TEST REPORT DATE: 4-Jan-2024 LB03-115-01 / LB03-115-02

LABORATORY TEST REPORT

Test Report No. (T1/T3)	LB03-115-01	LB03-115-02	Brand Name	COOLEX
Test Request No.	RQ03-115		Client Ref No.	LCR-001
Unit Model no. (ID/OD)	FCW-018 B	CCO-018 B	Applicant	REFRIGERATION INDUSTRIES STORAGE & OIL SERVICES CO.
Test Standard	SASO ISO 5151:2021			
Date of Sample Received	12/28/2023		Address	Sulabiya Industrial Area, 5th Ring Road, Block 1, Kuwait
Date of Test Performed	12/31/2023			

Information of Test Unit			
Brand Name	COOLEX	Electrical Rating	230V, 1Ph, 60Hz
Type of Unit	Wall Mounted Split Unit	Rated Cooling Capacity	17300 Btu/Hr @ 35 °C
Model No.(ID/OD)	FCW-018 B CCO-018 B	Annual Energy Consumption	5768 kWh
Serial No.(ID/OD)	101-XM-1139660101-XM-1139663	Test Method	Indoor Air-Enthalpy Method
Test Accordance with	Tested in accordance with SASO 2663/2021: Air Conditioners - Minimum Energy Performance, Labelling and Testing Requirements for Low Capacity Window and Single-Split Types		
Test Standard	SASO ISO 5151: Non-ducted air conditioners and heat pumps — Testing and rating for performance		
Manufactured by	REFRIGERATION INDUSTRIES STORAGE & OIL SERVICES CO.		

Details of Test Unit			
Main Components	Compressors	Condenser Motor/ Fan	Blower Motor/ Fan
Make	GMCC	JIANGMEN	Welling Motor
Model	ASF145N2SFTC3	SA50X	YKFG-45-4-110L
Type	Rotary	Direct Drive/Propeller	Direct Drive/Centrifugal
Power	230V, 1Ph, 60Hz	230V, 1Ph, 60Hz	230V, 1Ph, 60Hz
Indoor Heat Exchanger	778*336*25.4 /Finned tube volume: 0.0066m³		
Outdoor Heat Exchanger	864*585*23.2 /Finned tube volume: 0.0117m³		
Unit Size: W x H x D (mm)	Indoor	Outdoor	
	226*320*1025	860*710*322	

Key Statements	
Sample Condition:	The samples received were in working condition and damage free.
Installation:	The equipment was installed in air-enthalpy test Room in accordance with the manufacturer installation instructions, using recommended installation procedures and accessories.
	Refrigerant: R 410A was charged according to the marking label; System 1= 0.83 KG No additional Refrigerant was charged during the test.

Reviewed By:	Approved By:
MOMAN NAEEM (Laboratory/Testing Engineer)	EDMUNDO M.GABRIEL (Laboratory Manager)

PSYCHROMETRIC LAB RIC مختبر السيكرومترى

RIC PSYCHROMETRIC LAB , BLOCK#1 , 5TH RING ROAD SULAIBIYA PO BOX. 22261
SAFAT 13083 KUWAIT P: 1833380 - 22266497 E: lab@ric.com.kw

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Method:	The Cooling capacity and Energy consumption test were carried out in accordance with standard conditon of : SASO ISO 5151:2021

Test Conditions	T1			T3		
Setting parameters	Set Point	Measured Value	Unit	Set Point	Measured Value	Unit
Dry-bulb Temp. of Air entering indoor side	27.0	27.0	°C	29.0	29.0	°C
Wet-bulb Temp. of Air entering indoor side	19.0	19.0	°C	19.0	19.0	°C
Dry-bulb Temp. of Air entering outdoor side	35.0	35.0	°C	46.0	46.0	°C
Wet-bulb Temp. of Air entering outdoor side	24.0	24.0	°C	24.0	23.9	°C
Voltage	230	230.1	V	230	230.3	V
Frequency	60	60	Hz	60	60	Hz
External Static pressure	0	0	Pa	0	0	Pa

Air flow Conditions:	The tests were conducted at the above standard rating conditions with the fan speed set to the maximum speed.
Preconditions:	The test was conducted under the selected conditions with no changes made in fan speed or system resistance. Test conditions were maintained for not less than one hour before recording data for the capacity test.

Test Results (T1 Condition)

Parameter	Reading	Unit	Parameter	Reading	Unit
Airflow rate	662.8	ft³/m	Total cooling capacity	5143.163	W
Barometric pressure	101.7	Kpa		17549.2	Btu/hr
Indoor Air leaving Dry bulb	15.6	°C	Effective Power Input	1400.1	W
Indoor Air leaving Wet bulb	14.4	°C			
Current	6.20	A			
Energy Efficiency Raitio	12.55	Btu/hr.W			
		-			

Test Results (T3 Condition)

Parameter	Reading	Unit	Parameter	Reading	Unit
Airflow rate	708.7	ft³/m	Total cooling capacity	4553.328	W
Barometric pressure	102.1	Kpa		15536.6	Btu/hr
Indoor Air leaving Dry bulb	18.2	°C	Effective Power Input	1706.16	W
Indoor Air leaving Wet bulb	15.2	°C			
Current	7.5	A			
Energy Efficiency Raitio	9.1	Btu/hr.W			
CSPF@T3	3.14	-			

Maximum Operation Condition Test Result

Sample was operated at 52°C for 2 Hours, during this period there was no tripping or no abnormality observed.

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T1 CONDITION					
Description	Rated Value	Measured Value	Ratio %	Limit %	Verdict
Cooling Capacity(Btu/h)	17300	17549.2	101.4	≥ 95	PASS
Power Input (W)	1430	1400.1	97.9	≤ 105	PASS
EER	12.1	12.55	103.6	≥ 95	PASS

T3 CONDITION					
Description	Rated Value	Measured Value	Ratio %	Limit %	Verdict
Cooling Capacity(Btu/h)	14900	15536.6	104.3	≥ 95	PASS
Power Input (W)	1710	1706.16	99.8	≤ 105	PASS
EER	8.7	9.1	104.5	≥ 95	PASS
SEER	10.3	10.7	103.8	≥ 95	PASS

Minimum Energy Efficiency Classification is according to the following table of SASO 2663:2021 (Clause 8)

EER limits (Btu/h)W at T1	Energy Class	Bar Color
SEER ≥ 18.0	A	Dark Green
18.0 > SEER ≥ 15.0	B	Green
15.0 > SEER ≥ 12.5	C	Light Green
12.5 > SEER ≥ 10.0	D	Yellow
10.0 > SEER ≥ 9.0	E	Orange
9.0 > SEER ≥ 8.0	F	Red
8.0 > SEER	G	Dark Red

Master Measuring Equipments		
Equipment name	Equipment Model	Accuracy
RTD sensors	Chino : 78N01N00N040B3	±0.1°C
RTD sensors	Chino : 78N01N00N040B3	±0.1°C
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RTD sensors	Chino : 78N01N00N040B3	±0.1°C
RTD sensors	Chino : 78N01N00N040B3	±0.1°C
Power Analyzer	Yokogawa : WT333E	Ahr:±0.5%, Whr:±0.5%

DESCRIPTION	THERMOSTAT PERFORMANCE TEST SAMPLE		
Climate Type/ Test MethodThermostat/ Tolerance :	T3/ Enthalpy Indoor Test Room/ ±1 °C		
Readings	Cycle 1	Cycle 2	Cycle 3
Thermostat cut off Point	19.56 °C	19.51 °C	19.51 °C
Thermostat cut in Point	20.49 °C	20.51 °C	20.5 °C

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TEST REPORT DATE: 4-Jan-2024 LB03-115-01 / LB03-115-02

UNIT NAMEPLATE

COOLEX

SPLIT INDOOR UNIT

MODEL	:	FCW-018 B
SERIAL NO	:	101-XM-1139660
POWER SOURCE	:	230V, 1Ph, 60Hz
REFRIGERANT	:	R 410A
FACTORY CHARGE	:	0.83 KG
MOP(PSIG)	:	204/609 PSIG
CODE	:	460E-20499B000

Manufactured By : **REFRIGERATION INDUSTRIES STORAGE & OIL SERVICES CO.**

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Made In Kuwait

COOLEX

SPLIT OUTDOOR UNIT

MODEL : CCO-018 B CODE : 460E-20499B001
SERIAL NO : 101-XM-1139663
POWER SOURCE 230V, 1Ph, 60Hz

		(T1)	(T3)
COOLING CAPACITY	Btu/Hr (kW):	17300 (5.070)	14900 (4.380)
POWER INPUT	(W):	1430	1710
EER	(Btu/Hr)/W:	12.1	8.7
CURRENT	(Amps):	6.300	7.500
POWER FACTOR	(T3):	-	0.99
REFRIGERANT	R 410A :	0.83 KG	
MAXIMUM OPERATING PRESSURE	:	204/609 PSIG	

Manufactured By : **REFRIGERATION INDUSTRIES STORAGE & OIL SERVICES CO.**

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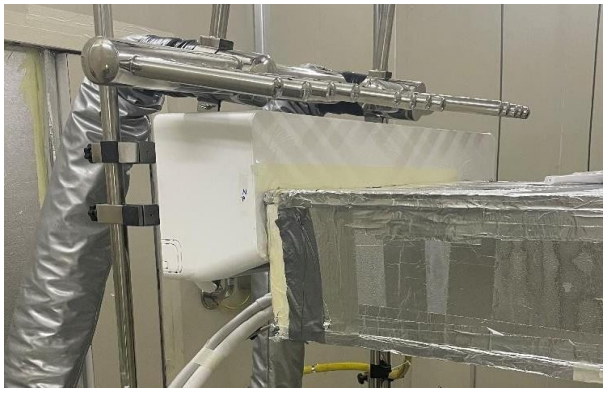
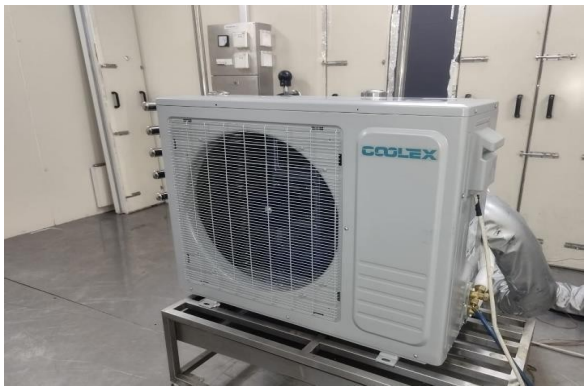
UNIT PHOTOGRAPH

Indoor Unit	Outdoor Unit
	

Remarks

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- The performance observations and test results in this report are relevant to the tested sample only.
- The test results reported in this report shall refer to the sample actually tested.
- This report shall not be reproduced except in full without prior authorization from RIC Psychrometric Lab.
- This equipment is designed to adjust the controls to vary the cooling temperatures not less than 20°C through thermostat

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TEST RESULTS

Test	Criteria	Test Report #	Pass/ Failed
Operability 52C (5.2- Maximum cooing performance test)	During one entire test, the equipment shall operate without any indication of damage The motors of the equipment shall operate continuously for the first hour of the test without tripping any protective device After the interruption of power, the equipment shall resume operation within 30 min and run continuously for 1 h, except as specified	LB03-115-01/02	Pass
Operability at minimum Cooling condition 5.3 Minimum cooing	The equipment shall operate under the conditions specified without any .indication of damage At the end of the 4-h test any accumulation of frost or ice on the indoor coil shall not cover more than 50 of the indoor-side face area of the indoor coil % -or reduce the airflow rate by more than 25 % of the initial airflow rate	LB03-115-01/02	Pass
Freeze-up air Blockage Freeze-up drip 5.4 Freeze-up drip performance test	During the test, no condensed water shall drip, run or blow from the equipment	LB03-115-01/02	Pass
Condensate control performance 5.5 Condensate control and enclosure sweat performance test 5.5 Condensate control and enclosure sweat performance test	When operating under the test conditions specified in test condition no. condensed water shall drip, run or blow from the unit	LB03-115-01/02	Pass
Operability at Maximum Heating Condition 6.2 Maximum Heating performance	The equipment shall operate under the conditions specified without indication of .damage		N/A
Operability at Minimum Heating Condition 6.3 Minimum Heating performance	The heat pump shall operate throughout the test without a cutoff by any safety control		N/A
Verification of Automatic Defrost 6.4 Automatic Defrost performance test	During the defrosting period, the temperature of the air from the indoor-side of the equipment shall not be lower than 18 C for longer		N/A

Test Conditions

Test Conditions	Indoor DB		Indoor WB		Outdoor DB		Outdoor WB	
	Set Point	Actual	Set Point	Actual	Set Point	Actual	Set Point	Actual
Operability 52C (5.2- Maximum cooling performance	32.00	32.00	23.00	23.00	52.00	52.00	31.00	31.00
Operability at minimum cooling conditions	21.00	21.00	15.00	15.00	21.00	21.00	-	
Freeze-up air blockage	21.00	21.07	15.00	15.17	21.00	20.99	-	
Freeze-up drip 5.4 Freeze-up drip performance	21.00	21.07	16.00	15.17	21.00	20.99	-	
Enclosure sweat performance	27.00	24.00	24.00	24.00	27.00	27.10	24.00	24.20
Operability at Maximum Heating Condition	27.00	-	-	-	24.00	-	18.00	-
Operability at Minimum Heating Condition	20.00	-	-	-	7.00	-	6.00	-
Verification of Automatic Defrost 6.4 Automatic defrost performance	20.00	-	15.00	.	2.00	-	1.00	-