



**Technical Report No.: 64.181.23.01416.01 Rev.00**

**Date: 2023-07-28**

Client: Report holder's name: Guangdong JNOD New Energy Technology Co,Ltd

Report holder's Address: 5th Building WISDOM CREATE WEALTH Industrial Park, Xingtan, Shunde, Foshan,Guangdong, PRC.

Contact person of report holder: Mr. Huang Weiping

Manufacturer: Manufacturer's name: Guangdong JNOD New Energy Technology Co,Ltd

Manufacturer's address: 5th Building WISDOM CREATE WEALTH Industrial Park, Xingtan, Shunde, Foshan,Guangdong, PRC.

Factory: Factory's name: Guangdong JNOD New Energy Technology Co,Ltd

Factory's address: 5th Building WISDOM CREATE WEALTH Industrial Park, Xingtan, Shunde, Foshan,Guangdong, PRC.

Test object: Product: DC INVERTER AIR SOURCE HEAT PUMP

Model: JME120HC

Trade mark: --

Test specification:  EN 14825:2022  
 EN 12102-1:2022

Purpose of examination: Test according to the test specification  
 (EU) No 813/2013  
 EU 2016/2282:2016-11-30

Test result: The test results show that the presented product is in compliance with the above listed test specifications.

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question. It does not imply a general statement regarding the quality of products from regular production. For further details please see testing and certification regulation, chapter A-3.4.

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## 1 Description of the test object

### 1.1 Function

Manufacturer's specification for intended use:  
The appliance is air to water heat pump.  
Manufacturer's specification for predictive use:  
According to user manual

### 1.2 Consideration of the foreseeable use

- Not applicable
- Covered through the applied standard
- Covered by the following comment
- Covered by attached risk analysis

### 1.3 Technical Data

Model :	JME120HC
Rated Voltage (V) :	220-240V~
Rated Frequency (Hz) :	50
Rated Power (W) :	3900
Rated Current (A) :	N/A
Protection Class :	Class I
Protection Against Moisture :	IP X4
Construction :	Stationary
Supply connection :	<input type="checkbox"/> Non detachable cord <input checked="" type="checkbox"/> Permanent connection to fixed wiring
Operation mode:	<input checked="" type="checkbox"/> Continuous operation; <input type="checkbox"/> Intermittent operation; <input type="checkbox"/> Short time operation;
Refrigerant/charge (kg) :	R290 / 0.7kg
Declared parameters :	<input checked="" type="checkbox"/> Average <input type="checkbox"/> Warmer <input type="checkbox"/> Colder
Sound power level dB(A) :	N/A
Series No :	N/A

## 2 Order

### 2.1 Date of Purchase Order, Customer's Reference

Date of Purchase Order: 2022-02-24,

Customer's Reference: Guangdong JNOD New Energy Technology Co.,Ltd

### 2.2 Test Sample(s)

• Reception date(s): 2023-07-03

• Location(s) of reception:

For Energy test:

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch

Address: B1F&2F, No. 3 Chuangqi Building, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou 511447, China

For Noise tests:

China Quality Certification Center South China Laboratory

Address: 11 Shenghui South Road, Nantou Town, Zhongshan City, Guangdong Province

• Condition of test sample(s): completed and can be normal operation

### 2.3 Date(s) of Testing

2023-07-14 to 2023-07-28

### 2.4 Location(s) of Testing

Same as 2.2

### 2.5 Points of Non-compliance or Exceptions of the Test Procedure

N/A

## 3 Test Results

Decision rule according to ILAC-G8:09/2019 clause 4.2.1 Binary statement for simple acceptance rule or IEC Guide 115:2021, clause 4.4.3, 4.5.1 Accuracy method was applied.

Decision rule according to customer's requirements was applied. It is:

Decision rule according to ILAC-G8:09/2019 clause 4.2.2 Binary statement with guard band - guard band length = 95 % extended measurement uncertainty, was applied.

Decision rule (based on ILAC-G8:09/2019 clause 4.2.3 Non-binary statement with guard band, guard band length = 95 % extended measurement uncertainty) for an upper specification limit (A lower limit or specification with an up-per and a lower limit is treated similarly.):

• Compliance with the requirement: If a specification limit is not breached by a measurement result plus the expanded uncertainty with a 95% coverage probability, then compliance with the specification will be stated (e. g. Pass).

• Non-compliance with the requirement: If a specification limit is exceeded by the measurement result minus the expanded uncertainty with a 95% coverage probability, then non-compliance with the specification will be stated (e. g. Fail).

• Inconclusive result: If a measurement result plus/minus the expanded uncertainty with a 95 % coverage probability overlaps the limit it will be stated that it is not possible to state compliance or non-compliance.

### 3.1 Positive Test Results

See Appendix I



**4 Remarks**

**4.1 General**

The user manual has been examined according to the minimum requirements described in the product standard. The manufacturer is responsible for the accuracy of further particulars as well as of the composition and layout.

**4.2** When the product is placed on the market, it must be accompanied with safety Instructions written in official language of the country. The instructions shall give information re-garding safe operation, installation and maintenance.

**5 Documentation**

- Appendix I: Test results
- Appendix II: Marking plate
- Appendix III: photo documentation
- Appendix IV: Construction data form
- Appendix V: Test equipment list

**6 Test History**

- 1) The appliance is Air to Water Heat Pump Unit, including a whole compression type refrigerant circuit to heat water in another circuit. The appliance was for cooling and heating water function, this report only for heating capacity test.
- 2) The main power is supplied by a 3-pole supply cord connecting to fixed wiring.
- 3) Water enthalpy method was adopted in this report.
- 4) Standby mode power, off mode power and thermostat-off mode power were tested according to clause 12 of standard EN 14825:2022.

**TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch  
TÜV SÜD Group**

Tested by: William Liang, Project Handler

*printed name, function & signature*

Approved by: Plum Li, Designated Reviewer

*printed name, function & signature*



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**Appendix I Test results**

<b>Table 1.</b>	<b>Heating mode(Low temperature application):</b>						<b>P</b>	
<b>Model</b>	JME120HC							
<b>Product type</b>	Air to Water	<b>Heating season</b>	<input checked="" type="checkbox"/>	Average	<input type="checkbox"/>	Warmer	<input type="checkbox"/>	Colder

**1. Test conditions:**

Condition	Part Load Ratio in %				Outdoor heat exchanger	Indoor heat exchanger
	Formula	A	W	C	Inlet dry (wet) bulb temperature °C	Inlet/outlet water temperatures (°C)
A	$(-7-16)/(T_{designh-16})$	88	N/A	N/A	-7(-8)	a / 34
B	$(+2-16)/(T_{designh-16})$	54	N/A	N/A	2(1)	a / 30
C	$(+7-16)/(T_{designh-16})$	35	N/A	N/A	7(6)	a / 27
D	$(+12-16)/(T_{designh-16})$	15	N/A	N/A	12(11)	a / 24
E	$(TOL-16)/(T_{designh-16})$				TOL	a / 35.3
F	$(T_{bivalent-16})/(T_{designh-16})$				T <sub>biv</sub>	a / 34
G	$(-15-16)/(T_{designh-16})$	N/A	N/A	N/A	-15	N/A

Remark: a) With the water flow rate as determined at the standard rating conditions given in EN14511-2 at 30/35 conditions, the capacity is 10.812kW, the power is 2.466kW, the COP is 4.38kW/kW.

**2. Tested data/correction data(Average):**

General test conditions/ Part-Load	Unit	A(-7)/W34 (88%)	A2/W30 (54%)	A7/W27 (35%)	A12/W24 (15%)	A(-10)/W35.3 (100%)	A(-7)/ W34 (88%)
	--	A	B	C	D	E	F
Data collection period	hh: min:sec	3:00:00	1:10:00	1:10:00	1:10:00	3:00:00	3:00:00
The heat pump defrosts	--	Yes	No	No	No	Yes	Yes
Complete Cycles	--	1	0	0	0	1	1
Barometric pressure	kPa	101.02	101.02	101.02	101.02	101.02	101.02
Voltage	V	229.5	230.3	230.7	230.8	229.3	229.5
Current input of the unit	A	10.92	5.21	3.45	3.07	12.80	10.92
Power input of the unit	kW	2.268	0.978	0.483	0.427	2.669	2.268
<b>Test conditions indoor unit</b>							
<b>Inlet Water temperature, DB</b>	°C	30.47	27.96	25.74**	23.35**	31.21	30.47
<b>Outlet Water temperature, DB</b>	°C	33.78	30.06	27.24**	25.09**	34.55	33.78

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**Appendix I Test results**

Test conditions outdoor unit							
Air inlet temperature, DB	°C	-6.98	2.00	7.00	12.00	-11.11	-6.98
Air inlet temperature, WB	°C	-8.00	1.00	6.02	11.01	-11.95	-8.00
Summary of the results							
Total heating capacity	kW	7.024	4.453	3.167	3.715	6.947	7.024
Effective power input	kW	2.239	0.949	0.454	0.398	2.640	2.239
Coefficient of performance (COP)	--	3.14	4.69	6.97	9.34	2.63	3.14
Compressor frequency	Hz	78	35	22	22	92	78
Water flow	m³/h	1.85	1.85	1.85	1.85	1.85	1.85
Remark: **The inlet and outlet temperatures are been determined according to Cl.11.5.1 of EN 14825:2022.							
3.Calculation/conclusion for SCOP(Average):							
Tdesignh(°C)	-10	Tbiv(°C)		-7			
Pdesignh(kW)	7.940	TOL(°C)		-10			
Test result A, B, C, D, E, F conditions:							
Condition	Part load	Measured capacity	COP at measured capacity	Cdh	CR	COP at part load	
E	7.940	6.947	2.63	0.90	1.00	2.63	
F	7.024	7.024	3.14	0.90	1.00	3.14	
A	7.024	7.024	3.14	0.90	1.00	3.14	
B	4.275	4.453	4.69	0.90	0.96	4.69	
C	2.748	3.167	6.97	0.90	0.87	6.87	
D	1.222	3.715	9.34	0.90	0.33	7.76	
CR: part load divided by capacity;							

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**Appendix I Test results**

Electric power consumptions	Unit	Value
Thermostat-off mode [P <sub>TO</sub> ]	kW	0.008
Standby mode [P <sub>SB</sub> ]	kW	0.008
Crankcase heater [P <sub>CK</sub> ]	kW	0.046
Off mode [P <sub>OFF</sub> ]	kW	0.008

Conclusions:	Unit	Value
SCOP <sub>on</sub> :	kWh/kWh	4.95
SCOP:	kWh/kWh	4.93
Q <sub>H</sub> :	kWh/year	16404
Q <sub>HE</sub> :	kWh/year	3325
η <sub>s,h</sub>	%	194.3
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2)	--	A+++

**Appendix I Test results**

<b>Table 2.</b>	<b>Heating mode(Medium temperature application):</b>					<b>P</b>	
<b>Model</b>	JME120HC						
<b>Product type</b>	Air to Water	<b>Heating season</b>	<input checked="" type="checkbox"/> Average	<input type="checkbox"/> Warmer	<input type="checkbox"/> Colder		
<b>1. Test conditions:</b>							
<b>Condition</b>	<b>Part Load Ratio in %</b>				<b>Outdoor heat exchanger</b>	<b>Indoor heat exchanger</b>	
	Formula	A	W	C	Inlet dry (wet) bulb temperature °C	Inlet/outlet water temperatures (°C)	
A	$(-7-16)/(T_{designh-16})$	88	N/A	N/A	-7(-8)	a / 52	
B	$(+2-16)/(T_{designh-16})$	54	N/A	N/A	2(1)	a / 42	
C	$(+7-16)/(T_{designh-16})$	35	N/A	N/A	7(6)	a / 36	
D	$(+12-16)/(T_{designh-16})$	15	N/A	N/A	12(11)	a / 30	
E	$(TOL-16)/(T_{designh-16})$				TOL	a / 55.3	
F	$(T_{bivalent-16})/(T_{designh-16})$				T <sub>biv</sub>	a / 52	
G	$(-15-16)/(T_{designh-16})$	N/A	N/A	N/A	-15	N/A	
Remark: a) With the water flow rate as determined at the standard rating conditions given in EN14511-2 at 47/55 conditions, the capacity is 10.387kW, the power is 3.321kW, the COP is 3.13kW/kW.							
<b>2. Tested data/correction data(Average):</b>							
<b>General test conditions/ Part-Load</b>	<b>Unit</b>	A(-7)/W52 (88%)	A2/W42 (54%)	A7/W36 (35%)	A12/W30 (15%)	A(-10)/W55.3 (100%)	A(-7)/W52 (88%)
--	--	A	B	C	D	E	F
<b>Data collection period</b>	hh: min:sec	3:00:00	1:10:00	1:10:00	1:10:00	1:10:00	3:00:00
<b>The heat pump defrosts</b>	--	Yes	No	No	No	No	Yes
<b>Complete Cycles</b>	--	1	0	0	0	0	1
<b>Barometric pressure</b>	kPa	99.85	99.85	99.85	99.80	99.75	99.85
<b>Voltage</b>	V	229.1	230.6	230.8	230.7	228.4	229.1
<b>Current input of the unit</b>	A	14.07	5.45	4.20	3.66	16.80	14.07
<b>Power input of the unit</b>	kW	2.846	1.105	0.596	0.513	3.599	2.846
<b>Test conditions indoor unit</b>							
<b>Inlet Water temperature, DB</b>	°C	46.75	38.91	34.05**	29.20**	49.36	46.75
<b>Outlet Water temperature, DB</b>	°C	52.44	41.99	36.41**	31.90**	55.28	52.44

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**Appendix I Test results**

Test conditions <b>outdoor</b> unit							
Air inlet temperature, DB	°C	-6.68	2.16	7.02	12.00	-9.95	-6.68
Air inlet temperature, WB	°C	-7.41	1.11	6.02	11.01	-10.86	-7.41

Summary of the results							
Total heating capacity	kW	6.564	4.006	3.055	3.514	7.753	6.564
Effective power input	kW	2.807	1.066	0.557	0.474	3.560	2.807
Coefficient of performance (COP)	--	2.34	3.76	5.49	7.42	2.18	2.34
Compressor frequency	Hz	78	35	22	22	94	78
Water flow	m³/h	1.13	1.13	1.13	1.13	1.13	1.13

Remark: \*\*The inlet and outlet temperatures are been determined according to Cl.11.5.1 of EN 14825:2022.

**3.Calculation/conclusion for SCOP(Average):**

Tdesignh(°C)	-10	Tbiv(°C)	-7
Pdesignh(kW)	7.421	TOL(°C)	-10

**Test result A, B, C, D, E, F conditions:**

Condition	Part load	Measured capacity	COP at measured capacity	Cdh	CR	COP at part load
E	7.421	7.753	2.18	0.90	0.96	2.18
F	6.564	6.564	2.34	0.90	1.00	2.34
A	6.564	6.564	2.34	0.90	1.00	2.34
B	3.996	4.006	3.76	0.90	1.00	3.76
C	2.569	3.055	5.49	0.90	0.84	5.39
D	1.142	3.514	7.42	0.90	0.32	6.14

CR: part load divided by capacity;

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**Appendix I Test results**

Electric power consumptions	Unit	Value
Thermostat-off mode [P <sub>TO</sub> ]	kW	0.008
Standby mode [P <sub>SB</sub> ]	kW	0.008
Crankcase heater [P <sub>CK</sub> ]	kW	0.046
Off mode [P <sub>OFF</sub> ]	kW	0.008

Conclusions:	Unit	Value
SCOP <sub>on</sub> :	kWh/kWh	3.91
SCOP:	kWh/kWh	3.90
Q <sub>H</sub> :	kWh/year	15331
Q <sub>HE</sub> :	kWh/year	3929
η <sub>s,h</sub>	%	153.1
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1)	--	A+++

**Appendix I Test results**

<b>Table 3.</b>	<b>Sound power level measurement(Medium temperature application)</b>		<b>P</b>
<b>Model</b>	JME120HC		
	Product type :	Air to Water	
	Outdoor heat exchanger, Air temperature DB/WB (°C):	7.0 / 6.0	
	Indoor heat exchanger, Water inlet/outlet temperature (°C):	47.0 / 55.0	
	Voltage (V):	230	
	Frequency (Hz):	50	
	Working condition class :	Class A	
	Acoustical environment :	Hemi-anechoic room	
	Windshield type :	Sponge	
	Measured position amount :	14	
	Water flow (m³/h):	1.13	
	<b>Measured quantity</b>	<b>L<sub>WA,indoors</sub> (dB(A))</b>	<b>L<sub>WA,outdoors</sub> (dB(A))</b>
	Sound pressure level ` L <sub>p(ST)</sub> ****	--	52
	Measurement distance d *	--	1.0m
	Sound power level L <sub>WA</sub> ****	--	66
Setting of controls: according to user manual. Duct connection:-- Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer Fan speed: 660r/min, compressor frequency: 78Hz.			

Appendix II Marking plate

**Nameplate**

DC INVERTER  
AIR SOURCE HEAT PUMP

MODEL	JME120HC
POWER SUPPLY	220-240V/50Hz
RUNNING TEMP RANGE(°C)	-25 ~ 43
HEATING CAPACITY MIN/MAX(kW)	5.55 ~ 11.2
HEATING INPUT POWER MIN/MAX(kW)	1.0 ~ 2.6
COOLING CAPACITY MIN/MAX ( kW)	3.98 ~ 6.85
COOLING INPUT POWER MIN/MAX(kW)	1.1 ~ 2.96
RATED.INPUT POWER(kW)	3.9
RETED WATER FLOW(m3/h)	2.06
MAX.HIGH/LOW PRESSURE(MPa)	3.0/0.8
MAX.ALLOWABLE PRESSURE(MPa)	3.0
MAX.WATER PRESSURE(MPa)	1.0
WATER PROOF CLASS	IPX4
ELECTRICITY SHOCK PROOF	I
WATER PRESSURE DROP(kPa)	20
WATER PIPE CONNECTION(inch)	1
NET WEIGHT(kg)	104
REFRIGERANT/QUANTITY(kg)	R290/0.7
DATE/NO	See bar code

5th Building WISDOM CREATE WEALTH Industrial Park,  
Xingtan, Shunde, Foshan,Guangdong, PRC.  
Guangdong JNOD New Energy Technology Co,Ltd





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**Appendix III photo documentaiton**

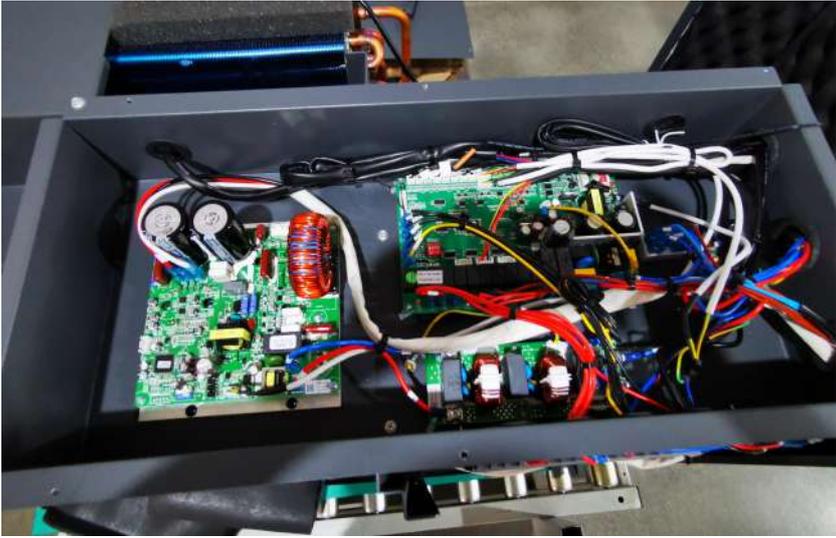
Details of:	Overall view
<p><b>View:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> General</li> <li><input type="checkbox"/> Front</li> <li><input type="checkbox"/> Rear</li> <li><input type="checkbox"/> Right</li> <li><input type="checkbox"/> Left</li> <li><input type="checkbox"/> Top</li> <li><input type="checkbox"/> Bottom</li> </ul>	

Details of:	Compressor
<p><b>View:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> General</li> <li><input type="checkbox"/> Front</li> <li><input type="checkbox"/> Rear</li> <li><input type="checkbox"/> Right</li> <li><input type="checkbox"/> Left</li> <li><input type="checkbox"/> Top</li> <li><input type="checkbox"/> Bottom</li> </ul>	

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**Appendix III photo documentaiton**

Details of:	Fan Motor
View:	
<input type="checkbox"/> General	
<input type="checkbox"/> Front	
<input type="checkbox"/> Rear	
<input type="checkbox"/> Right	
<input type="checkbox"/> Left	
<input type="checkbox"/> Top	
<input type="checkbox"/> Bottom	

Details of:	Main Control Board
View:	
<input type="checkbox"/> General	
<input type="checkbox"/> Front	
<input type="checkbox"/> Rear	
<input type="checkbox"/> Right	
<input type="checkbox"/> Left	
<input type="checkbox"/> Top	
<input type="checkbox"/> Bottom	

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**Appendix III photo documentaiton**

Details of:	Water Pump
<p><b>View:</b></p> <p><input type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p>	

**Appendix IV Construction data form**

Part	Technical data	
1. Compressor		
	Manufacture:	Guangdong Meizhi Compressor Ltd.
	Type:	EDTF420D62EMT
	Serial-number:	301118419Y
	Specification:	DC230V; at 180Hz; R290; 9200W
2. Condenser		
	Manufacture:	Jiangmen City East-Alliance Thermal Equipment Co., Ltd
	Type:	EATB61-D (30-2M-2L)
	Heat exchanger:	Plate heat exchanger
	Dimension(mm):	542mm×126mm×83mm
3. Evaporator		
	Manufacture:	Foshan RuiChuang Heat Exchange Equipment Co., Ltd.
	Type:	12KW
	Heat exchanger:	Fin heat exchanger
	Dimension(mm):	660mm×340mm×750mm
4. Fan motor		
	Manufacture:	Jiangmen LT Motor Co.,Ltd.
	Type:	RD120HE2
	Fan type:	4 blade
	Specification:	DC310V; 120W; 800r/min
5. Main control board		
	Manufacture:	Guangdong Chico Electronic INC
	Type:	CC902-V2.1
	Specification:	220V; 50Hz
6. Water pump		
	Manufacture:	Hefei Xinhua Canned Motor Pump Co.,Ltd.
	Type:	GPA25-9H
	Specification:	220-240VAC; 50Hz; 3-95W



**Appendix V Equipment List**

No.	Type	Manufacture	Model	Equipment ID	Calibration Due Date
1	R&A performance measuring system	GEI	5HP	64-1-90-11-004	2023-12-24
2	Temperature and humidity sensor	YOKOGAWA	HMD62	S4610294	2024-01-04
3	Water pressure gauge	YOKOGAWA	MPM489	B86832	2024-01-04
4	Water pressure gauge	YOKOGAWA	MPM489	B86833	2024-01-04
5	Flowmeter	YOKOGAWA	AXG032	S5W920561039	2024-01-04
6	Anechoic rooms (hemi-anechoic rooms)	Beijing Zhongjia Zhirui Technology Co., LTD	ZR-02	CQCSC-BE-0026	2023-11-24
7	environmental control system	Beijing Zhongjia Zhirui Technology Co., LTD	ZR-02	CQCSC-BE-0026	2023-11-23
8	20 Channels noise and vibration test system	RION	SA-02M	CQCSC-BE-0026	2024-01-12

-- End of Report --