



Ref. Certif. No.

JPTUV-011923-M1

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

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

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product
Produit

Room air conditioner indoor unit

Name and address of the applicant
Nom et adresse du demandeur

Electra Consumer Products
21 Aminadav St., Tel-Aviv
67067, Israel

Name and address of the manufacturer
Nom et adresse du fabricant

Electra Consumer Products
21 Aminadav St., Tel-Aviv
67067, Israel

Name and address of the factory
Nom et adresse de l'usine

See additional page(s)

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

AC 220-230V; 50Hz; Class I
Rated Power input: refer to test report
IP20 (Indoor unit only)
Refrigerant: R22, R407C, R410A
ELECTRA

Trade mark (if any)
Marque de fabrique (si elle existe)

KN series

Model/type Ref.
Ref. de type

For model differences, refer to the test report.
Re-issue of JPTUV-011923 dated 05.09.2005,
due to first modification.

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

A sample of the product was tested and found
to be in conformity with
Un échantillon de ce produit a été essayé et a été
considéré conforme à la

IEC 60335-2-40:1995+A1
IEC 60335-1:1991+A1+A2

As shown in the Test Report Ref. No. which forms part
of this Certificate
Comme indiqué dans le Rapport d'essais numéro de
référence qui constitue une partie de ce Certificat

12011246 002

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



TÜV Rheinland Group

TÜV Rheinland Japan Ltd.
German Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku
Yokohama 224-0021 Japan
Phone + 81 45 470-3888
Fax + 81 45 470-5221
Mail: info@jpn.tuv.com
Web: www.tuv.com

Signature:

Dipl. Ing. M. Glagla

Date: 19.03.2007



Ref. Certif. No.

Appendix to CB Certificate JPTUV-011923-M1
Report Number: 12011246 002

PAGE 1 OF 1

Name and address of the manufacturer
Electra Consumer Products
21 Aminadav St., Tel-Aviv
67067
Israel

Name and address of the factory(ies)
Electra Air-conditioning (Shenzhen) Co., Ltd.


2 WUHE AVENUE S.,
BANTIAN, BUJI
Shenzhen, Guangdong, P.R. China

Electra Consumer Products Ltd.

Sapir 1, Rishon Lezion
75704
Israel

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

Date: 19.03.2007


Dipl. Ing. M. Glagla


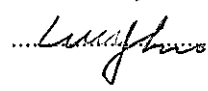
Date:

Signature:

TEST REPORT

IEC 60335-2-40

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

Report Reference No.....	12011246 002		
Compiled by (+ signature)	Leon Tan		
Approved by (+ signature)	Lucy Luo		
Contents.....	18 Pages		
Date of issue.....	2007-01-15		
CB Testing laboratory Name	TÜV Rheinland (Guangdong) Ltd.		
Address.....	43/F, Metro Plaza, 183 Tianhe Rd. North, Guangzhou 510620, P. R. China		
Testing location/procedure.....	CBTL <input checked="" type="checkbox"/>	SMT <input type="checkbox"/>	TMP <input type="checkbox"/>
Address.....	Unit C-101, No.11 Caipin Road, GZ Science City, Guangzhou 510663 P. R. China		
Applicant's Name.....	ELECTRA CONSUMER PRODUCTS		
Address.....	21 Aminadav St, Tel-Aviv, 67067 Israel		
Test specification			
Standard	IEC 60335-2-40:1995 + A1:2000 used in conjunction with IEC 60335-1:1991 + A1:1994 + A2:1999		
Test procedure	CB		
Non-standard test method.....	N.A.		
Test Report Form No.....	IEC60335_2_40C		
TRF originator.....	AENOR		
Master TRF	Dated 2002-02		
Copyright © 2002 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.			
Test item description	Air conditioner indoor unit		
Trademark	ELECTRA		
Model and/or type reference.....	KN series (see page 5)		
Manufacturer.....	Same as applicant		
Factory.....	See page 3		
Rating(s)	Rated voltage: AC 220-230V~ 50Hz Rated power: see rating labels on page 2 Refrigerant: R22, R407C, R410A IP20		

Cope of marking plate:

ELECTRA	MODEL: KN36 RC R410A	
PROD NO.:	Fuse: 15A(G)	Cooling: see outdoor
TYPE:	COS ϕ =0.95	heating: see outdoor
220-230V~ 50Hz	IP20 Rev.A	Dehumidification: 4.1 l/h
R410A:	Prated: 120W	PS: 6.3MPa Ps: 0.8MPa
		Temp.Class: T1 Weight: 48kg

ELECTRA	MODEL: KN36 ST R410A	
PROD NO.:	Fuse: 15A(G)	Cooling: see outdoor
TYPE:	COS ϕ =0.95	
220-230V~ 50Hz	IP20 Rev.A	Dehumidification: 4.1 l/h
R410A:	Prated: 120W	PS: 6.3MPa Ps: 0.8MPa
		Temp.Class: T1 Weight: 48kg

ELECTRA	MODEL: KN45 RC R410A	
PROD NO.:	Fuse: 20A(G)	Cooling: see outdoor
TYPE:	COS ϕ =0.95	heating: see outdoor
220-230V~ 50Hz	IP20 Rev.A	Dehumidification: 5.4 l/h
R410A:	Prated: 160W	PS: 6.3MPa Ps: 0.8MPa
		Temp.Class: T1 Weight: 48kg

ELECTRA	MODEL: KN45 ST R410A	
PROD NO.:	Fuse: 20A(G)	Cooling: see outdoor
TYPE:	COS ϕ =0.95	
220-230V~ 50Hz	IP20 Rev.A	Dehumidification: 5.4 l/h
R410A:	Prated: 160W	PS: 6.3MPa Ps: 0.8MPa
		Temp.Class: T1 Weight: 48kg

Remark: for other issued model rating labels, please refer to previous CB report 12011246 001.

Summary of testing:

1. All tests performed on KN45 RC R410A;
2. Based on the modification, the clause 7.1, 10, 11.8, 13, 15, 16, 17, 19.2, 19.5, 19.7, 19.11, 19.13, 19.14, 24.1, 29, 30 are considered, the relevant tests were passed.
3. For further information, please refer to report 12011246 001.

Test items particulars:

Serial Number : Prototype samples without serial numbers.

Additional information..... : N(.A.)

..... :
..... :

Test case verdicts

Test case does not apply to the test object : N(.A.)

Test item does meet the requirement..... : P(ass)

Test item does not meet the requirement : F(ail)

Testing

Date of receipt of test item : 2006-12-20

Date(s) of performance of test..... : 2006-12-20 —2007-01-10

General remarks

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IEC 60335-1.

The test results presented in this report relate only to the item tested.

This test report shall not be reproduced except in full, without the written approval of the issuing testing laboratory.

Clause numbers between brackets refer to clauses in IEC 60335-1

"(see Enclosure #)" refers to an additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

Factory information:

Factory 1: Electra Air-Conditioning (Shenzhen) Co., Ltd.

Address: 2 Wuhe Avenue S., Bantian, Buji, Shenzhen, Guangdong, P. R. China

Factory 2: ELECTRA CONSUMER PRODUCTS LTD.

Address: Sapir 1, Rishon Lezion, 75704, Israel

History of amendments and modifications:

Ref.No.12011246 001, dated 2005-08-23 (original report);

Ref.No.12011246 002 dated 2007-01-15 (modification report);

Description of modification:

This report has six issues:

1. Change the applicant and manufacturer from **Electra Air-Conditioning (Shenzhen) Co.,Ltd.** 2 Wuhe Avenue S., Bantian, Buji, Shenzhen, Guangdong, P. R. China, into **ELECTRA CONSUMER PRODUCTS** 21 Aminadav St, Tel-Aviv, 67067 Israel.
This modification applies for all issued models in report 12011246 001 and 12011246 002.
2. Add a new factory **ELECTRA CONSUMER PRODUCTS LTD.** Sapir 1, Rishon Lezion, 75704, Israel.
This modification applies for all issued models in report 12011246 001 and 12011246 002.
3. Add new model KN36 RC R410A, KN36 ST R410A, the new models are same as issued model KN36RC R407C, KN36ST R407C except the responded refrigerant is different, so the rating labels are changed, the data on the rating lables are changed respectively. Details please refer to rating labels, table 24.1 and photo document.
4. Add new model KN45 RC R410A, KN45 ST R410A, the new models are same as issued model KN45RC R407C, KN45ST R407C except the responded refrigerant is different, and the fan motor and related capacitor is different, so the rating labels are changed, the data on the rating lables are changed respectively. Details please refer to rating labels, table 24.1 and photo document.

List of new models:

No.	Model	Voltage	Rated power input	Refrigerant
1	KN36 RC R410A	220-230V	120W	R410A
2	KN36 ST R410A	220-230V	120W	R410A
3	KN45 RC R410A	220-230V	160W	R410A
4	KN45 ST R410A	220-230V	160W	R410A

5. Add alternate components for all issued models. The alternate components including transformer, terminal block, fan motor capacitor, thermal link in transformer, thermal cut-out, details please refer to table 24.1.

List of all models:

No.	Model name	Rated Voltage	Rated input	Refrigerant	Remark
1	KN-24SH	220-230V	2190W	R22	Use supplementary heater
2	KN-24RC	220-230V	90W	R22	No supplementary heater
3	KN-24ST	220-230V	90W	R22	No supplementary heater
4	KN-30SH	220-230V	2840W	R22	Use supplementary heater
5	KN-30RC	220-230V	140W	R22	No supplementary heater
6	KN-30ST	220-230V	140W	R22	No supplementary heater
7	KN-36RC	220-230V	120W	R22	No supplementary heater
8	KN-36ST	220-230V	120W	R22	No supplementary heater
9	KN-45RC	220-230V	160W	R22	No supplementary heater
10	KN-45ST	220-230V	160W	R22	No supplementary heater
11	KN-24SH R407C	220-230V	2190W	R407C	Use supplementary heater
12	KN-24RC R407C	220-230V	90W	R407C	No supplementary heater
13	KN-24ST R407C	220-230V	90W	R407C	No supplementary heater
14	KN-30SH R407C	220-230V	2840W	R407C	Use supplementary heater
15	KN-30RC R407C	220-230V	140W	R407C	No supplementary heater
16	KN-30ST R407C	220-230V	140W	R407C	No supplementary heater
17	KN-36RC R407C	220-230V	120W	R407C	No supplementary heater
18	KN-36ST R407C	220-230V	120W	R407C	No supplementary heater
19	KN-45RC R407C	220-230V	160W	R407C	No supplementary heater
20	KN-45ST R407C	220-230V	160W	R407C	No supplementary heater
21	KN-24SH R410A	220-230V	2190W	R410A	Use supplementary heater
22	KN-24RC R410A	220-230V	90W	R410A	No supplementary heater
23	KN-24ST R410A	220-230V	90W	R410A	No supplementary heater
24	KN-30SH R410A	220-230V	2840W	R410A	Use supplementary heater
25	KN-30RC R410A	220-230V	140W	R410A	No supplementary heater
26	KN-30ST R410A	220-230V	140W	R410A	No supplementary heater
27	KN36 RC R410A	220-230V	120W	R410A	No supplementary heater
28	KN36 ST R410A	220-230V	120W	R410A	No supplementary heater
29	KN45 RC R410A	220-230V	160W	R410A	No supplementary heater
30	KN45 ST R410A	220-230V	160W	R410A	No supplementary heater

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
7	MARKING		P
7.1	Rated voltage or voltage range (V) :	220-230V	P
	Symbol for nature of supply including number of phases, unless for single phase operation (IEC 60335-2-40:1995)	~	P
	Rated frequency or frequency range (Hz) :	50Hz	P
	Rated input or rated current	See rating label.	P
	Manufacturer's or responsible vendor's name, trademark or identification mark	ELECTRA	P
	Model or type reference	See rating label	P
	Symbol for Class II	Class I appliance	N/A
	Symbol for degree of protection against ingress of water, other than IPX0 (IEC 60335-2-40:1995)	IP20 (Not marked)	N/A
	Mass of the refrigerant or of each refrigerant in a blend (except for isotropic type (IEC 60335-2-40:1995)		N/A
	Refrigerant identification (IEC 60335-2-40:1995)	R22, R407C, R410A	P
	Permissible excessive operating pressure in pascals for sanitary hot water heat pumps (IEC 60335-2-40:1995)		N/A
	Excessive operating pressure of the refrigerant circuit for suction and discharge, if they differ (IEC 60335-2-40:1995)	See rating label	P
	The maximum operating pressure for the heat exchanger (IEC 60335-2-40/A1:2000)	See rating label	P
	Separate marking of the appliances with all the rated characteristics of the supplementary heaters (IEC 60335-2-40:1995)		N/A
	Marking of the direction of the fluid flow (IEC 60335-2-40:1995)		N/A
10	POWER INPUT AND CURRENT		P
10.1	Power input at rated voltage and normal operating temperature not deviating from rated input by more than shown in table; measured power input (W); rated input (W); deviation :	(see appended table)	P
10.2	Current at normal operating temperature not deviating from rated current by more than shown in table; measured current at rated voltage under normal operation (A); rated current (A); deviation :	Not marked on rating label.	N/A
11	HEATING		P
11.8	Monitored temperatures not exceeding the values of Table 3 (IEC 60335-2-40:1995)	(See appended table)	P

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Protective devices do not operate		P
	Sealing compound not flowing out		P
	Temperature of the air in the outlet duct not exceeding 90 °C (IEC 60335-2-40:1995)		N/A
13	LEAKAGE CURRENT		P
13.1	Leakage current not excessive and electric strength adequate		P
13.2	Leakage current measured by means of circuit described in Annex G (IEC 60335-2-40:1995)		P
	Leakage current measurements	(See appended table)	P
13.3	Electric strength test of insulation. See Note in Interpretation Sheet I-SH 02, August 1994	(See appended table)	P
	No breakdown during the test		P
15	MOISTURE RESISTANCE		P
15.1	Enclosure provides the degree of moisture protection against the ingress of water (rain, overflow from the drain pan of defrosting, tests of 15.2, 15.3, 11.6 and Cl. 16) (IEC 60335-2-40:1995)	Performed See also clause 16	P
	Motor-compressor not operated and detachable parts not removed during 15.2 and 15.3 (IEC 60335-2-40/A1:2000)		N/A
	After test, water inside the enclosure has not reduced the creepage distances and clearances below the values of Cl. 29 (IEC 60335-2-40:1995)		P
15.2	Tests in accordance with IEC 529 in appliances other than IPX0, as specified (IEC 60335-2-40:1995)	IP20	N/A
15.3	Spillage of liquid does not affect the electrical insulation (IEC 60335-2-40:1995)		P
15.4	Spillage test according to IEC 60335-2-40/A1:2000		N/A
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		P
16.1	No excessive leakage current and adequate insulation and electric strength (tests 16.2 and 16.3)		P
16.2	Leakage current measurements (IEC 60335-2-40:1995)	(See appended table)	P
16.3	Electric strength tests (values in table 5). See Note in Interpretation Sheet I-SH 02, August 1994	(See appended table)	P
17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS		P

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use		P
	Appliance supplied with 1,06 or 0,94 times rated voltage and the most unfavourable short-circuit or overload likely to occur in normal use applied	(See appended table)	P
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K	No safety extra-low voltage circuits.	N/A
	Temperature of the winding not exceeding the value specified in table 6		P
	Except fail-safe transformer complying 15.5 of IEC 61558-1 (IEC 60335-1/A2:1999)		N/A
19	ABNORMAL OPERATION		P
19.2	Test of appliance with motor rotors, other than motor-compressors, operated for 15 days (360 h) or until a protection device opens the circuit (IEC 60335-2-40:1995)		P
	Insulation of motor windings (IEC 60335-2-40:1995) :	(See appended table)	P
	Temperature of enclosure does not exceed (°C) (IEC 60335-2-40:1995) :	(See appended table)	P
	Temperature of the windings does not exceed the values shown in the table; temperature (°C) (IEC 60335-2-40:1995) :	(See appended table)	P
	Electric strength test as specified in 16.3, 72 h after the beginning of the test (IEC 60335-2-40:1995)	(See appended table)	P
	A 30 mA residual current device does not open (IEC 60335-2-40:1995)		P
	At the end, the leakage current between the windings and the enclosure does not exceed 2 mA (IEC 60335-2-40:1995)		P
19.5	Test of appliance with heat transfer medium flow of the outdoor heat exchanger restricted or shut off when reaching steady conditions (IEC 60335-2-40:1995)		N/A
	Test of appliance with heat transfer flow of the indoor heat exchanger restricted or shut off when reaching steady conditions (IEC 60335-2-40:1995)	Test result: Wall temperature: 42,3°C, Insulation of the supply cable: 51,9 °C.	P
	Disconnection of the motor common to both the outdoor and the indoor heat exchangers when reaching steady conditions (IEC 60335-2-40:1995)		N/A

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
19.7	The test of air to air appliances at rated voltage or at the upper limit of the rated voltage range. The dry-bulb temperature is 5 K below the values specified by the manufacturer (IEC 60335-2-40:1995)	11°C (indoor unit) The appliance can not operated.	P
	Test with the dry-bulb temperature 10 K over the values specified by the manufacturer (IEC 60335-2-40:1995)	42°C (indoor unit) Test result: Wall temperature: 53,3°C, Insulation of the supply cable: 57,2 °C.	P
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless they comply with the conditions specified in 19.11.1		P
	Windings temperature not exceeding values shown in Table 6 (IEC 60335-2-40:1995)		P
	Appliance shall comply with the conditions of 19.14 (IEC 60335-2-40:1995)		P
	Appliance withstands the test: a conductor becomes open circuited and three conditions are met (IEC 60335-2-40:1995)		P
19.11.1	Before applying the fault conditions a) to f) in 19.11.2, it is checked if circuits or parts of circuit meet both of the following conditions:		N/A
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N/A
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction in other parts of the appliance does not rely on the correct functioning of the electronic circuit		N/A
19.11.2	Fault conditions applied one at a time, the appliance operated under conditions specified in Cl. 11, but supplied at rated voltage, the duration of the tests as specified:		P
	a) short circuit of creepage distances and clearances between live parts of different potential, if these distances are less than the values specified in 29.1, unless the relevant part is adequately encapsulated	The CI/Cr measured not less than the values specified in 29,1.	N/A
	b) open circuit at the terminals of any component	(See appended table)	P
	c) short circuit of capacitors, unless they comply with IEC 60384-14 or 14.2 of IEC 60065	(See appended table)	P

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	d) short circuit of any two terminals of an electronic component, other than integrated circuits. This fault condition is not applied between the circuits of an optocoupler	(See appended table)	P
	e) failure of triacs in the diode mode		N/A
	f) failure of an integrated circuit. In this case the possible hazardous situations of the appliance are assessed to ensure that safety does not rely on the correct functioning of such a component		N/A
	Short-circuit of low-power circuits (IEC 60335-2-40:1995)		N/A
	The duration of the tests (IEC 60335-2-40:1995):		P
	- as specified in 11.7 but only for one operating cycle (in case the fault cannot be recognised by user) IEC 60335-2-40:1995)		N/A
	- as specified in 19.2, if fault can be recognised by user (IEC 60335-2-40:1995)		P
	- until steady conditions are established (IEC 60335-2-40:1995)		N/A
	Test ended if interruption of supply occurs within the appliance (IEC 60335-2-40:1995)		P
	Fault condition f) applied to encapsulated or similar components (IEC 60335-2-40:1995)		N/A
	PTC's, NTC's and VDR's resistors not short-circuited if used as specified by manufacturer (IEC 60335-2-40:1995)		P
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P
	Test for appliances with PTC heating elements (IEC 60335-2-40:1995)		N/A
19.14	No flames, molten metal, poisonous or ignitable gas or deformed enclosures (IEC 60335-2-40:1995)		P
	Temperatures rise shall not exceed the values shown in Table 7 (IEC 60335-2-40:1995)		P
	The electric strength test, the test voltage being:		P
	- basic insulation: 1000 V		P
	- supplementary insulation: 2750 V		P
	- reinforced insulation: 3750 V		P
24	COMPONENTS		P

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
24.1	Components comply with safety requirements in relevant IEC standards	See appended table	P
	Motor-compressors not tested according to IEC 60335-2-34 (not necessary to meet all requirements of IEC 60335-2-34) (IEC 60335-2-40:1995)		N/A
29	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		P
29.1	Creepage distances and clearances not less than specified in table 13	(See appended table)	P
	Values increased by 4 mm in case of reinforced insulation when resonance voltage		N/A
	Creepage distances and clearances for circuits with voltages greater than 250 V r.m.s. (345 V peak) comply with table (IEC 60335-2-40:1995)		P
	For motor-compressors with working voltages ≤ 250 V, 29.1 of IEC 60335-2-34 applies (IEC 60335-2-40:1995)		N/A
	Creepage distances and clearances for motor-compressors with working voltages > 250 V r.m.s. and ≤ 600 V r.m.s. not less than stated in Table 101 (IEC 60335-2-40:1995)		P
29.2	Distances through insulation not less than 1,0 mm for supplementary insulation, and 2,0 mm for reinforced insulation. Interpretation of this requirement: see Interpretation Sheet I-SH 02, August, 1994		N/A
29.2.1	Supplementary insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least two layers, each of the layers withstands the electric strength test of 16.3 for supplementary insulation		N/A
	Reinforced insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least three layers, and any two of the layers together withstand the electric strength test of 16.3 for reinforced insulation		N/A
29.2.2	Supplementary or reinforced insulation inaccessible and does not exceed the maximum permissible temperature values		N/A
	Supplementary or reinforced insulation, after conditioning as specified, withstands the electric strength test as specified in 16.3, both at the oven temperature and room temperature		N/A
30	RESISTANCE TO HEAT, FIRE AND TRACKING		P
30.1	See Annex H		P
	Relevant external parts of non-metallic material		P

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Parts supporting live parts and parts providing supplementary or reinforced insulation sufficiently resistant to heat		P
	Ball-pressure test with a force of 20 N, diameter of impression not exceeding 2 mm :		P
	External parts: at 75 °C		N/A
	Parts supporting live parts: at 125 °C	Terminal block, Transformer bobbin, insulation of fan motor.	P
	Parts providing supplementary or reinforced insulation: temperature (°C) :		N/A
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire		P
30.2.1	Possible burning test of relevant parts according to Annex J		N/A
	Glow-wire test of Annex K made at temperature 550 °C		N/A
30.2.3	Appliances operated while unattended, possible bad-connection test according to Annex L		N/A
	Glow-wire test of Annex K made at 850 °C	Terminal block, Transformer bobbin, insulation of fan motor.	P
	Possible needle-flame test according to Annex M		N/A
30.2.4	Parts of non-metallic material within a distance of 50 mm from parts not withstanding the tests of 30.2.2 or 30.2.3, subjected to the needle-flame test of Annex M		N/A
30.3	Relevant insulating material have adequate resistance to tracking		P
	Tracking test at 175 V according to Annex N	Terminal block, Transformer bobbin, insulation of fan motor.	P
	Tracking test at 250 V according to Annex N		N/A
	No hazard other than fire, tracking test at 175 V according to Annex N, and in addition needle-flame test of surrounding parts according to Annex M		P
	Possible needle-flame test of non-metallic material		N/A

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

10.1	TABLE: input power and current						P
	Operation mode	Cooling mode: Indoor(DB/WB °C): 32/23 Heating mode: Indoor(DB/WB °C): 27/-				P	
	Test voltage (V)	230V				—	
Model	Rated cooling (W)	Rated heating (W)	Measured cooling (W)	Measured heating (W)	Deviation cooling	Deviation heating	Limit
KN45 RC R410A	160	160	170	170	+6,25%	+6,25%	+20%

11.8	TABLE: TEMPERATURE RISE MEASUREMENTS						P
KN45 RC R410A	Operation mode	Cooling mode: Indoor: 32/23 Heating mode: Indoor: 27/-				P	
	t1 (°C)	21				—	
	t2 (°C)	See operation mode				—	
	Test voltage (W)	1,06x230=243,8V				—	
Temperature T of part:			Measured temperature (°C)		Required Temperature (°C)		
PCB			35,9		Material test		
5mm ambient of relay			41,6		T55		
Terminal block			29,2		Material test		
Surface of transformer winding			37,1		110		
Fan motor enclosure			56,8		150		
Fan motor capacitor			29,9		T70		
Remark 1: The test was performed at the high speed and low speed of fan motor, the highest value was listed.							
Remark 2: The test was performed on heating mode and cooling mode, the highest value was listed.							
	winding temperature rise measurements:			T1=25 °C		P	
	insulation class			See below		—	
temperature rise Dt of winding:		R ₁ (Ω)	R ₂ (Ω)	T (°C)	Limit T (°C)	insulation class	
YDK90-6A		65/30	75/35	64,9/68,2	120	B	

13.2	TABLE: LEAKAGE CURRENT AT OPERATING TEMPERATURE						P
	At 1,15 times rated input (W)	N/A				-	
	At 1,06 times rated voltage (V)	1,06x230=243,8V				-	
Measured between:			Measured (mA)		Limit (mA)		
L/N to earthed metal parts			0,88		3,5		
L/N to outside enclosure (class II construction)			0,071		0,25		

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

13.3	TABLE: ELECTRICAL INSULATION AT OPERATING TEMPERATURE		P
Test voltage applied between:	Test voltage (V)	Result	
L/N- earthed metal parts	1000	No	
L/N – enclosure of indoor unit (with aluminum foil)	3750	No	

16.2	TABLE: LEAKAGE CURRENT MEASUREMENTS		P
	At 1,06 times rated voltage (V)	1,06x230=243,8V	-
Measured between:	Measured (mA)	Limit (mA)	
L/N - earthed metal parts	0,54	3,5	
L/N – non-conductive enclosure	0,023	0,25	

16.3	TABLE: ELECTRIC STRENGTH TESTS		P
Test voltage applied between:	Test voltage (V)	Result	
L/N –earthed metal parts	1000	No	
L/N – enclosure of indoor unit (aluminium foil)	3750	No	

17.1	TABLE: OVERLOAD PROTECTION		P
	at 1,06 – 0,94 times rated voltage (V).....	1,06x230=243,8V	-
	Ambient temperature(°C).....	25	-
	Test model.....	GLP-060398	-
	Test condition.....	Short-circuit of secondary winding	
Thermal couples location:	Measured temperature (°C)	Limit temperature (°C)	Result
Primary Winding	110	225	P
Secondary Winding	118	225	P

Remark 1: 10 minutes later, the protector was operated.

Remark 2: Resistance method is not applicable due to severe complications are involved.

19.2	TABLE: LOCK MOTOR TEST, TEMPERATURE RISE MEASUREMENTS		P
Abnormal conditions:	Lock motor rotor		-
Duration:	15 days, after 3 days HV test performed		-
Test voltage:	230VAC		-
T1(°C)	25		-
T2(°C)	25		-
Model	YDK90-6A		-
Temperature of part/at (°C)	Temperature(°C)	Required temperature(°C)	
Enclosure temperature	108,8	150	

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Winding temperature	122,0	225(Class B)
Result:			
Protective device operated?		Yes	
If yes ,what was the protective device?		Thermal cut-out	
How long was the operation until protective device operated?		63 minutes	
Deformation of enclosure, which affect the compliance of cl.8?		No	
Poisonous or ignitable gas?		No	
Emit flames?		No	
Molten metal?		No	
LEAKAGE CURRENT MEASUREMENT			P
	at 1,06 times rated voltage (V)	1,06x230=243,8V	--
leakage current I between:		I (mA)	required I (mA)
L/N – enclosure		0,052	2,0

19.11.2	TABLE: fault condition tests		P
	Ambient temperature (°C)	Cooling:32/23(IU) Heating:27/- (IU)	-
	Test voltage (V)	230V	-
	Fault condition	Test result	Hazard
	1. SC indoor fan motor capacitor (cooling)	The indoor fan motor stopped. Two minutes later, appliance stopped.	No
	2. SC indoor fan motor capacitor (heating)	The appliance stopped.	No
	3. OC indoor fan motor capacitor (cooling)	The indoor fan motor keeps running. The power input increased for the appliance.	No
	4. OC indoor fan motor capacitor (heating)	The fan operated slowly. The appliance worked normally with input increased.	No
Remark 1: the "SC" means "short-circuited" ,"OC" means " open-circuited"			

19.14	ELECTRIC STRENGTH TEST		P
test voltage applied between:		test voltage (V)	breakdown
L/N – enclosure		1250	No

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

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

Remark 1: For thermal cut-outs, thermal links of fan motors and transformers which have been approved according to relevant IEC standards, the manufacturer, types and characters not listed in the CDF but should be in this scope authorized by original certification bodies.

Remark 2: Only new alternate components are listed.

Built-in components with windings: (motors, transformers, magnetic coils etc.)

Fan Motor for KN45 RC R410A, KN45 ST R410A	Welling	YDK90-6A	Main 1: 65,7±10% Main 2: 24,5±10% Main 3: 7,1±10% Aux: 95,3±10% Class B	IEC 60335-2-40	Test with appliance
Transformer	Green	GLP-060398	Pri: 115Ω±10% Sec: 0,9Ω±5% ClassB	IEC 60335-2-40	Test with appliance
Other components					
Terminal block	Huangzhong	TC1-2 series	450VAC 4,0mm ²	IEC 60335-1	Test with appliance
alternate	Jointec	RS9101 series	450VAC 4,0mm ²	IEC 60335-1	Test with appliance
alternate	changheng	JXO-6B	450VAC 4,0mm ²	IEC 60998	VDE 136925
Capacitor for motor YDK90-6A	HAOYE	MKPS 505	450V, 5μF T70 °C	IEC 60252-1	TUV 50035566
Thermal cut out in fan motor YDK90-6A	SENSATA	BW130	250V Operated temp:130±5°C	IEC 60730-1	VDE 40013915
Alternate	SENSATA	17AMC	250V Operated temp:130±5°C	IEC 60730-1	VDE 40013211
Alternate	SENSATA	8CM033A5	277V Operated temp:130±5°C	IEC 60730-1	KEMA 2014531-02
Alternate	DeSheng	BR-A	250V Operated temp:130±5□	IEC 60730-1	VDE 132813
Alternate	DeSheng	17AM-D	250V Operated temp:130±5□	IEC 60730-1	VDE 40009850
Thermal link in transformer	SET	K3	250V, 2A, 125□	IEC 60691	VDE 40017055
Alternate	Joint force	L30	250V, 2A, 125□	IEC 60691	TUV 50034789
Alternate	Aupo	A3-F	250V, 2A, 125□	IEC 60691	VDE 40001155

IEC 60335-2-40					
Clause	Requirement - Test			Result - Remark	Verdict
Self-reset thermal cut-out for electric heater	Changheng	KSD	250VAC, 10A close temp: 35□ open temp: 55□	IEC 60730	VDE 40004742
Non Self-reset thermal cut-out for electric heater	Therm-O-Dis c	G4A01	250VAC, 15A Tf: 84□ Tm: 125□	IEC 60730	VDE 40017228

29.1	TABLE: MINIMUM CREEPAGE DISTANCES AND CLEARANCES								P
creepage (cr) and clearance (cl) distance (mm):		Class III appliances		Other appliances, working voltage:				Remark	
				< 130 V		130-250 V		250-440 V	
		cr	cl	cr	cl	cr	cl	cr	cl
Between live parts of different potential									
- if protected against deposition of dirt	1,0	1,0	1,0	1,0	<u>3,0</u>	<u>3,0</u>	2,0	2,0	P
- if not protected against deposition of dirt	2,0	1,5	2,0	1,5	<u>4,0</u>	<u>4,0</u>	<u>4,0</u>	<u>3,0</u>	P
- if lacquered or enameled windings	1,0	1,0	1,5	1,5	<u>4,0</u>	<u>4,0</u>	3,0	3,0	P
- for positive temperature coefficient (PTC) resistors including their connecting wires, if protected against deposition of moisture or dirt	—	—	1,0	1,0	1,0	1,0	—	—	N/A
Cl and Cr measured between:									
<ol style="list-style-type: none"> 1. L and N on terminal block; 2. Input of transformer 3. Winding of fan motor to earthed enclosure. <p>The shortest value is considered.</p>									
Between live parts and other metal parts over basic insulation:									
- if protected against deposition of dirt:									N/A
- if of ceramic material, pure mica and similar material	1,0	1,0	1,0	1,0	2,5	2,5	—	—	N/A
- if of other material	1,5	1,0	1,5	1,0	3,0	2,5	—	—	N/A
- if not protected against deposition of dirt	2,0	1,5	2,0	1,5	<u>4,0</u>	<u>4,0</u>	—	—	P
- if the live parts are lacquered or enameled windings	1,0	1,0	1,5	1,5	<u>4,0</u>	<u>4,0</u>	—	—	P
- at the end of tubular sheathed-type heating elements	—	—	1,0	1,0	1,0	1,0	—	—	N/A
Cl and Cr measured between:									
<ol style="list-style-type: none"> 1. Live part on terminal and earthing metal part; 2. Winding of transformer/fan motor and enclosure/body; <p>The shortest value is considered.</p>									

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

30.1	Table: Ball pressure test			P
Part	Test temperature(°C)	Impression diameter(mm)	Limit (mm)	
Terminal block TC1-2 (mfg.: Huangzhong)	125	0,6	2,0	
Terminal block RS9101 (mfg.: Jointec)	125	0,5	2,0	
Terminal block JXO-6B(mfg.: Changheng)	125	0,5	2,0	
Transformer bobbin	125	0,8	2,0	
Insulation of fan motor YDK90-6A	125	0,9	2,0	

30.2	Table: resistance to heat, fire and tracking, glow-wire test							P
	Tracking test (V)		Glow-wire test(°C)					--
Part	175	250	Test temperature (°C)	Result				
				Ti=	Te=	Max high of flame	Ignition of tissue paper	Other observation
Terminal block TC1-2 (mfg.: Huangzhong)	175	--	850	--	--	--	--	Not burning
Terminal block RS9101 (mfg.: Jointec)	175	--	850	--	--	--	--	Not burning
Terminal block JXO-6B(mfg.: Changheng)	175	--	850	--	--	--	--	Not burning
Transformer bobbin	175	--	850	--	--	--	--	Not burning
Insulation of fan motor YDK90-6A	175	--	850	--	--	--	--	Not burning

--End of report--

Report Number: 12011246 002

Model: KN series (see report)



Picture 1

Remark: pictures 1-5 are for motor YDK90-6A.



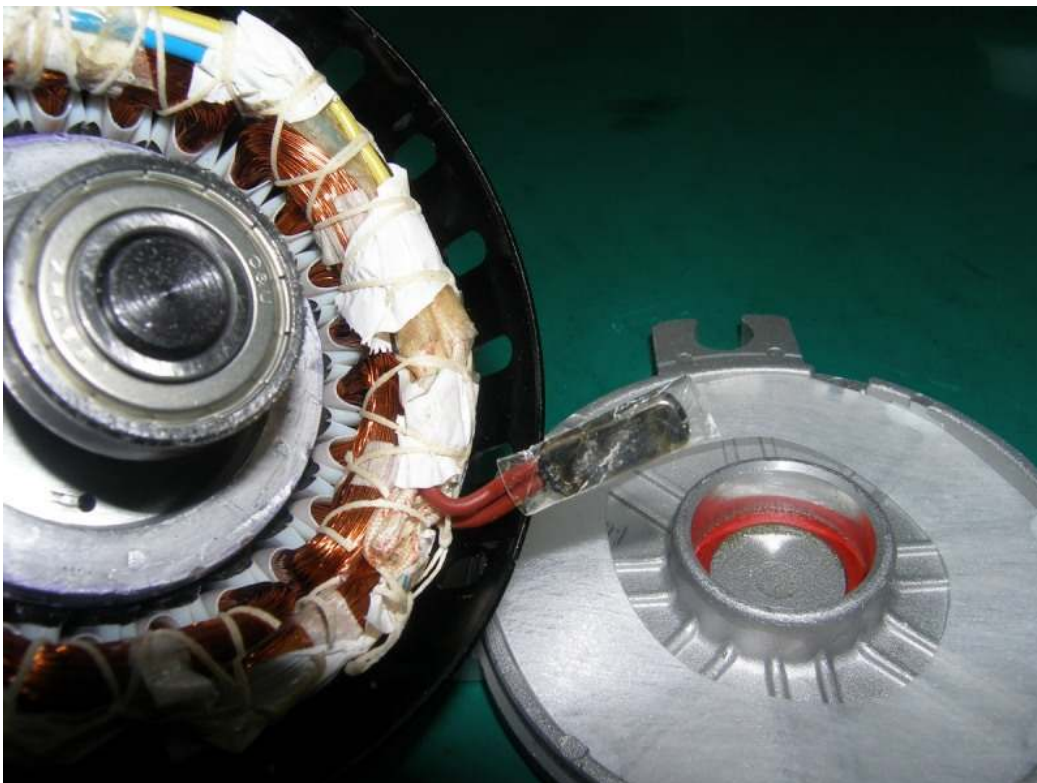
Picture 2

Report Number: 12011246 002

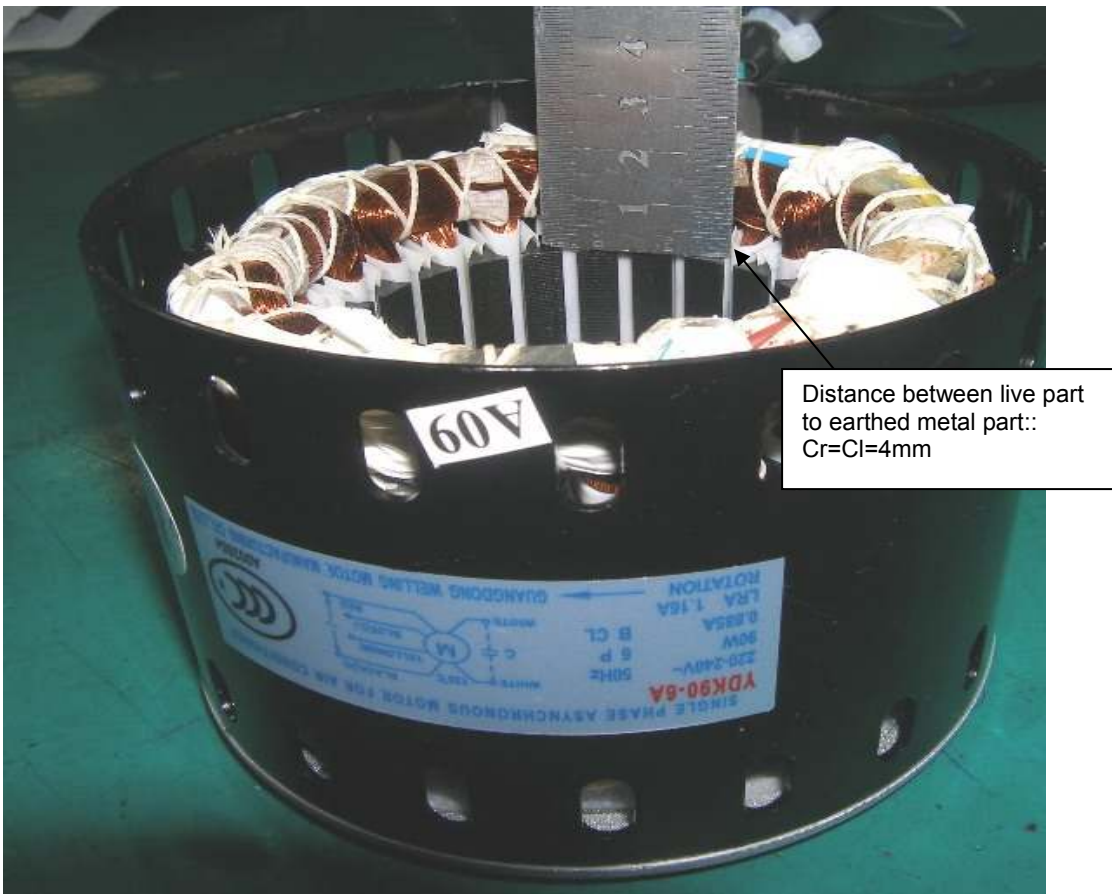
Model: KN series (see report)



Picture 3



Picture 4

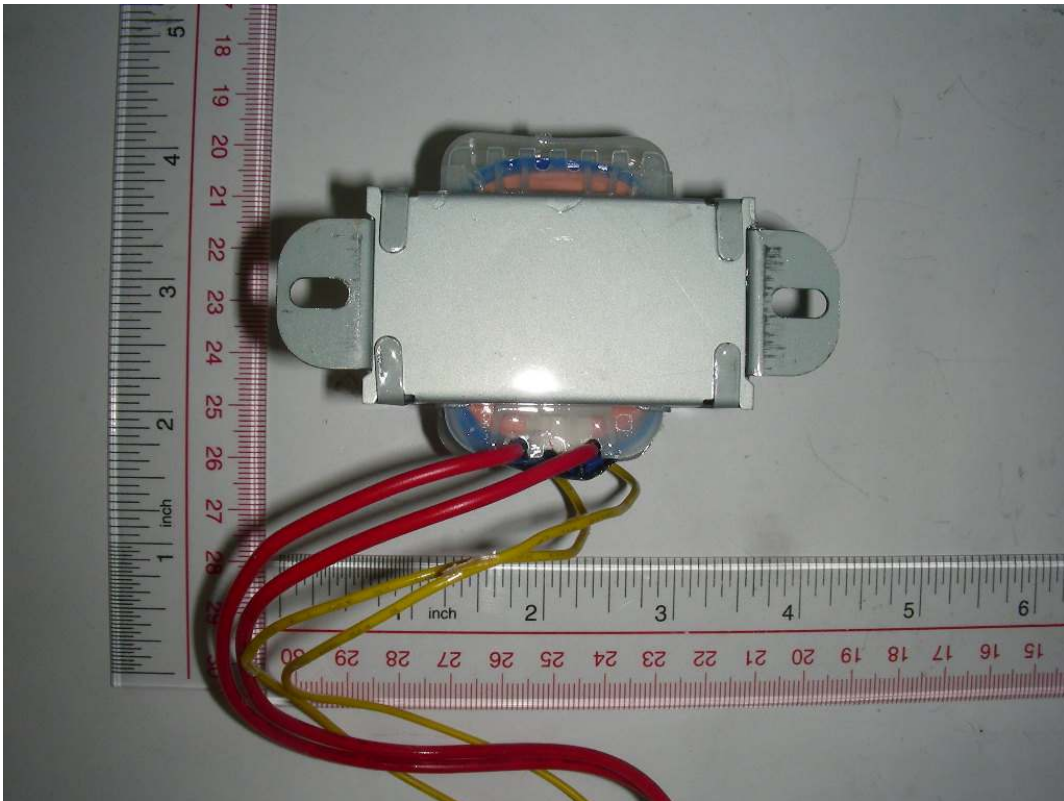


Picture 5

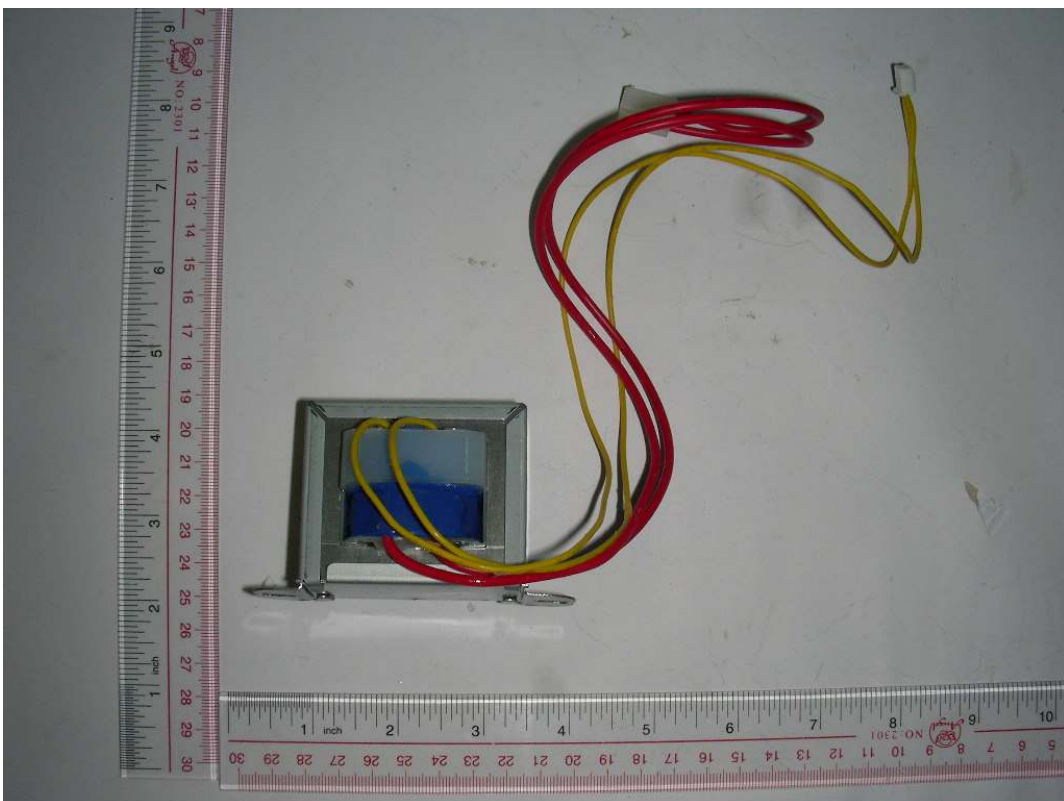


Picture 6

Remark: Pictures 6- 10 are for transformer GLP-060398.



Picture 7



Picture 8



Picture 9



Picture 10

Report Number: 12011246 002

Model: KN series (see report)



Picture 11

Remark: pictures 11-13 are for terminal blocks TC1-2, RS9101.



Picture 12

Report Number: 12011246 002

Model: KN series (see report)



Picture 13