-1**	**VDE 40003240**
Electrical Heater in chassis only for A5, A6, A9	Zhenjiang Dongfang Electric Heating Technology Co.;Ltd.	DYQ-02-I-230	230V 160W	EN 60335-1 EN 60335-2-40	Tested with appliance
[1)] An asterisk indicates a mark which assures the agreed level of surveillance					

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	—	—	—	—	N/A
500	0,5	—	—	—	—	N/A
800	0,5	—	—	—	—	N/A
1 500	0,5	—	—	—	—	N/A
2 500	**2,0**	**B1**	**F1**	—	—	P

4 000	3,5	—	—	—	—	N/A
6 000	5,5	—	—	—	—	N/A
8 000	8,0	—	—	—	—	N/A
10 000	11,0	—	—	—	—	N/A

Remark:
B1: B/W high voltage part and low voltage on main board M846F2VJ: 4,4 mm;
F1: B/W two poles of fuse on main board M846F2VJ: 4,1 mm

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	—	—	—	N/A
≤50	0,2	0,6	0,9	1,2	1,5	1,7	1,9	—	—	—	N/A
≤50	0,4	1,2	1,8	2,4	3,0	3,4	3,8	—	—	—	N/A
>50 and ≤125	0,3	0,8	1,1	1,5	1,9	2,1	2,4	—	—	—	N/A
>50 and ≤125	0,3	0,8	1,1	1,5	1,9	2,1	2,4	—	—	—	N/A
>50 and ≤125	0,6	1,6	2,2	3,0	3,8	4,2	4,8	—	—	—	N/A
>125 and ≤250	0,6	1,3	1,8	**2,5**	3,2	3,6	4,0	B1	—	—	P
>125 and ≤250	0,6	1,3	1,8	2,5	3,2	3,6	4,0	—		—	N/A
>125 and ≤250	1,2	2,6	3,6	5,0	6,4	7,2	8,0	—	—		N/A
>250 and ≤400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—	—	—	N/A
>250 and ≤400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—	—	—	N/A
>250 and ≤400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—	—	N/A

*), B=Basic, S=Supplementary and R=Reinforced
Remark:
B1: B/W high voltage part and low voltage on main board M846F2VJ: 4,4 mm

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	N/A
>50 and ≤125	0,3	0,7	1,0	1,4	1,8	2,0	2,2	N/A

>125 and ≤250	0,4	1,0	1,4	**2,0**	2,5	2,8	3,2	P (F1)
>250 and ≤400	0,8	1,6	2,2	3,2	4,0	4,5	5,0	N/A
>400 and ≤500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	N/A
>500 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	N/A
Remark: F1: B/W two poles of fuse on main board M846F2VJ: 5,8 mm								

TABLE 30	RENSISTANCE TO HEAT, FIRE AND TRACKING (appended table)													P
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		
Swing motor	Zhongshan Huilipu Motor Co., Ltd.	MP28VB	—	—	—	—	—	—	X	—	—	—	—	P
Relay	Dongguan Churod Electronics Co., Ltd.	A1-S-112HAF	—	—	—	—	—	—	—	X	—	—	—	P
4-way valve	Zhejiang Sanhua Climate and Appliance Controls Group Co., Ltd. (Zhejiang Sanhua Trading Co., Ltd.)	SHF-7H-34U-PG	—	—	—	—	—	—	X	—	—	—	—	P
PCB of main board	—	—	—	—	—	—	—	—	—	—	—	—	X	P

1) Flame persisting longer than 2 s
2) Surrounding parts are subjected to the needle-flame test of annex E
3) These parts subjected to the needle-flame test of annex E
4) Adjacent parts subjected to the needle-flame test of annex E
5) Parts of material classified as V-0 or V-1
6) Base material classified as V-0
supplementary information:

---End of report---

Annex I

Photo documentation

Type of equipment, model: Split-Type Air-Conditioner
GWH18RC-K3DNA3C (GWH18RC-K3DNA3C/I, GWH18RC-K3DNA3C/O);
GWH18RC-K3DNA2C (GWH18RC-K3DNA2C/I, GWH18RC-K3DNA3C/O);
GWH18RC-K3DNA8C(GWH18RC-K3DNA8C/I, GWH18RC-K3DNA8C/O);
GWH18RC-K3DNA6C (GWH18RC-K3DNA6C/I, GWH18RC-K3DNA3C/O);
GWH18RC-K3DBA5E (GWH18RC-K3DBA5E/I, GWH18RC-K3DBA5E/O);
GWH18RC-K3DBE1E (GWH18RC-K3DBE1E/I, GWH18RC-K3DBA5E/O);
GWH18RC-K3DNA9C (GWH18RC-K3DNA9C/I, GWH18RC-K3DNA8C/O);
GWH18RC-K3DNA5C (GWH18RC-K3DNA5C/I, GWH18RC-K3DNA8C/O);
GWH18RC-K3DBA3E (GWH18RC-K3DBA3E/I, GWH18RC-K3DBA5E/O)

Details of: Indoor unit plastic enclosure for model GWH18RC-K3DNA9C

View:

- ☒ general
- ☐ front
- ☐ rear
- ☐ right
- ☐ left
- ☐ top
- ☐ bottom

Details of: Indoor unit plastic enclosure for model GWH18RC-K3DNA5C

View:

- ☒ general
- ☐ front
- ☐ rear
- ☐ right
- ☐ left
- ☐ top
- ☐ bottom

Annex I

Details of: Indoor unit plastic enclosure for model GWH18RC-K3DBA3E

View:

- ☒ general
- ☐ front
- ☐ rear
- ☐ right
- ☐ left
- ☐ top
- ☐ bottom

Details of: Indoor unit main board for model GWH18RC-K3DBA3E
(the connectors for display board)

View:

- ☒ general
- ☐ front
- ☐ rear
- ☐ right
- ☐ left
- ☐ top
- ☐ bottom

Annex I

Details of: Indoor unit main board for model GWH18RC-K3DBA3E

View:

- ☒ general
- ☐ front
- ☐ rear
- ☐ right
- ☐ left
- ☐ top
- ☐ bottom

--- End of Annex I ---

EN 60335-2-40: 2003 / A13: 2012			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX ZE (normative)	**SPECIFIC ADDITIONAL REQUIREMENTS FOR APPLIANCES AND MACHINES INTENDED FOR COMMERCIAL USE**	—
	Evaluation should be done if applicable	N/A

ANNEX ZF (informative)	**CRITERIA APPLIED FOR THE ALLOCATION OF PRODUCTS COVERED BY STANDARDS IN THE EN 60335 SERIES UNDER LVD OR MD**	—
	Evaluation should be done if applicable	N/A

ANNEX ZZ (informative)	**COVERAGE OF ESSENTIAL REQUIREMENTS OF EC DIRECTIVES**	—
	Evaluation should be done if applicable	N/A

ANNEX ZAB (normative)	**EMISSION OF ACOUSTICAL NOISE FROM APPLIANCES COVERED BY ANNEX AZ**	—
	Evaluation should be done if applicable	N/A

--- End of Annex II ---

Equipment list of Gree Electric Appliances, Inc. of Zhuhai

SN	Name	Model/Number	Manufacturer	Calibration until
01	Leakage current tester	7611/E270035	Taiwan Huayi Electronics Corporation	2013-06-17
02	Safety gauge electrical medium analysis tester	7742/1350839	EXTECH	2013-10-30
03	Temperature recorder	BH140NON/GR705214	Shanghai Dahua-Qianye Meter Corporation	2013-11-21
04	Withstanding Voltage tester	7250/1250524	—	2014-10-19
05	Air enthalpy test room 1#	—	Gree Electric Appliances, Inc. of Zhuhai	2014-03-22
06	Vernier caliper	20119	Shanghai Measure Factory	2013-06-24
07	Multimeter	F289/12580256	FLUKE Corporation	2014-02-18

--- End of Annex III ---