The following samples were submitted and identified on behalf of the client as:

COMMISSION DELEGATED REGULATION (EU) No 2019/2018
supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of refrigerating appliances with a direct sales function
COMMISSION REGULATION (EU) No 2019/2024

laying down ecodesign requirements for refrigerating appliances with a direct sales function pursuant to Directive 2009/125/EC

Report Reference No..... :	**ROTOR2408120002**
Tested by (name + signature)..... :	Fang ya Chen Brad
Approved by (+ signature) ..... :	Yu
Date of issue.....:	2024-8-24
Total number of pages.....	8 pages
Testing Laboratory.....:	Ningbo Rotor Electrical Appliances Co., Ltd. Testing Center.
Address.....:	West Zone, Industrial Park,Guanhaiwei,Cixi,Ningbo,315315 Zhejiang, China
Accreditation to test to ISO 23953-2:	Yes

Applicant's name.....:	Ningbo Rotor Electrical Appliances Co., Ltd.
Address..... :	West Zone, Industrial Park, Guanhaiwei, Cixi, Ningbo, 315315 Zhejiang, China

Test specification:

Standard ..... :	ISO 23953-1: 2023 ISO 23953-2: 2023 COMMISSION REGULATION (EU) No 2019/2024; COMMISSION DELEGATED REGULATION (EU) No 2019/2018
Test procedure .....:	Testing Center
Non-standard test method……..:	None

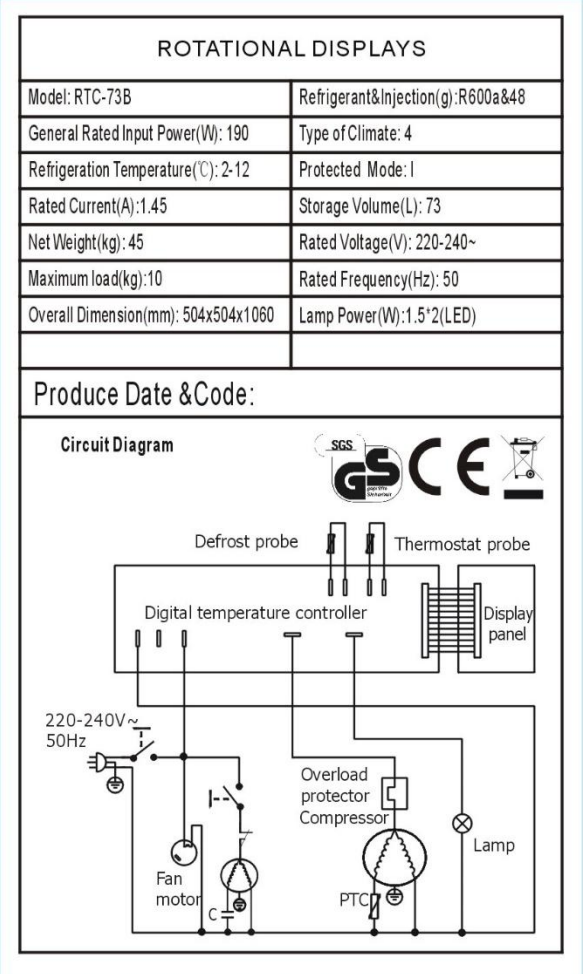
Test Report Form No.....:	ISO 23953-1/2:2023
Test Report Form(s) Originator.....:	Testing Center
Master TRF.....:	2011-09-06 (Updated to ISO 23953-1/-2:2023)

Test item description.....:	Vertical and combined supermarket refrigerator cabinets
Trade Mark.....:	--
Manufacturer.....:	Same as applicant
Model/Type reference.....:	RTC-73B
Ratings.....:	220-240 V; 50 Hz; R600a/48 g; Class I

Summary of testing:	
Tests performed(name of test and test clause): The submitted appliances comply with the specific standards. Tests according to the following standards were carried out: COMMISSION REGULATION (EU) No 2019/2024 COMMISSION DELEGATED REGULATION (EU) No 2019/2018 ISO 23953-1: 2023 ISO 23953-2: 2023 Thetested energy consumption is: 6.11 kWh/day/m^2.	**Testing location:** West Zone, Industrial Park, Guanhaiwei, Cixi, Ningbo, 315315 Zhejiang, China

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 National Certification Body that owns these marks.



Section1: Product specification

Product	Vertical and combined supermarket refrigerator cabinets
Cabinet type	Remote□ Self-contained☒
Brand name	／ Ningbo Rotor
Designation of the appliance	VC4
Model No.	RTC-73B
Serials No.	N/A
Rating(s)	220-240V~;50Hz
M-package Temperature class(for self-contained M2 display cabinets only)	H1
Designated Climate class	Tested under Climate Class4(30 °C ± 0.5 °C / 55 % ± 5 % RH)
Thermostat-setting (SP):	0 ° C ± 1 ° C
Refrigerant type	R600a / 48g
Appliance external dimensions(advisory only)	
Width(mm)	504
Height(mm)	1060
Depth(mm)	504
Night-cover supplied with the unit	Yes□ No☒
Manual light switch fitted	Yes□ No☒
Lighting, or part of the lighting controlled by a time- clock,or occupancy sensor (included in energy measurement)	
Smart sensor or similar device.....	Yes□ No☒
Anti-sweat heaters controlled by a time-clock, or automatic sensor (energy included in Edaily)	
smart sensor or similar automatic device	Yes□ No☒
Type of light source：	LED
Directional or Non Directional ：	Non Directional
Mains or Non-Mains ：	Non-Mains
Connected Light Source ：	Yes□ No☒ N/A□
Colour Tunable light source ：	Yes□ No☒ N/A□
High luminance light source ：	Yes□ No☒ N/A□
Anti-glare shield ：	Yes□ No☒ N/A□
Dimmable ：	Yes□ No☒ N/A□
Light source energy dfficiency class：	□Not check □N/A ☒ G

Defrost type: Automatic Electric

Defrost frequency: 2 cyles / 24 h

Fan type: Axial

Door or cover type: Sliding Glass door

Lighting power (W): 12 ：

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Tested under Climate Class 4 (30 °C ± 0.5 °C / 55 % ± 5 % RH) according to ISO 23953-2:2023. TRF No. EU No. ISO 23953_A (2023)

Section2:

General testing conditions:

Item	Description	Unit	Measurement/ Result	Requirements	
1	Climate class for testing room where the test was carried out	- ℃	30.0℃	Set 1	OK
2	Measurement of temperature in climate measuring point	℃	30.0℃	30.0℃	OK
3	Measurement of relative humidity in climate measuring point	%R.H.	55.0%	55%	OK

Testing carried out under Climate Class 4 conditions (30 °C ± 0.5 °C/55%±5%RH) as per ISO 23953-2:2023.

Cabinet Preparation:

Item	Description	Unit	Measurement/ Result	Requirements	Inspection
	The cabinet location according to	-	-	-	
1	X	mm	2000	2000	OK
2	B	mm	1600	≥1000 (recommended)	OK
3	Y	mm	2000	≥1500	OK
4	A	mm	1000	≥800	OK

Airflow, clearance and ambient setup according to ISO 23953-2:2023 Annex C (installation test conditions).

Test result:

Description	Measurement/Result	Requirement Special classification	Inspection
Highest temperature of warmest M-package	8.4℃	10℃	OK
Lowest temperature of coldest M-package	1.7℃	-1℃	OK
Highest minimum temperature of all M-package	N/A	N/A	N/A

Total Display Area (TDA) (m2)	0.59 m²
The total energy consumption of the refrigerated cabinet (kWh/day) (Edaily)	3.6036 kWh/day

Measurements revised in accordance with ISO 23953-2:2023. Energy consumption includes defrost, lighting and auxiliary components. Test conducted under Class 4 (30°C / 55% RH) environment.

Test Summary:		
Kind of product	Vertical and combined supermarket refrigerator cabinets	
M-package Class	H1	
AE(kwh/a): (refrigerated cabinet's annual energy consumption, Edaily×365)	1315.31 kWh/a	
SAE (kwh/a): (Standard annual energy consumption, SAE=365×P× (M+N×Y)×C.)	P value (correction factor)……..:	1.0
	M value (modeling parameters)……...:	9.1
	N value (modeling parameters)……:	9.1
	Y value (TDA)……..:	0.59
	C value (temperature coefficient)……..:	1.0
	Calculated SAE: 5281.19	
EEI: (Energy efficiency index, EEI = AE/SAE.)	24.9	

Category	Value for M	Value for N
Beverage coolers	2.2	0.006
Ice-cream freezers	2.1	0.009
Refrigerated vending machines	4.3	0.004
Gelato-scooping cabinets	25.0	30.4
Vertical & combined supermarket refrigerator cabinets	8.8	8.8
Horizontal supermarket refrigerator cabinets	3.7	3.5
Vertical & combined supermarket freezer cabinets	7.3	19.0
Horizontal supermarket freezer cabinets	4.0	10.3
Roll-in cabinets (from 1 March 2021)	9.2	11.6
Roll-in cabinets (from 1 September 2023)	9.1	9.1

Note: Coefficients M and N are derived from EU Regulation 2019/2018 Annex D. They are applied with correction (P) and temperature (C) factors defined in ISO 23953-2:2023. For roll-in cabinets, the applicable set (March 2021 or September 2023) depends on the product placing date on the EU market.

Ecode sign requirements Compliance:			
Energy efficiency index	Value	Verifying limit	Verdict (Pass/False)
EEI	24.9	<100(from 2021.03.01)	Pass
		<80(from 2023.09.01)	Pass

From 1 March 2021, the EEI of refrigerating appliances with a direct sales function shall not be above the values as set out in Table 1:

Table 1

Maximum EEI for refrigerating appliances with a direct sales function, expressed in %

	EEI
Ice-cream freezers	80
All other refrigerating appliances with a direct sales function	100

From 1 September 2023, the EEI of refrigerating appliances with a direct sales function, except for refrigerated drum vending machines, shall not be above the values as set out in Table 2.

Table 2

Maximum EEI for refrigerating appliances with a direct sales function, expressed in %

	EEI
Ice-cream freezers	50
All other refrigerating appliances with a direct sales function, except refrigerated drum vending machines	80

This section has been revised according to ISO 23953-1/-2:2023 and the harmonized EU 2019/2018 and 2019/2024 regulations. EEI values calculated include defrost, lighting, and control system energy consumption under Class 4 (30 °C / 55 % RH) conditions.

Energy efficiency classes:		
Energy efficiency index	Value	Number of stars
EEI	24.9	C

The energy efficiency class of a refrigerating appliance with a direct sales function shall be determined on the basis of its EEI as set out in Table 1.

Table 1

Energy efficiency classes of refrigerating appliances with a direct sales function

Energy Efficiency Class	EEI
A	EEI < 10
B	10 ≤ EEI < 20
C	20 ≤ EEI < 35
D	35 ≤ EEI < 50
E	50 ≤ EEI < 65
F	65 ≤ EEI < 80
G	EEI ≥ 80

Test Result:

RTC-73B – Energy Efficiency Calculation (ISO 23953-2023)

Parameter	Value	Notes
P value (correction factor)	1.00	Self-contained cabinet, ISO 23953-2:2023 default
M value	9.1	From EU 2019/2018 Annex D (Vertical & Combined Refrigerated Display Cabinets)
N value	9.10	From EU 2019/2018 Annex D
Y value (TDA)	0.59 m²	Measured per Annex C
C value (temperature coefficient)	1.00	Climate Class 4 (30 °C / 55 % RH)
Calculated SAEC (kWh/a)	5 281.19	Calculated using 365 × P × (M + N × Y) × C
AE (kWh/a)	1 315.31	Measured annual energy consumption
EEI (%)	24.9	EEI = AE / SAEC × 100
Energy Class	C	According to EU 2019/2018 Table 1

Note: All calculations revised according to ISO 23953-1:2023 and ISO 23953-2:2023 (Annex C). Using P = 1.00 and C = 1.00 for self-contained Climate Class 4 cabinet. Resulting EEI = 24.9% → Energy Class C (20 ≤ EEI < 35).