

# Technical Report No.: 64.181.22.03448.01 Rev.00

#### Date: 2022-09-22

Client:	Report holder's name:	Guangzhou Sprsun New Energy Technology Development Co., Ltd
	Report holder's Address:	No.15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng District, Guangzhou, 511338, China
	Contact person of report holder:	YE XIN
	Manufacturer's name:	Guangzhou Sprsun New Energy Technology Development Co., Ltd
	Manufacturer's address:	No.15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng District, Guangzhou, 511338, China
Factory:	Factory's name:	Guangzhou Sprsun New Energy Technology Development Co., Ltd
	Factory's address:	No.15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng District, Guangzhou, 511338, China
Test object:	Product:	EVI DC Inverter Air Source Heat Pumps
	Model:	CGK025V3L-B; CGK040V3L-B; CGK060V3L-B
	Trade name:	SPRSUN
Test specification:	_	EN 14825:2018
	$\checkmark$	(EU) No 813/2013
	$\checkmark$	EN 14511-3:2018
		EN 14511-4:2018 Clause 4 EN 12102-1:2017
Durnaga of	✓ Test appording to the t	
Purpose of examination:	Test according to the t	
	$\checkmark$	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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1.2

1.3



Description of the test object	
Function	
Manufacturer's specification for inte	nded use:
These appliances are air to water h	eat pump.
Manufacturer's specification for pre-	dictive use:
According to user manual.	
Consideration of the foreseeaNot applicableCovered through the applied stCovered by the following commCovered by attached risk analyst	tandard nent
Technical Data	
Model :	CGK025V3L-B; CGK040V3L-B; CGK060V3L-B
Rated Voltage (V) :	220-240V~
Rated Frequency (Hz) :	50
Rated Power (W) :	3090W for CGK025V3L-B; 5140W for CGK040V3L-B; 7090W for CGK060V3L-B
Rated Current (A) :	14.79A for CGK025V3L-B;
	24.60A for CGK040V3L-B;
	33.94A for CGK060V3L-B
Protection Class :	Class I
Protection Against Moisture :	IP X4
Construction :	Stationary
Supply connection :	Non detachable cord
	Permanent connection to fixed wiring
Operation mode:	Continuous operation;
	Intermittent operation;
	Short time operation;
Refrigerant/charge (g) :	R32 / 1500g for CGK025V3L-B; 2000g for CGK040V3L-B; 2800g for CGK060V3L-B
Declared parameters :	🖂 Average 🗌 Warmer 🔄 Colder
Sound power level dB(A) :	N/A
Series No :	KRZK07A10250803577 for CGK025V3L-B; KRZK06A10400803377 for CGK040V3L-B; KRZK06A10600802377 for CGK060V3L-B



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# 2 Order

# 2.1 Date of Purchase Order, Customer's Reference

2022-07-01, Guangzhou Sprsun New Energy Technology Development Co., Ltd

# 2.2 Test Sample(s)

- Reception date(s): 2022-07-01
- Location(s) of reception:
- For Energy test:

Guangzhou Lingxin Technology Co., LTD

Address: Room 101, Building 2, No.13 west Route, Kengtou Industrial Zone, Nancun Town, Panyu District, Guangzhou

For Noise tests:

CVC Testing Technology Co., Ltd.

Address: No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, Guangdong, 510663, P.R.China

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

# 2.3 Date(s) of Testing

2022-07-01 to 2022-07-31

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

3.1 Positive Test Results

See Appendix I

# 4 Remark

N/A

- **4.1** 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 par-ticulars 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 regarding 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 Summary

- 1) These appliances are Air to Water Heat Pump Unit, each one including a whole compression type refrigerant circuit to heat water in another circuit. These appliances were 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 14825:2018.

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

Tested by: William Liang, Project Handler

Approved by:

printed name, function & signature Plum Li, Designated Reviewer

printed name, function & signature







Appendix I 1	est results								
Table 1.	Heating mod	Heating mode(Low temperature application): P							
Model	CGK025V3L-I	3							
Product	Air to Water	Heating	1	Averag		Warmer		Colder	
type		season		е					
1. Test cond	itions:							1	
-		Part Loa				Outdoor		Indoo	
Condition	Form	in ۹ Formula				exchan Inlet dry	-	excha Inlet/out	
ndi	FOIII	lula	A	W	C	bulb	• •	temperat	
ပိ						tempera		temperat	
	( )					°C			
A B	(-7-16)/(Tdesi (+2-16)/ (Tdes		88 54	N/A N/A	N/A N/A	-7(-8		a/ a/	
C	(+2-16)/ (1des (+7-16)/(Tdes		35	N/A	N/A	2(1) 7(6)		a/	
D	(+12-16)/(Tde	signh-16)	15	N/A	N/A	12(11		a/	
E		(TOL-16)/ (To				TOL		a/3	
F		pivalent-16)/(				Tbiv		a/	34
G	(-15-16)/(Tdes		N/A	N/A	N/A	-15		N	
	ith the water flo								N14511-2
at 30/35 condi	tions, the capa	city is 7934.4	46W, the	e power	is 1685.6	4W, the C	OP is	4.71W/W.	
2.Tested dat	a/correction	data(Avera	age):						
General test	Unit	A(-7)/W34		W30	A7/W2			A(-	A(-
conditions/		(88%)	(54	4%)	(35%)	) (15	%)	10)/W35.	7)/W34
Part-Load								3 (100%)	(88%)
		А		В	С	D		E	F
Data collection period	hh: min:sec	4:00:00	2:1	0:00	2:10:0	0 2:10	0:00	4:00:00	4:00:00
The heat		Yes	Ν	lo	No	N	0	Yes	Yes
pump defrosts									
Complete Cycles		2		0	0	C	)	2	2
Barometric pressure	kPa	101.02	10 <sup>-</sup>	1.02	101.02	2 101	.02	101.02	101.02
Voltage	V	231.4	23	1.5	232.4	229	9.2	229.3	231.4
Current input of the unit	A	9.81	5.	04	4.01	3.2	29	10.03	9.81
Power input of the unit	kW	1.972	0.8	393	0.695	0.5	41	2.009	1.972
Test condition	s <b>indoor</b> unit	1				I		1	
<b>Inlet</b> Water temperature, DB	°C	29.39	27	.25	24.15	20.	86	31.02	29.39
<b>Outlet</b> Water temperature, DB	°C	33.39*	29	.90	26.99	24.	09	34.67*	33.39*

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	s <b>outdoor</b> unit						
Air <b>inlet</b> temperature, DB	°C	-6.84	2.02	7.12	12.01	-9.97	-6.84
Air <b>inlet</b> temperature, WB	°C	-8.08	1.01	6.00	11.00	-11.09	-8.08
Summary of th	ne results					-	
Total heating capacity	kW	6.255	4.177	4.470	5.082	5.725	6.255
Effective power input	kW	2.010	0.931	0.733	0.579	2.047	2.010
Coefficient of performance (COP)		3.11	4.49	6.10	8.78	2.80	3.11
Compressor frequency	Hz	70	33	30	30	70	70
Water flow	m³/h	1.35	1.35	1.35	1.35	1.35	1.35
			ature data is rec	orded by a fu	ull average co	omplete cyc	le's data.
	n/conclusion				III average c	omplete cyc	le's data.
3.Calculatio	n/conclusion		Average):	-7	III average c	omplete cyc	le's data.
<b>3.Calculatio</b> Tdesignh(°C) Pdesignh(kW )	n/conclusion	o for SCOP(	<b>Average):</b> Tbiv(°C) TOL(°C)	-7	III average c	omplete cyc	ile's data.
<b>3.Calculatio</b> Tdesignh(°C) Pdesignh(kW )	<b>n/conclusion</b> -10 7.071	o for SCOP(	<b>Average):</b> Tbiv(°C) TOL(°C)	-7	III average co		bart load
3.Calculatio Tdesignh(°C) Pdesignh(kW ) Test result <i>I</i>	n/conclusion -10 7.071 <b>A, B, C, D, E,</b>	for SCOP( F condition Measured	Average): Tbiv(°C) TOL(°C) ns: COP at measured	-7 -10			part load
3.Calculatio Tdesignh(°C) Pdesignh(kW ) Test result A	n/conclusion -10 7.071 <b>A, B, C, D, E,</b> Part load	for SCOP( F condition Measured capacity	Average): Tbiv(°C) TOL(°C) IS: COP at measured capacity	-7 -10 Cdh	CR	COP at	part load
3.Calculatio Tdesignh(°C) Pdesignh(kW ) Test result A O U U U U U U U U U U U U U U U U U U	n/conclusion -10 7.071 A, B, C, D, E, Part load 7.071	F condition Measured capacity 5.725	Average): Tbiv(°C) TOL(°C) IS: COP at measured capacity 2.80	-7 -10 Cdh 0.00	CR 1.00	COP at a	part load 80
3.Calculatio Tdesignh(°C) Pdesignh(kW ) Test result A io jip o O E E	n/conclusion -10 7.071 A, B, C, D, E, Part load 7.071 6.255	F condition Measured capacity 5.725 6.255	Average): Tbiv(°C) TOL(°C) ns: COP at measured capacity 2.80 3.11	-7 -10 Cdh 0.00 0.00	CR 1.00 1.00	COP at 2.4	50 11 11 11 11 11 11 11 11 11 11 11 11 11
3.Calculatio Tdesignh(°C) Pdesignh(kW ) Test result A bit puo O E E F A	n/conclusion -10 7.071 A, B, C, D, E, Part load 7.071 6.255 6.255	F condition Measured capacity 5.725 6.255 6.255	Average): Tbiv(°C) TOL(°C) TOL(°C) TOL(°C) 15: COP at measured capacity 2.80 3.11 3.11	-7 -10 Cdh 0.00 0.00 0.00	CR 1.00 1.00 1.00	COP at 2.3 3. 3. 4.	50 11 11 11 11 11 11 11 11 11 11 11 11 11





Electric power consumptions	Unit	Value
Thermostat-off mode [P <sub>TO</sub> ]	kW	0.009
Standby mode [P <sub>SB</sub> ]	kW	0.009
Crankcase heater [P <sub>CK</sub> ]	kW	0.033
Off mode [P <sub>OFF</sub> ]	kW	0.009
Conclusions:	Unit	Value
SCOPon:	kWh/kWh	4.71
SCOP:	kWh/kWh	4.70
Q <sub>H</sub> :	kWh/year	14609
Q <sub>HE</sub> :	kWh/year	3108
$\eta_{s,h}$	%	185.0
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2)		A+++

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Appendix I 1								-	
Table 2.	Heating mod	e(Medium te	emperat	ture app	lication)	:		F	2
Model	CGK025V3L-	В							
Product	Air to Water	Heating		Averag		Warmer		Colder	
type		season		е					
1. Test cond	itions:								
		Part Loa	d Ratio			Outdoo	r heat	Indoo	r heat
ы		in <sup>c</sup>	%			excha	nger	excha	anger
Condition	Form	nula	А	W	С	Inlet dry	(wet)		let water
ŭo						bul		temperat	ures (°C)
S						temper			
Α	(-7-16)/(Tdesi	anh-16)	88	N/A	N/A	°C -7(-		a/	52
B	(+2-16)/ (Tdes		54	N/A	N/A	2(1	,		42
С	(+7-16)/(Tdes	ignh-16)	35	N/A	N/A	7(6			36
D	(+12-16)/(Tde		15	N/A	N/A	12(1			30
E F		(TOL-16)/ (To				TO			55.3
G F	(11 (-15-16)/(Tdes	bivalent-16)/(	N/A	N/A	N/A	Tbi -15			52 /A
	ith the water flo								
	tions, the capa					-		-	
2.Tested dat	a/correction	data(Avera	ige):	-					
General test	Unit	A(-7)/W52	A2/	W42	A7/W3	36 A12	/W30	A(-	A(-
conditions/	0 m	(88%)		4%)	(35%)		5%)	10)/W55.	7)/W52
Part-Load		· · /	``	,		, , ,	,	໌ 3	(88%)
								(100%)	
		Α		В	С		D	E	F
Data	hh: min:sec	4:00:00	2:1	0:00	2:10:0	0 2:1	0:00	2:10:00	4:00:00
collection									
period									
The heat		Yes	N	١o	No	1	No	No	Yes
pump defrosts									
Complete		1		0	0		0	0	1
Cycles		1		0	0		0	0	1
Barometric	kPa	101.02	10'	1.02	101.0	2 10	1.02	101.02	101.02
pressure	Ni u	101.02	10	1.02	101.0		1.02	101.02	101.02
Voltage	V	232.3	22	9.3	232.5	5 23	3.8	230.8	232.3
Current input	A	13.29	6	.35	5.18	4	.12	14.45	13.29
of the unit	/ <b>\</b>	10.20	0.	.00	0.10		. 12	14.40	10.20
Power input	kW	2.837	1 -	162	0.919		698	3.085	2.837
of the unit	r v v	2.037	1.	102	0.918	, 0.	090	3.005	2.037
Test condition	s <b>indoor</b> unit								
Inlet Water	°C	44.62	38	8.05	31.70	) 25	5.15	47.99	44.62
temperature,	Ĭ	11.02			01.70			11.00	11.02
DB									
Outlet Water	°C	51.19	41	.98	35.94	4 30	0.01	54.78*	51.19
temperature,		-						-	-
DB									
	1	1							L

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Test condition	s outdoor unit						
Air inlet	°C	-7.00	2.00	7.01	12.00	-10.00	-7.00
temperature, DB							
Air <b>inlet</b> temperature, WB	°C	-8.20	1.00	6.00	11.00	-11.20	-8.20
Summary of th	ne results					•	
Total heating capacity	kW	6.597	4.017	4.348	4.978	6.881	6.597
Effective power input	kW	2.884	1.209	0.966	0.745	3.132	2.884
Coefficient of performance (COP)		2.29	3.32	4.50	6.68	2.20	2.29
Compressor frequency	Hz	70	33	30	30	70	70
Water flow	m³/h	0.88	0.88	0.88	0.88	0.88	0.88
	part condition, c				-		
3.Calculatio	n/conclusion						
<b>3.Calculatio</b> Tdesignh(°C)							
	n/conclusion -10		Average):	-7			
Tdesignh(°C) Pdesignh(kW )	n/conclusion -10	for SCOP(	[ <b>Average):</b> Tbiv(°C) TOL(°C)	-7			
Tdesignh(°C) Pdesignh(kW )	n/conclusion -10 7.458	for SCOP(	[ <b>Average):</b> Tbiv(°C) TOL(°C)	-7	CR	COP at p	part load
Tdesignh(°C) Pdesignh(kW ) <b>Test result /</b>	n/conclusion -10 7.458 A, B, C, D, E,	for SCOP( F condition Measured	Average): Tbiv(°C) TOL(°C) ns: COP at measured	-7 -10			
Tdesignh(°C) Pdesignh(kW ) Test result /	n/conclusion -10 7.458 A, <b>B, C, D, E,</b> Part load	for SCOP( F condition Measured capacity	Average): Tbiv(°C) TOL(°C) TOL(°C) TOL (°C) TOL (°C) TOL (°C)	-7 -10 Cdh	CR	COP at p	20
Tdesignh(°C) Pdesignh(kW ) Test result <i>I</i>	n/conclusion -10 7.458 A, <b>B, C, D, E,</b> Part load 7.458	F condition Measured capacity 6.881	Average): Tbiv(°C) TOL(°C) TOL(°C) TOL COP at measured capacity 2.20	-7 -10 Cdh 0.00	CR 1.00	COP at p	20 29
Tdesignh(°C) Pdesignh(kW ) Test result <i>A</i> O U E F	n/conclusion -10 7.458 A, B, C, D, E, Part load 7.458 6.597	F condition Measured capacity 6.881 6.597	Average): Tbiv(°C) TOL(°C) TOL(°C) TOL(°C) 2.20 2.29	-7 -10 Cdh 0.00 0.00	CR 1.00 1.00	COP at p 2.2 2.2	20 29 29
Tdesignh(°C) Pdesignh(kW ) Test result A	n/conclusion -10 7.458 A, B, C, D, E, Part load 7.458 6.597 6.597	F condition Measured capacity 6.881 6.597 6.597	Average): Tbiv(°C) TOL(°C) TOL(°C) TOL(°C) 2.20 2.20 2.29 2.29	-7 -10 Cdh 0.00 0.00 0.00	CR 1.00 1.00 1.00	COP at p 2.2 2.2	20 29 29 32
Tdesignh(°C) Pdesignh(kW ) Test result A	n/conclusion -10 7.458 A, B, C, D, E, Part load 7.458 6.597 6.597 4.016	F condition Measured capacity 6.881 6.597 6.597 4.017	Average): Tbiv(°C) TOL(°C) TS: COP at measured capacity 2.20 2.29 2.29 3.32	-7 -10 Cdh 0.00 0.00 0.00 0.00	CR 1.00 1.00 1.00 1.00	COP at p 2.2 2.2 3.3	20 29 29 32 47





Electric power consumptions	Unit	Value
Thermostat-off mode [P <sub>TO</sub> ]	kW	0.009
Standby mode [P <sub>SB</sub> ]	kW	0.009
Crankcase heater [P <sub>CK</sub> ]	kW	0.033
Off mode [P <sub>OFF</sub> ]	kW	0.009
Conclusions:	Unit	Value
SCOPon:	kWh/kWh	3.51
SCOP:	kWh/kWh	3.51
Q <sub>H</sub> :	kWh/year	15407
Q <sub>HE</sub> :	kWh/year	4394
$\eta_{s,h}$	%	137.2
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1)		A++

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Appendix I 1	est results								
Table 3.	Heating mod	Heating mode(Low temperature application):							
Model	CGK040V3L-I	В							
Product	Air to Water	ter Heating 🔄 Averag 🔄 Warmer 🔤 C					Colder		
type		season		е					
1. Test cond	itions:								
-		Part Loa				Outdoor			r heat
Condition	Form	in 9	% A	W	С	exchan Inlet dry (	-	excha	anger et water
ndi	FOIII	lula	A	vv	C	bulb	. ,	temperat	
ပိ						tempera		temperat	
^	(7.16)//Tdooi	aph 16)	00	N/A	N/A	°C -7(-8	\	a /	24
A B	(-7-16)/(Tdesi (+2-16)/ (Tdes		88 54	N/A	N/A	2(1)	)	a/	
C	(+7-16)/(Tdes		35	N/A	N/A	7(6)		a/	
D	(+12-16)/(Tde		15	N/A	N/A	12(11	)	a/	
E		(TOL-16)/ (To				TOL		a/3	
F		pivalent-16)/(				Tbiv		a/	
G	(-15-16)/(Tdes		N/A	N/A	N/A	-15		N/	
	ith the water flo tions, the capa								
2.Tested dat	a/correction	data(Avera	age):						
General test	Unit	A(-7)/W34	A2/	W30	A7/W2	27 A12/\	N24	A(-	A(-
conditions/		(88%)	(54	4%)	(35%)	) (15	%)	10)/W35.	7)/W34
Part-Load								3 (100%)	(88%)
		А		В	С	D		E	F
Data collection period	hh: min:sec	4:00:00	2:1	0:00	2:10:0	0 2:10	:00	4:00:00	4:00:00
The heat		Yes	Ν	lo	No	N	C	Yes	Yes
pump defrosts									
Complete Cycles		2		0	0	0		1	2
Barometric pressure	kPa	101.02		1.02	101.02			101.02	101.02
Voltage	V	235.1	23	4.5	230.4	232	2.9	230.3	235.1
Current input of the unit	A	14.10	6.	19	5.45	4.4	6	15.20	14.10
Power input of the unit	kW	3.061	1.2	207	1.041	0.84	42	3.269	3.061
Test condition	s <b>indoor</b> unit	1				1		1	
<b>Inlet</b> Water temperature, DB	°C	29.43	27	.54	24.28	20.8	87	30.82	29.43
<b>Outlet</b> Water temperature, DB	°C	33.31*	30	.00	27.12	24.0	06	34.79*	33.31*

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Test condition	s outdoor unit							
Air <b>inlet</b> temperature, DB	°C	-6.81	2.01	7.02	12.10	-9.93	-6.81	
Air <b>inlet</b> temperature, WB	°C	-8.00	1.00	6.01	11.00	-11.15	-8.00	
Summary of th	ne results							
Total heating capacity	kW	9.457	5.999	6.933	7.811	9.669	9.457	
Effective power input	kW	3.127	1.272	1.107	0.907	3.335	3.127	
Coefficient of performance (COP)		3.02	4.72	6.27	8.61	2.90	3.02	
Compressor frequency	Hz	57	25	25	25	60	57	
Water flow	m³/h	2.10	2.10	2.10	2.10	2.10	2.10	
3.Calculatio Tdesignh(°C)	n/conclusior	ofor SCOP(	Average): Tbiv(°C)	-7				
Pdesignh(kW	10.691		TOL(°C)					
/ Test result /	A, B, C, D, E,	F conditior	IS:					
Condition	Part load	Measured capacity	COP at measured capacity	Cdh	CR	COP at p	oart load	
E	10.691	9.669	2.90	0.00	1.00	2.9	90	
	1	0.457	3.02	0.00	1.00	3.02		
F	9.457	9.457	0.02	0.00			)2	
F	9.457 9.457	9.457 9.457	3.02	0.00	1.00	3.0		
							)2	
A	9.457	9.457	3.02	0.00	1.00	3.0	)2 72	
A B	9.457 5.756	9.457 5.999	3.02 4.72	0.00	1.00 0.96	3.0	)2 72 21	





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	0.041
Off mode [P <sub>OFF</sub> ]	kW	0.008
Conclusions:	Unit	Value
SCOPon:	kWh/kWh	4.85
SCOP:	kWh/kWh	4.84
Q <sub>H</sub> :	kWh/year	22087
Q <sub>HE</sub> :	kWh/year	4562
$\eta_{s,h}$	%	190.7
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2)		A+++

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Appendix I 1	est results								
Table 4.	Heating mode	e(Medium te	emperat	ure app	lication)			F	<b>D</b>
Model	CGK040V3L-I	В						1	
Product	Air to Water	Heating	1	Averag		Warmer		Colder	
type		season e							
1. Test cond	itions:								
		Indoo	r heat						
ы		in <sup>c</sup>	%			excha	nger	excha	anger
Condition	Form	nula	А	W	С	Inlet dry	(wet)	Inlet/out	et water
ŭ						bul		temperat	ures (°C)
Ŭ						temper			
A	(-7-16)/(Tdesi	anh-16)	88	N/A	N/A	°C -7(-8		a/	52
B	(+2-16)/ (Tdes		54	N/A	N/A	2(1			42
С	(+7-16)/(Tdes	ignh-16)	35	N/A	N/A	7(6			36
D	(+12-16)/(Tde		15	N/A	N/A	12(1			30
E		(TOL-16)/ (To				TO			55.3
F		oivalent-16)/(			N1/A	Tbi		a/	
G Bomark: a) W	(-15-16)/(Tdes ith the water flo		N/A	N/A	N/A	-15		N/	
	tions, the capa								
2.Tested dat	a/correction	data(Avera	ige):						
General test	Unit	A(-7)/W52		W42	A7/W3		/W30	A(-	A(-
conditions/		(88%)	(54	4%)	(35%)	) (1	5%)	10)/W55.	7)/W52
Part-Load								3 (100%)	(88%)
		Α		В	С		D	E	F
Data	hh: min:sec	4:00:00	2:1	0:00	2:10:0	0 2:1	0:00	4:00:00	4:00:00
collection									
period									
The heat		Yes	Ν	lo	No	1	lo	Yes	Yes
pump									
defrosts Complete		1		0	0		^	2	1
Complete Cycles		I		0	0		0	2	1
Barometric	kPa	101.02	10	1.02	101.02	2 10	1.02	101.02	101.02
pressure	кга	101.02	10	1.02	101.02	2 10	1.02	101.02	101.02
Voltage	V	229.1	23	1.3	232.9	22	9.2	229.6	229.1
Current input	A	18.66	7	67	6.54	5	.47	21.17	18.66
of the unit	, <b>,</b>	10.00		01	0.04	0		21.17	10.00
Power input	kW	3.995	1.{	591	1.367	1.0	046	4.544	3.995
of the unit									
Test condition		45.40	0.0	20	04.00		40	4774	45.40
Inlet Water	°C	45.13	38	.36	31.80	25	5.18	47.74	45.13
temperature, DB									
Ob Outlet Water	°C	51.08*	10	.00	36.08	20	.12	53.89*	51.08*
temperature,		51.00	42	.00	30.00		. 12	53.09	51.00
DB									
-						1			

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Air <b>inlet</b>	s <b>outdoor</b> unit						
temperature, DB	°C	-6.97	2.02	7.02	12.01	-9.93	-6.97
Air <b>inlet</b> temperature, WB	°C	-8.18	1.01	6.00	11.00	-11.15	-8.18
Summary of th	e results					-	
Total heating capacity	kW	9.135	5.633	6.626	7.663	9.431	9.135
Effective power input	kW	4.074	1.670	1.447	1.126	4.623	4.074
Coefficient of performance (COP)		2.24	3.37	4.58	6.81	2.04	2.24
Compressor frequency	Hz	53	25	25	25	60	53
Water flow	m³/h	1.33	1.33	1.33	1.33	1.33	1.33
3.Calculation Tdesignh(°C)	1/conclusion		A 1 1 A 1 A 1				
	-10	for SCOP(	Average): Tbiv(°C)	-7			
Pdesignh(kW )		for SCOP(	<u> </u>				
)	-10		Tbiv(°C) TOL(°C)				
)	-10 10.326		Tbiv(°C) TOL(°C)		CR	COP at p	part load
) Test result A	-10 10.326 <b>A, B, C, D, E,</b>	F conditior Measured	Tbiv(°C) TOL(°C) IS: COP at measured	-10	CR 1.00	COP at p	
) Test result A Longition	-10 10.326 <b>A, B, C, D, E,</b> Part load	F condition Measured capacity	Tbiv(°C) TOL(°C) IS: COP at measured capacity	-10 Cdh			)4
) Test result A Uourdition Condition E	-10 10.326 <b>A, B, C, D, E,</b> Part load 10.326	F condition Measured capacity 9.431	Tbiv(°C) TOL(°C) IS: COP at measured capacity 2.04	-10 Cdh	1.00	2.0	04 24
) Test result A uo Uo Uo UO O O E F	-10 10.326 <b>A, B, C, D, E,</b> Part load 10.326 9.135	F condition Measured capacity 9.431 9.135	Tbiv(°C) TOL(°C) IS: COP at measured capacity 2.04 2.24	-10 Cdh 0.00 0.00	1.00	2.0	04 24
) Test result A Io ID IO IO O O E F A	-10 10.326 <b>A, B, C, D, E,</b> Part load 10.326 9.135 9.135	F condition Measured capacity 9.431 9.135 9.135	Tbiv(°C) TOL(°C) IS: COP at measured capacity 2.04 2.24 2.24	-10 Cdh 0.00 0.00 0.00	1.00 1.00 1.00	2.0	04 24 24 37
) Test result A uo inition O C E E F A B	-10 10.326 <b>A, B, C, D, E,</b> Part load 10.326 9.135 9.135 5.560	<b>F condition</b> Measured capacity 9.431 9.135 9.135 5.633	Tbiv(°C) TOL(°C)	-10 Cdh 0.00 0.00 0.00 0.00	1.00 1.00 1.00 0.99	2.0 2.2 2.2 3.3 4.9	04 24 24 37





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	0.041
Off mode [P <sub>OFF</sub> ]	kW	0.008
Conclusions:	Unit	Value
SCOPon:	kWh/kWh	3.54
SCOP:	kWh/kWh	3.53
Q <sub>H</sub> :	kWh/year	21334
Q <sub>HE</sub> :	kWh/year	6040
$\eta_{s,h}$	%	138.3
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1)		A++

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Appendix I 1	est results								
Table 5.	Heating mod	e(Low temp	erature	applicat	tion):			F	<b>)</b>
Model	CGK060V3L-I	3							
Product	Air to Water	Heating	1	Averag		Warmer		Colder	
type		season		е					
1. Test cond	itions:								
_		Part Loa				Outdoor			r heat
Condition	Form	in 9		14/	-	exchan	-	excha	anger et water
ipu	Form	lula	A	W	С	Inlet dry bulb	• •	temperat	
ō						tempera		temperat	
•						°C	liaro		
А	(-7-16)/(Tdesi		88	N/A	N/A	-7(-8	5)	a/	34
В	(+2-16)/ (Tdes		54	N/A	N/A	2(1)		a/	
С	(+7-16)/(Tdes		35	N/A	N/A	7(6)		a/	
D	(+12-16)/(Tde		15	N/A	N/A	12(1		a/	
E F		(TOL-16)/ (To pivalent-16)/(				TOL Tbiv		a/3 a/	
G	(-15-16)/(Tdes		N/A	N/A	N/A	-15		N/	
	ith the water flo						ditions		
at 30/35 condi	tions, the capa	city is 16334	.05W, tl						
	a/correction	data(Avera	age):						
General test	Unit	A(-7)/W34		W30	A7/W2			A(-	A(-
conditions/		(88%)	(54	4%)	(35%)	) (15	%)	10)/W35.	7)/W34
Part-Load								3 (100%)	(88%)
		A		В	С	[		E	F
Data collection period	hh: min:sec	4:00:00	2:1	0:00	2:10:0	0 2:10	):00	4:00:00	4:00:00
The heat		Yes	N	lo	No	N	0	Yes	Yes
pump									
defrosts		4		0				0	4
Complete Cycles		1		0	0	(		2	1
Barometric pressure	kPa	101.02		1.02	101.02		.02	101.02	101.02
Voltage	V	231.2	23	0.6	230.1	23	0.7	231.3	231.2
Current input of the unit	A	18.23	8.	54	6.80	5.4	49	20.01	18.23
Power input of the unit	kW	3.875	1.6	624	1.244	0.9	98	4.310	3.875
Test condition	s <b>indoor</b> unit	1				<b>I</b>			
<b>Inlet</b> Water temperature, DB	°C	29.43	27	.62	24.39	21.	.16	30.82	29.43
<b>Outlet</b> Water temperature, DB	°C	33.01*	30	.02	26.98	3 24.	.13	34.46*	33.01*

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Test condition	s <b>outdoor</b> unit						
Air <b>inlet</b> temperature, DB	°C	-7.01	1.99	7.03	12.00	-9.98	-7.01
Air <b>inlet</b> temperature, WB	°C	-8.11	1.01	6.01	11.00	-11.11	-8.11
Summary of th	e results						
Total heating capacity	kW	11.796	7.933	8.582	9.806	11.929	11.796
Effective power input	kW	3.964	1.714	1.333	1.088	4.399	3.964
Coefficient of performance (COP)		2.98	4.63	6.44	9.02	2.71	2.98
Compressor frequency	Hz	71	33	30	30	78	71
	m³/h	2.83	2.83	2.83	2.83	2.83	2.83
	art condition, c	butlet tempera	ature data is rec	orded by a fi	ull average co	omplete cyc	e's data.
Remark: * In p 3.Calculatio	art condition, c	butlet tempera	ature data is rec Average):		ull average co	omplete cyc	le's data.
Remark: * In p	art condition, c	butlet tempera	ature data is rec	-7	ull average co	omplete cyc	le's data.
Remark: * In p <b>3.Calculatio</b> Tdesignh(°C) Pdesignh(kW )	art condition, c n/conclusion -10	outlet tempera	ature data is rec Average): Tbiv(°C) TOL(°C)	-7	ull average co	omplete cyc	le's data.
Remark: * In p <b>3.Calculatio</b> Tdesignh(°C) Pdesignh(kW )	n/conclusion -10 13.335	outlet tempera	ature data is rec Average): Tbiv(°C) TOL(°C)	-7	ull average co		part load
Remark: * In p <b>3.Calculatio</b> Tdesignh(°C) Pdesignh(kW ) <b>Test result <i>F</i></b>	art condition, c n/conclusion -10 13.335 <b>A, B, C, D, E,</b>	outlet tempera for SCOP( F condition Measured	Average): Tbiv(°C) TOL(°C) ns: COP at measured	-7 -10			part load
Remark: * In p <b>3.Calculation</b> Tdesignh(°C) Pdesignh(kW ) <b>Test result</b> A uitipuo O	n/conclusion -10 13.335 <b>A, B, C, D, E,</b> Part load	outlet tempera for SCOP( F condition Measured capacity	Average): Tbiv(°C) TOL(°C) TOL(°C) TOL(°C) TOL(°C) TOL(°C) TOL(°C)	-7 -10 Cdh	CR	COP at 2.	part load
Remark: * In p <b>3.Calculation</b> Tdesignh(°C) Pdesignh(kW ) <b>Test result</b> A U U U O E	art condition, c n/conclusion -10 13.335 <b>A, B, C, D, E,</b> Part load 13.335	outlet tempera for SCOP( F condition Measured capacity 11.929	Average): Tbiv(°C) TOL(°C) TOL(°C) TOL(°C) TOL(°C) 15: COP at measured capacity 2.71	-7 -10 Cdh 0.00	CR 1.00	COP at 2.2	part load
Remark: * In p <b>3.Calculation</b> Tdesignh(°C) Pdesignh(kW ) <b>Test result</b> A <u>ip</u> C E F	art condition, c n/conclusion -10 13.335 A, B, C, D, E, Part load 13.335 11.796	<b>F condition</b> Measured capacity 11.929 11.796	Average): Tbiv(°C) TOL(°C) TOL(°C) TOL(°C) TOL(°C) 15: COP at measured capacity 2.71 2.98	-7 -10 Cdh 0.00 0.00	CR 1.00 1.00	COP at 2.2	part load 71 98
Remark: * In p <b>3.Calculatio</b> Tdesignh(°C) Pdesignh(kW ) <b>Test result A</b> <u>U</u> U U U D E F A	art condition, c n/conclusion -10 13.335 A, B, C, D, E, Part load 13.335 11.796 11.796	for SCOP( F condition Measured capacity 11.929 11.796 11.796	Average): Tbiv(°C) TOL(°C) TOL(°C) TOL(°C) 2.71 2.98 2.98	-7 -10 Cdh 0.00 0.00 0.00	CR 1.00 1.00 1.00	COP at 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0





Electric power consumptions	Unit	Value
Thermostat-off mode [P <sub>TO</sub> ]	kW	0.009
Standby mode [P <sub>SB</sub> ]	kW	0.009
Crankcase heater [P <sub>CK</sub> ]	kW	0.035
Off mode [P <sub>OFF</sub> ]	kW	0.009
Conclusions:	Unit	Value
SCOPon:	kWh/kWh	4.82
SCOP:	kWh/kWh	4.82
Q <sub>H</sub> :	kWh/year	27550
Q <sub>HE</sub> :	kWh/year	5718
$\eta_{s,h}$	%	189.7
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2)		A+++

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Appendix I	Fest results								
Table 6.	Heating mod	e(Medium te	mperat	ure app	lication)	:		F	C
Model	CGK060V3L-	В							
Product	Air to Water	Heating	1	Averag		Warme	· 🗌	Colder	
type		season		е		_			
1. Test cond	litions:								
		Part Loa	d Ratio			Outdoo	or heat	Indoo	r heat
u		in <sup>c</sup>				excha	inger		anger
Condition	Form	nula	А	W	С	Inlet dr	y (wet)	Inlet/out	let water
ouo						bu		temperat	ures (°C)
C						tempe °(			
А	(-7-16)/(Tdesi	anh-16)	88	N/A	N/A	-7(	-	a/	52
В	(+2-16)/ (Tdes		54	N/A	N/A	2(	1		42
С	(+7-16)/(Tdes		35	N/A	N/A	7(	/		36
D	(+12-16)/(Tde		15	N/A	N/A	12(			30
E		(TOL-16)/ (To							55.3
F		bivalent-16)/(			N1/A	Tb			52
G Remark: a) W	(-15-16)/(Tdes ith the water flo		N/A	N/A	N/A	-1			/A N14511-2
	itions, the capa								
		•		no pono		. 1011, 11			•
2. Tested dat	ta/correction	data(Avera	ige):						
General test	Unit	A(-7)/W52	A2/	W42	A7/W3	36 A1	2/W30	A(-	A(-
conditions/		(88%)	(54	4%)	(35%	) (*	5%)	10)/W55.	7)/W52
Part-Load								3	(88%)
								(100%)	
		A		В	С		D	E	F
Data	hh: min:sec	4:00:00	2:1	0:00	2:10:0	0 2:	10:00	4:00:00	4:00:00
collection									
period	-	X						N N	Ň
The heat		Yes	Г	10	No		No	Yes	Yes
pump defrosts									
Complete		1		0	0		0	1	1
Cycles				0	0		0		1
Barometric	kPa	101.02	10	1.02	101.0	2 10	01.02	101.02	101.02
pressure		101102	10		10110			101.02	101102
Voltage	V	232.5	23	2.2	230.1	1 2	29.5	228.8	232.5
Current input	A	23.32	10	.56	8.45	f	6.60	25.85	23.32
of the unit		20.02	10	.00	0.10	Ì		20.00	20.02
Power input	kW	5.130	2	154	1.652	> 1	.292	5.647	5.130
of the unit	NVV	0.100	۷.	104	1.002	-   '	.202	0.047	0.100
Test condition	s indoor unit					I		1	
Inlet Water	°C	44.72	38	.30	32.05	5 2	5.16	47.48	44.72
temperature,	Ĭ	r7.12	50		02.00	, <u> </u>	0.10	1.40	17.12
DB									
Outlet Water	°C	50.96*	42	.07	36.09	) 2	9.91	53.44*	50.96*
temperature,					20.00				
DB									
								I	

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	s <b>outdoor</b> unit						
Air <b>inlet</b> temperature, DB	°C	-6.83	2.02	7.00	12.01	-9.87	-6.83
Air <b>inlet</b> temperature, WB	°C	-8.03	1.00	6.00	11.01	-10.96	-8.03
Summary of th	e results						
Total heating capacity	kW	12.462	7.582	8.136	9.578	11.900	12.462
Effective power input	kW	5.244	2.269	1.766	1.406	5.762	5.244
Coefficient of performance (COP)		2.38	3.34	4.61	6.81	2.07	2.38
Compressor frequency	Hz	68	33	30	30	78	68
Water flow	m³/h	1.73	1.73	1.73	1.73	1.73	1.73
3.Calculation Tdesignh(°C)	n/conclusion	for SCOP(	<b>Average):</b> Tbiv(°C)	-7			
	-	for SCOP(	<u> </u>				
Tdesignh(°C) Pdesignh(kW )	-10 14.087		Tbiv(°C) TOL(°C)				
Tdesignh(°C) Pdesignh(kW )	-10		Tbiv(°C) TOL(°C)		CR	COP at p	part load
Tdesignh(°C) Pdesignh(kW ) <b>Test result A</b>	-10 14.087 <b>A, B, C, D, E,</b>	F conditior Measured	Tbiv(°C) TOL(°C) IS: COP at measured	-10	CR 1.00	COP at p	
Tdesignh(°C) Pdesignh(kW ) Test result A	-10 14.087 <b>A, B, C, D, E,</b> Part load	F condition Measured capacity	Tbiv(°C) TOL(°C) IS: COP at measured capacity	-10 Cdh			07
Tdesignh(°C) Pdesignh(kW ) Test result A <u>option</u> C E	-10 14.087 <b>A, B, C, D, E,</b> Part load 14.087	F condition Measured capacity 11.900	Tbiv(°C) TOL(°C) IS: COP at measured capacity 2.07	-10 Cdh	1.00	2.0	07
Tdesignh(°C) Pdesignh(kW ) Test result A <u>oji</u> ip O O E F	-10 14.087 <b>A, B, C, D, E,</b> Part load 14.087 12.462	F condition Measured capacity 11.900 12.462	Tbiv(°C) TOL(°C) IS: COP at measured capacity 2.07 2.38	-10 Cdh 0.00 0.00	1.00	2.0	07 38
Tdesignh(°C) Pdesignh(kW ) Test result A	-10 14.087 <b>A, B, C, D, E,</b> Part load 14.087 12.462 12.462	F condition Measured capacity 11.900 12.462 12.462	Tbiv(°C) TOL(°C) IS: COP at measured capacity 2.07 2.38 2.38	-10 Cdh 0.00 0.00 0.00	1.00 1.00 1.00	2.0	07 38 38 38 34
Tdesignh(°C) Pdesignh(kW ) Test result A	-10 14.087 <b>A, B, C, D, E,</b> Part load 14.087 12.462 12.462 7.585	<b>F condition</b> Measured capacity 11.900 12.462 12.462 7.582	Tbiv(°C) TOL(°C) IS: COP at measured capacity 2.07 2.38 2.38 3.34	-10 Cdh 0.00 0.00 0.00 0.00	1.00 1.00 1.00 1.00	2.0 2.3 3.3 4.9	07 38 38 38 34





Electric power consumptions	Unit	Value
Thermostat-off mode [P <sub>TO</sub> ]	kW	0.009
Standby mode [P <sub>SB</sub> ]	kW	0.009
Crankcase heater [P <sub>CK</sub> ]	kW	0.035
Off mode [P <sub>OFF</sub> ]	kW	0.009
Conclusions:	Unit	Value
SCOPon:	kWh/kWh	3.56
SCOP:	kWh/kWh	3.55
Q <sub>H</sub> :	kWh/year	29104
Q <sub>HE</sub> :	kWh/year	8187
$\eta_{s,h}$	%	139.2
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1)		A++

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<u>Table 7.</u> Model	Clause 4 of CGK025V3L	<u>EN 14511-4:2</u> -B	018		Р
Nouel	CGRU20V3L	ט <b>י</b> .			
Customer Code	Execution Date [dd- mm-yyyy]	Testing item	Standard Reference	Comment	Test Response
TEST 1	25-07-2022	STARTING TEST	EN14511- 4:2018, §4.2.1.2 Table 3	The "lower" starting operating conditions declared by the manufacturer for the heating mode- i.e. Tair=-25.00°C, T out water 14.56°C, Flow rate 0.85m <sup>3</sup> /h have been set and obtained. At those conditions, the machine was switched on. It started without any problem and worked for 30 minutes without showing any warning or allarm. During the test the machine operated in automode. No damage was recorded on the machine during and after the test.	Passed
TEST 2	25-07-2022	OPERATIN G TEST	EN14511- 4:2018, §4.2.1.2Table 3	From the machine "lower" starting conditions - i.e the machine was brought to the lower operating conditions declared by the manufacturer for the heating mode- i.e. Tair=-25.02°C, T out water 56.52°C, Flow rate 0.85m <sup>3</sup> /h. Once these conditions were obtained, the machine was let operate for over 1 hour in automode. During the test, no waring or alarm were showed. No damage was recorded on the machine during and after the test.	Passed
TEST 3	25-07-2022	SHUTTING OFF WATER FLOW	EN14511- 4:2018, § 4.5	The water flow rate was shutted off through manual and automatic valves of the test rig. The machine switched off and only the flow switch Protection appeared on the user interface of indoor unit. Perform error reset operation, once the water flow rate was restored, the machine restarted automatically and worked for 30 minutes normally. No damage was recorded on the machine during and after the test.	Passed
TEST 4	25-07-2022	SHUTTING OFF AIR FLOW	EN14511- 4:2018, § 4.5	The air flow rate was shutted off through a plastic sheet and a panel. The machine never turned off. It continued to operate with continuous frosting and defrosting cycles. After more than half an hour, the air flow rate was restored and the machine started to operate normally. During the test, no waring or alarm were showed. No damage was recorded on the machine during and after the test.	Passed
TEST 5	25-07-2022	Complete Power Supply Failure	EN14511- 4:2018, § 4.6	The power supply was cut off for about 10 seconds.The unit restarted automatically within about 3 minutes after the power supply was reactivated.	Passed



Table 8. Model	Clause 4 of CGK040V3L	<u>EN 14511-4:2</u> -B	018		Р
Customer Code	Execution Date [dd- mm-yyyy]	Testing item	Standard Reference	Comment	Test Response
TEST 1		STARTING TEST	EN14511- 4:2018, §4.2.1.2 Table 3	The "lower" starting operating conditions declared by the manufacturer for the heating mode- i.e. Tair=-25.03°C, T out water 14.98°C, Flow rate 1.20m <sup>3</sup> /h have been set and obtained. At those conditions, the machine was switched on. It started without any problem and worked for 30 minutes without showing any warning or allarm. During the test the machine operated in automode. No damage was recorded on the machine during and after the test.	Passed
TEST 2	26-07-2022	OPERATIN G TEST	EN14511- 4:2018, §4.2.1.2Table 3	From the machine "lower" starting conditions - i.e the machine was brought to the lower operating conditions declared by the manufacturer for the heating mode- i.e. Tair=-25.12°C, T out water 56.45°C, Flow rate 1.20m <sup>3</sup> /h. Once these conditions were obtained, the machine was let operate for over 1 hour in automode. During the test, no waring or alarm were showed. No damage was recorded on the machine during and after the test.	Passed
TEST 3	26-07-2022	SHUTTING OFF WATER FLOW	EN14511- 4:2018, § 4.5	The water flow rate was shutted off through manual and automatic valves of the test rig. The machine switched off and only the flow switch Protection appeared on the user interface of indoor unit. Perform error reset operation, once the water flow rate was restored, the machine restarted automatically and worked for 30 minutes normally. No damage was recorded on the machine during and after the test.	Passed
TEST 4	26-07-2022	SHUTTING OFF AIR FLOW	EN14511- 4:2018, § 4.5	The air flow rate was shutted off through a plastic sheet and a panel. The machine never turned off. It continued to operate with continuous frosting and defrosting cycles. After more than half an hour, the air flow rate was restored and the machine started to operate normally. During the test, no waring or alarm were showed. No damage was recorded on the machine during and after the test.	Passed
TEST 5	26-07-2022	Complete Power Supply Failure	EN14511- 4:2018, § 4.6	The power supply was cut off for about 10 seconds.The unit restarted automatically within about 3 minutes after the power supply was reactivated.	Passed

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Table 9.		EN 14511-4:2	018		Р
Model	CGK060V3L	-В			
Customer Code	Execution Date [dd- mm-yyyy]	Testing item	Standard Reference	Comment	Test Response
TEST 1	27-07-2022	STARTING TEST	EN14511- 4:2018, §4.2.1.2 Table 3	The "lower" starting operating conditions declared by the manufacturer for the heating mode- i.e. Tair=-25.03°C, T out water 10.29°C, Flow rate 1.56m <sup>3</sup> /h have been set and obtained. At those conditions, the machine was switched on. It started without any problem and worked for 30 minutes without showing any warning or allarm. During the test the machine operated in automode. No damage was recorded on the machine during and after the test.	Passed
TEST 2	27-07-2022	OPERATIN G TEST	EN14511- 4:2018, §4.2.1.2Table 3	From the machine "lower" starting conditions - i.e the machine was brought to the lower operating conditions declared by the manufacturer for the heating mode- i.e. Tair=-25.00°C, T out water 56.21°C, Flow rate 1.56m <sup>3</sup> /h. Once these conditions were obtained, the machine was let operate for over 1 hour in automode. During the test, no waring or alarm were showed. No damage was recorded on the machine during and after the test.	Passed
TEST 3	27-07-2022	SHUTTING OFF WATER FLOW	EN14511- 4:2018, § 4.5	The water flow rate was shutted off through manual and automatic valves of the test rig. The machine switched off and only the flow switch Protection appeared on the user interface of indoor unit. Perform error reset operation, once the water flow rate was restored, the machine restarted automatically and worked for 30 minutes normally. No damage was recorded on the machine during and after the test.	Passed
TEST 4	27-07-2022	SHUTTING OFF AIR FLOW	EN14511- 4:2018, § 4.5	The air flow rate was shutted off through a plastic sheet and a panel. The machine never turned off. It continued to operate with continuous frosting and defrosting cycles. After more than half an hour, the air flow rate was restored and the machine started to operate normally. During the test, no waring or alarm were showed. No damage was recorded on the machine during and after the test.	Passed
TEST 5	27-07-2022	Complete Power Supply Failure	EN14511- 4:2018, § 4.6	The power supply was cut off for about 10 seconds.The unit restarted automatically within about 3 minutes after the power supply was reactivated.	Passed



Sound power leve	I measurement(Low te	emperature application)	Р
CGK025V3L-B			
Product type :			Air to Water
Outdoor heat excha	inger, Air temperature D	DB/WB (°C):	7.0 /6.0
Indoor heat exchan	ger, Water inlet/outlet te	emperature (°C):	30.0 /35.0
Voltage (V):			230
Frequency (Hz):			50
Working condition of	class :		Class A
Acoustical environn	nent :		Hemi-anechoic room
Windshield type :			Sponge
Measured position	amount :		14
Water flow (m <sup>3</sup> /h):			1.35
ured quantity	L <sub>WA,indoors</sub> (dB(A))	L <sub>WA,outdoors</sub> (dB(A))	Remark
re level $\overline{L}_{p(ST)}^{****}$			
ıs d *			
level L <sub>wA</sub> ****			
	CGK025V3L-B Product type : Outdoor heat exchange Indoor heat exchange Voltage (V): Frequency (Hz): Working condition of Acoustical environne Windshield type : Measured position a Water flow (m <sup>3</sup> /h): ured quantity ure level $\overline{L}_{p(ST)}^{****}$ us d *	CGK025V3L-B         Product type :         Outdoor heat exchanger, Air temperature E         Indoor heat exchanger, Water inlet/outlet te         Voltage (V):         Frequency (Hz):         Working condition class :         Acoustical environment :         Windshield type :         Measured position amount :         Water flow (m³/h):         ured quantity       L <sub>WA,indoors</sub> (dB(A))         Ire level $\overline{L}_{p(ST)}^{****}$ Is d *	Product type :         Outdoor heat exchanger, Air temperature DB/WB (°C):         Indoor heat exchanger, Water inlet/outlet temperature (°C):         Voltage (V):         Frequency (Hz):         Working condition class :         Acoustical environment :         Windshield type :         Measured position amount :         Water flow (m³/h):         ured quantity       L <sub>WA,indoors</sub> (dB(A))         Ire level       L <sub>p(ST)</sub> ****         Is d *

Rounding to: \*) 1 decimal places; \*\*) 2 decimal places; \*\*\*) 3 decimal places; \*\*\*\*) nearest integer Fan speed: 610 r/min, compressor speed: 55Hz.







Table 10b.	Sound power leve application)	Р		
Model	CGK025V3L-B			
	Product type :			Air to Water
	Outdoor heat exch	anger, Air temperature D	DB/WB (°C):	7.0 /6.0
	Indoor heat exchar	nger, Water inlet/outlet te	emperature (°C):	47.0 /55.0
	Voltage (V):	230		
	Frequency (Hz):	50		
	Working condition	Class A		
	Acoustical environ	ment :	Hemi-anechoi room Sponge	
	Windshield type :			
Measured position		amount :	14	
	Water flow (m³/h):			0.88
Measured quantity		L <sub>WA,indoors</sub> (dB(A))	L <sub>WA,outdoors</sub> (dB(A))	Remark
Sound pressure level $\overline{L}_{p(ST)}^{****}$			48	
Spheres radius d *			1.0m	
Sound power level L <sub>wA</sub> ****		+	63	1

Rounding to: \*) 1 decimal places; \*\*) 2 decimal places; \*\*\*) 3 decimal places; \*\*\*\*) nearest integer Fan speed: 580 r/min, compressor speed: 55Hz.







Table 11a.	Sound power leve	I measurement(Low te	emperature application)	Р		
Model	CGK040V3L-B					
	Product type :			Air to Water		
	Outdoor heat excha	inger, Air temperature D	B/WB (°C):	7.0 /6.0 30.0 /35.0		
	Indoor heat exchan	ger, Water inlet/outlet te	emperature (°C):			
	Voltage (V):			230		
	Frequency (Hz):	Frequency (Hz):				
	Working condition of	Class A				
	Acoustical environn	Hemi-anechoio room				
Windshield type : Measured position a Water flow (m³/h):			Sponge 14			
		amount :				
				2.10		
Measured quantity		L <sub>WA,indoors</sub> (dB(A))	L <sub>WA,outdoors</sub> (dB(A))	Remark		
Sound pressure level $\overline{L}_{p(ST)}^{****}$			53			
Spheres radius d *			1.0m			
Sound power level L <sub>wA</sub> ****			67			
Duct connect Rounding to:	*) 1 decimal places; *		3 decimal places; ****) ne	earest integer		

Fan speed: 780 r/min, compressor speed: 45Hz.







Table 11b.	Sound power leve application)	Р			
Model	CGK040V3L-B				
	Product type :			Air to Water	
	Outdoor heat excha	anger, Air temperature D	DB/WB (°C):	7.0 /6.0	
	Indoor heat exchan	ger, Water inlet/outlet te	emperature (°C):	47.0 /55.0	
	Voltage (V):			230	
	Frequency (Hz):	50			
	Working condition of	Class A			
w	Acoustical environn	Acoustical environment :			
	Windshield type :	Sponge			
	Measured position	Measured position amount :			
	Water flow (m³/h):			1.33	
Measured quantity		L <sub>WA,indoors</sub> (dB(A))	L <sub>WA,outdoors</sub> (dB(A))	Remark	
Sound pressure level $\overline{L}_{p(ST)}^{****}$			53		
Spheres radius d *			1.0m		
Sound power level L <sub>wA</sub> ****			67		

Duct connection:--

Rounding to: \*) 1 decimal places; \*\*) 2 decimal places; \*\*\*) 3 decimal places; \*\*\*\*) nearest integer Fan speed: 730 r/min, compressor speed: 45Hz.



B ΤÜΛ



Table 12a.	Sound power leve	Р				
Model	CGK060V3L-B					
	Product type :			Air to Water		
	Outdoor heat excha	anger, Air temperature D	DB/WB (°C):	7.0 /6.0		
	Indoor heat exchan	ger, Water inlet/outlet te	emperature (°C):	30.0 /35.0		
	Voltage (V):	230 50				
	Frequency (Hz):					
	Working condition of	Class A				
	Acoustical environn	Hemi-anechoi room				
	Windshield type :		Sponge			
	Measured position	Measured position amount :				
Water flow (m³/h):				2.83		
Measured quantity		L <sub>WA,indoors</sub> (dB(A))	L <sub>WA,outdoors</sub> (dB(A))	Remark		
Sound pressure level $\overline{L}_{p(ST)}^{****}$			53			
Spheres radius d *			1.0m			
Sound power level L <sub>wA</sub> ****			68			

Rounding to: \*) 1 decimal places; \*\*) 2 decimal places; \*\*\*) 3 decimal places; \*\*\*\*) nearest integer Fan speed: 700 r/min, compressor speed: 58Hz.



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Table 12b.	Sound power leve application)	Р		
Model	CGK060V3L-B			
	Product type :			Air to Water
	Outdoor heat exch	anger, Air temperature D	DB/WB (°C):	7.0 /6.0
	Indoor heat exchar	nger, Water inlet/outlet te	emperature (°C):	47.0 /55.0
	Voltage (V):	230 50		
	Frequency (Hz):			
	Working condition	Class A		
	Acoustical environ	ment :	Hemi-anechoi room Sponge	
	Windshield type :			
Measured position		amount :	14	
	Water flow (m <sup>3</sup> /h):			1.73
Measured quantity		L <sub>WA,indoors</sub> (dB(A))	L <sub>WA,outdoors</sub> (dB(A))	Remark
Sound pressure level $\overline{L}_{p(ST)}^{****}$			56	
Spheres radius d *			1.0m	
Sound power level L <sub>wA</sub> ****			71	1

Rounding to: \*) 1 decimal places; \*\*) 2 decimal places; \*\*\*) 3 decimal places; \*\*\*\*) nearest integer Fan speed: 670 r/min, compressor speed: 58Hz.





Appendix	II	Marking plat	е
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Model: <u>CGK025V3L-B</u>

Nameplate

EVI DC Inverter Air	CGK025V3L-B
Power Supply	220-240V~/50Hz
*Heating Capacity Min./Max.	4.32/9.4kW
*Heating Input Power Min./Max.	0.76/2.06kW
*Heating COP Min./Max.	4.56/5.68W/W
Cooling Capacity Min./Max.	2.78/6.05kW
Cooling Input Power Min./Max.	0.74/2.44kW
Rated. Input Power/Current	3.09kW/14.79A
Max. Water Outlet Temperature	55°C
Water Flow	1.6m³/h
Refrigerant/Weight	R32/1500g
Low/High side operation pressure	1.5/4.4MPa
Maximum allowable pressure	4.4MPa
Max Water Pressure	1.0MPa
Shock Proof Grade	I
WaterProof Level	IPX4
Water Pressure Drop	18kPa
Water Pipe Connection	1 inch
Net Weight	78kg
Date/NO.	See bar code
*Heating working condition: Dry bulb temperature 7°C, Wet bul Inlet water temperature 30°C, Outle	b temperature 6°C,
System CO2 equivalent ch	narge weight: 1.01 ton
Guangzhou Sprsun New Energy Te No. 15 Tangxi Road, Yinsha Indus	

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TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch 5F&8F East, Communication Building, No.163 Pingyun Road, Huangpu Ave. West, Guangzhou 510656, China Tel: +86 20 38320668

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Sprs	UN 🛕 (E 🕱
EVI DC Inverter An	ir Source Heat Pumps CGK040V3L-B
Power Supply	220-240V~/50Hz
*Heating Capacity Min./Max.	7.27/15.8kW
*Heating Input Power Min./Max.	1.26/3.43kW
*Heating COP Min./Max.	4.60/5.77W/W
Cooling Capacity Min./Max.	4.67/10.16kW
Cooling Input Power Min./Max.	1.24/4.06kW
Rated. Input Power/Current	5.14kW/24.6A
Max. Water Outlet Temperature	55°C
Water Flow	2.7m <sup>3</sup> /h
Refrigerant/Weight	R32/2000g
Low/High side operation pressure	1.5/4.4MPa
Maximum allowable pressure	4.4MPa
Max Water Pressure	1.0MPa
Shock Proof Grade	I
WaterProof Level	IPX4
Water Pressure Drop	21kPa
Water Pipe Connection	1 inch
Net Weight	98kg
Date/NO.	See bar code
*Heating working condition: Dry bulb temperature 7°C, Wet b Inlet water temperature 30°C, Ou System CO2 equivalent	
No. 15 Tangxi Road, Yinsha Ind	Technology Development Co., Ltd dustrial Park, Xintang, Zengcheng, hou, China

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EVI DC Inverter Air S	an and a second
Model	CGK060V3L-B
Power Supply	220-240V~/50Hz
*Heating Capacity Min./Max.	10.03/21.8kW
*Heating Input Power Min./Max.	1.74/4.73kW
*Heating COP Min./Max.	4.61/5.76W/W
Cooling Capacity Min./Max.	6.45/14.02kW
Cooling Input Power Min./Max.	1.71/6kW
Rated. Input Power/Current	7.09kW/33.94A
Max. Water Outlet Temperature	55°C
Water Flow	3.8m³/h
Refrigerant/Weight	R32/2800g
Low/High side operation pressure	1.5/4.4MPa
Maximum allowable pressure	4.4MPa
Max Water Pressure	1.0MPa
Shock Proof Grade	I
WaterProof Level	IPX4
Water Pressure Drop	25kPa
Water Pipe Connection	1 inch
Net Weight	124kg
Date/NO.	See bar code
System CO2 equivalent cha	rge weight: 1.89 ton
*Heating working condition: Dry bulb temperature 7°C, Wet bul Inlet water temperature 30°C, Outl Guangzhou Sprsun New Energy Tech	et water temperature 35°C.
No. 15 Tangxi Road, Yinsha Industri	al Park, Xintang, Zengcheng,
Guangzhou,	China

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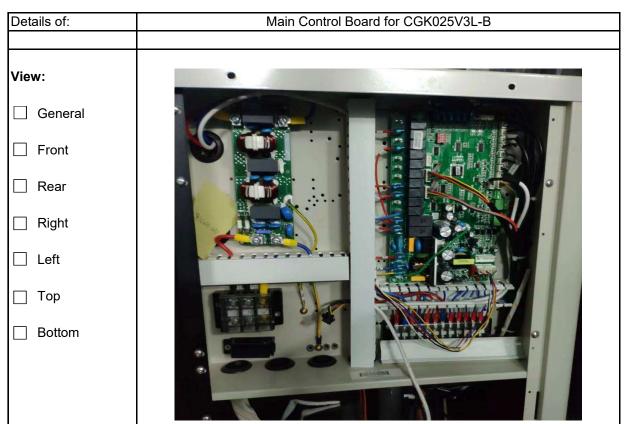
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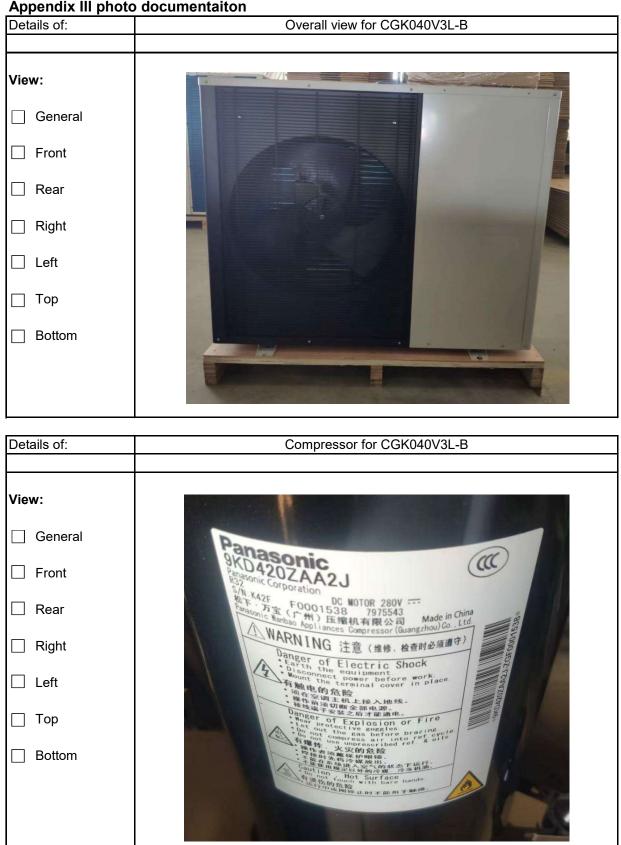
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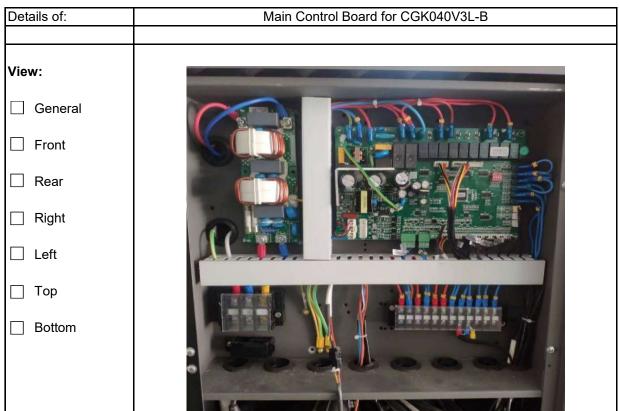
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# Details of: Overall view for CGK060V3L-B View: General Front Rear Right Left 🗌 Тор Bottom Details of: Compressor for CGK060V3L-B View: Panasonic General C€0035 4 9VD420ZAA2J Front R32 F0006867 Made in China 7975144 🗌 Rear \*9VD420ZAA2JF0006 WARNING/DANGER Danger of Electric Shock Earth the equipment. Disconnect power before work. Mount the terminal cover in place. Danger of Explosion or Fire Let out the gas before brazing. Do not compress air into ref. cycle. Do not compress cibed ref. 6 oils. Caution . Hot Surface Do not touch with bare hands. Right Left 🗌 Тор PROD. YEAR: 2022 VOLUME: 3. 13L PS: 43 bar TS: -35°C - +115°C Panasonic Wanbao Appliances Compressor (Buangzhou) Co. Ltd ZhongCun, PanYu District, GuangZhou, Guangdong, P. R. China Author ized Representative in EU Panasonic Marketing Europe GmbH Winsbergring 15, 22525 Hamburg, Germany Bottom

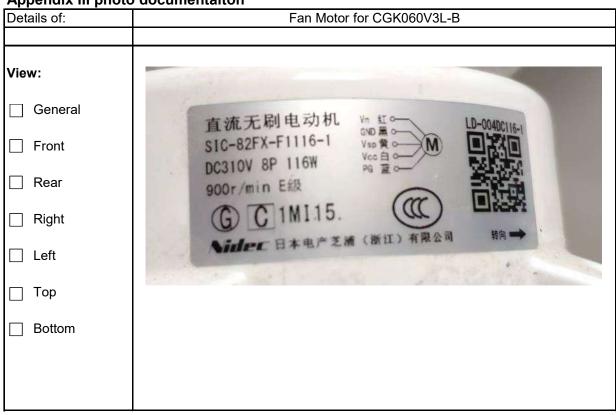
# Appendix III photo documentaiton

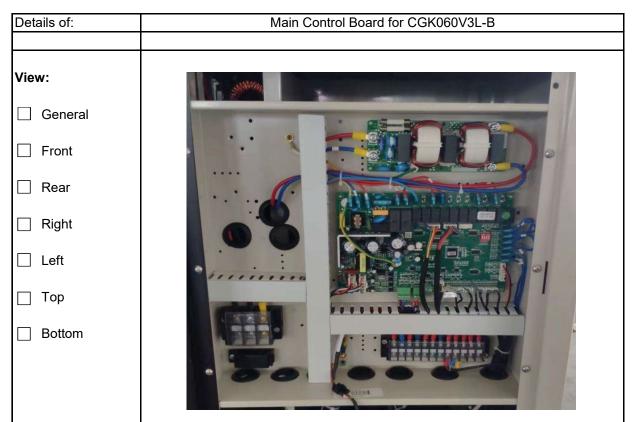
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Model: CGK025V3L-B		
Part		Technical data
1. Compressor		
	Manufacture:	Panasonic Wanbao Appliances Compressor
		(Guangzhou) Co., Ltd.
	Туре:	9RD220ZAA2J
	Rated capacity:	2265W
	Serial-number:	F0002644
	Specification:	DC280V; R32
2. Condenser		
	Manufacture:	Jiangsu Yuanzhuo Equipment Manfactur Co., Ltd
	Туре:	ZL62FA-22AD-CG
	Heat exchanger:	Plate heat exchanger
	Dimension (mm):	526(L)mmX119(H)mmX56(D)mm
3. Evaporator		
	Manufacture:	Guangzhou Aotai Refrigeration EquipmentCo., Ltd.
	Туре:	03KA-CP-04
	Heat exchanger:	Finned-coil heat exchanger
	Dimension (mm):	660(L)mmX750(H)mmX345(D)mm
4. Fan motor		
	Manufacture:	Nidec Shibaura (Zhejiang) Co., Ltd.
	Туре:	SIC-82FX-F1116-1
	Fan type:	3 blade
	Specification:	DC310V; 116W
5. Main control board		
	Manufacture:	СНІСО
	Туре:	CG248075
	Specification:	220-240V; 50Hz







Appendix IV	Construction	data form	
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Model: CGK040V3L-E	Model: <u>CGK040V3L-B</u>					
Part		Technical data				
1. Compressor						
	Manufacture:	Panasonic Wanbao Appliances Compressor				
		(Guangzhou) Co., Ltd.				
	Туре:	9KD420ZAA2J 4320W				
	Rated capacity:					
	Serial-number:	F0001538				
	Specification:	DC280V; R32				
2. Condenser						
	Manufacture:	Jiangsu Yuanzhuo Equipment Manfactur Co., Ltd				
	Туре:	ZL62FA-30AD-CG				
	Heat exchanger:	Plate heat exchanger				
	Dimension (mm):	526(L)mmX119(H)mmX71(D)mm				
3. Evaporator						
	Manufacture:	Guangzhou Aotai Refrigeration Equipment Co., Ltd.				
	Туре:	04KA-CP-01				
	Heat exchanger:	Finned-coil heat exchanger				
	Dimension (mm):	660(L)mmX900(H)mmX345(D)mm				
4. Fan motor						
	Manufacture:	Nidec Shibaura (Zhejiang) Co., Ltd.				
	Туре:	SIC-82FX-F1116-1				
	Fan type:	3 blade				
	Specification:	DC310V; 116W				
5. Main control board						
	Manufacture:	СНІСО				
	Туре:	CG248075				
	Specification:	220-240V; 50Hz				

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# Appendix IV Construction data form

Model: <u>CGK060V3L-B</u>				
Part		Technical data		
1. Compressor				
	Manufacture:	Panasonic Wanbao Appliances Compressor		
		(Guangzhou) Co., Ltd.		
Туре:		9VD420ZAA2J		
	Rated capacity:	4390W F0006867		
	Serial-number:			
	Specification:	DC280V; R32		
2. Condenser				
	Manufacture:	Jiangsu Yuanzhuo Equipment Manfactur Co., Ltd		
	Туре:	ZL62FA-40AD-CG		
	Heat exchanger:	Plate heat exchanger		
	Dimension (mm):	526(L)mmX119(H)mmX91(D)mm		
3. Evaporator				
	Manufacture:	Guangzhou Aotai Refrigeration EquipmentCo., Ltd.		
	Туре:	05KA-CP-01		
	Heat exchanger:	Finned-coil heat exchanger		
	Dimension (mm):	660(L)mmX1300(H)mmX345(D)mm		
4. Fan motor				
	Manufacture:	Nidec Shibaura (Zhejiang) Co., Ltd.		
	Туре:	SIC-82FX-F1116-1		
	Fan type:	3 blade		
	Specification:	DC310V; 116W		
5. Main control board				
	Manufacture:	СНІСО		
	Туре:	CG248075		
	Specification:	220-240V; 50Hz		





#### Appendix V Equipment List

No.	Туре	Manufacture	Model	Equipment ID	Calibration Due Date
1	Digital power meter	YOKOGAWA	WT230	91HC39024	2023-01-04
2	Platinum resistance	CHINO	Pt100	TS-019XC0130	2023-01-04
3	Platinum resistance	CHINO	Pt100	TS3XA0248	2023-01-04
4	Temperature and humidity sensor	YOKOGAWA	HMD62	S4610294	2023-01-04
5	Water pressure gauge	YOKOGAWA	MPM489	B86832	2023-01-04
6	Water pressure gauge	YOKOGAWA	MPM489	B86833	2023-01-04
7	Flowmeter	YOKOGAWA	AXG032	S5W920561039	2023-01-04
8	Anechoic rooms (hemi-anechoic rooms)	Guangzhou Kinte	-	NC-036-2	2023-10-07
9	AC source Supply	YANGHONG	YF-3600	VGDS-0637	2022-11-07
10	6 channel data logger	—	PXI-1033	VGDY-0257	2023-05-20
11	PULSE system	B & K	3660C	VGDY-0184	2023-04-12
12	Calibrator	B & K	4231	HJ-000095	2023-06-30
13	Long steel tape	_	5m	HJ-000150	2023-01-04
14	Temperature measurement system	_		NC-036-1	2023-06-07
15	Atmospheric pressure meter			HJ-000165	2022-11-22
16	Constant temperature water system	B & K		VGDS-0448	2023-04-18
17	Windscreen	B & K	WS002-5	_	

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