

Technical Report No.: 64.181.22.03449.01 Rev.00

Date: 2022-09-20

Client: Report holder's name: Guangzhou Sprsun New Energy Technology Development

Co., Ltd

Report holder's No.15 Tangxi Road, Yinsha Industrial Park, Xintang, Address: Zengcheng District, Guangzhou, 511338, China

Contact person of YE XIN

report holder:

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: CGK-025V3L; CGK-030V3L-B;

CGK-040V3L; CGK-050V3L-B

Trade name: SPRSUN

Test specification: EN 14825:2018

(EU) No 813/2013 EN 14511-3:2018

N 14511-4:2018 Clause 4

☑ EN 12102-1:2017

Purpose of

Test according to the test specification

examination:

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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πιν®



Rated Current (A):

Protection Class:

| l | Description of the test object | t |
|-----|--|--|
| 1.1 | Function | |
| | Manufacturer's specification for in | tended use: |
| | These appliances are air to water | heat pump. |
| | Manufacturer's specification for pr | redictive use: |
| | According to user manual. | |
| 1.2 | Consideration of the foresee ☐ Not applicable ☐ Covered through the applied ☐ Covered by the following con ☐ Covered by attached risk and | standard nment |
| 1.3 | Technical Data | |
| | Model: | CGK-025V3L; CGK-030V3L-B; CGK-040V3L; CGK-050V3L-B |
| | Rated Voltage (V): | 380-420V, 3N~ |
| | Rated Frequency (Hz): | 50Hz |
| | Rated Power (W): | 3000 for CGK-025V3L; 3940 for CGK-030V3L-B; 4900 for CGK-040V3L; 6290 for CGK-050V3L-B |

| 6.30 for CGK-025V3L; 8.31 for CGK-030V3L-B; 10.40 for CGK-040V3L; 13.28 for CGK-050V3L-B |
|--|
| Class I |
| ID V4 |

| 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 CGK-025V3L; |
| | 1700g for CGK-030V3L-B; |
| | 2000a for CGK-040V3L |

2800g for CGK-050V3L-B ✓ Average ☐ Warmer Colder

Declared parameters :

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



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2 Order

2.1 Date of Purchase Order, Customer's Reference

2022-08-15, Guangzhou Sprsun New Energy Technology Development Co., Ltd

2.2 Test Sample(s)

- · Reception date(s): 2022-08-15,
- 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

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

2.3 Date(s) of Testing

2022-08-15 to 2022-09-19

2.4 Location(s) of Testing

Same as 2.2

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

Test Results 3

Positive Test Results 3.1

See Appendix I

Remark

N/A

- The user manual has been examined according to the minimum requirements 4.1 described in the product standard. The manufacturer is responsible for the accuracy of further par-ticulars as well as of the composition and layout.
- When the product is placed on the market, it must be accompanied with safety Instruc-4.2 tions written in official language of the country. The instructions shall give information re-garding safe operation, installation and maintenance.

5 **Documentation**

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







Technical Report



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 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 14825:2018.

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

Tested by: William Liang, Project Handler

printed name, function & signature

Approved by: Plum Li, Designated Reviewer

printed name, function & signature

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| Appendix i i | restresuits | | | | | | | | | | | |
|-----------------|--|-----------------|-----------|----------|-----------|------------|---------|--|-----------|--|--|--|
| Table 1. | Heating mode(Low temperature application): | | | | | | Р | | | | | |
| Model | CGK-025V3L | | | | | | | | | | | |
| Product | Air to Water | Heating | I | Averag | | Warmer | | Colder | | | | |
| type | | season | | е | | | | | | | | |
| 1. Test cond | Test conditions: | | | | | | | | | | | |
| | | Part Loa | d Ratio | | | Outdoo | r heat | Indoo | r heat | | | |
| uo | | in ^c | % | | | excha | nger | excha | anger | | | |
| Condition | Form | ula | Α | W | | Inlet dry | (wet) | Inlet/out | let water | | | |
|) i | | | | | | bu | b | temperat | ures (°C) | | | |
| ပိ | | | | | | tempei | ature | | | | | |
| | | | | | | °C | | | | | | |
| Α | (-7-16)/(Tdesi | | 88 | N/A | N/A | -7(- | | | 34 | | | |
| В | (+2-16)/ (Tdes | | 54 | N/A | N/A | 2(1 | • | | 30 | | | |
| С | (+7-16)/(Tdesi | | 35 | N/A | N/A | 7(6 | • | a/ | | | | |
| D | (+12-16)/(Tde | | 15 | N/A | N/A | 12(1 | | | 24 | | | |
| <u>E</u> | | TOL-16)/ (To | | | | TC | | | 35.3 | | | |
| F | | oivalent-16)/(| | | N1/A | Tb | | a / | | | | |
| G | (-15-16)/(Tdes | | N/A | N/A | N/A | -1: | | N/ | | | | |
| Remark: a) Wi | | | | | | | | | N14511-2 | | | |
| at 30/35 condit | lions, the capa | city is 7879.6 | ≥vv, tne | power is | S 1697.75 | evv, the C | OP IS 2 | 1.6400/00. | | | | |
| 2.Tested dat | a/correction | data(Avera | age): | | | | | | | | | |
| General test | Unit | A(-7)/W34 | A2/ | W30 | A7/W2 | 7 A12 | 2/W24 | A(-10)/ | A(-7)/ | | | |
| conditions/ | | (88%) | (54 | 4%) | (35%) |) (1 | 5%) | W35.3 | W34 | | | |
| Part-Load | | | | | , , | | | (100%) | (88%) | | | |
| | | | | | | | | | | | | |
| | | А | | В | С | | D | Е | F | | | |
| Data | hh: min:sec | 4:00:00 | | 0:00 | 2:10:0 | | 0:00 | 4:00:00 | 4:00:00 | | | |
| collection | 1111. 111111.360 | 4.00.00 | 2.1 | 0.00 | 2.10.0 | 2.1 | 0.00 | 4.00.00 | 4.00.00 | | | |
| period | | | | | | | | | | | | |
| The heat | | Yes | N | No. | No | | No | Yes | Yes | | | |
| pump defrosts | | 103 | | 10 | 110 | | 10 | 103 | 100 | | | |
| pariip acirosis | | | | | | | | | | | | |
| Complete | | 2 | | 0 | 0 | | 0 | 2 | 2 | | | |
| Cycles | | _ | | • | · · | | | | _ | | | |
| Barometric | kPa | 101.02 | 101 | 1.02 | 101.02 | 2 10 | 1.02 | 101.02 | 101.02 | | | |
| pressure | NF a | 101.02 | 10 | 1.02 | 101.02 | 2 10 | 1.02 | 101.02 | 101.02 | | | |
| Voltage | V | 401.3 | 400.6 399 | | 399.0 | 39 | 97.9 | 400.9 | 401.3 | | | |
| _ | Δ | 4.00 | 2 | CE | | | | F 0F | 4.00 | | | |
| Current input | Α | 4.96 | 2.65 2. | | 2.25 | 1 | .93 | 5.05 | 4.96 | | | |
| of the unit | | | | | | | | | | | | |
| Power input | kW | 2.047 | 0.895 0.7 | | 0.705 | 0. | 555 | 2.073 | 2.047 | | | |
| of the unit | | | | | | | | | | | | |
| Test conditions | indoor unit | | | | | 1 | | <u>, </u> | | | | |
| Inlet Water | °C | 29.36 | 27 | 7.33 | 24.33 | 20 | 0.76 | 30.99 | 29.36 | | | |
| temperature, | | | | | | | | | | | | |
| DB | | | | | | | | | | | | |
| Outlet Water | °C | 33.27* | 29 | .98 | 27.15 | 23 | 3.96 | 34.51* | 33.27* | | | |
| temperature, | | | | | | | | | | | | |
| looʻ | Ī | Ī | | | | | | 1 | 1 | | | |

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| Appendix i i | est results | | | | | | | | | | |
|--|------------------------|-------|-------|-------|-------|--------|-------|--|--|--|--|
| Test conditions | s outdoor unit | | | | | | | | | | |
| Air inlet temperature, DB | °C | -6.97 | 2.03 | 7.00 | 12.01 | -10.00 | -6.97 | | | | |
| Air inlet temperature, WB | °C | -8.11 | 1.01 | 6.00 | 11.00 | -11.11 | -8.11 | | | | |
| Summary of th | Summary of the results | | | | | | | | | | |
| Total heating capacity | kW | 6.135 | 4.154 | 4.433 | 5.036 | 5.511 | 6.135 | | | | |
| Effective power input | kW | 2.079 | 0.927 | 0.737 | 0.587 | 2.105 | 2.079 | | | | |
| Coefficient of performance (COP) | | 2.95 | 4.48 | 6.01 | 8.58 | 2.62 | 2.95 | | | | |
| 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 | | | | |

Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.

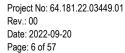
| 3.0 | Cal | cu | lat | ion/ | conc | lus | ion | for | SC | OP | (Ave | rage |): |
|-----|-----|----|-----|------|------|-----|-----|-----|----|----|------|------|----|
|-----|-----|----|-----|------|------|-----|-----|-----|----|----|------|------|----|

| ` | |
|----------|----------|
| Tbiv(°C) | -7 |
| | |
| TOL(°C) | -10 |
| | Tbiv(°C) |

| | ľ | Γest | result | : A, E | 3, C | , D | , E, | F | conditions | 3: |
|--|---|------|--------|--------|------|-----|------|---|------------|----|
|--|---|------|--------|--------|------|-----|------|---|------------|----|

| rest result A | rest result A, B, C, D, E, F conditions. | | | | | | | | | | | |
|---------------|--|-------------------|--------------------------------|------|------|------------------|--|--|--|--|--|--|
| Condition | Part load | Measured capacity | COP at measured capacity | Cdh | CR | COP at part load | | | | | | |
| E | 6.935 | 5.511 | 2.62 | 0.00 | 1.00 | 2.62 | | | | | | |
| F | 6.135 | 6.135 | 2.95 | 0.00 | 1.00 | 2.95 | | | | | | |
| А | 6.135 | 6.135 | 2.95 | 0.00 | 1.00 | 2.95 | | | | | | |
| В | 3.734 | 4.154 | 4.48 | 0.99 | 0.90 | 4.47 | | | | | | |
| С | 2.400 | 4.433 | 6.01 | 0.99 | 0.54 | 5.96 | | | | | | |
| D | 1.067 | 5.036 | 8.58 | 0.99 | 0.21 | 8.27 | | | | | | |

CR: part load divided by capacity;







| Unit | Value |
|------|----------|
| kW | 0.017 |
| kW | 0.017 |
| kW | 0.029 |
| kW | 0.017 |
| | kW kW |

| Conclusions: | Unit | Value |
|--|----------|-------|
| SCOPon: | kWh/kWh | 4.63 |
| SCOP: | kWh/kWh | 4.62 |
| Q _H : | kWh/year | 14327 |
| Q _{HE} : | kWh/year | 3102 |
| $\eta_{s,h}$ | % | 181.8 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2) | | A+++ |



| | | | | | | | _ | | | | |
|----------------------------------|---|------------------|-------|------|--------|-----------------|--------------|----------|-----------|--|--|
| Table 2. | Heating mode(Medium temperature application): | | | | | | Р | | | | |
| Model | CGK-025V3L | | | | | | | | | | |
| Product | Air to Water Heating Averag Warmer Colder | | | | | | | | | | |
| type | | season | | е | | | | | | | |
| 1. Test conditions: | | | | | | | | | | | |
| | Indoo | r heat | | | | | | | | | |
| Ę | | Part Loa in 9 | | | | Outdoo excha | | excha | | | |
| Condition | Form | | Α | W | С | Inlet dr | | | let water | | |
| pu | | | , , | | | bu | | temperat | | | |
| ပိ | | | | | | tempe | | | | | |
| | | | | | | °(| | | | | |
| Α | (-7-16)/(Tdesi | gnh-16) | 88 | N/A | N/A | -7(| -8) | a/ | 52 | | |
| В | (+2-16)/ (Tdes | signh-16) | 54 | N/A | N/A | 2(| 1) | a/ | 42 | | |
| С | (+7-16)/(Tdes | | 35 | N/A | N/A | 7(| - | a/ | | | |
| D | (+12-16)/(Tde | | 15 | N/A | N/A | 12(| | a/ | | | |
| E | | (TOL-16)/ (To | | | | TC | | | 55.3 | | |
| F | | bivalent-16)/(| | | | Tb | | a / | | | |
| G | (-15-16)/(Tdes | | N/A | N/A | N/A | -1 | _ | N/ | | | |
| Remark: a) Wi at 47/55 condit | | | | | | • | | • | N14511-2 | | |
| | | | | | | | | | | | |
| 2.Tested dat | a/correction | data(Avera | age): | | | | | | | | |
| General test | Unit | A(-7)/W52 | A2/ | W42 | A7/W3 | 6 A1 | 2/W30 | A(-10)/ | A(-7)/ | | |
| conditions/ | | (88%) | (54%) | | (35%) | | 5%) | W55.3 | Ŵ52 | | |
| Part-Load | | | | , | ` ' | · · | , | (100%) | (88%) | | |
| | | | | | | | | | , , | | |
| | | А | | В | С | | D | Е | F | | |
| Data | hh: min:sec | 4:00:00 | | 0:00 | 2:10:0 | 0 2: | 10:00 | 2:10:00 | 4:00:00 | | |
| collection | | | | | | · - | | | | | |
| period | | | | | | | | | | | |
| The heat | | Yes | N | 1o | No | | No | No | Yes | | |
| pump defrosts | | | | | | | | | | | |
| | | | | | | | | | | | |
| Complete | | 1 | (| 0 | 0 | | 0 | 0 | 1 | | |
| Cycles | | | | | | | | | | | |
| Barometric | kPa | 101.02 | 101 | 1.02 | 101.02 | 2 10 | 1.02 | 101.02 | 101.02 | | |
| pressure | | | | | | | | | | | |
| Voltage | V | 400.7 | 40 | 1.7 | 401.0 | 4 | 02.0 | 403.4 | 400.7 | | |
| Current input | Α | 6.80 | 3. | 15 | 2.76 | 2 | 2.40 | 6.70 | 6.80 | | |
| of the unit | | | | | | | | | | | |
| Power input | kW | 2.956 | 1.176 | | 0.924 | . 0 | .716 | 3.069 | 2.956 | | |
| of the unit | | 2.000 | ٠. | 170 | 0.524 | | ., 10 | 0.000 | 2.500 | | |
| | | | | | | | | | | | |
| Test conditions | | 44.07 | 0.7 | | 04.00 | | - 1 1 | 10.11 | 44.07 | | |
| Inlet Water | °C | 44.67 | 37 | .84 | 31.89 | 2 | 5.14 | 48.14 | 44.67 | | |
| temperature, | | | | | | | | | | | |
| DB | 00 | 54.07 | 4.1 | 0.4 | 00.4 | | 0.04 | E4 40* | 54.07 | | |
| Outlet Water | °C | 51.27 | 41 | .81 | 36.15 | 3 | 0.01 | 54.46* | 51.27 | | |
| temperature, DB | | | | | | | | | | | |

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| Appenaix i i | estresuits | | | | | | | | | |
|----------------------------------|------------------------------|-------|-------|-------|-------|--------|-------|--|--|--|
| Test conditions | Test conditions outdoor unit | | | | | | | | | |
| Air inlet temperature, DB | °C | -6.93 | 2.02 | 7.00 | 12.00 | -10.00 | -6.93 | | | |
| Air inlet temperature, WB | °C | -8.13 | 1.00 | 6.00 | 11.00 | -11.22 | -8.13 | | | |
| Summary of th | e results | | | | | | | | | |
| Total heating capacity | kW | 6.532 | 4.007 | 4.313 | 4.932 | 6.336 | 6.532 | | | |
| Effective power input | kW | 2.996 | 1.216 | 0.964 | 0.756 | 3.109 | 2.996 | | | |
| Coefficient of performance (COP) | | 2.18 | 3.29 | 4.48 | 6.52 | 2.04 | 2.18 | | | |
| Compressor frequency | Hz | 70 | 33 | 30 | 30 | 70 | 70 | | | |
| Water flow | m³/h | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | | | |

Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.

| | 3.0 | Calcu | lation/ | /conclu | usion | for | SCOP | (Averaç | ıe) |): |
|--|-----|-------|---------|---------|-------|-----|------|---------|-----|----|
|--|-----|-------|---------|---------|-------|-----|------|---------|-----|----|

| (· · · · · · · · · · · · · · · · | | | | | | | | |
|-----------------------------------|-------|----------|-----|--|--|--|--|--|
| Tdesignh(°C) | -10 | Tbiv(°C) | -7 | | | | | |
| | | | | | | | | |
| Pdesignh(kW) | 7.384 | TOL(°C) | -10 | | | | | |
| | | | | | | | | |

| Test | result A | A, B, C, | D, E, I | F cond | litions: |
|------|----------|----------|---------|--------|----------|
|------|----------|----------|---------|--------|----------|

| Tool Toolin A, B, G, B, E, T Containens. | | | | | | | | |
|--|-----------------|-------------------|--------------------------------|------|------|------------------|--|--|
| Condition | Part load | Measured capacity | COP at measured capacity | Cdh | CR | COP at part load | | |
| E | 7.384 | 6.336 | 2.04 | 0.00 | 1.00 | 2.04 | | |
| F | 6.532 | 6.532 | 2.18 | 0.00 | 1.00 | 2.18 | | |
| А | 6.532 | 6.532 | 2.18 | 0.00 | 1.00 | 2.18 | | |
| В | 3.976 | 4.007 | 3.29 | 0.00 | 0.99 | 3.29 | | |
| С | 2.556 | 4.313 | 4.48 | 0.99 | 0.59 | 4.45 | | |
| D | 1.136 | 4.932 | 6.52 | 0.99 | 0.23 | 6.31 | | |
| CR: part load of | divided by capa | ncity; | | | | | | |

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Annandiy I Tast results

| Appendix i rest results | | |
|--|---------|-------|
| Electric power consumptions | Unit | Value |
| Thermostat-off mode [P _{TO}] | kW | 0.017 |
| Standby mode [P _{SB}] | kW | 0.017 |
| Crankcase heater [P _{CK}] | kW | 0.029 |
| Off mode [P _{OFF}] | kW | 0.017 |
| Conclusions: | Unit | Value |
| SCOPon: | kWh/kWh | 3.45 |
| SCOP. | kWh/kWh | 3 44 |

| Conclusions: | Unit | Value |
|--|----------|-------|
| SCOPon: | kWh/kWh | 3.45 |
| SCOP: | kWh/kWh | 3.44 |
| Q _H : | kWh/year | 15255 |
| Q _{HE} : | kWh/year | 4432 |
| $\eta_{s,h}$ | % | 134.7 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1) | 1 | A++ |

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| Appendix i i | estresuits | | | | | | | | | |
|-----------------|--|-----------------|-----------------|------------|------------|--------------------|----------|-----------|------------|--|
| Table 3. | Heating mode(Low temperature application): | | | | | | F | • | | |
| Model | CGK-030V3L-B | | | | | | | | | |
| Product | Air to Water Heating | | | | | | | Colder | | |
| type | | season | | е | | | | | | |
| 1. Test cond | itions: | | | | | | <u> </u> | 1 | | |
| | | Part Loa | d Ratio | | | Outdoo | r heat | Indoo | r heat | |
| u O | | in ^c | % | | | excha | nger | excha | anger | |
| Condition | Form | ula | Α | W | | Inlet dr | / (wet) | Inlet/out | let water | |
|) uc | | | | | | bu | lb | temperat | ures (°C) | |
| ŭ | | | | | | tempe | | | | |
| | , = , <u>a</u>) | | | 21/2 | | °(| | ļ | | |
| A | (-7-16)/(Tdesign | | 88 | N/A | N/A | -7(- | | | 34 | |
| В | (+2-16)/ (Tdes | | 54 | N/A | N/A | 2(1) 7(6) | | | 30 | |
| C D | (+7-16)/(Tdesi (+12-16)/(Tde | | 35 15 | N/A N/A | N/A N/A | | • | | 27 | |
| E | | TOL-16)/ (To | | | IN/A | 12(<i>¹</i> | | | 24 35.3 | |
| F | | oivalent-16)/(| | | | Tb | | a/ a/ | | |
| G | (-15-16)/(Tdes | | N/A | N/A | N/A | -1 | | N/ | | |
| Remark: a) Wi | | | | | | | | | | |
| at 30/35 condit | | | | | | | | | | |
| 2.Tested dat | a/correction | data(Avera | age): | | | | | | | |
| General test | Unit | A(-7)/W34 | A2/ | W30 | A7/W2 | 7 A12 | 2/W24 | A(-10)/ | A(-7)/ | |
| conditions/ | | (88%) | (54 | 4%) | (35%) |) (1 | 5%) | W35.3 | W34 | |
| Part-Load | | | , | , | | , | | (100%) | (88%) | |
| | | | | | | | | | | |
| | | А | | В | С | | D | Е | F | |
| Data | hh: min:sec | 4:00:00 | | 0:00 | 2:10:0 | 0 2.4 | 10:00 | 4:00:00 | 4:00:00 | |
| collection | | 1.00.00 | | 0.00 | 2.10.0 | ~ - - | . 0.00 | 1.00.00 | 1.00.00 | |
| period | | | | | | | | | | |
| The heat | | Yes | ١ | 1 0 | No | | No | Yes | Yes | |
| pump defrosts | | | | | | | | | | |
| | | | | | | | | | | |
| Complete | | 1 | | 0 | 0 | | 0 | 1 | 1 | |
| Cycles | | | | | | | | | | |
| Barometric | kPa | 101.02 | 10 ² | 1.02 | 101.02 | 2 10 | 1.02 | 101.02 | 101.02 | |
| pressure | | | | | | | | | | |
| Voltage | V | 412.8 | 39 | 5.0 | 406.5 | 4 | 00.9 | 410.7 | 412.8 | |
| Current input | Α | 4.29 | 2. | 00 | 1.58 | 1 | .38 | 4.26 | 4.29 | |
| of the unit | | | | | | | | | | |
| Power input | kW | 2.455 | 0.0 | 977 | 0.762 | 0 | .595 | 2.508 | 2.455 | |
| of the unit | KVV | 2.433 | 0.3 | 511 | 0.702 | · · | .030 | 2.300 | 2.400 | |
| | | | | | | | | | | |
| Test conditions | | | | | | | | | | |
| Inlet Water | °C | 29.01 | 27 | 7.52 | 34.35 | 2 | 0.84 | 30.56 | 29.01 | |
| temperature, | | | | | | | | | | |
| DB | | | | | | | | | | |
| Outlet Water | °C | 33.10* | 30 | .14 | 27.07 | 2: | 3.93 | 34.33* | 33.10* | |
| temperature, | | | | | | | | | | |

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| Appenaix i i | est results | | | | | | | | | |
|--|------------------------------|-------|-------|-------|-------|--------|-------|--|--|--|
| Test conditions | Test conditions outdoor unit | | | | | | | | | |
| Air inlet temperature, DB | °C | -6.96 | 2.04 | 7.01 | 12.01 | -9.97 | -6.96 | | | |
| Air inlet temperature, WB | °C | -8.12 | 1.01 | 6.00 | 11.00 | -10.97 | -8.12 | | | |
| Summary of th | e results | | | | | | | | | |
| Total heating capacity | kW | 7.106 | 4.513 | 4.828 | 5.463 | 6.547 | 7.106 | | | |
| Effective power input | kW | 2.488 | 1.010 | 0.795 | 0.628 | 2.541 | 2.488 | | | |
| Coefficient of performance (COP) | | 2.86 | 4.47 | 6.08 | 8.70 | 2.58 | 2.86 | | | |
| Compressor frequency | Hz | 78 | 33 | 30 | 30 | 78 | 78 | | | |
| Water flow | m³/h | 1.49 | 1.49 | 1.49 | 1.49 | 1.49 | 1.49 | | | |

Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.

| 3.Calculation/conclusion for SCOP(Av | erage): |
|--------------------------------------|---------|
|--------------------------------------|---------|

| L | | | | |
|---|--------------|-------|----------|-----|
| Ī | Tdesignh(°C) | -10 | Tbiv(°C) | -7 |
| | | | | |
| Ī | Pdesignh(kW) | 8.032 | TOL(°C) | -10 |

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

| rest result A, B, C, B, E, I conditions. | | | | | | | | | |
|--|-----------|-------------------|--------------------------------|------|------|------------------|--|--|--|
| Condition | Part load | Measured capacity | COP at measured capacity | Cdh | CR | COP at part load | | | |
| E | 8.032 | 6.547 | 2.58 | 0.00 | 1.00 | 2.58 | | | |
| F | 7.106 | 7.106 | 2.86 | 0.00 | 1.00 | 2.86 | | | |
| А | 7.106 | 7.106 | 2.86 | 0.00 | 1.00 | 2.86 | | | |
| В | 4.325 | 4.513 | 4.47 | 0.00 | 0.96 | 4.47 | | | |
| С | 2.780 | 4.828 | 6.08 | 0.99 | 0.58 | 6.03 | | | |
| D | 1.236 | 5.463 | 8.70 | 0.99 | 0.23 | 8.41 | | | |

CR: part load divided by capacity;

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

| Conclusions: | Unit | Value |
|--|----------|-------|
| SCOPon: | kWh/kWh | 4.62 |
| SCOP: | kWh/kWh | 4.61 |
| Q _H : | kWh/year | 16595 |
| Q _{HE} : | kWh/year | 3601 |
| $\eta_{s,h}$ | % | 181.4 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2) | | A+++ |

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| Table 4. | Heating mode(Medium temperature application): | | | | | | | F |) |
|-----------------|---|---------------------------|--------------------|--------|--------|-------|--------------------|-----------|-----------|
| Model | CGK-030V3L-B | | | | | | • | | |
| Product | Air to Water | Heating | \rightarrow | Averag | | Warm | er 🗌 | Colder | |
| type | | season | | е | | | | | |
| 1. Test cond | 1. Test conditions: | | | | | | | | |
| | | Part Loa | d Ratio | | | Outdo | or heat | Indoo | r heat |
| u C | | in 9 | | | | | anger | excha | |
| Condition | Form | | Α | W | С | | ry (wet) | Inlet/out | |
| bud | | | | | | | uľb | temperat | ures (°C) |
| ၓ | | | | | | temp | erature | | |
| | | | | | | | ,C | | |
| A | (-7-16)/(Tdesig | | 88 | N/A | N/A | | (-8) | a / | |
| В | (+2-16)/ (Tdes | | 54 | N/A | N/A | | (1) | a / | |
| C | (+7-16)/(Tdesi | | 35 | N/A | N/A | | (6) | a / | |
| D E | (+12-16)/(Tde | Signn-16) TOL-16)/ (To | 15 | N/A | N/A | | (11) OL | a/ | 55.3 |
| <u> </u> | | oivalent-16)/(| | | | | biv | a/: | |
| G | (-15-16)/(Tdes | | N/A | N/A | N/A | | 15 | N, | |
| Remark: a) Wi | | | | | | | _ | | |
| at 47/55 condit | ions, the capa | city is 8448.6 | 4W, the | | | | | | |
| 2.Tested dat | a/correction | data(Avera | age): | | | | | | |
| General test | Unit | A(-7)/W52 | A2/\ | W42 | A7/W3 | 6 A | 12/W30 | A(-10)/ | A(-7)/ |
| conditions/ | | (88%) | (54 | 1%) | (35%) |) | (15%) | W55.3 | Ŵ52 |
| Part-Load | | | | - | | | | (100%) | (88%) |
| | | | | | | | | | |
| | | А | | В | С | | D | Е | F |
| Data | hh: min:sec | 4:00:00 | 2:10 | 0:00 | 2:10:0 | 0 2 | :10:00 | 4:00:00 | 4:00:00 |
| collection | | | | | | | | | |
| period | | | | | | | | | |
| The heat | | Yes | N | 10 | No | | No | Yes | Yes |
| pump defrosts | | | | | | | | | |
| | | | | | | | | | |
| Complete | | 1 | (| 0 | 0 | | 0 | 1 | 1 |
| Cycles | | | | | | | | | |
| Barometric | kPa | 101.02 | 101 | 1.02 | 101.02 | 2 / | 01.02 | 101.02 | 101.02 |
| pressure | | | | | | | | | |
| Voltage | V | 408.5 | 39 | 3.9 | 391.3 | | 391.0 | 392.3 | 408.5 |
| Current input | Α | 5.47 | 2. | 53 | 2.11 | | 1.71 | 6.03 | 5.47 |
| of the unit | | | | | | | | | |
| Power input | kW | 3.226 | 1.2 | 258 | 0.979 | 1 | 0.755 | 3.593 | 3.226 |
| of the unit | | 0 | | | | | | | 0 |
| Test conditions | indoor unit | | | | | | | <u>l</u> | |
| Inlet Water | °C | 44.20 | 27 | .96 | 31.51 | | 24.91 | 47.04 | 44.20 |
| temperature, | C | 44.20 | 31 | .90 | 31.31 | | 24.91 | 47.04 | 44.20 |
| DB | | | | | | | | | |
| Outlet Water | °C | 51.27* | 12 | .03 | 35.94 | _ | 30.04 | 54.00* | 51.27* |
| temperature, | | 01.21 | 42 | .00 | 55.34 | | JJ.U -1 | 37.00 | 01.21 |
| nemperature, | | | | | | | | | |

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| Appendix i | est results | | | | | | |
|--|-----------------------|-------|-------|-------|-------|--------|-------|
| Test condition | s outdoor unit | | | | | | |
| Air inlet temperature, DB | °C | -6.98 | 2.02 | 7.03 | 12.01 | -9.99 | -6.98 |
| Air inlet temperature, WB | °C | -8.20 | 1.00 | 6.00 | 11.00 | -11.02 | -8.20 |
| Summary of th | ne results | | | | | | |
| Total heating capacity | kW | 7.258 | 4.244 | 4.622 | 5.360 | 7.229 | 7.258 |
| Effective power input | kW | 3.246 | 1.278 | 0.999 | 0.775 | 3.613 | 3.246 |
| Coefficient of performance (COP) | | 2.24 | 3.32 | 4.63 | 6.92 | 2.00 | 2.24 |
| Compressor frequency | Hz | 71 | 33 | 30 | 30 | 78 | 71 |
| Water flow | m³/h | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |

Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.

| | 3.0 | Calcu | lation/ | /conclu | usion | for | SCOP | (Averaç | ıe) |): |
|--|-----|-------|---------|---------|-------|-----|------|---------|-----|----|
|--|-----|-------|---------|---------|-------|-----|------|---------|-----|----|

| Tdesignh(°C) | -10 | Tbiv(°C) | -7 |
|--------------|-------|----------|-----|
| | | | |
| Pdesignh(kW) | 8.205 | TOL(°C) | -10 |
| | | | |

| | Test | result | ΔF | 3 C | D | F F | conditions: |
|---|-------|---------|------|-------|--------|------|-------------|
| ı | IICOL | 1 COUIL | М. Ь | J. U. | . D. I | L. I | conditions. |

| restresult A, B, C, B, E, 1 conditions. | | | | | | | | | | |
|---|-----------|-------------------|--------------------------------|------|------|------------------|--|--|--|--|
| Condition | Part load | Measured capacity | COP at measured capacity | Cdh | CR | COP at part load | | | | |
| E | 8.205 | 7.229 | 2.00 | 0.00 | 1.00 | 2.00 | | | | |
| F | 7.258 | 7.258 | 2.24 | 0.00 | 1.00 | 2.24 | | | | |
| А | 7.258 | 7.258 | 2.24 | 0.00 | 1.00 | 2.24 | | | | |
| В | 4.418 | 4.244 | 3.32 | 0.00 | 1.00 | 3.32 | | | | |
| С | 2.840 | 4.622 | 4.63 | 0.99 | 0.61 | 4.60 | | | | |
| D | 1.262 | 5.360 | 6.92 | 0.99 | 0.24 | 6.70 | | | | |

CR: part load divided by capacity;

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

| Conclusions: | Unit | Value |
|--|----------|-------|
| SCOPon: | kWh/kWh | 3.43 |
| SCOP: | kWh/kWh | 3.42 |
| Q _H : | kWh/year | 16951 |
| Q _{HE} : | kWh/year | 4951 |
| $\eta_{s,h}$ | % | 133.9 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1) | | A++ |

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| Table 5. | Heating mode(Low temperature application): | | | | | | | P | |
|----------------------------------|--|----------------|----------|--------|--------|-------------|--------------------|----------|------------|
| Model | CGK-040V3L | | | | | | | 1 | |
| Product | Air to Water | Heating | J | Averag | | Warm | er | Colder | |
| type | | season | | е | | | | | |
| 1. Test cond | itions: | | | | | | • | • | |
| | | Part Loa | d Ratio | | | Outd | oor heat | Indoo | r heat |
| uo | | in 🤋 | % | | | | hanger | | anger |
| Condition | Form | ula | Α | W | | | dry (wet) | | let water |
| uo | | | | | | | bulb | temperat | tures (°C) |
| O | | | | | | tem | perature | | |
| A | (-7-16)/(Tdesig | nnh-16) | 88 | N/A | N/A | _ | <u>°C</u> 7(-8) | a / | 34 |
| В | (+2-16)/ (Tdes | | 54 | N/A | N/A | | 2(1) | _ | 30 |
| C | (+7-16)/(Tdesi | | 35 | N/A | N/A | | 7(6) | | 27 |
| D | (+12-16)/(Tde: | | 15 | N/A | N/A | | 2(11) | | 24 |
| Е | | TOL-16)/ (To | | | | | TOL | | 35.3 |
| F | | oivalent-16)/(| | | | | Tbiv | | 34 |
| G Damariu a) Wi | (-15-16)/(Tdes | | N/A | N/A | N/A | | -15 | | /A |
| Remark: a) Wi at 30/35 condit | | | | | | | | | |
| 2.Tested dat | a/correction | data(Avera | age): | | | | | | |
| General test | Unit | A(-7)/W34 | A2/ | W30 | A7/W2 | .7 <i>F</i> | 12/W24 | A(-10)/ | A(-7)/ |
| conditions/ | | (88%) | (54 | 1%) | (35%) |) | (15%) | W35.3 | W34 |
| Part-Load | | | | | | | | (100%) | (88%) |
| | | | | | | | | | |
| | | Α | I | В | С | | D | Е | 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 | | | | | | | | | |
| The heat | | Yes | N | lo | No | | No | Yes | Yes |
| pump defrosts | | | | | | | | | |
| Complete | | 2 | | 0 | 0 | | 0 | 2 | 2 |
| Cycles | | _ | | | Ü | | Ü | | _ |
| Barometric | kPa | 101.02 | 101 | 1.02 | 101.02 | 2 | 101.02 | 101.02 | 101.02 |
| pressure | 4 | 101102 | | | 101101 | | 101102 | 101.02 | 101.02 |
| Voltage | V | 405.7 | 39 | 7.1 | 397.0 |) | 399.1 | 400.3 | 405.7 |
| Current input | А | 6.88 | 3. | 46 | 3.18 | | 2.76 | 7.28 | 6.88 |
| of the unit | | | | | | | | | |
| Power input | kW | 3.171 | 1.2 | 298 | 1.110 |) | 0.912 | 3.374 | 3.171 |
| of the unit | | | | | | | | | |
| Test conditions | indoor unit | | | | | I | | 1 | 1 |
| Inlet Water | °C | 29.33 | 27 | .48 | 24.06 | ; | 20.88 | 30.78 | 29.33 |
| temperature, | | | | | | | | | |
| DB | | | | | | | | | |
| Outlet Water | °C | 33.10 | 29 | .90 | 26.84 | | 24.05 | 34.54 | 33.10 |
| temperature, | | | | | | | | | |
| DB | I | 1 | | | | | | 1 | 1 |

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| Appendix i i | est results | | | | | | |
|--|-----------------------|-------|-------|-------|-------|--------|-------|
| Test conditions | s outdoor unit | | | | | | |
| Air inlet temperature, DB | °C | -7.00 | 2.01 | 7.01 | 12.00 | -9.99 | -7.00 |
| Air inlet temperature, WB | °C | -8.20 | 1.01 | 6.01 | 11.00 | -11.13 | -8.20 |
| Summary of th | e results | | | | | | |
| Total heating capacity | kW | 9.307 | 6.004 | 6.890 | 7.848 | 9.284 | 9.307 |
| Effective power input | kW | 3.219 | 1.346 | 1.158 | 0.960 | 3.422 | 3.219 |
| Coefficient of performance (COP) | | 2.89 | 4.46 | 5.95 | 8.18 | 2.71 | 2.89 |
| Compressor frequency | Hz | 57 | 25 | 25 | 25 | 60 | 57 |
| Water flow | m³/h | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 |

Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.

| Tdesignh(°C) | -10 | Tbiv(°C) | -7 |
|--------------|--------|----------|-----|
| | | | |
| Pdesignh(kW) | 10.521 | TOL(°C) | -10 |

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

| 111 1111 , , , , , , 11 1111 1 | | | | | | | | | | |
|--------------------------------|------------------------------------|-------------------|--------------------------------|------|------|------------------|--|--|--|--|
| Condition | Part load | Measured capacity | COP at measured capacity | Cdh | CR | COP at part load | | | | |
| Е | 10.521 | 9.284 | 2.71 | 0.00 | 1.00 | 2.71 | | | | |
| F | 9.307 | 9.307 | 2.89 | 0.00 | 1.00 | 2.89 | | | | |
| А | 9.307 | 9.307 | 2.89 | 0.00 | 1.00 | 2.89 | | | | |
| В | 5.665 | 6.004 | 4.46 | 0.00 | 0.94 | 4.46 | | | | |
| С | 3.642 | 6.890 | 5.95 | 0.99 | 0.53 | 5.90 | | | | |
| D | 1.619 | 7.848 | 8.18 | 0.99 | 0.21 | 7.88 | | | | |
| CR: part load of | CR: part load divided by capacity; | | | | | | | | | |

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| Electric power consumptions | Unit | Value |
|--|------------------|-------|
| Thermostat-off mode [P _{TO}] | kW | 0.018 |
| Standby mode [P _{SB}] | kW | 0.018 |
| Crankcase heater [P _{CK}] | kW | 0.041 |
| Off mode [P _{OFF}] | kW | 0.018 |
| Conclusions: | Unit | Value |
| 0000 | 1.1471- /1.1471- | 4.00 |

| Conclusions: | Unit | Value |
|--|----------|-------|
| SCOPon: | kWh/kWh | 4.60 |
| SCOP: | kWh/kWh | 4.59 |
| Q _H : | kWh/year | 21736 |
| Q _{HE} : | kWh/year | 4737 |
| $\eta_{s,h}$ | % | 180.5 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2) | | A+++ |

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| Table 6. | Heating mode(Medium temperature application): | | | | | | | F | • |
|-----------------|---|----------------------------|----------|----------|--------|-----------|--------|----------|--------------------|
| Model | CGK-040V3L | | | | | | | | |
| Product | Air to Water | Heating | ✓ | Averag | | Warmer | | Colder | |
| type | | season | | е | | | | | |
| 1. Test cond | itions: | | | <u> </u> | | | | l | |
| | | Part Loa | d Patio | | | Outdoo | r hoat | Indoo | r heat |
| - | | in 9 | | | | excha | | | anger |
| Condition | Form | | Α | W | С | Inlet dry | _ | | let water |
| pu | | dia | , , | | Ŭ | bul | ` , | temperat | |
| ပိ | | | | | | temper | ature | | ` , |
| | | | | | | °C | | | |
| Α | (-7-16)/(Tdesi | | 88 | N/A | N/A | -7(- | | | 52 |
| В | (+2-16)/ (Tdes | | 54 | N/A | N/A | 2(1 | | | 42 |
| С | (+7-16)/(Tdesi | | 35 | N/A | N/A | 7(6 | | | 36 |
| D E | (+12-16)/(Tde | signn-16) (TOL-16)/ (To | 15 | N/A | N/A | 12(1 | | | 30 |
| <u>_</u> | | oivalent-16)/(| | | | TO Tbi | | | 55.3 52 |
| G | (-15-16)/(Tdes | | N/A | N/A | N/A | -18 | | N, | |
| Remark: a) Wi | | | | | | | | | |
| at 47/55 condit | ions, the capac | city is 12600. | 64W, th | | | | | | |
| 2.Tested dat | a/correction | data(Avera | age): | | | | | | |
| General test | Unit | A(-7)/W52 | A2/ | W42 | A7/W3 | 6 A12 | 2/W30 | A(-10)/ | A(-7)/ |
| conditions/ | | (88%) | (54 | 1%) | (35%) | (1 | 5%) | W55.3 | Ŵ5Ź |
| Part-Load | | | | | | | | (100%) | (88%) |
| | | | | | | | | | |
| | | А | I | В | С | | D | Е | 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 | ١ | 10 | No | ı | Vo | Yes | Yes |
| pump defrosts | | | | | | | | | |
| | | | | | | | | _ | |
| Complete | | 1 | (| 0 | 0 | | 0 | 2 | 1 |
| Cycles | | | | | | | | | |
| Barometric | kPa | 101.02 | 101 | 1.02 | 101.02 | 2 10 | 1.02 | 101.02 | 101.02 |
| pressure | | 400 = | | | 400.0 | | | 101.0 | 100 = |
| Voltage | V | 400.7 | 40 | 4.4 | 400.3 | 39 | 95.0 | 401.6 | 400.7 |
| Current input | A | 9.07 | 4. | 16 | 3.65 | 3 | .04 | 10.50 | 9.07 |
| of the unit | | | | | | | | | |
| Power input | kW | 4.559 | 1.6 | 664 | 1.395 | 1. | 118 | 4.807 | 4.559 |
| of the unit | | | | | | | | | |
| Test conditions | indoor unit | | | | | | | | |
| Inlet Water | °C | 45.38 | 38 | .41 | 31.84 | 25 | 5.01 | 47.72 | 45.38 |
| temperature, |] ~ | 70.00 | | | 01.04 | 2 |).U I | 71.12 | - 10.00 |
| DB | | | | | | | | | |
| Outlet Water | °C | 51.21 | 42 | .01 | 36.06 | 30 | 0.05 | 54.04* | 51.21 |
| temperature, |] _ | J | | | 50.00 | | | 001 | J |
| DR | | | | | | | |] | |

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| Appenaix i i | estresuits | | | | | | |
|--|-----------------------|-------|-------|-------|-------|--------|-------|
| Test conditions | s outdoor unit | | | | | | |
| Air inlet temperature, DB | °C | -6.97 | 2.02 | 7.02 | 12.00 | -9.86 | -6.97 |
| Air inlet temperature, WB | °C | -8.20 | 1.00 | 6.00 | 11.00 | -11.11 | -8.20 |
| Summary of th | e results | | | | | | |
| Total heating capacity | kW | 9.264 | 5.652 | 6.652 | 7.648 | 9.862 | 9.264 |
| Effective power input | kW | 4.592 | 1.697 | 1.428 | 1.151 | 4.840 | 4.592 |
| Coefficient of performance (COP) | | 2.02 | 3.33 | 4.66 | 6.65 | 2.04 | 2.02 |
| Compressor frequency | Hz | 52 | 25 | 25 | 25 | 60 | 52 |
| Water flow | m³/h | 1.36 | 1.36 | 1.36 | 1.36 | 1.36 | 1.36 |

Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.

| | 3.0 | Calcu | lation/ | /conclu | usion | for | SCOP | (Averaç | ıe) |): |
|--|-----|-------|---------|---------|-------|-----|------|---------|-----|----|
|--|-----|-------|---------|---------|-------|-----|------|---------|-----|----|

| Tdesignh(°C) | -10 | Tbiv(°C) | -7 | | | |
|--------------|--------|----------|-----|--|--|--|
| | | | | | | |
| Pdesignh(kW) | 10.472 | TOL(°C) | -10 | | | |
| | | | | | | |

| | Test | result | ΔF | 3 C | D | F F | conditions: |
|---|-------|---------|------|-------|--------|------|-------------|
| ı | IICOL | 1 COUIL | М. Ь | J. U. | . D. I | L. I | conditions. |

| rest result 7 | restrictant A, B, G, B, E, 1 Gorialions. | | | | | | | | |
|------------------|--|-------------------|--------------------------------|------|------|------------------|--|--|--|
| Condition | Part load | Measured capacity | COP at measured capacity | Cdh | CR | COP at part load | | | |
| Е | 10.472 | 9.862 | 2.04 | 0.00 | 1.00 | 2.04 | | | |
| F | 9.264 | 9.264 | 2.02 | 0.00 | 1.00 | 2.02 | | | |
| А | 9.264 | 9.264 | 2.02 | 0.00 | 1.00 | 2.02 | | | |
| В | 5.639 | 5.652 | 3.33 | 0.00 | 1.00 | 3.33 | | | |
| С | 3.625 | 6.652 | 4.66 | 0.99 | 0.54 | 4.62 | | | |
| D | 1.611 | 7.648 | 6.65 | 0.99 | 0.21 | 6.41 | | | |
| CR: part load of | divided by capa | ncity; | | | | • | | | |

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Annandiy I Tast results

| Electric power consumptions | Unit | Value |
|--|---------|-------|
| Thermostat-off mode [P _{TO}] | kW | 0.018 |
| Standby mode [P _{SB}] | kW | 0.018 |
| Crankcase heater [P _{CK}] | kW | 0.041 |
| Off mode [P _{OFF}] | kW | 0.018 |
| Conclusions: | Unit | Value |
| SCOPon: | kWh/kWh | 3.46 |

| Conclusions: | Unit | Value |
|--|----------|-------|
| SCOPon: | kWh/kWh | 3.46 |
| SCOP: | kWh/kWh | 3.45 |
| Q _H : | kWh/year | 21636 |
| Q _{HE} : | kWh/year | 6264 |
| $\eta_{s,h}$ | % | 135.2 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1) | - | A++ |

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Annandiy I Tast results

| Table 7. | Heating mod | e(Low temp | erature | applicat | tion): | | | | > |
|--|----------------------------------|----------------|----------|------------|------------|-------------|----------|------------------|---------------|
| Model | CGK-050V3L | -В | | | | | | | |
| Product | Air to Water | Heating | 7 | Averag | | Warmer | | Colder | |
| type | | season | | е | | | | | |
| 1. Test cond | litions: | | | | | | | | |
| | | Part Loa | d Ratio | | | Outdoo | r heat | Indoo | r heat |
| ou | | in S | % | | | excha | nger | exch | anger |
| Condition | Form | nula | Α | W | | Inlet dry | (wet) | Inlet/out | let water |
| on | | | | | | bul | | temperat | ures (°C) |
| S | | | | | | temper | | | |
| Λ | / 7.4C)//Tdoc | anh 10) | 00 | NI/A | NI/A | °C | | / | 24 |
| <u>А</u> В | (-7-16)/(Tdesi (+2-16)/ (Tdes | | 88 54 | N/A N/A | N/A N/A | -7(- 2(1 | | | 34 |
| С | (+7-16)/(Tdes | | 35 | N/A | N/A | 7(6 | | - | 27 |
| D | (+12-16)/(Tde | | 15 | N/A | N/A | 12(1 | | | 24 |
| E | | (TOL-16)/ (To | | | 14,71 | TO | _ | | 35.3 |
| F | | bivalent-16)/(| | | | Tbi | | | 34 |
| G | (-15-16)/(Tdes | | N/A | N/A | N/A | -15 | | N | /A |
| Remark: a) W | ith the water flo | ow rate as de | termine | d at the s | standard | rating cor | ditions | given in El | N14511-2 |
| at 30/35 condi | tions, the capa | city is 15607. | .70W, th | ne power | is 3278.5 | 59W, the | COP is | 4.76W/W. | |
| 2 Tested dat | ta/correction | data(Avera | aue). | | | | | | |
| | | • | <u> </u> | M/00 | A 7/A/O | 7 1 440 | /\/\/O.4 | A (40) | A / Z\ / |
| General test conditions/ | Unit | A(-7)/W34 | | W30 | A7/W2 | | /W24 | A(-10) /W35.3 | A(-7)/ W34 |
| Part-Load | | (88%) | (54 | 4%) | (35%) |) (1 | 5%) | (100%) | (88%) |
| r art-Loau | | | | | | | | (10076) | (00 /0) |
| | | | | | | | | _ | _ |
| | | Α | | В | С | | D | Е | 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 | | Vac | | lo. | No | | la. | Vaa | Vac |
| | | Yes | רו | 10 | No | l I | Ио | Yes | Yes |
| pump defrosts | | | | | | | | | |
| Complete | | 1 | | 0 | 0 | | 0 | 1 | 1 |
| Cycles | | | | • | J | | O | • | |
| Barometric | kPa | 101.02 | 10: | 1.02 | 101.02 | 2 10 | 1.02 | 101.02 | 101.02 |
| pressure | KF a | 101.02 | 10 | 1.02 | 101.02 | 2 10 | 1.02 | 101.02 | 101.02 |
| Voltage | V | 398.5 | 40 | 0.2 | 408.1 | 40 |)4.7 | 398.6 | 398.5 |
| , and the second | A | 6.29 | | | | | | | |
| Current input | Δ | h 29 | 2. | 86 | 2.42 | 2 | .06 | 6.82 | 6.29 |
| | / \ | 0.23 | | | | | | | |
| of the unit | | | | | | | | | |
| Power input | kW | 3.670 | | 496 | 1.278 | 1. | 033 | 3.916 | 3.670 |
| | | | | | 1.278 | 1. | 033 | 3.916 | 3.670 |
| Power input | kW | | | | 1.278 | 1. | 033 | 3.916 | 3.670 |
| Power input of the unit Test condition | kW | | 1.4 | | 1.278 | | 033 | 3.916 | 3.670 |
| Power input of the unit Test condition Inlet Water | kW s indoor unit | 3.670 | 1.4 | 496 | | | | | |
| Power input of the unit Test condition Inlet Water temperature, | kW s indoor unit | 3.670 | 1.4 | 496 | | | | | |
| Power input of the unit | kW s indoor unit | 3.670 | 1.4 | 496 | | 20 | | | |

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| Appendix | lest results | | | | | | |
|--|-----------------------|--------|-------|-------|-------|--------|--------|
| Test condition | s outdoor unit | | | | | | |
| Air inlet temperature, DB | °C | -6.87 | 2.01 | 7.09 | 12.01 | -9.97 | -6.87 |
| Air inlet temperature, WB | °C | -8.09 | 1.00 | 6.00 | 11.00 | -11.09 | -8.09 |
| Summary of th | ne results | | | | | | |
| Total heating capacity | kW | 11.841 | 7.394 | 8.493 | 9.724 | 11.578 | 11.841 |
| Effective power input | kW | 3.767 | 1.593 | 1.375 | 1.130 | 4.013 | 3.767 |
| Coefficient of performance (COP) | | 3.14 | 4.64 | 6.18 | 8.60 | 2.88 | 3.14 |
| Compressor frequency | Hz | 67 | 30 | 30 | 30 | 70 | 67 |
| Water flow | m³/h | 2.62 | 2.62 | 2.62 | 2.62 | 2.62 | 2.62 |

Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.

| 3.Calculation/conclusion for SCOP(Av | erage): |
|--------------------------------------|---------|
|--------------------------------------|---------|

| | | ` | |
|--------------|--------|----------|-----|
| Tdesignh(°C) | -10 | Tbiv(°C) | -7 |
| | | | |
| Pdesignh(kW) | 13.386 | TOL(°C) | -10 |
| | | | |

| Test result A | А, В, | C, D | , E, F | conditions: |
|---------------|-------|------|--------|-------------|
|---------------|-------|------|--------|-------------|

| | , , -, , , | | | | | |
|------------------|-----------------|-------------------|--------------------------------|------|------|------------------|
| Condition | Part load | Measured capacity | COP at measured capacity | Cdh | CR | COP at part load |
| Е | 13.386 | 11.578 | 2.88 | 0.00 | 1.00 | 2.88 |
| F | 11.841 | 11.841 | 3.14 | 0.00 | 1.00 | 3.14 |
| А | 11.841 | 11.841 | 3.14 | 0.00 | 1.00 | 3.14 |
| В | 7.208 | 7.394 | 4.64 | 0.00 | 0.97 | 4.64 |
| С | 4.634 | 8.493 | 6.18 | 0.99 | 0.55 | 6.13 |
| D | 2.059 | 9.724 | 8.60 | 0.99 | 0.21 | 8.30 |
| CR: part load of | divided by capa | acity; | | | | • |

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Annendiy I Test results

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

| Conclusions: | Unit | Value |
|--|----------|-------|
| SCOPon: | kWh/kWh | 4.82 |
| SCOP: | kWh/kWh | 4.81 |
| Q _H : | kWh/year | 27655 |
| Q _{HE} : | kWh/year | 5745 |
| $\eta_{s,h}$ | % | 189.6 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2) | | A+++ |

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| Table 8. | Heating mode(Medium temperature application): | | | | | | | F | • | | |
|-----------------------------------|---|----------------|----------|----------|-----------|----------------|----------|----------|-----------|--|--|
| Model | CGK-050V3L- | В | | | | | | • | | | |
| Product | Air to Water | Heating | / | Averag | | Warme | r | Colder | | | |
| type | | season | | е | | | | | | | |
| 1. Test cond | itions: | | | | | | | | | | |
| Part Load Ratio Outdoor heat Indo | | | | | | | | | | | |
| <u> </u> | | in 9 | | | | | anger | excha | | | |
| Condition | Form | | Α | W | С | | ry (wet) | | let water | | |
| <u>p</u> | 1 01111 | did | | ** | 0 | | ulb | temperat | | | |
| Ō | | | | | | | erature | temperat | uics (C) | | |
| Ü | | | | | | - | C | | | | |
| А | (-7-16)/(Tdesi | gnh-16) | 88 | N/A | N/A | | (-8) | a / | 52 | | |
| В | (+2-16)/ (Tdes | | 54 | N/A | N/A | | (1) | a / | 42 | | |
| С | (+7-16)/(Tdesi | ignh-16) | 35 | N/A | N/A | 7 | (6) | a/ | 36 | | |
| D | (+12-16)/(Tde | signh-16) | 15 | N/A | N/A | 12 | (11) | a / | 30 | | |
| E | | TOL-16)/ (To | | | | | OL | | 55.3 | | |
| F | | oivalent-16)/(| | | | | biv | a/ | | | |
| G | (-15-16)/(Tdes | | N/A | N/A | N/A | | 15 | N. | | | |
| Remark: a) Wi | | | | | | | | | N14511-2 | | |
| at 47/55 condit | ions, the capa | city is 15616. | .57W, th | ne power | is 5018.0 | 00W, th | COP is | 3.11W/W. | | | |
| 2.Tested dat | a/correction | data(Avera | age): | | | | | | | | |
| General test | Unit | A(-7)/W52 | A2/ | W42 | A7/W3 | 6 A´ | 2/W30 | A(-10)/ | A(-7)/ | | |
| conditions/ | | (88%) | (54 | 4%) | (35%) |) (| 15%) | W55.3 | Ŵ52 | | |
| Part-Load | | , , | ` | , | , | | , | (100%) | (88%) | | |
| | | | | | | | | , , | ` , | | |
| | | А | | В | С | | D | E | F | | |
| Data | hh: min:sec | 4:00:00 | | 0:00 | 2:10:0 | 0 2 | :10:00 | 4:00:00 | 4:00:00 | | |
| collection | | 1.00.00 | | 0.00 | 2.10.0 | ` - | | 1.00.00 | 1.00.00 | | |
| period | | | | | | | | | | | |
| The heat | | Yes | N | lo | No | | No | Yes | Yes | | |
| pump defrosts | | . 55 | | | | | | | . 55 | | |
| | | | | | | | | | | | |
| Complete | | 1 | (| 0 | 0 | 0 0 | | 1 | 1 | | |
| Cycles | | | | | | | | | | | |
| Barometric | kPa | 101.02 | 101 | 1.02 | 101.02 | 2 1 | 01.02 | 101.02 | 101.02 | | |
| pressure | | | | | | | | | | | |
| Voltage | V | 398.2 | 40 | 7.6 | 409.0 | | 105.4 | 391.3 | 398.2 | | |
| Current input | Α | 8.02 | 3. | 54 | 3.06 | | 2.52 | 9.27 | 8.02 | | |
| of the unit | | | | | | | | | | | |
| Power input | kW | 4.763 | 2 (| 038 | 1.622 | | 1.278 | 5.567 | 4.763 | | |
| of the unit | | 00 | , | | | | 0 | 0.00. | 00 | | |
| Test conditions | indoor unit | | | | | | | | | | |
| Inlet Water | °C | 45.28 | 38 | .52 | 31.98 | | 25.32 | 48.09 | 45.28 | | |
| temperature, |] ~ | 10.20 | 50 | | 01.00 | | -5.52 | 70.00 | 10.20 | | |
| DB | | | | | | | | | | | |
| Outlet Water | °C | 51.15* | 42 | 2.03 | 36.09 | , | 30.03 | 54.12* | 51.15* | | |
| temperature, |] | 00 | | | 30.00 | | 23.00 | 02 | 00 | | |
| DB | | | | | | | | | | | |

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| Appendix i | rest results | | | | | | |
|----------------------------------|-----------------------|--------|-------|-------|-------|--------|--------|
| Test conditions | s outdoor unit | | | | | | |
| Air inlet temperature, DB | °C | -6.98 | 2.19 | 7.00 | 12.00 | -9.86 | -6.98 |
| Air inlet temperature, WB | °C | -8.18 | 1.01 | 6.00 | 11.00 | -11.07 | -8.18 |
| Summary of th | ne results | | | | | | |
| Total heating capacity | kW | 11.423 | 6.996 | 8.143 | 9.436 | 11.795 | 11.423 |
| Effective power input | kW | 4.877 | 2.152 | 1.736 | 1.392 | 5.681 | 4.877 |
| Coefficient of performance (COP) | | 2.34 | 3.25 | 4.69 | 6.78 | 2.08 | 2.34 |
| Compressor frequency | Hz | 63 | 30 | 30 | 30 | 70 | 63 |
| Water flow | m³/h | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 |

Remark: * In part condition, outlet temperature data is recorded by a full average complete cycle's data.

| | 3.0 | Calcu | lation/ | /conclu | usion | for | SCOP | (Averaç | ıe) |): |
|--|-----|-------|---------|---------|-------|-----|------|---------|-----|----|
|--|-----|-------|---------|---------|-------|-----|------|---------|-----|----|

| Tdesignh(°C) | -10 | Tbiv(°C) | -7 |
|--------------|--------|----------|-----|
| | | | |
| Pdesignh(kW) | 12.913 | TOL(°C) | -10 |
| | | | |

| ľ | Tact | racult | Δ | R C | D | FF | conditions: |
|---|------|--------|------|-------|----|------|-------------|
| ı | rest | resuit | A. I | D. C. | υ. | с. г | conditions. |

| rest result 7 | Tool Toolar A, B, G, B, L, T Containons. | | | | | | | | |
|------------------|--|-------------------|--------------------------------|------|------|------------------|--|--|--|
| Condition | Part load | Measured capacity | COP at measured capacity | Cdh | CR | COP at part load | | | |
| Е | 12.913 | 11.795 | 2.08 | 0.00 | 1.00 | 2.08 | | | |
| F | 11.423 | 11.423 | 2.34 | 0.00 | 1.00 | 2.34 | | | |
| А | 11.423 | 11.423 | 2.34 | 0.00 | 1.00 | 2.34 | | | |
| В | 6.953 | 6.996 | 3.25 | 0.00 | 0.99 | 3.25 | | | |
| С | 4.470 | 8.143 | 4.69 | 0.99 | 0.55 | 4.65 | | | |
| D | 1.987 | 9.436 | 6.78 | 0.99 | 0.21 | 6.53 | | | |
| CR: part load of | divided by capa | ncity; | | | | | | | |

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

| Conclusions: | Unit | Value |
|--|----------|-------|
| SCOPon: | kWh/kWh | 3.52 |
| SCOP: | kWh/kWh | 3.51 |
| Q _H : | kWh/year | 26677 |
| Q _{HE} : | kWh/year | 7591 |
| $\eta_{s,h}$ | % | 137.6 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1) | | A++ |



Annendiy I Test results

| | (I Test resu | | | | |
|------------------|------------------------------------|--|---|---|------------------|
| Table 9. | | EN 14511-4:2 | 2018 | | Р |
| Model | CGK-025V3 | L | | | |
| Customer Code | Execution Date [dd- mm-yyyy] | Testing item | Standard Reference | Comment | Test Response |
| TEST 1 | 16-09-2022 | 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=-25.09°C, T out water 14.90°C, Flow rate 0.85m³/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 | 16-09-2022 | 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=-24.99°C, T out water 56.42°C, Flow rate 0.85m³/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 | 16-09-2022 | 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 | 16-09-2022 | 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 | 16-09-2022 | 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 |



| | k I Test resu | | | | |
|------------------|------------------------------------|--|---|---|------------------|
| Table 10. Model | Clause 4 of CGK-030V3 | EN 14511-4:2 | 2018 | | Р |
| wodei | CGK-030V3 | L-D | | | |
| Customer Code | Execution Date [dd- mm-yyyy] | Testing item | Standard Reference | Comment | Test Response |
| TEST 1 | | 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=-25.12°C, T out water 14.70°C, Flow rate 0.80m³/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 | 17-09-2022 | 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=-25.21°C, T out water 56.25°C, Flow rate 0.82m³/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 | 17-09-2022 | 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 | 17-09-2022 | 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 | 17-09-2022 | 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 |



| | k I Test resu | | | | |
|------------------|------------------------------------|--|---|---|------------------|
| Table 11. Model | Clause 4 of CGK-040V3 | EN 14511-4:2 | 2018 | | Р |
| wodei | CGK-040V3 | L | | | |
| Customer Code | Execution Date [dd- mm-yyyy] | Testing item | Standard Reference | Comment | Test Response |
| TEST 1 | 18-09-2022 | 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=-25.05°C, T out water 14.77°C, Flow rate 1.23m³/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 | 18-09-2022 | 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=-25.01°C, T out water 56.37°C, Flow rate 1.23m³/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 | 18-09-2022 | 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 | 18-09-2022 | 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 | 18-09-2022 | 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 |



| | k I Test resu | | | | |
|------------------|------------------------------------|--|---|---|------------------|
| Table 12. | Clause 4 of CGK-050V3 | EN 14511-4:2 | 2018 | | Р |
| wodei | CGK-050V3 | L-D | | | |
| Customer Code | Execution Date [dd- mm-yyyy] | Testing item | Standard Reference | Comment | Test Response |
| TEST 1 | 19-09-2022 | 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=-24.92°C, T out water 14.05°C, Flow rate 1.55m³/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 | 19-09-2022 | 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=-24.15°C, T out water 56.89°C, Flow rate 1.53m³/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 | 19-09-2022 | 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 | 19-09-2022 | 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 | 19-09-2022 | 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 level | measurement(Low te | P | |
|-------------------------------|---|--|--|
| CGK-025V3L | | | |
| Product type : | | | Air to Water |
| Outdoor heat exchar | nger, Air temperature D | DB/WB (°C): | 7.0 /6.0 |
| Indoor heat exchang | er, Water inlet/outlet te | emperature (°C): | 30.0 /35.0 |
| Voltage (V): | 400 | | |
| Frequency (Hz): | 50 | | |
| Working condition cl | Class A | | |
| Acoustical environment | | Hemi-anechoic room | |
| Windshield type : | Sponge | | |
| Measured position a | 14 | | |
| Water flow (m³/h): | 1.35 | | |
| ured quantity | L _{WA,indoors} (dB(A)) | L _{WA,outdoors} (dB(A)) | Remark |
| $\overline{L}_{p(ST)}^{****}$ | | 44 | |
| us d * | | 1.0m | |
| level L _{wA} **** | | 58 | |
| | CGK-025V3L Product type: Outdoor heat exchang Voltage (V): Frequency (Hz): Working condition cl Acoustical environm Windshield type: Measured position a Water flow (m³/h): ured quantity ure level \(\overline{L}_{p(ST)}^{****} \) | CGK-025V3L 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 LwA,indoors (dB(A)) ure level Lp(ST)**** us 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 LwA,indoors (dB(A)) LwA,outdoors (dB(A)) ure level Lp(ST)***** 44 us d * 1.0m |

Setting of controls: according to user manual.

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Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer

Fan speed: 450 r/min, compressor speed: 55Hz.



| Table 13b. | Sound power level application) | measurement(Mediu | m temperature | Р | | | |
|---------------|--|---------------------------------|----------------------------------|--------------|--|--|--|
| Model | CGK-025V3L | | | | | | |
| | Product type : | | | Air to Water | | | |
| | Outdoor heat exchar | nger, Air temperature D | DB/WB (°C): | 7.0 /6.0 | | | |
| | Indoor heat exchang | er, Water inlet/outlet te | emperature (°C): | 47.0 /55.0 | | | |
| | Voltage (V): | 400 | | | | | |
| | Frequency (Hz): | 50 | | | | | |
| | Working condition cl | Class A | | | | | |
| | Acoustical environment | Hemi-anechoic room | | | | | |
| | Windshield type : | Sponge | | | | | |
| | Measured position a | 14 | | | | | |
| | Water flow (m³/h): | 0.87 | | | | | |
| Meas | sured quantity | L _{WA,indoors} (dB(A)) | L _{WA,outdoors} (dB(A)) | Remark | | | |
| Sound press | ure level $\overline{L}_{p(ST)}^{****}$ | | 47 | | | | |
| Spheres radi | us d * | | 1.0m | | | | |
| Sound powe | r level L _{wA} **** | | 61 | | | | |
| Sotting of on | ting of controls: according to user manual | | | | | | |

Setting of controls: according to user manual.

Duct connection:--

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Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer

Fan speed: 460 r/min, compressor speed: 55Hz.



| Sound power level | measurement(Low to | Р | |
|-----------------------------------|--|--|---|
| CGK-030V3L-B | | | |
| Product type : | | | Air to Water |
| Outdoor heat exchar | nger, Air temperature D | DB/WB (°C): | 7.0 /6.0 |
| Indoor heat exchang | er, Water inlet/outlet te | emperature (°C): | 30.0 /35.0 |
| Voltage (V): | | 400 | |
| Frequency (Hz): | 50 | | |
| Working condition cla | Class A | | |
| Acoustical environme | Hemi-anechoic room | | |
| Windshield type : | Sponge | | |
| Measured position a | 14 | | |
| Water flow (m³/h): | 1.49 | | |
| ured quantity | L _{WA,indoors} (dB(A)) | L _{WA,outdoors} (dB(A)) | Remark |
| $ \overline{L}_{p(ST)}^{****} $ | | 50 | |
| us d * | | 1.0m | |
| level L _{wA} **** | | 64 | |
| | CGK-030V3L-B Product type: Outdoor heat excharg Indoor heat exchang Voltage (V): Frequency (Hz): Working condition cl Acoustical environme Windshield type: Measured position a Water flow (m³/h): ured quantity ure level \(\overline{L}_{p(ST)}^{****}\) us d * | CGK-030V3L-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 LWA,indoors (dB(A)) ure level Lp(ST)**** us 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 LwA,indoors (dB(A)) LwA,outdoors (dB(A)) Ire level Lp(ST)**** 50 Is d * 1.0m |

Setting of controls: according to user manual.

Duct connection:--

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Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer

Fan speed: 680 r/min, compressor speed: 55Hz.



| Table 14b. | Sound power level measurement(Medium temperature application) | | | Р |
|---|---|---------------------------------|----------------------------------|--------------------|
| 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 |
| | Water flow (m³/h): | ater flow (m³/h): | | 0.90 |
| Measured quantity | | L _{WA,indoors} (dB(A)) | L _{WA,outdoors} (dB(A)) | Remark |
| Sound pressure level $\bar{L}_{p(ST)}^{****}$ | | | 50 | |
| Spheres radius 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

Fan speed: 630 r/min, compressor speed: 55Hz.

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| Sound power level | measurement(Low to | emperature application) | Р |
|-----------------------------------|--|--|---|
| CGK-040V3L | | | |
| Product type : | | | Air to Water |
| Outdoor heat exchar | nger, Air temperature D | DB/WB (°C): | 7.0 /6.0 |
| Indoor heat exchang | er, Water inlet/outlet te | emperature (°C): | 30.0 /35.0 |
| Voltage (V): | | | 400 |
| Frequency (Hz): | | | 50 |
| Working condition class : | | | Class A |
| | | | Hemi-anechoic room |
| Windshield type : Sp | | | Sponge |
| Measured position amount : 14 | | 14 | |
| Water flow (m³/h): | | | 2.13 |
| ured quantity | L _{WA,indoors} (dB(A)) | L _{WA,outdoors} (dB(A)) | Remark |
| $ \overline{L}_{p(ST)}^{****} $ | | 48 | |
| us d * | | 1.0m | |
| level L _{wA} **** | | 63 | |
| | CGK-040V3L Product type: Outdoor heat exchang Voltage (V): Frequency (Hz): Working condition cl Acoustical environment Windshield type: Measured position a Water flow (m³/h): ured quantity ure level \(\overline{L}_{p(ST)}^{****} \) | CGK-040V3L 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 LwA,indoors (dB(A)) ure level Lp(ST)**** us 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 LwA,indoors (dB(A)) LwA,outdoors (dB(A)) Jure level Lp(ST)***** 48 Just d * 1.0m |

Setting of controls: according to user manual.

Duct connection:--

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Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer

Fan speed: 460 r/min, compressor speed: 45Hz.

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| Table 15b. | Sound power level measurement(Medium temperature application) | | | | |
|--|---|---------------------------------|----------------------------------|--------------|--|
| Model | CGK-040V3L | | | | |
| | Product type : | | | Air to Water | |
| | Outdoor heat exchai | nger, Air temperature D | DB/WB (°C): | 7.0 /6.0 | |
| | Indoor heat exchang | er, Water inlet/outlet te | emperature (°C): | 47.0 /55.0 | |
| | Voltage (V): | | | 400 | |
| | Frequency (Hz): | | | 50 | |
| | Working condition cl | ass: | | Class A | |
| | Acoustical environm | Acoustical environment : | | | |
| | Windshield type : | Vindshield type : | | | |
| | Measured position a | mount : | | 14 | |
| | Water flow (m³/h): | | | 1.36 | |
| Meas | ured quantity | L _{WA,indoors} (dB(A)) | L _{WA,outdoors} (dB(A)) | Remark | |
| Sound pressure level $\overline{L}_{p(ST)}^{****}$ | | | 52 | | |
| Spheres radius d * | | | 1.0m | | |
| Sound power level L _{wA} **** | | | 67 | | |
| | otrole: appording to upo | a manual | <u> </u> | | |

Setting of controls: according to user manual.

Duct connection:--

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Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ***) nearest integer

Fan speed: 680 r/min, compressor speed: 45Hz.



| Sound power level | measurement(Low to | emperature application) | Р |
|-----------------------------------|---|--|---|
| CGK-050V3L-B | | | |
| Product type : | | | Air to Water |
| Outdoor heat exchar | nger, Air temperature D | DB/WB (°C): | 7.0 /6.0 |
| Indoor heat exchang | er, Water inlet/outlet te | emperature (°C): | 30.0 /35.0 |
| Voltage (V): | | | 400 |
| Frequency (Hz): | | | 50 |
| Working condition class : Clas | | | Class A |
| | | | Hemi-anechoic room |
| Windshield type : Spo | | | Sponge |
| Measured position amount : 14 | | 14 | |
| Water flow (m³/h): | | | 2.62 |
| ured quantity | L _{WA,indoors} (dB(A)) | L _{WA,outdoors} (dB(A)) | Remark |
| $ \overline{L}_{p(ST)}^{****} $ | | 48 | |
| us d * | | 1.0m | |
| level L _{wA} **** | | 63 | |
| | CGK-050V3L-B Product type: Outdoor heat exchang Voltage (V): Frequency (Hz): Working condition cl Acoustical environment Windshield type: Measured position a Water flow (m³/h): ured quantity ure level \(\overline{L}_{p(ST)}^{****}\) us d * | CGK-050V3L-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 LwA,indoors (dB(A)) ure level Lp(ST)**** us 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 LwA,indoors (dB(A)) LwA,outdoors (dB(A)) Jure level Lp(ST)***** 48 Just d * 1.0m |

Setting of controls: according to user manual.

Duct connection:--

Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer

Fan speed: 560 r/min, compressor speed: 55Hz.

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| Table 16b. | Sound power level measurement(Medium temperature application) | | | P | |
|--|---|---------------------------------|----------------------------------|--------------|--|
| Model CGK-050V3L-B | | | | L | |
| | Product type : | | | Air to Water | |
| | Outdoor heat exchar | nger, Air temperature D | DB/WB (°C): | 7.0 /6.0 | |
| | Indoor heat exchang | er, Water inlet/outlet te | emperature (°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 | | |
| | Water flow (m³/h): | | | 1.70 | |
| Meas | sured quantity | L _{WA,indoors} (dB(A)) | L _{WA,outdoors} (dB(A)) | Remark | |
| Sound pressure level $\overline{L}_{p(ST)}^{****}$ | | | 53 | | |
| Spheres radius d * | | | 1.0m | | |
| Sound power level L _{wA} **** | | | 68 | | |
| Cotting of on | ntrole: according to use | <u> </u> | | | |

Setting of controls: according to user manual.

Duct connection:--

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Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ***) nearest integer

Fan speed: 650 r/min, compressor speed: 55Hz.



Nameplate

Model: CGK-025V3L









| EVI DC Inverter Al | r Source Heat Pumps |
|-------------------------------|---------------------|
| Model | CGK-025V3L |
| Power Supply | 380-420V, 3N~/50Hz |
| *Heating Capacity Min./Max. | 4.37/9.5kW |
| *Heating Input Power Min /May | 0.76/2.07k/M |

Powe ~/50Hz *Heat /9.5kW 0.76/2.07kW *Heating Input Power Min./Max. *Heating COP Min./Max. 4.59/5.75W/W Cooling Capacity Min./Max. 2.85/6.2kW Cooling Input Power Min./Max. 0.76/2.4kW Rated. Input Power/Current 3kW/6.3A Max. Water Outlet Temperature 55°C Water Flow 1.6m³/h Refrigerant/Weight R32/1500g 1.5/4.4MPa Low/High side operation pressure Maximum allowable pressure 4.4MPa Max Water Pressure 1.0MPa Shock Proof Grade Ι WaterProof Level IPX4 18kPa Water Pressure Drop Water Pipe Connection 1 inch 80kg Net Weight 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.

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No. 15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng, Guangzhou, China



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Nameplate

Model: CGK-030V3L-B





| EVI DC Inverter A | ir 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℃ |
| Water Flow | 2m³/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 |

System CO2 equivalent charge weight: 1.15 ton

*Heating working condition:

Net Weight

Date/NO.

Dry bulb temperature 7°C, Wet bulb temperature 6°C, Inlet water temperature 30°C, Outlet water temperature 35°C.

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No. 15 Tangxi Road, Yinsha Industrial Park, Xintang, Zengcheng, Guangzhou, China



88ka

See bar code



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. | 4.70/5.89W/W |
| Cooling Capacity Min./Max. | 4.8/10.44kW |
| Cooling Input Power Min./Max. | 1.25/3.93kW |
| Rated. Input Power/Current | 4.9kW/10.4A |
| Max. Water Outlet Temperature | 55℃ |
| 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 | 98kg |
| Date/NO. | See bar code |
| System CO2 equivalent s | hargo waight: 1 2E top |

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.

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Nameplate

Model: CGK-050V3L-B









| EVI DC Inverter Ai | r 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℃ |
| Water Flow | 3.4m³/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 |

*Heating working condition:

Dry bulb temperature 7°C, Wet bulb temperature 6°C, Inlet water temperature 30°C, Outlet water temperature 35°C.

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System CO2 equivalent charge weight: 1.89 ton

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| Details of: Overall view for CGK-025V3L |
|---|
| View: General |

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| Details of: | Fan Motor for CGK-025V3L |
|---|---|
| View: General Front Rear Right Left Top Bottom | WOLONG 空间用天朝直接电动机 ZWB278D04A(1821300) DC310V 重侧形成 P60HS P920r/min M 目 (同) WC P61710x IP24 E级 型 型 WOLONG ELECTRIC GROUP COLTD. |

| Details of: | Main Control Board for CGK-025V3L |
|---|-----------------------------------|
| View: General Front Rear Right Left Top Bottom | |

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| Details of: | Overall view for CGK-030V3L-B | | |
|-------------|-------------------------------|--|--|
| View: | | | |
| ☐ General | | | |
| Front | 30 | | |
| Rear | | | |
| Right | | | |
| Left | | | |
| Тор | | | |
| Bottom | | | |
| | | | |
| | | | |



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| Details of: | Fan Motor for CGK-030V3L-B |
|-------------|--|
| View: | |
| ☐ General | 直流无刷电动机 Vin 红 0 LD-004DC116-1 |
| Front | SIC-82FX-F1116-1 Vsp # 0 M |
| ☐ Rear | DC310V 8P 116W YCC 日 PG 重 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 |
| Right | G C 1MI15. |
| ☐ Left | Nider 日本电产芝浦(浙江)有限公司 特 → |
| Тор | A STATE OF THE PARTY OF THE PAR |
| ☐ Bottom | |
| | |
| | |

| View: General Front | Details of: | Main Control Board for CGK-030V3L-B | | |
|--|--|-------------------------------------|--|--|
| □ Rear □ Right □ Left □ Top □ Bottom | View: General Front Rear Right Left Top | | | |

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| Details of: | Overall view for CGK-040V3L | | | |
|---|-----------------------------|--|--|--|
| View: General Front Rear Right Left Top Bottom | | | | |

| Details of: | Compressor for CGK-040V3L |
|-------------|---|
| View: | |
| ☐ General | Panasonic 9VD420ZAA2J COMPRESSOR |
| ☐ Front | SERVIUM ZROV — M32 |
| Rear | WARNING DANGER |
| Right | Uanger of Electric Shock Earth the equipment. Disconnect power before work lace |
| ☐ Left | *Rear protective goggles. Let out the gas before brazing Do not compress air into ref & o's |
| □ Тор | PROD. YEAR: 2022 VOLUME: 3,13L |
| ☐ Bottom | 2hongCun, Pany Appliances Compressor (Guangzhou) Co. 1 China Aus Change Compressor (Guangzhou) Co. 1 China |
| | Authorized Representative in EU Panasonic Marketing Europe GmbH Winsbergring 15.22525 Hamburg, Germany |
| | 15, 22525 Hamburg, us. |

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| Details of: | Fan Motor for CGK-040V3L |
|---|---|
| View: General Front Rear Right Left Top Bottom | WOLONG 空调用无刷直流电动机 Air Conditioner BLDC Motor ZMB378D98A DC310V ⑥ 150N 8P 900r/min |

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| Details of: | Compressor for CGK-050V3L-B | | |
|-------------|--|--|--|
| View: | Donoconio | | |
| ☐ General | Panasonic 9VD420ZAA2J C € 0035 @ | | |
| Front | COMPRESSOR R32 | | |
| Rear | SERIAL NO. V42AU FOOO4942 Panasonic Corporation Made in China 7975144 | | |
| Right | ⚠ WARNING/DANGER | | |
| Left | Danger of Electric Shock • Earth the equipment. | | |
| □ Тор | • Disconnect power before work. • Mount the terminal cover in place. | | |
| ☐ Bottom | Danger of Explosion or Fire • Wear protective goggles. • Let out the gas before brazing. • Do not compress air into ref. cycle. • Do not use unprescribed ref. & oils. Caution, Hot Surface • Do not touch with hare hands | | |

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| Details of: | Fan Motor for CGK-050V3L-B | | |
|-------------|-------------------------------|--|--|
| View: | | | |
| ☐ General | 直流无刷电动机 Vin 红 C LD-004DC116-1 | | |
| Front | SIC-82FX-F1116-1 Vsp 集 | | |
| Rear | 900r/min E級 | | |
| Right | G C 1MI15. | | |
| Left | Aider 日本电产芝蒲(浙江)有限公司 特向→ | | |
| □ Тор | | | |
| Bottom | | | |
| | | | |
| | | | |

| Details of: | Main Control Board for CGK-050V3L-B | | |
|--|-------------------------------------|--|--|
| View: General Front Rear Right Left | Main Control Board for CGK-050V3L-B | | |
| □ Тор | | | |
| ☐ Bottom | | | |
| | | | |
| | | | |

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| 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: | East -Alliance Thermal Equipment |
| | Type: | EATB61-D-22-2M-2L |
| | Heat exchanger: | Plate heat exchanger |
| | Dimension (mm): | 539(L)mmX125(H)mmX64(D)mm |
| 3. Evaporator | | |
| | Manufacture: | Guangzhou Aotai Refrigeration EquipmentCo.,Ltd. |
| | Type: | 03KA-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: | UP3CON0S00 |
| | Specification: | 380-420V; 50Hz |





| Model: CGK-030V3L- | Model: CGK-030V3L-B | | | | | | |
|-----------------------|---------------------|---|--|--|--|--|--|
| 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 Manfactur 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. | | | | | |
| | Туре: | SIC-82FX-F1116-1 | | | | | |
| | Fan type: | 3 blade | | | | | |
| | Specification: | DC310V; 116W | | | | | |
| 5. Main control board | | | | | | | |
| | Manufacture: | CHICO | | | | | |
| | Туре: | CG248075 | | | | | |
| | Specification: | 380-420V; 50Hz | | | | | |





| Model: CGK-040V3L | | | | | | |
|-----------------------|-----------------|---|--|--|--|--|
| 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: | East -Alliance Thermal Equipment | | | | |
| | Type: | EATB61-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)mmX910(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: | UP3CON0S00 | | | | |
| | Specification: | 380-420V; 50Hz | | | | |





| Model: CGK-050V3L- | Model: CGK-050V3L-B | | | | | | |
|-----------------------|---------------------|---|--|--|--|--|--|
| 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 | | | | | |
| | Туре: | CG248075 | | | | | |
| | Specification: | 380-420V; 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 | _ | _ |

-- End of Report --



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