

## Technical Report No.: 64.181.22.04504.01 Rev.00

Date: 2023-04-14

|                         |                                                                                                              |                                                                                    |
|-------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Client:                 | Report holder's name: Guangzhou Green Power Technology Co., Ltd                                              |                                                                                    |
|                         | Report holder's Address:                                                                                     | Building B2, No. 79, Jingquan 3rd Road, Huangpu District, 511356, Guangzhou, China |
|                         | Contact person of applicant:                                                                                 | Mr. Jiang Tianbao                                                                  |
|                         | Manufacturer's name: Guangzhou Green Power Technology Co., Ltd                                               |                                                                                    |
|                         | Manufacturer's address:                                                                                      | Building B2, No. 79, Jingquan 3rd Road, Huangpu District, 511356, Guangzhou, China |
| Factory:                | Factory's name: Guangzhou Green Power Technology Co., Ltd                                                    |                                                                                    |
|                         | Factory's address:                                                                                           | Building B2, No. 79, Jingquan 3rd Road, Huangpu District, 511356, Guangzhou, China |
| Test object:            | Product:                                                                                                     | Heat Pump<br>(DC Inverter heat pump)                                               |
|                         | Model:                                                                                                       | Master plus 120-TRI; Master plus 160-TRI                                           |
|                         | Trade name:                                                                                                  | --                                                                                 |
| Test specification:     | <input checked="" type="checkbox"/>                                                                          | EN 14825:2022                                                                      |
|                         | <input checked="" type="checkbox"/>                                                                          | EN 14511-3:2022                                                                    |
| Purpose of examination: | Test according to the test specification                                                                     |                                                                                    |
|                         | <input checked="" type="checkbox"/>                                                                          | (EU) No 813/2013                                                                   |
|                         | <input checked="" type="checkbox"/>                                                                          | 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.

## 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 :                       | Master plus 120-TRI; Master plus 160-TRI                                                                                                                        |
| Rated Voltage (V) :           | 380-415V, 3N~                                                                                                                                                   |
| Rated Frequency (Hz) :        | 50                                                                                                                                                              |
| Rated Power (W) :             | 4700W for Master plus 120-TRI;<br>6500W for Master plus 160-TRI                                                                                                 |
| Rated Current (A) :           | 8.4A for Master plus 120-TRI;<br>11.6A for Master plus 160-TRI                                                                                                  |
| Protection Class :            | Class I                                                                                                                                                         |
| Protection Against Moisture : | IP X4                                                                                                                                                           |
| Construction :                | Stationary                                                                                                                                                      |
| Supply connection :           | <input type="checkbox"/> Non detachable cord<br><input checked="" type="checkbox"/> Permanent connection to fixed wiring                                        |
| Operation mode:               | <input checked="" type="checkbox"/> Continuous operation;<br><input type="checkbox"/> Intermittent operation;<br><input type="checkbox"/> Short time operation; |
| Refrigerant/charge (kg) :     | R290 / 1.40kg for Master plus 120-TRI;<br>1.70kg for Master plus 160-TRI                                                                                        |
| Declared parameters :         | <input checked="" type="checkbox"/> Average <input type="checkbox"/> Warmer <input type="checkbox"/> Colder                                                     |
| Sound power level dB(A) :     | N/A                                                                                                                                                             |
| Series No :                   | GPMASERPLUS120T230217055 for Master<br>plus 120-TRI;<br>GPMASERPLUS160T230218052 for Master<br>plus 160-TRI                                                     |

## 2 Order

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

2022-12-07 ,  
Guangzhou Green Power Technology Co., Ltd

### 2.2 Test Sample(s)

- Reception date(s): 2022-12-07
- Location(s) of reception:  
For Energy test:  
Guangzhou Customs District Technology Center  
Address: No.3, Desheng East Road, Shunde, Daliang, Foshan, Guangdong, China
- Condition of test sample(s): completed and can be normal operation

### 2.3 Date(s) of Testing

2022-12-15 to 2023-01-10

### 2.4 Location(s) of Testing

Same as 2.2

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

N/A

## 3 Test Results

### 3.1 Positive Test Results

See Appendix I

## 4 Remark

N/A

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

## 5 Documentation

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

## 6 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 14825:2022.

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

Tested by: William Liang, Project Handler

*printed name, function & signature*

Approved by: Plum Li, Designated Reviewer

*printed name, function & signature*



# Appendix I Test results

Appendix 1 Test results

|                                                                                                                                                                                                   |                                            |                    |                                     |                 |                                     |                                      |                          |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------|-------------------------------------|-----------------|-------------------------------------|--------------------------------------|--------------------------|--------|
| Table 1.                                                                                                                                                                                          | Heating mode(Low temperature application): |                    |                                     |                 |                                     |                                      | P                        |        |
| Model                                                                                                                                                                                             | Master plus 120-TRI                        |                    |                                     |                 |                                     |                                      |                          |        |
| 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<br>in %                    |                    |                                     |                 | Outdoor heat exchanger              | Indoor heat exchanger                |                          |        |
|                                                                                                                                                                                                   | Formula                                    | A                  | W                                   |                 | Inlet dry (wet) bulb temperature °C | Inlet/outlet water temperatures (°C) |                          |        |
| A                                                                                                                                                                                                 | $(-7-16)/(T_{designh}-16)$                 | 88                 | N/A                                 | N/A             | -7(-8)                              | a / 34                               |                          |        |
| B                                                                                                                                                                                                 | $(+2-16)/(T_{designh}-16)$                 | 54                 | N/A                                 | N/A             | 2(1)                                | a / 30                               |                          |        |
| C                                                                                                                                                                                                 | $(+7-16)/(T_{designh}-16)$                 | 35                 | N/A                                 | N/A             | 7(6)                                | a / 27                               |                          |        |
| D                                                                                                                                                                                                 | $(+12-16)/(T_{designh}-16)$                | 15                 | N/A                                 | N/A             | 12(11)                              | a / 24                               |                          |        |
| E                                                                                                                                                                                                 | $(TOL-16)/(T_{designh}-16)$                |                    |                                     |                 | TOL                                 | a / 35.3                             |                          |        |
| F                                                                                                                                                                                                 | $(T_{bivalent}-16)/(T_{designh}-16)$       |                    |                                     |                 | Tbiv                                | a / 34                               |                          |        |
| G                                                                                                                                                                                                 | $(-15-16)/(T_{designh}-16)$                | N/A                | N/A                                 | N/A             | -15                                 | N/A                                  |                          |        |
| Remark: a) With the water flow rate as determined at the standard rating conditions given in EN14511-2 at 30/35 conditions, the capacity is 12.188kW, the power is 2.610kW, the COP is 4.67kW/kW. |                                            |                    |                                     |                 |                                     |                                      |                          |        |
| 2.Tested data/correction data(Average):                                                                                                                                                           |                                            |                    |                                     |                 |                                     |                                      |                          |        |
| General test conditions/<br>Part-Load                                                                                                                                                             | Unit                                       | A(-7)/W34<br>(88%) | A2/W30<br>(54%)                     | A7/W27<br>(35%) | A12/W24<br>(15%)                    | A(-10)/W35.3<br>(100%)               | A(-7)/W34<br>(88%)       |        |
|                                                                                                                                                                                                   | --                                         | A                  | B                                   | C               | D                                   | E                                    | F                        |        |
| Data collection period                                                                                                                                                                            | hh: min:sec                                | 1:10:00            | 1:10:00                             | 1:10:00         | 1:10:00                             | 1:10:00                              | 1:10:00                  |        |
| The heat pump defrosts                                                                                                                                                                            | --                                         | No                 | No                                  | No              | No                                  | No                                   | No                       |        |
| Complete Cycles                                                                                                                                                                                   | --                                         | 0                  | 0                                   | 0               | 0                                   | 0                                    | 0                        |        |
| Barometric pressure                                                                                                                                                                               | kPa                                        | 101.02             | 101.01                              | 101.01          | 101.02                              | 101.01                               | 101.02                   |        |
| Voltage                                                                                                                                                                                           | V                                          | 398.5              | 399.1                               | 399.2           | 399.2                               | 398.3                                | 398.5                    |        |
| Current input of the unit                                                                                                                                                                         | A                                          | 6.15               | 2.52                                | 1.35            | 1.18                                | 6.39                                 | 6.15                     |        |
| Power input of the unit                                                                                                                                                                           | kW                                         | 3.720              | 1.377                               | 0.701           | 0.600                               | 3.881                                | 3.720                    |        |
| Test conditions indoor unit                                                                                                                                                                       |                                            |                    |                                     |                 |                                     |                                      |                          |        |
| Inlet Water temperature, DB                                                                                                                                                                       | °C                                         | 29.73              | 27.35                               | 25.13           | 23.35                               | 31.11                                | 29.73                    |        |
| Outlet Water temperature, DB                                                                                                                                                                      | °C                                         | 33.88              | 29.98                               | 27.60           | 25.47                               | 35.24                                | 33.88                    |        |

Doc No.: ITC-TTW0902.02E – Rev. 11

## Appendix I Test results

|                                                    |           |                   |                          |       |       |                  |       |
|----------------------------------------------------|-----------|-------------------|--------------------------|-------|-------|------------------|-------|
| Test conditions <b>outdoor unit</b>                |           |                   |                          |       |       |                  |       |
| Air <b>inlet</b> temperature, DB                   | °C        | -7.00             | 2.03                     | 7.00  | 12.00 | -10.00           | -7.00 |
| Air <b>inlet</b> temperature, WB                   | °C        | -8.00             | 1.01                     | 6.00  | 11.00 | -11.00           | -8.00 |
| Summary of the results                             |           |                   |                          |       |       |                  |       |
| Total heating capacity                             | kW        | 9.942             | 6.133                    | 4.440 | 5.090 | 9.887            | 9.942 |
| Effective power input                              | kW        | 3.665             | 1.322                    | 0.646 | 0.545 | 3.827            | 3.665 |
| Coefficient of performance (COP)                   | --        | 2.71              | 4.64                     | 6.87  | 9.34  | 2.58             | 2.71  |
| Compressor frequency                               | Hz        | 90                | 36                       | 20    | 20    | 90               | 90    |
| Water flow                                         | m³/h      | 2.08              | 2.08                     | 2.08  | 2.08  | 2.08             | 2.08  |
| Remark: -                                          |           |                   |                          |       |       |                  |       |
| <b>3.Calculation/conclusion for SCOP(Average):</b> |           |                   |                          |       |       |                  |       |
| Tdesignh(°C)                                       | -10       | Tbiv(°C)          |                          | -7    |       |                  |       |
| Pdesignh(kW)                                       | 11.239    | TOL(°C)           |                          | -10   |       |                  |       |
| <b>Test result A, B, C, D, E, F conditions:</b>    |           |                   |                          |       |       |                  |       |
| Condition                                          | Part load | Measured capacity | COP at measured capacity | Cdh   | CR    | COP at part load |       |
| E                                                  | 11.239    | 9.887             | 2.58                     | 0.90  | 1.00  | 2.58             |       |
| F                                                  | 9.942     | 9.942             | 2.71                     | 0.90  | 1.00  | 2.71             |       |
| A                                                  | 9.942     | 9.942             | 2.71                     | 0.90  | 1.00  | 2.71             |       |
| B                                                  | 6.052     | 6.133             | 4.64                     | 0.90  | 0.99  | 4.64             |       |
| C                                                  | 3.890     | 4.440             | 6.87                     | 0.90  | 0.88  | 6.77             |       |
| D                                                  | 1.729     | 5.090             | 9.34                     | 0.90  | 0.34  | 7.82             |       |
| CR: part load divided by capacity;                 |           |                   |                          |       |       |                  |       |

Doc No.: ITC-TTW0902.02E – Rev.11

## Appendix I Test results

| Electric power consumptions      | Unit | Value |
|----------------------------------|------|-------|
| Thermostat-off mode [ $P_{TO}$ ] | kW   | 0.032 |
| Standby mode [ $P_{SB}$ ]        | kW   | 0.016 |
| Crankcase heater [ $P_{CK}$ ]    | kW   | 0.044 |
| Off mode [ $P_{OFF}$ ]           | kW   | 0.016 |

| Conclusions:                                                                           | Unit     | Value |
|----------------------------------------------------------------------------------------|----------|-------|
| SCOP <sub>on</sub> :                                                                   | kWh/kWh  | 4.78  |
| SCOP:                                                                                  | kWh/kWh  | 4.77  |
| $Q_H$ :                                                                                | kWh/year | 23219 |
| $Q_{HE}$ :                                                                             | kWh/year | 4872  |
| $\eta_{s,h}$                                                                           | %        | 187.6 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2) | --       | A+++  |

# Appendix I Test results

Appendix 1 Test results

|                                                                                                                                                                                                   |                                               |                    |                                     |                 |                                     |                                      |                          |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------|-------------------------------------|-----------------|-------------------------------------|--------------------------------------|--------------------------|--------|
| Table 2.                                                                                                                                                                                          | Heating mode(Medium temperature application): |                    |                                     |                 |                                     |                                      | P                        |        |
| Model                                                                                                                                                                                             | Master plus 120-TRI                           |                    |                                     |                 |                                     |                                      |                          |        |
| 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<br>in %                       |                    |                                     |                 | Outdoor heat exchanger              | Indoor heat exchanger                |                          |        |
|                                                                                                                                                                                                   | Formula                                       | A                  | W                                   | C               | Inlet dry (wet) bulb temperature °C | Inlet/outlet water temperatures (°C) |                          |        |
| A                                                                                                                                                                                                 | $(-7-16)/(T_{designh}-16)$                    | 88                 | N/A                                 | N/A             | -7(-8)                              | a / 52                               |                          |        |
| B                                                                                                                                                                                                 | $(+2-16)/(T_{designh}-16)$                    | 54                 | N/A                                 | N/A             | 2(1)                                | a / 42                               |                          |        |
| C                                                                                                                                                                                                 | $(+7-16)/(T_{designh}-16)$                    | 35                 | N/A                                 | N/A             | 7(6)                                | a / 36                               |                          |        |
| D                                                                                                                                                                                                 | $(+12-16)/(T_{designh}-16)$                   | 15                 | N/A                                 | N/A             | 12(11)                              | a / 30                               |                          |        |
| E                                                                                                                                                                                                 | $(TOL-16)/(T_{designh}-16)$                   |                    |                                     |                 | TOL                                 | a / 55.3                             |                          |        |
| F                                                                                                                                                                                                 | $(T_{bivalent}-16)/(T_{designh}-16)$          |                    |                                     |                 | Tbiv                                | a / 52                               |                          |        |
| G                                                                                                                                                                                                 | $(-15-16)/(T_{designh}-16)$                   | N/A                | N/A                                 | N/A             | -15                                 | N/A                                  |                          |        |
| Remark: a) With the water flow rate as determined at the standard rating conditions given in EN14511-2 at 47/55 conditions, the capacity is 12.204kW, the power is 4.033kW, the COP is 3.03kW/kW. |                                               |                    |                                     |                 |                                     |                                      |                          |        |
| 2.Tested data/correction data(Average):                                                                                                                                                           |                                               |                    |                                     |                 |                                     |                                      |                          |        |
| General test conditions/<br>Part-Load                                                                                                                                                             | Unit                                          | A(-7)/W52<br>(88%) | A2/W42<br>(54%)                     | A7/W36<br>(35%) | A12/W30<br>(15%)                    | A(-10)/W55.3<br>(100%)               | A(-7)/W52<br>(88%)       |        |
|                                                                                                                                                                                                   | --                                            | A                  | B                                   | C               | D                                   | E                                    | F                        |        |
| Data collection period                                                                                                                                                                            | hh: min:sec                                   | 1:10:00            | 1:10:00                             | 1:10:00         | 1:10:00                             | 1:10:00                              | 1:10:00                  |        |
| The heat pump defrosts                                                                                                                                                                            | --                                            | No                 | No                                  | No              | No                                  | No                                   | No                       |        |
| Complete Cycles                                                                                                                                                                                   | --                                            | 0                  | 0                                   | 0               | 0                                   | 0                                    | 0                        |        |
| Barometric pressure                                                                                                                                                                               | kPa                                           | 99.85              | 99.85                               | 99.85           | 99.80                               | 99.75                                | 99.85                    |        |
| Voltage                                                                                                                                                                                           | V                                             | 398.4              | 398.9                               | 399.1           | 399.3                               | 398.1                                | 398.4                    |        |
| Current input of the unit                                                                                                                                                                         | A                                             | 6.93               | 3.06                                | 1.58            | 1.37                                | 7.60                                 | 6.93                     |        |
| Power input of the unit                                                                                                                                                                           | kW                                            | 4.494              | 1.694                               | 0.830           | 0.709                               | 4.710                                | 4.494                    |        |
| Test conditions indoor unit                                                                                                                                                                       |                                               |                    |                                     |                 |                                     |                                      |                          |        |
| Inlet Water temperature, DB                                                                                                                                                                       | °C                                            | 45.51              | 37.96                               | 33.94           | 28.93                               | 49.07                                | 45.51                    |        |
| Outlet Water temperature, DB                                                                                                                                                                      | °C                                            | 52.00              | 41.95                               | 36.30           | 32.04                               | 55.28                                | 52.00                    |        |

Doc No.: ITC-TTW0902.02E – Rev.11

### Appendix I Test results

|                                                    |           |                   |                          |       |       |                  |       |
|----------------------------------------------------|-----------|-------------------|--------------------------|-------|-------|------------------|-------|
| Test conditions <b>outdoor unit</b>                |           |                   |                          |       |       |                  |       |
| Air <b>inlet</b> temperature, DB                   | °C        | -6.98             | 2.03                     | 7.01  | 11.97 | -9.97            | -6.98 |
| Air <b>inlet</b> temperature, WB                   | °C        | -7.99             | 1.00                     | 6.00  | 11.00 | -10.97           | -7.99 |
| Summary of the results                             |           |                   |                          |       |       |                  |       |
| Total heating capacity                             | kW        | 9.878             | 6.053                    | 4.072 | 4.731 | 9.383            | 9.878 |
| Effective power input                              | kW        | 4.462             | 1.661                    | 0.797 | 0.676 | 4.678            | 4.462 |
| Coefficient of performance (COP)                   | --        | 2.21              | 3.64                     | 5.11  | 7.00  | 2.01             | 2.21  |
| Compressor frequency                               | Hz        | 84                | 37                       | 20    | 20    | 91               | 84    |
| Water flow                                         | m³/h      | 1.32              | 1.32                     | 1.32  | 1.32  | 1.32             | 1.32  |
| Remark: -                                          |           |                   |                          |       |       |                  |       |
| <b>3.Calculation/conclusion for SCOP(Average):</b> |           |                   |                          |       |       |                  |       |
| Tdesignh(°C)                                       | -10       | Tbiv(°C)          |                          | -7    |       |                  |       |
| Pdesignh(kW )                                      | 11.166    | TOL(°C)           |                          | -10   |       |                  |       |
| <b>Test result A, B, C, D, E, F conditions:</b>    |           |                   |                          |       |       |                  |       |
| Condition                                          | Part load | Measured capacity | COP at measured capacity | Cdh   | CR    | COP at part load |       |
| E                                                  | 11.166    | 9.383             | 2.01                     | 0.90  | 1.00  | 2.01             |       |
| F                                                  | 9.878     | 9.878             | 2.21                     | 0.90  | 1.00  | 2.21             |       |
| A                                                  | 9.878     | 9.878             | 2.21                     | 0.90  | 1.00  | 2.21             |       |
| B                                                  | 6.013     | 6.053             | 3.64                     | 0.90  | 0.99  | 3.64             |       |
| C                                                  | 3.865     | 4.072             | 5.11                     | 0.90  | 0.95  | 5.11             |       |
| D                                                  | 1.718     | 4.731             | 7.00                     | 0.90  | 0.36  | 5.95             |       |
| CR: part load divided by capacity;                 |           |                   |                          |       |       |                  |       |

Doc No.: ITC-TTW0902.02E – Rev. 11

## Appendix I Test results

| Electric power consumptions      | Unit | Value |
|----------------------------------|------|-------|
| Thermostat-off mode [ $P_{TO}$ ] | kW   | 0.032 |
| Standby mode [ $P_{SB}$ ]        | kW   | 0.016 |
| Crankcase heater [ $P_{CK}$ ]    | kW   | 0.044 |
| Off mode [ $P_{OFF}$ ]           | kW   | 0.016 |

| Conclusions:                                                                           | Unit     | Value |
|----------------------------------------------------------------------------------------|----------|-------|
| SCOP <sub>on</sub> :                                                                   | kWh/kWh  | 3.74  |
| SCOP:                                                                                  | kWh/kWh  | 3.73  |
| $Q_H$ :                                                                                | kWh/year | 23070 |
| $Q_{HE}$ :                                                                             | kWh/year | 6183  |
| $\eta_{s,h}$                                                                           | %        | 146.2 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1) | --       | A++   |

# Appendix I Test results

Appendix 1 Test results

|                                                                                                                                                                                                   |                                            |                    |                                     |                 |                                     |                                      |                          |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------|-------------------------------------|-----------------|-------------------------------------|--------------------------------------|--------------------------|--------|
| Table 3.                                                                                                                                                                                          | Heating mode(Low temperature application): |                    |                                     |                 |                                     |                                      | P                        |        |
| Model                                                                                                                                                                                             | Master plus 160-TRI                        |                    |                                     |                 |                                     |                                      |                          |        |
| 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<br>in %                    |                    |                                     |                 | Outdoor heat exchanger              | Indoor heat exchanger                |                          |        |
|                                                                                                                                                                                                   | Formula                                    | A                  | W                                   |                 | Inlet dry (wet) bulb temperature °C | Inlet/outlet water temperatures (°C) |                          |        |
| A                                                                                                                                                                                                 | $(-7-16)/(T_{designh}-16)$                 | 88                 | N/A                                 | N/A             | -7(-8)                              | a / 34                               |                          |        |
| B                                                                                                                                                                                                 | $(+2-16)/(T_{designh}-16)$                 | 54                 | N/A                                 | N/A             | 2(1)                                | a / 30                               |                          |        |
| C                                                                                                                                                                                                 | $(+7-16)/(T_{designh}-16)$                 | 35                 | N/A                                 | N/A             | 7(6)                                | a / 27                               |                          |        |
| D                                                                                                                                                                                                 | $(+12-16)/(T_{designh}-16)$                | 15                 | N/A                                 | N/A             | 12(11)                              | a / 24                               |                          |        |
| E                                                                                                                                                                                                 | $(TOL-16)/(T_{designh}-16)$                |                    |                                     |                 | TOL                                 | a / 35.3                             |                          |        |
| F                                                                                                                                                                                                 | $(T_{bivalent}-16)/(T_{designh}-16)$       |                    |                                     |                 | Tbiv                                | a / 34                               |                          |        |
| G                                                                                                                                                                                                 | $(-15-16)/(T_{designh}-16)$                | N/A                | N/A                                 | N/A             | -15                                 | N/A                                  |                          |        |
| Remark: a) With the water flow rate as determined at the standard rating conditions given in EN14511-2 at 30/35 conditions, the capacity is 16.153kW, the power is 3.504kW, the COP is 4.61kW/kW. |                                            |                    |                                     |                 |                                     |                                      |                          |        |
| 2.Tested data/correction data(Average):                                                                                                                                                           |                                            |                    |                                     |                 |                                     |                                      |                          |        |
| General test conditions/<br>Part-Load                                                                                                                                                             | Unit                                       | A(-7)/W34<br>(88%) | A2/W30<br>(54%)                     | A7/W27<br>(35%) | A12/W24<br>(15%)                    | A(-10)/W35.3<br>(100%)               | A(-7)/W34<br>(88%)       |        |
|                                                                                                                                                                                                   | --                                         | A                  | B                                   | C               | D                                   | E                                    | F                        |        |
| Data collection period                                                                                                                                                                            | hh: min:sec                                | 1:10:00            | 1:10:00                             | 1:10:00         | 1:10:00                             | 1:10:00                              | 1:10:00                  |        |
| The heat pump defrosts                                                                                                                                                                            | --                                         | No                 | No                                  | No              | No                                  | No                                   | No                       |        |
| Complete Cycles                                                                                                                                                                                   | --                                         | 0                  | 0                                   | 0               | 0                                   | 0                                    | 0                        |        |
| Barometric pressure                                                                                                                                                                               | kPa                                        | 101.02             | 101.01                              | 101.01          | 101.02                              | 101.01                               | 101.02                   |        |
| Voltage                                                                                                                                                                                           | V                                          | 398.1              | 399.1                               | 399.6           | 399.6                               | 398.0                                | 398.1                    |        |
| Current input of the unit                                                                                                                                                                         | A                                          | 8.04               | 3.44                                | 1.73            | 1.60                                | 8.84                                 | 8.04                     |        |
| Power input of the unit                                                                                                                                                                           | kW                                         | 5.005              | 1.903                               | 0.895           | 0.815                               | 5.551                                | 5.005                    |        |
| Test conditions indoor unit                                                                                                                                                                       |                                            |                    |                                     |                 |                                     |                                      |                          |        |
| Inlet Water temperature, DB                                                                                                                                                                       | °C                                         | 29.61              | 27.34                               | 25.33           | 23.97                               | 31.16                                | 29.61                    |        |
| Outlet Water temperature, DB                                                                                                                                                                      | °C                                         | 34.02              | 30.04                               | 27.23           | 26.04                               | 35.25                                | 34.02                    |        |

Doc No.: ITC-TTW0902.02E – Rev.11

## Appendix I Test results

|                                             |           |                   |                          |       |       |                  |        |
|---------------------------------------------|-----------|-------------------|--------------------------|-------|-------|------------------|--------|
| Test conditions outdoor unit                |           |                   |                          |       |       |                  |        |
| Air inlet temperature, DB                   | °C        | -6.99             | 2.02                     | 7.01  | 12.01 | -9.98            | -6.99  |
| Air inlet temperature, WB                   | °C        | -7.99             | 1.00                     | 6.00  | 11.01 | -10.98           | -7.99  |
| Summary of the results                      |           |                   |                          |       |       |                  |        |
| Total heating capacity                      | kW        | 14.134            | 8.702                    | 5.763 | 6.622 | 13.060           | 14.134 |
| Effective power input                       | kW        | 4.970             | 1.869                    | 0.860 | 0.781 | 5.516            | 4.970  |
| Coefficient of performance (COP)            | --        | 2.84              | 4.66                     | 6.70  | 8.48  | 2.37             | 2.84   |
| Compressor frequency                        | Hz        | 86                | 37                       | 20    | 20    | 95               | 86     |
| Water flow                                  | m³/h      | 2.78              | 2.78                     | 2.78  | 2.78  | 2.78             | 2.78   |
| Remark: -                                   |           |                   |                          |       |       |                  |        |
| 3.Calculation/conclusion for SCOP(Average): |           |                   |                          |       |       |                  |        |
| Tdesignh(°C)                                | -10       | Tbiv(°C)          |                          | -7    |       |                  |        |
| Pdesignh(kW )                               | 15.977    | TOL(°C)           |                          | -10   |       |                  |        |
| Test result A, B, C, D, E, F conditions:    |           |                   |                          |       |       |                  |        |
| Condition                                   | Part load | Measured capacity | COP at measured capacity | Cdh   | CR    | COP at part load |        |
| E                                           | 15.977    | 13.060            | 2.37                     | 0.90  | 1.00  | 2.37             |        |
| F                                           | 14.134    | 14.134            | 2.84                     | 0.90  | 1.00  | 2.84             |        |
| A                                           | 14.134    | 14.134            | 2.84                     | 0.90  | 1.00  | 2.84             |        |
| B                                           | 8.603     | 8.702             | 4.66                     | 0.90  | 0.99  | 4.66             |        |
| C                                           | 5.531     | 5.763             | 6.70                     | 0.90  | 0.96  | 6.70             |        |
| D                                           | 2.458     | 6.622             | 8.48                     | 0.90  | 0.37  | 7.25             |        |
| CR: part load divided by capacity;          |           |                   |                          |       |       |                  |        |

Doc No.: ITC-TTW0902.02E – Rev.11

## Appendix I Test results

| Electric power consumptions      | Unit | Value |
|----------------------------------|------|-------|
| Thermostat-off mode [ $P_{TO}$ ] | kW   | 0.033 |
| Standby mode [ $P_{SB}$ ]        | kW   | 0.016 |
| Crankcase heater [ $P_{CK}$ ]    | kW   | 0.045 |
| Off mode [ $P_{OFF}$ ]           | kW   | 0.016 |

| Conclusions:                                                                           | Unit     | Value |
|----------------------------------------------------------------------------------------|----------|-------|
| SCOP <sub>on</sub> :                                                                   | kWh/kWh  | 4.77  |
| SCOP:                                                                                  | kWh/kWh  | 4.77  |
| $Q_H$ :                                                                                | kWh/year | 33009 |
| $Q_{HE}$ :                                                                             | kWh/year | 6926  |
| $\eta_{s,h}$                                                                           | %        | 187.6 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 2) | --       | A+++  |

# Appendix I Test results

Appendix 1 Test results

|                                                                                                                                                                                                   |                                               |                    |                                     |                 |                                     |                                      |                          |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------|-------------------------------------|-----------------|-------------------------------------|--------------------------------------|--------------------------|--------|
| Table 4.                                                                                                                                                                                          | Heating mode(Medium temperature application): |                    |                                     |                 |                                     |                                      | P                        |        |
| Model                                                                                                                                                                                             | Master plus 160-TRI                           |                    |                                     |                 |                                     |                                      |                          |        |
| 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<br>in %                       |                    |                                     |                 | Outdoor heat exchanger              | Indoor heat exchanger                |                          |        |
|                                                                                                                                                                                                   | Formula                                       | A                  | W                                   | C               | Inlet dry (wet) bulb temperature °C | Inlet/outlet water temperatures (°C) |                          |        |
| A                                                                                                                                                                                                 | $(-7-16)/(T_{designh}-16)$                    | 88                 | N/A                                 | N/A             | -7(-8)                              | a / 52                               |                          |        |
| B                                                                                                                                                                                                 | $(+2-16)/(T_{designh}-16)$                    | 54                 | N/A                                 | N/A             | 2(1)                                | a / 42                               |                          |        |
| C                                                                                                                                                                                                 | $(+7-16)/(T_{designh}-16)$                    | 35                 | N/A                                 | N/A             | 7(6)                                | a / 36                               |                          |        |
| D                                                                                                                                                                                                 | $(+12-16)/(T_{designh}-16)$                   | 15                 | N/A                                 | N/A             | 12(11)                              | a / 30                               |                          |        |
| E                                                                                                                                                                                                 | $(TOL-16)/(T_{designh}-16)$                   |                    |                                     |                 | TOL                                 | a / 55.3                             |                          |        |
| F                                                                                                                                                                                                 | $(T_{bivalent}-16)/(T_{designh}-16)$          |                    |                                     |                 | Tbiv                                | a / 52                               |                          |        |
| G                                                                                                                                                                                                 | $(-15-16)/(T_{designh}-16)$                   | N/A                | N/A                                 | N/A             | -15                                 | N/A                                  |                          |        |
| Remark: a) With the water flow rate as determined at the standard rating conditions given in EN14511-2 at 47/55 conditions, the capacity is 16.169kW, the power is 5.302kW, the COP is 3.05kW/kW. |                                               |                    |                                     |                 |                                     |                                      |                          |        |
| 2.Tested data/correction data(Average):                                                                                                                                                           |                                               |                    |                                     |                 |                                     |                                      |                          |        |
| General test conditions/<br>Part-Load                                                                                                                                                             | Unit                                          | A(-7)/W52<br>(88%) | A2/W42<br>(54%)                     | A7/W36<br>(35%) | A12/W30<br>(15%)                    | A(-10)/W55.3<br>(100%)               | A(-7)/W52<br>(88%)       |        |
|                                                                                                                                                                                                   | --                                            | A                  | B                                   | C               | D                                   | E                                    | F                        |        |
| Data collection period                                                                                                                                                                            | hh: min:sec                                   | 1:10:00            | 1:10:00                             | 1:10:00         | 1:10:00                             | 1:10:00                              | 1:10:00                  |        |
| The heat pump defrosts                                                                                                                                                                            | --                                            | No                 | No                                  | No              | No                                  | No                                   | No                       |        |
| Complete Cycles                                                                                                                                                                                   | --                                            | 0                  | 0                                   | 0               | 0                                   | 0                                    | 0                        |        |
| Barometric pressure                                                                                                                                                                               | kPa                                           | 99.85              | 99.85                               | 99.85           | 99.80                               | 99.75                                | 99.85                    |        |
| Voltage                                                                                                                                                                                           | V                                             | 397.9              | 398.8                               | 399.3           | 399.5                               | 397.7                                | 397.9                    |        |
| Current input of the unit                                                                                                                                                                         | A                                             | 9.81               | 4.35                                | 2.16            | 1.75                                | 10.57                                | 9.81                     |        |
| Power input of the unit                                                                                                                                                                           | kW                                            | 6.210              | 2.438                               | 1.132           | 0.908                               | 6.728                                | 6.210                    |        |
| Test conditions indoor unit                                                                                                                                                                       |                                               |                    |                                     |                 |                                     |                                      |                          |        |
| Inlet Water temperature, DB                                                                                                                                                                       | °C                                            | 44.95              | 37.75                               | 33.19           | 28.92                               | 49.00                                | 44.95                    |        |
| Outlet Water temperature, DB                                                                                                                                                                      | °C                                            | 51.90              | 41.97                               | 36.12           | 32.01                               | 55.31                                | 51.90                    |        |

### Appendix I Test results

| Test conditions outdoor unit |    |       |      |      |       |        |       |
|------------------------------|----|-------|------|------|-------|--------|-------|
| Air inlet temperature, DB    | °C | -6.98 | 2.03 | 7.02 | 12.03 | -9.98  | -6.98 |
| Air inlet temperature, WB    | °C | -7.98 | 1.01 | 6.00 | 11.01 | -10.98 | -7.98 |

### Summary of the results

|                                  |      |        |       |       |       |        |        |
|----------------------------------|------|--------|-------|-------|-------|--------|--------|
| Total heating capacity           | kW   | 13.960 | 8.544 | 5.689 | 6.227 | 12.626 | 13.960 |
| Effective power input            | kW   | 6.159  | 2.387 | 1.080 | 0.856 | 6.676  | 6.159  |
| Coefficient of performance (COP) | --   | 2.27   | 3.58  | 5.27  | 7.27  | 1.89   | 2.27   |
| Compressor frequency             | Hz   | 90     | 38    | 21*   | 20    | 95     | 90     |
| Water flow                       | m³/h | 1.75   | 1.75  | 1.75  | 1.75  | 1.75   | 1.75   |

Remark: \*In part condition, this compressor frequency is lowest.

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

|              |        |          |     |
|--------------|--------|----------|-----|
| Tdesignh(°C) | -10    | Tbiv(°C) | -7  |
| Pdesignh(kW) | 15.781 | TOL(°C)  | -10 |

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

| Condition | Part load | Measured capacity | COP at measured capacity | Cdh  | CR   | COP at part load |
|-----------|-----------|-------------------|--------------------------|------|------|------------------|
| E         | 15.781    | 12.626            | 1.89                     | 0.90 | 1.00 | 1.89             |
| F         | 13.960    | 13.960            | 2.27                     | 0.90 | 1.00 | 2.27             |
| A         | 13.960    | 13.960            | 2.27                     | 0.90 | 1.00 | 2.27             |
| B         | 8.498     | 8.544             | 3.58                     | 0.90 | 0.99 | 3.58             |
| C         | 5.463     | 5.689             | 5.27                     | 0.90 | 0.96 | 5.27             |
| D         | 2.428     | 6.227             | 7.27                     | 0.90 | 0.39 | 6.29             |

CR: part load divided by capacity;

## Appendix I Test results

| Electric power consumptions      | Unit | Value |
|----------------------------------|------|-------|
| Thermostat-off mode [ $P_{TO}$ ] | kW   | 0.033 |
| Standby mode [ $P_{SB}$ ]        | kW   | 0.016 |
| Crankcase heater [ $P_{CK}$ ]    | kW   | 0.045 |
| Off mode [ $P_{OFF}$ ]           | kW   | 0.016 |

| Conclusions:                                                                           | Unit     | Value |
|----------------------------------------------------------------------------------------|----------|-------|
| SCOP <sub>on</sub> :                                                                   | kWh/kWh  | 3.75  |
| SCOP:                                                                                  | kWh/kWh  | 3.75  |
| $Q_H$ :                                                                                | kWh/year | 32604 |
| $Q_{HE}$ :                                                                             | kWh/year | 8701  |
| $\eta_{s,h}$                                                                           | %        | 146.9 |
| Seasonal space heating energy efficiency classes: (According (EU) No 811/2013 Table 1) | --       | A++   |

## Appendix II Marking plate

### Nameplate

Model: Master plus 120-TRI

| DC Inverter heat pump                                                                                                                                                                                                                                                                                    |                   |                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|
| Model:                                                                                                                                                                                                                                                                                                   |                   | Master plus 120-TRI |
| Heating Capacity                                                                                                                                                                                                                                                                                         | kW                | 12.1                |
| Heating Input                                                                                                                                                                                                                                                                                            | kW                | 2.66                |
| Heating Current                                                                                                                                                                                                                                                                                          | A                 | 11.8                |
| COP                                                                                                                                                                                                                                                                                                      | W/W               | 4.55                |
| Cooling Capacity                                                                                                                                                                                                                                                                                         | kW                | 11.8                |
| Cooling Input                                                                                                                                                                                                                                                                                            | kW                | 3.08                |
| Cooling Current                                                                                                                                                                                                                                                                                          | A                 | 13.7                |
| EER                                                                                                                                                                                                                                                                                                      | W/W               | 3.83                |
| Rated Voltage/Frequency                                                                                                                                                                                                                                                                                  | V/Hz              | 380-415V, 3N~, 50Hz |
| Rated Input Power                                                                                                                                                                                                                                                                                        | kW                | 4.7                 |
| Rated Input Current                                                                                                                                                                                                                                                                                      | A                 | 8.4                 |
| High/Low cut-off pressure value                                                                                                                                                                                                                                                                          | MPa               | 3.2/1.3             |
| Refrigerant type/charge/GWP                                                                                                                                                                                            | .../kg            | R290/1.4/3          |
| CO <sub>2</sub> equivalent                                                                                                                                                                                                                                                                               |                   | 0.0042t             |
| Waterproof grade                                                                                                                                                                                                                                                                                         |                   | IPX4                |
| Electrical shockproof                                                                                                                                                                                                                                                                                    |                   | I                   |
| Noise                                                                                                                                                                                                                                                                                                    | dB(A)             | 38                  |
| Max water outlet temperature                                                                                                                                                                                                                                                                             | °C                | 75                  |
| Use ambient temperature                                                                                                                                                                                                                                                                                  | °C                | -25~45              |
| Diameter of water connection                                                                                                                                                                                                                                                                             |                   | DN25                |
| Rating water flow                                                                                                                                                                                                                                                                                        | m <sup>3</sup> /h | 2.08                |
| Internal pressure drop of rating water flow                                                                                                                                                                                                                                                              | kPa               | 30                  |
| Min/Max heating water pressure                                                                                                                                                                                                                                                                           | MPa               | 0.05/0.3            |
| Net dimensions(L/W/H)                                                                                                                                                                                                                                                                                    | mm                | 976/450/688         |
| Net weight                                                                                                                                                                                                                                                                                               | kg                | 90                  |
| Rated test conditions:<br>Heating: Ambient temp.(DB/WB):7 °C/6 °C<br>Water temp.(In/Out):30 °C/35 °C<br>Cooling: Ambient temp.(DB/WB):35 °C/24 °C,<br>Water temp.(In/Out):23 °C/18 °C<br><b>Contains fluorinated greenhouse gases covered by the Kyoto protocol</b><br><b>Hermetically sealed system</b> |                   |                     |
| Guangzhou Green Power Technology Co., Ltd<br>Building B2, No. 79, Jingquan 3rd Road, Huangpu District, 511356,<br>Guangzhou, China                                                                                                                                                                       |                   |                     |
|                                                |                   |                     |

## Appendix II Marking plate

### Nameplate

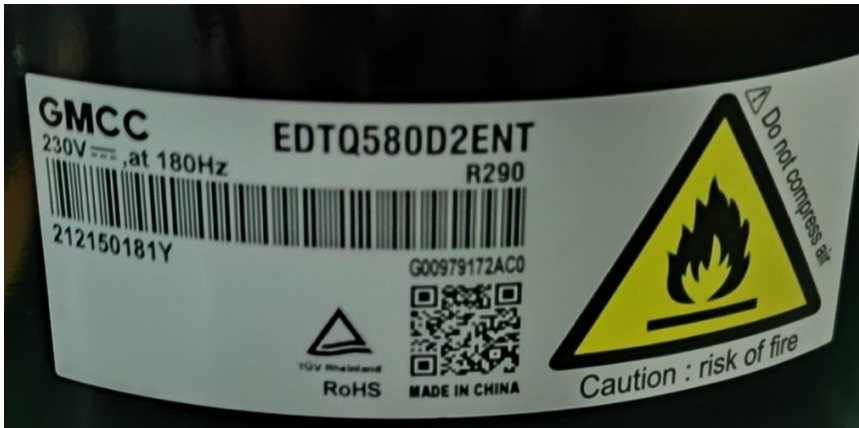
Model: Master plus 160-TRI

| DC Inverter heat pump                                                                                                                                                                                                                                                                                   |                                                                                           |                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------|
| Model:                                                                                                                                                                                                                                                                                                  |                                                                                           | Master plus 160-TRI |
| Heating Capacity                                                                                                                                                                                                                                                                                        | kW                                                                                        | 16.2                |
| Heating Input                                                                                                                                                                                                                                                                                           | kW                                                                                        | 3.56                |
| Heating Current                                                                                                                                                                                                                                                                                         | A                                                                                         | 15.8                |
| COP                                                                                                                                                                                                                                                                                                     | W/W                                                                                       | 4.55                |
| Cooling Capacity                                                                                                                                                                                                                                                                                        | kW                                                                                        | 15.2                |
| Cooling Input                                                                                                                                                                                                                                                                                           | kW                                                                                        | 3.98                |
| Cooling Current                                                                                                                                                                                                                                                                                         | A                                                                                         | 17.7                |
| EER                                                                                                                                                                                                                                                                                                     | W/W                                                                                       | 3.82                |
| Rated Voltage/Frequency                                                                                                                                                                                                                                                                                 | V/Hz                                                                                      | 380-415V, 3N~, 50Hz |
| Rated Input Power                                                                                                                                                                                                                                                                                       | kW                                                                                        | 6.5                 |
| Rated Input Current                                                                                                                                                                                                                                                                                     | A                                                                                         | 11.6                |
| High/Low cut-off pressure value                                                                                                                                                                                                                                                                         | MPa                                                                                       | 3.2/1.3             |
| Refrigerant type/charge/GWP                                                                                                                                                                                                                                                                             |  .../kg | R290/1.7/3          |
| CO <sub>2</sub> equivalent                                                                                                                                                                                                                                                                              |                                                                                           | 0.0051t             |
| Waterproof grade                                                                                                                                                                                                                                                                                        |                                                                                           | IPX4                |
| Electrical shockproof                                                                                                                                                                                                                                                                                   |                                                                                           | I                   |
| Noise                                                                                                                                                                                                                                                                                                   | dB(A)                                                                                     | 40                  |
| Max water outlet temperature                                                                                                                                                                                                                                                                            | °C                                                                                        | 75                  |
| Use ambient temperature                                                                                                                                                                                                                                                                                 | °C                                                                                        | -25~45              |
| Diameter of water connection                                                                                                                                                                                                                                                                            |                                                                                           | DN25                |
| Rating water flow                                                                                                                                                                                                                                                                                       | m <sup>3</sup> /h                                                                         | 2.79                |
| Internal pressure drop of rating water flow                                                                                                                                                                                                                                                             | kPa                                                                                       | 30                  |
| Min/Max heating water pressure                                                                                                                                                                                                                                                                          | MPa                                                                                       | 0.05/0.3            |
| Net dimensions(L/W/H)                                                                                                                                                                                                                                                                                   | mm                                                                                        | 1106/450/1603       |
| Net weight                                                                                                                                                                                                                                                                                              | kg                                                                                        | 115                 |
| Rated test conditions:<br>Heating: Ambient temp(DB/WB):7 °C/6 °C<br>Water temp.(In/Out):30 °C/35 °C<br>Cooling: Ambient temp.(DB/WB):35 °C/24 °C,<br>Water temp.(In/Out):23 °C/18 °C<br><b>Contains fluorinated greenhouse gases covered by the Kyoto protocol</b><br><b>Hermetically sealed system</b> |                                                                                           |                     |
| Guangzhou Green Power Technology Co., Ltd<br>Building B2, No. 79, Jingquan 3rd Road, Huangpu District, 511356,<br>Guangzhou, China                                                                                                                                                                      |                                                                                           |                     |
|                                               |                                                                                           |                     |

Doc No.: ITC-TTW0902.02E – Rev.1.1

### Appendix III photo documentaiton

| Details of:                                                                                                                                                                                                                                                                                  | Overall view for Master plus 120-TRI                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <p><b>View:</b></p> <p><input type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> |  |

| Details of:                                                                                                                                                                                                                                                                                  | Compressor for Master plus 120-TRI                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p><b>View:</b></p> <p><input type="checkbox"/> General</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right</p> <p><input type="checkbox"/> Left</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> |  |

### Appendix III photo documentaiton

|             |                                                                                     |
|-------------|-------------------------------------------------------------------------------------|
| Details of: | Fan Motor for Master plus 120-TRI                                                   |
| View:       |  |

|             |                                                                                      |
|-------------|--------------------------------------------------------------------------------------|
| Details of: | Main Control Board for Master plus 120-TRI                                           |
| View:       |  |

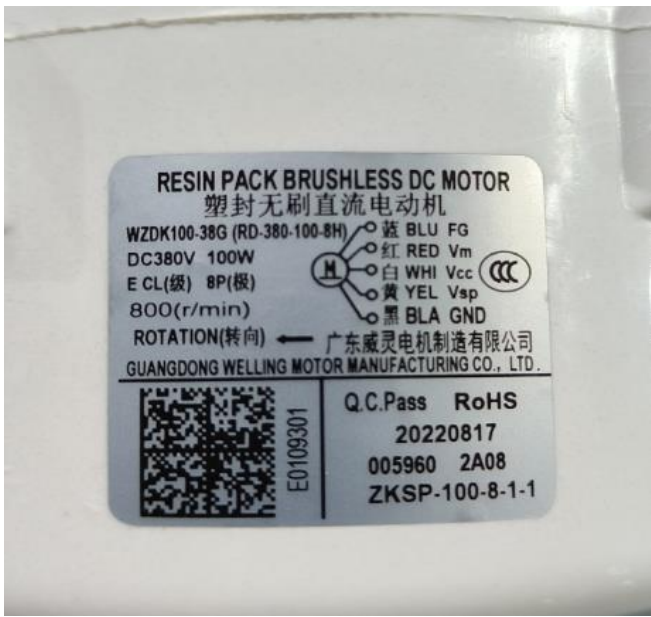
Appendix III photo documentaiton

|             |                                                                                     |
|-------------|-------------------------------------------------------------------------------------|
| Details of: | Water Pump for Master plus 120-TRI                                                  |
| View:       |  |

|             |                                                                                      |
|-------------|--------------------------------------------------------------------------------------|
| Details of: | Overall view for Master plus 160-TRI                                                 |
| View:       |  |

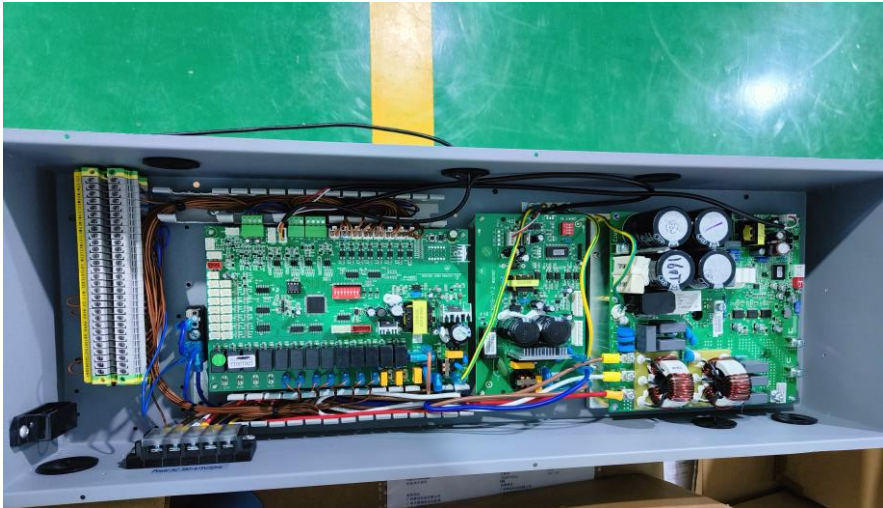
### Appendix III photo documentaiton

|                                  |                                                                                    |
|----------------------------------|------------------------------------------------------------------------------------|
| Details of:                      | Compressor for Master plus 160-TRI                                                 |
| 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:                      | Fan Motor for Master plus 160-TRI                                                    |
| 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.11

Appendix III photo documentaiton

|                                  |                                                                                    |
|----------------------------------|------------------------------------------------------------------------------------|
| Details of:                      | Main Control Board for Master plus 160-TRI                                         |
| 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:                      | Water Pump for Master plus 160-TRI                                                   |
| 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  |                                                                                      |

**Appendix IV Construction data form**

| <b>Model: Master plus 120-TRI</b> |                 |                                                 |
|-----------------------------------|-----------------|-------------------------------------------------|
| <b>Part</b>                       |                 | <b>Technical data</b>                           |
| <b>1. Compressor</b>              |                 |                                                 |
|                                   | Manufacture:    | Guangdong Meizhi Compressor Ltd                 |
|                                   | Type:           | EDTQ580D2ENT                                    |
|                                   | Rated capacity: | -                                               |
|                                   | Serial-number:  | 212150181Y                                      |
|                                   | Specification:  | DC230V; at 180Hz; R290                          |
| <b>2. Condenser</b>               |                 |                                                 |
|                                   | Manufacture:    | Danfoss                                         |
|                                   | Type:           | C39L-EZ-54                                      |
|                                   | Heat exchanger: | Plate heat exchanger                            |
|                                   | Dimension(mm):  | 332(L)mm×118(W)mm×77(H)mm                       |
| <b>3. Evaporator</b>              |                 |                                                 |
|                                   | Manufacture:    | Guangdong Wolong Technology Co., Ltd.           |
|                                   | Type:           | 10220004                                        |
|                                   | Heat exchanger: | Finned heat exchanger                           |
|                                   | Dimension(mm):  | 788.7(L)mm×308.7(W)mm×798(H)mm                  |
| <b>4. Fan motor</b>               |                 |                                                 |
|                                   | Manufacture:    | GUANGDONG WELLING MOTOR MANUFACTURING CO., LTD. |
|                                   | Type:           | ZKSP-100-8-1-1                                  |
|                                   | Fan type:       | 3 blade                                         |
|                                   | Specification:  | DC380V; 100W                                    |
| <b>5. Main control board</b>      |                 |                                                 |
|                                   | Manufacture:    | Guangdong Chico Electronic INC                  |
|                                   | Type:           | CC1074                                          |
|                                   | Specification:  | 220-240V~; 50/60Hz                              |
| <b>6. Water pump</b>              |                 |                                                 |
|                                   | Manufacture:    | Wilo                                            |
|                                   | Type:           | Para 25/9-87/IPWM1                              |
|                                   | Specification:  | 1-230V; 50/60Hz; 3-87W                          |

**Appendix IV Construction data form**

| <b>Model: Master plus 160-TRI</b> |                 |                                                 |
|-----------------------------------|-----------------|-------------------------------------------------|
| <b>Part</b>                       |                 | <b>Technical data</b>                           |
| 1. Compressor                     |                 |                                                 |
|                                   | Manufacture:    | Guangdong Meizhi Compressor Ltd                 |
|                                   | Type:           | EDTQ750D66ENT                                   |
|                                   | Rated capacity: | -                                               |
|                                   | Serial-number:  | 210507003K                                      |
|                                   | Specification:  | DC230V; at 180Hz; R290                          |
| 2. Condenser                      |                 |                                                 |
|                                   | Manufacture:    | Danfoss                                         |
|                                   | Type:           | C39L-EZ-68                                      |
|                                   | Heat exchanger: | Plate heat exchanger                            |
|                                   | Dimension(mm):  | 331(L)mm×117(W)mm×94(H)mm                       |
| 3. Evaporator                     |                 |                                                 |
|                                   | Manufacture:    | Guangdong Wolong Technology Co., Ltd.           |
|                                   | Type:           | 10220006                                        |
|                                   | Heat exchanger: | Finned heat exchanger                           |
|                                   | Dimension(mm):  | 769.1(L)mm×284.1(W)mm×1554(H)mm                 |
| 4. Fan motor                      |                 |                                                 |
|                                   | Manufacture:    | GUANGDONG WELLING MOTOR MANUFACTURING CO., LTD. |
|                                   | Type:           | ZKSP-100-8-1-1                                  |
|                                   | Fan type:       | 3 blade                                         |
|                                   | Specification:  | DC380V; 100W                                    |
| 5. Main control board             |                 |                                                 |
|                                   | Manufacture:    | Guangdong Chico Electronic INC                  |
|                                   | Type:           | CC1074                                          |
|                                   | Specification:  | 220-240V~; 50/60Hz                              |
| 6. Water pump                     |                 |                                                 |
|                                   | Manufacture:    | Wilo                                            |
|                                   | Type:           | Para 25/9-87/IPWM1                              |
|                                   | Specification:  | 1-230V; 50/60Hz; 3-87W                          |



## 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      | OPTIFLUX4100 C | H17221264    | 2023-12-21           |

-- End of Report --