

TEST REPORT

Applicant:	Hefei Hualing Co., Ltd.
Address:	No.176 JinXiu Road,Hefei Economy &Technology Development Area, Hefei, 230601, P.R.China.
Product:	Refrigerator
Model / Brand:	HS-173LN(CE-BC133CM-JQ)
Rating:	220-240V, 50Hz, 0.36A, R600a/24g, Climate class SN/N/ST.
Testing Laboratory:	Intertek Testing Services Shanghai Limited.
Test location:	7F, Building 51, No.1089, Qinzhou North Road, Shanghai, China
Date of receipt of test item:	February 20, 2023
Date(s) of performance of test:	From February 25, 2023 to March 10, 2023
Test methods:	EU 2019/2019+EU 2021/341; EU 2019/2016+EU 2021/340; EN 62552-1:2020,EN 62552-2:2020 and EN 62552-3:2020; EN 60704-1:2010+A11:2012; EN 60704-2-14:2013+A11:2015+A1:2019
Conclusion: The sample was tested for energy efficiency class according to EU 2019/2016+EU 2021/340. It was found to comply with the requirements of energy efficiency class E and Energy efficiency requirements from 1 March, 2021 of Ecodesign requirements EU 2019/2019+EU 2021/341.	

Prepared by:

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Reviewed by:



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Reviewer

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NOTE:

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2. This report relates to the a.m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.
3. All the tests were performed in laboratory according to the standard EN 62552 requirements, located at 7F, Building 51, No.1089, Qinzhou North Road, Shanghai, China.
4. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.
5. Test case does not apply to the test object: N/A;
Test item does meet the requirement: P;
Test item does not meet the requirement: F;
Test case not checked: --.

Labels:

Rated Voltage(V)	220-240	 <p>Refrigerator</p> <p>HS-173LN (CE-BC133CM-JQ)</p> 
Rated Frequency(Hz)	50	
Climate Classification	SN,N,ST	
Rated Current(A)	0.36	
Refrigerant	R600a	
Amount(g)	24	
Total Volume(L)	131	
Fresh food compartment Volume(L)	131	
Annual energy consumption AE (kWh/a)	90	
Energy consumption E16 (kWh/24h)	0.127	
Energy consumption E32 (kWh/24h)	0.365	
Insulation Blowing Agent	Cyclopentane	
Compressor	WV43YT	
Authorized EEA		
Importer / Address:		
Manufacturer / Address:		
Serial Number		
Hefei Hualing Co., Ltd		

EN 62552-2:2020			
Clause	Requirement – Test	Result – Remark	Verdict
6	Storage test	See appended table 1	P
7	Cooling capacity test		--
8	Freezing capacity test		N/A
9	Automatic ice-making capacity test		N/A
Annex A	Pull down test		--
Annex B	Wine storage appliances and compartments; storage test		N/A
Annex C	Temperature rise test		N/A
Annex D	Water vapour condensation test		--
EN 62552-3:2020			
All	Energy Consumption and volume	See appended table 3 and table 4	P

COMMISSION REGULATION (EU) No 2019/2019+EU2021/341			
Clause	Requirement – Test	Result – Remark	Verdict
Annex II	Ecodesign requirements		
1	Energy efficiency requirements:		
	From 1 March 2021, the energy efficiency index (EEI) of refrigerating appliances shall not be above the values as set out in Table 1.		P
	From 1 March 2024, the EEI of refrigerating appliances shall not be above the values set out in Table 2.		N/A
2	Functional requirements:		
	From 1 March 2021, refrigerating appliances shall meet the following requirements:		P
	Any fast freeze facility, or any similar function achieved through modification of the temperature settings in freezer compartments, shall, once activated by the end-user according to the manufacturer's, the importer's or authorised representative's instructions, automatically revert to the previous normal storage conditions after no more than 72 hours.		N/A
	Winter settings shall be automatically activated or de-activated according to the need to maintain the frozen compartment(s) at the correct temperature.		N/A
	Each compartment shall be marked with the appropriate identification symbol. For the frozen compartments this shall be the number of stars of the compartment. For the chill and unfrozen compartments, this shall be an indication, chosen by the manufacturer, the importer or authorised representative, of the type of food that should be stored in the compartment.		P
	If the refrigerating appliance contains vacuum insulation panels, the refrigerating appliance shall be labelled with the letters 'VIP' in a clearly visible and readable way.		N/A
	For 2-star sub-compartments or 2-star sections: 1. a 2-star sub-compartment or 2-star section is separated from the 3-star or 4-star volume by a partition, container, or similar construction; 2. the volume of the 2-star sub-compartment or 2-star section does not exceed 20 % of the total volume of the containing compartment.		N/A
	For 4-star compartments, the freezing time to bring the temperature of the light load from +25 to - 18 °C at an ambient temperature of 25 °C shall be such that the resulting freezing capacity complies with the requirement in Article 2, point 22.		N/A
	Until 1 March 2024, the requirements laid down in points 2(a) and (b) shall not apply to combi appliances with one electromechanical thermostat and one compressor which are not equipped with an electronic control board.		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
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4	Information requirements:		
	From 1 March 2021, instruction manuals for installers and end-users, and free access website of manufacturers, importers or authorised representatives shall include the following information:		P
	the combination of drawers, baskets and shelves that result in the most efficient use of energy for the refrigerating appliance;		P
	clear guidance about where and how to store foodstuffs in a refrigerating appliance for best preservation over the longest period, to avoid food waste;		P
	the recommended setting of temperatures in each compartment for optimum food preservation. These settings shall not contradict the storage conditions set out in Annex III, Table 3;		P
	an estimation of the impact of temperature settings on food waste;		P
	a description of the effects of special modes and features, and in particular how temperatures are affected in each compartment and for how long;		N/A
	for wine storage appliances: 'this appliance is intended to be used exclusively for the storage of wine'. This shall not apply to refrigerating appliances that are not specifically designed for wine storage but may be used for this purpose, or to refrigerating appliances that have a wine storage compartment combined with any other compartment type;		N/A
	instructions for the correct installation and end-user maintenance, including cleaning, of the refrigerating appliance;		P
	for a freestanding appliance: 'this refrigerating appliance is not intended to be used as a built-in appliance';		P
	for appliances without a 4-star compartment: 'this refrigerating appliance is not suitable for freezing foodstuffs';		P
	access to professional repair, such as internet webpages, addresses, contact details;		P
	relevant information for ordering spare parts, directly or through other channels provided by the manufacturer, importer or authorised representative;		P
	the minimum period during which spare parts, necessary for the repair of the appliance, are available;		P
	the minimum duration of the guarantee of the refrigerating appliance offered by the manufacturer, importer or authorised representative;		P

COMMISSION REGULATION (EU) No 2019/2019+EU2021/341			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>for refrigerating appliances with climate class: extended temperate: 'this refrigerating appliance is intended to be used at ambient temperatures ranging from 10°C to 32°C'; temperate: 'this refrigerating appliance is intended to be used at ambient temperatures ranging from 16°C to 32C'; subtropical: 'this refrigerating appliance is intended to be used at ambient temperatures ranging from 16°C to 38C'; tropical: 'this refrigerating appliance is intended to be used at ambient temperatures ranging from 16°C to 43C';</p>		P
	<p>instruction on how to find the model information in the product database, as defined in Regulation (EU) 2019/2016 by means of a weblink that links to the model information as stored in the product database or a link to the product database and information on how to find the model identifier on the product.</p>		P

Clause 6 of EN 62552-2:2020		Table 1: storage test		Pass
Ambient temperature (°C)	Compartment Type	Measured temperature (°C)	Required temperature (°C)	
10	Fresh food compartment	T _{ma} =3.26 T _{1m} =3.40 T _{2m} =3.48 T _{3m} =2.89	T _{ma} ≤ +4, 0 ≤ T _{1m} , T _{2m} , T _{3m} ≤ +8	
	Four star compartment	N/A	≤ -18	
	Average temperature deviation of any package between period E and period S	N/A	≤ 0.2	
38	Fresh food compartment	T _{ma} =2.89 T _{1m} =4.38 T _{2m} =3.28 T _{3m} =1.03	T _{ma} ≤ +4, 0 ≤ T _{1m} , T _{2m} , T _{3m} ≤ +8	
	Four star compartment	N/A	≤ -18	
	Average temperature deviation of any package between period E and period S	N/A	≤ 0.2	

Clause 8 of EN 62552-2:2020		Table 2: Freezer capacity		N/A
Items	Measured value	Required value		
Volume of the four star compartment	N/A	--		
Weight of blast load (kg)	N/A	--		
Weight of light load (kg)	N/A	--		
Ballast load warmest M package	N/A	≤ -15°C		
Ballast load warmest M package(end)	N/A	≤ -18°C		
Freezer time (h)	N/A	--		
Measured freezing capacity(kg/24h)	N/A	--		
Rated freezing capacity(kg/24h)	N/A	--		
Deviation	N/A	≥ 100%(Measured/Rated)		

Annex H of EN 62552-3:2020	Table 3: Determination of volume			Pass
Compartment type	Measured storage volume(L)	Rated storage volume(L)	Measured/Rated	Requirement (Measured/Rated)
Fresh food compartment	131.1	131	100.1%	≥100%
Total volume	131.1	131	100.1%	≥100%

EN 62552-3:2020	Table 4: Energy consumption		P	
Test condition: Ambient temperature:	32°C		16°C	
Temperature control position	Set 1	Set 2	Set 1	Set 2
Fresh food compartment temperature	3.04	5.41	3.73	4.44
Four star compartment temperature	N/A	N/A	N/A	N/A
Energy consumption(Wh/day)	351.3	301.3	107.4	101.6
Incremental defrost and recovery energy consumption(wh)	N/A	N/A	N/A	N/A
Defrost interval(h)	N/A	N/A	N/A	N/A
Interpolation energy consumption(Wh/day)	331.0		105.3	
E daily(kWh/24h)	0.218			
E aux	0			
AE(KWh/year)(L=1)	79.57			
Rated annual energy consumption(KWh/year)	90			

Sound power level test (EN 60704-1:2010+A11:2012; EN 60704-2-14:2013+A11:2015+A1:2019)						
Test voltage/frequency:		230V / 50Hz				
Measured surface:		See figure 1				
Environments:	Background noise	<18 dB(A)				
	Radius of free field	-				
	Ambient temperature	23°C				
	Relative humidity	50%				
Overall dimensions(L*W*H) mm		574*535*845				
Measurement surface area S (m ²)		14.54				
Microphone Position	1	2	3	4	5	6
L _{pi} : (circle 1) dB(A)	25.70	23.50	26.40	23.20	24.80	23.70
L _{pi} : (circle 2) dB(A)	24.70	22.20	23.30	22.30	24.30	21.60
L _{pi} : (circle 3) dB(A)	24.60	23.30	24.40	22.40	24.90	22.00
L _{pmc} / Average sound pressure level dB(A)		23.89				
L _W / Sound power level dB(A)		35.50				
L _W / Sound power level dB(A) (Declared)		39				
Airborne acoustical noise emission class (according to Commission Regulation (EU) 2019/2016)		C				

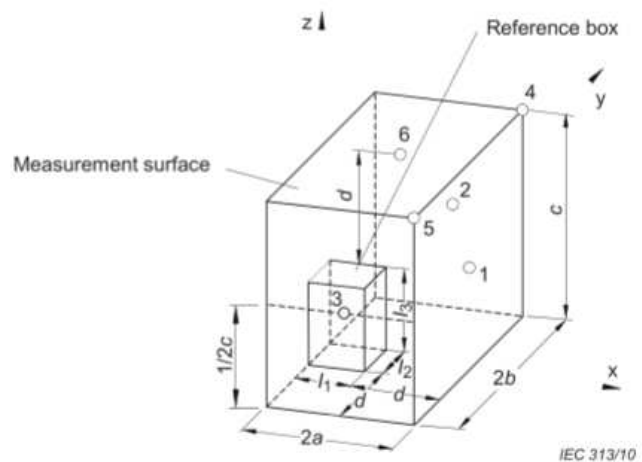
Figure 1

Co-ordinates of microphone positions:

N°	x	y	z
1	2a	0	0,5c
2	a	b	0,5c
3	a	-b	0,5c
4	2a	b	c
5	2a	-b	c
6	a	0	c

Measurement surface area:

$$S = 2(2ac + 2ab + bc)$$



EU 2019/2016+EU 2021/340_ANNEX V Product information sheet			
Type of refrigerating appliances:			
Low-noise appliance:	[Yes/no]	Design type:	[built-in/freestanding]
Wine storage appliance:	[Yes/no]	Other refrigerating appliances:	[Yes/no]
General product parameters:			
Parameter	value	Parameter	Value
Overall dimensions (millimetre)	Height	845	Total volume(L)
	Width	553	
	Depth	574	
EEI	100%	Energy efficiency class	E
Airborne acoustical noise emissions(dB(A) re 1 pW)	39	Airborne acoustical noise emission class	C
Annual energy consumption(kWh/a)	90	Climate class:	SN/N/ST
Minimum ambient temperature(°C) for which the refrigerating appliance is suitable	10	Maximum ambient temperature(°C) for which the refrigerating appliance is suitable	38
Winter setting	[Yes/no]		

EU 2019/2016+EU 2021/340 _ANNEX V Product information sheet		Compartment Parameters			
Compartment type		Compartment parameters and values			
		Compartment Volume (L)	Recommended temperature setting for optimised food storage (°C) These settings shall not contradict the storage conditions set out in Annex IV, Table 3	Freezing capacity (kg/24 h)	Defrosting type (auto-defrost = A, manual defrost = M)
Pantry	[yes/no]	N/A	N/A	N/A	N/A
Wine storage	[yes/no]	N/A	N/A	N/A	N/A
Cellar	[yes/no]	N/A	N/A	N/A	N/A
Fresh food	[yes/no]	131	4	N/A	M
Chill	[yes/no]	N/A	N/A	N/A	N/A
0-star or ice – making	[yes/no]	N/A	N/A	N/A	N/A
1-star	[yes/no]	N/A	N/A	N/A	N/A
2-star	[yes/no]	N/A	N/A	N/A	N/A
3-star	[yes/no]	N/A	N/A	N/A	N/A
4-star	[yes/no]	N/A	N/A	N/A	N/A
2-star section	[yes/no]	N/A	N/A	N/A	N/A
Variable temperature compartment	[yes/no]	N/A	N/A	N/A	N/A
For 4-star compartments					
Fast freeze facility			[yes/no]		
Light source parameters					
Type of light source			LED		
Energy efficiency class			N/A		

EU 2019/2016+EU 2021/340			
General product specifications:			
Parameter	Value	Parameter	Value
AE Annual energy consumption(kWh/a)	90.00	EEl(%)	99.2%
SAE Standard annual energy consumption (kWh/a)	90.72	Combi parameter	1
Temperature rise time(h)	N/A	Load factor	1
Door heat loss factor	1	Climate class	SN/N/ST
Anti-condensation heater type	None	Airborne acoustical noise emissions (dB(A) re 1 pW)	39
Additional product specifications for refrigerating appliances, except for low noise refrigerating appliances			
parameter	value		
Daily energy consumption at 32°C (kWh/24h)	0.365		
Additional product specifications for low noise refrigerating appliances: N/A			
parameter	value		
Daily energy consumption at 25°C (kWh/24h)	N/A		
Additional product specifications for wine storage appliances: N/A			
parameter	value	parameter	value
Internal humidity (%)	N/A	Number of bottles	N/A

EU 2019/2016+EU 2021/340								
Compartment specifications:								
Compartment type	Compartment parameters and values							
	Target temperature (° C)	Compartment volume (dm3 or l)	Freezing capacity (kg/24 h)	Thermodynamic parameter (rc)	Nc	Mc	Defrost factor(Ac)	Built-in factor(Bc)
Pantry	+17	N/A	-	0.35	75	0.12	1.00	1.00
Wine storage	+12	N/A	-	0.60	75	0.12	1.00	1.00
Cellar	+12	N/A	-	0.60	75	0.12	1.00	1.00
Fresh food	+4	131	-	1.00	75	0.12	1.00	1.00
Chill	+2	N/A	-	1.10	138	0.12	1.00	1.00
0-star or ice making	0	N/A	-	1.20	138	0.15	N/A	1.00
1-star	-6	N/A	-	1.50	138	0.15	N/A	1.00
2-star	-12	N/A	-	1.80	138	0.15	N/A	1.00
3-star	-18	N/A	-	2.10	138	0.15	N/A	1.00
4-star	-18	N/A	-	2.10	138	0.15	1.00	1.00
2-star section	-12	N/A	-	1.80	138	0.15	N/A	1.00
Variable temperature compartment	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
The sum of the volumes of the chill compartment(s) and the unfrozen compartment(s) [l or dm3]		131						
The sum of the volumes of the frozen compartment(s) [l or dm3]		0						

EEI Calculation:		
Parameters	Measured value	Rated value
E ₁₆ (Energy consumption at 16°C) (kWh/24h)	0.105	0.127
E ₃₂ (Energy consumption at 32°C) (kWh/24h)	0.331	0.365
E _{daily} (Daily energy consumption)(kwh/24h) $E_{daily} = 0,5 \times (E_{16} + E_{32})$	0.218	0.246
E _{aux} (Auxiliary energy)	N/A	N/A
Load factor L	1.0	
AE(Annual energy consumption)(kWh/a) $AE = 365 \times E_{daily} / L + E_{aux}$	79.57	90
SAE(Standard annual energy consumption) $SAE = C \times D \times \sum_{c=1}^n A_c \times B_c \times [V_c V] \times (N_c + V \times r_c \times M_c)$	90.73	90.72
EEI(%) $EEI = AE / SAE.$	87.7	99.2
Energy efficiency class	E	E
Maximum EEI (EEI≤125)	Pass	Pass

Critical Component List:

Object / part No.	Manufacturer/trademark	Type / model	Technical data
Compressor	Hangzhou Qianjiang Refrigeration Compressor Group Co., Ltd.	WV43YT	220-240V, 50Hz, R600a

Photos:



Front view



Internal view



Rear view



Compressor label