



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.	GZES120900879606
Date of issue.....	2013-06-26
Total number of pages	41
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.....:	
Manufacturer/Address.....:	Same as applicant
Factory/Address.....:	Same as applicant
Model/Type reference	<p>GWH09MB-K3DNA3K (Indoor unit: GWH09MB-K3DNA3K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DND3K (Indoor unit: GWH09MB-K3DND3K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNA2K (Indoor unit: GWH09MB-K3DNA2K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNA5K (Indoor unit: GWH09MB-K3DNA5K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DND8D (Indoor unit: GWH09MB-K3DND8D/I, Outdoor unit: GWH09MB-K3DND8D/O);</p> <p>GWH09MB-K3DNB3K(Indoor unit: GWH09MB-K3DNB3K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNE1K(Indoor unit: GWH09MB-K3DNE1K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNC9K(Indoor unit: GWH09MB-K3DNC9K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNA4K(Indoor unit: GWH09MB-K3DNA4K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNE2K (Indoor unit: GWH09MB-K3DNE2K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNE3K (Indoor unit: GWH09MB-K3DNE3K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNB7K (Indoor unit: GWH09MB-K3DNB7K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNC5K (Indoor unit: GWH09MB-K3DNC5K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNC1K (Indoor unit: GWH09MB-K3DNC1K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH09MB-K3DNC8K (Indoor unit: GWH09MB-K3DNC8K/I, Outdoor unit: GWH09MB-K3DNA3K/O);</p> <p>GWH12MB-K3DNA3K (Indoor unit: GWH12MB-K3DNA3K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DND3K (Indoor unit: GWH12MB-K3DND3K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DNA2K (Indoor unit: GWH12MB-K3DNA2K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DNA5K (Indoor unit: GWH12MB-K3DNA5K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DND8D (Indoor unit: GWH12MB-K3DND8D/I, Outdoor unit: GWH12MB-K3DND8D/O)</p> <p>GWH12MB-K3DNB3K(Indoor unit: GWH12MB-K3DNB3K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DNE1K(Indoor unit: GWH12MB-K3DNE1K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DNC9K(Indoor unit: GWH12MB-K3DNC9K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DNA4K(Indoor unit: GWH12MB-K3DNA4K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DNE2K (Indoor unit: GWH12MB-K3DNE2K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DNE3K (Indoor unit: GWH12MB-K3DNE3K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DNB7K (Indoor unit: GWH12MB-K3DNB7K/I, Outdoor unit: GWH12MB-K3DNA3K/O);</p> <p>GWH12MB-K3DNC5K (Indoor unit: GWH12MB-K3DNC5K/I, Outdoor</p>

	<p>unit: GWH12MB-K3DNA3K/O) GWH12MB-K3DNC1K (Indoor unit: GWH12MB-K3DNC1K/I, Outdoor unit: GWH12MB-K3DNA3K/O) GWH12MB-K3DNC8K (Indoor unit: GWH12MB-K3DNC8K/I, Outdoor unit: GWH12MB-K3DNA3K/O)</p>
<p>Ratings..... :</p>	<p>220-240 V~; 50 Hz; 1, GWH09MB-K3DNA3K, GWH09MB-K3DND3K, GWH09MB-K3DNA2K, GWH09MB-K3DNA5K, GWH09MB-K3DNB3K, GWH09MB-K3DNE1K, GWH09MB-K3DNC9K, GWH09MB-K3DNA4K, GWH09MB-K3DNE2K, GWH09MB-K3DNE3K, GWH09MB-K3DNB7K, GWH09MB-K3DNC5K, GWH09MB-K3DNC1K, GWH09MB-K3DNC8K: Cooling: 1300 W; Heating: 1400 W; 2, GWH09MB-K3DND8D: Cooling: 1550 W, Heating: 1400 W; 3, GWH12MB-K3DNA3K, GWH12MB-K3DND3K, GWH12MB-K3DNA2K, GWH12MB-K3DNA5K, GWH12MB-K3DNB3K, GWH12MB-K3DNE1K, GWH12MB-K3DNC9K, GWH12MB-K3DNA4K, GWH12MB-K3DNE2K, GWH12MB-K3DNE3K, GWH12MB-K3DNB7K, GWH12MB-K3DNC5K, GWH12MB-K3DNC1K, GWH12MB-K3DNC8K: Cooling: 1400 W; Heating: 1550 W; 4, GWH12MB-K3DND8D: Cooling: 1600 W; Heating: 1550 W</p>

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB Testing Laboratory: Testing location/ address.....:	SGS-CSTC Standards Technical Services Co., Ltd. - E&E Lab Guangzhou 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, Guangdong, China 510663
<input type="checkbox"/> Associated CB Laboratory: Testing location/ address.....:	N/A
<input checked="" type="checkbox"/> Testing procedure: TMP Tested by (name + signature).....:	<i>George Gu</i> George Gu
Approved by (+ signature).....:	<i>Gaven Deng</i> Gaven Deng
Testing location/ address.....:	Gree Electric Appliances, Inc. of Zhuhai Jinji West Road, Qianshan, Zhuhai, Guangdong, China
<input type="checkbox"/> Testing procedure: WMT Tested by (name + signature).....:	N/A
Witnessed by (+ signature).....:	
Approved by (+ signature).....:	
Testing location/ address.....:	
<input type="checkbox"/> Testing procedure: SMT Tested by (name + signature).....:	N/A
Approved by (+ signature).....:	
Supervised by (+ signature).....:	
Testing location/ address.....:	
<input type="checkbox"/> Testing procedure: RMT Tested by (name + signature).....:	N/A
Approved by (+ signature).....:	
Supervised by (+ signature).....:	
Testing location/ address.....:	



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Summary of testing:

Tests performed (name of test and test clause):

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 GWH09MB-K3DNC1K, GWH12MB-K3DNC1K.

The submitted samples complied with above standards.

Testing location:

Tests of clause 10, 11, 13, 19.2, 29 and 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:

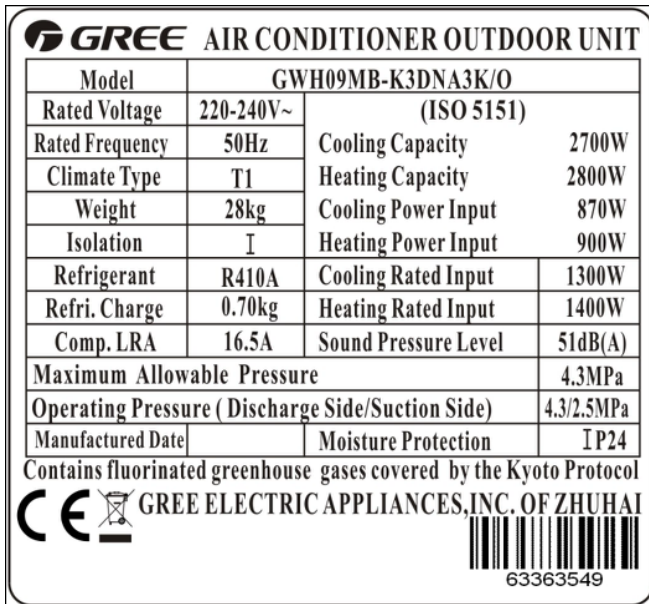
European group differences had been taken into account.

Copy of marking plate:

Labels for model GWH09MB-K3DNC1K:





GREE
SPLIT AIR CONDITIONER INDOOR UNIT
 Model GWH09MB-K3DNC1K/I
 Rated Voltage 220-240V~
 Rated Frequency 50Hz
 Cooling Capacity 2700W
 Heating Capacity 2800W
 Air Flow Volume 600m³/h
 Sound Pressure Level(H) 39dB(A)
 Weight 9kg
 Manufactured Date
 GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI
 CE  
 63262000154



GREE AIR CONDITIONER OUTDOOR UNIT

Model	GWH09MB-K3DNA3K/O		
Rated Voltage	220-240V~	(ISO 5151)	
Rated Frequency	50Hz	Cooling Capacity	2700W
Climate Type	T1	Heating Capacity	2800W
Weight	28kg	Cooling Power Input	870W
Isolation	I	Heating Power Input	900W
Refrigerant	R410A	Cooling Rated Input	1300W
Refri. Charge	0.70kg	Heating Rated Input	1400W
Comp. LRA	16.5A	Sound Pressure Level	51dB(A)
Maximum Allowable Pressure			4.3MPa
Operating Pressure (Discharge Side/Suction Side)			4.3/2.5MPa
Manufactured Date		Moisture Protection	IP24

Contains fluorinated greenhouse gases covered by the Kyoto Protocol
 GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI
 CE  
 63363549



Labels for model GWH09MB-K3DNC8K:

GREE

**SPLIT AIR CONDITIONER
INDOOR UNIT**

Model **GWH09MB-K3DNC8K/I**
 Rated Voltage **220-240V~**
 Rated Frequency **50Hz**
 Cooling Capacity **2700W**
 Heating Capacity **2800W**
 Air Flow Volume **600m³/h**
 Sound Pressure Level(H) **39dB(A)**
 Weight **9kg**
 Manufactured Date


GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

 
63282000171

GREE AIR CONDITIONER OUTDOOR UNIT

Model	GWH09MB-K3DNA3K/O (ISO 5151)		
Rated Voltage	220-240V~	Cooling Capacity	2700W
Rated Frequency	50Hz	Heating Capacity	2800W
Climate Type	T1	Cooling Power Input	870W
Weight	28kg	Heating Power Input	900W
Isolation	I	Cooling Rated Input	1300W
Refrigerant	R410A	Heating Rated Input	1400W
Refri. Charge	0.70kg	Sound Pressure Level	51dB(A)
Comp. LRA	16.5A	Maximum Allowable Pressure	4.3MPa
Operating Pressure (Discharge Side/Suction Side)		4.3/2.5MPa	
Manufactured Date		Moisture Protection	IP24

Contains fluorinated greenhouse gases covered by the Kyoto Protocol

 
GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI
63363549



Labels for model GWH12MB-K3DNC1K:

GREE

**SPLIT AIR CONDITIONER
INDOOR UNIT**

Model **GWH12MB-K3DNC1K/I**
 Rated Voltage **220-240V~**
 Rated Frequency **50Hz**
 Cooling Capacity **3500W**
 Heating Capacity **4000W**
 Air Flow Volume **580m³/h**
 Sound Pressure Level(H) **40dB(A)**
 Weight **9kg**
 Manufactured Date


GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

 
63262000155

GREE AIR CONDITIONER OUTDOOR UNIT

Model	GWH12MB-K3DNA3K/O (ISO 5151)		
Rated Voltage	220-240V~	Cooling Capacity	3500W
Rated Frequency	50Hz	Heating Capacity	4000W
Climate Type	T1	Cooling Power Input	1170W
Weight	29kg	Heating Power Input	1200W
Isolation	I	Cooling Rated Input	1400W
Refrigerant	R410A	Heating Rated Input	1550W
Refri. Charge	0.85kg	Sound Pressure Level	53dB(A)
Comp. LRA	16.5A	Maximum Allowable Pressure	4.3MPa
Operating Pressure (Discharge Side/Suction Side)		4.3/2.5MPa	
Manufactured Date		Moisture Protection	IP24

Contains fluorinated greenhouse gases covered by the Kyoto Protocol

 
GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI
63363550

Labels for model GWH12MB-K3DNC8K:

GREE

**SPLIT AIR CONDITIONER
INDOOR UNIT**

Model **GWH12MB-K3DNC8K/I**
 Rated Voltage **220-240V~**
 Rated Frequency **50Hz**
 Cooling Capacity **3500W**
 Heating Capacity **4000W**
 Air Flow Volume **580m³/h**
 Sound Pressure Level(H) **40dB(A)**
 Weight **9kg**
 Manufactured Date


GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI


 
 63262000170

GREE AIR CONDITIONER OUTDOOR UNIT

Model	GWH12MB-K3DNA3K/O		
Rated Voltage	220-240V~	(ISO 5151)	
Rated Frequency	50Hz	Cooling Capacity	3500W
Climate Type	T1	Heating Capacity	4000W
Weight	29kg	Cooling Power Input	1170W
Isolation	I	Heating Power Input	1200W
Refrigerant	R410A	Cooling Rated Input	1400W
Refri. Charge	0.85kg	Heating Rated Input	1550W
Comp. LRA	16.5A	Sound Pressure Level	53dB(A)
Maximum Allowable Pressure			4.3MPa
Operating Pressure (Discharge Side/Suction Side)			4.3/2.5MPa
Manufactured Date		Moisture Protection	IP24

Contains fluorinated greenhouse gases covered by the Kyoto Protocol

 **GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI**


 63363550

Test item particulars	
Classification of installation and use	Fixed appliance
Supply Connection	Non-detachable flexible cord fitted with a plug
.....	
Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing	
Date of receipt of test item	2013-04-20
Date (s) of performance of tests	From 2013-04-20 to 2013-06-20
General remarks:	
<p>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.</p> <p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> <p>This document is issued by the company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.</p> <p>Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.</p> <p>Unless otherwise stated: (a) the results shown in this document refer only to the sample(s) tested and (b) such sample(s) are retained for 3 months. This document cannot be reproduced except in full, without prior approval of the company.</p> <p>The test report includes the following additional documents to the original TRF: Attachment I: 2 pages of photo documentation; Attachment II: 1 page of equipment list for TMP</p>	
General product information:	
<p>Split-type air-conditioner for household used only, the refrigerant is R410A.</p> <p>The appliances have cooling and heating functions.</p> <p>Model GWH09MB-K3DNA3K is all the same as model GWH12MB-K3DNA3K except for mass of refrigerant, rating labels and programme of outdoor unit main board.</p> <p>Model GWH09MB-K3DND3K is all the same as model GWH09MB-K3DNA3K except for display panel of indoor unit.</p> <p>Model GWH12MB-K3DND3K is all the same as model GWH12MB-K3DNA3K except for display panel of indoor unit.</p>	
Amendment-1:	
<p>The original test report Ref. No. GZES120900879601, dated Nov. 23, 2012 was modified on Dec. 12, 2012 to include the following additions, which were considered technical modifications:</p> <p>1, Added six models: GWH09MB-K3DNA2K, GWH09MB-K3DNA5K, GWH09MB-K3DND8D, GWH12MB-K3DNA2K, GWH12MB-K3DNA5K, GWH12MB-K3DND8D.</p>	

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The differences between new models and original models were listed as below:

- 1) Models GWH09MB-K3DNA2K and GWH09MB-K3DNA5K were all same as original model GWH09MB-K3DNA3K except for the appearance of indoor unit display panel.
- 2) Model GWH09MB-K3DND8D was all the same as original model GWH09MB-K3DNA3K except for the appearance of indoor unit display panel, indoor unit main board and rated power input of cooling mode. (The indoor unit main board of model GWH09MB-K3DND8D was all the same as model GWH09MB-K3DNA3K except for the indoor fan motor running capacitor on main board.)
- 3) Models GWH12MB-K3DNA2K and GWH12MB-K3DNA5K were all same as original model GWH12MB-K3DNA3K except for the appearance of indoor unit display panel.
- 4) Model GWH12MB-K3DND8D was all the same as original model GWH12MB-K3DNA3K except for the appearance of indoor unit display panel, indoor unit main board and rated power input of cooling mode. (The indoor unit main board of model GWH12MB-K3DND8D was all the same as model GWH12MB-K3DNA3K except for the indoor fan motor running capacitor on main board.)

2, Alternative power cord and interconnection cord for models GWH09MB-K3DNA2K, GWH09MB-K3DNA5K, GWH12MB-K3DNA2K, GWH12MB-K3DNA5K. Details see the table 24.1.

After reviewing, test of clause 30 was considered to carry out on the alternative fan motor running capacitors.

Amendment-2:

The original test report Ref. No. GZES120900879601, dated Nov. 23, 2012 was modified on Dec. 28, 2012 to include the following additions, which were considered technical modifications:

1, Added eight models: GWH09MB-K3DNB3K, GWH09MB-K3DNE1K, GWH09MB-K3DNC9K, GWH09MB-K3DNA4K, GWH12MB-K3DNB3K, GWH12MB-K3DNE1K, GWH12MB-K3DNC9K, GWH12MB-K3DNA4K.

The differences between new models and original models were listed as below:

- 1) Models GWH09MB-K3DNB3K, GWH09MB-K3DNE1K, GWH09MB-K3DNC9K and GWH09MB-K3DNA4K were all same as original model GWH09MB-K3DNA3K except for the appearance of indoor unit display panel.
 - 2) Models GWH12MB-K3DNB3K, GWH12MB-K3DNE1K, GWH12MB-K3DNC9K and GWH12MB-K3DNA4K were all same as original model GWH12MB-K3DNA3K except for the appearance of indoor unit display panel.
- 2, Alternative power cord and interconnection cord for models GWH09MB-K3DNB3K, GWH09MB-K3DNE1K, GWH09MB-K3DNC9K, GWH09MB-K3DNA4K, GWH12MB-K3DNB3K, GWH12MB-K3DNE1K, GWH12MB-K3DNC9K and GWH12MB-K3DNA4K. Details see the table 24.1.
- 3, Alternative a panel for model GWH09MB-K3DNA2K and GWH12MB-K3DNA2K.

After reviewing, no test was considered to carry out.

Amendment-3:

The original test report Ref. No. GZES120900879601, dated Nov. 23, 2012 was modified on Jan. 21, 2013 to include the following additions, which were considered technical modifications:

1, Added four new models: GWH09MB-K3DNE2K, GWH09MB-K3DNE3K, GWH12MB-K3DNE2K, GWH12MB-K3DNE3K.

The differences between new models and original models were listed as below:

- 1) Model GWH09MB-K3DNE2K was all the same as original model GWH09MB-K3DNA3K except for the appearance of indoor unit display panel and the shape of display board.
- 2) Model GWH09MB-K3DNE3K was all the same as original model GWH09MB-K3DNA3K except for the appearance of indoor unit display panel.
- 3) Model GWH12MB-K3DNE2K was all the same as original model GWH12MB-K3DNA3K except for the appearance of indoor unit display panel and the shape of display board.
- 4) Model GWH12MB-K3DNE3K was all the same as original model GWH12MB-K3DNA3K except for the appearance of indoor unit display panel.

2, Alternative one panel for models GWH09MB-K3DND8D and GWH12MB-K3DND8D.

3, Alternative power cord and interconnection cord for the four new models. Details see the components in bold in table 24.1.

After reviewing, no test was considered to be carried out.

Amendment-4:

The original test report Ref. No. GZES120900879601, dated Nov. 23, 2012 was modified on April 09, 2013 to include the following additions and changes, which were considered technical modifications:

1, Added four new models: GWH09MB-K3DNB7K, GWH09MB-K3DNC5K, GWH12MB-K3DNB7K, GWH12MB-K3DNC5K.

Models GWH09MB-K3DNB7K and GWH09MB-K3DNC5K were all the same as original model GWH09MB-K3DNA3K except for the appearance of indoor unit display panel and the shape of display board. Details see attachment I.

Models GWH12MB-K3DNB7K and GWH12MB-K3DNC5K were all the same as original model GWH12MB-K3DNA3K except for the appearance of indoor unit display panel and the shape of display board. Details see attachment I.

2, Added reactor, interconnection cord, power cord as alternative ones, details see the components in bold in table 24.1.

3, Added chassis electrical heater for models GWH09MB-K3DNA4K, GWH09MB-K3DNA5K, GWH12MB-K3DNA4K, GWH12MB-K3DNA5K, details see attachment I and table 24.1. The electrical heater would not work during the appliance normal operation.

4, Updated the label of indoor fan motor. (the current mark on label was corrected from 0,215 A to 0,180 A, detail see attachment I)

After reviewing, tests of clause 8, 16.3, 19.10, 22, 24, 25, 29 and 30 were considered to be necessary.

Amendment-5:

The original test report Ref. No. GZES120900879601, dated Nov. 23, 2012 was modified on Jun 26, 2013 to include the following additions and changes, which were considered technical modifications:

1, Added four new models: GWH09MB-K3DNC1K, GWH09MB-K3DNC8K, GWH12MB-K3DNC1K, GWH12MB-K3DNC8K.

Models GWH09MB-K3DNC1K and GWH09MB-K3DNC8K are all the same as original model GWH09MB-K3DNA3K except for the appearance of indoor unit display panel. Details see attachment I.

Models GWH12MB-K3DNC1K and GWH12MB-K3DNC8K are all the same as original model GWH12MB-K3DNA3K except for the appearance of indoor unit display panel. Details see attachment I.

There are two colours for indoor unit display panels of models GWH09MB-K3DNC8K and GWH12MB-K3DNC8K, Details see attachment I.

2, Added outdoor fan motor, Y1 capacitor as alternative ones, details see the components in bold in table 24.1.

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):		—
	- 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):		—
	- 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		N/A
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 I_s between the output terminals after output voltage adjusted to appropriate test voltage (IEC 60335-1/A1)		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 I _r . Values of I _s and I _r given in table 5 for various high-voltage sources (IEC 60335-1/A1)		P
	No breakdown during the tests	(See appended table)	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).....:	(See appended table)	P
	Temperature of enclosure does not exceed (°C) (IEC 60335-2-40).....:	(See appended table)	P
	Temperature of the windings does not exceed the values shown in the table ; temperature (°C) (IEC 60335-2-40).....:	(See appended table)	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

24	COMPONENTS		—
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components	(See appended table)	P
	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

IEC 60335-2-40			
Clause	Requirement + Test	Result	Verdict
	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)		N/A
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, complying with IEC 60384-14, 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
	- 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		N/A
	- manual reset thermal motor-protectors for hermetic and semi-hermetic type motor-compressors (IEC 60335-2-40): 50		N/A

IEC 60335-2-40			
Clause	Requirement + Test	Result	Verdict
	- other automatic thermal motor-protectors (IEC 60335-2-40): 2000	Protector for fan motors	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)		P
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		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		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

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Clause	Requirement + Test	Result	Verdict
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 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)		P
	For motor-compressor not complying with IEC 60335-2-34, additions and modifications as specified (IEC 60335-2-40)		N/A
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

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Clause	Requirement + Test	Result	Verdict
	Impulse voltage test not applicable (IEC 60335-1/A1):		—
	- when the microenvironment is pollution degree 3 (IEC 60335-1/A1)		P
	- 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 overvoltage, 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
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

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Clause	Requirement + Test	Result	Verdict
	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	For PCB of indoor unit only	P
	precautions taken to protect the insulation; pollution degree 1		N/A
	insulation subjected to conductive pollution; pollution degree 3	For parts except PCB of indoor unit	P
	Compliance is checked by inspection and measurements as specified		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)	For PCB of indoor unit only	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		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

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

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Clause	Requirement + Test	Result	Verdict
	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
30.2	Parts of non-metallic material adequately resistant to ignition and spread of fire		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

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Clause	Requirement + Test	Result	Verdict
	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
	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:		—
	- 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		N/A
	- 650 °C, for other connections		N/A
	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)		P
	Test not carried out by specified items		N/A

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10.1	TABLE: Power input deviation					P
Input deviation of/at:	P rated (W)	P measured (W)	ΔP	Required ΔP	Remark	
230 V, 50 Hz	1300	1078,9	-17,0%	+15%	GWH09MB-K3DNC1K (Cooling mode)	
230 V, 50 Hz	1400	519,8	-62,9%	+15%	GWH09MB-K3DNC1K (Heating mode)	
230 V, 50 Hz	1400	1247,9	-10,9%	+15%	GWH12MB-K3DNC1K (Cooling mode)	
230 V, 50 Hz	1550	522,8	-66,3%	+15%	GWH12MB-K3DNC1K (Heating mode)	

Supplementary information:
The data listed in the table were the maximum measured values for the test samples assembled with all alternative fan motors.

11.8	TABLE: Heating test, thermocouples (GWH09MB-K3DNC1K)			P
	Tested voltage	240 V x 1,06 = 254,4 V		—
	Ambient, t (°C)	Cooling mode: Indoor: DB: 32, WB: 23; Outdoor: DB: 43, WB: 26 Heating mode: Indoor: DB: 27, WB: - Outdoor: DB: 24, WB: 18		—
Thermocouple locations		T (°C)		Max. T (°C)
		Cooling	Heating	
Indoor unit				
Power cord		39,0	33,4	75
Plastic enclosure		31,8	27,2	For clause 30.1
Terminal block		33,5	27,9	85
Swing motor		33,5	35,1	90 (Class A)
Indoor fan motor enclosure		40,6	36,2	105 (Class E)
Main PCB		34,2	30,2	145
High frequency transformer		43,9	41,2	105 (Class E)
Fan motor running capacitor		37,9	33,4	T70
Relay for compressor		36,8	33,0	T50
Relay for fan motor		37,2	33,1	T85
Outdoor unit				
Interconnection cord		43,3	24,1	75
Terminal block		44,0	24,4	85
Lead wiring for compressor		57,4	34,1	75
Compressor housing		86,8	61,5	For reference
Discharge pipe of compressor		89,0	62,2	For reference

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Outdoor fan motor winding (FW30J-ZL NIDEC SHIBAURA)	71,2	23,3	105 (Class E)
4-way valve winding	58,7	73,0	110 (Class B)
Reactor winding	51,9	30,4	165 (Class H)
Main PCB	47,6	26,9	145
X capacitor	47,2	23,5	T100
Varistor	42,8	26,4	T85
High frequency transformer	53,7	31,8	105 (Class E)
Relay on main board	51,4	27,3	T70
Test floor	47,3	20,8	90
Supplementary information: —			

11.8	TABLE: Heating test, thermocouples (GWH12MB-K3DNC1K)		P
	Tested voltage	240 V x 1,06 = 254,4 V	—
	Ambient, t (°C)	Cooling mode: Indoor: DB: 32, WB: 23; Outdoor: DB: 43, WB: 26 Heating mode: Indoor: DB: 27, WB: - Outdoor: DB: 24, WB: 18	—
Thermocouple locations	T (°C)		Max. T (°C)
	Cooling	Heating	
Indoor unit			
Power cord	32,2	28,2	75
Plastic enclosure	33,2	28,2	For clause 30.1
Terminal block	32,7	28,7	85
Swing motor	37,4	27,9	90 (Class A)
Indoor fan motor enclosure	40,3	37,1	105 (Class E)
Main PCB	32,3	28,6	145
High frequency transformer	43,6	41,2	105 (Class E)
Fan motor running capacitor	36,1	29,6	T70
Outdoor unit			
Terminal block	37,2	22,7	85
Lead wiring for compressor	51,0	30,3	75
Compressor housing	87,5	63,2	For reference
Discharge pipe of compressor	86,6	61,8	For reference
Outdoor fan motor winding (FW30J-ZL Panasonic)	55,0	23,5	105 (Class E)
Outdoor fan motor winding (FW30J-ZL Shinano)	56,9	25,3	105 (Class E)
4-way valve winding	51,3	73,4	110 (Class B)

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Main PCB	50,4	27,5	145
High frequency transformer	59,0	32,9	105 (Class E)
Relay on main board	50,9	28,3	T70
Test floor	48,8	22,4	90
Supplementary information: the recorded values are the max value of alternative fan motor			

13.2	TABLE: Leakage current		P
	Heating appliances: 1,15 x rated power 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)
For model GWH09MB-K3DNC1K			
L/N and earthed metal enclosure		0,37	3,5
L/N and plastic enclosure of indoor unit		0,08	0,25
L/N and plastic handle of outdoor unit		0,08	0,25
For model GWH12MB-K3DNC1K			
L/N and earthed metal enclosure		0,38	3,5
L/N and plastic enclosure of indoor unit		0,09	0,25
L/N and plastic handle of outdoor unit		0,08	0,25
Supplementary information: The data listed in the table were the maximum measured values for the samples assembled with all alternative fan motors.			

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 on display board and insulation cover of display board		1750	No
L/N and surface of display panel		3000	No
Supplementary information: The data listed in the table were the maximum measured values for the samples assembled with all alternative fan motors.			

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19.2	TABLE: Abnormal operation			P
	Tested voltage		240 V	—
	t ₁ (°C).....:		23,0	—
	t ₂ (°C).....:		23,0	—
Temperature T of part / at:		T (°C)	Required T (°C)	
Outdoor fan motor winding (FW30J-ZL Panasonic)		93,8	165 (class E)	
fan motor enclosure (FW30J-ZL Panasonic)		85,6	150	
Outdoor fan motor winding (FW30J-ZL Shinano)		28,8	165 (class E)	
fan motor enclosure (FW30J-ZL Shinano)		27,5	150	
Outdoor fan motor winding (FW30J-ZL NIDEC SHIBAURA)		98,6	165 (class E)	
fan motor enclosure (FW30J-ZL NIDEC SHIBAURA)		91,5	150	
Remark: —				

24.1	TABLE: Components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity	
Indoor unit						
Plug	Guangdong Huasheng Electrical Appliances Co., Ltd.	CT-104	AC 250 V, 16 A	DIN VDE 0620-1: 2010-02	VDE 40006002	
Plug (Alternative)	Changzhou Hong Chang Electronics Co., Ltd.	DTIII-2P-05	AC 250 V, 16 A	DIN VDE 0620-1: 2010-02	VDE 40015536	
Power cord	Guangdong Huasheng Electrical Appliances Co., Ltd.	H05VV-F	3G 1,5 mm ²	DIN VDE 0281-5: 2002-09	VDE 40005362	
Power cord (Alternative)	Changzhou Hong Chang Electronics Co., Ltd.	H05VV-F	3G 1,5 mm ²	DIN VDE 0281-5: 2002-09	VDE 124978	

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<p>Power cord (Alternative for models GWH09MB-K3DNA2K, GWH12MB-K3DNA2K, GWH09MB-K3DNA5K, GWH12MB-K3DNA5K, GWH09MB-K3DNB3K, GWH09MB-K3DNE1K, GWH09MB-K3DNC9K, GWH09MB-K3DNA4K, GWH12MB-K3DNB3K, GWH12MB-K3DNE1K, GWH12MB-K3DNC9K, GWH12MB-K3DNA4K)</p>	<p>Guangdong Huasheng Electrical Appliances Co., Ltd.</p>	<p>H05VV-F</p>	<p>3G 1,0 mm²</p>	<p>DIN VDE 0281-5: 2002-09</p>	<p>VDE 40005362</p>
<p>Power cord (Alternative for models GWH09MB-K3DNE2K, GWH09MB-K3DNE3K, GWH12MB-K3DNE2K, GWH12MB-K3DNE3K)</p>	<p>Guangdong Huasheng Electrical Appliances Co., Ltd.</p>	<p>H05VV-F</p>	<p>3G 1,0 mm²</p>	<p>DIN VDE 0281-5: 2002-09</p>	<p>VDE 40005362</p>
<p>Power cord (Alternative for models GWH09MB-K3DNB7K, GWH09MB-K3DNC5K, GWH12MB-K3DNB7K, GWH12MB-K3DNC5K)</p>	<p>Guangdong Huasheng Electrical Appliances Co., Ltd.</p>	<p>H05VV-F</p>	<p>3G 1,0 mm²</p>	<p>DIN VDE 0281-5: 2002-09</p>	<p>VDE 40005362</p>
<p>Terminal block</p>	<p>Changzhou Changheng Kaidu Electric Appliances Co., Ltd.</p>	<p>JX-G-4C</p>	<p>AC 250 V, 2,5 mm²</p>	<p>EN 60998-1: 2004; EN 60998-2-1: 2004; EN 60335-2-40; EN 60335-1</p>	<p>Tested with appliance VDE 40020936</p>

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Terminal block (Alternative)	Zhen jiang Honglian Electrician Co., Ltd.	JX1239	AC 250 V, 2,5 mm ²	EN 60335-2-40; EN 60335-1	Tested with appliance
Terminal block (Alternative)	Nantong Huaguan Electric Co., Ltd.	JXW-4-G1	AC 250 V, 2,5 mm ²	EN 60998-1: 2004; EN 60998-2-1: 2004; EN 60335-2-40; EN 60335-1	Tested with appliance VDE 40013197
Swing motor	Changzhou LeiLi Electrical Equipment Co., Ltd.	MP24AA	12 VDC, Class A	EN 60335-2-40; EN 60335-1	Tested with appliance
Swing motor (Alternative)	Jiangsu Huayang Electrical Appliance Co., Ltd.	MP24AA	12 VDC, Class A	EN 60335-2-40; EN 60335-1	Tested with appliance
Swing motor (Alternative)	Changzhou Oukai Electrical Appliance Co., Ltd.	MP24AA	12 VDC, Class A	EN 60335-2-40; EN 60335-1	Tested with appliance
Swing motor (Alternative)	Hefei Rishang Electrical Co., Ltd.	MP24AA	12 VDC, Class A	EN 60335-2-40; EN 60335-1	Tested with appliance
Swing motor (Alternative)	Zhongshan Huilipu Motor Co., Ltd.	MP24AA	12 VDC, Class A	EN 60335-2-40; EN 60335-1	Tested with appliance
Indoor fan motor	Jiangsu Shangqi Group Co., Ltd.	FN20J-PG	220-240 V, 50 Hz, 20 W, Class E	EN 60335-2-40; EN 60335-1	Tested with appliance
Indoor fan motor (Alternative)	Zhongshan Broad-Ocean Motor Co., Ltd.	FN20J-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 Manufacture Co., Ltd.	FN20J-PG	220-240 V, 50 Hz, 20 W, Class E	EN 60335-2-40; EN 60335-1	Tested with appliance
Indoor fan motor (Alternative)	Changzhou Regal-Beloit Sinya Motor Co., Ltd.	FN20J-PG	220-240 V, 50 Hz, 20 W, Class E	EN 60335-2-40; EN 60335-1	Tested with appliance
Indoor fan motor (Alternative)	Zhejiang Wolong Home Appliance Motor Co., Ltd.	FN20J-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 City Tongde Electric Equipment Co., Ltd.	FN20J-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 Series	AC 250 V, 5 A, Operation: 100 °C	EN 60730-1; EN 60730-2-2	VDE 132813

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Motor protector (Alternative)	Changzhou Changhong Tongli Electric Appliance Co., Ltd.	KW Series	AC 250 V, 8 A, Operation: 100 °C	EN 60730-1; EN 60730-2-2	VDE 40020906
Motor protector (Alternative)	Sensata Technologies Holland B.V.	BRL Series	AC 250 V, 8 A; Operation: 100 °C	EN 60730-1; EN 60730-2-2	KEMA 2089558.01
Main board for models other than GWH12MB-K3DND8D, GWH09MB-K3DND8D	Gree Electric Appliances, Inc. of Zhuhai	M839F2PJ	—	EN 60335-2-40; EN 60335-1	Tested with appliance
- Indoor fan motor running capacitor	Wuxi Xixi Capacitor Co., Ltd.	CBB61	AC 500 V, 1,0 uF, T70	EN 60252-1: 2001	TUV R50128479
- Indoor fan motor running capacitor (Alternative)	Zhuhai Gree Xinyuan Electronic Co., Ltd.	CBB61	AC 500 V, 1,0 uF, T70	EN 60252-1: 2001	TUV R50120798
- Indoor fan motor running capacitor (Alternative)	Xiamen Faratronic Co., Ltd.	CBB61	AC 500 V, 1,0 uF, T70	EN 60252-1: 2001	VDE 40004094
- Indoor fan motor running capacitor (Alternative)	Ningbo Shine Electronical Co., Ltd.	CBB61A	AC 500 V, 1,0 uF, T70	EN 60252-1: 2001	TUV R50065558
- Indoor fan motor running capacitor (Alternative)	AnHui FeiDa Industry Stock Co., Ltd.	CBB61	AC 450 V, 1 uF, T85	EN 60252-1: 2001	VDE 40012579
- Indoor fan motor running capacitor (Alternative)	Shanghai Haoye Capacitors Co., Ltd.	MKNS105	AC 450 V, 1,0 uF, T70	EN 60252-1: 2001	TUV R50035566
- Indoor fan motor running capacitor (Alternative)	Foshan Shunde Fongming Electronic Tech. Co., Ltd.	CBB61	AC 450 V, 1,0 uF, T70	EN 60252-1: 2001	VDE 40006835
Main board for models GWH12MB-K3DND8D, GWH09MB-K3DND8D	Gree Electric Appliances, Inc. of Zhuhai	M839F2GJ	—	EN 60335-2-40; EN 60335-1	Tested with appliance

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- Indoor fan motor running capacitor	Ningbo Shine Electrical Co., Ltd.	CBB61S	AC 450 V, 1,0 uF, T70	EN 60252-1: 2001	TUV R50076953
- Indoor fan motor running capacitor (Alternative)	Shanghai Haoye Capacitors Co., Ltd.	MKPS105	AC 450 V, 1,0 uF, T70	EN 60252-1: 2001	TUV R50035566
X2 capacitor 1#	Xiamen Faratronic Co., Ltd.	MKP62	AC 275 V, 104M, T110	EN 132400 EN 60384-14	VDE 40000358
X2 capacitor 1# (Alternative)	OKAYA Electric Industries Co., Ltd.	LE104	AC 275 V, 0,1 uF, T100	EN 132400 EN 60384-14	SEMKO SE/0142-1
X2 capacitor 1# (Alternative)	Anhui Xinyang electronics Co., Ltd.	MKP	AC 275 V, 0,1 uF, T100	EN 60384-14: 2005-08	VDE 40024537
X2 Capacitor 2#	Xiamen Faratronic Co., Ltd.	MKP62	AC 275 V, 105K, T110	EN 132400; EN 60384-14	VDE 40000358
X2 Capacitor 2# (Alternative)	Pilkor Electronics Co., Ltd.	PCX2 335M	AC 275 V, 1,0 uF, T85	EN 132400; EN 60384-14	SEMKO SE/0256-2
X2 Capacitor 2# (Alternative)	Anhui Xinyang Electronics Co., Ltd.	MKP	AC 275 V, 1,0 uF, T100	EN 60384-14: 2005-08	VDE 40024537
Varistor	Chengdu Tieda Electroni Co., Ltd.	MYN15-621K	AC 385 V, T85	IEC 61051-1 IEC 61051-2 IEC 61051-2-2 CECC 42000/A1 CECC 42200/A1 CECC 42201/A1	VDE 40008571
Varistor (Alternative)	Xianhua Advanced Technology Holding) Co., Ltd.	FNR-14K621	AC 380 V, T85	IEC 61051-1 IEC 61051-2 IEC 61051-2-2 CECC 42000 CECC 42200 CECC 42201	VDE 40008242
Optocoupler 1#	Toshiba Corporation	TLP781	Vceo: 80 V; If: 60 mA; Ic: 50 mA	DIN EN 60747-5-2: 2003	VDE 40021173
Optocoupler 2#	Sharp Corporation	PC817	Vceo: 80 V; If: 50 mA; Ic: 50 mA	DIN EN 60747-5-2: 2003	VDE 40008087
High frequency transformer	Xinji Electronics Component (HangZhou) Co., Ltd.	EE25-9PA	Input: 80 V-260 V, 65KHz, 1,26Ω; Output: 18 V, 100 mA; 12 V 500 mA; 5 V, 500 mA; Class E	EN 60335-2-40; EN 60335-1	Tested with appliance
High-frequency transformer (Alternative)	Huizhou Jiayang Electronic New-tech Co., Ltd.	EE25-9PA	Input: 85 V-265 V, 65 KHz, 1,26Ω; Output: 18 V, 100 mA; 12 V, 500 mA; 5 V, 500 mA; Class B	EN 60335-2-40; EN 60335-1	Tested with appliance

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High-frequency transformer (Alternative)	Dongguan Dazhong Electronic Co., Ltd.	EE25-9PA	Input: 85 V-265 V, 65 KHz, 1,26Ω; Output: 18 V, 100 mA; 12 V, 500 mA; 5 V, 500 mA; Class B	EN 60335-2-40; EN 60335-1	Tested with appliance
High-frequency transformer (Alternative)	Shenzhen Jingquanhua Electronic Co., Ltd.	EE25-9PA	Input: 85 V-265 V, 65 KHz, 1,26Ω; Output: 18 V, 100 mA; 12 V, 500 mA; 5 V, 500 mA; Class E	EN 60335-2-40; EN 60335-1	Tested with appliance
Inductance	Hangzhou Ruichuang Industry And Trade Co., Ltd.	200uH/2A	200 uH, 2 A	EN 60335-2-40; EN 60335-1	Tested with appliance
Inductance (Alternative)	Xinji Electronics Component (Hangzhou) Co., Ltd.	200uH/2A	200 uH, 2 A	EN 60335-2-40; EN 60335-1	Tested with appliance
Inductance (Alternative)	Shenzhen Yamaxi Electronic Co., Ltd.	T50-26	200 uH, 2 A	EN 60335-2-40; EN 60335-1	Tested with appliance
Inductance (Alternative)	Huizhou Jiayang Electronic New-tech Co., Ltd.	200uH/2A	200 uH, 2 A	EN 60335-2-40; EN 60335-1	Tested with appliance
Inductance (Alternative)	Fenghua Advanced Technology (Holding) Co., Ltd.	200uH/2A	200 uH, 2 A	EN 60335-2-40; EN 60335-1	Tested with appliance
Inductance (Alternative)	Dongguan Dazhong Electronic Co., Ltd.	200uH/2A	200 uH, 2 A	EN 60335-2-40; EN 60335-1	Tested with appliance
Filter	Xinji Electronics Component (Hangzhou) Co., Ltd.	SF2022A-05220	AC 250 V, 0,5 A	EN 60335-2-40; EN 60335-1	Tested with appliance
Filter (Alternative)	Shenzhen Yamaxi Electronic Co., Ltd.	SF2022A-05220	AC 250 V, 0,5 A	EN 60335-2-40; EN 60335-1	Tested with appliance
Filter (Alternative)	Dongguan Dazhong Electronic Co., Ltd.	SF2022A05220	AC 250 V, 0,5 A	EN 60335-2-40; EN 60335-1	Tested with appliance
Relay for compressor	Xiamen Hongfa Electroacoustic Co., Ltd.	JQX-102F	250 V~; 20 A; T85; DC 12 V; cycles: 10E4	EN 61810-1: 2004; IEC 61810-1: 2004	VDE 40024142
Relay for compressor (Alternative)	Omron Electronic Components (Shenzhen) Ltd.	G4A-1A-E-CN	250 V~; 20 A; T85; DC 12 V; cycles: 10E4	EN 61810-1: 2008	TUV R50214482
Relay for compressor (Alternative)	Omron Corporation	G4A-1A-E-CN	250 V~; 20 A; T50; DC 12 V; cycles: 10E4	EN 61810-1 EN 60255-23	VDE 107293

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Relay for compressor (Alternative)	Dongguan Sanyou Electrical Appliances Co., Ltd.	SFK-112DM	250 V~; 20 A; T85; DC 12 V; cycles: 10E4	EN 61810-1: 2004 IEC 61810-1: 2004	VDE 40007481
Relay for compressor (Alternative)	Songchuan Precision Co., Ltd.	891WP-1A-C	250 V~; 25 A; T85; DC 12 V; cycles: 10E4	EN 61810-1: 2004	TÜV R3-50003966
Relay for compressor (Alternative)	Tyco Electronics (Shenzhen) Co. Ltd.	EF00-1A2-D012-F	250 V~; 20 A; T85; DC 12 V; cycles: 10E4	EN 61810-1: 2004; IEC 61810-1: 2003	TUV R50117320
Relay for indoor fan motor	Xiamen Hongfa Electroacoustic Co., Ltd.	JZC-43F	250 VAC, 3 A, 12 VDC, cycles: 10E4, T85	EN 61810-1 EN 60255-23	VDE 40002220
Relay for indoor fan motor (Alternative)	Omron Corporation	G5NB-1A	250 VAC, 3 A, 12 VDC, cycles: 10E4, T85	EN 61810-1 EN 60255-23	VDE 137575
Relay for indoor fan motor (Alternative)	Dongguan Sanyou Electrical Appliances Co., Ltd.	SRB-S-112DM	277 VAC, 5 A, 12 VDC, cycles: 10E4, T85	EN 61810-1: 2004	TUV R50138320
Relay for indoor fan motor (Alternative)	Songchuan Precision Co., Ltd.	202N-1AC-C	250 VAC, 5 A, 12 VDC, cycles: 3E4, T85	EN 61810-1 EN 60255-23	VDE 40008369
Relay for indoor fan motor (Alternative)	Tyco Electronics (Shenzhen) Co., Ltd.	PCJ-112D3M	250 VAC, 3 A, 12 VDC, cycles: 10E4, T90	EN 61810-1 EN 60255-23	VDE 40009151
Optical isolator	Panasonic Electric Works Co., Ltd.	AQH2223	250 VAC, 0,9A, T85	EN 60950: 2000	VDE 40004928
Fuse link	Hollyland Company Limited	50T	AC 250 V, T 3,15 AL	EN 60127-1: 1991+A1+A2; EN 60127-2: 2003+A1	VDE 40014460
Fuse link (Alternative)	Suzhou Walter Electronic Co., Ltd.	TSD	AC 250 V, T 3,15 AL	EN 60127-1: 1991+A1+A2; EN 60127-2: 2003+A1	VDE 40016851
Rectifier	Shindengen Electric MFG Co., Ltd.	NC 80	AC 600 V, 1,5 A	EN 60335-2-40; EN 60335-1	Tested with appliance
PCB 1#	CHANG CHUN PLASTICS CO LTD	CCP-508U	CEM-1, 94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E108591
PCB 1# (Alternative)	SHENGYI TECHNOLOGY CO LTD	S3116	CEM-1, 94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E109769
PCB 1# (Alternative)	SHENGYI TECHNOLOGY CO LTD	S1141	FR-4, 94V-0	EN 60335-2-40; EN 60335-1	Tested with appliance UL E109769
PCB 1# (Alternative)	SHENGYI TECHNOLOGY CO LTD	S3110	CEM-1, 94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E109769
PCB 1# (Alternative)	KINGBOARD LAMINATES LTD	KB3151C	FR-1, 94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E123995

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PCB 2#	SHENGYI TECHNOLOGY CO LTD	S2130	CEM-3, 94V-0	EN 60335-2-40; EN 60335-1	Tested with appliance UL E109769
PCB 2# (Alternative)	KINGBOARD LAMINATES LTD	KB6160	FR-4, 94V-0	EN 60335-2-40; EN 60335-1	Tested with appliance UL E123995
PCB 2# (Alternative)	SHENGYI TECHNOLOGY CO LTD	S1141	FR-4, 94V-0	EN 60335-2-40; EN 60335-1	Tested with appliance UL E109769
PCB 2# (Alternative)	NAN YA PLASTICS CORP CCL DEPT ELECTRONIC MATERIAL DIV	FR-4-86	FR-4, 94V-0	EN 60335-2-40; EN 60335-1	Tested with appliance UL E98983(S)
Cold plasma generator	Shandong Xuesheng Technology Co., Ltd.	XS-PL-06	AC 220-240 V, 50/60 Hz, ≤ 2 W	EN 60335-1 EN 60335-2-65	TUV R50172899
Outdoor unit					
Interconnection cord	Guangdong Huasheng Electrical Appliances Co., Ltd.	H07RN-F	4G 1,5 mm ²	DIN VDE 0282-4: 2005-02	VDE 40016788
Interconnection cord (Alternative for models GWH09MB-K3DNA2K, GWH12MB-K3DNA2K, GWH09MB-K3DNA5K, GWH12MB-K3DNA5K, GWH09MB-K3DNB3K, GWH09MB-K3DNE1K, GWH09MB-K3DNC9K, GWH09MB-K3DNA4K, GWH12MB-K3DNB3K, GWH12MB-K3DNE1K, GWH12MB-K3DNC9K, GWH12MB-K3DNA4K)	Guangdong Huasheng Electrical Appliances Co., Ltd.	H07RN-F	4G 1,0 mm ²	DIN VDE 0282-4: 2005-02	VDE 40016788

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Interconnection cord (Alternative for models GWH09MB-K3DNE2K, GWH09MB-K3DNE3K, GWH12MB-K3DNE2K, GWH12MB-K3DNE3K)	Guangdong Huasheng Electrical Appliances Co., Ltd.	H07RN-F	4G 1,0 mm ²	DIN VDE 0282-4: 2005-02	VDE 40016788
Interconnection cord (Alternative for models GWH09MB-K3DNE2K, GWH09MB-K3DNE3K, GWH12MB-K3DNE2K, GWH12MB-K3DNE3K)	Guangdong Huasheng Electrical Appliances Co., Ltd.	H07RN-F	4G 1,0 mm ²	DIN VDE 0282-4: 2005-02	VDE 40016788
Compressor	Zhuhai Landa Compressor Co., Ltd.	QXA-A091zE190A	DC 260-350 V, 15-120 Hz, 3Phase, Class B, R410A	EN 60335-2-34: 2002+A11+A1+A2; EN 60335-1: 2002+A1+A11+A12+A2+A13+A14	TUV R50135262
Compressor protector	Sensata Technoloies (Baoying) Co., Ltd.	1NT11L-6233	AC 250 V, 100000 cycles; Open: (115±3)°C, Close: (95±5)°C	EN60730-2-9 EN60730-1	KEMA NO. 2014531.16
Compressor protector (Alternative)	Changzhou Changrong Electrical Appliance Co., Ltd.	HPC	AC 250 V, 5 A; 10000 cycles; Operation: 115°C; Reset: 95°C	EN 60730-2-9 EN 60730-1	VDE 40032296
Compressor protector (Alternative)	Jiangsu Changheng (Group) Control Devices & Products Co., Ltd.	KSD	AC 250 V, 10 A; 35000 cycles; Operation: 115°C; Reset: 95°C	EN 60730-2-9 EN 60730-1	VDE 40022995
Outdoor fan motor	Zhuhai Kaibang Motor Manufacture Co., Ltd.	FW30J-ZL	DC 176-375 V, 30 W, Class E	EN 60335-2-40 EN 60335-1	Tested with appliance
Outdoor fan motor (Alternative)	Dongguan Shinano Motor Co., Ltd.	FW30J-ZL	DC 310 V, 30 W, Class E	EN 60335-2-40 EN 60335-1	Tested with appliance
Outdoor fan motor (Alternative)	NIDEC SHIBAURA (Zhejiang) CORP	FW30J-ZL	310V,0,36A, 30W, Class E, 76Ω	EN 60335-2-40 EN 60335-1	Tested with appliance

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Outdoor fan motor (Alternative)	Panasonic Appliances Motor (Hangzhou) Co., Ltd.	FW30J-ZL	310V, 30W, Class E, 76Ω	EN 60335-2-40 EN 60335-1	Tested with appliance
Outdoor fan motor (Alternative)	Hefei Shinano Motor Co., LTD.	FW30J-ZL	310V, 30W, 0,13A, Class E, 76Ω	EN 60335-2-40 EN 60335-1	Tested with appliance
4-way valve	Zhejiang Duan Precision Industries Group Co., Ltd.	DSF-4-R410A	AC 220-240 V; 50/60 Hz; 7/5 W; Class B	EN 60730-1	VDE 40013212
4-way valve (Alternative)	Zhejiang Sanhua Climate and Appliance Controls Group Co., Ltd.	SHF-4H-23U-P	AC 220-240 V, 50/60 Hz, 4,5/3,5 W, Class B	EN 60730-1	VDE 40003240
Main board for models GWH09MB-K3DNA3K, GWH09MB-K3DND3K, GWH09MB-K3DNA2K, GWH09MB-K3DNA5K, GWH09MB-K3DNB3K, GWH09MB-K3DNE1K, GWH09MB-K3DNC9K, GWH09MB-K3DNA4K, GWH09MB-K3DNE2K, GWH09MB-K3DNE3K, GWH09MB-K3DND8D, GWH09MB-K3DNB7K, GWH09MB-K3DNC5K, GWH09MB-K3DNC1K, GWH09MB-K3DNC8K	Gree Electric Appliances, Inc. of Zhuhai	W8283BX	—	EN 60335-2-40 EN 60335-1	Tested with appliance

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Main board for models GWH12MB-K3DNA3K, GWH12MB-K3DND3K, GWH12MB-K3DNA2K, GWH12MB-K3DNA5K, GWH12MB-K3DNB3K, GWH12MB-K3DNE1K, GWH12MB-K3DNC9K, GWH12MB-K3DNA4K, GWH12MB-K3DNE2K, GWH12MB-K3DNE3K, GWH12MB-K3DND8D, GWH12MB-K3DNB7K, GWH12MB-K3DNC5K, GWH12MB-K3DNC1K, GWH12MB-K3DNC8K	Gree Electric Appliances, Inc. of Zhuhai	W8283BW	—	EN 60335-2-40 EN 60335-1	Tested with appliance
Y1 Capacitor	TDK-EPC Corporation, Capacitors Group	CD472M	AC 250 V, 472M, T70	EN 60384-14: 2005-08	VDE 40029780
Y1 Capacitor	Murata Mfg. Co., Ltd. (Headquarters)	KX472M	250VAC, 472M	EN 60384-14: 2005-08	VDE 40002831
Y2 Capacitor	TDK-EPC Corporation, Capacitors Group	CS472M	AC 250 V, 472M, T70	EN 60384-14: 2005-08	VDE 40029781
X2 capacitor 1#	Xiamen Faratronic Co., Ltd.	MKP62	AC 275 V, 104M, T110	EN 132400 EN 60384-14	VDE 40000358
X2 capacitor 1# (Alternative)	OKAYA Electric Industries Co., Ltd.	LE104	AC 275 V, 0,1 uF, T100	EN 132400 EN 60384-14	SEMKO SE/0142-1
X2 capacitor 1# (Alternative)	Anhui Xinyang electronics Co., Ltd.	MKP	AC 275 V, 0,1 uF, T100	EN 60384-14: 2005-08	VDE 40024537
X2 Capacitor 2#	Xiamen Faratronic Co., Ltd.	MKP62	AC 275 V, 105K, T110	EN 132400; EN 60384-14	VDE 40000358
X2 Capacitor 2# (Alternative)	Pilkor Electronics Co., Ltd.	PCX2 335M	AC 275 V, 1,0 uF, T85	EN 132400; EN 60384-14	SEMKO SE/0256-2

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X2 Capacitor 2# (Alternative)	Anhui Xinyang Electronics Co., Ltd.	MKP	AC 275 V, 1,0 uF, T100	EN 60384-14: 2005-08	VDE 40024537
PTC Resistance	Gaoli Electronic Branch of Huagong Tech Co., Ltd.	MZ8IV-B470N	R=47Ω±20%; Ts=120±10°C ; Umax=275VAC; Imax=8Arms	EN 60335-2-40 EN 60335-1	Tested with appliance
PTC Resistance (Alternative)	Dandong Guotong Electronic Components Co., Ltd.	MZ-47R-A	R=47(1±20%)	EN 60335-2-40 EN 60335-1	Tested with appliance
Varistor	Chengdu Tieda Electroni Co., Ltd.	MYN15-621K	AC 385 V, T85	IEC 61051-1 IEC 61051-2 IEC 61051-2-2 CECC 42000/A1 CECC 42200/A1 CECC 42201/A1	VDE 40008571
Varistor (Alternative)	Xianhua Advanced Technology Holding) Co., Ltd.	FNR-14K621	AC 380 V, T85	IEC 61051-1 IEC 61051-2 IEC 61051-2-2 CECC 42000 CECC 42200 CECC 42201	VDE 40008242
Optocoupler 1#	Toshiba Corporation	TLP781	Vceo: 80 V; If: 60 mA; Ic: 50 mA	DIN EN 60747-5-2: 2003	VDE 40021173
Optocoupler 2#	Sharp Corporation	PC817	Vceo: 80 V; If: 50 mA; Ic: 50 mA	DIN EN 60747-5-2: 2003	VDE 40008087
Optocoupler 3#	AVAGO TECHNOLOGIE S MANUFACTURING (SINGAPORE) PTE. LTD	HCPL-817	130%<CTR<260%; High input-output isolation voltage: 5000V; Vceo: 70V; If: 50mA; Ic: 50mA	DIN EN 60747-5-2: 2003-01	VDE 40016429
Relay on filter board	Xiamen Hongfa Electroacoustic Co., Ltd.	JQX-14FW	250 VAC, 16 A, DC 12 V, cycles:10E4, T70	EN 61810-1: 2008	VDE 40023508
Relay on filter board (Alternative)	Songchuan Precision Co., Ltd.	793-P-1A	250 VAC, 16 A, DC 12 V, cycles:10E4, T60	EN 61810-1 EN 61810-5 EN 60255-23	TÜV R50056914
Relay on filter board (Alternative)	Tyco Electronics (Shenzhen) Co., Ltd.	OZT-SS-112LM1	240 VAC, 16 A, DC 12 V, cycles:10E4, T60	EN 61810-1: 2004; IEC 61810-1: 2003	TÜV R50139112
Relay for 4-way valve	Xiamen Hongfa Electroacoustics Co., Ltd.	JZC-32F	250 VAC, 5 A, 12 VDC, cycles: 10E4, T70	EN 61810-1: 2004; IEC 61810-1: 2004	VDE 40012204
Relay for 4-way valve (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

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Relay for 4-way valve (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 for 4-way valve (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
Fuse link 1#	Walter Electronic Co., Ltd.	ICP	AC 250 V, T3, 15 AL	EN 60127-1; EN 60127-3	VDE 40012824
Fuse link 2#	Hollyland Co., Ltd.	65TS	AC 250 V, T15 AH	EN 60127-1; EN 60127-2	TUV J50136250
IPM 1#	MITSUBISHI ELECTRIC CORP SEMICONDUCTOR DIV	PS219A4-ASTX	Vces: 600 V; Ic: 15 A	EN 60335-2-40; EN 60335-1	Tested with appliance
IPM 2#	Toshiba Corporation	TPD4124K	Operation: 500 V, 2A; Fsw=20 KHz; Viso=1500 V	EN 60335-2-40; EN 60335-1	Tested with appliance
High frequency transformer	Xinji Electronics Component (HangZhou) Co., Ltd.	EE25-9PA	Input: 85 V-265 V, 65KHz, 1,26Ω; Output: 18 V, 100 mA; 12 V 500 mA; 5 V, 500 mA; Class E	EN 60335-2-40; EN 60335-1	Tested with appliance
High frequency transformer (Alternative)	Dongguan Dazhong Electronic Co., Ltd.	EE25-9PA	Input: 85 V-265 V, 65 KHz, 1,26Ω; Output: 18 V, 100 mA; 12 V, 500 mA; 5 V, 500 mA; Class B	EN 60335-2-40; EN 60335-1	Tested with appliance
High frequency transformer (Alternative)	Shenzhen Jingquanhua Electronic Co., Ltd.	EE25-9PA	Input: 85 V-265 V, 65 KHz, 1,26Ω; Output: 18 V, 100 mA; 12 V, 500 mA; 5 V, 500 mA; Class B	EN 60335-2-40; EN 60335-1	Tested with appliance
High-frequency transformer (Alternative)	Huizhou Jiayang Electronic New-tech Co., Ltd.	EE25-9PA	Input: 85 V-265 V, 65 KHz, 1,26Ω; Output: 18 V, 100 mA; 12 V, 500 mA; 5 V, 500 mA; Class E	EN 60335-2-40; EN 60335-1	Tested with appliance
Rectifier	Shanghai Microsemi Semiconductor Co., Ltd.	GBJ15J	AC 600 V, 15 A	EN 60335-2-40; EN 60335-1	Tested with appliance
Rectifier (Alternative)	Shindengen Electric MFG Co., Ltd.	D15XB 60	AC 600 V, 15 A	EN 60335-2-40; EN 60335-1	Tested with appliance

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Terminal block	Changzhou Changheng Kaidu Electric Appliance Co., Ltd.	JXD-3	AC 450 V, 2,5 mm ²	EN 60335-2-40; EN 60335-1	Tested with appliance
Terminal block (Alternative)	Nantong Huaguan Electric Co., Ltd.	JXW	AC 450 V, 2,5 mm ²	EN 60335-2-40; EN 60335-1	Tested with appliance
Reactor	QINGDAO YUNLU ENERGY TECHNOLOGY CO LTD	R 315D	8 mH, 10 A, Class H	EN 60335-2-40; EN 60335-1	Tested with appliance
Reactor (Alternative)	HUIZHOU JIAYANG ELECTRONIC NEW-TECH CO LTD	L8mH/10A	8 mH, 10 A, Class H	EN 60335-2-40; EN 60335-1	Tested with appliance
Reactor (Alternative)	SHANGHAI TABUCHI TRANSFORMER CO LTD	L8mH/10A	8 mH, 10 A, Class H	EN 60335-2-40; EN 60335-1	Tested with appliance
Reactor (Alternative)	HEFEI ECRIEE-TAMURA ELECTRIC CO LTD	L8mH/10A	8 mH, 10 A, Class H	EN 60335-2-40; EN 60335-1	Tested with appliance
Reactor (Alternative for models GWH09MB-K3DNA4K, GWH09MB-K3DNA5K, GWH09MB-K3DNA3K, GWH09MB-K3DNB7K, GWH09MB-K3DNC5K, GWH09MB-K3DNC1K, GWH09MB-K3DNC8K, GWH12MB-K3DNA5K, GWH12MB-K3DNA3K, GWH12MB-K3DNB7K, GWH12MB-K3DNC5K, GWH12MB-K3DNC1K, GWH12MB-K3DNC8K)	Zhuhai Kaibang Motor Manufacturing Co., Ltd.	L8mH/10A	8 mH, 10 A, Class H	EN 60335-2-40; EN 60335-1	Tested with appliance

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PCB 1#	CHANG CHUN PLASTICS CO LTD	CCP-508U	CEM-1, 94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E108591
PCB 1# (Alternative)	SHENGYI TECHNOLOGY CO LTD	S3116	CEM-1, 94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E109769
PCB 1# (Alternative)	SHENGYI TECHNOLOGY CO LTD	S1141	FR-4, 94V-0	EN 60335-2-40; EN 60335-1	Tested with appliance UL E109769
PCB 1# (Alternative)	SHENGYI TECHNOLOGY CO LTD	S3110	CEM-1, 94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E109769
PCB 1# (Alternative)	KINGBOARD LAMINATES LTD	KB3151C	FR-1, 94V-0	EN 60335-2-40 EN 60335-1	Tested with appliance UL E123995
PCB 2#	SHENGYI TECHNOLOGY CO LTD	S2130	CEM-3, 94V-0	EN 60335-2-40; EN 60335-1	Tested with appliance UL E109769
PCB 2# (Alternative)	KINGBOARD LAMINATES LTD	KB6160	FR-4, 94V-0	EN 60335-2-40; EN 60335-1	Tested with appliance UL E123995
PCB 2# (Alternative)	SHENGYI TECHNOLOGY CO LTD	S1141	FR-4, 94V-0	EN 60335-2-40; EN 60335-1	Tested with appliance UL E109769
PCB 2# (Alternative)	NAN YA PLASTICS CORP CCL DEPT ELECTRONIC MATERIAL DIV	FR-4-86	FR-4, 94V-0	EN 60335-2-40; EN 60335-1	Tested with appliance UL E98983(S)
Chassis electrical heater for models GWH09MB-K3DNA4K, GWH09MB-K3DNA5K, GWH12MB-K3DNA4K, GWH12MB-K3DNA5K	Zhenjiang Dongfang Electric Heating Technology Co., Ltd.	DYQ-02-I-230	AC 230 V, 72 W	EN 60335-2-40; EN 60335-1	Tested with appliance

¹⁾ An asterisk indicates a mark which assures the agreed level of surveillance

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29.1	TABLE: Clearances					P
	Overvoltage category.....:	II				
Rated impulse voltage (V)	Min. cl (mm)	Type of insulation:				Verdict / Remark
		Basic	Functional	Supplementary	Reinforced	
330	0,5 ¹⁾	—	—	—	—	N/A
500	0,5 ¹⁾	—	—	—	—	N/A
800	0,5 ¹⁾	—	—	—	—	N/A
1500	0,5 ^{1), 2)}	—	—	—	—	N/A
2500	1,5²⁾	B1	—	—	—	P
4000	3,0 ²⁾	—	—	—	—	N/A
6000	5,5 ²⁾	—	—	—	—	N/A
8000	8,0 ²⁾	—	—	—	—	N/A
10000	11,0 ²⁾	—	—	—	—	N/A

¹⁾ Value is increased to 0,8 mm for pollution degree 3
²⁾ If the construction is affected by wear, by distortion, by movement of the parts or during assembly, the value is increased by 0,5 mm

supplementary information:
B1: Between motor winding and metal enclosure for all outdoor fan motor: min. 3,2 mm;

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29.2	TABLE: Creepage distances, basic, supplementary and reinforced insulation										P
Working voltage (V)	Creepage distance (mm) Pollution degree										Verdict
	1	2			3			Type of insulation			
Material group			Material group			B ^{*)}	S ^{*)}	R ^{*)}			
I		II	IIIa/IIIb	I	II				IIIa/IIIb		
≤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		—	—	N/A
>125 and ≤250	0,6	1,3	1,8	2,5	3,2	3,6	2,0 (for motor winding only)	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
supplementary information:
B1: Between motor winding and metal enclosure for all outdoor fan motor: min. 3,2 mm

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30 TABLE: RESISTANCE 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		
Fan motor bobbin	NIDEC SHIBAURA (Zhejiang) CORP	FW30J-ZL	—	—	—	—	—	X	—	—	—	—	—	P
Fan motor bobbin	Panasonic Appliances Motor (Hangzhou) Co., Ltd.	FW30J-ZL	—	—	—	—	—	X	—	—	—	—	—	P
Fan motor bobbin	Hefei Shinano Motor Co., LTD.	FW30J-ZL	—	—	—	—	—	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---

Photo documentation

Type of equipment,
model:

Split-Type Air-conditioner
 GWH09MB-K3DNA3K (Indoor unit: GWH09MB-K3DNA3K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DND3K (Indoor unit: GWH09MB-K3DND3K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNA2K (Indoor unit: GWH09MB-K3DNA2K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNA5K (Indoor unit: GWH09MB-K3DNA5K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DND8D (Indoor unit: GWH09MB-K3DND8D/I, Outdoor unit: GWH09MB-K3DND8D/O);
 GWH09MB-K3DNB3K (Indoor unit: GWH09MB-K3DNB3K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNE1K (Indoor unit: GWH09MB-K3DNE1K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNC9K (Indoor unit: GWH09MB-K3DNC9K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNA4K (Indoor unit: GWH09MB-K3DNA4K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNE2K (Indoor unit: GWH09MB-K3DNE2K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNE3K (Indoor unit: GWH09MB-K3DNE3K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNB7K (Indoor unit: GWH09MB-K3DNB7K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNC5K (Indoor unit: GWH09MB-K3DNC5K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNC1K (Indoor unit: GWH09MB-K3DNC1K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH09MB-K3DNC8K (Indoor unit: GWH09MB-K3DNC8K/I, Outdoor unit: GWH09MB-K3DNA3K/O);
 GWH12MB-K3DNA3K (Indoor unit: GWH12MB-K3DNA3K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DND3K (Indoor unit: GWH12MB-K3DND3K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNA2K (Indoor unit: GWH12MB-K3DNA2K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNA5K (Indoor unit: GWH12MB-K3DNA5K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DND8D (Indoor unit: GWH12MB-K3DND8D/I, Outdoor unit: GWH12MB-K3DND8D/O);
 GWH12MB-K3DNB3K (Indoor unit: GWH12MB-K3DNB3K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNE1K (Indoor unit: GWH12MB-K3DNE1K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNC9K (Indoor unit: GWH12MB-K3DNC9K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNA4K (Indoor unit: GWH12MB-K3DNA4K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNE2K (Indoor unit: GWH12MB-K3DNE2K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNE3K (Indoor unit: GWH12MB-K3DNE3K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNB7K (Indoor unit: GWH12MB-K3DNB7K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNC5K (Indoor unit: GWH12MB-K3DNC5K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNC1K (Indoor unit: GWH12MB-K3DNC1K/I, Outdoor unit: GWH12MB-K3DNA3K/O);
 GWH12MB-K3DNC8K (Indoor unit: GWH12MB-K3DNC8K/I, Outdoor unit: GWH12MB-K3DNA3K/O)

Details of: Display panel for GWH09MB-K3DNC1K and GWH12MB-K3DNC1K



Details of: Display panel for GWH09MB-K3DNC8K and GWH12MB-K3DNC8K

