



Technical Report No.: 64.181.22.03449.03 Rev.00

Date: 2024-07-22

Client: Name: Guangzhou Sprsun New Energy Technology Development Co., Ltd
Address: No.15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng District,Guangzhou,511338, China
Contact person: YE XIN

Manufacturer: Name: Guangzhou Sprsun New Energy Technology Development Co., Ltd
Address: No.15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng District,Guangzhou,511338, China

Factory: Name: Guangzhou Sprsun New Energy Technology Development Co., Ltd
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: CGK-025V3L; CGK-030V3L-B; CGK-040V3L; CGK-050V3L-B
Trade mark: SPRSUN

Test specification: EN 14825:2022
 EN 14511-3:2022
 EN 14511-4:2022 Clause 4
 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, Certification, Validation and Verification Regulations, chapter A-3.3.

Doc No.: ITC-TTW0902.02E – Rev.15

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 :	CGK-025V3L; CGK-030V3L-B; CGK-040V3L; CGK-050V3L-B
Rated Voltage (V) :	380-420V, 3N~
Rated Frequency (Hz) :	50
Rated Power (W) :	3000 for CGK-025V3L; 3940 for CGK-030V3L-B; 4900 for CGK-040V3L; 6290 for CGK-050V3L-B
Rated Current (A) :	6.30 for CGK-025V3L; 8.31 for CGK-030V3L-B; 10.40 for CGK-040V3L; 13.28 for CGK-050V3L-B
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) :	R32 / 1.50kg for CGK-025V3L; 1.70kg for CGK-030V3L-B; 2.00kg for CGK-040V3L; 2.80kg for CGK-050V3L-B
Declared parameters :	<input checked="" type="checkbox"/> Average <input type="checkbox"/> Warmer <input type="checkbox"/> Colder
Sound power level dB(A) :	N/A
Series No :	KRZK07A20250703577 for CGK-025V3L; KRZJ09A20300801957 for CGK-030V3L-B; KRZK07A20400703827 for CGK-040V3L; KRZJ09A20500802377 for CGK-050V3L-B

2 Order

2.1 Date of Purchase Order, Customer's Reference

Date of Purchase Order: 2022-08-15, 2023-04-18, 2024-07-09

Customer's Reference: Guangzhou Sprsun New Energy Technology Development Co., Ltd

2.2 Test Sample(s)

• Reception date(s): 2022-08-15, 2023-04-18, 2024-06-25

• Location(s) of reception:

For Energy test:

Guangzhou Customs District Technology Center
(CNAS accredited laboratory with Registration No.CNAS L2322)

Address: No.3, Desheng East Road, Daliang, Shunde District, Foshan, Guangdong, China

For Noise tests:

CVC Testing Technology Co., Ltd.
(CNAS accredited laboratory with Registration No.CNAS L0095)

Address: No.3, Tiantai Yilu, Kaitai Avenue, Science City, Guangzhou, Guangdong, China

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

2.3 Date(s) of Testing

2022-08-15 to 2022-09-19, 2023-04-18 to 2023-05-25, 2024-06-25 to 2024-06-25

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 115:2023, clause 4.3 Simple acceptance 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.

There are no statements to conformity or no results with measurand stated in this report, no decision rule has been applied.



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 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 Test History

- 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 5-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.
5) The test report 64.181.22.03449.02 Rev.00, dated 2023-06-27 supersedes original test report 64.181.22.03449.01 Rev.00, dated 2022-09-20 to include the following changes and/or additions, which were considered technical modifications:
a) Change product configuration and update all standards in the report. Therefore, related testing for all models was updated.
6) This test report 64.181.22.03449.03 Rev.00, dated 2024-07-22 supersedes original test report 64.181.22.03449.02 Rev.00, dated 2023-06-27 to include the following changes and/or additions, which were considered technical modifications:
a) Updating EN 12102-1 test for model CGK-040V3L.

Doc No.: ITC-TTW0902.02E - Rev.15

TUV SUD Certification and Testing (China) Co., Ltd. Guangzhou Branch
TUV SUD Group

Tested by: William Liang, Project Handler
printed name, function & signature

Approved by: Plum Li, Designated Reviewer
printed name, function & signature



Appendix I Test results

Table 1.	Heating mode (Low temperature application):						P	
Model	CGK-025V3L							
Product type	Air to Water	Heating season	<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	Average climates	Inlet dry (wet) bulb temperature (°C)		Inlet/outlet water temperatures (°C)			
A	$(-7-16)/(T_{designh-16})$	88	-7(-8)		a / 34			
B	$(+2-16)/(T_{designh-16})$	54	2(1)		a / 30			
C	$(+7-16)/(T_{designh-16})$	35	7(6)		a / 27			
D	$(+12-16)/(T_{designh-16})$	15	12(11)		a / 24			
E	$(TOL-16)/(T_{designh-16})$		TOL		a / 35.3			
F	$(T_{bivalent-16})/(T_{designh-16})$		T _{biv}		a / 34			
G	$(-15-16)/(T_{designh-16})$	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 7.868kW, the power is 1.682kW, the COP is 4.68kW/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	
Electrical Properties								
Voltage	V	400.0	400.2	400.7	400.8	400.4	400.0	
Current input of the unit	A	4.92	2.56	2.08	1.91	5.02	4.92	
Power input of the unit	kW	2.023	0.863	0.720	0.611	2.058	2.023	
Compressor frequency	Hz	70	33	30	30	70	70	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

Test conditions User Side							
Water flow	m³/h	1.35	1.35	1.35	1.35	1.35	1.35
Inlet Water temperature	°C	29.37	27.32	25.49	23.31	30.99	29.37
Outlet Water temperature	°C	33.22*	29.93	28.25	26.42	34.47*	33.22*
Test conditions Source Side							
Barometric pressure	kPa	101.02	101.02	101.02	101.02	101.02	101.02
Air inlet temperature, DB	°C	-7.07	2.02	7.01	12.01	-10.04	-7.07
Air inlet temperature, WB	°C	-8.09	1.02	6.01	11.00	-11.09	-8.09
Summary of the results							
Total heating capacity	kW	6.027	4.076	4.329	4.873	5.435	6.027
Effective power input	kW	2.039	0.880	0.736	0.628	2.075	2.039
Coefficient of performance (COP)	kW/kW	2.95	4.63	5.88	7.77	2.62	2.95
Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.							

Electric power consumptions	Unit	Value
Thermostat-off mode [P _{TO}]	kW	0.020
Standby mode [P _{SB}]	kW	0.017
Crankcase heater [P _{CK}]	kW	0.029
Off mode [P _{OFF}]	kW	0.017

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

3.Calculation/conclusion for SCOP:						
Tdesignh(°C):	-10	Tbiv(°C) :	-7			
Pdesignh(kW):	6.813	TOL(°C) :	-10			
Test result A, B, C, D, E, F conditions:						
Condition	Part load	Measured capacity	Measured COP	Cdh	CR	COP at part load
E	6.813	5.435	2.62	0.90	1.00	2.62
F	6.027	6.027	2.95	0.90	1.00	2.95
A	6.027	6.027	2.95	0.90	1.00	2.95
B	3.668	4.076	4.63	0.90	0.90	4.58
C	2.358	4.329	5.88	0.90	0.54	5.43
D	1.048	4.873	7.77	0.90	0.22	5.69
CR: part load divided by capacity;						

Conclusions:	Unit	Value
SCOPon:	kWh/kWh	4.47
SCOP:	kWh/kWh	4.46
QH:	kWh/year	14075
QHE:	kWh/year	3159
$\eta_{s,h}$	%	175.2
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2)	--	A+++

Appendix I Test results

Table 2.	Heating mode (Medium temperature application):						P	
Model	CGK-025V3L							
Product type	Air to Water	Heating season	<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	Average climates	Inlet dry (wet) bulb temperature (°C)		Inlet/outlet water temperatures (°C)			
A	$(-7-16)/(T_{designh-16})$	88	-7(-8)		a / 52			
B	$(+2-16)/(T_{designh-16})$	54	2(1)		a / 42			
C	$(+7-16)/(T_{designh-16})$	35	7(6)		a / 36			
D	$(+12-16)/(T_{designh-16})$	15	12(11)		a / 30			
E	$(TOL-16)/(T_{designh-16})$		TOL		a / 55.3			
F	$(T_{bivalent-16})/(T_{designh-16})$		T _{biv}		a / 52			
G	$(-15-16)/(T_{designh-16})$	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 7.961kW, the power is 2.774kW, the COP is 2.87kW/kW.								
2. Tested data/correction data(Average):								
General test conditions/ Part-Load	Unit	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	
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	
Electrical Properties								
Voltage	V	400.6	401.0	401.5	398.7	403.1	400.6	
Current input of the unit	A	6.76	3.11	2.54	2.49	6.65	6.76	
Power input of the unit	kW	2.937	1.160	0.983	0.830	3.042	2.937	
Compressor frequency	Hz	70	33	30	30	70	70	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

Test conditions User Side							
Water flow	m ³ /h	0.87	0.87	0.87	0.87	0.87	0.87
Inlet Water temperature	°C	44.71	37.90	33.43	28.89	48.18	44.71
Outlet Water temperature	°C	51.24*	41.80	37.53	33.65	54.41*	51.24*
Test conditions Source Side							
Barometric pressure	kPa	101.02	101.02	101.02	101.02	101.02	101.02
Air inlet temperature, DB	°C	-6.88	2.03	7.02	12.00	-10.09	-6.88
Air inlet temperature, WB	°C	-8.10	1.03	6.00	11.00	-11.19	-8.10
Summary of the results							
Total heating capacity	kW	6.447	3.928	4.133	4.802	6.236	6.447
Effective power input	kW	2.961	1.184	1.006	0.853	3.066	2.961
Coefficient of performance (COP)	kW/kW	2.18	3.32	4.11	5.63	2.03	2.18
Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.							

Electric power consumptions	Unit	Value
Thermostat-off mode [P _{TO}]	kW	0.020
Standby mode [P _{SB}]	kW	0.017
Crankcase heater [P _{CK}]	kW	0.029
Off mode [P _{OFF}]	kW	0.017

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

3.Calculation/conclusion for SCOP:						
Tdesignh(°C):	-10	Tbiv(°C) :	-7			
Pdesignh(kW):	7.287	TOL(°C) :	-10			
Test result A, B, C, D, E, F conditions:						
Condition	Part load	Measured capacity	Measured COP	Cdh	CR	COP at part load
E	7.287	6.236	2.03	0.90	1.00	2.03
F	6.447	6.447	2.18	0.90	1.00	2.18
A	6.447	6.447	2.18	0.90	1.00	2.18
B	3.924	3.928	3.32	0.90	1.00	3.32
C	2.523	4.133	4.11	0.90	0.61	3.86
D	1.121	4.802	5.63	0.90	0.23	4.24
CR: part load divided by capacity;						

Conclusions:	Unit	Value
SCOPon:	kWh/kWh	3.26
SCOP:	kWh/kWh	3.25
Q _H :	kWh/year	15056
Q _{HE} :	kWh/year	4633
η _{s,h}	%	127.0
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1)	--	A++

Appendix I Test results

Table 3.	Heating mode (Low temperature application):						P	
Model	CGK-030V3L-B							
Product type	Air to Water	Heating season	<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	Average climates	Inlet dry (wet) bulb temperature (°C)		Inlet/outlet water temperatures (°C)			
A	$(-7-16)/(T_{designh-16})$	88	-7(-8)		a / 34			
B	$(+2-16)/(T_{designh-16})$	54	2(1)		a / 30			
C	$(+7-16)/(T_{designh-16})$	35	7(6)		a / 27			
D	$(+12-16)/(T_{designh-16})$	15	12(11)		a / 24			
E	$(TOL-16)/(T_{designh-16})$		TOL		a / 35.3			
F	$(T_{bivalent-16})/(T_{designh-16})$		T _{biv}		a / 34			
G	$(-15-16)/(T_{designh-16})$	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 8.385kW, the power is 1.838kW, the COP is 4.56kW/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	
Electrical Properties								
Voltage	V	400.4	399.4	399.8	400.1	400.6	400.4	
Current input of the unit	A	4.38	1.92	1.53	1.34	4.33	4.38	
Power input of the unit	kW	2.433	0.947	0.764	0.646	2.489	2.433	
Compressor frequency	Hz	78	33	30	30	78	78	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

Test conditions User Side							
Water flow	m ³ /h	1.49	1.49	1.49	1.49	1.49	1.49
Inlet Water temperature	°C	29.02	27.52	25.35	23.27	30.59	29.02
Outlet Water temperature	°C	33.06*	30.10	28.06	26.35	34.31*	33.06*
Test conditions Source Side							
Barometric pressure	kPa	101.02	101.02	101.02	101.02	101.02	101.02
Air inlet temperature, DB	°C	-6.90	1.99	7.02	12.02	-9.96	-6.90
Air inlet temperature, WB	°C	-8.10	1.04	6.00	11.00	-10.93	-8.10
Summary of the results							
Total heating capacity	kW	6.999	4.433	4.698	5.324	6.455	6.999
Effective power input	kW	2.448	0.963	0.780	0.661	2.505	2.448
Coefficient of performance (COP)	kW/kW	2.86	4.61	6.02	8.05	2.58	2.86
Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.							

Electric power consumptions	Unit	Value
Thermostat-off mode [P _{TO}]	kW	0.012
Standby mode [P _{SB}]	kW	0.008
Crankcase heater [P _{CK}]	kW	0.044
Off mode [P _{OFF}]	kW	0.008

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

3.Calculation/conclusion for SCOP:						
Tdesignh(°C):	-10	Tbiv(°C) :	-7			
Pdesignh(kW):	7.912	TOL(°C) :	-10			
Test result A, B, C, D, E, F conditions:						
Condition	Part load	Measured capacity	Measured COP	Cdh	CR	COP at part load
E	7.912	6.455	2.58	0.90	1.00	2.58
F	6.999	6.999	2.86	0.90	1.00	2.86
A	6.999	6.999	2.86	0.90	1.00	2.86
B	4.261	4.433	4.61	0.90	0.96	4.61
C	2.739	4.698	6.02	0.90	0.58	5.62
D	1.217	5.324	8.05	0.90	0.23	6.02
CR: part load divided by capacity;						

Conclusions:	Unit	Value
SCOPon:	kWh/kWh	4.51
SCOP:	kWh/kWh	4.50
Q _H :	kWh/year	16347
Q _{HE} :	kWh/year	3632
η _{s,h}	%	177.0
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2)	--	A+++

Appendix I Test results

Table 4.	Heating mode (Medium temperature application):						P	
Model	CGK-030V3L-B							
Product type	Air to Water	Heating season	<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	Average climates	Inlet dry (wet) bulb temperature (°C)		Inlet/outlet water temperatures (°C)			
A	$(-7-16)/(T_{designh-16})$	88	-7(-8)		a / 52			
B	$(+2-16)/(T_{designh-16})$	54	2(1)		a / 42			
C	$(+7-16)/(T_{designh-16})$	35	7(6)		a / 36			
D	$(+12-16)/(T_{designh-16})$	15	12(11)		a / 30			
E	$(TOL-16)/(T_{designh-16})$		TOL		a / 55.3			
F	$(T_{bivalent-16})/(T_{designh-16})$		T _{biv}		a / 52			
G	$(-15-16)/(T_{designh-16})$	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 8.450kW, the power is 2.929kW, the COP is 2.88kW/kW.								
2. Tested data/correction data(Average):								
General test conditions/ Part-Load	Unit	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	
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	
Electrical Properties								
Voltage	V	400.2	399.8	400.3	400.2	399.6	400.2	
Current input of the unit	A	5.54	2.45	2.01	1.78	5.89	5.54	
Power input of the unit	kW	3.202	1.234	1.046	0.877	3.573	3.202	
Compressor frequency	Hz	71	33	30	30	78	71	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

Test conditions User Side							
Water flow	m ³ /h	0.90	0.90	0.90	0.90	0.90	0.90
Inlet Water temperature	°C	44.28	38.00	33.28	28.81	47.09	44.28
Outlet Water temperature	°C	51.26*	41.98	37.51	33.73	53.97*	51.26*
Test conditions Source Side							
Barometric pressure	kPa	101.02	101.02	101.02	101.02	101.02	101.02
Air inlet temperature, DB	°C	-6.98	2.03	7.02	12.01	-9.96	-6.98
Air inlet temperature, WB	°C	-8.17	1.05	6.01	11.00	-11.00	-8.17
Summary of the results							
Total heating capacity	kW	6.970	4.254	4.411	5.139	7.151	6.970
Effective power input	kW	3.224	1.257	1.069	0.900	3.596	3.224
Coefficient of performance (COP)	kW/kW	2.16	3.38	4.13	5.71	1.99	2.16
Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.							

Electric power consumptions	Unit	Value
Thermostat-off mode [P _{TO}]	kW	0.012
Standby mode [P _{SB}]	kW	0.008
Crankcase heater [P _{CK}]	kW	0.044
Off mode [P _{OFF}]	kW	0.008

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

3.Calculation/conclusion for SCOP:						
Tdesignh(°C):	-10	Tbiv(°C) :	-7			
Pdesignh(kW):	7.879	TOL(°C) :	-10			
Test result A, B, C, D, E, F conditions:						
Condition	Part load	Measured capacity	Measured COP	Cdh	CR	COP at part load
E	7.879	7.151	1.99	0.90	1.00	1.99
F	6.970	6.970	2.16	0.90	1.00	2.16
A	6.970	6.970	2.16	0.90	1.00	2.16
B	4.243	4.254	3.38	0.90	1.00	3.38
C	2.727	4.411	4.13	0.90	0.62	3.89
D	1.212	5.139	5.71	0.90	0.24	4.31
CR: part load divided by capacity;						

Conclusions:	Unit	Value
SCOPon:	kWh/kWh	3.30
SCOP:	kWh/kWh	3.29
QH:	kWh/year	16278
QHE:	kWh/year	4950
$\eta_{s,h}$	%	128.6
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1)	--	A++

Appendix I Test results

Table 5.	Heating mode (Low temperature application):						P	
Model	CGK-040V3L							
Product type	Air to Water	Heating season	<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	Average climates	Inlet dry (wet) bulb temperature (°C)		Inlet/outlet water temperatures (°C)			
A	$(-7-16)/(T_{designh-16})$	88	-7(-8)		a / 34			
B	$(+2-16)/(T_{designh-16})$	54	2(1)		a / 30			
C	$(+7-16)/(T_{designh-16})$	35	7(6)		a / 27			
D	$(+12-16)/(T_{designh-16})$	15	12(11)		a / 24			
E	$(TOL-16)/(T_{designh-16})$		TOL		a / 35.3			
F	$(T_{bivalent-16})/(T_{designh-16})$		T _{biv}		a / 34			
G	$(-15-16)/(T_{designh-16})$	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 12.392kW, the power is 2.645kW, the COP is 4.68kW/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	
Electrical Properties								
Voltage	V	400.2	398.0	400.3	400.6	399.6	400.2	
Current input of the unit	A	6.93	3.37	2.87	2.73	7.26	6.93	
Power input of the unit	kW	3.150	1.267	1.097	0.952	3.359	3.150	
Compressor frequency	Hz	57	25	25	25	60	57	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

Test conditions User Side							
Water flow	m ³ /h	2.13	2.13	2.13	2.13	2.13	2.13
Inlet Water temperature	°C	29.31	27.49	25.53	23.43	30.76	29.31
Outlet Water temperature	°C	33.09*	29.88	28.30	26.56	34.49*	33.09*
Test conditions Source Side							
Barometric pressure	kPa	101.02	101.02	101.02	101.02	101.02	101.02
Air inlet temperature, DB	°C	-7.05	1.93	7.01	12.01	-9.98	-7.05
Air inlet temperature, WB	°C	-8.15	1.02	6.00	11.00	-11.10	-8.15
Summary of the results							
Total heating capacity	kW	9.293	5.925	6.858	7.731	9.189	9.293
Effective power input	kW	3.175	1.293	1.122	0.977	3.384	3.175
Coefficient of performance (COP)	kW/kW	2.93	4.58	6.11	7.91	2.72	2.93
Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.							

Electric power consumptions	Unit	Value
Thermostat-off mode [P _{TO}]	kW	0.019
Standby mode [P _{SB}]	kW	0.018
Crankcase heater [P _{CK}]	kW	0.041
Off mode [P _{OFF}]	kW	0.018

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

3.Calculation/conclusion for SCOP:						
Tdesignh(°C):	-10	Tbiv(°C) :	-7			
Pdesignh(kW):	10.505	TOL(°C) :	-10			
Test result A, B, C, D, E, F conditions:						
Condition	Part load	Measured capacity	Measured COP	Cdh	CR	COP at part load
E	10.505	9.189	2.72	0.90	1.00	2.72
F	9.293	9.293	2.93	0.90	1.00	2.93
A	9.293	9.293	2.93	0.90	1.00	2.93
B	5.657	5.925	4.58	0.90	0.95	4.58
C	3.636	6.858	6.11	0.90	0.53	5.62
D	1.616	7.731	7.91	0.90	0.21	5.74
CR: part load divided by capacity;						

Conclusions:	Unit	Value
SCOPon:	kWh/kWh	4.52
SCOP:	kWh/kWh	4.51
Q _H :	kWh/year	21704
Q _{HE} :	kWh/year	4817
η _{s,h}	%	177.2
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2)	--	A+++

Appendix I Test results

Table 6.	Heating mode (Medium temperature application):						P	
Model	CGK-040V3L							
Product type	Air to Water	Heating season	<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	Average climates	Inlet dry (wet) bulb temperature (°C)		Inlet/outlet water temperatures (°C)			
A	$(-7-16)/(T_{designh-16})$	88	-7(-8)		a / 52			
B	$(+2-16)/(T_{designh-16})$	54	2(1)		a / 42			
C	$(+7-16)/(T_{designh-16})$	35	7(6)		a / 36			
D	$(+12-16)/(T_{designh-16})$	15	12(11)		a / 30			
E	$(TOL-16)/(T_{designh-16})$		TOL		a / 55.3			
F	$(T_{bivalent-16})/(T_{designh-16})$		T _{biv}		a / 52			
G	$(-15-16)/(T_{designh-16})$	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 12.589kW, the power is 4.162kW, the COP is 3.02kW/kW.								
2. Tested data/correction data(Average):								
General test conditions/ Part-Load	Unit	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	
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	
Electrical Properties								
Voltage	V	400.9	400.3	400.6	401.3	400.4	400.9	
Current input of the unit	A	9.02	4.16	3.54	3.08	10.53	9.02	
Power input of the unit	kW	4.535	1.648	1.430	1.202	4.805	4.535	
Compressor frequency	Hz	52	25	25	25	60	52	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

Test conditions User Side							
Water flow	m ³ /h	1.36	1.36	1.36	1.36	1.36	1.36
Inlet Water temperature	°C	45.43	38.44	33.76	28.97	47.75	45.43
Outlet Water temperature	°C	51.20*	41.99	37.95	33.77	54.03*	51.20*
Test conditions Source Side							
Barometric pressure	kPa	101.02	101.02	101.02	101.02	101.02	101.02
Air inlet temperature, DB	°C	-7.07	2.01	7.01	12.01	-9.81	-7.07
Air inlet temperature, WB	°C	-8.19	1.05	6.00	11.00	-11.10	-8.19
Summary of the results							
Total heating capacity	kW	9.154	5.586	6.593	7.561	9.792	9.154
Effective power input	kW	4.552	1.665	1.447	1.219	4.822	4.552
Coefficient of performance (COP)	kW/kW	2.01	3.36	4.56	6.20	2.03	2.01
Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.							

Electric power consumptions	Unit	Value
Thermostat-off mode [P _{TO}]	kW	0.019
Standby mode [P _{SB}]	kW	0.018
Crankcase heater [P _{CK}]	kW	0.041
Off mode [P _{OFF}]	kW	0.018

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

3.Calculation/conclusion for SCOP:						
Tdesignh(°C):	-10	Tbiv(°C) :	-7			
Pdesignh(kW):	10.348	TOL(°C) :	-10			
Test result A, B, C, D, E, F conditions:						
Condition	Part load	Measured capacity	Measured COP	Cdh	CR	COP at part load
E	10.348	9.792	2.03	0.90	1.00	2.03
F	9.154	9.154	2.01	0.90	1.00	2.01
A	9.154	9.154	2.01	0.90	1.00	2.01
B	5.572	5.586	3.36	0.90	1.00	3.36
C	3.582	6.593	4.56	0.90	0.54	4.20
D	1.592	7.561	6.20	0.90	0.21	4.51
CR: part load divided by capacity;						

Conclusions:	Unit	Value
SCOPon:	kWh/kWh	3.32
SCOP:	kWh/kWh	3.31
QH:	kWh/year	21379
QHE:	kWh/year	6455
$\eta_{s,h}$	%	129.5
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1)	--	A++

Appendix I Test results

Table 7.	Heating mode (Low temperature application):						P	
Model	CGK-050V3L-B							
Product type	Air to Water	Heating season	<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	Average climates	Inlet dry (wet) bulb temperature (°C)		Inlet/outlet water temperatures (°C)			
A	$(-7-16)/(T_{designh-16})$	88	-7(-8)		a / 34			
B	$(+2-16)/(T_{designh-16})$	54	2(1)		a / 30			
C	$(+7-16)/(T_{designh-16})$	35	7(6)		a / 27			
D	$(+12-16)/(T_{designh-16})$	15	12(11)		a / 24			
E	$(TOL-16)/(T_{designh-16})$		TOL		a / 35.3			
F	$(T_{bivalent-16})/(T_{designh-16})$		T _{biv}		a / 34			
G	$(-15-16)/(T_{designh-16})$	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 15.581kW, the power is 3.230kW, the COP is 4.82kW/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	
Electrical Properties								
Voltage	V	399.6	399.8	400.6	399.5	399.7	399.6	
Current input of the unit	A	6.26	2.85	2.48	2.21	6.79	6.26	
Power input of the unit	kW	3.659	1.488	1.320	1.132	3.909	3.659	
Compressor frequency	Hz	67	30	30	30	70	67	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

Test conditions User Side							
Water flow	m³/h	2.62	2.62	2.62	2.62	2.62	2.62
Inlet Water temperature	°C	29.39	27.60	25.52	23.33	30.97	29.39
Outlet Water temperature	°C	33.24*	30.01	28.30	26.45	34.75*	33.24*
Test conditions Source Side							
Barometric pressure	kPa	101.02	101.02	101.02	101.02	101.02	101.02
Air inlet temperature, DB	°C	-6.85	2.05	7.02	12.02	-9.96	-6.85
Air inlet temperature, WB	°C	-8.06	1.01	6.00	11.00	-11.04	-8.06
Summary of the results							
Total heating capacity	kW	11.753	7.327	8.481	9.545	11.498	11.753
Effective power input	kW	3.737	1.566	1.398	1.209	3.986	3.737
Coefficient of performance (COP)	kW/kW	3.15	4.68	6.07	7.89	2.88	3.15
Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.							

Electric power consumptions	Unit	Value
Thermostat-off mode [P _{TO}]	kW	0.016
Standby mode [P _{SB}]	kW	0.014
Crankcase heater [P _{CK}]	kW	0.032
Off mode [P _{OFF}]	kW	0.014

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

3.Calculation/conclusion for SCOP:						
Tdesignh(°C):	-10	Tbiv(°C) :	-7			
Pdesignh(kW):	13.286	TOL(°C) :	-10			
Test result A, B, C, D, E, F conditions:						
Condition	Part load	Measured capacity	Measured COP	Cdh	CR	COP at part load
E	13.286	11.498	2.88	0.90	1.00	2.88
F	11.753	11.753	3.15	0.90	1.00	3.15
A	11.753	11.753	3.15	0.90	1.00	3.15
B	7.154	7.327	4.68	0.90	0.98	4.68
C	4.599	8.481	6.07	0.90	0.54	5.60
D	2.044	9.545	7.89	0.90	0.21	5.77
CR: part load divided by capacity;						

Conclusions:	Unit	Value
SCOPon:	kWh/kWh	4.62
SCOP:	kWh/kWh	4.61
QH:	kWh/year	27450
QHE:	kWh/year	5953
$\eta_{s,h}$	%	181.5
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2)	--	A+++

Appendix I Test results

Table 8.	Heating mode (Medium temperature application):						P	
Model	CGK-050V3L-B							
Product type	Air to Water	Heating season	<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	Average climates	Inlet dry (wet) bulb temperature (°C)		Inlet/outlet water temperatures (°C)			
A	$(-7-16)/(T_{designh-16})$	88	-7(-8)		a / 52			
B	$(+2-16)/(T_{designh-16})$	54	2(1)		a / 42			
C	$(+7-16)/(T_{designh-16})$	35	7(6)		a / 36			
D	$(+12-16)/(T_{designh-16})$	15	12(11)		a / 30			
E	$(TOL-16)/(T_{designh-16})$		TOL		a / 55.3			
F	$(T_{bivalent-16})/(T_{designh-16})$		T _{biv}		a / 52			
G	$(-15-16)/(T_{designh-16})$	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 15.570kW, the power is 4.933kW, the COP is 3.16kW/kW.								
2. Tested data/correction data(Average):								
General test conditions/ Part-Load	Unit	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	
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	
Electrical Properties								
Voltage	V	399.0	400.1	400.2	400.1	399.4	399.0	
Current input of the unit	A	7.97	3.59	3.19	2.84	9.05	7.97	
Power input of the unit	kW	4.746	2.028	1.702	1.439	5.549	4.746	
Compressor frequency	Hz	63	30	30	30	70	63	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

Test conditions User Side							
Water flow	m ³ /h	1.70	1.70	1.70	1.70	1.70	1.70
Inlet Water temperature	°C	45.41	38.52	33.74	29.00	48.18	45.41
Outlet Water temperature	°C	51.09*	42.00	37.85	33.73	54.06*	51.09*
Test conditions Source Side							
Barometric pressure	kPa	101.02	101.02	101.02	101.02	101.02	101.02
Air inlet temperature, DB	°C	-7.04	2.17	7.02	12.04	-9.81	-7.04
Air inlet temperature, WB	°C	-8.16	1.02	6.00	11.01	-11.06	-8.16
Summary of the results							
Total heating capacity	kW	11.294	6.903	8.106	9.326	11.661	11.294
Effective power input	kW	4.796	2.078	1.752	1.490	5.599	4.796
Coefficient of performance (COP)	kW/kW	2.35	3.32	4.63	6.26	2.08	2.35
Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.							

Electric power consumptions	Unit	Value
Thermostat-off mode [P _{TO}]	kW	0.016
Standby mode [P _{SB}]	kW	0.014
Crankcase heater [P _{CK}]	kW	0.032
Off mode [P _{OFF}]	kW	0.014

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

3.Calculation/conclusion for SCOP:						
Tdesignh(°C):	-10	Tbiv(°C) :	-7			
Pdesignh(kW):	12.768	TOL(°C) :	-10			
Test result A, B, C, D, E, F conditions:						
Condition	Part load	Measured capacity	Measured COP	Cdh	CR	COP at part load
E	12.768	11.661	2.08	0.90	1.00	2.08
F	11.294	11.294	2.35	0.90	1.00	2.35
A	11.294	11.294	2.35	0.90	1.00	2.35
B	6.875	6.903	3.32	0.90	1.00	3.32
C	4.420	8.106	4.63	0.90	0.55	4.27
D	1.964	9.326	6.26	0.90	0.21	4.55
CR: part load divided by capacity;						

Conclusions:	Unit	Value
SCOPon:	kWh/kWh	3.41
SCOP:	kWh/kWh	3.40
Q _H :	kWh/year	26378
Q _{HE} :	kWh/year	7755
η _{s,h}	%	133.1
Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1)	--	A++



Appendix I Test results

Table 9a.	Sound power level measurement (Low temperature application)		P
Model	CGK-025V3L		
	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):	30.0 / 35.0	
	Voltage (V):	400	
	Frequency (Hz):	50	
	Working condition class :	Class A	
	Acoustical environment :	Hemi-anechoic room	
	Windshield type :	Sponge	
	Measured position amount :	14	
Measured quantity	L _{WA,indoors} (dB(A))	L _{WA,outdoors} (dB(A))	Remark
Sound pressure level ` L _{p(ST)} ****	--	44	--
Measurement distance d *	--	1.0m	--
Sound power level L _{WA} ****	--	58	--
Setting of controls: according to user manual.			
Duct connection:--			
Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer			

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix I Test results

Table 9b.	Sound power level measurement (Medium temperature application)		P
Model	CGK-025V3L		
	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):	400	
	Frequency (Hz):	50	
	Working condition class :	Class A	
	Acoustical environment :	Hemi-anechoic room	
	Windshield type :	Sponge	
	Measured position amount :	14	
Measured quantity	L _{WA,indoors} (dB(A))	L _{WA,outdoors} (dB(A))	Remark
Sound pressure level $L_{p(ST)}$ ****	--	47	--
Measurement distance d *	--	1.0m	--
Sound power level L _{WA} ****	--	61	--
Setting of controls: according to user manual.			
Duct connection:--			
Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer			

Appendix I Test results

Table 10a.	Sound power level measurement (Low temperature application)		P
Model	CGK-030V3L-B		
	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):	30.0 / 35.0	
	Voltage (V):	400	
	Frequency (Hz):	50	
	Working condition class :	Class A	
	Acoustical environment :	Hemi-anechoic room	
	Windshield type :	Sponge	
	Measured position amount :	14	
Measured quantity	L _{WA,indoors} (dB(A))	L _{WA,outdoors} (dB(A))	Remark
Sound pressure level ` L _{p(ST)} ****	--	50	--
Measurement distance d *	--	1.0m	--
Sound power level L _{WA} ****	--	64	--
Setting of controls: according to user manual.			
Duct connection:--			
Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer			

Appendix I Test results

Table 10b. Sound power level measurement (Medium temperature application)		P	
Model	CGK-030V3L-B		
	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):	400	
	Frequency (Hz):	50	
	Working condition class :	Class A	
	Acoustical environment :	Hemi-anechoic room	
	Windshield type :	Sponge	
	Measured position amount :	14	
Measured quantity	L _{WA,indoors} (dB(A))	L _{WA,outdoors} (dB(A))	Remark
Sound pressure level $L_{p(ST)}$ ****	--	50	--
Measurement distance d *	--	1.0m	--
Sound power level L _{WA} ****	--	65	--
Setting of controls: according to user manual.			
Duct connection:--			
Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer			

Appendix I Test results

Table 11a.	Sound power level measurement (Low temperature application)		P
Model	CGK-040V3L		
	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):	30.0 / 35.0	
	Voltage (V):	400	
	Frequency (Hz):	50	
	Working condition class :	Class A	
	Acoustical environment :	Hemi-anechoic room	
	Windshield type :	Sponge	
	Measured position amount :	14	
	Measured quantity	L_{WA,indoors} (dB(A))	L_{WA,outdoors} (dB(A))
	Sound pressure level ` L _{p(ST)} ****	--	48
	Measurement distance d *	--	1.0m
	Sound power level L _{WA} ****	--	63
Setting of controls: according to user manual.			
Duct connection:--			
Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer			

Appendix I Test results

Table 11b. Sound power level measurement (Medium temperature application)		P	
Model	CGK-040V3L		
	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):	400	
	Frequency (Hz):	50	
	Working condition class :	Class A	
	Acoustical environment :	Hemi-anechoic room	
	Windshield type :	Sponge	
	Measured position amount :	14	
Measured quantity	L _{WA,indoors} (dB(A))	L _{WA,outdoors} (dB(A))	Remark
Sound pressure level $\hat{L}_{p(ST)}$ ****	--	49	--
Measurement distance d *	--	1.0m	--
Sound power level L _{WA} ****	--	63	--
Setting of controls: according to user manual.			
Duct connection:--			
Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer			

Appendix I Test results

Table 12a.	Sound power level measurement (Low temperature application)		P
Model	CGK-050V3L-B		
	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):	30.0 / 35.0	
	Voltage (V):	400	
	Frequency (Hz):	50	
	Working condition class :	Class A	
	Acoustical environment :	Hemi-anechoic room	
	Windshield type :	Sponge	
	Measured position amount :	14	
	Measured quantity	L_{WA,indoors} (dB(A))	L_{WA,outdoors} (dB(A))
	Sound pressure level ` L _{p(ST)} ****	--	48
	Measurement distance d *	--	1.0m
	Sound power level L _{WA} ****	--	63
Setting of controls: according to user manual.			
Duct connection:--			
Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer			

Appendix I Test results

Table 12b. Sound power level measurement (Medium temperature application)		P	
Model	CGK-050V3L-B		
	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):	400	
	Frequency (Hz):	50	
	Working condition class :	Class A	
	Acoustical environment :	Hemi-anechoic room	
	Windshield type :	Sponge	
	Measured position amount :	14	
Measured quantity	L _{WA,indoors} (dB(A))	L _{WA,outdoors} (dB(A))	Remark
Sound pressure level $\hat{L}_{p(ST)}$ ****	--	53	--
Measurement distance d *	--	1.0m	--
Sound power level L _{WA} ****	--	68	--
Setting of controls: according to user manual.			
Duct connection:--			
Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer			

Appendix I Test results

Table 13.	Clause 4 of EN 14511-4:2022	P
Model:	CGK-025V3L	
TEST 1	STARTING TEST (§4.2.1.2 Table 3)	
Requirement: The "lower" starting operating conditions declared by the manufacturer for the heating mode- i.e. T _{air} = -25.11 °C, T _{out water} = 14.78 °C, Flow rate 0.85 m ³ /h have been set and obtained. At those conditions, the machine was switched on.		
Observation/ Evaluation: It started without any problem and worked for 30 minutes without showing any warning or alarm. During the test the machine operated in auto mode. No damage was recorded on the machine during and after the test.		
Test Response: Pass		
TEST 2	OPERATING TEST (§4.2.1.2 Table 3)	
Requirement: 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. T _{air} = -24.65 °C, T _{out water} = 56.33 °C, Flow rate 0.85 m ³ /h. Once these conditions were obtained, the machine was let operate for over 1 hour in auto mode.		
Observation/ Evaluation: During the test, no warning or alarm were showed. No damage was recorded on the machine during and after the test.		
Test Response: Pass		
TEST 3	SHUTTING OFF WATER FLOW (§ 4.5)	
Requirement: 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.		
Observation/ Evaluation: 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.		
Test Response: Pass		
TEST 4	SHUTTING OFF AIR FLOW (§ 4.5)	
Requirement: 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.		
Observation/ Evaluation: During the test, no warning or alarm were showed. No damage was recorded on the machine during and after the test.		
Test Response: Pass		
TEST 5	COMPLETE POWER SUPPLY FAILURE (§ 4.6)	
Requirement: The power supply was cut off for about 5 seconds.		
Observation/ Evaluation: The unit restarted automatically within about 3 minutes after the power supply was reactivated.		
Test Response: Pass		

Doc No.: ITC-TTW0902.02E – Rev.15



Appendix I Test results

Table 14.	Clause 4 of EN 14511-4:2022	P
Model:	CGK-030V3L-B	
TEST 1	STARTING TEST (§4.2.1.2 Table 3)	
Requirement: The "lower" starting operating conditions declared by the manufacturer for the heating mode- i.e. T _{air} = -25.00 °C, T _{out water} = 15.16 °C, Flow rate 0.80 m ³ /h have been set and obtained. At those conditions, the machine was switched on.		
Observation/ Evaluation: It started without any problem and worked for 30 minutes without showing any warning or alarm. During the test the machine operated in auto mode. No damage was recorded on the machine during and after the test.		
Test Response: Pass		

TEST 2	OPERATING TEST (§4.2.1.2 Table 3)	
Requirement: 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. T _{air} = -25.09 °C, T _{out water} = 56.14 °C, Flow rate 0.82 m ³ /h. Once these conditions were obtained, the machine was let operate for over 1 hour in auto mode.		
Observation/ Evaluation: During the test, no warning or alarm were showed. No damage was recorded on the machine during and after the test.		
Test Response: Pass		

TEST 3	SHUTTING OFF WATER FLOW (§ 4.5)	
Requirement: 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.		
Observation/ Evaluation: 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.		
Test Response: Pass		

TEST 4	SHUTTING OFF AIR FLOW (§ 4.5)	
Requirement: 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.		
Observation/ Evaluation: During the test, no warning or alarm were showed. No damage was recorded on the machine during and after the test.		
Test Response: Pass		

TEST 5	COMPLETE POWER SUPPLY FAILURE (§ 4.6)	
Requirement: The power supply was cut off for about 5 seconds.		
Observation/ Evaluation: The unit restarted automatically within about 3 minutes after the power supply was reactivated.		
Test Response: Pass		

Doc No.: ITC-TTW0902.02E – Rev.15



Appendix I Test results

Table 15.	Clause 4 of EN 14511-4:2022	P
Model:	CGK-040V3L	
TEST 1	STARTING TEST (§4.2.1.2 Table 3)	
Requirement: The "lower" starting operating conditions declared by the manufacturer for the heating mode- i.e. T _{air} = -25.32 °C, T _{out water} = 14.88 °C, Flow rate 1.23 m ³ /h have been set and obtained. At those conditions, the machine was switched on.		
Observation/ Evaluation: It started without any problem and worked for 30 minutes without showing any warning or alarm. During the test the machine operated in auto mode. No damage was recorded on the machine during and after the test.		
Test Response: Pass		

TEST 2	OPERATING TEST (§4.2.1.2 Table 3)	
Requirement: 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. T _{air} = -25.04 °C, T _{out water} = 56.31 °C, Flow rate 1.23 m ³ /h. Once these conditions were obtained, the machine was let operate for over 1 hour in auto mode.		
Observation/ Evaluation: During the test, no warning or alarm were showed. No damage was recorded on the machine during and after the test.		
Test Response: Pass		

TEST 3	SHUTTING OFF WATER FLOW (§ 4.5)	
Requirement: 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.		
Observation/ Evaluation: 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.		
Test Response: Pass		

TEST 4	SHUTTING OFF AIR FLOW (§ 4.5)	
Requirement: 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.		
Observation/ Evaluation: During the test, no warning or alarm were showed. No damage was recorded on the machine during and after the test.		
Test Response: Pass		

TEST 5	COMPLETE POWER SUPPLY FAILURE (§ 4.6)	
Requirement: The power supply was cut off for about 5 seconds.		
Observation/ Evaluation: The unit restarted automatically within about 3 minutes after the power supply was reactivated.		
Test Response: Pass		

Doc No.: ITC-TTW0902.02E – Rev.15



Appendix I Test results

Table 16.	Clause 4 of EN 14511-4:2022	P
Model:	CGK-050V3L-B	
TEST 1	STARTING TEST (§4.2.1.2 Table 3)	
Requirement: The "lower" starting operating conditions declared by the manufacturer for the heating mode- i.e. T _{air} = -24.65 °C, T _{out water} = 14.01 °C, Flow rate 1.55 m ³ /h have been set and obtained. At those conditions, the machine was switched on.		
Observation/ Evaluation: It started without any problem and worked for 30 minutes without showing any warning or alarm. During the test the machine operated in auto mode. No damage was recorded on the machine during and after the test.		
Test Response: Pass		

TEST 2	OPERATING TEST (§4.2.1.2 Table 3)	
Requirement: 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. T _{air} = -24.23 °C, T _{out water} = 56.78 °C, Flow rate 1.53 m ³ /h. Once these conditions were obtained, the machine was let operate for over 1 hour in auto mode.		
Observation/ Evaluation: During the test, no warning or alarm were showed. No damage was recorded on the machine during and after the test.		
Test Response: Pass		





TEST 3	SHUTTING OFF WATER FLOW (§ 4.5)	
Requirement: 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.		
Observation/ Evaluation: 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.		
Test Response: Pass		

TEST 4	SHUTTING OFF AIR FLOW (§ 4.5)	
Requirement: 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.		
Observation/ Evaluation: During the test, no warning or alarm were showed. No damage was recorded on the machine during and after the test.		
Test Response: Pass		

TEST 5	COMPLETE POWER SUPPLY FAILURE (§ 4.6)	
Requirement: The power supply was cut off for about 5 seconds.		
Observation/ Evaluation: The unit restarted automatically within about 3 minutes after the power supply was reactivated.		
Test Response: Pass		





Doc No.: ITC-TTW0902.02E – Rev.15

Appendix II Marking plate

Nameplate	
Model: <u>CGK-025V3L</u>	
  	
EVI DC Inverter Air Source Heat Pumps	
Model	CGK-025V3L
Power Supply	380-420V 3N~/50Hz
*Heating Capacity Min./Max.	4.37/9.5kW
*Heating Input Power Min./Max.	0.76/2.07kW
*Heating COP Min./Max.	4.58/5.73W/W
Cooling Capacity Min./Max.	2.85/6.2kW
Cooling Input Power Min./Max.	0.76/2.4kW
Rated. Input Power/Current	3.0kW/6.3A
Max. Water Outlet Temperature	55°C
Water Flow	1.6m ³ /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	80kg
Date/NO.	See bar code
System CO2 equivalent charge weight: 1.01 ton	
*Heating working condition:	
Dry bulb temperature 7°C, Wet bulb temperature 6°C	
Inlet water temperature 30°C, Outlet water temperature 35°C	
Guangzhou Sprsun New Energy Technology Development Co., Ltd No. 15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng Guangzhou, China	





Doc No.: ITC-TTW0902.02E – Rev.15

Appendix II Marking plate

Nameplate	
Model: <u>CGK-030V3L-B</u>	
  	
EVI DC Inverter Air Source Heat Pumps	
Model	CGK-030V3L-B
Power Supply	380-420V 3N~/50Hz
*Heating Capacity Min./Max.	5.34/11.6kW
*Heating Input Power Min./Max.	0.97/2.62kW
*Heating COP Min./Max.	4.43/5.51W/W
Cooling Capacity Min./Max.	3.43/7.46kW
Cooling Input Power Min./Max.	0.95/3.11kW
Rated. Input Power/Current	3.94kW/8.31A
Max. Water Outlet Temperature	55°C
Water Flow	2m ³ /h
Refrigerant/Weight	 R32/1700g
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	20kPa
Water Pipe Connection	1 inch
Net Weight	88kg
Date/NO.	See bar code
System CO2 equivalent charge weight: 1.15 ton	
*Heating working condition:	
Dry bulb temperature 7°C, Wet bulb temperature 6°C	
Inlet water temperature 30°C, Outlet water temperature 35°C	
Guangzhou Sprsun New Energy Technology Development Co., Ltd No. 15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng Guangzhou, China	





Doc No.: ITC-TTW0902.02E – Rev.15

Appendix II Marking plate

Nameplate	
Model: CGK-040V3L	
  	
EVI DC Inverter Air Source Heat Pumps	
Model	CGK-040V3L
Power Supply	380-420V 3N~/50Hz
*Heating Capacity Min./Max.	7.36/16kW
*Heating Input Power Min./Max.	1.25/3.4kW
*Heating COP Min./Max.	4.71/5.89W/W
Cooling Capacity Min./Max.	4.8/10.44kW
Cooling Input Power Min./Max.	1.24/3.93kW
Rated. Input Power/Current	4.9kW/10.4A
Max. Water Outlet Temperature	55°C
Water Flow	2.7m ³ /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	105kg
Date/NO.	See bar code
System CO2 equivalent charge weight: 1.35 ton	
*Heating working condition:	
Dry bulb temperature 7°C, Wet bulb temperature 6°C	
Inlet water temperature 30°C, Outlet water temperature 35°C	
Guangzhou Sprsun New Energy Technology Development Co., Ltd No. 15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng Guangzhou, China	

Doc No.: ITC-TTW0902.02E – Rev.15


Appendix II Marking plate

Nameplate	
Model: <u>CGK-050V3L-B</u>	
  	
EVI DC Inverter Air Source Heat Pumps	
Model	CGK-050V3L-B
Power Supply	380-420V 3N~/50Hz
*Heating Capacity Min./Max.	9.11/19.8kW
*Heating Input Power Min./Max.	1.54/4.2kW
*Heating COP Min./Max.	4.71/5.92W/W
Cooling Capacity Min./Max.	5.86/12.74kW
Cooling Input Power Min./Max.	1.52/4.97kW
Rated. Input Power/Current	6.29kW/13.28A
Max. Water Outlet Temperature	55°C
Water Flow	3.4m ³ /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	23kPa
Water Pipe Connection	1 inch
Net Weight	124kg
Date/NO.	See bar code
System CO2 equivalent charge weight: 1.89ton	
*Heating working condition:	
Dry bulb temperature 7°C, Wet bulb temperature 6°C	
Inlet water temperature 30°C, Outlet water temperature 35°C	
Guangzhou Sprsun New Energy Technology Development Co., Ltd No. 15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng Guangzhou, China	

Doc No.: ITC-TTW0902.02E – Rev.15


Appendix III photo documentation

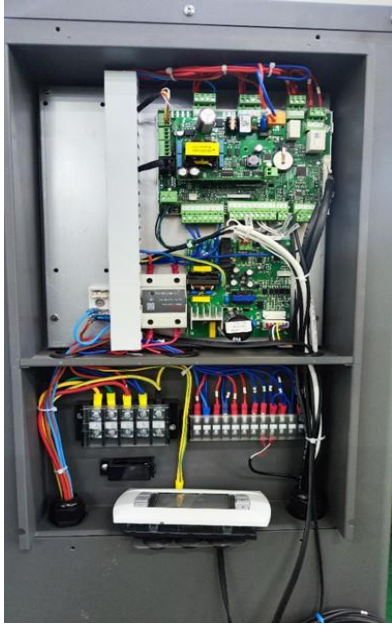
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<p>View:</p> <p><input type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p>	

Details of:	Compressor for CGK-025V3L
<p>View:</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>	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix III photo documentation

Details of:	Fan Motor for CGK-025V3L
<p>View:</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>	

Details of:	Main Control Board for CGK-025V3L
<p>View:</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>	

Doc No.: ITC-TTW0902.02E – Rev.15


Appendix III photo documentation

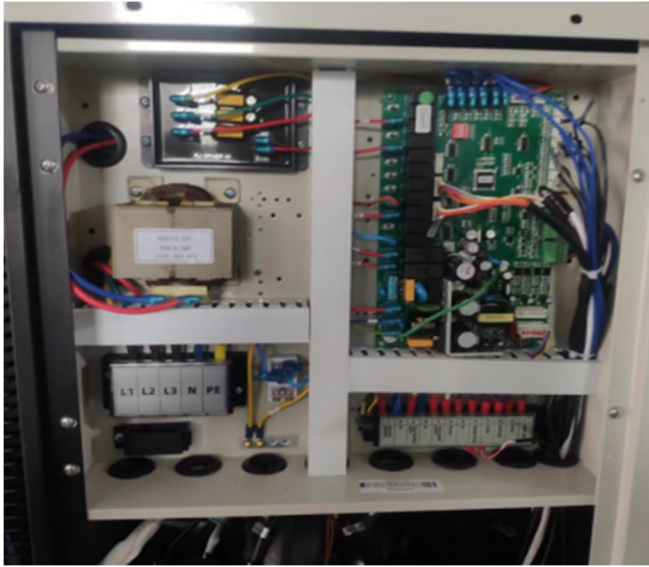
Details of:	Overall view for CGK-030V3L-B
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<input type="checkbox"/> Rear	
<input type="checkbox"/> Right	
<input type="checkbox"/> Left	
<input type="checkbox"/> Top	
<input type="checkbox"/> Bottom	

Details of:	Compressor for CGK-030V3L-B
View:	
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<input type="checkbox"/> Front	
<input type="checkbox"/> Rear	
<input type="checkbox"/> Right	
<input type="checkbox"/> Left	
<input type="checkbox"/> Top	
<input type="checkbox"/> Bottom	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix III photo documentation


Details of:	Fan Motor for CGK-030V3L-B
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 for CGK-030V3L-B
View:	
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<input type="checkbox"/> Front	
<input type="checkbox"/> Rear	
<input type="checkbox"/> Right	
<input type="checkbox"/> Left	
<input type="checkbox"/> Top	
<input type="checkbox"/> Bottom	

Doc No.: ITC-TTW0902.02E – Rev.15


Appendix III photo documentation

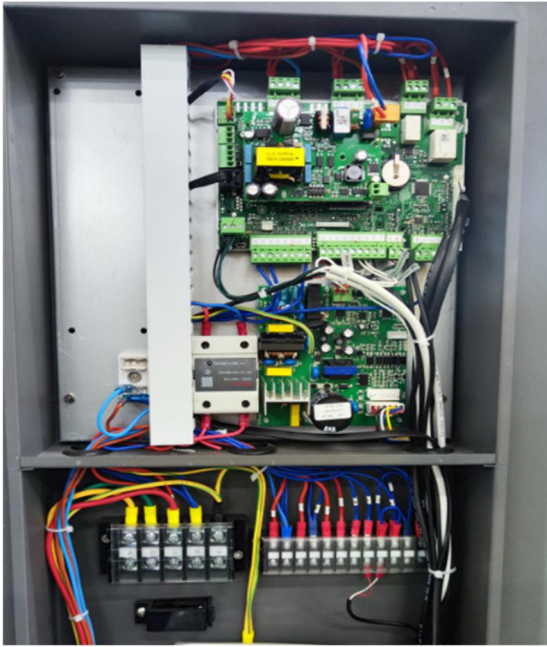
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<p>View:</p> <p><input type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p>	

Details of:	Compressor for CGK-040V3L
<p>View:</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>	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix III photo documentation


Details of:	Fan Motor for CGK-040V3L
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 for CGK-040V3L
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	

Doc No.: ITC-TTW0902.02E – Rev.15


Appendix III photo documentation

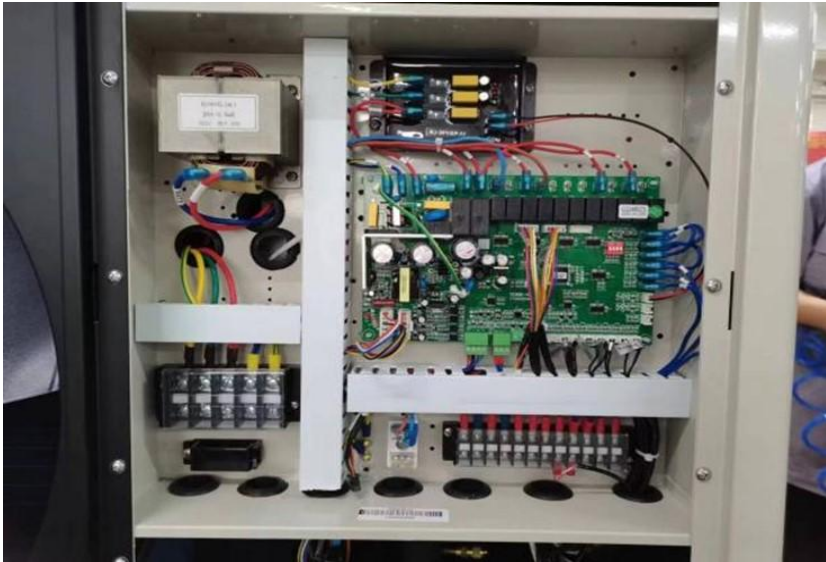
Details of:	Overall view for CGK-050V3L-B
View:	
<input type="checkbox"/> General	
<input type="checkbox"/> Front	
<input type="checkbox"/> Rear	
<input type="checkbox"/> Right	
<input type="checkbox"/> Left	
<input type="checkbox"/> Top	
<input type="checkbox"/> Bottom	

Details of:	Compressor for CGK-050V3L-B
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	

Doc No.: ITC-TTW0902.02E – Rev.15

Appendix III photo documentation

Details of:	Fan Motor for CGK-050V3L-B
<p>View:</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>	 <p>The photograph shows a white label for a Nidec brushless DC motor. The label contains the following text: '直流无刷电动机' (Brushless DC Motor), 'SIC-82FX-F1116-1', 'DC310V 8P 116W', '900r/min E级' (900 rpm, E-grade), and 'Nidec 日本电产芝浦 (浙江) 有限公司' (Nidec Japan, Zhejiang). It also features a wiring diagram with terminals for Vm (red), GND (black), Vsp (yellow), Vcc (white), and PG (blue). A QR code and the model number 'LD-004DC116-1' are present. A 'CCC' certification mark and a rotation direction arrow are also visible.</p>

Details of:	Main Control Board for CGK-050V3L-B
<p>View:</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>	 <p>The photograph shows the interior of an electrical cabinet with the main control board installed. The board is populated with various electronic components, including capacitors, resistors, and integrated circuits. It is connected to a power supply unit and a terminal block. The cabinet door is open, revealing the internal wiring and components.</p>

Doc No.: ITC-TTW0902.02E - Rev.15

Appendix IV Construction data form

Model: CGK-025V3L		
Part		Technical data
1. Compressor		
	Manufacture:	Panasonic Wanbao Appliances Compressor (Guangzhou) Co.,Ltd.
	Type:	9RD220ZAA2J
	Rated capacity:	2265W
	Serial-number:	F0002644
	Specification:	DC280V; R32
2. Condenser		
	Manufacture:	JIANGSU BAODE HEAT EXCHANGER EQUIPMENT CO.,LTD.
	Type:	61-D-22-2M-2L
	Heat exchanger:	Plate heat exchanger
	Dimension(mm):	542(L)mmX126(H)mmX64(D)mm
3. Evaporator		
	Manufacture:	Guangzhou Aotai Refrigeration EquipmentCo.,Ltd.
	Type:	2.5KA-CP-04
	Heat exchanger:	Finned-coil heat exchanger
	Dimension(mm):	660(L)mmX750(H)mmX345(D)mm
4. Fan motor		
	Manufacture:	Wolong Electric Group Co., Ltd
	Type:	ZWB278D04A
	Fan type:	3 blade
	Specification:	DC310V; 102W
5. Main control board		
	Manufacture:	CAREL
	Type:	UP3A02200T3S0
	Specification:	220-240V; 50Hz

Appendix IV Construction data form

Model: <u>CGK-030V3L-B</u>		
Part		Technical data
1. Compressor		
	Manufacture:	Panasonic Wanbao Appliances Compressor (Guangzhou) Co.,Ltd.
	Type:	9KD240ZAA2J
	Rated capacity:	2580W
	Serial-number:	F0003015
	Specification:	DC280V; R32
2. Condenser		
	Manufacture:	Jiangsu Yuanzhuo Equipment Manufactur Co.,Ltd
	Type:	ZL62FA-26AD-CG
	Heat exchanger:	Plate heat exchanger
	Dimension(mm):	526(L)mmX119(H)mmX63(D)mm
3. Evaporator		
	Manufacture:	Guangzhou Aotai Refrigeration EquipmentCo.,Ltd.
	Type:	03KA-CP-01
	Heat exchanger:	Finned-coil heat exchanger
	Dimension(mm):	660(L)mmX750(H)mmX345(D)mm
4. Fan motor		
	Manufacture:	Nidec Shibaura (Zhejiang) Co., Ltd.
	Type:	SIC-82FX-F1116-1
	Fan type:	3 blade
	Specification:	DC310V; 116W
5. Main control board		
	Manufacture:	CHICO
	Type:	CG248075
	Specification:	220-240V; 50Hz

Appendix IV Construction data form

Model: <u>CGK-040V3L</u>		
Part		Technical data
1. Compressor		
	Manufacture:	Panasonic Wanbao Appliances Compressor (Guangzhou) Co.,Ltd.
	Type:	9VD420ZAA2J
	Rated capacity:	4390W
	Serial-number:	F0006867
	Specification:	DC280V; R32
2. Condenser		
	Manufacture:	JIANGSU BAODE HEAT EXCHANGER EQUIPMENT CO.,LTD.
	Type:	61-D-30-2M-2L
	Heat exchanger:	Plate heat exchanger
	Dimension(mm):	542(L)mmX126(H)mmX83(D)mm
3. Evaporator		
	Manufacture:	Guangzhou Aotai Refrigeration EquipmentCo.,Ltd.
	Type:	04KA-CP-01
	Heat exchanger:	Finned-coil heat exchanger
	Dimension(mm):	660(L)mmX900(H)mmX345(D)mm
4. Fan motor		
	Manufacture:	Wolong Electric Group Co., Ltd
	Type:	ZWB378D98A
	Fan type:	3 blade
	Specification:	DC310V; 150W
5. Main control board		
	Manufacture:	CAREL
	Type:	UP3A02200T3S0
	Specification:	220-240V; 50Hz

Appendix IV Construction data form

Model: <u>CGK-050V3L-B</u>		
Part		Technical data
1. Compressor		
	Manufacture:	Panasonic Wanbao Appliances Compressor (Guangzhou) Co.,Ltd.
	Type:	9VD420ZAA2J
	Rated capacity:	4390W
	Serial-number:	F0004942
	Specification:	DC280V; R32
2. Condenser		
	Manufacture:	Jiangsu Yuanzhuo Equipment Manfactur Co.,Ltd
	Type:	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.
	Type:	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.
	Type:	SIC-82FX-F1116-1
	Fan type:	3 blade
	Specification:	DC310V; 116W
5. Main control board		
	Manufacture:	CHICO
	Type:	CG248075
	Specification:	220-240V; 50Hz

Appendix V Equipment List

No.	Type	Manufacture	Model	Equipment ID	Calibration Due Date
1	Heat pump energy efficiency testing system	PINXIN	10HP	2017J00001	2023-11-24
2	Electromagnetic flowmeter	KROHNE	OPTIFLUX4100C	H17221264	2023-12-21
3	Hemi-anechoic room(B)	Guangzhou Kinte	5.2m×4.4m×4.6m	NC-036-3	2028-10-06
4	Dynamic signal analysis system	—	HAHI2022	VG DY-2137	2025-01-08
5	Calibrator	B & K	4231	HJ-000095	2024-07-06
6	AC source Supply	YANGHONG	AFC-33030TS	VGDS-0637	2024-11-02
7	Long steel tape	—	5m	HJ-000062	2024-09-11
8	Temperature measurement system	—	Special	NC-036-1	2025-06-03
9	Atmospheric pressure meter	—	—	HJ-000165	2024-11-21
10	Constant temperature water system	B & K	Special	VGDS-0448	2025-04-12
11	Windscreen	B & K	WS002-5	—	—

-- End of Report --