

CHUZHOU HANSHANG

DOE TEST REPORT

SCOPE OF WORK

<PERFORMANCE TESTING –REFRIGERATOR– MODELS (See models listed in page two) >

REPORT NUMBER

210101275SHA-004

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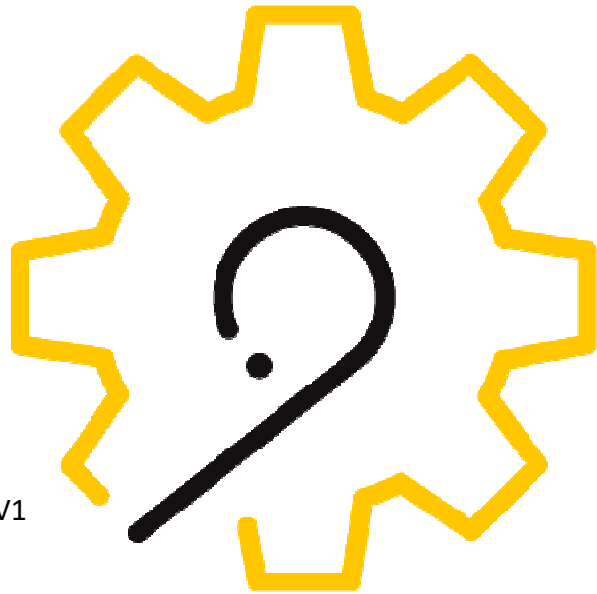
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PAGES

15

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TTRF_10CFR 430 SUBPART B APPENDIX A/B _V1





Total Quality. Assured.

DOE TEST REPORT

INTERTEK TESTING SERVICES SHANGHAI LIMITED

7F, BUILDING 51, NO.1089, QINZHOU NORTH ROAD, SHANGHAI, CHINA.

WWW.INTERTEK.COM

Issued: September 13, 2021

Intertek Report No. 210101275SHA-004

Intertek Project No. 210101275SHA

PERFORMANCE TEST
OF
REFRIGERATOR
RENDERED TO

Chuzhou Hangshang Electrical Appliances Co., Ltd
CHINA

GENERAL: This Report gives the results of Performance Tests of refrigerator, Models: BC-132ANB, BC-132ANL; Brand Name: **RICHME**. Model: EFR492; Brand Name: FRIGIDAIRE. Models: RFR441, RFR453, RFR464, RFR465; Brand Name: RCA. Model: TFR441; Brand name: THOMSON. Model: FTC45R; Brand name: Frestec. This investigation was authorized by Ms. SHAO XIAOYAN on January 20, 2021. The investigation was begun on February 06, 2021 and completed on February 15, 2021. Each of prototype samples in good condition was provided by the client on January 20, 2021 and tested at Intertek Testing Services Shanghai Limited. (7F, Building 51, No.1089, Qinzhou North Road, Shanghai, China.)

10 CFR 430 SUBPART B, APPENDIX A

Applicant:
Chuzhou Hangshang Electrical Appliances Co., Ltd.

Manufacturer:
Chuzhou Hangshang Electrical Appliances Co., Ltd.

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NO. 555, CHANGJIANG EAST ROAD, CHENG DONG
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Sample Descriptions:	
Model:	BC-132ANB
Product:	Refrigerator
Door:	Solid door, hinged type
Refrigerant:	R600a, 26g
Evaporator fan motor:	NO
Condenser fan motor:	NO
Defrost heater:	NO
Anti-sweat heater:	NO
Defrost mode:	Manual defrost
Ice maker:	NO
Refrigerator compartment volume(L/cu.ft):	127/4.5
Freezer compartment volume(L/cu.ft):	0
Total volume(L/cu.ft):	127/4.5
Total adjusted volume(L/cu.ft):	127/4.5
Remark: All models are same appliances except the color of appearance.	

Marking Plate:

RICHME

Refrigerator

Circuit Diagram

Model	BC-132ANB
Rated Voltage (V)	115~
Rated Frequency (Hz)	60
Rated Current (A)	0.8
Max.Lamp's Rated Power(W)	15
Refrigerant	R600a
Refrigerant Weight (g/oz)	26/0.92
Design Pressure:High Side(PSIG)	250
Design Pressure:Low Side(PSIG)	88

Intertek
5011097

Conforms to UL Std.
60335-1 & 60335-2-24
Cert. to CSA Std. C22.2
No. 60335-1 & 60335-2-24

MADE IN CHINA

CHUZHOU HANSHANG ELECTRICAL APPLIANCES CO., LTD.

RICHME

Refrigerator

Circuit Diagram

Model	BC-132ANL
Rated Voltage (V)	115~
Rated Frequency (Hz)	60
Rated Current (A)	0.8
Max.Lamp's Rated Power(W)	1
Refrigerant	R600a
Refrigerant Weight (g/oz)	26/0.92
Design Pressure:High Side(PSIG)	250
Design Pressure:Low Side(PSIG)	88

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Conforms to UL Std.
60335-1 & 60335-2-24
Cert. to CSA Std. C22.2
No. 60335-1 & 60335-2-24

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FRIGIDAIRE Refrigerator	
Model	EFR492
Rated Voltage (V)	115~
Rated Frequency (Hz)	60
Rated Current (A)	0.8
Max.Lamp's Rated Power(W)	15
Refrigerant	R600a
Refrigerant Weight (g/oz)	26/0.92
Design Pressure:High Side(PSIG)	250
Design Pressure:Low Side(PSIG)	88

Circuit Diagram

CHUZHOU HANSHANG ELECTRICAL APPLIANCES CO., LTD.

Conforms to UL Std. 60335-1 & 60335-2-24
Cert. to CSA Std. C22.2
No. 60335-1 & 60335-2-24

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Refrigerator

Model : RFR441

Circuit Diagram

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Cert. to CSA Std. C22.2
No. 60335-1 & 60335-2-24

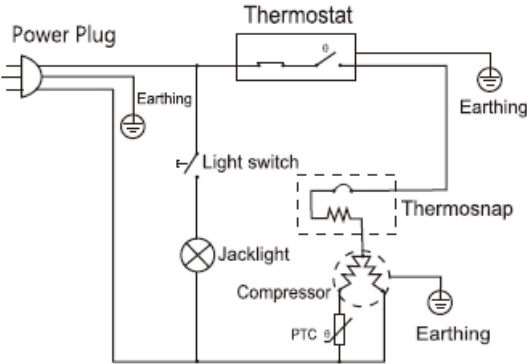
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Model	RFR441
Rated Voltage (V)	115~
Rated Frequency (Hz)	60
Rated Current (A)	0.8
Max.Lamp's Rated Power(W)	15
Refrigerant	R600a
Refrigerant Weight (g/oz)	26/0.92
Design Pressure:High Side(PSIG)	250
Design Pressure:Low Side(PSIG)	88



Refrigerator

Circuit Diagram



MADE IN CHINA

CHUZHOU HANSHANG ELECTRICAL APPLIANCES CO., LTD.

Model : RFR453

Model	RFR453
Rated Voltage (V)	115~
Rated Frequency (Hz)	60
Rated Current (A)	0.8
Max.Lamp's Rated Power(W)	15
Refrigerant	R600a
Refrigerant Weight (g/oz)	26/0.92
Design Pressure:High Side(PSIG)	250
Design Pressure:Low Side(PSIG)	88



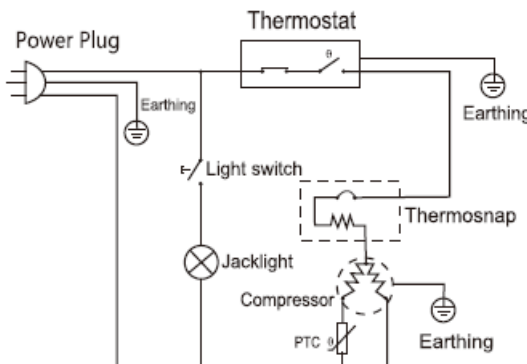
Conforms to UL Std.
60335-1 & 60335-2-24
Cert. to CSA Std. C22.2
No. 60335-1 & 60335-2-24





Refrigerator

Circuit Diagram



MADE IN CHINA

CHUZHOU HANSHANG ELECTRICAL APPLIANCES CO., LTD.

Model : RFR464

Model	RFR464
Rated Voltage (V)	115~
Rated Frequency (Hz)	60
Rated Current (A)	0.8
Max.Lamp's Rated Power(W)	15
Refrigerant	R600a
Refrigerant Weight (g/oz)	26/0.92
Design Pressure:High Side(PSIG)	250
Design Pressure:Low Side(PSIG)	88



Conforms to UL Std.
60335-1 & 60335-2-24
Cert. to CSA Std. C22.2
No. 60335-1 & 60335-2-24

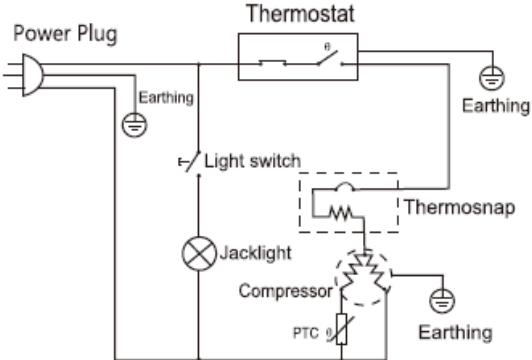




Refrigerator

Model : RFR465

Circuit Diagram



MADE IN CHINA

CHUZHOU HANSHANG ELECTRICAL APPLIANCES CO., LTD.

Model	RFR465
Rated Voltage (V)	115~
Rated Frequency (Hz)	60
Rated Current (A)	0.8
Max.Lamp's Rated Power(W)	15
Refrigerant	R600a
Refrigerant Weight (g/oz)	26/0.92
Design Pressure:High Side(PSIG)	250
Design Pressure:Low Side(PSIG)	88



Conforms to UL Std.
60335-1 & 60335-2-24
Cert. to CSA Std. C22.2
No. 60335-1 & 60335-2-24





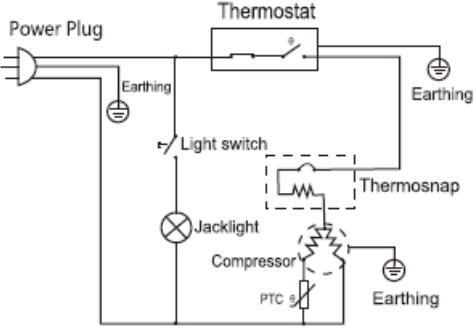
Refrigerator

Model : TFR441

Model	TFR441
Rated Voltage (V)	115~
Rated Frequency (Hz)	60
Rated Current (A)	0.8
Max.Lamp's Rated Power(W)	15
Refrigerant	R600a
Refrigerant Weight (g/oz)	26/0.92
Design Pressure:High Side(PSIG)	250
Design Pressure:Low Side(PSIG)	88

CHUZHOU HANSHANG ELECTRICAL APPLIANCES CO., LTD.

Circuit Diagram

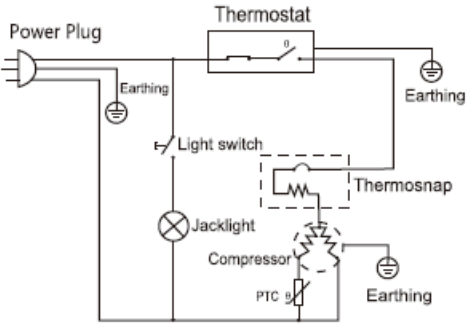


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Conforms to UL Std.
60335-1 & 60335-2-24
Cert. to CSA Std. C22.2
No. 60335-1 & 60335-2-24



Frestec Refrigerator	Circuit Diagram																		
<table> <tr> <td>Model</td><td>FTC45R</td></tr> <tr> <td>Rated Voltage (V)</td><td>115~</td></tr> <tr> <td>Rated Frequency (Hz)</td><td>60</td></tr> <tr> <td>Rated Current (A)</td><td>0.8</td></tr> <tr> <td>Max.Lamp's Rated Power(W)</td><td>15</td></tr> <tr> <td>Refrigerant</td><td>R600a</td></tr> <tr> <td>Refrigerant Weight (g/oz)</td><td>26/0.92</td></tr> <tr> <td>Design Pressure:High Side(PSIG)</td><td>250</td></tr> <tr> <td>Design Pressure:Low Side(PSIG)</td><td>88</td></tr> </table>	Model	FTC45R	Rated Voltage (V)	115~	Rated Frequency (Hz)	60	Rated Current (A)	0.8	Max.Lamp's Rated Power(W)	15	Refrigerant	R600a	Refrigerant Weight (g/oz)	26/0.92	Design Pressure:High Side(PSIG)	250	Design Pressure:Low Side(PSIG)	88	 The circuit diagram illustrates the electrical system of the refrigerator. It starts with a power plug connected to a line and a neutral line. The line passes through a thermostat and then splits to a light switch and a compressor. The light switch controls a jacklight. The compressor is connected to a PTC (Positive Temperature Coefficient) device. Both the light switch and the compressor are connected to a common earthing point. A thermosnap is also shown connected to the line and earthing.
Model	FTC45R																		
Rated Voltage (V)	115~																		
Rated Frequency (Hz)	60																		
Rated Current (A)	0.8																		
Max.Lamp's Rated Power(W)	15																		
Refrigerant	R600a																		
Refrigerant Weight (g/oz)	26/0.92																		
Design Pressure:High Side(PSIG)	250																		
Design Pressure:Low Side(PSIG)	88																		
 Conforms to UL Std. 60335-1 & 60335-2-24 Cert. to CSA Std. C22.2 No. 60335-1 & 60335-2-24 Intertek 5011097  MADE IN CHINA CHUZHOU HANSHANG ELECTRICAL APPLIANCES CO., LTD.																			

Photos:





Critical Components Table:

Object / part No.	Manufacturer/ trademark	Type / model	Technical data
Compressor	HUAYI	L35C5L	110-120V, 60Hz, R600a

Test results:
Appended table for energy consumption:

Sample number (Sample 1)		Temperature control position			
		Median position		Warmest position	
Test conditions	Frequency(HZ)	60		60	
	Voltage(V)	115.3		115.0	
	Ambient temperature(° C)	32.3		32.2	
	The relative humidity	50%		50%	
Fresh food compartment temperature (° C)		TR1	1.95	TR1	-2.00
		TR2	5.46	TR2	1.74
		TR3	5.17	TR3	1.36
		Average	4.19	Average	0.37
Freezer compartment temperature (° C)		TF1	--	TF1	--
		TF2	--	TF2	--
		TF3	--	TF3	--
		Average	--	Average	--
ET		0.518 (ET1)		0.639 (ET2)	
IET		0			
E1(Target temperature is 3.9 for fresh food compartment)		0.527			
E2(Target temperature is -17.8 for freezer compartment)		NA			
Energy consumption for Sample 1 (kWh/day)		0.527			
Energy consumption (kWh/year)		192.4			

Sample number (Sample 2)		Temperature control position			
		Median position		Coldest position	
Test conditions	Frequency(HZ)	60		60	
	Voltage(V)	115.2		115.1	
	Ambient temperature(° C)	32.1		32.2	
	The relative humidity	48%		49%	
Fresh food compartment temperature (° C)		TR1	2.15	TR1	-2.01
		TR2	7.06	TR2	3.22
		TR3	6.08	TR3	2.08
		Average	5.10	Average	1.10
Freezer compartment temperature (° C)		TF1	--	TF1	--
		TF2	--	TF2	--
		TF3	--	TF3	--
		Average	--	Average	--
ET		0.457(ET1)		0.574 (ET2)	
IET		0			
E1(Target temperature is 3.9 for fresh food compartment)		0.492			
E2(Target temperature is -17.8 for freezer compartment)		NA			
Energy consumption for Sample 2 (kWh/day)		0.492			
Energy consumption (kWh/year)		179.6			

Sample number (Sample 3)		Temperature control position			
		Median position		Coldest position	
Test conditions	Frequency(HZ)	60		60	
	Voltage(V)	115.0		115.1	
	Ambient temperature(° C)	32.2		32.2	
	The relative humidity	50%		49%	
Fresh food compartment temperature (° C)		TR1	-1.22	TR1	-3.41
		TR2	6.28	TR2	3.10
		TR3	8.87	TR3	4.41
		Average	4.64	Average	1.37
Freezer compartment temperature (° C)		TF1	--	TF1	--
		TF2	--	TF2	--
		TF3	--	TF3	--
		Average	--	Average	--
ET		0.494(ET1)		0.578 (ET2)	
IET		0			
E1(Target temperature is 3.9 for fresh food compartment)		0.513			
E2(Target temperature is -17.8 for freezer compartment)		NA			
Energy consumption for Sample 3 (kWh/day)		0.513			
Energy consumption (kWh/year)		187.2			

Sampling Plan:

Sample no.	Energy consumption(kWh/year)
Sample 1	192.4
Sample 2	179.6
Sample 3	187.2
Sample mean	186.4
UCL/1.1 (95%confidence)	179.2
Rated	226

Verification of DOE

Model(s):	BC-132ANB; BC-132ANL; EFR492; RFR441; RFR453; RFR464; RFR465; TFR441; FTC45R
Product Class:	11A. Compact All Refrigerator-manual defrost
Total adjusted volume	127L
Maximum Energy use(kWh/year)	$0.277av + 219.1 = 254.3$
Verdict	Pass

Conclusion:

From the results of our testing on the submitted samples, we are of the opinion that the samples comply with the requirements of DOE.

Report prepared by:



Project Engineer
Wendy Wang

Report approved by:



Technical Supervisor
Vicent Ni