




Test Report issued under the responsibility of:

SGS Fimko Ltd.

TEST REPORT IEC 60335-2-34 Safety of household and similar electrical appliances Part 2: Particular requirements for motor compressor	
Report Number	18JP-0515-01
Date of issue	20 th December 2018; Amendment 1, 11 th November 2020
Total number of pages	9 Pages
Applicant's name	Kulthorn Premier Company Limited.
Address	446/3 Moo9, Chachoengsao-Nakorn ratchasima Rd., Nong Kee, Kabinburi, Prachinburi 25110, Thailand.
Test specification:	
Standard	IEC 60335-2-34:2012(Fifth Edition) in conjunction with IEC 60335-1:2010 (Fifth Edition)
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	IEC60335_2_34F
Test Report Form(s) Originator	IMQ S.p.A.
Master TRF	Dated 2013-06
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Test item description	Motor compressor (Reciprocating Inverter type)
Trade Mark	
Manufacturer	Same as Applicant
Model/Type reference	See table model list on page 7
Ratings	100-260V $\overline{=}$ 60-200Hz, R-290, LBP For class I appliances (for used in Refrigerators/Freezers appliances) (See in General product information)

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Japan Electrical Testing Laboratory (Thailand) Co., Ltd.
Testing location/ address :		46/171, Nuanchan Rd., Nuanchan, Bungkum, Bangkok 10230, Thailand.
<input type="checkbox"/>	Associated CB Testing Laboratory:	N/A
Testing location/ address :		N/A
Tested by (name + signature) :	Mr. Sirisak Mongkol (Engineer)	<i>Sirisak M.</i>
Approved by (name + signature) :	Mr. Michael Larsen (Laboratory General Manager)	<i>Michael Larsen</i>
<hr/>		
<input type="checkbox"/>	Testing procedure: (TMP) CTF1	
Testing location/ address :		
Tested by (name + signature) :		
Approved by (name + signature) :		
<hr/>		
<input type="checkbox"/>	Testing procedure: WMT	N/A
Testing location/ address :		N/A
Tested by (name + signature) :	N/A	
Witnessed by (name + signature) :	N/A	
Approved by (name + signature) :	N/A	
<hr/>		
<input type="checkbox"/>	Testing procedure: SMT	N/A
Testing location/ address :		N/A
Tested by (name + signature) :	N/A	
Approved by (name + signature) :	N/A	
Supervised by (name + signature) .. :	N/A	

<p>List of Attachments (including a total number of pages in each attachment):</p> <ul style="list-style-type: none"> • Enclosure 3: Photo documentation (4 pages) 	
<p>Summary of testing:</p> <p>18JP-0515-00, issued date: 20th December 2018</p> <p>The full test is conducted on the motor-compressor model C-KVHR450LZ</p> <ul style="list-style-type: none"> • The motor-compressors are classified as being tested with Annex AA. • Testing according to Annex AA is performed. Inverter used during testing of motor-compressor was not evaluated and therefore is sub-clause 19.101 and 19.103 of IEC 60335-2-34:2012 needed to be evaluated in the end product. • Temperature rise of windings and housing of motor-compressor need to be measured in the end product. <p>Protective devices are testing with the products!</p> <p>18JP-0515-01, Amendment 1;</p> <ul style="list-style-type: none"> • For this amendment, by adding additional motor-compressor 8 models which have the same electrical specification such as stator / rotor and rated voltage / Hz, but only the power is difference, but lower from the tested motor-compressor, was not additional test necessary. Only cl. 7 and 24 was necessary. 	
<p>Tests performed (name of test and test clause):</p> <p>Clause 7: Marking and instructions</p> <p>Clause 24: Components</p>	<p>Testing location:</p> <p>Japan Electrical Testing Laboratory (Thailand) Co., Ltd.</p> <p>46/173, Nuanchan Rd., Nuanchan, Bungkum, Bangkok 10230, Thailand</p>
<p>Summary of compliance with National Differences</p> <p>None</p>	

Copy of marking plate:

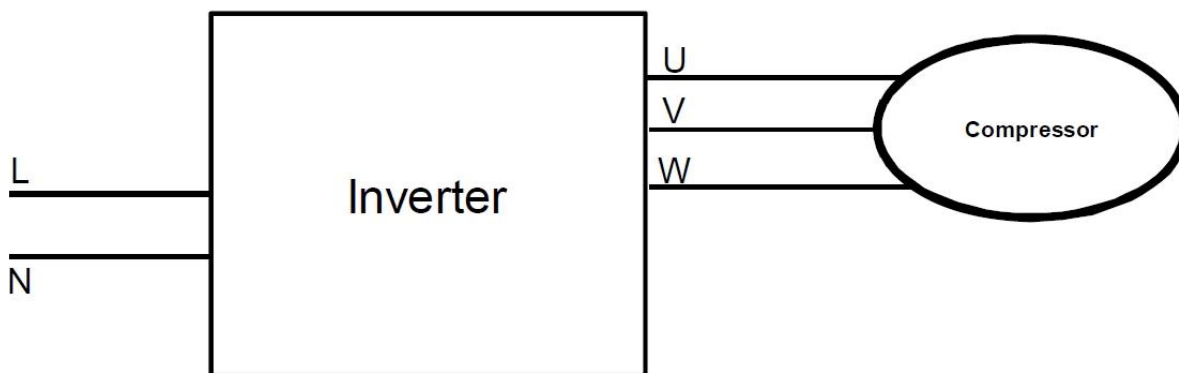
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Marking plate

Marking plate, only the model names are different

Wiring Diagram



Test item particulars.....	Motor Compressors
Classification of installation and use.....	Class I
Supply Connection	Not intended for direct connection of the appliance supply cord to the motor-compressor terminals
Application category	LBP / MBP / HBP
Cooling.....	static / oil / air
Refrigerant identification	R-290
Designed pressure.....	-
Protection system (1), if present.....	Thermal motor protector / Protective electronic circuit
Protection system (2)	Self-resetting / Non-self-resetting
Control system (starting control functions devices) ..	relay / PTC / other (Inverter control)
Control system (cooling capacity control functions) . :	Yes / No
Electronic circuit	Yes / No (The inverter is not part of this evaluation)
Start capacitor	Yes / No
Run capacitor.....	Yes / No
Fixed speed	Yes / No
Variable speed	Yes / No
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	7th October 2020
Date (s) of performance of tests	22th October 2020 to 27th December 2020

General remarks:

The test results presented in this report relate only to the object tested.
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

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

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

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

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided: **Yes**
 Not applicable

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies):

Kulthorn Premier Company Limited.
 446/3 Moo9, Chachoengsao- Nakorn ratchasima Rd.,
 Nong Kee, Kabinburi, Prachinburi 25110, Thailand

General product information:

18JP-0515-00, issued date: 20th December 2018

- This motor-compressor is 3 phase (DC) inverter type and for use in class I refrigerator/freezer appliances with refrigerant number R-290, Consist of 1 model in the test report.
- Motor-compressor is classified as being not intended for direct connection of the appliance supply cord to the motor-compressor terminals and is including the test in Annex AA.
- Type of winding insulation is synthetic.
- Low Back Pressure (LBP).
- Protective devices system is part of the inverter and the inverter used for the test is self-resetting, when the protective system has operated. The compressor needs to be installation with the right protective devices and settings from the manufacturer's instruction and specification.
- The compressor was supplied through an inverter. The Inverter is not part of this approval was provided for testing only, the specification model and manufacturer for inverter will be determined by end product.
- All details of specification see in the table of model list and Matrix's list for type/model descriptions on next page.

Abbreviations:

- PEC = protection electronic circuit
- LBP = Low Back Pressure
- rpm = Revolutions per minture

18JP-0515-01, Amendment 1;

- This amendment cover adding 8 additional motor-compressors (no. 2 to 9). The main difference from the already approved motor-compressor is the power. The 8 additional models have a lower power rating. The electrical specification such as stator / rotor and rated voltage / Hz, are the same.
- The difference is the output from the inverter.
- All details of specification, see in the table of model list and Matrix's list for type/model descriptions.

Table of models list:

No.	Model Name	Type	Rated (V / Ph / Hz)	Power (W)	Back pressure (HBP / MBP / LBP)	Refrigerant Type	AC Power source (Inverter) *
1	C-KVHR450LZ	Reciprocating Inverter	100-260V --- 60-200Hz	379	LBP	R-290	100V 50Hz
2	C-KVHR200L*			189			
3	C-KVHR222L*			207			
4	C-KVHR252L*			222			
5	C-KVHR302L*			249			
6	C-KVHR352L*			263			
7	C-KVHR402L*			306			
8	C-KVHR422L*			328			
9	C-KVHR452L*			355			


Note:

*) The driver "Inverter" is not part of this evaluation and need to be evaluated in end product, used for testing only.

Matrix's list for type/model descriptions :

C-KV HR 450 L Z
 ① ② ③ ④ ⑤

- '①' Represents the compressor type;
C-KV = C-KV type (BLDC compressor)
- '②' Represents the refrigerant type for Compressor series;
HR = Standard Performance (R-290)
- '③' Represents the compressor output (Watt);
450 = 450W
- '④' Represents the compressor application;
L = Low back pressre (LBP)
M = Medium back pressure (MBP)
H = High back pressure (HBP)
- '⑤' Represents the Modification Mark;
Z = Original Specification
ZA to AA or Z* = Modification about connect to refrigerator (size tube and bending or length of tube)

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
7	MARKING AND INSTRUCTIONS		
7.1	Rated voltage or voltage range (V) :	100-260V===	P
	Symbol for nature of supply, or..... :	===	P
	Rated frequency (Hz) :	60-200Hz	P
	The rated power input or rated current need not be marked (IEC 60335-2-34)	Noticed	P
	Manufacturer's or responsible vendor's name, trademark or identification mark :		P
	Model or type reference..... :	See table model list on page 7	P
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen	100-260V=== 60-200Hz	P
7.14	Marking clearly legible and durable, rubbing test as specified		P
24	COMPONENTS		
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components :	(see appended table)	P

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict

24.1	TABLE: Critical components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
- Description:		Specific components for model All models			
Motor (Winding)	Kulthorn Premier Company Limited	C-KVHR450LZ, C-KVHR200L*, C-KVHR222L*, C-KVHR252L*, C-KVHR302L*, C-KVHR352L*, C-KVHR402L*, C-KVHR422L*, C-KVHR452L*	Reciprocating LBP, BLDC 100-260V $\overline{=}$ 60-200Hz, R-290	IEC 60335-1, IEC 60335-2-34	Test with appliance
Compressor Terminal	Fusite	393 series	3 pins (U-V-W) or (R-S-C)	IEC 60335-1, IEC 60335-2-34	Test with appliance
Terminal cover	Kulthorn Premier Company Limited	Thermo platic	Thermo platic	IEC 60335-1, IEC 60335-2-34	Test with appliance
Supplementary information:					
¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

-----End of Report-----