

TOSHIBA

3rd version
2022-02

Installation and the use of refrigerants not specified by Toshiba Carrier Corporation

Toshiba refrigeration and air-conditioning units are designed and manufactured on the assumption that the product is used with a specific refrigerant suitable for each unit.
The type of refrigerant used for each of our products is shown in the accompanying owners manual, or on the product label attached to the product itself.
Toshiba Carrier corporation shall not assume any liability for failures, malfunctions or safety in its products if the refrigerant used is different from the one specified.



SAFETY PRECAUTIONS

Please see the technical Document for details.

Notice : Toshiba is committed to continuously improving its products to ensure the highest quality and reliability standards, and to meet local regulations and market requirements. All features and specifications are subject to change without prior notice.

USXEE202202FL

Air-cooled Inverter Modular Chiller
for Diverse Customer Needs



UNIVERSAL SMART X Series **EDGE** Inverter Modular Chiller



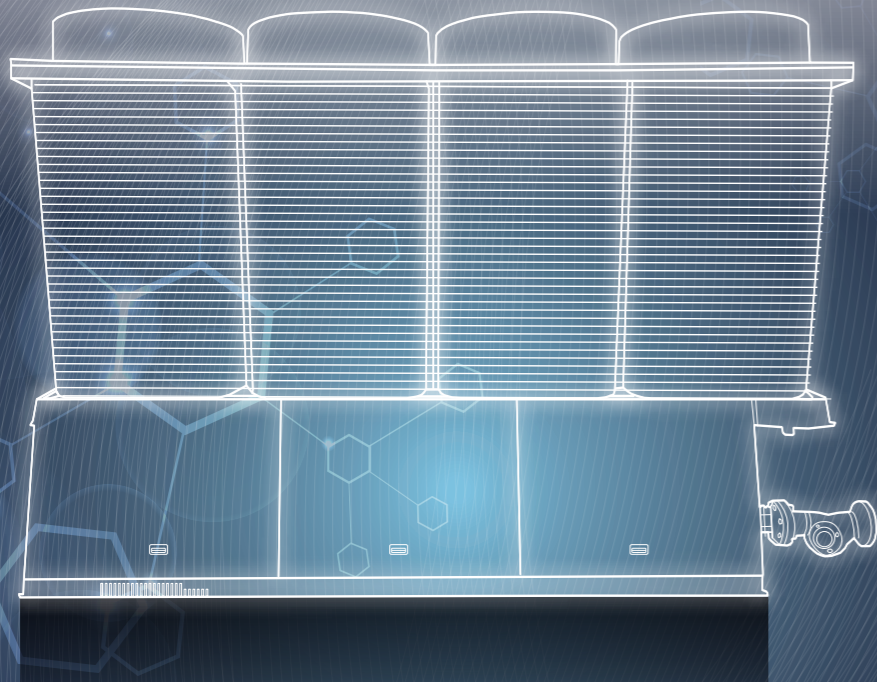
 **Better Air Solutions**

Made in Japan
All-new innovative chiller system



UNIVERSAL SMART X Series **EDGE**

High efficiency combined with cutting-edge space-saving design.



| Internal inverter pump / Pumpless / Brine | | | |
|---|--------------|----------|--|
| Model | Use | Type | Power supply |
| Series EDGE (Standard Model) 50HP/60HP/70HP | Cooling only | Standard | 3 phase 4 wires 50Hz/60Hz 380-415V |
| | | High EER | |
| | Heat pump | Standard | |
| | | High EER | |
| Powerful Heating Type (Apply this to all the following text.) 50HP/60HP | Heat pump | Standard | |
| | | High EER | |

Models

- RUA - GP 51 1 H L N R 8 - E
- Air Cooled Chiller
 - Universal Smart X EDGE (R32)
 - Capacity USRT
 - 42: 50HP / 51: 60HP/ 56: 70HP
 - Version number
 - C : Cooling - only
 - H: Heat Pump (cooling/heating)
 - F: High heating Capacity Model
 - L: Pumpless
 - 1: Internal Pump (pump output 1.5kW)
 - 2: Internal Pump (pump output 2.2kW)
 - 3: Internal Pump (pump output 3.7kW)
 - 5: Internal Pump (pump output 5.5kW)
 - 7: Internal Pump (pump output 7.5kW)
 - E : Europe, UK : United Kingdom, TR : Turkey
 - 8: 3ph 4wires 50Hz/60Hz 380 - 415V
 - Blank: Water/R: Brine
 - Blank: Standard type/ N: High - EER type

Operation range

Series **EDGE** 50HP 60HP 70HP

| | | | |
|---------------------------------------|---------------------------------------|----|------------------|
| Leaving water temperature (Note 1) | Cooling (Note 5) | °C | 4~30 |
| | Heating (Note 2 * 3) | | 25~55 |
| | Temperature difference (inlet/outlet) | | 5~10 |
| Outside air temperature | Cooling | °C | -15~52 (Note 4) |
| | Heating (Note 2 * 3) | | -15~21DB, 15.5WB |

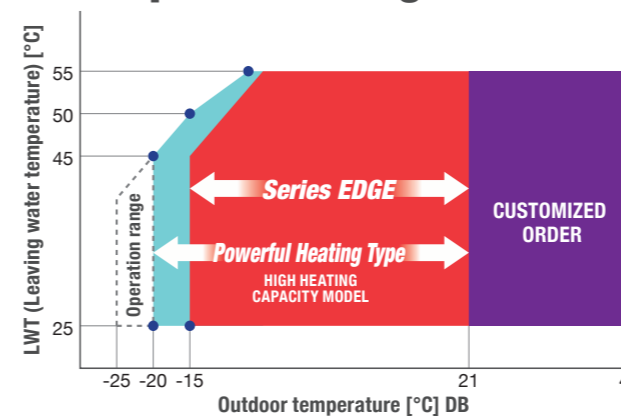
Note 1: LWT not higher than 35°C at cooling or not lower than 20°C at heating operation is allowable till 1 hour after starting up. After then, however, LWT must be within the operating range. Control it with bypass pipe if needed.
 Note 2: For heat pump models only. -20°C is for 60HP powerful heating.
 Note 3: Depending on the outdoor air temperature, leaving hot water temperature is limited as below.

Powerful Heating Type 50HP 60HP

| | | | |
|---------------------------------------|---------------------------------------|----|------------------|
| Leaving water temperature (Note 1) | Cooling (Note 5) | °C | 4~30 |
| | Heating (Note 2 * 3) | | 25~55 |
| | Temperature difference (inlet/outlet) | | 5~10 |
| Outside air temperature | Cooling | °C | -15~52 (Note 4) |
| | Heating (Note 2 * 3) | | -20~21DB, 15.5WB |

Note 4: The range of water temperature control may become larger when the cooling operation load is low.

Leaving water temperature range

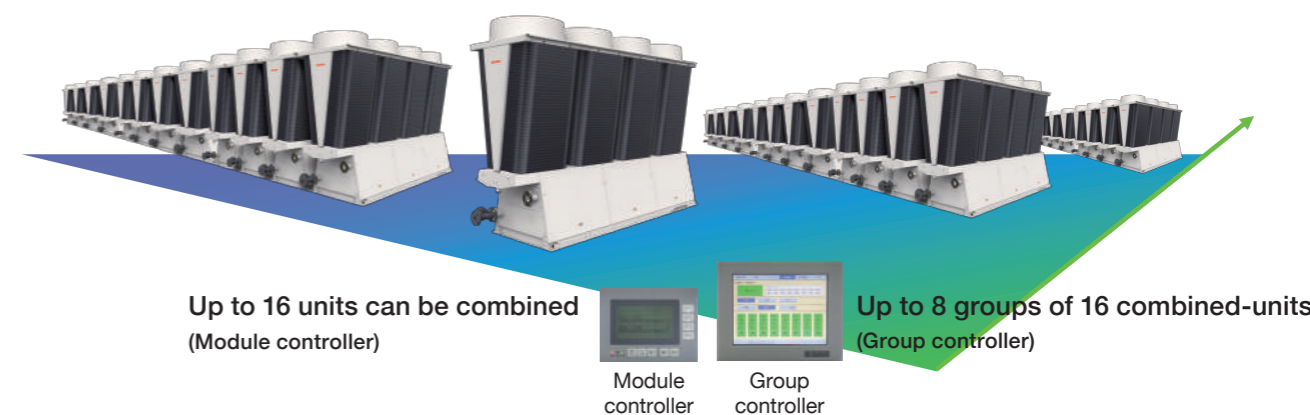
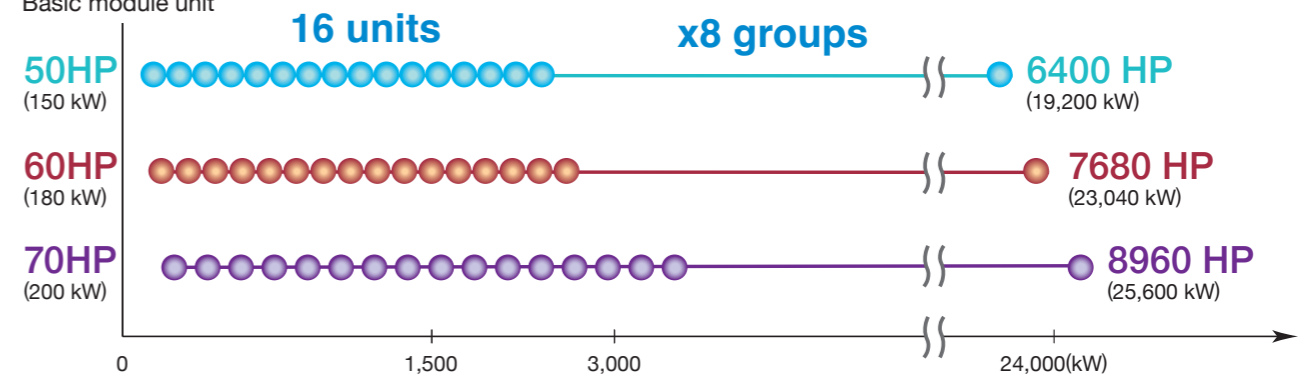


Operating range for water spray device

| | | |
|---|----|-------|
| Water dispersing water temperature range | °C | 10~30 |
| Water dispersing preset outdoor air temperature | °C | 20~40 |

Capacity range

Basic module unit



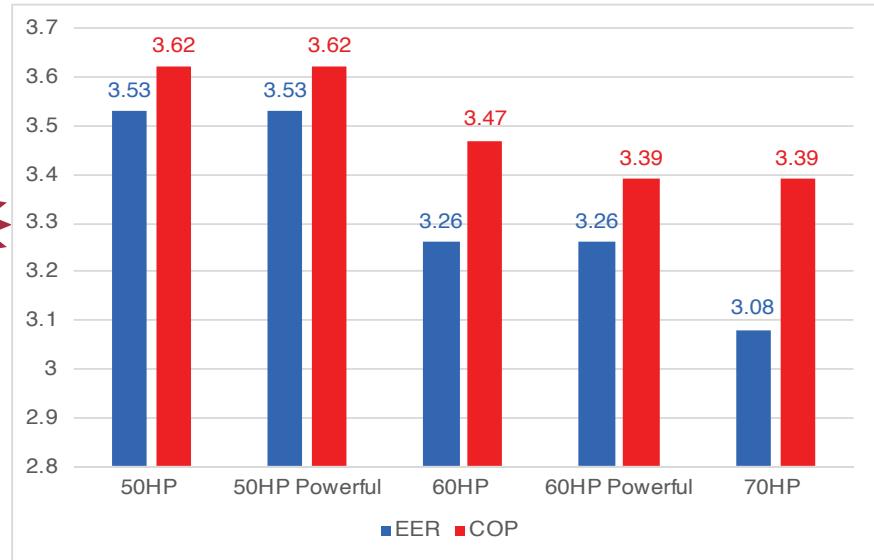
Feature

1

High Energy Efficiency

- Extremely high full load and part load energy efficiency as a result of the combination between low GWP refrigerant R32 and newly developed DC inverter compressor.
- 50HP model is a top class energy efficient model.
- Precise adjustment of water flow volume and water pressure based on required load by using internal pump module with variable flow bypass control resulting in even higher system efficiency.

Top class



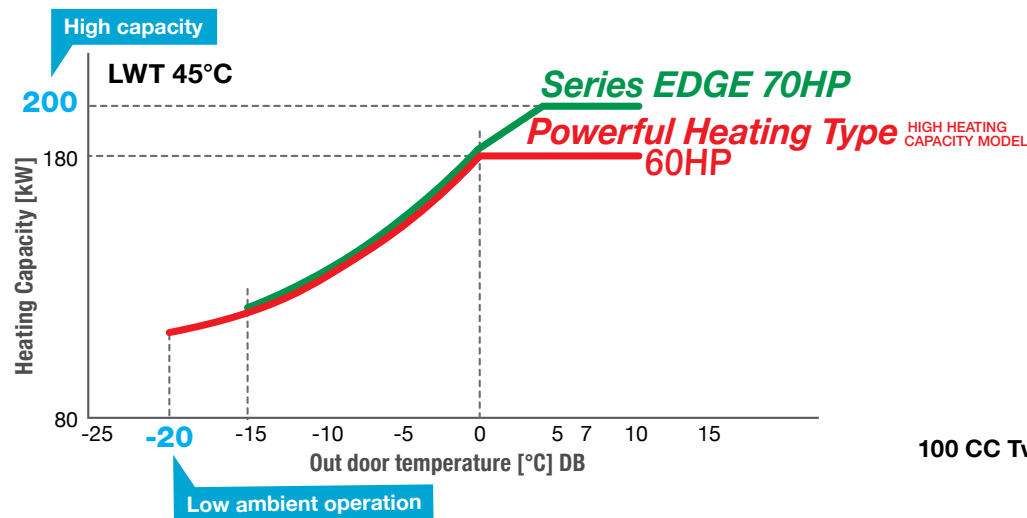
*Conditions:
Cooling EER LWT 7C, EWT 12C, OAT 35C
Heating COP LWT 45C, EWT 40C, OAT 7CDB, 8CWB

Feature

2

Large Capacity DC Inverter Twin Rotary Compressor

Impressive heating capacity and operation range even in low ambient temperature by using world's largest capacity DC twin rotary compressor equipped with R32 refrigerant.



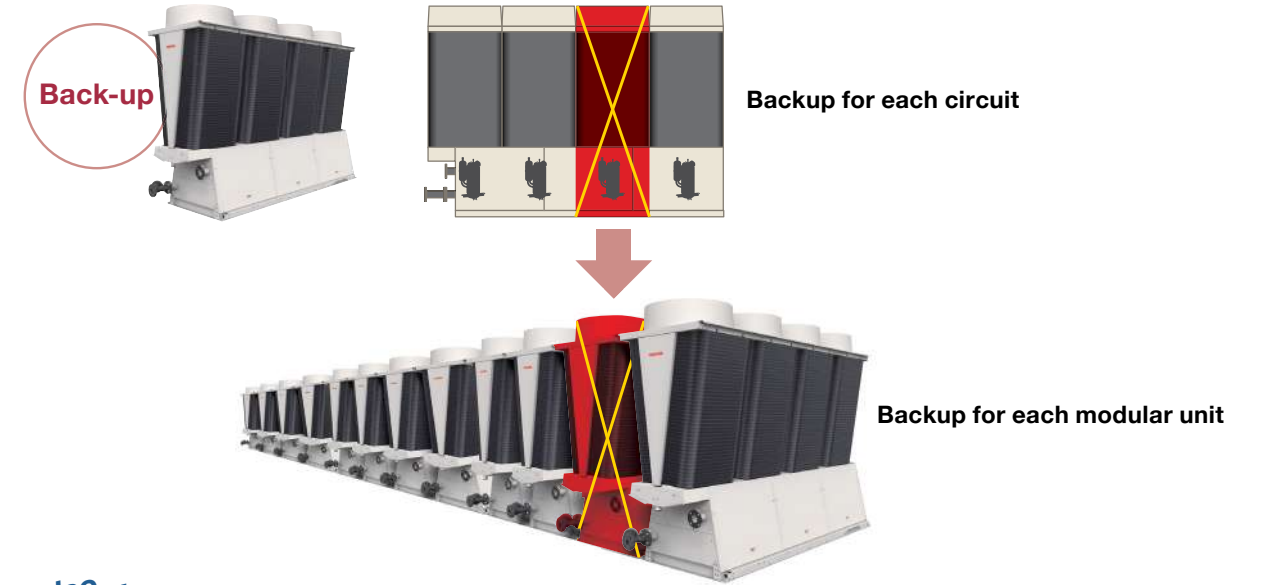
100 CC Twin Rotary Compressor

Feature

3

Highly reliable module system

- Four independent refrigerant cycles available in each module promising excellent risk diversification.
- Economical solution with low Initial cost for backup.



And also...

Defrosting operation is performed separately for each compressor

Make use of the backup function to carry out distributed defrost in the module units to prevent a reduction in temperature for hot water.



Photo: Defrosting operation demonstration

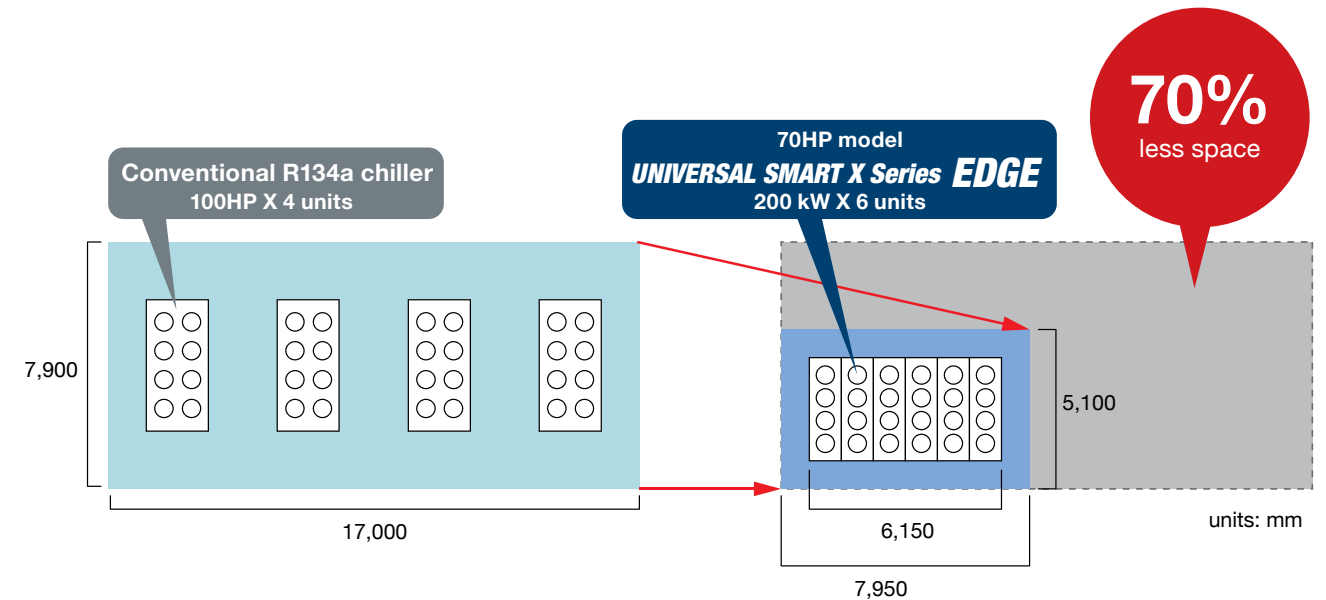
Feature

4

Installation Friendliness

- Optimized airflow by unique X frame design.
- Easy installation even in small spaces due to compact design.
- Easy replacement and installation in stages due to modular design.
- Installation space reduced by 70% compared to conventional R134a model*.

*Compared to the space needed to install a system for a 1200 kW cooling load. Comparison with four RUA-SA30001H units and six 200 kW module units.



Feature 5

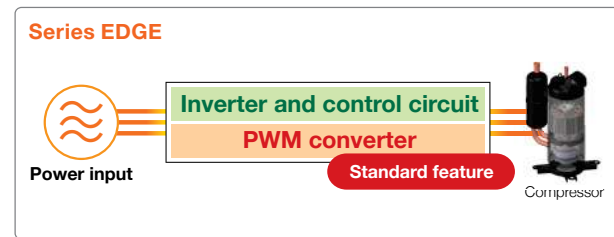
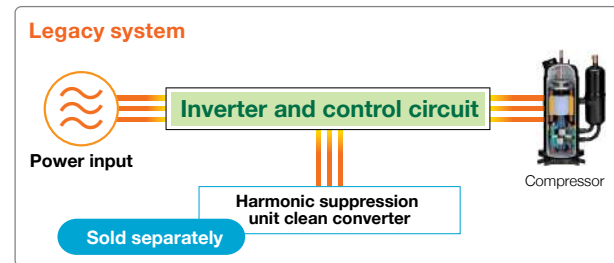
Outstanding Harmonic Suppression



The harmonic suppression function is installed as a standard feature on all models and achieves a power factor of up to 99%. This decreases electric transformer volume as well as reducing installation costs.

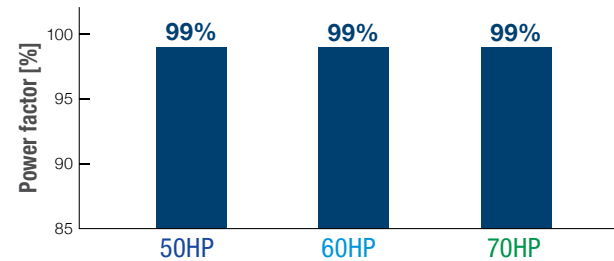
PWM Converter Benefits

- 1 Eliminates problems caused by harmonic current
- 2 Reduces consumption volume of power generator and electrical equipment

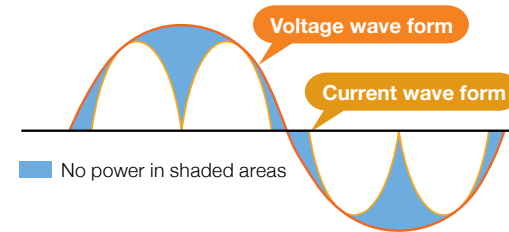


99% Power Factor Benefits

- 1 Reduction in power loss through load current
- 2 Improved efficiency of electrical equipment through reductions in current



Efficiency reduction projection



Feature 6

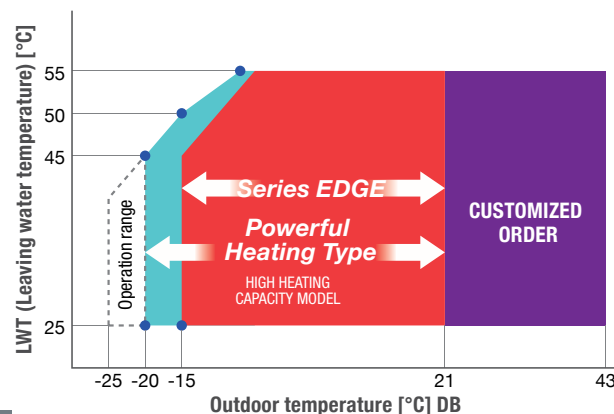
Reinforced heating capacity in low ambient temperatures

Powerful Heating Type achieves high level heating capacity, even in outdoor temperatures as low as -25°C, and minimises capacity drop during defrost operations.

Powerful Heating Type HIGH HEATING CAPACITY MODEL

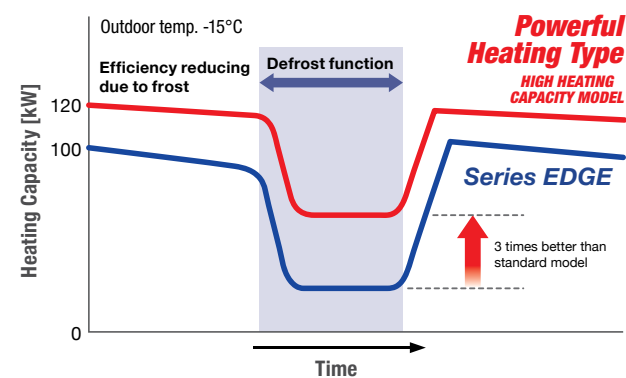
In outdoor temperatures down to -15°C, the system is still capable of producing hot water up to 50°C. At -20°C hot water produced is up to 45°C.

Performance between -20°C and -25°C is not guaranteed. Exceptional environmental factors such as blizzard conditions or ice may inhibit operation in temperatures of -20°C or lower.



Thanks to a new, advanced controller, the Powerful Heating Type model is capable of reducing capacity loss by three times during defrost than standard models.

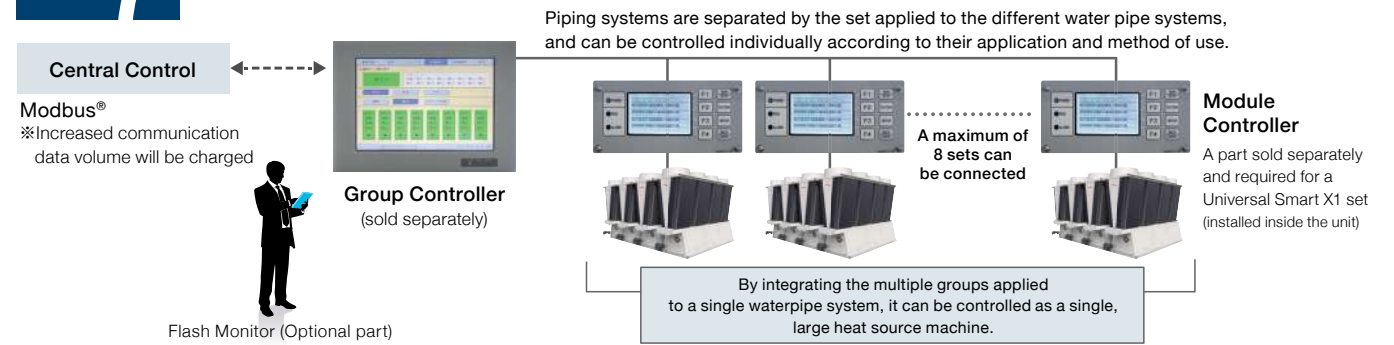
Energy Usage During Defrost (1 module)



Feature 7

Excellent Control System

Easy to use and collect data with several types of control available.



Group Controller

Batch control of heat source unit using the group controller

Up to eight sets, total 128 units, can be controlled at once from a single controller. Individual settings and operation states can be controlled and displayed via a touch panel, supporting customer energy management.

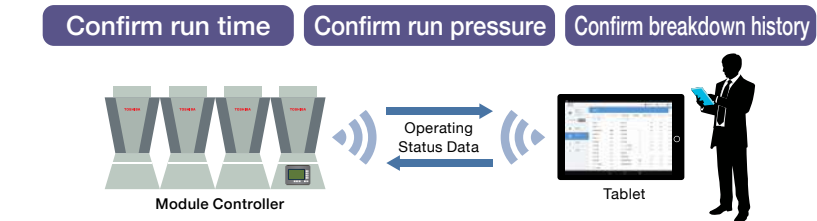
Function List

| Item | Notes |
|------------------------------------|--|
| Operating status display | For each model: Start/Stop, Operational mode, Fault occurrence, Operational capacity, LWT/EWT, Flow rate, Simple production heat capacity, Basic integral power, Basic capabilities, Basic input, Basic COP For each module controller: Start/Stop, Operational mode, Error code, Operational capacity, LWT/EWT, Flow conversion volume, Basic capabilities, Basic input, Basic COP For each module: Start/Stop, Operational mode, Error code, Operational capacity, LWT/EWT, Flow conversion volume, Basic capabilities, Outside air temperature, Basic input, Basic COP For each circuit: Refrigeration cycle information, Compressor operation time, Compressor startup counts |
| Operational state output (Total) | Start/Stop, Failure, Operational capacity, Basic capabilities, Basic input, Operational pattern |
| Start/Stop | For entire system, Each model, and Each module controller |
| Pattern settings (Switch) | Enables setting and switching operating pattern of group controller |
| Operational mode settings (Switch) | Enables setting and switching the operation mode for entire system. |
| Preset temperature changes | All model temperature settings can be changed. |
| Current demand settings | Electrical current demand can be configured. |
| System settings | All connected modules can be systematically classified. (for each module controller system) |
| Schedule settings | Operational schedule can be configured. (monthly, weekly, daily) |
| Error history display | Error history can be verified. |
| Operational data savings | Displayed data can be saved to MMC. |
| Trend display | Water temperature, outside air temperature, operational capacity, basic capabilities, basic input, basic COP, basic production heat capacity and basic integral power can be displayed on a graph. |
| Power saving | Enables switching the demand setting to validation or invalidation. |

Wifi Data Analysis

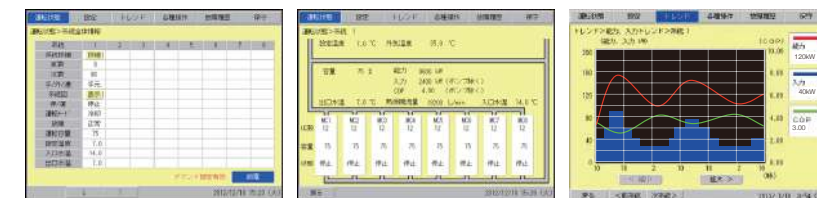
Wireless LAN-Equipped - Operating data can be obtained with tablet

The tablet improves the convenience of operation and management. Wireless LAN comes as standard in the module controller. Information can be collected without opening service panel.

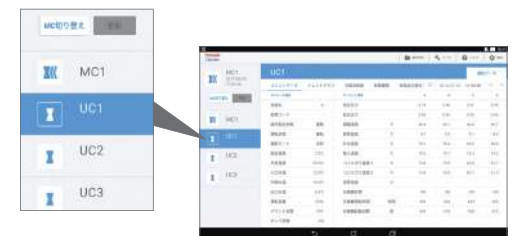


Supported tablets: Android 5.0 or higher 10.1" screen recommended

*The machine is not designed for use in all regions. Please contact a representative for details.

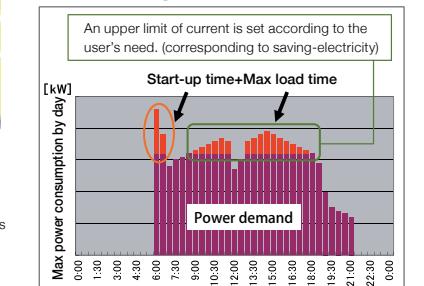


Operating Status/Main Screen
Operating Status/System Data Confirmation Screen
Operating Trends (capacity, input, COP) Confirmation Screen
Data displayed over a time frame which is easy to confirm or adjust.



Visualize the operating status of module controller and unit controller!
It allows safe and quick operations even in bad weather!!

Users can set an upper limit of current (demand) using the Group Controller and peak shave. Peak Shaving Scenario



The upper limit of current (demand) can be set in units of 1 amp for each system.



UNIVERSAL SMART X Series *EDGE*

Series *EDGE* - Standard Model
50HP/60HP/70HP
Powerful Heating Type – High Heating Capacity Model
50HP/60HP



Specifications Internal inverter pump

50HP Series *EDGE* Heat pump

| | | Standard type | High-EER type | |
|---|--------------------------------------|---|---------------------|------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUAGP421H18 | RUAGP421H1N8 | |
| Cooling capacity | (Note 1) (kW) | 150 | 150 | |
| Heating capacity | (Note 1) (kW) | 150 | 150 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2,350 | |
| | | Width (mm) | 1,000 | |
| | | Depth (mm) | 3,300 | |
| Shipping weight | (kg) | 1,348 | 1,360 | |
| Operating weight | (kg) | 1,384 | 1,396 | |
| Power supply | (Note 1-3) | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design | | (Note 4-5) (A) | 82.1 | |
| Electrical data | Cooling | Nominal current (A) | 65.3 | 42.8 |
| | | Nominal input (kW) | 42.5 | 27.9 |
| | | EER | 3.53 | 5.38 |
| | | SEER | 4.88 | 5.06 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| | Heating | Nominal current (A) | 63.6 | 63.6 |
| | | Nominal input (kW) | 41.4 | 41.4 |
| | | COP | 3.62 | 3.62 |
| | | SCOP | 4.26 | 4.26 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary x 4 | | |
| | Motor output x number of units (kW) | 9.0 x 4 | | |
| | Type of start | Inverter starter | | |
| | Case heater (W) | 37 x 4 | | |
| Compressor oil | Type | RB74AF | | |
| | Charge (L) | 2.0 x 4 | | |
| Condenser coil - air side | | Plate fin coil | | |
| Fan | Type | Propeller fan | | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | | |
| | Type of start | Inverter starter | | |
| | Motor output x number of units (kW) | 1.2 x 4 | | |
| Spray system | Water spray volume (L/min) | - | | |
| | Supply water pressure (Note 8) (MPa) | - | | |
| | Control | - | | |
| Pump | Motor output (kW) | 1.5 | | |
| | Type | Centrifugal pump | | |
| | Flow control | Inverter | | |
| | Maximum current (A) | 3.1 | | |
| | Minimum input (kW) | 2 | | |
| Cooler - water side (Note 10) | | Brazed plate heat exchanger (SUS316 equivalent) | | |
| Refrigerant | Type | R32 | | |
| | R32 charge (kg) | 8.8 x 4 | | |
| | Control | Electric expansion valve | | |
| Capacity control steps | (Note 11) (%) | 0; 5-100 | | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | | |
| Defrost system | | Distributed reverse cycle system | | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | | |
| Pipework | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | | |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | | |
| | Coil drain (A) | PT1-1/2" external thread | | |
| Sound power level | dB(A) | 83.8 | | |

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
(Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
(Note 4) The power supply differs from pump capacity. Please refer to pump information table to design power supply correctly.
(Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
(Note 6) Power factors may vary depending on site conditions.
(Note 7) Electrical data does not include inbuilt pump.
(Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
(Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
(Note 10) Working pressure is below 0.7 MPa.
(Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

Specifications Internal inverter pump

50HP Powerful Heating Type Heat pump

| | | Standard type | High-EER type |
|--|--------------------------------------|---|--------------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP421F18 | RUAGP421F18 |
| Cooling capacity (Note 1) (kW) | | 150 | 150 |
| Heating capacity (Note 1) (kW) | | 150 | 150 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,359 | 1,371 |
| Operating weight (kg) | | 1,395 | 1,407 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4-5) (A) | | 82.1 | 82.1 |
| Electrical data (Note 7) | Cooling | Nominal current (A) | 65.3 |
| | | Nominal input (kW) | 42.5 |
| | | EER | 3.53 |
| | | SEER | 4.88 |
| | | Power factor (Note 6) (%) | 99 |
| | Heating | Nominal current (A) | 63.6 |
| | | Nominal input (kW) | 41.4 |
| | | COP | 3.62 |
| | | SCOP | 4.26 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 9.0 x 4 | 9.0 x 4 |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | 1,230 (maximum) |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| Spray system (Note 8) | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 9) (MPa) | - | 0.2 |
| Pump | Control | Continuous spraying when outside temperature and compressor capacity exceeds setting values | |
| | Motor output (kW) | 1.5 | 1.5 |
| | Type | Centrifugal pump | |
| | Flow control | Inverter | |
| | Minimum input (kW) | 2 | 2 |
| Cooler - water side (Note 10) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 |
| | Control | Electric expansion valve | |
| Drain pan heater (W) | 75 x 6 | 75 x 6 | |
| Capacity control steps (Note 11) (%) | 0; 5-100 | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermostat error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) |
| | Coil drain (A) | PT1-1/2" external thread | PT1-1/2" external thread |
| Sound power level (dB(A)) | 83.8 | 83.8 | |

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) The power supply differs from pump capacity. Please refer to pump information table to design power supply correctly.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Electrical data does not include inbuilt pump.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 10) Working pressure is below 0.7 MPa.
 (Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

Specifications Internal inverter pump

50HP Series EDGE Cooling-only

| | | Standard type | High-EER type |
|--|--------------------------------------|---|--------------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP421C18 | RUAGP421C18 |
| Cooling capacity (Note 1) (kW) | | 150 | 150 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,309 | 1,322 |
| Operating weight (kg) | | 1,345 | 1,358 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4-5) (A) | | 82.1 | 82.1 |
| Electrical data (Note 7) | Cooling | Nominal current (A) | 66.2 |
| | | Nominal input (kW) | 43.1 |
| | | EER | 3.48 |
| | | SEER | 4.9 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 8.7 x 4 | 7.2 x 4 |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | 1,230 (maximum) |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| Spray system (Note 8) | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 9) (MPa) | - | 0.2 |
| Pump | Control | Continuous spraying when outside temperature and compressor capacity exceeds setting values | |
| | Motor output (kW) | 1.5 | 1.5 |
| | Type | Centrifugal pump | |
| | Flow control | Inverter | |
| | Minimum input (kW) | 2 | 2 |
| Cooler - water side (Note 10) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 11) (%) | 0; 5-100 | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermostat error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) |
| | Coil drain (A) | PT1-1/2" external thread | PT1-1/2" external thread |
| Sound power level (dB(A)) | 83.8 | 83.8 | |

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) The power supply differs from pump capacity. Please refer to pump information table to design power supply correctly.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Electrical data does not include inbuilt pump.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 10) Working pressure is below 0.7 MPa.
 (Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

Specifications Internal inverter pump

60HP Series EDGE Heat pump

| | | Standard type | High-EER type | |
|--|--------------------------------------|---|---|------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUAGP511H18 | RUAGP511H18 | |
| Cooling capacity (Note 1) (kW) | | 180 | 180 | |
| Heating capacity (Note 1) (kW) | | 180 | 180 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2,350 | |
| | | Width (Note 2) (mm) | 1,000 | |
| | | Depth (Note 2) (mm) | 3,300 | |
| Shipping weight (kg) | | 1,348 | 1,360 | |
| Operating weight (kg) | | 1,384 | 1,396 | |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design (Note 4-5) (A) | | 103 | 103 | |
| Electrical data (Note 7) | Cooling | Nominal current (A) | 84.8 | 57.3 |
| | | Nominal input (kW) | 55.2 | 37.3 |
| | | EER | 3.26 | 4.82 |
| | | SEER | 4.77 | 4.94 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| | Heating | Nominal current (A) | 79.6 | 79.6 |
| | | Nominal input (kW) | 51.9 | 51.9 |
| | | COP | 3.47 | 3.47 |
| | | SCOP | 4.35 | 4.35 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary x 4 | | |
| | Motor output x number of units (kW) | 11.2 x 4 | 11.1 x 4 | |
| | Type of start | Inverter starter | | |
| | Case heater (W) | 37 x 4 | 37 x 4 | |
| Compressor oil | Type | RB74AF | | |
| | Charge (L) | 2.0 x 4 | | |
| Condenser coil - air side | | Plate fin coil | | |
| Fan | Type | Propeller fan | | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | | |
| | Type of start | Inverter starter | | |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 | |
| Spray system (Note 8) | Water spray volume (L/min) | - | 13.6 x 1 | |
| | Supply water pressure (Note 9) (MPa) | - | 0.2 | |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values | |
| Pump | Motor output (kW) | 1.5 | 1.5 | |
| | Type | Centrifugal pump | | |
| | Flow control | Inverter | | |
| | Maximum current (A) | 3.1 | 3.1 | |
| | Minimum input (kW) | 2 | 2 | |
| Cooler - water side (Note 10) | | Braze plate heat exchanger (SUS316 equivalent) | | |
| Refrigerant | Type | R32 | | |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 | |
| | Control | Electric expansion valve | | |
| Capacity control steps (Note 11) (%) | | 0; 5-100 | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | | |
| Defrost system | | Distributed reverse cycle system | | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | | |
| Piping details | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) | |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) | |
| | Coil drain (A) | PT1-1/2" external thread | PT1-1/2" external thread | |
| Sound power level dB(A) | | 87.4 | 87.4 | |

- (Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.
- (Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) The power supply differs from pump capacity. Please refer to pump information table to design power supply correctly.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Electrical data does not include inbuilt pump.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 10) Working pressure is below 0.7 MPa.
 (Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

Specifications Internal inverter pump

60HP Powerful Heating Type Heat pump

| | | Standard type | High-EER type | |
|--|--------------------------------------|---|---|------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUAGP511F18 | RUAGP511F18 | |
| Cooling capacity (Note 1) (kW) | | 180 | 180 | |
| Heating capacity (Note 1) (kW) | | 200 | 200 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2,350 | |
| | | Width (Note 2) (mm) | 1,000 | |
| | | Depth (Note 2) (mm) | 3,300 | |
| Shipping weight (kg) | | 1,359 | 1,371 | |
| Operating weight (kg) | | 1,395 | 1,407 | |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design (Note 4-5) (A) | | 113 | 113 | |
| Electrical data (Note 7) | Cooling | Nominal current (A) | 84.8 | 57.3 |
| | | Nominal input (kW) | 55.2 | 37.4 |
| | | EER | 3.26 | 4.81 |
| | | SEER | 4.77 | 4.94 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| | Heating | Nominal current (A) | 90.6 | 90.6 |
| | | Nominal input (kW) | 59 | 59 |
| | | COP | 3.39 | 3.39 |
| | | SCOP | 4.23 | 4.23 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary x 4 | | |
| | Motor output x number of units (kW) | 12.5 x 4 | 12.5 x 4 | |
| | Type of start | Inverter starter | | |
| | Case heater (W) | 37 x 4 | 37 x 4 | |
| Compressor oil | Type | RB74AF | | |
| | Charge (L) | 2.0 x 4 | | |
| Condenser coil - air side | | Plate fin coil | | |
| Fan | Type | Propeller fan | | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | | |
| | Type of start | Inverter starter | | |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 | |
| Spray system (Note 8) | Water spray volume (L/min) | - | 13.6 x 1 | |
| | Supply water pressure (Note 9) (MPa) | - | 0.2 | |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values | |
| Pump | Motor output (kW) | 1.5 | 1.5 | |
| | Type | Centrifugal pump | | |
| | Flow control | Inverter | | |
| | Maximum current (A) | 3.1 | 3.1 | |
| | Minimum input (kW) | 2 | 2 | |
| Cooler - water side (Note 10) | | Braze plate heat exchanger (SUS316 equivalent) | | |
| Refrigerant | Type | R32 | | |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 | |
| | Control | Electric expansion valve | | |
| Capacity control steps (Note 11) (%) | | 0; 5-100 | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | | |
| Defrost system | | Distributed reverse cycle system | | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | | |
| Piping details | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) | |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) | |
| | Coil drain (A) | PT1-1/2" external thread | PT1-1/2" external thread | |
| Sound power level dB(A) | | 87.4 | 87.4 | |

- (Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.
- (Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) The power supply differs from pump capacity. Please refer to pump information table to design power supply correctly.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Electrical data does not include inbuilt pump.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 10) Working pressure is below 0.7 MPa.
 (Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

Specifications Internal inverter pump

60HP Series EDGE Cooling-only

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP511C18 | RUAGP511C1N8 |
| Cooling capacity (Note 1) (kW) | | 180 | 180 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,309 | 1,322 |
| Operating weight (kg) | | 1,345 | 1,358 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4-5) (A) | | 103 | 103 |
| Electrical data (Note 7) | Cooling | Nominal current (A) | 84.8 |
| | | Nominal input (kW) | 55 |
| | | EER | 3.27 |
| | | SEER | 4.8 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 11.2 x 4 | |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | |
| Spray system (Note 8) | Water spray volume (L/min) | - | |
| | Supply water pressure (Note 9) (MPa) | - | |
| | Control | - | |
| Pump | Motor output (kW) | 1.5 | |
| | Type | Centrifugal pump | |
| | Flow control | Inverter | |
| | Maximum current (A) | 3.1 | |
| | Minimum input (kW) | 2 | |
| Cooler - water side (Note 10) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 11) (%) | | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 2-1/2" flange | |
| | Cold/Hot water outlet (A) | 2-1/2" flange | |
| | Coil drain (A) | PT1-1/2" external thread | |
| Sound power level dB(A) | | 87.4 | |

- (Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281.
- (Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) The power supply differs from pump capacity. Please refer to pump information table to design power supply correctly.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Electrical data does not include inbuilt pump.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 10) Working pressure is below 0.7 MPa.
 (Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

Specifications Internal inverter pump

70HP Series EDGE Heat pump

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP561H28 | RUAGP561H2N8 |
| Cooling capacity (Note 1) (kW) | | 200 | 200 |
| Heating capacity (Note 1) (kW) | | 200 | 200 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,357 | 1,369 |
| Operating weight (kg) | | 1,393 | 1,405 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4-5) (A) | | 119 | 119 |
| Electrical data (Note 7) | Cooling | Nominal current (A) | 99.7 |
| | | Nominal input (kW) | 64.9 |
| | | EER | 3.08 |
| | | SEER | 4.75 |
| | | Power factor (Note 6) (%) | 99 |
| | Heating | Nominal current (A) | 90.1 |
| | | Nominal input (kW) | 59 |
| | | COP | 3.39 |
| | | SCOP | 4.28 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 13.3 x 4 | |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | |
| Spray system (Note 8) | Water spray volume (L/min) | - | |
| | Supply water pressure (Note 9) (MPa) | - | |
| | Control | - | |
| Pump | Motor output (kW) | 2.2 | |
| | Type | Centrifugal pump | |
| | Flow control | Inverter | |
| | Maximum current (A) | 4.3 | |
| | Minimum input (kW) | 2.8 | |
| Cooler - water side (Note 10) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 11) (%) | | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 3" flange (JIS10K) | |
| | Cold/Hot water outlet (A) | 3" flange (JIS10K) | |
| | Coil drain (A) | PT1-1/2" external thread | |
| Sound power level dB(A) | | 90.9 | |

- (Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.
- (Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) The power supply differs from pump capacity. Please refer to pump information table to design power supply correctly.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Electrical data does not include inbuilt pump.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 10) Working pressure is below 0.7 MPa.
 (Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

Specifications Internal inverter pump

70HP Series EDGE Cooling-only

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP561C28 | RUAGP561C2N8 |
| Cooling capacity (Note 1) (kW) | | 200 | 200 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,318 | 1,331 |
| Operating weight (kg) | | 1,354 | 1,367 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4-5) (A) | | 119 | 119 |
| Electrical data (Note 7) | Cooling | Nominal current (A) | 99.1 |
| | | Nominal input (kW) | 64.5 |
| | | EER | 3.1 |
| | | SEER | 4.75 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 13.3 x 4 | 9.1 x 4 |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | |
| | Type of start | Inverter starter | |
| Spray system (Note 8) | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 9) (MPa) | - | 0.2 |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values |
| Pump | Motor output (kW) | 2.2 | 2.2 |
| | Type | Centrifugal pump | |
| | Flow control | Inverter | |
| | Maximum current (A) | 4.3 | |
| | Minimum input (kW) | 2.8 | |
| Cooler - water side (Note 10) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 11) (%) | | 0; 5-100 | 0; 5-100 |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermostat error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 3" flange (JIS10K) | |
| | Cold/Hot water outlet (A) | 3" flange (JIS10K) | |
| | Coil drain (A) | PT1-1/2" external thread | |
| Sound power level dB(A) | | 90.9 | 90.9 |

- (Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281.
- (Note 2) Dimensions do not include projections of water pipe connections.
- (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
- (Note 4) The power supply differs from pump capacity. Please refer to pump information table to design power supply correctly.
- (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
- (Note 6) Power factors may vary depending on site conditions.
- (Note 7) Electrical data does not include inbuilt pump.
- (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
- (Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
- (Note 10) Working pressure is below 0.7 MPa.
- (Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

Specifications Pumpless

50HP Series EDGE Heat pump

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP421HL8 | RUAGP421HLN8 |
| Cooling capacity (Note 1) (kW) | | 150 | 150 |
| Heating capacity (Note 1) (kW) | | 150 | 150 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,290 | 1,302 |
| Operating weight (kg) | | 1,326 | 1,338 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4) (A) | | 79 | 79 |
| Electrical data (Note 7) | Cooling | Nominal current (A) | 65.3 |
| | | Nominal input (kW) | 42.5 |
| | | EER | 3.53 |
| | | SEER | 4.88 |
| | | Power factor (Note 5) (%) | 99 |
| | Heating | Nominal current (A) | 63.6 |
| | | Nominal input (kW) | 41.4 |
| | | COP | 3.62 |
| | | SCOP | 4.26 |
| | | Power factor (Note 5) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 9.0 x 4 | 9.0 x 4 |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | |
| | Type of start | Inverter starter | |
| Spray system (Note 8) | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 9) (MPa) | - | 0.2 |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values |
| Pump | Motor output (kW) | 2.2 | 2.2 |
| | Type | Centrifugal pump | |
| | Flow control | Inverter | |
| | Maximum current (A) | 4.3 | |
| | Minimum input (kW) | 2.8 | |
| Cooler - water side (Note 10) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 11) (%) | | 0; 5-100 | 0; 5-100 |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermostat error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | |
| | Coil drain (A) | PT1-1/2" external thread | |
| Sound power level dB(A) | | 83.8 | 83.8 |

- (Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.
- (Note 2) Dimensions do not include projections of water pipe connections.
- (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
- (Note 4) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
- (Note 5) Power factors may vary depending on site conditions.
- (Note 6) Electrical data does not include inbuilt pump.
- (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
- (Note 8) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
- (Note 9) Working pressure is below 0.7 MPa.
- (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

50HP **Powerful Heating Type** Heat pump

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP421FL8 | RUAGP421FLN8 |
| Cooling capacity (Note 1) (kW) | | 150 | 150 |
| Heating capacity (Note 1) (kW) | | 150 | 150 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,302 | 1,314 |
| Operating weight (kg) | | 1,338 | 1,350 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4) (A) | | 79 | 79 |
| Electrical data (Note 5) | Cooling | Nominal current (A) | 65.3 |
| | | Nominal input (kW) | 42.5 |
| | | EER | 3.53 |
| | | SEER | 4.88 |
| | | Power factor (Note 5) (%) | 99 |
| | Heating | Nominal current (A) | 99 |
| | | Nominal input (kW) | 63.6 |
| | | COP | 41.4 |
| | | SCOP | 4.26 |
| | | Power factor (Note 5) (%) | 99 |
| Compressor (Note 6) | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 9.0 x 4 | |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan (Note 7) | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | |
| Spray system (Note 7) | Water spray volume (L/min) | - | |
| | Supply water pressure (Note 8) (MPa) | - | |
| | Control | - | |
| Cooler - water side (Note 9) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Drain pan heater (W) | | 75 x 6 | |
| Capacity control steps (Note 10) (%) | | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | |
| | Coil drain (A) | PT1-1/2" external thread | |
| Sound power level dB(A) | | 83.8 | |

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.
 (Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 5) Power factors may vary depending on site conditions.
 (Note 6) Electrical data does not include inbuilt pump.
 (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 8) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 9) Working pressure is below 0.7 MPa.
 (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

50HP **Series EDGE** Cooling-only

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP421CL8 | RUAGP421CLN8 |
| Cooling capacity (Note 1) (kW) | | 150 | 150 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,251 | 1,264 |
| Operating weight (kg) | | 1,287 | 1,300 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4) (A) | | 79 | 79 |
| Electrical data (Note 5) | Cooling | Nominal current (A) | 66.2 |
| | | Nominal input (kW) | 43.1 |
| | | EER | 3.48 |
| | | SEER | 4.9 |
| | | Power factor (Note 5) (%) | 99 |
| Compressor (Note 6) | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 8.7 x 4 | |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan (Note 7) | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | |
| Spray system (Note 7) | Water spray volume (L/min) | - | |
| | Supply water pressure (Note 8) (MPa) | - | |
| | Control | - | |
| Cooler - water side (Note 9) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 10) (%) | | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | |
| | Coil drain (A) | PT1-1/2" external thread | |
| Sound power level dB(A) | | 83.8 | |

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281.
 (Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 5) Power factors may vary depending on site conditions.
 (Note 6) Electrical data does not include inbuilt pump.
 (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 8) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 9) Working pressure is below 0.7 MPa.
 (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

60HP Series **EDGE** Heat pump

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP511HL8 | RUAGP511HLN8 |
| Cooling capacity (Note 1) (kW) | | 180 | 180 |
| Heating capacity (Note 1) (kW) | | 180 | 180 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,290 | 1,302 |
| Operating weight (kg) | | 1,326 | 1,338 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4) (A) | | 99 | 99 |
| Electrical data (Note 5) | Cooling | Nominal current (A) | 84.8 |
| | | Nominal input (kW) | 55.2 |
| | | EER | 3.26 |
| | | SEER | 4.77 |
| | | Power factor (Note 5) (%) | 99 |
| | Heating | Nominal current (A) | 79.6 |
| | | Nominal input (kW) | 51.9 |
| | | COP | 3.47 |
| | | SCOP | 4.35 |
| | | Power factor (Note 5) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 11.2 x 4 | 11.1 x 4 |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | 2.0 x 4 |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| Spray system (Note 7) | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 8) (MPa) | - | 0.2 |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values |
| Cooler - water side (Note 9) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 10) (%) | | 0; 5-100 | 0; 5-100 |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) |
| | Coil drain (A) | PT1-1/2" external thread | PT1-1/2" external thread |
| Sound power level dB(A) | | 87.4 | 87.4 |

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 5) Power factors may vary depending on site conditions.
 (Note 6) Electrical data does not include inbuilt pump.
 (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 8) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 9) Working pressure is below 0.7 MPa.
 (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

60HP **Powerful Heating Type** Heat pump

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP511FL8 | RUAGP511FLN8 |
| Cooling capacity (Note 1) (kW) | | 180 | 180 |
| Heating capacity (Note 1) (kW) | | 200 | 200 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,302 | 1,314 |
| Operating weight (kg) | | 1,338 | 1,350 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4) (A) | | 110 | 110 |
| Electrical data (Note 5) | Cooling | Nominal current (A) | 84.8 |
| | | Nominal input (kW) | 55.2 |
| | | EER | 3.26 |
| | | SEER | 4.77 |
| | | Power factor (Note 5) (%) | 99 |
| | Heating | Nominal current (A) | 90.6 |
| | | Nominal input (kW) | 59 |
| | | COP | 3.39 |
| | | SCOP | 4.23 |
| | | Power factor (Note 5) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 12.5 x 4 | 12.5 x 4 |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | 2.0 x 4 |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| Spray system (Note 7) | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 8) (MPa) | - | 0.2 |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values |
| Cooler - water side (Note 9) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 |
| | Control | Electric expansion valve | |
| Drain pan heater (W) | | 75 x 6 | 75 x 6 |
| Capacity control steps (Note 10) (%) | | 0; 5-100 | 0; 5-100 |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange (JIS10K) |
| | Coil drain (A) | PT1-1/2" external thread | PT1-1/2" external thread |
| Sound power level dB(A) | | 87.4 | 87.4 |

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 5) Power factors may vary depending on site conditions.
 (Note 6) Electrical data does not include inbuilt pump.
 (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 8) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 9) Working pressure is below 0.7 MPa.
 (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

60HP Series **EDGE** Cooling-only

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP511CL8 | RUAGP511CLN8 |
| Cooling capacity (Note 1) (kW) | | 180 | 180 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,251 | 1,264 |
| Operating weight (kg) | | 1,287 | 1,300 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4) (A) | | 99 | 99 |
| Electrical data (Note 6) | Cooling | Nominal current (A) | 84.8 |
| | | Nominal input (kW) | 55 |
| | | EER | 3.27 |
| | | SEER | 4.8 |
| | | Power factor (Note 5) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 11.2 x 4 | |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | |
| Spray system (Note 7) | Water spray volume (L/min) | - | |
| | Supply water pressure (Note 8) (MPa) | - | |
| | Control | - | |
| Cooler - water side (Note 9) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 10) (%) | | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermostat error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | |
| | Coil drain (A) | PT1-1/2" external thread | |
| Sound power level dB(A) | | 87.4 | |

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281.
 (Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 5) Power factors may vary depending on site conditions.
 (Note 6) Electrical data does not include inbuilt pump.
 (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 8) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 9) Working pressure is below 0.7 MPa.
 (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

70HP Series **EDGE** Heat pump

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP561HL8 | RUAGP561HLN8 |
| Cooling capacity (Note 1) (kW) | | 200 | 200 |
| Heating capacity (Note 1) (kW) | | 200 | 200 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,296 | 1,308 |
| Operating weight (kg) | | 1,332 | 1,344 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4) (A) | | 115 | 115 |
| Electrical data (Note 6) | Cooling | Nominal current (A) | 99.7 |
| | | Nominal input (kW) | 64.9 |
| | | EER | 3.08 |
| | | SEER | 4.72 |
| | | Power factor (Note 5) (%) | 99 |
| | Heating | Nominal current (A) | 90.1 |
| | | Nominal input (kW) | 59 |
| | | COP | 3.39 |
| | | SCOP | 4.28 |
| | | Power factor (Note 5) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 13.3 x 4 | |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | |
| Spray system (Note 7) | Water spray volume (L/min) | - | |
| | Supply water pressure (Note 8) (MPa) | - | |
| | Control | - | |
| Cooler - water side (Note 9) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 10) (%) | | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermostat error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 3" flange (JIS10K) | |
| | Cold/Hot water outlet (A) | 3" flange (JIS10K) | |
| | Coil drain (A) | PT1-1/2" external thread | |
| Sound power level dB(A) | | 90.9 | |

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.
 (Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 5) Power factors may vary depending on site conditions.
 (Note 6) Electrical data does not include inbuilt pump.
 (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 8) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 9) Working pressure is below 0.7 MPa.
 (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

70HP Series **EDGE** Cooling-only

| | | Standard type | High-EER type |
|--|--------------------------------------|---|---|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUAGP561CL8 | RUAGP561CLN8 |
| Cooling capacity (Note 1) (kW) | | 200 | 200 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2,350 |
| | | Width (Note 2) (mm) | 1,000 |
| | | Depth (Note 2) (mm) | 3,300 |
| Shipping weight (kg) | | 1,258 | 1,270 |
| Operating weight (kg) | | 1,294 | 1,306 |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4) (A) | | 115 | 115 |
| Electrical data (Note 6) | Cooling | Nominal current (A) | 99.1 |
| | | Nominal input (kW) | 64.5 |
| | | EER | 3.1 |
| | | SEER | 4.75 |
| | | Power factor (Note 5) (%) | 99 |
| Compressor | Type | Hermetic rotary x 4 | |
| | Motor output x number of units (kW) | 13.3 x 4 | 9.1 x 4 |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | 2.0 x 4 |
| Condenser coil - air side | | Plate fin coil | Plate fin coil |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | 1,230 (maximum) |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| Spray system (Note 7) | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 8) (MPa) | - | 0.2 |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values |
| Cooler - water side (Note 9) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 10) (%) | 0; 5-100 | 0; 5-100 | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | |
| Piping diameters | Cold/Hot water inlet (A) | 3" flange (JIS10K) | 3" flange (JIS10K) |
| | Cold/Hot water outlet (A) | 3" flange (JIS10K) | 3" flange (JIS10K) |
| | Coil drain (A) | PT1-1/2" external thread | PT1-1/2" external thread |
| Sound power level | dB(A) | 90.9 | 90.9 |

- (Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281.
- (Note 2) Dimensions do not include projections of water pipe connections.
- (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
- (Note 4) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
- (Note 5) Power factors may vary depending on site conditions.
- (Note 6) Electrical data does not include inbuilt pump.
- (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
- (Note 8) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
- (Note 9) Working pressure is below 0.7 MPa.
- (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

Ex.) Internal inverter pump Air-cooled heat pump [High-EER type] 16 combined module units

| | | Ex.) 50HP x 1 (single unit) | Ex.) 50HP x 16 units | Calculation Method | |
|--|--------------------------------------|---|---|--|---|
| Model (A single module unit) | | RUAGP421H1N8 | RUAGP421H1N8 | | |
| Cooling capacity (Note 1) (kW) | | 150 | 2400 | (Single unit value) x (number of module units in set) | |
| Heating capacity (Note 1) (kW) | | 150 | 2400 | (Single unit value) x (number of module units in set) | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | - | |
| | Dimensions | Height (mm) | 2,350 | See General Charts | |
| | | Width (Note 2) (mm) | 1,000 | | |
| | | Depth (Note 2) (mm) | 3,300 | | |
| Shipping weight (kg) | | 1,360 | 21,760 | | (Single unit value) x (number of module units in set) |
| Operating weight (kg) | | 1,396 | 22,336 | (Single unit value) x (number of module units in set) | |
| Power supply (Note 1-3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | | |
| Reference current for power supply design (Note 4-5) (A) | | 82.1 | 82.1 x 16 | (Single unit value) x (number of module units in set)- | |
| Electrical data (Note 6) | Cooling | Nominal current (A) | 42.8 | 684.8 | (Single unit value) x (number of module units in set) |
| | | Nominal input (kW) | 27.9 | 446.4 | (Single unit value) x (number of module units in set) |
| | | EER | 5.38 | 5.38 | - |
| | | SEER | 5.06 | 5.06 | - |
| | | Power factor (Note 6) (%) | 99 | 99 | - |
| | Heating | Nominal current (A) | 63.6 | 1017.6 | (Single unit value) x (number of module units in set) |
| | | Nominal input (kW) | 41.4 | 662.4 | (Single unit value) x (number of module units in set) |
| | | COP | 3.62 | 3.62 | - |
| | | SCOP | 4.26 | 4.26 | - |
| | | Power factor (Note 6) (%) | 99 | 99 | - |
| Compressor (Note 7) | Type | Hermetic rotary | | - | |
| | Motor output x number of units (kW) | 9.0 x 4 | 9.0 x 64 | (Single unit value) x (number of module units in set) | |
| | Type of start | Inverter starter | | | |
| | Case heater (W) | 37 x 4 | 37 x 64 | (Single unit value) x (number of module units in set) | |
| Compressor oil | Type | RB74AF | | | |
| | Charge (L) | 2.0 x 4 | 2.0 x 64 | (Single unit value) x (number of module units in set) | |
| Condenser coil - air side | | Plate fin coil | Plate fin coil | - | |
| Fan | Type | Propeller fan | | - | |
| | Air quantity (m ³ /min) | 1,230 (maximum) | 19,680 (maximum) | (Single unit value) x (number of module units in set) | |
| | Type of start | Inverter starter | | | |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 64 | (Single unit value) x (number of module units in set) | |
| Spray system (Note 8) | Water spray volume (L/min) | 13.6 x 1 | 13.6 x 16 | (Single unit value) x (number of module units in set) | |
| | Supply water pressure (Note 9) (MPa) | 0.2 | 0.2 | - | |
| | Control | Continuous spraying when outside temperature and compressor capacity exceeds setting values | Continuous spraying when outside temperature and compressor capacity exceeds setting values | - | |
| Pump | Motor output (kW) | 1.5 | 1.5 x 16 | (Single unit value) x (number of module units in set) | |
| | Type | Centrifugal pump | | - | |
| | Flow control | Inverter | | - | |
| | Maximum current (A) | 3.1 | 3.1 x 16 | (Single unit value) x (number of module units in set) | |
| | Minimum input (kW) | 2 | 2.0 x 16 | (Single unit value) x (number of module units in set) | |
| Cooler - water side (Note 10) | | Braze plate heat exchanger (SUS316 equivalent) | | - | |
| Refrigerant | Type | R32 | | - | |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 64 | (Single unit value) x (number of module units in set) | |
| | Control | Electric expansion valve | | - | |
| Capacity control steps (Note 11) (%) | 0; 5-100 | 0; 5-100 | - | | |
| Operation control | | Microprocessor control based on leaving water temperature and temperature difference | | - | |
| Defrost system | | Distributed reverse cycle system | Distributed reverse cycle system | - | |
| Protective device | | High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, high water temp. cutout, low flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error) | | - | |
| Piping diameters | Cold/Hot water inlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange x 16 (JIS10K) | (Single unit value) x (number of module units in set) *Each module unit has one connection port | |
| | Cold/Hot water outlet (A) | 2-1/2" flange (JIS10K) | 2-1/2" flange x 16 (JIS10K) | | |
| | Coil drain (A) | PT1-1/2" external thread | PT1-1/2" external thread x 16 | | |
| Sound power level | dB(A) | 83.8 | - | See General Charts | |

- (Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
 For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
 For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°CDB, 6°CWB outdoor air (OAT)
 Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
 Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.
- (Note 2) Dimensions do not include projections of water pipe connections.
- (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
- (Note 4) The power supply differs from pump capacity. Please refer to pump information table to design power supply correctly.
- (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
- (Note 6) Power factors may vary depending on site conditions.
- (Note 7) Electrical data does not include inbuilt pump.
- (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
- (Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
- (Note 10) Working pressure is below 0.7 MPa.
- (Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

General Charts for Set of Modules : Capacity, Dimensions, and Sound Level

50HP **Series EDGE** **Powerful Heating Type**

| Number of modules | Cooling capacity (kW) | Heating capacity (kW) <small>(Note 1)</small> | Dimensions (mm) HxWxD <small>(Note 2)</small> | Sound Pressure Level <small>(Note 3)</small> | | | Sound Power Level |
|-------------------|-----------------------|---|---|--|-------------------------|--------------------------|-------------------|
| | | | | Control box side | Air heat exchanger side | Water heat exchange side | |
| 1 | 150 | 150 | 2,350x1,000x3,300 | 64.7 | 65.9 | 69.1 | 83.8 |
| 2 | 300 | 300 | 2,350x2,030x3,300 | 67.5 | 68.7 | 70.4 | 86.8 |
| 3 | 450 | 450 | 2,350x3,060x3,300 | 69.0 | 70.2 | 70.9 | 88.6 |
| 4 | 600 | 600 | 2,350x4,090x3,300 | 70.0 | 71.2 | 71.2 | 89.8 |
| 5 | 750 | 750 | 2,350x5,120x3,300 | 70.6 | 71.8 | 71.4 | 90.8 |
| 6 | 900 | 900 | 2,350x6,150x3,300 | 71.1 | 72.4 | 71.5 | 91.6 |
| 7 | 1050 | 1050 | 2,350x7,180x3,300 | 71.5 | 72.7 | 71.6 | 92.3 |
| 8 | 1200 | 1200 | 2,350x8,210x3,300 | 71.8 | 73.0 | 71.7 | 92.8 |
| 9 | 1350 | 1350 | 2,350x9,240x3,300 | 72.0 | 73.2 | 71.8 | 93.3 |
| 10 | 1500 | 1500 | 2,350x10,270x3,300 | 72.2 | 73.4 | 71.8 | 93.8 |
| 11 | 1650 | 1650 | 2,350x11,300x3,300 | 72.3 | 73.5 | 71.8 | 94.2 |
| 12 | 1800 | 1800 | 2,350x12,300x3,300 | 72.4 | 73.7 | 71.9 | 94.6 |
| 13 | 1950 | 1950 | 2,350x13,360x3,300 | 72.5 | 73.7 | 71.9 | 94.9 |
| 14 | 2100 | 2100 | 2,350x14,390x3,300 | 72.6 | 73.9 | 71.9 | 95.3 |
| 15 | 2250 | 2250 | 2,350x15,420x3,300 | 72.7 | 73.9 | 71.9 | 95.6 |
| 16 | 2400 | 2400 | 2,350x16,450x3,300 | 72.8 | 74.0 | 72.0 | 95.8 |

Note 1: Only for heat pump types.

Note 2: Dimensions (width, depth) do not include projections of water pipe connections and power cable kit. (when installing optional parts)

Note 3: The on-site sound level will be higher due to the effect of back noise and sound reflection.

60HP **Series EDGE**

| Number of modules | Cooling capacity (kW) | Heating capacity (kW) <small>(Note 1)</small> | Dimensions (mm) HxWxD <small>(Note 2)</small> | Sound Pressure Level <small>(Note 3)</small> | | | Sound Power Level |
|-------------------|-----------------------|---|---|--|-------------------------|--------------------------|-------------------|
| | | | | Control box side | Air heat exchanger side | Water heat exchange side | |
| 1 | 180 | 180 | 2,350x1,000x3,300 | 68.2 | 68.3 | 71.2 | 87.4 |
| 2 | 360 | 360 | 2,350x2,030x3,300 | 71.0 | 71.1 | 72.5 | 90.4 |
| 3 | 540 | 540 | 2,350x3,060x3,300 | 72.5 | 72.6 | 73.1 | 92.2 |
| 4 | 720 | 720 | 2,350x4,090x3,300 | 73.5 | 73.6 | 73.3 | 93.4 |
| 5 | 900 | 900 | 2,350x5,120x3,300 | 74.1 | 74.2 | 73.5 | 94.4 |
| 6 | 1080 | 1080 | 2,350x6,150x3,300 | 74.7 | 74.8 | 73.7 | 95.2 |
| 7 | 1260 | 1260 | 2,350x7,180x3,300 | 75.0 | 75.1 | 73.7 | 95.9 |
| 8 | 1440 | 1440 | 2,350x8,210x3,300 | 75.3 | 75.4 | 73.8 | 96.4 |
| 9 | 1620 | 1620 | 2,350x9,240x3,300 | 75.5 | 75.6 | 73.9 | 96.9 |
| 10 | 1800 | 1800 | 2,350x10,270x3,300 | 75.7 | 75.8 | 73.9 | 97.4 |
| 11 | 1980 | 1980 | 2,350x11,300x3,300 | 75.8 | 75.9 | 74.0 | 97.8 |
| 12 | 2160 | 2160 | 2,350x12,300x3,300 | 76.0 | 76.1 | 74.0 | 98.2 |
| 13 | 2340 | 2340 | 2,350x13,360x3,300 | 76.0 | 76.1 | 74.0 | 98.5 |
| 14 | 2520 | 2520 | 2,350x14,390x3,300 | 76.1 | 76.2 | 74.0 | 98.9 |
| 15 | 2700 | 2700 | 2,350x15,420x3,300 | 76.2 | 76.3 | 74.1 | 99.2 |
| 16 | 2880 | 2880 | 2,350x16,450x3,300 | 76.3 | 76.4 | 74.1 | 99.4 |

Note 1: Only for heat pump types.

Note 2: Dimensions (width, depth) do not include projections of water pipe connections and power cable kit. (when installing optional parts)

Note 3: The on-site sound level will be higher due to the effect of back noise and sound reflection.

General Charts for Set of Modules : Capacity, Dimensions, and Sound Level

60HP **Powerful Heating Type**

| Number of modules | Cooling capacity (kW) | Heating capacity (kW) <small>(Note 1)</small> | Dimensions (mm) HxWxD <small>(Note 2)</small> | Sound Pressure Level <small>(Note 3)</small> | | | Sound Power Level |
|-------------------|-----------------------|---|---|--|-------------------------|--------------------------|-------------------|
| | | | | Control box side | Air heat exchanger side | Water heat exchange side | |
| 1 | 180 | 200 | 2,350x1,000x3,300 | 68.2 | 68.3 | 71.2 | 87.4 |
| 2 | 360 | 400 | 2,350x2,030x3,300 | 71.0 | 71.1 | 72.5 | 90.4 |
| 3 | 540 | 600 | 2,350x3,060x3,300 | 72.5 | 72.6 | 73.1 | 92.2 |
| 4 | 720 | 800 | 2,350x4,090x3,300 | 73.5 | 73.6 | 73.3 | 93.4 |
| 5 | 900 | 1000 | 2,350x5,120x3,300 | 74.1 | 74.2 | 73.5 | 94.4 |
| 6 | 1080 | 1200 | 2,350x6,150x3,300 | 74.7 | 74.8 | 73.7 | 95.2 |
| 7 | 1260 | 1400 | 2,350x7,180x3,300 | 75.0 | 75.1 | 73.7 | 95.9 |
| 8 | 1440 | 1600 | 2,350x8,210x3,300 | 75.3 | 75.4 | 73.8 | 96.4 |
| 9 | 1620 | 1800 | 2,350x9,240x3,300 | 75.5 | 75.6 | 73.9 | 96.9 |
| 10 | 1800 | 2000 | 2,350x10,270x3,300 | 75.7 | 75.8 | 73.9 | 97.4 |
| 11 | 1980 | 2200 | 2,350x11,300x3,300 | 75.8 | 75.9 | 74.0 | 97.8 |
| 12 | 2160 | 2400 | 2,350x12,300x3,300 | 76.0 | 76.1 | 74.0 | 98.2 |
| 13 | 2340 | 2600 | 2,350x13,360x3,300 | 76.0 | 76.1 | 74.0 | 98.5 |
| 14 | 2520 | 2800 | 2,350x14,390x3,300 | 76.1 | 76.2 | 74.0 | 98.9 |
| 15 | 2700 | 3000 | 2,350x15,420x3,300 | 76.2 | 76.3 | 74.1 | 99.2 |
| 16 | 2880 | 3200 | 2,350x16,450x3,300 | 76.3 | 76.4 | 74.1 | 99.4 |

Note 1: Only for heat pump types.

Note 2: Dimensions (width, depth) do not include projections of water pipe connections and power cable kit. (when installing optional parts)

Note 3: The on-site sound level will be higher due to the effect of back noise and sound reflection.

70HP **Series EDGE**

| Number of modules | Cooling capacity (kW) | Heating capacity (kW) <small>(Note 1)</small> | Dimensions (mm) HxWxD <small>(Note 2)</small> | Sound Pressure Level <small>(Note 3)</small> | | | Sound Power Level |
|-------------------|-----------------------|---|---|--|-------------------------|--------------------------|-------------------|
| | | | | Control box side | Air heat exchanger side | Water heat exchange side | |
| 1 | 200 | 200 | 2,350x1,000x3,300 | 69.7 | 68.6 | 74.0 | 90.9 |
| 2 | 400 | 400 | 2,350x2,030x3,300 | 72.5 | 71.5 | 75.3 | 93.9 |
| 3 | 600 | 600 | 2,350x3,060x3,300 | 74.0 | 72.9 | 75.9 | 95.7 |
| 4 | 800 | 800 | 2,350x4,090x3,300 | 75.0 | 74.0 | 76.2 | 96.9 |
| 5 | 1000 | 1000 | 2,350x5,120x3,300 | 75.6 | 74.6 | 76.3 | 97.9 |
| 6 | 1200 | 1200 | 2,350x6,150x3,300 | 76.1 | 75.1 | 76.5 | 98.7 |
| 7 | 1400 | 1400 | 2,350x7,180x3,300 | 76.5 | 75.4 | 76.6 | 99.4 |
| 8 | 1600 | 1600 | 2,350x8,210x3,300 | 76.8 | 75.7 | 76.6 | 99.9 |
| 9 | 1800 | 1800 | 2,350x9,240x3,300 | 77.0 | 75.9 | 76.7 | 100.4 |
| 10 | 2000 | 2000 | 2,350x10,270x3,300 | 77.2 | 76.1 | 76.7 | 100.9 |
| 11 | 2200 | 2200 | 2,350x11,300x3,300 | 77.3 | 76.2 | 76.8 | 101.3 |
| 12 | 2400 | 2400 | 2,350x12,300x3,300 | 77.4 | 76.4 | 76.8 | 101.7 |
| 13 | 2600 | 2600 | 2,350x13,360x3,300 | 77.5 | 76.5 | 76.8 | 102.0 |
| 14 | 2800 | 2800 | 2,350x14,390x3,300 | 77.6 | 76.6 | 76.8 | 102.4 |
| 15 | 3000 | 3000 | 2,350x15,420x3,300 | 77.7 | 76.6 | 76.9 | 102.7 |
| 16 | 3200 | 3200 | 2,350x16,450x3,300 | 77.8 | 76.7 | 76.9 | 102.9 |

Note 1: Only for heat pump types.

Note 2: Dimensions (width, depth) do not include projections of water pipe connections and power cable kit. (when installing optional parts)

Note 3: The on-site sound level will be higher due to the effect of back noise and sound reflection.

Capacity Chart

Standard & Powerful Heating Type (Leaving (LVG) / Entering (ETG) water temperature difference = 7°C)

50HP Series EDGE Heat pump

List of cooling capacities RUA-GP421H(L)

| Chilled water outlet temperature (°C) | Item | (kW) | Outside air temperature (°C) (DB) | | | | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------|-----------------------------------|------|------|------|------|------|------|------|------|--|--|--|--|--|--|--|--|--|--|
| | | | 15 | 20 | 25 | 30 | 35 | 40 | 43 | 48 | 52 | | | | | | | | | | |
| 4 | Cooling capacity | 168 | 163 | 154 | 145 | 136 | 127 | 121 | 106 | 95.0 | | | | | | | | | | | |
| | Power consumption | 25.5 | 29.2 | 32.9 | 36.8 | 40.8 | 44.9 | 47.1 | 46.9 | 48.0 | | | | | | | | | | | |
| | Chilled water flow rate | 344 | 335 | 316 | 297 | 278 | 259 | 248 | 217 | 195 | | | | | | | | | | | |
| | Operation current | (A) | 37.4 | 42.5 | 48.0 | 53.7 | 59.5 | 65.4 | 68.6 | 68.4 | 70.0 | | | | | | | | | | |
| | Operation current | (A) | 37.4 | 43.0 | 48.9 | 54.6 | 60.8 | 66.9 | 69.2 | 68.4 | 66.3 | | | | | | | | | | |
| 7 | Cooling capacity | 186 | 181 | 171 | 160 | 150 | 140 | 132 | 114 | 97.3 | | | | | | | | | | | |
| | Power consumption | 25.4 | 29.5 | 33.5 | 37.5 | 41.7 | 45.9 | 47.5 | 46.9 | 45.5 | | | | | | | | | | | |
| | Chilled water flow rate | 382 | 370 | 350 | 328 | 307 | 286 | 269 | 233 | 199 | | | | | | | | | | | |
| | Operation current | (A) | 37.4 | 43.0 | 48.9 | 54.6 | 60.8 | 66.9 | 69.2 | 68.4 | 66.3 | | | | | | | | | | |
| | Operation current | (A) | 37.4 | 43.2 | 49.2 | 55.4 | 61.7 | 67.9 | 68.7 | 68.6 | 64.0 | | | | | | | | | | |
| 9 | Cooling capacity | 199 | 193 | 182 | 171 | 160 | 149 | 138 | 120 | 98.8 | | | | | | | | | | | |
| | Power consumption | 25.4 | 29.6 | 33.8 | 38.0 | 42.3 | 46.6 | 47.1 | 47.1 | 43.9 | | | | | | | | | | | |
| | Chilled water flow rate | 408 | 396 | 374 | 350 | 327 | 305 | 283 | 245 | 202 | | | | | | | | | | | |
| | Operation current | (A) | 37.4 | 43.2 | 49.2 | 55.4 | 61.7 | 67.9 | 68.7 | 68.6 | 64.0 | | | | | | | | | | |
| | Operation current | (A) | 37.4 | 43.6 | 50.0 | 56.6 | 62.9 | 69.5 | 69.0 | 69.2 | 60.0 | | | | | | | | | | |
| 12 | Cooling capacity | 219 | 211 | 200 | 189 | 176 | 164 | 150 | 131 | 100 | | | | | | | | | | | |
| | Power consumption | 25.4 | 29.9 | 34.3 | 38.8 | 43.1 | 47.7 | 47.3 | 47.5 | 41.2 | | | | | | | | | | | |
| | Chilled water flow rate | *430 | *430 | 410 | 387 | 361 | 335 | 306 | 267 | 206 | | | | | | | | | | | |
| | Operation current | (A) | 37.4 | 43.6 | 50.0 | 56.6 | 62.9 | 69.5 | 69.0 | 69.2 | 60.0 | | | | | | | | | | |
| | Operation current | (A) | 37.4 | 43.9 | 50.4 | 57.1 | 64.0 | 69.7 | 69.2 | 69.9 | 55.8 | | | | | | | | | | |
| 15 | Cooling capacity | 230 | 222 | 210 | 198 | 187 | 174 | 159 | 141 | 101 | | | | | | | | | | | |
| | Power consumption | 25.2 | 30.1 | 34.6 | 39.1 | 43.9 | 47.8 | 47.5 | 48.0 | 38.3 | | | | | | | | | | | |
| | Chilled water flow rate | *430 | *430 | *430 | 406 | 382 | 356 | 325 | 289 | 207 | | | | | | | | | | | |
| | Operation current | (A) | 37.1 | 43.9 | 50.4 | 57.1 | 64.0 | 69.7 | 69.2 | 69.9 | 55.8 | | | | | | | | | | |
| | Operation current | (A) | 37.1 | 43.7 | 50.4 | 57.4 | 64.3 | 69.8 | 68.9 | 70.5 | 53.3 | | | | | | | | | | |
| 20 | Cooling capacity | 230 | 221 | 211 | 201 | 191 | 178 | 162 | 146 | 102 | | | | | | | | | | | |
| | Power consumption | 25.2 | 30.0 | 34.6 | 39.3 | 44.1 | 47.8 | 47.2 | 48.3 | 36.6 | | | | | | | | | | | |
| | Chilled water flow rate | *430 | *430 | *430 | 411 | 390 | 363 | 332 | 299 | 209 | | | | | | | | | | | |
| | Operation current | (A) | 37.1 | 43.7 | 50.4 | 57.4 | 64.3 | 69.8 | 68.9 | 70.5 | 53.3 | | | | | | | | | | |
| | Operation current | (A) | 37.1 | 43.8 | 50.4 | 57.4 | 64.0 | 69.8 | 68.9 | 70.5 | 51.3 | | | | | | | | | | |
| 25 | Cooling capacity | 230 | 221 | 211 | 201 | 191 | 178 | 162 | 146 | 102 | | | | | | | | | | | |
| | Power consumption | 25.2 | 30.0 | 34.6 | 39.3 | 43.9 | 47.8 | 47.2 | 48.3 | 36.4 | | | | | | | | | | | |
| | Chilled water flow rate | *430 | *430 | *430 | 411 | 390 | 364 | 332 | 299 | 209 | | | | | | | | | | | |
| | Operation current | (A) | 37.1 | 43.8 | 50.4 | 57.4 | 64.3 | 69.8 | 68.9 | 70.5 | 53.3 | | | | | | | | | | |
| | Operation current | (A) | 37.1 | 43.8 | 50.4 | 57.4 | 64.0 | 69.8 | 68.9 | 70.5 | 51.3 | | | | | | | | | | |
| 30 | Cooling capacity | 230 | 221 | 211 | 201 | 191 | 178 | 162 | 146 | 102 | | | | | | | | | | | |
| | Power consumption | 25.2 | 30.0 | 34.6 | 39.3 | 43.9 | 47.8 | 47.2 | 48.3 | 36.6 | | | | | | | | | | | |
| | Chilled water flow rate | *430 | *430 | *430 | 411 | 391 | 364 | 332 | 299 | 208 | | | | | | | | | | | |
| | Operation current | (A) | 37.1 | 43.8 | 50.4 | 57.4 | 64.3 | 69.8 | 68.9 | 70.5 | 53.3 | | | | | | | | | | |
| | Operation current | (A) | 37.1 | 43.8 | 50.5 | 57.4 | 64.3 | 69.8 | 68.9 | 53.3 | 53.3 | | | | | | | | | | |

List of heating capacities RUA-GP421H(L)

| Warm water outlet temperature (°C) | Item | (kW) | Outside air temperature (°C) (DB) | | | | | | | | | | | | | | | | | | |
|------------------------------------|----------------------|---------|-----------------------------------|------|------|------|------|------|------|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | -15 | -10 | -5 | 0 | 4 | 7 | 15 | | | | | | | | | | | | |
| 25 | Heating capacity | 103 | 118 | 134 | 151 | 166 | 153 | 182 | | | | | | | | | | | | | |
| | Power consumption | 30.4 | 31.1 | 31.2 | 31.4 | 31.9 | 26.0 | 25.0 | | | | | | | | | | | | | |
| | Warm water flow rate | (L/min) | 212 | 242 | 275 | 310 | 339 | 314 | 373 | | | | | | | | | | | | |
| | Operation current | (A) | 44.8 | 45.7 | 46.0 | 46.2 | 47.0 | 37.9 | 36.5 | | | | | | | | | | | | |
| | Operation current | (A) | 44.8 | 45.7 | 46.0 | 46.2 | 47.0 | 37.9 | 36.5 | | | | | | | | | | | | |
| 30 | Heating capacity | 103 | 118 | 134 | 151 | 165 | 152 | 181 | | | | | | | | | | | | | |
| | Power consumption | 33.3 | 34.4 | 34.9 | 35.0 | 35.9 | 29.3 | 29.0 | | | | | | | | | | | | | |
| | Warm water flow rate | (L/min) | 211 | 241 | 274 | 308 | 337 | 312 | 371 | | | | | | | | | | | | |
| | Operation current | (A) | 49.1 | 51 | 51 | 52 | 52 | 42.7 | 42.3 | | | | | | | | | | | | |
| | Operation current | (A) | 49.1 | 51 | 51 | 52 | 52 | 42.7 | 42.3 | | | | | | | | | | | | |
| 35 | Heating capacity | 103 | 117 | 133 | 150 | 164 | 151 | 180 | | | | | | | | | | | | | |
| | Power consumption | 36.4 | 37.4 | 38.2 | 39.0 | 39.8 | 32.9 | 33.2 | | | | | | | | | | | | | |
| | Warm water flow rate | (L/min) | 210 | 240 | 273 | 307 | 336 | 310 | 368 | | | | | | | | | | | | |
| | Operation current | (A) | 54 | 55 | 56 | 57 | 58 | 48.0 | 48.4 | | | | | | | | | | | | |
| | Operation current | (A) | 54 | 55 | 56 | 57 | 58 | 48.0 | 48.4 | | | | | | | | | | | | |
| 40 | Heating capacity | 102 | 116 | 132 | 149 | 163 | 151 | 178 | | | | | | | | | | | | | |
| | Power consumption | 39.2 | 40.4 | 41.6 | 42.8 | 43.9 | 36.8 | 37.3 | | | | | | | | | | | | | |
| | Warm water flow rate | (L/min) | 209 | 239 | 271 | 305 | 334 | 308 | 365 | | | | | | | | | | | | |
| | Operation current | (A) | 58 | 60 | 61 | 62 | 64 | 54 | 54 | | | | | | | | | | | | |
| | Operation current | (A) | 58 | 60 | 61 | 62 | 64 | 54 | 54 | | | | | | | | | | | | |
| 45 | Heating capacity | 102 | 116 | 132 | 149 | 163 | 150 | 177 | | | | | | | | | | | | | |
| | Power consumption | 42.1 | 43.9 | 45.2 | 46.7 | 48.4 | 40.8 | 41.7 | | | | | | | | | | | | | |
| | Warm water flow rate | (L/min) | 209 | 237 | 269 | 304 | 334 | 307 | 363 | | | | | | | | | | | | |
| | Operation current | (A) | 62 | 65 | 66 | 68 | 71 | 59 | 61 | | | | | | | | | | | | |
| | Operation current | (A) | 62 | 65 | 66 | 68 | 71 | 59 | 61 | | | | | | | | | | | | |
| 50 | Heating capacity | 115 | 130 | 144 | 154 | 149 | 176 | | | | | | | | | | | | | | |
| | Power consumption | 47.1 | 48.7 | 49.5 | 49.5 | 44.9 | 46.3 | | | | | | | | | | | | | | |
| | Warm water flow rate | (L/min) | 236 | 267 | 295 | 316 | 305 | 360 | | | | | | | | | | | | | |
| | Operation current | (A) | 69 | 71 | 72 | 72 | 65 | 68 | | | | | | | | | | | | | |
| | Operation current | (A) | 69 | 71 | 72 | 72 | 65 | 68 | | | | | | | | | | | | | |
| 55 | Heating capacity | 123 | 134 | 141 | 148 | 169 | | | | | | | | | | | | | | | |
| | Power consumption | 49.8 | 49.6 | 49.1 | 49.2 | 49.0 | | | | | | | | | | | | | | | |
| | Warm water flow rate | (L/min) | 251 | 273 | 289 | 304 | 346 | | | | | | | | | | | | | | |
| | Operation current | (A) | 73 | 72 | 72 | 72 | 71 | | | | | | | | | | | | | | |
| | Operation current | (A) | 73 | 72 | 72 | 72 | 71 | | | | | | | | | | | | | | |

Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 7°C, RH 85%

Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.

Note 3: [Red box] are displaying maximum capacities. Other values indicate performance when operating at rated frequency. * indicates maximum flow rate. Δt is larger than 7°C.

Note 4: The value shown in the table above are in case the nominal capacity is 400V.

Note 5: This table is subject to change without notice.

Capacity Chart

Standard & Powerful Heating Type (Leaving (LVG) / Entering (ETG) water temperature difference = 7°C)

60HP Series EDGE Heat pump

List of cooling capacities RUA-GP511H(L)

| Chilled water outlet temperature (°C) | Item | (kW) | Outside air temperature (°C) (DB) | | | | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|---------|-----------------------------------|------|------|------|------|------|------|------|------|--|--|--|--|--|--|--|--|--|--|
| | | | 15 | 20 | 25 | 30 | 35 | 40 | 43 | 48 | 52 | | | | | | | | | | |
| 4 | Cooling capacity | 204 | 196 | 185 | 174 | 164 | 153 | 146 | 130 | 95.0 | | | | | | | | | | | |
| | Power consumption | 34.1 | 39.1 | 43.6 | 48.1 | 52.7 | 57.3 | 59.3 | 59.1 | 47.7 | | | | | | | | | | | |
| | Chilled water flow rate | (L/min) | 417 | 401 | 380 | 357 | 335 | 313 | 300 | 266 | 194 | | | | | | | | | | |
| | Operation current | (A) | 49.7 | 57.0 | 63.6 | 70.1 | 76.9 | 83.5 | 86.5 | 86.2 | 69.6 | | | | | | | | | | |
| | Operation current | (A) | 49.7 | 57.0 | 63.6 | 70.1 | 76.9 | 83.5 | 86.5 | 86.2 | 69.6 | | | | | | | | | | |
| 7 | Cooling capacity | 219 | 216 | 204 | 192 | 180 | 168 | 157 | 141 | 97.6 | | | | | | | | | | | |
| | Power consumption | 34.6 | 39.6 | 44.4 | 49.2 | 53.9 | 58.7 | 59.2 | 60.0 | 45.4 | | | | | | | | | | | |
| | Chilled water flow rate | (L/min) | 449 | 442 | 417 | 393 | 369 | 344 | 322 | 288 | 200 | | | | | | | | | | |
| | Operation current | (A) | 50.4 | 57.8 | 64.8 | 71.8 | 78.6 | 85.6 | 86.4 | 87.5 | 66.2 | | | | | | | | | | |
| | Operation current | (A) | 50.4 | 57.8 | 64.8 | 71.8 | 78.6 | 85.6 | 86.4 | 87.5 | 66.2 | | | | | | | | | | |
| 9 | Cooling capacity | 230 | 228 | 217 | 204 | 191 | 179 | 165 | 149 | 99 | | | | | | | | | | | |

Capacity Chart

Standard Type (Leaving (LVG) / Entering (ETG) water temperature difference = 7°C)

70HP Series EDGE Heat pump

List of cooling capacities RUA-GP561H (L)

| Chilled water outlet temperature (°C) | Item | Outside air temperature (°C) (DB) | | | | | | | | |
|---------------------------------------|---------------------------------|-----------------------------------|------|------|------|------|-------|------|------|------|
| | | 15 | 20 | 25 | 30 | 35 | 40 | 43 | 48 | 52 |
| 4 | Cooling capacity (kW) | 226 | 217 | 205 | 194 | 182 | 171 | 163 | 144 | 95.6 |
| | Power consumption (kW) | 40.9 | 46.6 | 51.6 | 56.7 | 61.5 | 66.8 | 68.5 | 67.0 | 47.8 |
| | Chilled water flow rate (L/min) | 463 | 444 | 420 | 397 | 374 | 350 | 334 | 294 | 196 |
| | Operation current (A) | 59.7 | 67.9 | 75.3 | 82.7 | 89.6 | 97.4 | 99.9 | 97.7 | 69.7 |
| 7 | Cooling capacity (kW) | 244 | 237 | 225 | 212 | 200 | 187 | 174 | 150 | 97.6 |
| | Power consumption (kW) | 42.1 | 47.0 | 52.6 | 57.8 | 63.3 | 68.5 | 68.0 | 64.7 | 45.0 |
| | Chilled water flow rate (L/min) | 500 | 486 | 461 | 435 | 410 | 383 | 357 | 307 | 200 |
| | Operation current (A) | 61.3 | 68.6 | 76.6 | 84.2 | 92.3 | 99.9 | 99.1 | 94.3 | 65.6 |
| 9 | Cooling capacity (kW) | 256 | 250 | 239 | 226 | 212 | 198 | 183 | 152 | 99.1 |
| | Power consumption (kW) | 43.0 | 47.2 | 53.1 | 58.7 | 64.0 | 68.8 | 68.0 | 61.8 | 43.5 |
| | Chilled water flow rate (L/min) | 523 | 512 | 489 | 462 | 435 | 405 | 375 | 311 | 203 |
| | Operation current (A) | 62.6 | 68.8 | 77.4 | 85.6 | 93.4 | 100.2 | 99.2 | 90.1 | 63.4 |
| 12 | Cooling capacity (kW) | 270 | 267 | 258 | 245 | 232 | 214 | 197 | 156 | 101 |
| | Power consumption (kW) | 44.6 | 47.8 | 53.6 | 59.5 | 65.4 | 69.0 | 68.2 | 58.2 | 41.1 |
| | Chilled water flow rate (L/min) | 552 | 548 | 528 | 502 | 475 | 438 | 403 | 319 | 206 |
| | Operation current (A) | 65.1 | 69.8 | 78.2 | 86.7 | 95.3 | 100.6 | 99.4 | 84.9 | 59.9 |
| 15 | Cooling capacity (kW) | 274 | 273 | 265 | 254 | 242 | 224 | 208 | 158 | 101 |
| | Power consumption (kW) | 45.0 | 48.0 | 53.9 | 59.9 | 65.9 | 68.9 | 68.2 | 54.9 | 37.7 |
| | Chilled water flow rate (L/min) | 561 | 559 | 542 | 520 | 497 | 458 | 426 | 325 | 208 |
| | Operation current (A) | 65.6 | 70.0 | 78.5 | 87.3 | 96.1 | 100.5 | 99.4 | 80.0 | 54.9 |
| 20 | Cooling capacity (kW) | 274 | 273 | 264 | 253 | 243 | 227 | 213 | 160 | 102 |
| | Power consumption (kW) | 45.1 | 48.3 | 53.8 | 59.8 | 66.2 | 69.0 | 68.3 | 53.7 | 36.2 |
| | Chilled water flow rate (L/min) | 561 | 559 | 541 | 519 | 497 | 465 | 436 | 328 | 209 |
| | Operation current (A) | 65.7 | 70.0 | 78.4 | 87.2 | 96.5 | 100.6 | 99.5 | 78.3 | 52.7 |
| 25 | Cooling capacity (kW) | 266 | 266 | 260 | 249 | 238 | 226 | 213 | 160 | 102 |
| | Power consumption (kW) | 42.8 | 44.9 | 50.7 | 56.6 | 62.5 | 68.3 | 68.3 | 53.7 | 36.2 |
| | Chilled water flow rate (L/min) | 545 | 545 | 532 | 509 | 487 | 463 | 436 | 327 | 209 |
| | Operation current (A) | 62.5 | 65.4 | 73.8 | 82.5 | 91.1 | 99.5 | 99.5 | 78.3 | 52.7 |
| 30 | Cooling capacity (kW) | 249 | 250 | 248 | 237 | 225 | 214 | 207 | 102 | 102 |
| | Power consumption (kW) | 46.6 | 40.5 | 44.9 | 50.4 | 55.6 | 61.3 | 64.7 | 36.3 | 36.3 |
| | Chilled water flow rate (L/min) | 510 | 511 | 508 | 485 | 462 | 437 | 423 | 209 | 209 |
| | Operation current (A) | 57.3 | 59.1 | 65.5 | 73.5 | 81.0 | 89.4 | 94.3 | 52.9 | 52.9 |

List of heating capacities RUA-GP561H (L)

| Warm water outlet temperature (°C) | Item | Outside air temperature (°C) (DB) | | | | | | | | |
|------------------------------------|------------------------------|-----------------------------------|------|------|------|------|------|------|--|--|
| | | -15 | -10 | -5 | 0 | 4 | 7 | 15 | | |
| 25 | Heating capacity (kW) | 153 | 174 | 196 | 214 | 231 | 203 | 237 | | |
| | Power consumption (kW) | 49.7 | 50.9 | 51.4 | 51.3 | 52.4 | 38.5 | 37.9 | | |
| | Warm water flow rate (L/min) | 314 | 356 | 401 | 437 | 473 | 415 | 485 | | |
| | Operation current (A) | 74 | 76 | 76 | 76 | 77 | 57 | 55 | | |
| 30 | Heating capacity (kW) | 154 | 175 | 196 | 213 | 230 | 202 | 235 | | |
| | Power consumption (kW) | 54.6 | 56.1 | 56.8 | 56.8 | 58.2 | 43.4 | 43.2 | | |
| | Warm water flow rate (L/min) | 315 | 357 | 402 | 436 | 471 | 414 | 482 | | |
| | Operation current (A) | 81 | 83 | 84 | 84 | 86 | 63 | 63 | | |
| 35 | Heating capacity (kW) | 153 | 175 | 197 | 213 | 229 | 201 | 235 | | |
| | Power consumption (kW) | 58.8 | 61.2 | 62.5 | 62.3 | 63.6 | 48.2 | 48.9 | | |
| | Warm water flow rate (L/min) | 314 | 357 | 402 | 436 | 469 | 412 | 481 | | |
| | Operation current (A) | 88 | 90 | 92 | 92 | 94 | 70 | 71 | | |
| 40 | Heating capacity (kW) | 153 | 174 | 196 | 212 | 229 | 200 | 234 | | |
| | Power consumption (kW) | 63.5 | 65.9 | 67.8 | 67.3 | 69.2 | 53.1 | 54.3 | | |
| | Warm water flow rate (L/min) | 312 | 356 | 402 | 434 | 468 | 410 | 479 | | |
| | Operation current (A) | 94 | 97 | 100 | 99 | 102 | 77 | 79 | | |
| 45 | Heating capacity (kW) | 151 | 173 | 192 | 208 | 221 | 200 | 233 | | |
| | Power consumption (kW) | 67.4 | 70.6 | 71.4 | 71.0 | 71.3 | 58.1 | 59.9 | | |
| | Warm water flow rate (L/min) | 309 | 354 | 392 | 426 | 453 | 410 | 477 | | |
| | Operation current (A) | 99 | 104 | 105 | 105 | 104 | 85 | 87 | | |
| 50 | Heating capacity (kW) | 164 | 180 | 196 | 208 | 200 | 232 | | | |
| | Power consumption (kW) | 71.3 | 70.9 | 70.8 | 71.0 | 63.3 | 65.7 | | | |
| | Warm water flow rate (L/min) | 336 | 369 | 401 | 425 | 410 | 474 | | | |
| | Operation current (A) | 105 | 104 | 103 | 104 | 92 | 96 | | | |
| 55 | Heating capacity (kW) | 159 | 181 | 193 | 199 | 227 | | | | |
| | Power consumption (kW) | 65.7 | 69.1 | 69.9 | 68.9 | 69.8 | | | | |
| | Warm water flow rate (L/min) | 327 | 371 | 396 | 408 | 464 | | | | |
| | Operation current (A) | 97 | 101 | 102 | 100 | 102 | | | | |

Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 7°C, RH 85%

Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.

Note 3: are displaying maximum capacities. Other values indicate performance when operating at rated frequency. * indicates maximum flow rate. Δt is larger than 7°C.

Note 4: The value shown in the table above are in case the nominal capacity is 400V.

Note 5: This table is subject to change without notice.

Capacity Chart

High EER Type (Leaving (LVG) / Entering (ETG) water temperature difference = 7°C)

50HP Series EDGE Heat pump

List of cooling capacities RUA-GP421HN (L)

| Chilled water outlet temperature (°C) | Item | Outside air temperature (°C) (DB) | | | | | |
|---------------------------------------|---------------------------------|-----------------------------------|------|------|------|------|------|
| | | 30 | 35 | 40 | 43 | 48 | 52 |
| 4 | Cooling capacity (kW) | 143 | 136 | 129 | 125 | 118 | 112 |
| | Power consumption (kW) | 23.2 | 26.2 | 29.1 | 30.8 | 34.2 | 36.8 |
| | Chilled water flow rate (L/min) | 293 | 279 | 265 | 256 | 242 | 229 |
| | Operation current (A) | 33.8 | 38.2 | 42.4 | 44.9 | 49.9 | 53.7 |
| 7 | Cooling capacity (kW) | 158 | 150 | 143 | 138 | 130 | 124 |
| | Power consumption (kW) | 23.6 | 26.8 | 29.8 | 31.4 | 34.9 | 37.7 |
| | Chilled water flow rate (L/min) | 323 | 307 | 292 | 283 | 267 | 254 |
| | Operation current (A) | 34.4 | 39.1 | 43.4 | 45.7 | 50.8 | 55.0 |
| 9 | Cooling capacity (kW) | 168 | 160 | 152 | 147 | 139 | 132 |
| | Power consumption (kW) | 23.6 | 27.3 | 30.2 | 31.7 | 35.5 | 38.2 |
| | Chilled water flow rate (L/min) | 344 | 327 | 312 | 302 | 285 | 271 |
| | Operation current (A) | 34.4 | 39.8 | 44.0 | 46.3 | 51.8 | 55.6 |
| 12 | Cooling capacity (kW) | 182 | 174 | 166 | 162 | 153 | 146 |
| | Power consumption (kW) | 23.8 | 27.6 | 30.9 | 32.7 | 36.4 | 39.1 |
| | Chilled water flow rate (L/min) | 373 | 356 | 341 | 332 | 314 | 299 |
| | Operation current (A) | 34.7 | 40.3 | 45.1 | 47.7 | 53.1 | 57.1 |
| 15 | Cooling capacity (kW) | 190 | 183 | 175 | 170 | 161 | 155 |
| | Power consumption (kW) | 24.0 | 28.0 | 31.5 | 33.3 | 36.9 | 39.8 |
| | Chilled water flow rate (L/min) | 389 | 374 | 358 | 348 | 331 | 317 |
| | Operation current (A) | 35.0 | 40.9 | 46.0 | 48.6 | 53.8 | 58.1 |
| 20 | Cooling capacity (kW) | 190 | 183 | 175 | 171 | 164 | 158 |
| | Power consumption (kW) | 24.0 | 28.0 | 31.4 | 33.3 | 37.2 | 40.1 |
| | Chilled water flow rate (L/min) | 390 | 374 | 359 | 351 | 336 | 324 |
| | Operation current (A) | 35.0 | 40.9 | 45.8 | 48.5 | 54.2 | 58.5 |
| 25 | Cooling capacity (kW) | 190 | 182 | 175 | 171 | 164 | 158 |
| | Power consumption (kW) | 24.0 | 27.9 | 31.4 | 33.3 | 37.2 | 40.0 |
| | Chilled water flow rate (L/min) | 389 | 373 | 359 | 350 | 336 | 324 |
| | Operation current (A) | 35.0 | 40.7 | 45.8 | 48.6 | 54.2 | 58.3 |
| 30 | Cooling capacity (kW) | 190 | 182 | 175 | 171 | 158 | 158 |
| | Power consumption (kW) | 26.2 | 27.9 | 31.4 | 33.3 | 40.0 | 40.0 |
| | Chilled water flow rate (L/min) | 389 | 373 | 359 | 350 | 324 | 324 |
| | Operation current (A) | 35.0 | 40.7 | 45.8 | 48.6 | 58.3 | 58.3 |

50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421CN (L)

| Chilled water outlet temperature (°C) | Item | Outside air temperature (°C) (DB) | | | | | |
|---------------------------------------|---------------------------------|-----------------------------------|------|------|------|------|------|
| | | 30 | 35 | 40 | 43 | 48 | 52 |
| 4 | Cooling capacity (kW) | 143 | 136 | 129 | 125 | 118 | 112 |
| | Power consumption (kW) | 23.8 | 26.9 | 29.8 | 31.4 | 35.0 | 37.6 |
| | Chilled water flow rate (L/min) | 293 | 279 | 265 | 256 | 242 | 230 |
| | Operation current (A) | 34.8 | 39.2 | 43.4 | 45.8 | 51.1 | 54.8 |
| 7 | Cooling capacity (kW) | 157 | 150 | 143 | 138 | 130 | 124 |
| | Power consumption (kW) | 24.2 | 27.6 | 30.6 | 32.2 | 35.7 | 38.5 |
| | Chilled water flow rate (L/min) | 322 | 307 | 292 | 283 | 267 | 254 |
| | Operation current (A) | 35.2 | 40.2 | 44.6 | 46.9 | 52.1 | 56.1 |
| 9 | Cooling capacity (kW) | 168 | 160 | 152 | 147 | 139 | 133 |
| | Power consumption (kW) | 24.3 | 28.1 | 31.1 | 32.6 | 36.4 | 39.3 |
| | Chilled water flow rate (L/min) | 344 | 327 | 312 | 302 | 285 | 271 |
| | Operation current (A) | 35.4 | 40.9 | 45.3 | 47.5 | 53.1 | 57.4 |
| 12 | Cooling capacity (kW) | 182 | 174 | 166 | 162 | 153 | 146 |
| | Power consumption (kW) | 24.5 | 28.4 | 31.8 | 33.5 | 37.3 | 40.1 |
| | Chilled water flow rate (L/min) | 373 | 356 | 341 | 332 | 314 | 299 |
| | Operation current (A) | 35.8 | 41.5 | 46.4 | 48.9 | 54.4 | 58.5 |
| 15 | Cooling capacity (kW) | 190 | 183 | 174 | 170 | 161 | 155 |
| | Power consumption (kW) | 24.7 | 28.8 | 32.2 | 34.3 | 37.9 | 40.9 |
| | Chilled water flow rate (L/min) | 390 | 374 | 357 | 347 | 331 | 317 |
| | Operation current (A) | 36.0 | 42.0 | 47.0 | 50.0 | 55.2 | 59.6 |
| 20 | Cooling capacity (kW) | 190 | 182 | 175 | 171 | 164 | 158 |
| | Power consumption (kW) | 24.7 | 28.7 | 32.3 | 34.2 | 38.1 | 41.0 |
| | Chilled water flow rate (L/min) | 389 | 373 | 359 | 350 | 336 | 324 |
| | Operation current (A) | 36.0 | 41.9 | 47.1 | 49.9 | 55.6 | 59.8 |
| 25 | Cooling capacity (kW) | 190 | 182 | 175 | 171 | 164 | 158 |
| | Power consumption (kW) | 24.7 | 28.8 | 32.3 | 34.2 | 38.1 | 41.0 |
| | Chilled water flow rate (L/min) | 389 | 373 | 359 | 350 | 336 | 324 |
| | Operation current (A) | 36.1 | 41.9 | 47.1 | 49.9 | 55.6 | 59.8 |
| 30 | Cooling capacity (kW) | 190 | 182 | 175 | 171 | 158 | 158 |
| | Power consumption (kW) | 26.9 | 28.7 | 32.3 | 34.2 | 41.0 | 41.0 |
| | Chilled water flow rate (L/min) | 389 | 373 | 359 | 350 | 324 | 324 |
| | Operation current (A) | 36.1 | 41.9 | 47.2 | 49.9 | 59.8 | 59.8 |

Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 7°C.

Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.

Note 3: The value shown in the table above are in case the nominal capacity is 400V.

Note 4: This table is subject to change without notice.

70HP Series EDGE Cooling-only

List of cooling capacities RUA-GP561C (L)

| Chilled water outlet temperature (°C) | Item | Outside air temperature (°C) (DB) | | | | | | | | |
|---------------------------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|------|------|
| | | 15 | 20 | 25 | 30 | 35 | 40 | 43 | 48 | 52 |
| 4 | Cooling capacity (kW) | 225 | 217 | 206 | 194 | 182 | 171 | 163 | 144 | 94.8 |
| | Power consumption (kW) | 40.1 | 45.5 | 50.1 | 55.9 | 61.1 | 66.0 | 67.6 | 66.7 | 48.1 |
| | Chilled water flow rate (L/min) | 462 | 445 | 422 | 397 | 374 | 350 | 333 | 295 | 194 |
| | Operation current (A) | 58.5 | 66.3 | 73.1 | 81.5 | 89.0 | 96.3 | 98.6 | 97.2 | 70.2 |
| 7 | Cooling capacity (kW) | 244 | 238 | 225 | 212 | 200 | 187 | 174 | 149 | 97.1 |
| | Power consumption (kW) | 40.9 | 46.1 | 51.4 | 57.0 | 62.5 | 67.5 | 67.2 | 64.2 | 45.6 |
| | Chilled water flow rate (L/min) | 500 | 486 | 461 | 435 | 410 | 383 | 356 | 306 | 199 |
| | Operation current (A) | 59.6 | 67.2 | 74.9 | 83.1 | 91.1 | 98.4 | 98.0 | 93.6 | 66.5 |
| 9 | Cooling capacity (kW) | 255 | 250 | 239 | 226 | 212 | 198 | 182 | 152 | 98.9 |
| | Power consumption (kW) | 41.9 | 46.3 | 51.8 | 57.8 | 63.5 | 68.0 | 67.2 | 62.3 | 44.2 |
| | Chilled water flow rate (L/min) | 522 | 512 | 490 | 462 | 434 | 405 | 373 | 311 | 202 |
| | Operation current (A) | 61.2 | 67.5 | 75.6 | 84.3 | 92.5 | 99.2 | 97.9 | 90.8 | 64.4 |
| 12 | Cooling capacity (kW) | 269 | 267 | 259 | 246 | 232 | 214 | 196 | 155 | 100 |
| | Power consumption (kW) | 43.7 | 47.1 | 52.6 | 58.9 | 64.8 | 68.2 | 67.1 | 58.5 | 41.2 |
| | Chilled water flow | | | | | | | | | |

Capacity Chart

High EER Type (Leaving (LVG) / Entering (ETG) water temperature difference = 7°C)

70HP Series EDGE Heat pump

List of cooling capacities RUA-GP561HN (L)

| Chilled water outlet temperature (°C) | Item | Outside air temperature (°C) (DB) | | | | | |
|---------------------------------------|---------------------------------|-----------------------------------|------|------|------|------|------|
| | | 30 | 35 | 40 | 43 | 48 | 52 |
| 4 | Cooling capacity (kW) | 192 | 183 | 174 | 169 | 161 | 154 |
| | Power consumption (kW) | 37.9 | 42.2 | 45.8 | 47.6 | 51.9 | 55.0 |
| | Chilled water flow rate (L/min) | 393 | 374 | 357 | 346 | 329 | 315 |
| | Operation current (A) | 55.2 | 61.5 | 66.8 | 69.4 | 75.7 | 80.2 |
| 7 | Cooling capacity (kW) | 210 | 200 | 190 | 185 | 176 | 168 |
| | Power consumption (kW) | 38.7 | 43.3 | 47.1 | 49.2 | 53.5 | 56.6 |
| | Chilled water flow rate (L/min) | 430 | 410 | 390 | 379 | 360 | 345 |
| | Operation current (A) | 56.5 | 63.1 | 68.7 | 71.7 | 78.0 | 82.5 |
| 9 | Cooling capacity (kW) | 223 | 212 | 202 | 196 | 187 | 179 |
| | Power consumption (kW) | 39.2 | 44.1 | 48.2 | 50.1 | 54.7 | 57.9 |
| | Chilled water flow rate (L/min) | 457 | 434 | 414 | 402 | 382 | 366 |
| | Operation current (A) | 57.1 | 64.3 | 70.3 | 73.1 | 79.7 | 84.5 |
| 12 | Cooling capacity (kW) | 244 | 232 | 221 | 214 | 204 | 195 |
| | Power consumption (kW) | 39.7 | 44.8 | 49.6 | 51.4 | 56.4 | 59.6 |
| | Chilled water flow rate (L/min) | 499 | 476 | 452 | 439 | 417 | 399 |
| | Operation current (A) | 57.8 | 65.3 | 72.2 | 75.0 | 82.2 | 86.9 |
| 15 | Cooling capacity (kW) | 254 | 243 | 233 | 226 | 216 | 208 |
| | Power consumption (kW) | 39.7 | 45.1 | 50.2 | 52.3 | 57.3 | 60.8 |
| | Chilled water flow rate (L/min) | 520 | 498 | 476 | 463 | 442 | 426 |
| | Operation current (A) | 57.9 | 65.7 | 73.2 | 76.3 | 83.5 | 88.7 |
| 20 | Cooling capacity (kW) | 254 | 243 | 234 | 228 | 219 | 212 |
| | Power consumption (kW) | 39.7 | 45.1 | 50.2 | 52.5 | 57.5 | 61.1 |
| | Chilled water flow rate (L/min) | 519 | 498 | 478 | 467 | 448 | 435 |
| | Operation current (A) | 57.9 | 65.7 | 73.2 | 76.6 | 83.8 | 89.1 |
| 25 | Cooling capacity (kW) | 253 | 243 | 234 | 228 | 219 | 212 |
| | Power consumption (kW) | 39.7 | 45.1 | 50.2 | 52.5 | 57.5 | 61.1 |
| | Chilled water flow rate (L/min) | 519 | 497 | 478 | 467 | 449 | 435 |
| | Operation current (A) | 57.8 | 65.7 | 73.2 | 76.6 | 83.8 | 89.1 |
| 30 | Cooling capacity (kW) | 246 | 238 | 229 | 223 | 208 | 208 |
| | Power consumption (kW) | 42.2 | 43.0 | 47.9 | 50.1 | 58.8 | 58.8 |
| | Chilled water flow rate (L/min) | 504 | 487 | 468 | 457 | 425 | 425 |
| | Operation current (A) | 55.7 | 62.7 | 69.9 | 73.1 | 85.7 | 85.7 |

70HP Series EDGE Cooling-only

List of cooling capacities RUA-GP561CN (L)

| Chilled water outlet temperature (°C) | Item | Outside air temperature (°C) (DB) | | | | | |
|---------------------------------------|---------------------------------|-----------------------------------|------|------|------|------|------|
| | | 30 | 35 | 40 | 43 | 48 | 52 |
| 4 | Cooling capacity (kW) | 192 | 183 | 174 | 169 | 161 | 154 |
| | Power consumption (kW) | 37.4 | 41.6 | 45.2 | 46.8 | 51.3 | 54.4 |
| | Chilled water flow rate (L/min) | 393 | 374 | 357 | 347 | 330 | 316 |
| | Operation current (A) | 54.6 | 60.6 | 65.9 | 68.3 | 74.8 | 79.3 |
| 7 | Cooling capacity (kW) | 210 | 200 | 191 | 185 | 176 | 169 |
| | Power consumption (kW) | 38.2 | 42.7 | 46.8 | 48.6 | 52.9 | 56.1 |
| | Chilled water flow rate (L/min) | 430 | 410 | 391 | 379 | 361 | 346 |
| | Operation current (A) | 55.7 | 62.3 | 68.3 | 70.8 | 77.1 | 81.9 |
| 9 | Cooling capacity (kW) | 223 | 212 | 202 | 197 | 187 | 179 |
| | Power consumption (kW) | 38.6 | 43.4 | 47.5 | 49.9 | 54.0 | 57.2 |
| | Chilled water flow rate (L/min) | 458 | 435 | 415 | 403 | 383 | 367 |
| | Operation current (A) | 56.3 | 63.3 | 69.3 | 72.7 | 78.8 | 83.4 |
| 12 | Cooling capacity (kW) | 244 | 232 | 221 | 215 | 204 | 196 |
| | Power consumption (kW) | 39.2 | 44.4 | 48.8 | 51.1 | 55.6 | 59.0 |
| | Chilled water flow rate (L/min) | 499 | 475 | 453 | 440 | 418 | 401 |
| | Operation current (A) | 57.1 | 64.7 | 71.1 | 74.5 | 81.0 | 86.1 |
| 15 | Cooling capacity (kW) | 253 | 243 | 232 | 226 | 216 | 208 |
| | Power consumption (kW) | 39.2 | 44.6 | 49.4 | 51.8 | 56.7 | 60.1 |
| | Chilled water flow rate (L/min) | 518 | 497 | 476 | 463 | 442 | 426 |
| | Operation current (A) | 57.1 | 65.0 | 72.0 | 75.6 | 82.7 | 87.6 |
| 20 | Cooling capacity (kW) | 253 | 242 | 233 | 228 | 219 | 212 |
| | Power consumption (kW) | 39.2 | 44.4 | 49.5 | 52.1 | 56.9 | 60.6 |
| | Chilled water flow rate (L/min) | 518 | 496 | 477 | 466 | 448 | 434 |
| | Operation current (A) | 57.2 | 64.7 | 72.1 | 75.9 | 82.9 | 88.3 |
| 25 | Cooling capacity (kW) | 253 | 242 | 233 | 228 | 219 | 212 |
| | Power consumption (kW) | 39.3 | 44.5 | 49.5 | 52.1 | 56.9 | 60.6 |
| | Chilled water flow rate (L/min) | 517 | 496 | 477 | 466 | 448 | 434 |
| | Operation current (A) | 57.3 | 64.9 | 72.1 | 75.9 | 82.9 | 88.3 |
| 30 | Cooling capacity (kW) | 246 | 238 | 229 | 223 | 208 | 208 |
| | Power consumption (kW) | 41.6 | 43.0 | 47.8 | 49.9 | 58.6 | 58.6 |
| | Chilled water flow rate (L/min) | 505 | 487 | 468 | 457 | 425 | 425 |
| | Operation current (A) | 55.6 | 62.6 | 69.7 | 72.7 | 85.4 | 85.4 |

Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 7°C.
 Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.
 Note 3: The value shown in the table above are in case the nominal capacity is 400W.
 Note 4: This table is subject to change without notice.

Water Volume for set of modules

Standard Water Flow Rate / Water Volume Range
 (Leaving (LVG)/Entering (ETG) water temperature difference = 7°C)

50HP Series EDGE Powerful Heating Type

Internal inverter pump

| Number of modules | Standard flow rate (L/min) (Note 2) | Flow rate range (L/min) (Note 3・6) | Minimum water loop volume (L) (Note 4・5・6) | In-unit water volume (L) |
|-------------------|-------------------------------------|------------------------------------|--|--------------------------|
| 1 | 307 | 150~600 | 717 | 36 |
| 2 | 614 | 150~1200 | | 72 |
| 3 | 921 | 150~1800 | | 108 |
| 4 | 1,229 | 150~2400 | | 144 |
| 5 | 1,536 | 150~3000 | | 180 |
| 6 | 1,843 | 150~3600 | | 216 |
| 7 | 2,150 | 150~4200 | | 252 |
| 8 | 2,457 | 150~4800 | | 288 |
| 9 | 2,764 | 150~5400 | | 324 |
| 10 | 3,071 | 150~6000 | | 360 |
| 11 | 3,379 | 150~6600 | | 396 |
| 12 | 3,686 | 150~7200 | | 432 |
| 13 | 3,993 | 150~7800 | | 468 |
| 14 | 4,300 | 150~8400 | | 504 |
| 15 | 4,607 | 150~9000 | | 540 |
| 16 | 4,914 | 150~9600 | | 576 |

Note 1: For both at cooling/heating. Indicates the flow rate and water pressure loss when leaving/entering water temperature difference is 7°C at rated capacity. (water pressure loss is only for pumpless models)
 Note 2: Within the indicated flow rate range, the flow rate automatically changes from the pump integrated into each module. (only for internal inverter pump models)
 Note 3: Value indicated for retained water amount is with a standard flow amount. (Rated capacity, change in water outlet/inlet temperature difference = 7°C)
 When calculating the retained water amount, calculate the greatest water loss in the piping flow channel, giving consideration to the bypass channel etc.
 Note 4: Please make a separate inquiry if you would like to control the effect of a temperature reduction in the water supply due to the defrost operation.
 Note 5: When operating at the rated flow capacity, even with internal inverter pump models, set the flow amount range and system retained water amount to the same value as the pumpless model.

60HP Series EDGE

| Number of modules | Standard flow rate (L/min) (Note 2) | Flow rate range (L/min) (Note 3・6) | Minimum water loop volume (L) (Note 4・5・6) | In-unit water volume (L) |
|-------------------|-------------------------------------|------------------------------------|--|--------------------------|
| 1 | 369 | 150~600 | 860 | 36 |
| 2 | 737 | 150~1200 | | 72 |
| 3 | 1,106 | 150~1800 | | 108 |
| 4 | 1,474 | 150~2400 | | 144 |
| 5 | 1,843 | 150~3000 | | 180 |
| 6 | 2,211 | 150~3600 | | 216 |
| 7 | 2,580 | 150~4200 | | 252 |
| 8 | 2,949 | 150~4800 | | 288 |
| 9 | 3,317 | 150~5400 | | 324 |
| 10 | 3,686 | 150~6000 | | 360 |
| 11 | 4,054 | 150~6600 | | 396 |
| 12 | 4,423 | 150~7200 | | 432 |
| 13 | 4,791 | 150~7800 | | 468 |
| 14 | 5,160 | 150~8400 | | 504 |
| 15 | 5,529 | 150~9000 | | 540 |
| 16 | 5,897 | 150~9600 | | 576 |

Note 1: For both at cooling/heating. Indicates the flow rate and water pressure loss when leaving/entering water temperature difference is 7°C at rated capacity. (water pressure loss is only for pumpless models)
 Note 2: Within the indicated flow rate range, the flow rate automatically changes from the pump integrated into each module. (only for internal inverter pump models)
 Note 3: Value indicated for retained water amount is with a standard flow amount. (Rated capacity, change in water outlet/inlet temperature difference = 7°C)
 When calculating the retained water amount, calculate the greatest water loss in the piping flow channel, giving consideration to the bypass channel etc.
 Note 4: Please make a separate inquiry if you would like to control the effect of a temperature reduction in the water supply due to the defrost operation.
 Note 5: When operating at the rated flow capacity, even with internal inverter pump models, set the flow amount range and system retained water amount to the same value as the pumpless model.

Water Volume for set of modules

60HP *Powerful Heating Type*

Internal inverter pump

| Number of modules | Standard flow rate (L/min) (Note 1) | | Flow rate range (L/min) (Note 4) | Minimum water loop volume (L) (Note 2・3・4) | In-unit water volume (L) |
|-------------------|-------------------------------------|---------|----------------------------------|--|--------------------------|
| | Cooling | Heating | | | |
| 1 | 369 | 410 | 150~600 | 956 | 36 |
| 2 | 737 | 819 | 150~1200 | | 72 |
| 3 | 1,106 | 1,229 | 150~1800 | | 108 |
| 4 | 1,474 | 1,638 | 150~2400 | | 144 |
| 5 | 1,843 | 2,048 | 150~3000 | | 180 |
| 6 | 2,211 | 2,457 | 150~3600 | | 216 |
| 7 | 2,580 | 2,867 | 150~4200 | | 252 |
| 8 | 2,949 | 3,276 | 150~4800 | | 288 |
| 9 | 3,317 | 3,686 | 150~5400 | | 324 |
| 10 | 3,686 | 4,095 | 150~6000 | | 360 |
| 11 | 4,054 | 4,505 | 150~6600 | | 396 |
| 12 | 4,423 | 4,914 | 150~7200 | | 432 |
| 13 | 4,791 | 5,324 | 150~7800 | | 468 |
| 14 | 5,160 | 5,733 | 150~8400 | | 504 |
| 15 | 5,529 | 6,143 | 150~9000 | | 540 |
| 16 | 5,897 | 6,552 | 150~9600 | | 576 |

Note 1: For both at cooling/heating. Indicates the flow rate and water pressure loss when leaving/entering water temperature difference is 7°C at rated capacity. (water pressure loss is only for pumpless models)

Note 2: Within the indicated flow rate range, the flow rate automatically changes from the pump integrated into each module. (only for internal inverter pump models)

Note 3: Value indicated for retained water amount is with a standard flow amount. (Rated capacity, change in water outlet/inlet temperature difference = 7°C)
When calculating the retained water amount, calculate the greatest water loss in the piping flow channel, giving consideration to the bypass channel etc.

Note 4: Please make a separate inquiry if you would like to control the effect of a temperature reduction in the water supply due to the defrost operation.

Note 5: When operating at the rated flow capacity, even with internal inverter pump models, set the flow amount range and system retained water amount to the same value as the pumpless model.

70HP *Series EDGE*

| Number of modules | Standard flow rate (L/min) (Note 2) | | Flow rate range (L/min) (Note 3・6) | Minimum water loop volume (L) (Note 4・5・6) | In-unit water volume (L) |
|-------------------|-------------------------------------|---------|------------------------------------|--|--------------------------|
| | Cooling | Heating | | | |
| 1 | 410 | | 150~650 | 956 | 36 |
| 2 | 819 | | 150~1300 | | 72 |
| 3 | 1,229 | | 150~1950 | | 108 |
| 4 | 1,638 | | 150~2600 | | 144 |
| 5 | 2,048 | | 150~3250 | | 180 |
| 6 | 2,457 | | 150~3900 | | 216 |
| 7 | 2,867 | | 150~4550 | | 252 |
| 8 | 3,276 | | 150~5200 | | 288 |
| 9 | 3,686 | | 150~5850 | | 324 |
| 10 | 4,095 | | 150~6500 | | 360 |
| 11 | 4,505 | | 150~7150 | | 396 |
| 12 | 4,914 | | 150~7800 | | 432 |
| 13 | 5,324 | | 150~8450 | | 468 |
| 14 | 5,733 | | 150~9100 | | 504 |
| 15 | 6,143 | | 150~9750 | | 540 |
| 16 | 6,552 | | 150~10400 | | 576 |

Note 1: For both at cooling/heating. Indicates the flow rate and water pressure loss when leaving/entering water temperature difference is 7°C at rated capacity. (water pressure loss is only for pumpless models)

Note 2: Within the indicated flow rate range, the flow rate automatically changes from the pump integrated into each module. (only for internal inverter pump models)

Note 3: Value indicated for retained water amount is with a standard flow amount. (Rated capacity, change in water outlet/inlet temperature difference = 7°C)
When calculating the retained water amount, calculate the greatest water loss in the piping flow channel, giving consideration to the bypass channel etc.

Note 4: Please make a separate inquiry if you would like to control the effect of a temperature reduction in the water supply due to the defrost operation.

Note 5: When operating at the rated flow capacity, even with internal inverter pump models, set the flow amount range and system retained water amount to the same value as the pumpless model.

Water Volume for set of modules

50HP *Series EDGE* *Powerful Heating Type*

Pumpless

| Number of modules | Standard flow rate (L/min) (Note 2) | Water pressure loss (kPa) (Note 1) | Flow rate range (L/min) (Note 4) | Minimum water loop volume (L) (Note 2・3・4) | In-unit water volume (L) |
|-------------------|-------------------------------------|------------------------------------|----------------------------------|--|--------------------------|
| | | | | | |
| 1 | 307 | 29.9 | 150~600 | 717 | 36 |
| 2 | 614 | | 300~1,200 | 1,434 | 72 |
| 3 | 921 | | 450~1,800 | 2,150 | 108 |
| 4 | 1,229 | | 600~2,400 | 2,867 | 144 |
| 5 | 1,536 | | 750~3,000 | 3,584 | 180 |
| 6 | 1,843 | | 900~3,600 | 4,301 | 216 |
| 7 | 2,150 | | 1,050~4,200 | 5,017 | 252 |
| 8 | 2,457 | | 1,200~4,800 | 5,734 | 288 |
| 9 | 2,764 | | 1,350~5,400 | 6,451 | 324 |
| 10 | 3,071 | | 1,500~6,000 | 7,168 | 360 |
| 11 | 3,379 | | 1,650~6,600 | 7,884 | 396 |
| 12 | 3,686 | | 1,800~7,200 | 8,601 | 432 |
| 13 | 3,993 | | 1,950~7,800 | 9,318 | 468 |
| 14 | 4,300 | | 2,100~8,400 | 10,035 | 504 |
| 15 | 4,607 | | 2,250~9,000 | 10,751 | 540 |
| 16 | 4,914 | | 2,400~9,600 | 11,468 | 576 |

Note 1: For both at cooling/heating. Indicates the flow rate and water pressure loss when leaving/entering water temperature difference is 7°C at rated capacity. (water pressure loss is only for pumpless models)

Note 2: Within the indicated flow rate range, the flow rate automatically changes from the pump integrated into each module. (only for internal inverter pump models)

Note 3: Value indicated for retained water amount is with a standard flow amount. (Rated capacity, change in water outlet/inlet temperature difference = 7°C)
When calculating the retained water amount, calculate the greatest water loss in the piping flow channel, giving consideration to the bypass channel etc.

Note 4: Please make a separate inquiry if you would like to control the effect of a temperature reduction in the water supply due to the defrost operation.

60HP *Series EDGE*

| Number of modules | Standard flow rate (L/min) (Note 2) | Water pressure loss (kPa) (Note 1) | Flow rate range (L/min) (Note 4) | Minimum water loop volume (L) (Note 2・3・4) | In-unit water volume (L) |
|-------------------|-------------------------------------|------------------------------------|----------------------------------|--|--------------------------|
| | | | | | |
| 1 | 369 | 42.1 | 150~600 | 860 | 36 |
| 2 | 737 | | 300~1,200 | 1,720 | 72 |
| 3 | 1,106 | | 450~1,800 | 2,580 | 108 |
| 4 | 1,474 | | 600~2,400 | 3,440 | 144 |
| 5 | 1,843 | | 750~3,000 | 4,301 | 180 |
| 6 | 2,211 | | 900~3,600 | 5,161 | 216 |
| 7 | 2,580 | | 1,050~4,200 | 6,021 | 252 |
| 8 | 2,949 | | 1,200~4,800 | 6,881 | 288 |
| 9 | 3,317 | | 1,350~5,400 | 7,741 | 324 |
| 10 | 3,686 | | 1,500~6,000 | 8,601 | 360 |
| 11 | 4,054 | | 1,650~6,600 | 9,461 | 396 |
| 12 | 4,423 | | 1,800~7,200 | 10,321 | 432 |
| 13 | 4,791 | | 1,950~7,800 | 11,181 | 468 |
| 14 | 5,160 | | 2,100~8,400 | 12,041 | 504 |
| 15 | 5,529 | | 2,250~9,000 | 12,902 | 540 |
| 16 | 5,897 | | 2,400~9,600 | 13,762 | 576 |

Note 1: For both at cooling/heating. Indicates the flow rate and water pressure loss when leaving/entering water temperature difference is 7°C at rated capacity. (water pressure loss is only for pumpless models)

Note 2: Within the indicated flow rate range, the flow rate automatically changes from the pump integrated into each module. (only for internal inverter pump models)

Note 3: Value indicated for retained water amount is with a standard flow amount. (Rated capacity, change in water outlet/inlet temperature difference = 7°C)
When calculating the retained water amount, calculate the greatest water loss in the piping flow channel, giving consideration to the bypass channel etc.

Note 4: Please make a separate inquiry if you would like to control the effect of a temperature reduction in the water supply due to the defrost operation.

Water Volume for set of modules

60HP Powerful Heating Type

Pumpless

| Number of modules | Standard flow rate (L/min) ^(Note 1) | | Water pressure loss (kPa) ^(Note 1) | | Flow rate range (L/min) ^(Note 4) | Minimum water loop volume (L) ^(Note 2・3・4) | In-unit water volume (L) |
|-------------------|--|---------|---|---------|---|---|--------------------------|
| | Cooling | Heating | Cooling | Heating | | | |
| 1 | 369 | 410 | 42.1 | 51.2 | 150~600 | 956 | 36 |
| 2 | 737 | 819 | | | 300~1,200 | 1,911 | 72 |
| 3 | 1,106 | 1,229 | | | 450~1,800 | 2,867 | 108 |
| 4 | 1,474 | 1,638 | | | 600~2,400 | 3,823 | 144 |
| 5 | 1,843 | 2,048 | | | 750~3,000 | 4,778 | 180 |
| 6 | 2,211 | 2,457 | | | 900~3,600 | 5,734 | 216 |
| 7 | 2,580 | 2,867 | | | 1,050~4,200 | 6,690 | 252 |
| 8 | 2,949 | 3,276 | | | 1,200~4,800 | 7,645 | 288 |
| 9 | 3,317 | 3,686 | | | 1,350~5,400 | 8,601 | 324 |
| 10 | 3,686 | 4,095 | | | 1,500~6,000 | 9,557 | 360 |
| 11 | 4,054 | 4,505 | | | 1,650~6,600 | 10,512 | 396 |
| 12 | 4,423 | 4,914 | | | 1,800~7,200 | 11,468 | 432 |
| 13 | 4,791 | 5,324 | | | 1,950~7,800 | 12,424 | 468 |
| 14 | 5,160 | 5,733 | | | 2,100~8,400 | 13,379 | 504 |
| 15 | 5,529 | 6,143 | | | 2,250~9,000 | 14,335 | 540 |
| 16 | 5,897 | 6,552 | | | 2,400~9,600 | 15,291 | 576 |

Note 1: For both at cooling/heating. Indicates the flow rate and water pressure loss when leaving/entering water temperature difference is 7°C at rated capacity. (water pressure loss is only for pumpless models)
 Note 2: Within the indicated flow rate range, the flow rate automatically changes from the pump integrated into each module. (only for internal inverter pump models)
 Note 3: Value indicated for retained water amount is with a standard flow amount. (Rated capacity, change in water outlet/inlet temperature difference = 7°C)
 When calculating the retained water amount, calculate the greatest water loss in the piping flow channel, giving consideration to the bypass channel etc.
 Note 4: Please make a separate inquiry if you would like to control the effect of a temperature reduction in the water supply due to the defrost operation.

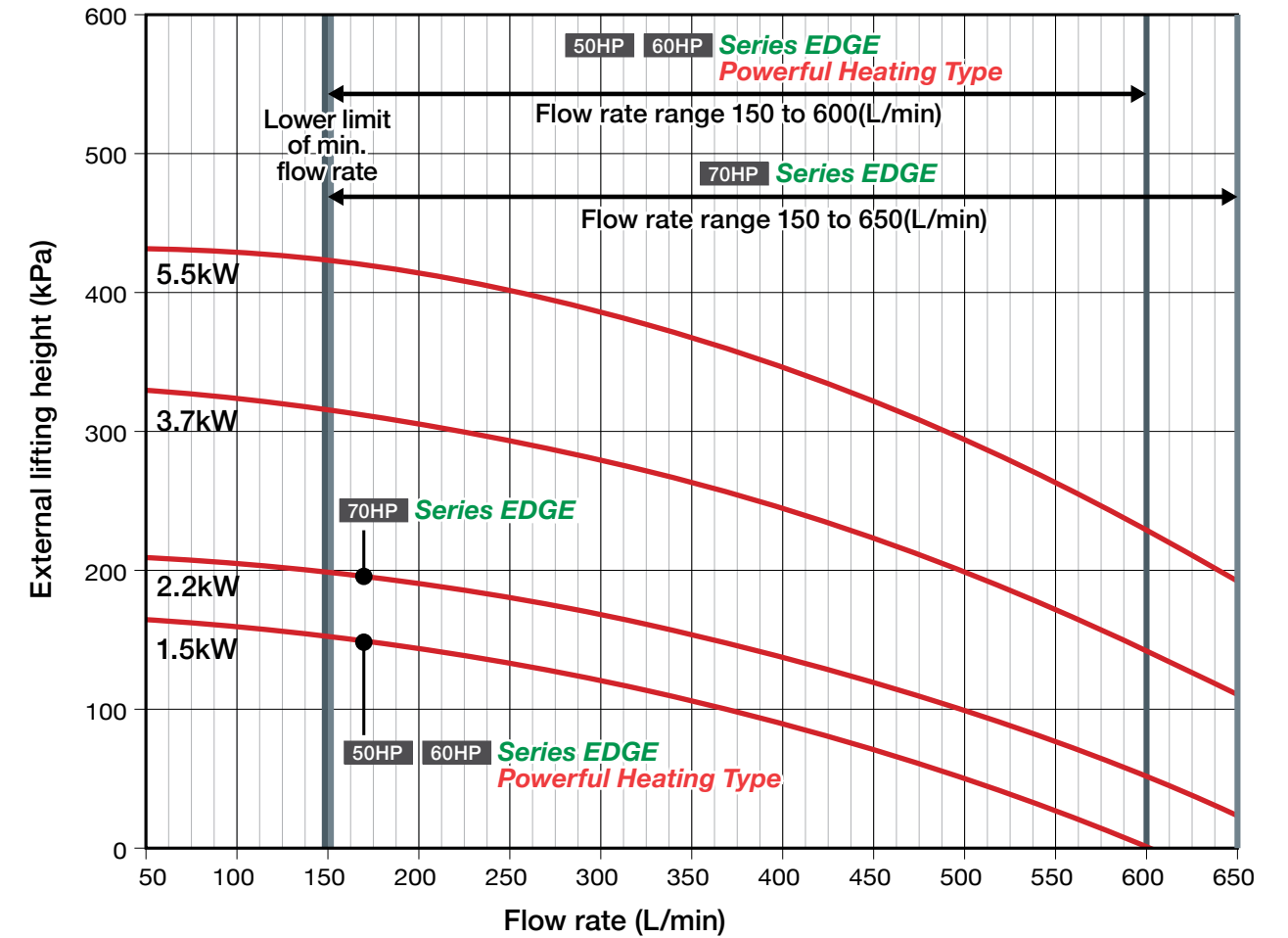
70HP Series EDGE

| Number of modules | Standard flow rate (L/min) ^(Note 1) | Water pressure loss (kPa) ^(Note 1) | Flow rate range (L/min) ^(Note 4) | Minimum water loop volume (L) ^(Note 2・3・4) | In-unit water volume (L) |
|-------------------|--|---|---|---|--------------------------|
| | | | | | |
| 2 | 819 | 300~1300 | 1,911 | 72 | |
| 3 | 1,229 | 450~1950 | 2,867 | 108 | |
| 4 | 1,638 | 600~2600 | 3,823 | 144 | |
| 5 | 2,048 | 750~3250 | 4,778 | 180 | |
| 6 | 2,457 | 900~3900 | 5,734 | 216 | |
| 7 | 2,867 | 1,050~4550 | 6,690 | 252 | |
| 8 | 3,276 | 1,200~5200 | 7,645 | 288 | |
| 9 | 3,686 | 1,350~5850 | 8,601 | 324 | |
| 10 | 4,095 | 1,500~6500 | 9,557 | 360 | |
| 11 | 4,505 | 1,650~7150 | 10,512 | 396 | |
| 12 | 4,914 | 1,800~7800 | 11,468 | 432 | |
| 13 | 5,324 | 1,950~8450 | 12,424 | 468 | |
| 14 | 5,733 | 2,100~9100 | 13,379 | 504 | |
| 15 | 6,143 | 2,250~9750 | 14,335 | 540 | |
| 16 | 6,552 | 2,400~10400 | 15,291 | 576 | |

Note 1: For both at cooling/heating. Indicates the flow rate and water pressure loss when leaving/entering water temperature difference is 7°C at rated capacity. (water pressure loss is only for pumpless models)
 Note 2: Within the indicated flow rate range, the flow rate automatically changes from the pump integrated into each module. (only for internal inverter pump models)
 Note 3: Value indicated for retained water amount is with a standard flow amount. (Rated capacity, change in water outlet/inlet temperature difference = 7°C)
 When calculating the retained water amount, calculate the greatest water loss in the piping flow channel, giving consideration to the bypass channel etc.
 Note 4: Please make a separate inquiry if you would like to control the effect of a temperature reduction in the water supply due to the defrost operation.

Pump Characteristics / Internal Inverter Pump

50HP, 60HP Series EDGE and Powerful Heating Type,
 70HP Series EDGE internal pump 60Hz performance curve



Pump specification values

| Pump output | 50HP, 60HP model | | | | 70HP model | | |
|--|------------------|--------|---------|---------|------------|---------|---------|
| | 1.5 | 2.2 | 3.7 | 5.5 | 2.2 | 3.7 | 5.5 |
| Flow rate range ⁽¹⁾ (L/min) | 150~600 | | | | | | |
| External lifting height ⁽²⁾ (kPa) | 43~151 | 92~198 | 190~315 | 284~422 | 64~198 | 158~315 | 247~422 |
| Max. operation current ⁽³⁾ (A) | 3.3 | 4.5 | 7.3 | 10.5 | 4.5 | 7.3 | 10.5 |
| Max. power consumption ⁽³⁾ (kW) | 2.0 | 2.8 | 4.5 | 6.4 | 2.8 | 4.5 | 6.4 |
| Max. allowable boost pressure (MPa) | 0.52 | 0.47 | 0.36 | 0.25 | 0.47 | 0.36 | 0.25 |
| Max. suction head (water temp. 60°C or less) (kPa) | 40 | 40 | 40 | 40 | 40 | 40 | 40 |

Note 1: Flow rate range (upper limit), max. current and max. power consumption in the table above are values for a single pump. Multiply the number of pumps (modules) by these values depending on the unit size.
 When selecting anything other than rated output, you can also use values outside of the flow amount range shown in the graph. Use the formula below to find the flow amount range outside of the rated capacity.

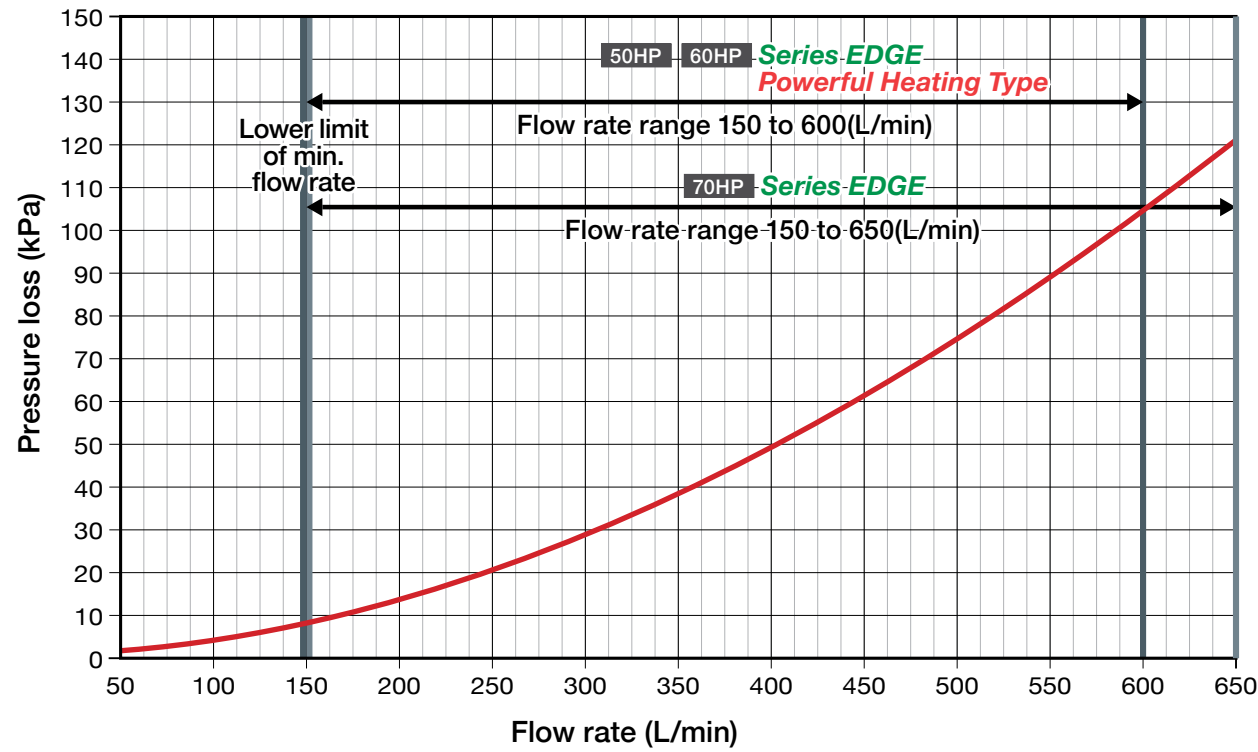
Minimum flow rate=capacity x 860/60/10 (maximum temperature difference)
 *However, minimum flow amount must be at or above 150L/min
 Maximum flow amount=capacity x 860/60/5 (minimum temperature difference)
 *However, maximum flow amount must be at or below 600L/min for the 50HP and 60HP model, and at or below 650L/min for the 70HP model

Note 2: Lifting height outside of the unit shown in the table is the value when the pump frequency is 60Hz at the flow rate range above.
 The pump lift outside of the machine is the value reached when subtracting the resistance inside the machine from the total pump lift.
 Note 3: Max. current and max. power consumption are the max. values when the pump operation frequency is 60Hz. (In case the nominal current is 380V)
 Note 4: 60Hz pumps are commonly used in the 50Hz area.
 Note 5: There are some ranges where pump capacity is not enough for the system to run within flow rate range so please increase pump's horsepower.
 Note 6: In case the nominal current is 380V.
 Note 7: Please refer to 7.5kW pump information in the full technical document (databook).

Pump Characteristics / Internal Resistance Curve (For pumpless)

Internal resistance curve (For pumpless) 50HP, 60HP Series EDGE and Powerful Heating Type, 70HP Series EDGE

Note: For a unit without a pump, select a pump outside of the heat pump unit considering internal resistance below



Power Supply Design

Displayed below are the electrical power design specifications for each module unit.

- Power supply design (380V/400V/415V specifications)
(Internal inverter pump/Pumpless) (Heat pump/Cooling-only)
(Standard type and High-EER type in common)

| | | 50HP Series EDGE Powerful Heating Type | | | | 60HP Series EDGE | | | | | |
|---|---|---|------------------------|------|------------------|------------------|------------------------|------|------|------|------|
| | | 50/60Hz 380V/400V/415V | | | | | | | | | |
| Internal Pump | Power supply | 50/60Hz 380V/400V/415V | | | | | | | | | |
| | | Pumpless | Internal inverter pump | | | Pumpless | Internal inverter pump | | | | |
| Motor Output (kW) | | 1.5 | 2.2 | 3.7 | 5.5 | 1.5 | 2.2 | 3.7 | 5.5 | | |
| Type | | Centrifugal pump | | | Centrifugal pump | | | | | | |
| Type of start | | Inverter start | | | Inverter start | | | | | | |
| Control | | Inverter | | | Inverter | | | | | | |
| Max. Current (A) | | 3.1 | 4.3 | 6.9 | 10 | 3.1 | 4.3 | 6.9 | 10 | | |
| Max. Input (kW) | | 2.0 | 2.8 | 4.5 | 6.4 | 2.0 | 2.8 | 4.5 | 6.4 | | |
| No. of primary connecting parts for power supply wiring | | No. of power connection terminals inside each module(M10) | | | | | | | | | |
| Standard Current (A) | | 79.0 | 82.1 | 83.3 | 85.9 | 89.0 | 99.0 | 103 | 104 | 106 | 109 |
| Power Source Capacity (kVA) | | 54.8 | 56.9 | 57.8 | 59.6 | 61.7 | 68.6 | 70.8 | 71.6 | 73.4 | 75.5 |
| Power Supply Design | Power Supply IV: Power Supply ≤ 20m (mm ²) | 38 | | | | 38 | | | | 60 | |
| | IV: Power Supply ≤ 50m (mm ²) | 38 | | | | 38 | | | | 60 | |
| | Wiring (mm ²) CV: Power Supply ≤ 20m (mm ²) | 22 | | | | 22 | | | | 38 | |
| | CV: Power Supply ≤ 50m (mm ²) | 22 | | | | 22 | | | | 38 | |
| Ground | | 22 | | | | 22 | | | | 38 | |
| Switch (A) | | 100 | | | | 100 | | | | 125 | |
| Fuse (A) | | 100 | | | | 100 | | | | 125 | |
| Earth Leakage Circuit Breaker (Capacity) (A) | | 100 | | | | 100 | | | | 125 | |
| Earth Leakage Circuit Breaker (Sensibility) (mA) | | 100 | | | | 100 | | | | 200 | |

| | | 60HP Powerful Heating Type | | | | 70HP Series EDGE | | | | | |
|---|---|---|------------------------|------|------------------|------------------|------------------------|------|------|------|--|
| | | 50/60Hz 380V/400V/415V | | | | | | | | | |
| Internal Pump | Power supply | 50/60Hz 380V/400V/415V | | | | | | | | | |
| | | Pumpless | Internal inverter pump | | | Pumpless | Internal inverter pump | | | | |
| Motor Output (kW) | | 1.5 | 2.2 | 3.7 | 5.5 | 2.2 | 3.7 | 5.5 | | | |
| Type | | Centrifugal pump | | | Centrifugal pump | | | | | | |
| Type of start | | Inverter start | | | Inverter start | | | | | | |
| Control | | Inverter | | | Inverter | | | | | | |
| Max. Current (A) | | 3.1 | 4.3 | 6.9 | 10 | 4.3 | 6.9 | 10 | | | |
| Max. Input (kW) | | 2.0 | 2.8 | 4.5 | 6.4 | 2.8 | 4.5 | 6.4 | | | |
| No. of primary connecting parts for power supply wiring | | No. of power connection terminals inside each module(M10) | | | | | | | | | |
| Standard Current (A) | | 110 | 113 | 114 | 117 | 120 | 115 | 119 | 122 | 125 | |
| Power Source Capacity (kVA) | | 75.9 | 78.1 | 78.9 | 80.7 | 82.8 | 79.4 | 82.4 | 84.2 | 86.3 | |
| Power Supply Design | Power Supply IV: Power Supply ≤ 20m (mm ²) | 60 | | | | 60 | | | | 60 | |
| | IV: Power Supply ≤ 50m (mm ²) | 60 | | | | 60 | | | | 60 | |
| | Wiring (mm ²) CV: Power Supply ≤ 20m (mm ²) | 38 | | | | 38 | | | | 38 | |
| | CV: Power Supply ≤ 50m (mm ²) | 38 | | | | 38 | | | | 38 | |
| Ground | | 38 | | | | 38 | | | | 38 | |
| Switch (A) | | 125 | | | | 125 | | | | 125 | |
| Fuse (A) | | 125 | | | | 125 | | | | 125 | |
| Earth Leakage Circuit Breaker (Capacity) (A) | | 125 | | | | 125 | | | | 125 | |
| Earth Leakage Circuit Breaker (Sensibility) (mA) | | 200 | | | | 200 | | | | 200 | |

- *1. The internal pump can be replaced with another pump with appropriate output according to the lifting height outside of the unit required by a custom option. Since power supply design is different depending on the pump output, be sure to see the values in the corresponding field.
- *2. The pump operates at a maximum frequency of 60 Hz at the maximum flow rate (per module).
- *3. A leakage breaker must be installed. Use one that conforms to higher harmonics to prevent malfunction since this unit includes an inverter.
- *4. Standard Current is the value considering the imbalance of 2% between power supply voltages.

Note.1: The thickness of the ground lead is the value for when using IV wire shown in the table for power supply wire. Refer to IEC60204-15.2 depending on the thickness of the wire used.

Table 1-Minimum cross-sectional area of the external protective copper conductor

| Cross-sectional area of copper phase conductors supplying the equipment S mm ² | Minimum cross-sectional area of the external protective copper conductor Sp mm ² |
|--|--|
| S ≤ 16 | S |
| 16 < S ≤ 35 | 16 |
| S > 35 | S/2 |

- Fuse capacities in the tables are for B class fuses.
- Select a power supply transformer that can support values greater than those shown in the tables.
- Power supply line thickness values are for metal conduits with three or fewer wires inside a single conduit, (or six or fewer wires when two wires are used for one pole)
- Selected based on Japanese regulations. Select the appropriate unit based on the laws and regulations of the location where the unit is to be installed.

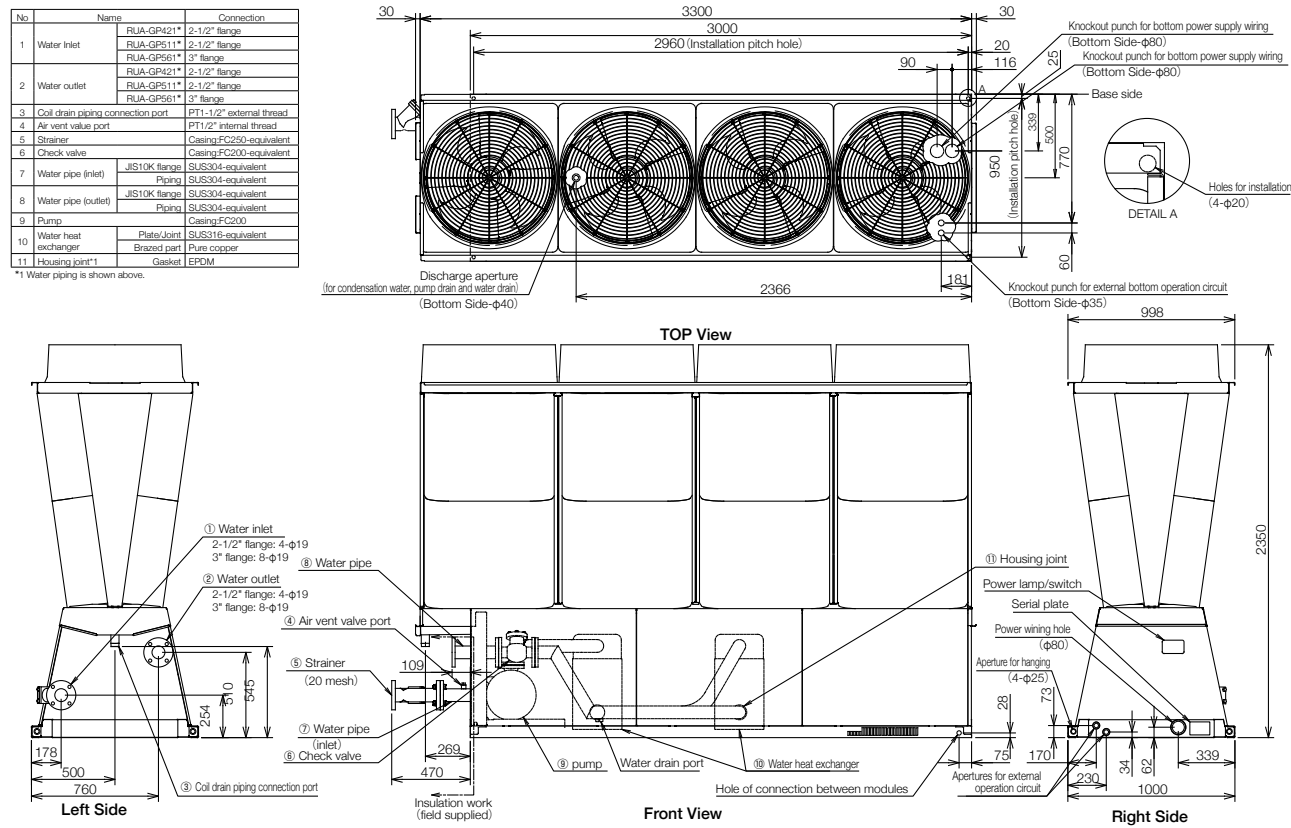
Note 2: Check databook for 7.5kW pump and Module controller power supply information.

Outline Drawing

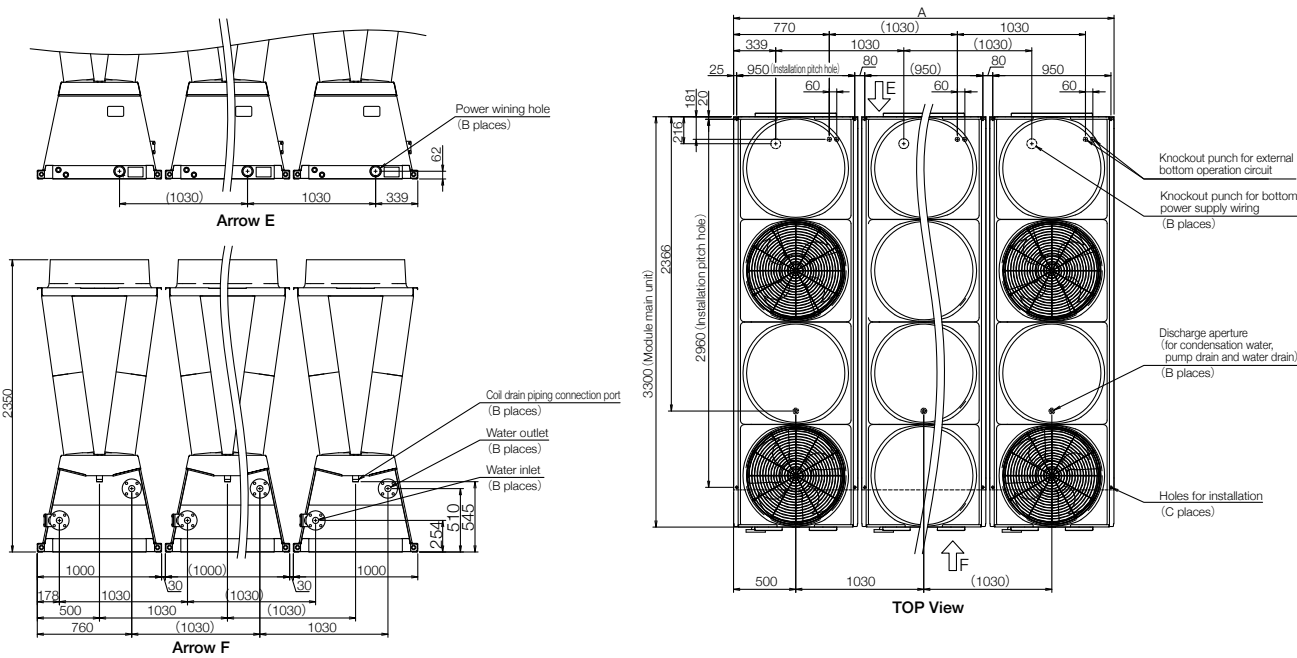
50, 60HP Series EDGE / Powerful Heating Type, 70HP Series EDGE With Pump/Pumpless

*Pumpless model does not include check valve

A single module unit



Combined installation



| The number of modules | A | B | C | The number of modules | A | B | C | The number of modules | A | B | C | The number of modules | A | B | C |
|-----------------------|------|---|----|-----------------------|------|---|----|-----------------------|-------|----|----|-----------------------|-------|----|----|
| 1 module | 1000 | 1 | 4 | 5 module | 5120 | 5 | 20 | 9 module | 9240 | 9 | 36 | 13 module | 13360 | 13 | 52 |
| 2 modules | 2030 | 2 | 8 | 6 modules | 6150 | 6 | 24 | 10 modules | 10270 | 10 | 40 | 14 modules | 14390 | 14 | 56 |
| 3 modules | 3060 | 3 | 12 | 7 modules | 7180 | 7 | 28 | 11 modules | 11300 | 11 | 44 | 15 modules | 15420 | 15 | 60 |
| 4 modules | 4090 | 4 | 16 | 8 modules | 8210 | 8 | 32 | 12 modules | 12330 | 12 | 48 | 16 modules | 16450 | 16 | 64 |

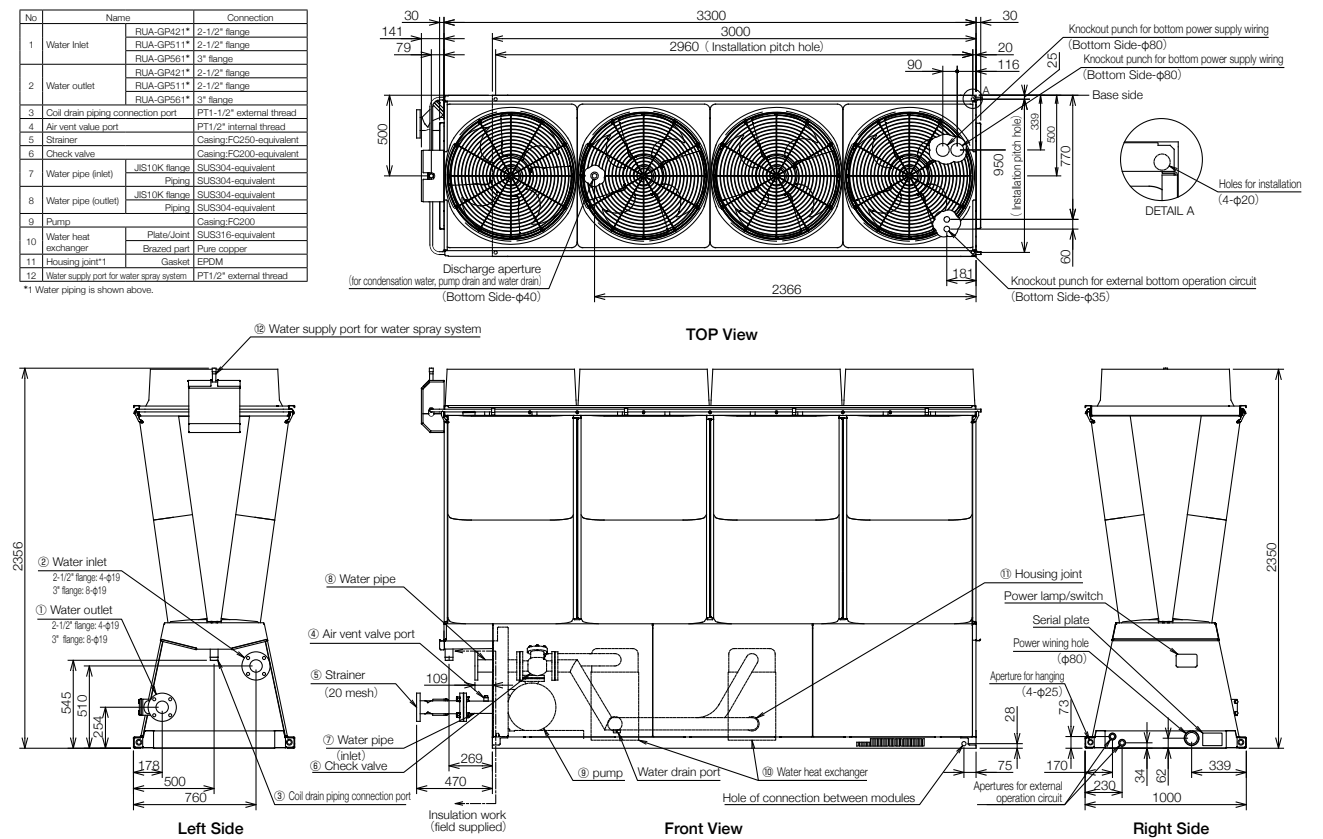
Note 1: The values indicated above are applied to A through C.
 Note 2: When the power supply wiring kit (optional) is not used. Regarding the dimensions when the power supply wiring kit is installed, refer to the document of consent for power supply wiring kit.
 Note 3: 30mm clearance space between modules is only minimum requirement for Japanese service man. Please consider larger space for European service man.

Outline Drawing

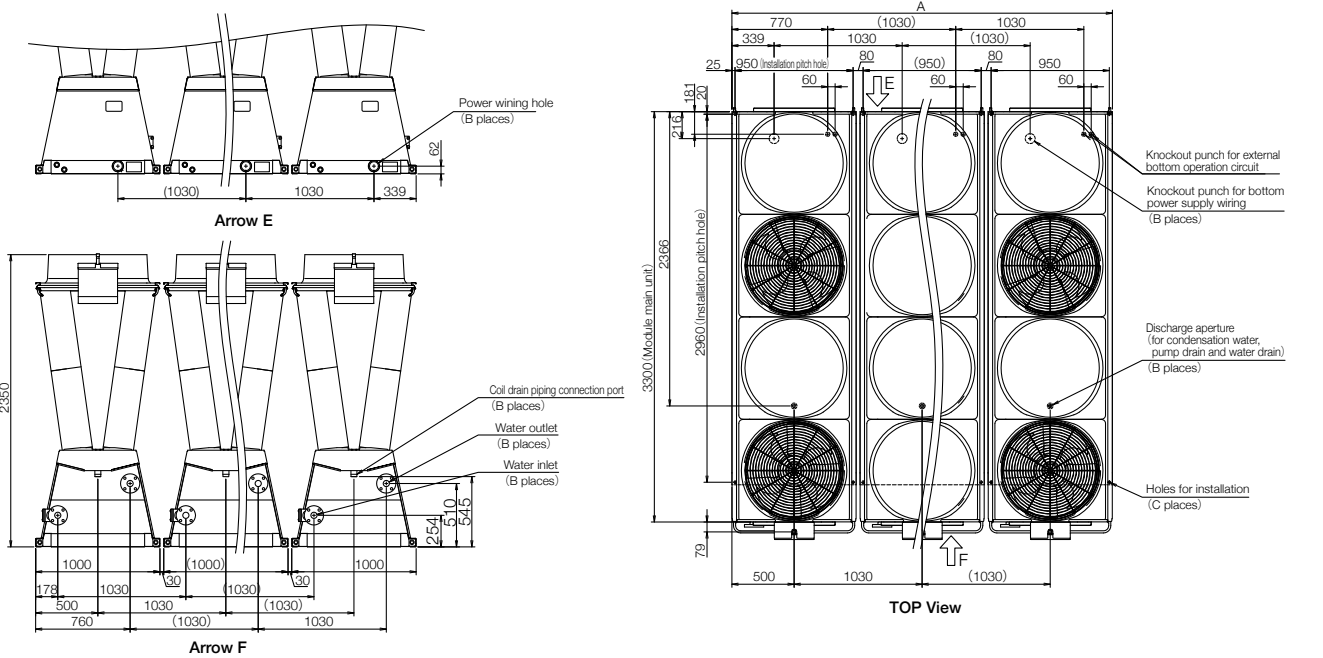
50, 60HP Series EDGE / Powerful Heating Type, 70HP Series EDGE - High EER - With Pump/Pumpless

*Pumpless model does not include check valve

A single module unit



Combined installation



| The number of modules | A | B | C | The number of modules | A | B | C | The number of modules | A | B | C | The number of modules | A | B | C |
|-----------------------|------|---|----|-----------------------|------|---|----|-----------------------|-------|----|----|-----------------------|-------|----|----|
| 1 module | 1000 | 1 | 4 | 5 module | 5120 | 5 | 20 | 9 module | 9240 | 9 | 36 | 13 module | 13360 | 13 | 52 |
| 2 modules | 2030 | 2 | 8 | 6 modules | 6150 | 6 | 24 | 10 modules | 10270 | 10 | 40 | 14 modules | 14390 | 14 | 56 |
| 3 modules | 3060 | 3 | 12 | 7 modules | 7180 | 7 | 28 | 11 modules | 11300 | 11 | 44 | 15 modules | 15420 | 15 | 60 |
| 4 modules | 4090 | 4 | 16 | 8 modules | 8210 | 8 | 32 | 12 modules | 12330 | 12 | 48 | 16 modules | 16450 | 16 | 64 |

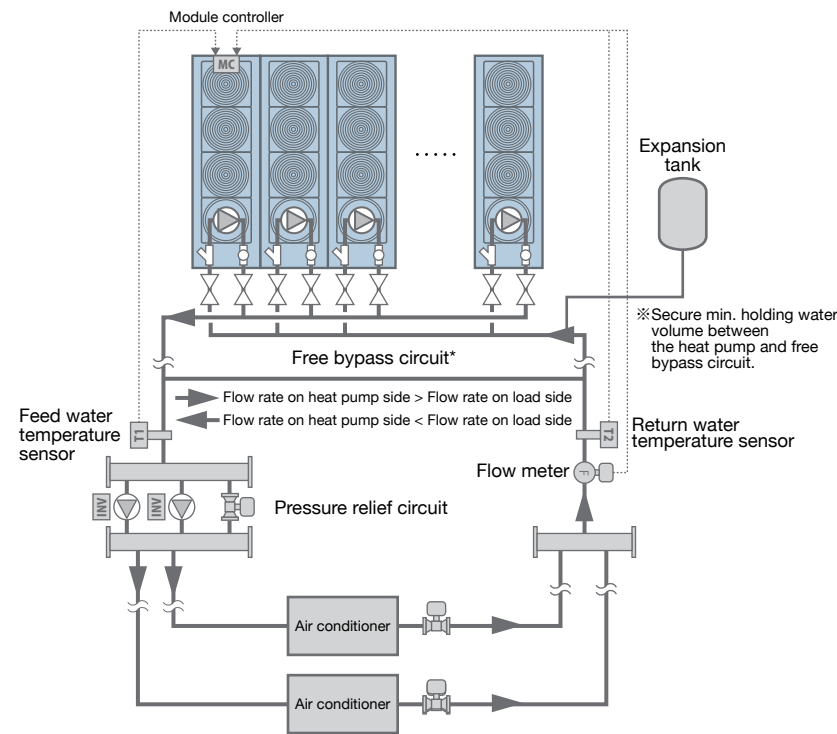
Note 1: The values indicated above are applied to A through C.
 Note 2: When the power supply wiring kit (optional) is not used. Regarding the dimensions when the power supply wiring kit is installed, refer to the document of consent for power supply wiring kit.
 Note 3: 30mm clearance space between modules is only minimum requirement for Japanese service man. Please consider larger space for European service man.

System Examples for Internal Inverter Pump Units

- As a cold (hot) water circulation pump is built in, test run adjustment which includes the whole piping system is necessary. (Forced open/close of auto control valve in A/C is required.)
- The system detects the required flow rate on load side, and automatically fluctuates the number of internal cold (hot) water circulating pumps and the operating frequency. Refer to "Pump Characteristics" and select an internal pump by considering the required max. flow rate and max. lift for the system.
- Also consider construction on the suction side of internal pumps (boost pressure/pipe resistance). While internal pumps are stopped, ensure that the pressure on the suction side is not negative to prevent the air from entering the pumps from mechanical seals. Ensure that the suction side main water pipes are higher than the heat pump cold (hot) water inlet piping to prevent the air from accumulating in the heat pump. Closer attention is required when an open-type tank is set up as an expansion tank on the heat pump inlet side.
- To improve energy saving abilities, we recommend that you make a variable flow system using 2 way valves on the secondary side etc.
- If the heat pump is located at the highest point in the system, install an automatic air vent valve (with a check valve function) at the inlet pipe for each module.
- Secure a sufficient holding water volume between the heat pump and the bypass circuit to ensure water temperature controllability. The water volume described in the specifications table is required to operate a module for two minutes, the minimum running time. The values in the table show the minimum holding water volume required to protect the unit. Ensure as much holding water volume as possible to minimize the variation of supply water temperature.
- Differential pressure regulating valves or flow meters may be required depending on the system. In that case, use different power supply from that of the heat pump. Follow instructions by the manufacturer for how to wire the valves or flow meters.
- For any system not listed below, please contact us.

1. Example of duplex pump system

(load side: variable flow, heat pump side: variable flow)



1. As there may be an unbalance in the load side pump flow rate and the heat pump flow rate, construct a normally open free bypass circuit.
2. LWT/EWT sensor in heat pump and water temperature sensor on feed/return water pipes detect the temperature balance inside the system, and control the number of internal pump for cold/hot-water circulation and the frequency to minimize the imbalance between estimated load side flow rate and heat pump side flow rate. Mount the external sensors attached to the module controller on feed water pipes and return water pipes, and connect the sensors to the module controller.
3. If there is a flow meter F (provided locally) in the system, connect its output to the module controller. This enables control which directly detects flow rate on the load side (mounting of external sensors on the feed/return water pipes is required even when using a flow meter).
4. The module compressor with internal pump for cold/hot-water circulation controls the number of compressors and frequency so that the leaving water temperature approaches the set temperature.

List of equipment for control

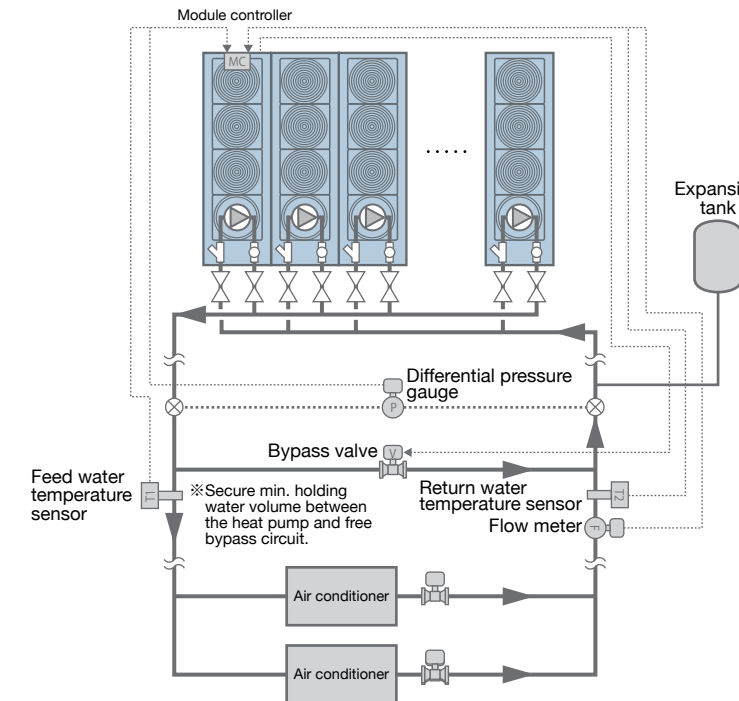
| Part name | Specifications | Quantity | Provided locally | Constructed locally |
|--------------------------------------|---|----------|-------------------------------|---------------------|
| Water temperature sensor (mandatory) | 10kΩ external sensor | 2 | Attached to module controller | ○ |
| Flow meter | Able to measure instantaneous value support voltage/current output* (Able to adjust input range span: DC 0 to 5V) | 1 | ○ | ○ |

* Attach 250Ω±1% metal film resistor (provided locally) when the signal has current 4-20mA. (In that case, input range span is DC 1 to 5V)

System Examples for Internal Inverter Pump Units

2. Single Pump: Example of standard system

(load side: variable flow, heat pump side: variable flow)



1. LWT/EWT sensor in heat pump and water temperature sensor on feed/return water pipes detect the temperature balance inside the system, and control the number of internal pumps for cold/hot-water circulation and the frequency to minimize the imbalance between the estimated load side flow rate and the heat pump side flow rate.
2. If there is a flow meter F (provided locally) in the system, connect its output to the module controller. This enables control which directly detects flow rate on the load side (mounting of external sensors on feed/return water pipes is required even when using a flow meter).
3. The module compressor with internal pump for cold/hot-water circulation controls the number of compressors and frequency so that the leaving water temperature approaches the set temperature.
4. As there may be an imbalance in the load side required flow rate and the heat pump flow rate, construct a bypass valve V (provided locally) which is operated according to detection of differential pressure between the feed/return water pipes. The bypass valve V is controlled by a module controller.
5. While the operation is stopped, the freeze protection control may automatically operate the internal pump. The bypass valve may be forcibly opened to secure the flow path. In this case, water may not be supplied to equipment on the load side (to feed water to the equipment on the load side, be sure to open the 2-way valve on the load side in accordance with freeze protection control of the heat pump, instead of configuring settings not to open the bypass valve).

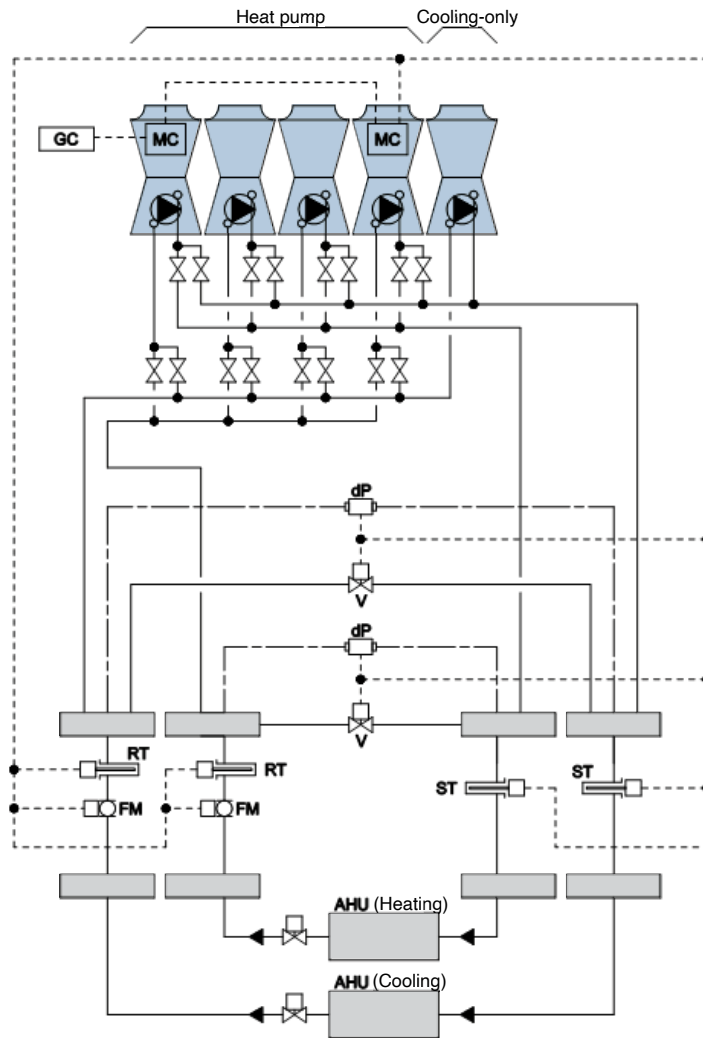
List of equipment for control

| Part name | Specifications | Quantity | Provided locally | Constructed locally |
|---|---|----------|-------------------------------|---------------------|
| Water temperature sensor (mandatory) | 10kΩ external sensor | 2 | Attached to module controller | ○ |
| Flow meter | Able to measure instantaneous value support voltage/current output* (Able to adjust input range span: DC 0 to 5V) | 1 | ○ | ○ |
| Differential pressure gauge (mandatory) | Pressure gauge (mandatory). Able to measure instantaneous value support voltage/current output* (Able to adjust input range span: DC 0 to 5V) | 1 | ○ | ○ |
| Bypass valve (mandatory) | Globe valve which can perform proportional control at current input DC 4 to 20mA (Able to adjust span) | 1 | ○ | ○ |

* Attach 150Ω±1% metal film resistor (provided locally) when the signal has current 4-20mA. (In that case, input range span is DC 0.6 to 3V)

System Examples for Internal Inverter Pump Units

3. Example of Chilled/Warm Water Simultaneous Use System



1. Install a valve for switching between the inlet and outlet of heat pumps that switch between chilled and warm water. (If it is a motor-operated valve, ensure it works with the local instrumentation panel.)
2. Connect each cooling and heating component (FM, ST, RT, dP, V) to the module controller (MC).

Option List

| Option Parts | Model Code | Locally constructed (*Note2) | Availability of factory assembly (*Note3) | Remarks |
|---|---|------------------------------|---|---|
| Module Controller (MC) See following page for Model Codes. | For Standard model For Powerful Heating type | ✓ | ✓ | - One controller required for one group |
| Group Controller (GC) | RBP-GC003S-E | ✓ | n/a | |
| Connect fitting Kit | RBP-BT923TYS-E | ✓ | n/a | - N-1 kits required (N = no. modules) |
| Fin Guard Kit | RBP-BG901S-E | ✓ | ✓ | |
| Flange kit for hood/net installation | RBP-FL030E-E | n/a | ✓ | |
| External sensor (*note1) | RBP-RTHS-E | ✓ | n/a | |
| SD card for Flash Monitor | RBP-SDCD-E | ✓ | n/a | - One SD card required for one MC |

Note 1: Module controller with internal inverter pump contains external sensor (2 sensors for feed/return water temperature) for controlling one system of the water pipe systems. If an external sensor to control a secondary circuit of water pipes is required, an additional order must be placed. You also need to place an order for an external sensor for monitoring the temperature of return and condensation water for module controllers in pumpless models, which do not have external sensors.

Note 2: On-site installation work is needed. (Not included in seller's work description.)

Note 3: Factory fitting is available as a custom option

| Item | | Locally constructed and locally set up |
|---|------------------------------|--|
| Ext. temp setpoint input | MC and GC standard functions | Required |
| External capacity input | indent (MC) | Required ^(Note 3) |
| Maximum number of modules that can be operated input | indent (MC) | Required ^(Note 3) |
| Demand capacity input | indent (MC) | Required ^(Note 3) |
| Run/Stop input, make signal supported | MC and GC standard functions | Required |
| Run/Stop input, pulse signal supported (over 500 msec) | MC and GC standard functions | Required |
| Operation pattern input | MC and GC standard functions | Required |
| Enabling operation by each system input | MC standard functions | Required |
| Demand input | MC standard functions | Required |
| Pump interlock input | MC standard functions | Required |
| Forced fan operation input | indent (MC) | Required ^(Note 3) |
| Power outage recovery input | indent (MC·GC) | Required ^(Note 3) |
| Anti-freezing pump interlock input | indent (MC) | Required ^(Note 3) |
| Operation mode output (for each system) | indent (MC) | Required ^(Note 3) |
| Operating capacity output | MC and GC standard functions | Required |
| Simple input display (instant values) | GC standard functions | Not necessary |
| Simple watt-hour display (daily usage) | GC standard functions | Not necessary |
| Simple input/output (instant values) | GC standard functions | Required |
| Simple capacity display (instant values) | MC and GC standard functions | Not necessary |
| Simple heat production display (daily usage) | GC standard functions | Not necessary |
| Simple capacity output (instant values) | MC and GC standard functions | Required |
| Operation output (GC: Overall or by system) | MC and GC standard functions | Required |
| Malfunction output (GC: Overall or by system) | MC and GC standard functions | Required |
| Operation pattern output | MC and GC standard functions | Required |
| Operation mode output (cooling, heating, cooling/heating thermal storage) | MC standard functions | Required |
| Pump interlock output | MC standard functions | Required |
| Water spray device interlock output | MC standard functions | Required |
| Group output for defrosting | indent (MC) | Required ^(Note 3) |
| Output for freeze protection pump operation | indent (MC) | Required ^(Note 3) |
| Output at maximum-capacity operation | indent (MC) | Required ^(Note 3) |
| Scheduled operation function | GC standard functions | Required |
| Double setpoints (temperature setpoint) ^(Note 4) | MC standard functions | Required |
| Module operating time display | MC standard functions | Not necessary |
| Compressor run hours display | MC standard functions | Not necessary |
| Module startup counts display | MC standard functions | Not necessary |
| Compressor startup counts display | MC standard functions | Not necessary |
| Module operating time averaging control | MC standard functions | Not necessary |
| Compressor run hours averaging control | MC standard functions | Not necessary |

Module Controller (MC):

Required in any one module of a system Model codes are shown in below table;

| | Type | Model Code |
|-----------------------------|-------------------------------------|-----------------|
| Standard Model | Standard Water Application | RBP-MC003SSE |
| | Standard Water Application + Modbus | RBP-MC003SSDE |
| | Brine Water Application | RBP-MC003SSRE |
| | Brine Water Application + Modbus | RBP-MC003SSRDE |
| Powerful Heating Type Model | Standard Water Application | RBP-MC003SSFDE |
| | Standard Water Application + Modbus | RBP-MC003SSFDE |
| | Brine Water Application | RBP-MC003SSFRE |
| | Brine Water Application + Modbus | RBP-MC003SSFRDE |

Custom Options

| | Custom Option | Remarks | |
|----------------|---|---|--|
| Unit | Anti corrosion & heavy anti corrosion models | - Follows JRA standards | |
| | Large ΔT specification | - The temperature difference ranges from 10 °C to 16 °C. | |
| | Heat machine specification | - Heating only. Operable OAT ranges more than 21°C(DB) up to 43°C(DB) | |
| | Heat machine specification with cooling operation | - Heat pump with expanded range for heating operation | |
| | Stainless steel screw set | | |
| | Stainless steel water strainer & check valve | | |
| | Special pump specification | | |
| | Heat storage system specification | | |
| | UPS connecting software | | |
| | Fast start up specification | | |
| | Automatic system recovery | | |
| | Module Controller (MC) | Factory fitting | |
| | | Modbus connectivity | |
| Connecting kit | Anti corrosion & heavy anti corrosion models | -N-1 kits required (N = no. modules) | |
| Fin guard | Factory fitting | | |
| Flange kit | Anti corrosion & heavy anti corrosion models | | |

Note : Please contact our sales staff for the prices and lead time

Specifications

Brine specifications

Efficiently and precisely support various low-temperature processes with brine specifications of the Universal Smart X Series EDGE.

Brine-Spec Line-Up and Module Names

| Model | | With an inverter pump | | |
|-------|---------------|---|--------------------------------------|--|
| | | Series EDGE <small>Cooling-only</small> | Series EDGE <small>Heat pump</small> | Powerful Heating Type <small>Heat pump</small> |
| 50HP | Standard type | RUA-GP421C(*)R8-E | RUA-GP421H(*)R8-E | RUA-GP421F(*)R8-E |
| | High-EER type | RUA-GP421C(*)NR8-E | RUA-GP421H(*)NR8-E | RUA-GP421F(*)NR8-E |
| 60HP | Standard type | RUA-GP511C(*)R8-E | RUA-GP511H(*)R8-E | RUA-GP511F(*)R8-E |
| | High-EER type | RUA-GP511C(*)NR8-E | RUA-GP511H(*)NR8-E | RUA-GP511F(*)NR8-E |
| 70HP | Standard type | RUA-GP561C(*)R8-E | RUA-GP561H(*)R8-E | |
| | High-EER type | RUA-GP561C(*)NR8-E | RUA-GP561H(*)NR8-E | |

| Model | | Pumpless | | |
|-------|---------------|---|--------------------------------------|--|
| | | Series EDGE <small>Cooling-only</small> | Series EDGE <small>Heat pump</small> | Powerful Heating Type <small>Heat pump</small> |
| 50HP | Standard type | RUA-GP421CLR8-E | RUA-GP421HLR8-E | RUA-GP421FLR8-E |
| | High-EER type | RUA-GP421CLNR8-E | RUA-GP421HLNR8-E | RUA-GP421FLNR8-E |
| 60HP | Standard type | RUA-GP511CLR8-E | RUA-GP511HLR8-E | RUA-GP511FLR8-E |
| | High-EER type | RUA-GP511CLNR8-E | RUA-GP511HLNR8-E | RUA-GP511FLNR8-E |
| 70HP | Standard type | RUA-GP561CLR8-E | RUA-GP561HLR8-E | |
| | High-EER type | RUA-GP561CLNR8-E | RUA-GP561HLNR8-E | |

*Note 1: With inverter pump model, number inside () defines pump horsepower. Please change from 1 to 7 for pump from 1.5kW to 7.5kW. Final model name will not include (). Please refer to catalogue page 2 for model name's rules.

*Note 2: -E is for countries in Europe except United Kingdom, Turkey. Please use -UK for United Kingdom and -TR for Turkey.

Brine leaving temperature and brine density

① Refer to the capacity table regarding the performance of the brine chiller. In addition, the density of the brine (ethylene glycol) is the density noted below so the freezing temperature is (brine outlet temperature) - (B°C).

| Brine leaving temperature (°C) | °C | +5 | 0 | -5 | -10 | -15 |
|--------------------------------------|-----|------------|------------|------------|------------|------------|
| Ethylene glycol density (Nybrine Z1) | wt% | 11 (15) | 20 (27) | 28 (38) | 34 (46) | 40 (54) |
| Propylene glycol density (Brine PFP) | wt% | 12 (18) | 22 (34) | 29 (45) | 35 (54) | 40 (62) |

50HP Series **EDGE** Heat pump

| | | Standard type | High EER type |
|--|---------------------------------------|--|----------------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUA-GP421H(*1)R8-E | RUA-GP421H(*1)NR8-E |
| Cooling capacity (Note 1,7) (kW) | | 100 | 100 |
| Heating capacity (Note 1,7) (kW) | | 150 | 150 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2350 |
| | | Width (Note 2) (mm) | 1000 |
| | | Depth (Note 2) (mm) | 3300 |
| Shipping weight (kg) | | 1,353 | 1,365 |
| Operating weight (kg) | | 1,389 | 1,401 |
| Power supply (Note 1,3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4,5) | | 82.1 | |
| Electrical data (Note 14) | Cooling | Nominal current (A) | 61.1(60.9) |
| | | Nominal input (kW) | 39.8(39.7) |
| | | EER | 2.51 (2.52) |
| | | SEER | 4.88 |
| | | Power factor (Note 6) (%) | 99 |
| | Heating | Nominal current (A) | 63.1(63.9) |
| | | Nominal input (kW) | 41.1(41.7) |
| | | COP | 3.65(3.60) |
| | | SCOP | 4.26 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary | |
| | Motor output x number of units (kW) | 9.0 x 4 | |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m³/min) | 1,230 (max. value) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | |
| | Supply water pressure (Note 10) (MPa) | 0.2 | |
| | Control | Continuous spraying when outside temperature and compressor capacity exceeds setting values | |
| Pump | Motor output (kW) | 2.2 | |
| | Type | Centrifugal pump | |
| | Flow control | Inverter | |
| | Maximum current (A) | 4.5 | |
| | Minimum input (kW) | 2.8 | |
| Cooler - water side (Note 11) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 12) (%) | | 6 ~ 100 | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, high water temperature protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | |
| | Coil drain | PT1-1/2" external thread x 1 | |
| Sound power level | | 83.8 | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^{Note 13)} | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.
 (Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.
 (Note 14) Electrical data is not including inbuilt pump.

50HP **Powerful Heating Type** Heat pump

| | | Standard type | High EER type |
|--|---------------------------------------|---|----------------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUA-GP421F(*1)R8-E | RUA-GP421F(*1)NR8-E |
| Cooling capacity (Note 1,7) (kW) | | 100 | 100 |
| Heating capacity (Note 1,7) (kW) | | 150 | 150 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | |
| | Dimensions | Height (mm) | 2350 |
| | | Width (Note 2) (mm) | 1000 |
| | | Depth (Note 2) (mm) | 3300 |
| Shipping weight (kg) | | 1,363 | 1,376 |
| Operating weight (kg) | | 1,399 | 1,412 |
| Power supply (Note 1,3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | |
| Reference current for power supply design (Note 4,5) | | 82.1 | |
| Electrical data (Note 14) | Cooling | Nominal current (A) | 61.1(60.9) |
| | | Nominal input (kW) | 39.8(39.7) |
| | | EER | 2.51(2.52) |
| | | SEER | 4.88 |
| | | Power factor (Note 6) (%) | 99 |
| | Heating | Nominal current (A) | 63.1(63.9) |
| | | Nominal input (kW) | 41.1(41.7) |
| | | COP | 3.65(3.60) |
| | | SCOP | 4.26 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary | |
| | Motor output x number of units (kW) | 9.0 x 4 | |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m³/min) | 1,230 (max. value) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | |
| | Supply water pressure (Note 10) (MPa) | 0.2 | |
| | Control | Continuous spraying when outside temperature and compressor capacity exceeds setting values | |
| Pump | Motor output (kW) | 2.2 | |
| | Type | Centrifugal pump | |
| | Flow control | Inverter | |
| | Maximum current (A) | 4.5 | |
| | Minimum input (kW) | 2.8 | |
| Cooler - water side (Note 11) | | Braze plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 12) (%) | | 6 ~ 100 | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor timeguards, freeze protection, high water temperature protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | |
| | Coil drain | PT1-1/2" external thread x 1 | |
| Sound power level | | 83.8 | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^{Note 13)} | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.
 (Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.
 (Note 14) Electrical data is not including inbuilt pump.

50HP Series **EDGE** Cooling-only

| | | Standard type | High EER type |
|--|---------------------------------------|---|---|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUA-GP421C(*1)R8-E | RUA-GP421C(*1)NR8-E |
| Cooling capacity (Note 1,7) (kW) | | 100 | 100 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | Silky shade (Munsell 1Y8.5/0.5) |
| | Dimensions | Height (mm) | 2350 |
| | | Width (Note 2) (mm) | 1000 |
| | | Depth (Note 2) (mm) | 3300 |
| Shipping weight (kg) | | 1,314 | 1,326 |
| Operating weight (kg) | | 1,350 | 1,362 |
| Power supply (Note 1,2) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | 3-phase 4-wire 50/60Hz 380V/400V/415V |
| Reference current for power supply design (Note 4,5) | | 82.1 | 82.1 |
| Electrical data (Note 14) | Cooling | Nominal current (A) | 61.1(61.4) |
| | | Nominal input (kW) | 39.8(40.0) |
| | | EER | 2.51(2.50) |
| | | SEER | 4.90 |
| | Power factor (Note 6) (%) | 99 | |
| Compressor | Type | Hermetic rotary | Hermetic rotary |
| | Motor output x number of units (kW) | 8.4 x 4 | 6.2 x 4 |
| | Type of start | Inverter starter | Inverter starter |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | RB74AF |
| | Charge (L) | 2.0 x 4 | 2.0 x 4 |
| Condenser coil - air side | | Plate fin coil | Plate fin coil |
| Fan | Type | Propeller fan | Propeller fan |
| | Air quantity (m ³ /min) | 1,230 (max. value) | 1,230 (max. value) |
| | Type of start | Inverter starter | Inverter starter |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 10) (MPa) | - | 0.2 |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values |
| Pump | Motor output (kW) | 2.2 | 2.2 |
| | Type | Centrifugal pump | Centrifugal pump |
| | Flow control | Inverter | Inverter |
| | Maximum current (A) | 4.5 | 4.5 |
| Minimum input (kW) | 2.8 | 2.8 | |
| Cooler - water side (Note 11) | | Brazed plate heat exchanger (SUS316 equivalent) | Brazed plate heat exchanger (SUS316 equivalent) |
| Refrigerant | Type | R32 | R32 |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 |
| | Control | Electric expansion valve | Electric expansion valve |
| Capacity control steps (Note 12) (%) | | 6 - 100 | 6 - 100 |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) |
| | Coil drain | PT1-1/2" external thread x 1 | PT1-1/2" external thread x 1 |
| Sound power level | | 83.8 | 83.8 |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^{Note 13} | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.
 (Note 14) Electrical data is not including inbuilt pump.

60HP Series **EDGE** Heat pump

| | | Standard type | High EER type |
|--|---------------------------------------|--|---|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUA-GP511H(*1)R8-E | RUA-GP511H(*1)NR8-E |
| Cooling capacity (Note 1,7) (kW) | | 118 | 118 |
| Heating capacity (Note 1,7) (kW) | | 180 | 180 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | Silky shade (Munsell 1Y8.5/0.5) |
| | Dimensions | Height (mm) | 2350 |
| | | Width (Note 2) (mm) | 1000 |
| | | Depth (Note 2) (mm) | 3300 |
| Shipping weight (kg) | | 1,353 | 1,365 |
| Operating weight (kg) | | 1,389 | 1,401 |
| Power supply (Note 1,2) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | 3-phase 4-wire 50/60Hz 380V/400V/415V |
| Reference current for power supply design (Note 4,5) | | 103 | 103 |
| Electrical data (Note 14) | Cooling | Nominal current (A) | 74.2(73.9) |
| | | Nominal input (kW) | 48.4(48.2) |
| | | EER | 2.44(2.45) |
| | | SEER | 4.77 |
| | | Power factor (Note 6) (%) | 99 |
| | Heating | Nominal current (A) | 78.7(80.1) |
| | | Nominal input (kW) | 51.3(52.2) |
| | | COP | 3.51 (3.45) |
| | | SCOP | 4.35 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary | Hermetic rotary |
| | Motor output x number of units (kW) | 11.0 x 4 | 11.0 x 4 |
| | Type of start | Inverter starter | Inverter starter |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | RB74AF |
| | Charge (L) | 2.0 x 4 | 2.0 x 4 |
| Condenser coil - air side | | Plate fin coil | Plate fin coil |
| Fan | Type | Propeller fan | Propeller fan |
| | Air quantity (m ³ /min) | 1,230 (max. value) | 1,230 (max. value) |
| | Type of start | Inverter starter | Inverter starter |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 10) (MPa) | - | 0.2 |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values |
| Pump | Motor output (kW) | 2.2 | 2.2 |
| | Type | Centrifugal pump | Centrifugal pump |
| | Flow control | Inverter | Inverter |
| | Maximum current (A) | 4.5 | 4.5 |
| Minimum input (kW) | 2.8 | 2.8 | |
| Cooler - water side (Note 11) | | Brazed plate heat exchanger (SUS316 equivalent) | Brazed plate heat exchanger (SUS316 equivalent) |
| Refrigerant | Type | R32 | R32 |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 |
| | Control | Electric expansion valve | Electric expansion valve |
| Capacity control steps (Note 12) (%) | | 4 - 100 | 4 - 100 |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, high water temperature protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) |
| | Coil drain | PT1-1/2" external thread x 1 | PT1-1/2" external thread x 1 |
| Sound power level | | 83.8 | 83.8 |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^{Note 13} | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.
 (Note 14) Electrical data is not including inbuilt pump.

60HP *Powerful Heating Type* Heat pump

| | | Standard type | High EER type | |
|--|---------------------------------------|---|----------------------------|-------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUA-GP511F(*1)R8-E | RUA-GP511C(*1)NR8-E | |
| Cooling capacity (Note 1,7) (kW) | | 118 | 118 | |
| Heating capacity (Note 1,7) (kW) | | 200 | 200 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2350 | |
| | | Width (Note 2) (mm) | 1000 | |
| | | Depth (Note 2) (mm) | 3300 | |
| Shipping weight (kg) | | 1,363 | 1,376 | |
| Operating weight (kg) | | 1,399 | 1,412 | |
| Power supply (Note 1,3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design (Note 4,5) | | 113 | | |
| Electrical data (Note 14) | Cooling | Nominal current (A) | 74.2(73.9) | 51.0(51.6) |
| | | Nominal input (kW) | 48.4(48.2) | 33.2(33.6) |
| | | EER | 2.44(2.45) | 3.55(3.51) |
| | | SEER | 4.77 | 4.94 |
| | Heating | Power factor (Note 6) (%) | 99 | 99 |
| | | Nominal current (A) | 89.7(90.8) | 89.7(90.8) |
| | | Nominal input (kW) | 58.5(59.2) | 58.5(59.2) |
| | | COP | 3.42 (3.38) | 3.42 (3.38) |
| | | SCOP | 4.23 | 4.23 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary | | |
| | Motor output x number of units (kW) | 12.5 x 4 | | |
| | Type of start | Inverter starter | | |
| | Case heater (W) | 37 x 4 | | |
| Compressor oil | Type | RB74AF | | |
| | Charge (L) | 2.0 x 4 | | |
| Condenser coil - air side | | Plate fin coil | | |
| Fan | Type | Propeller fan | | |
| | Air quantity (m ³ /min) | 1,230 (max. value) | | |
| | Type of start | Inverter starter | | |
| | Motor output x number of units (kW) | 1.2 x 4 | | |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | | |
| | Supply water pressure (Note 10) (MPa) | 0.2 | | |
| | Control | - | | |
| Pump | Motor output (kW) | 2.2 | | |
| | Type | Centrifugal pump | | |
| | Flow control | Inverter | | |
| | Maximum current (A) | 4.5 | | |
| | Minimum input (kW) | 2.8 | | |
| Cooler - water side (Note 11) | | Braze plate heat exchanger (SUS316 equivalent) | | |
| Refrigerant | Type | R32 | | |
| | R32 charge (kg) | 8.8 x 4 | | |
| | Control | Electric expansion valve | | |
| Drain pan heater (W) | | 75 x 6 | | |
| Capacity control steps (Note 12) (%) | | 4 ~ 100 | | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | | |
| Defrost system | | Distributed reverse cycle system | | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor timeguards, freeze protection, high water temperature protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | | |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | | |
| | Coil drain | PT1-1/2" external thread x 1 | | |
| Sound power level | | 87.4 | | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^(Note 13) | | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
The concentration of ethylene glycol : 28wt%
For Cooling: 2°C entering water (EWT), -5°C leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT).
same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
() shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
(Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
(Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
(Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
(Note 6) Power factors may vary depending on site conditions.
(Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
(Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
(Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
(Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
(Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
(Note 12) The capacity control range varies with operating conditions.
(Note 13) The external sensor's lead wire length is 30 m.
(Note 14) Electrical data is not including inbuilt pump.

60HP *Series EDGE* Cooling-only

| | | Standard type | High EER type | |
|--|---------------------------------------|---|----------------------------|------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUA-GP511C(*1)R8-E | RUA-GP511C(*1)NR8-E | |
| Cooling capacity (Note 1,7) (kW) | | 118 | 118 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2350 | |
| | | Width (Note 2) (mm) | 1000 | |
| | | Depth (Note 2) (mm) | 3300 | |
| Shipping weight (kg) | | 1,314 | 1,326 | |
| Operating weight (kg) | | 1,350 | 1,362 | |
| Power supply (Note 1,3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design (Note 4,5) | | 103 | | |
| Electrical data (Note 14) | Cooling | Nominal current (A) | 73.9(73.6) | 49.5(51.4) |
| | | Nominal input (kW) | 48.2(48.0) | 32.2(33.5) |
| | | EER | 2.45(2.46) | 3.66(3.52) |
| | | SEER | 4.80 | 4.99 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary | | |
| | Motor output x number of units (kW) | 9.8 x 4 | | |
| | Type of start | Inverter starter | | |
| | Case heater (W) | 37 x 4 | | |
| Compressor oil | Type | RB74AF | | |
| | Charge (L) | 2.0 x 4 | | |
| Condenser coil - air side | | Plate fin coil | | |
| Fan | Type | Propeller fan | | |
| | Air quantity (m ³ /min) | 1,230 (max. value) | | |
| | Type of start | Inverter starter | | |
| | Motor output x number of units (kW) | 1.2 x 4 | | |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | | |
| | Supply water pressure (Note 10) (MPa) | - | | |
| | Control | - | | |
| Pump | Motor output (kW) | 2.2 | | |
| | Type | Centrifugal pump | | |
| | Flow control | Inverter | | |
| | Maximum current (A) | 4.5 | | |
| | Minimum input (kW) | 2.8 | | |
| Cooler - water side (Note 11) | | Braze plate heat exchanger (SUS316 equivalent) | | |
| Refrigerant | Type | R32 | | |
| | R32 charge (kg) | 8.8 x 4 | | |
| | Control | Electric expansion valve | | |
| Capacity control steps (Note 12) (%) | | 4 ~ 100 | | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | | |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | | |
| | Coil drain | PT1-1/2" external thread x 1 | | |
| Sound power level | | 83.8 | | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^(Note 13) | | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
The concentration of ethylene glycol : 28wt%
For Cooling: 2°C entering water (EWT), -5°C leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
() shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
(Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
(Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
(Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
(Note 6) Power factors may vary depending on site conditions.
(Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
(Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
(Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
(Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
(Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
(Note 12) The capacity control range varies with operating conditions.
(Note 13) The external sensor's lead wire length is 30 m.
(Note 14) Electrical data is not including inbuilt pump.

70HP Series **EDGE** Heat pump

| | | Standard type | High EER type | |
|--|---------------------------------------|--|---|-------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUA-GP561H(*1)R8-E | RUA-GP561H(*1)NR8-E | |
| Cooling capacity (Note 1,7) (kW) | | 132 | 132 | |
| Heating capacity (Note 1,7) (kW) | | 200 | 200 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2350 | |
| | | Width (Note 2) (mm) | 1000 | |
| | | Depth (Note 2) (mm) | 3300 | |
| Shipping weight (kg) | | 1,376 | 1,389 | |
| Operating weight (kg) | | 1,412 | 1,425 | |
| Power supply (Note 1,2) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design (Note 4,5) | | 119 | 119 | |
| Electrical data (Note 14) | Cooling | Nominal current (A) | 84.8(85.1) | 59.2(59.6) |
| | | Nominal input (kW) | 55.2(55.5) | 38.6(38.8) |
| | | EER | 2.39(2.38) | 3.42(3.40) |
| | | SEER | 4.72 | 4.89 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| | Heating | Nominal current (A) | 89.7(90.8) | 89.7(90.8) |
| | | Nominal input (kW) | 58.5(59.2) | 58.5(59.2) |
| | | COP | 3.42 (3.38) | 3.42 (3.38) |
| | | SCOP | 4.28 | 4.28 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary | Hermetic rotary | |
| | Motor output x number of units (kW) | 12.5 x 4 | 12.5 x 4 | |
| | Type of start | Inverter starter | Inverter starter | |
| | Case heater (W) | 37 x 4 | 37 x 4 | |
| Compressor oil | Type | RB74AF | RB74AF | |
| | Charge (L) | 2.0 x 4 | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | Plate fin coil | |
| Fan | Type | Propeller fan | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (max. value) | 1,230 (max. value) | |
| | Type of start | Inverter starter | Inverter starter | |
| Spray system (Note 8, 9) | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 | |
| | Water spray volume (L/min) | - | 13.6 x 1 | |
| | Supply water pressure (Note 10) (MPa) | - | 0.2 | |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values | |
| Pump | Motor output (kW) | 3.7 | 3.7 | |
| | Type | Centrifugal pump | Centrifugal pump | |
| | Flow control | Inverter | Inverter | |
| | Maximum current (A) | 7.3 | 7.3 | |
| | Minimum input (kW) | 4.5 | 4.5 | |
| Cooler - water side (Note 11) | | Brazed plate heat exchanger (SUS316 equivalent) | Brazed plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | R32 | |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 | |
| | Control | Electric expansion valve | Electric expansion valve | |
| Capacity control steps (Note 12) (%) | | 4 ~ 100 | 4 ~ 100 | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | | |
| Defrost system | | Distributed reverse cycle system | | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, high water temperature protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | | |
| Piping diameters | Cold/Hot water inlet | 3" flange x 1 (JIS10K) | 3" flange x 1 (JIS10K) | |
| | Cold/Hot water outlet | 3" flange x 1 (JIS10K) | 3" flange x 1 (JIS10K) | |
| | Coil drain | PT1-1/2" external thread x 1 | PT1-1/2" external thread x 1 | |
| Sound power level | | 90.9 | 90.9 | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^(Note 13) | | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 Power factors may vary depending on site conditions.
 (Note 6) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test.
 Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 8) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 10) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 11) The capacity control range varies with operating conditions.
 (Note 12) The external sensor's lead wire length is 30 m.
 (Note 13) Electrical data is not including inbuilt pump.

70HP Series **EDGE** Cooling-only

| | | Standard type | High EER type | |
|--|---------------------------------------|---|---|------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUA-GP561C(*1)R8-E | RUA-GP561C(*1)NR8-E | |
| Cooling capacity (Note 1,7) (kW) | | 132 | 132 | |
| Heating capacity (Note 1,7) (kW) | | 200 | 200 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2350 | |
| | | Width (Note 2) (mm) | 1000 | |
| | | Depth (Note 2) (mm) | 3300 | |
| Shipping weight (kg) | | 1,337 | 1,350 | |
| Operating weight (kg) | | 1,373 | 1,386 | |
| Power supply (Note 1,2) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design (Note 4,5) | | 119 | 119 | |
| Electrical data (Note 14) | Cooling | Nominal current (A) | 84.1(84.4) | 58.2(58.9) |
| | | Nominal input (kW) | 54.8(55.0) | 37.9(38.4) |
| | | EER | 2.41(2.40) | 3.48(3.44) |
| | | SEER | 4.75 | 4.92 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary | Hermetic rotary | |
| | Motor output x number of units (kW) | 11.1 x 4 | 8.5 x 4 | |
| | Type of start | Inverter starter | Inverter starter | |
| | Case heater (W) | 37 x 4 | 37 x 4 | |
| Compressor oil | Type | RB74AF | RB74AF | |
| | Charge (L) | 2.0 x 4 | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | Plate fin coil | |
| Fan | Type | Propeller fan | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (max. value) | 1,230 (max. value) | |
| | Type of start | Inverter starter | Inverter starter | |
| Spray system (Note 8, 9) | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 | |
| | Water spray volume (L/min) | - | 13.6 x 1 | |
| | Supply water pressure (Note 10) (MPa) | - | 0.2 | |
| | Control | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values | |
| Pump | Motor output (kW) | 3.7 | 3.7 | |
| | Type | Centrifugal pump | Centrifugal pump | |
| | Flow control | Inverter | Inverter | |
| | Maximum current (A) | 7.3 | 7.3 | |
| | Minimum input (kW) | 4.5 | 4.5 | |
| Cooler - water side (Note 11) | | Brazed plate heat exchanger (SUS316 equivalent) | Brazed plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | R32 | |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 | |
| | Control | Electric expansion valve | Electric expansion valve | |
| Capacity control steps (Note 12) (%) | | 4 ~ 100 | 4 ~ 100 | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | | |
| Piping diameters | Cold/Hot water inlet | 3" flange x 1 (JIS10K) | 3" flange x 1 (JIS10K) | |
| | Cold/Hot water outlet | 3" flange x 1 (JIS10K) | 3" flange x 1 (JIS10K) | |
| | Coil drain | PT1-1/2" external thread x 1 | PT1-1/2" external thread x 1 | |
| Sound power level | | 90.9 | 90.9 | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^(Note 13) | | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test.
 Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.
 (Note 14) Electrical data is not including inbuilt pump.

50HP Series **EDGE** Heat pump

| | | Standard type | High EER type | |
|--|---------------------------------------|--|------------------------------|------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUA-GP421HLR8-E | RUA-GP421HLNR8-E | |
| Cooling capacity (Note 1,7) (kW) | | 100 | 100 | |
| Heating capacity (Note 1,7) (kW) | | 150 | 150 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2350 | |
| | | Width (Note 2) (mm) | 1000 | |
| | | Depth (Note 2) (mm) | 3300 | |
| Shipping weight (kg) | | 1,292 | 1,304 | |
| Operating weight (kg) | | 1,328 | 1,340 | |
| Power supply (Note 1,3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design (Note 4,5) | | 79 | | |
| Electrical data | Cooling | Nominal current (A) | 61.1(60.9) | 41.5(42.2) |
| | | Nominal input (kW) | 39.8(39.7) | 27.0(27.5) |
| | | EER | 2.51 (2.52) | 3.70(3.64) |
| | | SEER | 4.88 | 5.06 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| | Heating | Nominal current (A) | 63.1(63.9) | 63.1(63.9) |
| | | Nominal input (kW) | 41.1(41.7) | 41.1(41.7) |
| | | COP | 3.65(3.60) | 3.65(3.60) |
| | | SCOP | 4.26 | 4.26 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary | | |
| | Motor output x number of units (kW) | 9.0 x 4 | | |
| | Type of start | Inverter starter | | |
| | Case heater (W) | 37 x 4 | | |
| Compressor oil | Type | RB74AF | | |
| | Charge (L) | 2.0 x 4 | | |
| Condenser coil - air side | | Plate fin coil | | |
| Fan | Type | Propeller fan | | |
| | Air quantity (m ³ /min) | 1,230 (max. value) | | |
| | Type of start | Inverter starter | | |
| | Motor output x number of units (kW) | 1.2 x 4 | | |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | | |
| | Supply water pressure (Note 10) (MPa) | - | | |
| | Control | - | | |
| Cooler - water side (Note 11) | | Braze plate heat exchanger (SUS316 equivalent) | | |
| Refrigerant | Type | R32 | | |
| | R32 charge (kg) | 8.8 x 4 | | |
| | Control | Electric expansion valve | | |
| Capacity control steps (Note 12) (%) | | 6 - 100 | | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | | |
| Defrost system | | Distributed reverse cycle system | | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, high water temperature protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) | |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) | |
| | Coil drain | PT1-1/2" external thread x 1 | PT1-1/2" external thread x 1 | |
| Sound power level | | 83.8 | | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^{Note13)} | | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test.
 Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.

50HP **Powerful Heating Type** Heat pump

| | | Standard type | High EER type | |
|--|---------------------------------------|---|------------------------------|------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUA-GP421FLR8-E | RUA-GP421FLNR8-E | |
| Cooling capacity (Note 1,7) (kW) | | 100 | 100 | |
| Heating capacity (Note 1,7) (kW) | | 150 | 150 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2350 | |
| | | Width (Note 2) (mm) | 1000 | |
| | | Depth (Note 2) (mm) | 3300 | |
| Shipping weight (kg) | | 1,304 | 1,316 | |
| Operating weight (kg) | | 1,340 | 1,352 | |
| Power supply (Note 1,3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design (Note 4,5) | | 79 | | |
| Electrical data | Cooling | Nominal current (A) | 61.1(60.9) | 41.5(42.2) |
| | | Nominal input (kW) | 39.8(39.7) | 27.0(27.5) |
| | | EER | 2.51(2.52) | 3.70(3.64) |
| | | SEER | 4.88 | 5.06 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| | Heating | Nominal current (A) | 63.1(63.9) | 63.1(63.9) |
| | | Nominal input (kW) | 41.1(41.7) | 41.1(41.7) |
| | | COP | 3.65(3.60) | 3.65(3.60) |
| | | SCOP | 4.26 | 4.26 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary | | |
| | Motor output x number of units (kW) | 9.0 x 4 | | |
| | Type of start | Inverter starter | | |
| | Case heater (W) | 37 x 4 | | |
| Compressor oil | Type | RB74AF | | |
| | Charge (L) | 2.0 x 4 | | |
| Condenser coil - air side | | Plate fin coil | | |
| Fan | Type | Propeller fan | | |
| | Air quantity (m ³ /min) | 1,230 (max. value) | | |
| | Type of start | Inverter starter | | |
| | Motor output x number of units (kW) | 1.2 x 4 | | |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | | |
| | Supply water pressure (Note 10) (MPa) | - | | |
| | Control | - | | |
| Cooler - water side (Note 11) | | Braze plate heat exchanger (SUS316 equivalent) | | |
| Refrigerant | Type | R32 | | |
| | R32 charge (kg) | 8.8 x 4 | | |
| | Control | Electric expansion valve | | |
| Capacity control steps (Note 12) (%) | | 6 - 100 | | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | | |
| Defrost system | | Distributed reverse cycle system | | |
| Protective device | | *High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor timeguards, freeze protection, high water temperature protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm)* | | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) | |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) | |
| | Coil drain | PT1-1/2" external thread x 1 | PT1-1/2" external thread x 1 | |
| Sound power level | | 83.8 | | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^{Note13)} | | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test.
 Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.

50HP Series **EDGE** Cooling-only

| | | Standard type | High EER type |
|--|---------------------------------------|---|---|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUA-GP421CLR8-E | RUA-GP421CLNR8-E |
| Cooling capacity (Note 1,7) (kW) | | 100 | 100 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | Silky shade (Munsell 1Y8.5/0.5) |
| | Dimensions | Height (mm) | 2350 |
| | | Width (Note 2) (mm) | 1000 |
| | | Depth (Note 2) (mm) | 3300 |
| Shipping weight (kg) | | 1,253 | 1,266 |
| Operating weight (kg) | | 1,289 | 1,302 |
| Power supply (Note 1,2) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | 3-phase 4-wire 50/60Hz 380V/400V/415V |
| Reference current for power supply design (Note 4,5) | | 79 | 79 |
| Electrical data | Cooling | Nominal current (A) | 61.1(61.4) |
| | | Nominal input (kW) | 39.8(40.0) |
| | | EER | 2.51(2.50) |
| | | SEER | 4.90 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary | Hermetic rotary |
| | Motor output x number of units (kW) | 8.4 x 4 | 6.2 x 4 |
| | Type of start | Inverter starter | Inverter starter |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | RB74AF |
| | Charge (L) | 2.0 x 4 | 2.0 x 4 |
| Condenser coil - air side | | Plate fin coil | Plate fin coil |
| Fan | Type | Propeller fan | Propeller fan |
| | Air quantity (m ³ /min) | 1,230 (max. value) | 1,230 (max. value) |
| | Type of start | Inverter starter | Inverter starter |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 10) (MPa) | - | 0.2 |
| Control | | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values |
| Cooler - water side (Note 11) | | Brazed plate heat exchanger (SUS316 equivalent) | Brazed plate heat exchanger (SUS316 equivalent) |
| Refrigerant | Type | R32 | R32 |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 |
| | Control | Electric expansion valve | Electric expansion valve |
| Capacity control steps (Note 12) (%) | | 6 - 100 | 6 - 100 |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) |
| | Coil drain | PT1-1/2" external thread x 1 | PT1-1/2" external thread x 1 |
| Sound power level | | 83.8 | 83.8 |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^{Note 13)} | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature). same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT) , -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT). Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.

(Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.

(Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.

(Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction

(Note 6) Power factors may vary depending on site conditions.

(Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.

(Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)

(Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).

(Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)

(Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)

(Note 12) The capacity control range varies with operating conditions.

(Note 13) The external sensor's lead wire length is 30 m.

60HP Series **EDGE** Heat pump

| | | Standard type | High EER type |
|--|---------------------------------------|--|---|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUA-GP511HLR8-E | RUA-GP511HLNR8-E |
| Cooling capacity (Note 1,7) (kW) | | 118 | 118 |
| Heating capacity (Note 1,7) (kW) | | 180 | 180 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | Silky shade (Munsell 1Y8.5/0.5) |
| | Dimensions | Height (mm) | 2350 |
| | | Width (Note 2) (mm) | 1000 |
| | | Depth (Note 2) (mm) | 3300 |
| Shipping weight (kg) | | 1,292 | 1,304 |
| Operating weight (kg) | | 1,328 | 1,340 |
| Power supply (Note 1,2) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | 3-phase 4-wire 50/60Hz 380V/400V/415V |
| Reference current for power supply design (Note 4,5) | | 99 | 99 |
| Electrical data | Cooling | Nominal current (A) | 74.2(73.9) |
| | | Nominal input (kW) | 48.4(48.2) |
| | | EER | 2.44(2.45) |
| | | SEER | 4.77 |
| | | Power factor (Note 6) (%) | 99 |
| | Heating | Nominal current (A) | 78.7(80.1) |
| | | Nominal input (kW) | 51.3(52.2) |
| | | COP | 3.51 (3.45) |
| | | SCOP | 4.35 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary | Hermetic rotary |
| | Motor output x number of units (kW) | 11.0 x 4 | 11.0 x 4 |
| | Type of start | Inverter starter | Inverter starter |
| | Case heater (W) | 37 x 4 | 37 x 4 |
| Compressor oil | Type | RB74AF | RB74AF |
| | Charge (L) | 2.0 x 4 | 2.0 x 4 |
| Condenser coil - air side | | Plate fin coil | Plate fin coil |
| Fan | Type | Propeller fan | Propeller fan |
| | Air quantity (m ³ /min) | 1,230 (max. value) | 1,230 (max. value) |
| | Type of start | Inverter starter | Inverter starter |
| | Motor output x number of units (kW) | 1.2 x 4 | 1.2 x 4 |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | 13.6 x 1 |
| | Supply water pressure (Note 10) (MPa) | - | 0.2 |
| Control | | - | Continuous spraying when outside temperature and compressor capacity exceeds setting values |
| Cooler - water side (Note 11) | | Brazed plate heat exchanger (SUS316 equivalent) | Brazed plate heat exchanger (SUS316 equivalent) |
| Refrigerant | Type | R32 | R32 |
| | R32 charge (kg) | 8.8 x 4 | 8.8 x 4 |
| | Control | Electric expansion valve | Electric expansion valve |
| Capacity control steps (Note 12) (%) | | 4 - 100 | 4 - 100 |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, high water temperature protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | 2-1/2" flange x 1 (JIS10K) |
| | Coil drain | PT1-1/2" external thread x 1 | PT1-1/2" external thread x 1 |
| Sound power level | | 83.8 | 83.8 |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^{Note 13)} | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature). same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT) , -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT). Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.

(Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.

(Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.

(Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction

(Note 6) Power factors may vary depending on site conditions.

(Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.

(Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)

(Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).

(Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)

(Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)

(Note 12) The capacity control range varies with operating conditions.

(Note 13) The external sensor's lead wire length is 30 m.

60HP **Powerful Heating Type** Heat pump

| | | Standard type | High EER type |
|--|---------------------------------------|---|---------------------------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUA-GP511FLR8-E | RUA-GP511FLNR8-E |
| Cooling capacity (Note 1,7) (kW) | | 118 | 118 |
| Heating capacity (Note 1,7) (kW) | | 200 | 200 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | Silky shade (Munsell 1Y8.5/0.5) |
| | Dimensions | Height (mm) | 2350 |
| | | Width (Note 2) (mm) | 1000 |
| | | Depth (Note 2) (mm) | 3300 |
| Shipping weight (kg) | | 1,304 | 1,316 |
| Operating weight (kg) | | 1,340 | 1,352 |
| Power supply (Note 1,3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | 3-phase 4-wire 50/60Hz 380V/400V/415V |
| Reference current for power supply design (Note 4,5) | | 110 | 110 |
| Electrical data | Cooling | Nominal current (A) | 74.2(73.9) |
| | | Nominal input (kW) | 48.4(48.2) |
| | | EER | 2.44(2.45) |
| | | SEER | 4.77 |
| | | Power factor (Note 6) (%) | 99 |
| | Heating | Nominal current (A) | 89.7(90.8) |
| | | Nominal input (kW) | 58.5(59.2) |
| | | COP | 3.42 (3.38) |
| | | SCOP | 4.23 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary | |
| | Motor output x number of units (kW) | 12.5 x 4 | |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (max. value) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | |
| Spray system | Water spray volume (L/min) | - | |
| | Supply water pressure (Note 10) (MPa) | - | |
| | Control | - | |
| (Note 8, 9) | | Continuous spraying when outside temperature and compressor capacity exceeds setting values | |
| Cooler - water side (Note 11) | | Brazed plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Drain pan heater (W) | | 75 x 6 | |
| Capacity control steps (Note 12) (%) | | 4 ~ 100 | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | |
| Defrost system | | Distributed reverse cycle system | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor timeguards, freeze protection, high water temperature protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | |
| | Coil drain | PT1-1/2" external thread x 1 | |
| Sound power level | | 87.4 | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^(Note 13) | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test.
 Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.

60HP **Series EDGE** Cooling-only

| | | Standard type | High EER type |
|--|---------------------------------------|---|---------------------------------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V |
| Model (A single module unit) | | RUA-GP511CLR8-E | RUA-GP511CLNR8-E |
| Cooling capacity (Note 1,7) (kW) | | 118 | 118 |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | Silky shade (Munsell 1Y8.5/0.5) |
| | Dimensions | Height (mm) | 2350 |
| | | Width (Note 2) (mm) | 1000 |
| | | Depth (Note 2) (mm) | 3300 |
| Shipping weight (kg) | | 1,253 | 1,266 |
| Operating weight (kg) | | 1,289 | 1,302 |
| Power supply (Note 1,3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | 3-phase 4-wire 50/60Hz 380V/400V/415V |
| Reference current for power supply design (Note 4,5) | | 99 | 99 |
| Electrical data | Cooling | Nominal current (A) | 73.9(73.6) |
| | | Nominal input (kW) | 48.2(48.0) |
| | | EER | 2.45(2.46) |
| | | SEER | 4.80 |
| | | Power factor (Note 6) (%) | 99 |
| Compressor | Type | Hermetic rotary | |
| | Motor output x number of units (kW) | 9.8 x 4 | |
| | Type of start | Inverter starter | |
| | Case heater (W) | 37 x 4 | |
| Compressor oil | Type | RB74AF | |
| | Charge (L) | 2.0 x 4 | |
| Condenser coil - air side | | Plate fin coil | |
| Fan | Type | Propeller fan | |
| | Air quantity (m ³ /min) | 1,230 (max. value) | |
| | Type of start | Inverter starter | |
| | Motor output x number of units (kW) | 1.2 x 4 | |
| Spray system | Water spray volume (L/min) | - | |
| | Supply water pressure (Note 10) (MPa) | - | |
| | Control | - | |
| (Note 8, 9) | | Continuous spraying when outside temperature and compressor capacity exceeds setting values | |
| Cooler - water side (Note 11) | | Brazed plate heat exchanger (SUS316 equivalent) | |
| Refrigerant | Type | R32 | |
| | R32 charge (kg) | 8.8 x 4 | |
| | Control | Electric expansion valve | |
| Capacity control steps (Note 12) (%) | | 4 ~ 100 | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | |
| Piping diameters | Cold/Hot water inlet | 2-1/2" flange x 1 (JIS10K) | |
| | Cold/Hot water outlet | 2-1/2" flange x 1 (JIS10K) | |
| | Coil drain | PT1-1/2" external thread x 1 | |
| Sound power level | | 83.8 | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^(Note 13) | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test.
 Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.

70HP Series **EDGE** Heat pump

| | | Standard type | High EER type | |
|--|---------------------------------------|--|-------------------------|-------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUA-GP561HLR8-E | RUA-GP561HLNR8-E | |
| Cooling capacity (Note 1,7) (kW) | | 132 | 132 | |
| Heating capacity (Note 1,7) (kW) | | 200 | 200 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2350 | |
| | | Width (Note 2) (mm) | 1000 | |
| | | Depth (Note 2) (mm) | 3300 | |
| Shipping weight (kg) | | 1,298 | 1,310 | |
| Operating weight (kg) | | 1,334 | 1,346 | |
| Power supply (Note 1,3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design (Note 4,5) | | 115 | 115 | |
| Electrical data | Cooling | Nominal current (A) | 84.8(85.1) | 59.2(59.6) |
| | | Nominal input (kW) | 55.2(55.5) | 38.6(38.8) |
| | | EER | 2.39(2.38) | 3.42(3.40) |
| | | SEER | 4.72 | 4.89 |
| | Power factor (Note 6) (%) | 99 | 99 | |
| | Heating | Nominal current (A) | 89.7(90.8) | 89.7(90.8) |
| | | Nominal input (kW) | 58.5(59.2) | 58.5(59.2) |
| | | COP | 3.42 (3.38) | 3.42 (3.38) |
| | | SCOP | 4.28 | 4.28 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary | | |
| | Motor output x number of units (kW) | 12.5 x 4 | | |
| | Type of start | Inverter starter | | |
| | Case heater (W) | 37 x 4 | | |
| Compressor oil | Type | RB74AF | | |
| | Charge (L) | 2.0 x 4 | | |
| Condenser coil - air side | | Plate fin coil | | |
| Fan | Type | Propeller fan | | |
| | Air quantity (m ³ /min) | 1,230 (max. value) | | |
| | Type of start | Inverter starter | | |
| | Motor output x number of units (kW) | 1.2 x 4 | | |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | | |
| | Supply water pressure (Note 10) (MPa) | - | | |
| | Control | - | | |
| Cooler - water side (Note 11) | | Braze plate heat exchanger (SUS316 equivalent) | | |
| Refrigerant | Type | R32 | | |
| | R32 charge (kg) | 8.8 x 4 | | |
| | Control | Electric expansion valve | | |
| Capacity control steps (Note 12) (%) | | 4 ~ 100 | | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | | |
| Defrost system | | Distributed reverse cycle system | | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, high water temperature protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | | |
| Piping diameters | Cold/Hot water inlet | 3" flange x 1 (JIS10K) | | |
| | Cold/Hot water outlet | 3" flange x 1 (JIS10K) | | |
| | Coil drain | PT1-1/2" external thread x 1 | | |
| Sound power level | | 90.9 | | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^{Note 13)} | | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.

70HP Series **EDGE** Cooling-only

| | | Standard type | High EER type | |
|--|---------------------------------------|---|-------------------------|------------|
| | | 380V /400V/ 415V | 380V /400V/ 415V | |
| Model (A single module unit) | | RUA-GP561CLR8-E | RUA-GP561CLNR8-E | |
| Cooling capacity (Note 1,7) (kW) | | 132 | 132 | |
| Exterior | Unit color | Silky shade (Munsell 1Y8.5/0.5) | | |
| | Dimensions | Height (mm) | 2350 | |
| | | Width (Note 2) (mm) | 1000 | |
| | | Depth (Note 2) (mm) | 3300 | |
| Shipping weight (kg) | | 1,260 | 1,272 | |
| Operating weight (kg) | | 1,296 | 1,308 | |
| Power supply (Note 1,3) | | 3-phase 4-wire 50/60Hz 380V/400V/415V | | |
| Reference current for power supply design (Note 4,5) | | 115 | 115 | |
| Electrical data | Cooling | Nominal current (A) | 84.1(84.4) | 58.2(58.9) |
| | | Nominal input (kW) | 54.8(55.0) | 37.9(38.4) |
| | | EER | 2.41(2.40) | 3.48(3.44) |
| | | SEER | 4.75 | 4.92 |
| | | Power factor (Note 6) (%) | 99 | 99 |
| Compressor | Type | Hermetic rotary | | |
| | Motor output x number of units (kW) | 11.1 x 4 | | |
| | Type of start | Inverter starter | | |
| | Case heater (W) | 37 x 4 | | |
| Compressor oil | Type | RB74AF | | |
| | Charge (L) | 2.0 x 4 | | |
| Condenser coil - air side | | Plate fin coil | | |
| Fan | Type | Propeller fan | | |
| | Air quantity (m ³ /min) | 1,230 (max. value) | | |
| | Type of start | Inverter starter | | |
| | Motor output x number of units (kW) | 1.2 x 4 | | |
| Spray system (Note 8, 9) | Water spray volume (L/min) | - | | |
| | Supply water pressure (Note 10) (MPa) | - | | |
| | Control | - | | |
| Cooler - water side (Note 11) | | Braze plate heat exchanger (SUS316 equivalent) | | |
| Refrigerant | Type | R32 | | |
| | R32 charge (kg) | 8.8 x 4 | | |
| | Control | Electric expansion valve | | |
| Capacity control steps (Note 12) (%) | | 4 ~ 100 | | |
| Operation control | | Microprocessor controls flow rate control and chilled (warm) water temperature | | |
| Protective device | | High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, freeze protection, low water flow, discharge temperature, low pressure protection, sensor failure, water pressure alarm) | | |
| Piping diameters | Cold/Hot water inlet | 3" flange x 1 (JIS10K) | | |
| | Cold/Hot water outlet | 3" flange x 1 (JIS10K) | | |
| | Coil drain | PT1-1/2" external thread x 1 | | |
| Sound power level | | 90.9 | | |
| Required parts sold separately | | Module controller (MC) (external sensor x 2 included) ^{Note 13)} | | |

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
 The concentration of ethylene glycol : 28wt%
 For Cooling: 2°C entering water (EWT), -5°C leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).
 same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
 () shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
 Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
 Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013.

(Note 2) Dimensions do not include projections of water pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
 (Note 4) Please refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
 (Note 5) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent malfunction.
 (Note 6) Power factors may vary depending on site conditions.
 (Note 7) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant.
 (Note 8) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 9) Ensure that the water quality standard items and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994).
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
 (Note 12) The capacity control range varies with operating conditions.
 (Note 13) The external sensor's lead wire length is 30 m.

Capacity Chart

Brine specifications

Standard Type (for both internal inverter pump models and pumpless models)

50HP Series EDGE Heat pump Powerful Heating Type

List of cooling capacities RUA-GP421H/F(L/R)

| Chilled water outlet temperature (°C) | Brine density (wt%) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|---------------------------------------|---------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|------|
| | | | 25 | 30 | 35 | 40 | 43 | 45 | 50 | 52 |
| -5 | 28 | Cooling capacity [kW] | 110 | 105 | 100 | 95.4 | 93.6 | 92.4 | 80.7 | 77.2 |
| | | Power consumption [kW] | 33.0 | 36.3 | 39.7 | 43.2 | 45.7 | 47.4 | 46.9 | 47.7 |
| | | Chilled water flow rate [L/min] | 347 | 331 | 315 | 301 | 295 | 291 | 254 | 243 |
| | | Operation current [A] | 48.2 | 53.0 | 58.0 | 63.0 | 67.0 | 69.5 | 68.5 | 69.5 |
| | | Power consumption [kW] | 35.4 | 39.1 | 42.6 | 46.4 | 47.8 | 47.5 | 47.1 | 49.2 |
| 0 | 20 | Cooling capacity [kW] | 140 | 132 | 124 | 115 | 109 | 103 | 89.4 | 87.0 |
| | | Power consumption [kW] | 35.4 | 39.1 | 42.6 | 46.4 | 47.8 | 47.5 | 47.1 | 49.2 |
| | | Chilled water flow rate [L/min] | 429 | 405 | 380 | 353 | 334 | 316 | 274 | 267 |
| | | Operation current [A] | 52.0 | 57.0 | 62.5 | 68.0 | 70.0 | 69.5 | 69.0 | 72.0 |

- Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 5°C.
- Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.
- Note 3: The value shown in the table above are when the ethylene glycol is used.
- Note 4: The value shown in the table above are in case the nominal capacity is 400V.
- Note 5: This table is subject to change without notice

50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421C(L/R)

| Chilled water outlet temperature (°C) | Brine density (wt%) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|---------------------------------------|---------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|------|
| | | | 25 | 30 | 35 | 40 | 43 | 45 | 50 | 52 |
| -15 | 40 | Cooling capacity [kW] | 75.6 | 72.2 | 68.8 | 65.3 | 63.1 | 61.6 | 57.7 | 56.1 |
| | | Power consumption [kW] | 29.1 | 31.8 | 34.6 | 37.3 | 39.0 | 40.0 | 42.7 | 44.2 |
| | | Chilled water flow rate [L/min] | 252 | 240 | 229 | 217 | 210 | 205 | 192 | 187 |
| | | Operation current [A] | 42.4 | 46.4 | 50.5 | 54.5 | 57.0 | 58.5 | 62.5 | 64.5 |
| | | Power consumption [kW] | 30.9 | 34.1 | 37.2 | 40.2 | 41.9 | 43.0 | 46.3 | 46.5 |
| -10 | 34 | Cooling capacity [kW] | 91.5 | 87.4 | 83.3 | 79.1 | 76.6 | 74.9 | 70.4 | 66.9 |
| | | Power consumption [kW] | 30.9 | 34.1 | 37.2 | 40.2 | 41.9 | 43.0 | 46.3 | 46.5 |
| | | Chilled water flow rate [L/min] | 296 | 283 | 269 | 256 | 248 | 242 | 228 | 216 |
| | | Operation current [A] | 45.1 | 49.8 | 54.5 | 59.0 | 61.5 | 63.0 | 68.0 | 68.0 |
| -7 | 30 | Cooling capacity [kW] | 102 | 97.7 | 93.1 | 88.8 | 86.5 | 85.0 | 76.0 | 72.7 |
| | | Power consumption [kW] | 32.0 | 35.4 | 38.8 | 42.1 | 44.1 | 45.7 | 46.3 | 46.9 |
| | | Chilled water flow rate [L/min] | 324 | 311 | 296 | 282 | 275 | 270 | 242 | 231 |
| | | Operation current [A] | 46.7 | 52.0 | 57.0 | 61.5 | 64.5 | 67.0 | 68.0 | 68.5 |
| -5 | 28 | Cooling capacity [kW] | 110 | 105 | 100 | 95.5 | 93.6 | 90.9 | 78.9 | 75.6 |
| | | Power consumption [kW] | 32.7 | 36.3 | 40.0 | 43.6 | 46.1 | 47.1 | 46.4 | 47.3 |
| | | Chilled water flow rate [L/min] | 347 | 331 | 315 | 301 | 295 | 287 | 249 | 238 |
| | | Operation current [A] | 47.8 | 53.0 | 58.5 | 64.0 | 67.5 | 69.0 | 68.0 | 69.0 |
| 0 | 20 | Cooling capacity [kW] | 140 | 132 | 124 | 115 | 107 | 101 | 87.1 | 84.9 |
| | | Power consumption [kW] | 34.8 | 38.9 | 43.1 | 46.7 | 47.3 | 47.0 | 46.6 | 48.5 |
| | | Chilled water flow rate [L/min] | 429 | 405 | 380 | 353 | 328 | 310 | 267 | 260 |
| | | Operation current [A] | 51.0 | 57.0 | 63.0 | 68.5 | 69.5 | 68.5 | 68.0 | 71.0 |

- Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 5°C.
- Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.
- Note 3: The value shown in the table above are when the ethylene glycol is used.
- Note 4: The value shown in the table above are in case the nominal capacity is 400V.
- Note 5: This table is subject to change without notice

50HP Series EDGE Heat pump Powerful Heating Type

List of heating capacities RUA-GP421H/F(L/R)

| Warm water outlet temperature (°C) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|------------------------------------|------------------------------|-----------------------------------|------|------|------|------|------|------|--|
| | | -15 | -10 | -5 | 0 | 4 | 7 | 15 | |
| 25 | Heating capacity [kW] | 103 | 118 | 134 | 151 | 166 | 153 | 182 | |
| | Power consumption [kW] | 30.4 | 31.1 | 31.2 | 31.4 | 31.9 | 26.0 | 25.0 | |
| | Warm water flow rate [L/min] | 212 | 242 | 275 | 310 | 339 | 314 | 373 | |
| | Operation current [A] | 44.8 | 45.7 | 46.0 | 46.2 | 47.0 | 37.9 | 36.5 | |
| | Power consumption [kW] | 33.3 | 34.4 | 34.9 | 35.0 | 35.9 | 29.3 | 29.0 | |
| 30 | Heating capacity [kW] | 103 | 118 | 134 | 150 | 165 | 152 | 181 | |
| | Power consumption [kW] | 30.4 | 31.1 | 31.2 | 31.4 | 31.9 | 26.0 | 25.0 | |
| | Warm water flow rate [L/min] | 211 | 241 | 274 | 308 | 337 | 312 | 371 | |
| | Operation current [A] | 49.1 | 50.7 | 51.4 | 51.6 | 52.3 | 42.7 | 42.3 | |
| | Power consumption [kW] | 36.4 | 37.4 | 38.2 | 39.0 | 39.8 | 32.9 | 33.2 | |
| 35 | Heating capacity [kW] | 103 | 117 | 133 | 150 | 164 | 151 | 180 | |
| | Power consumption [kW] | 36.4 | 37.4 | 38.2 | 39.0 | 39.8 | 32.9 | 33.2 | |
| | Warm water flow rate [L/min] | 210 | 240 | 273 | 307 | 336 | 310 | 368 | |
| | Operation current [A] | 53.6 | 55.1 | 56.3 | 57.4 | 58.0 | 48.0 | 48.4 | |
| | Power consumption [kW] | 102 | 116 | 132 | 149 | 163 | 151 | 178 | |
| 40 | Heating capacity [kW] | 102 | 116 | 132 | 149 | 163 | 151 | 178 | |
| | Power consumption [kW] | 39.2 | 40.4 | 41.6 | 42.8 | 43.9 | 36.8 | 37.3 | |
| | Warm water flow rate [L/min] | 209 | 239 | 271 | 305 | 334 | 308 | 365 | |
| | Operation current [A] | 57.8 | 59.5 | 61.3 | 62.4 | 64.1 | 53.7 | 54.4 | |
| | Power consumption [kW] | 102 | 116 | 131 | 148 | 163 | 150 | 177 | |
| 45 | Heating capacity [kW] | 102 | 116 | 131 | 148 | 163 | 150 | 177 | |
| | Power consumption [kW] | 42.1 | 43.9 | 45.2 | 46.7 | 48.4 | 40.8 | 41.7 | |
| | Warm water flow rate [L/min] | 209 | 237 | 269 | 304 | 334 | 307 | 363 | |
| | Operation current [A] | 62.1 | 64.7 | 65.9 | 68.1 | 70.5 | 59.4 | 60.9 | |
| | Power consumption [kW] | 115 | 130 | 144 | 154 | 149 | 176 | | |
| 50 | Heating capacity [kW] | 115 | 130 | 144 | 154 | 149 | 176 | | |
| | Power consumption [kW] | 47.1 | 48.7 | 49.5 | 49.5 | 44.9 | 46.3 | | |
| | Warm water flow rate [L/min] | 236 | 267 | 295 | 316 | 305 | 360 | | |
| | Operation current [A] | 69.4 | 71.0 | 72.1 | 72.2 | 65.4 | 67.5 | | |
| | Power consumption [kW] | 123 | 134 | 141 | 148 | 169 | | | |
| 55 | Heating capacity [kW] | 123 | 134 | 141 | 148 | 169 | | | |
| | Power consumption [kW] | 49.8 | 49.6 | 49.1 | 49.2 | 49.0 | | | |
| | Warm water flow rate [L/min] | 251 | 273 | 289 | 304 | 346 | | | |
| | Operation current [A] | 72.6 | 72.4 | 71.6 | 71.7 | 71.4 | | | |

- Note 1: The values shown in the table above are for an inlet / outlet warm water temperature differential of 7°C, RH85%.
- Note 2: The heating capacity has been measured when the module was operating at the rated frequency.
- Note 3: [Red box] are displaying maximum capacities. * indicates maximum flow rate. Δt is larger than 7°C.
- Note 4: The values shown in the table above are in case there is no effect of frost formation / defrosting.
- Note 5: The values shown in the table above are for brine density 0%.
- Note 6: The value shown in the table above are in case the nominal capacity is 400V.
- Note 7: This table is subject to change without notice.

Capacity Chart

Brine specifications

Standard Type (for both internal inverter pump models and pumpless models)

60HP Series EDGE Heat pump Powerful Heating Type

List of cooling capacities RUA-GP511H/F(L/R)

| Chilled water outlet temperature (°C) | Brine density (wt%) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|---------------------------------------|---------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|------|
| | | | 25 | 30 | 35 | 40 | 43 | 45 | 50 | 52 |
| -5 | 28 | Cooling capacity [kW] | 129 | 124 | 118 | 113 | 111 | 110 | 101 | 88.1 |
| | | Power consumption [kW] | 40.7 | 44.4 | 48.2 | 52.3 | 55.2 | 57.3 | 59.1 | 55.4 |
| | | Chilled water flow rate [L/min] | 407 | 391 | 372 | 356 | 350 | 347 | 318 | 278 |
| | | Operation current [A] | 59.5 | 64.8 | 70.5 | 76.5 | 81.0 | 84.0 | 86.5 | 81.0 |
| | | Power consumption [kW] | 163 | 154 | 145 | 135 | 131 | 125 | 112 | 91.4 |
| 0 | 20 | Cooling capacity [kW] | 163 | 154 | 145 | 135 | 131 | 125 | 112 | 91.4 |
| | | Power consumption [kW] | 44.3 | 48.4 | 52.5 | 56.7 | 59.5 | 59.5 | 60.2 | 52.2 |
| | | Chilled water flow rate [L/min] | 500 | 472 | 445 | 414 | 402 | 383 | 343 | 280 |
| | | Operation current [A] | 65.0 | 71.0 | 77.0 | 83.0 | 87.0 | 87.0 | 88.0 | 76.5 |

- Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 5°C.
- Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.
- Note 3: The value shown in the table above are when the ethylene glycol is used.
- Note 4: The value shown in the table above are in case the nominal capacity is 400V.
- Note 5: This table is subject to change without notice

60HP Series EDGE Cooling-only

List of cooling capacities RUA-GP511C(L/R)

| Chilled water outlet temperature (°C) | Brine density (wt%) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|---------------------------------------|---------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|------|
| | | | 25 | 30 | 35 | 40 | 43 | 45 | 50 | 52 |
| -15 | 40 | Cooling capacity [kW] | 88.5 | 84.6 | 80.7 | 76.6 | 74.1 | 72.3 | 67.8 | 66.1 |
| | | Power consumption [kW] | 34.4 | 37.6 | 40.6 | 43.5 | 45.2 | 46.3 | 49.5 | 50.8 |
| | | Chilled water flow rate [L/min] | 295 | 282 | 269 | 255 | 247 | 241 | 226 | 220 |
| | | Operation current [A] | 51 | 55 | 60 | 64 | 66 | 68 | 73 | 75 |
| | | Power consumption [kW] | 36.9 | 40.6 | 44.1 | 47.2 | 49.2 | 50.6 | 53.9 | 56.9 |
| -10 | 34 | Cooling capacity [kW] | 107 | 103 | 97.8 | 93.0 | 90.1 | 88.1 | 83.0 | 81.9 |
| | | Power consumption [kW] | 36.9 | 40.6 | 44.1 | 47.2 | 49.2 | 50.6 | 53.9 | 56.9 |
| | | Chilled water flow rate [L/min] | 346 | 333 | 316 | 301 | 291 | 285 | 268 | 265 |
| | | Operation current [A] | 54 | 60 | 65 | 69 | 72 | 74 | 79 | 83 |
| -7 | 30 | Cooling capacity [kW] | 120 | 115 | 110 | 105 | 102 | 101 | 95.5 | 86.7 |
| | | Power consumption [kW] | 38.5 | 42.4 | 46.2 | 49.8 | 52.3 | 54.0 | 57.9 | 56.7 |
| | | Chilled water flow rate [L/min] | 382 | 366 | 350 | 334 | 324 | 321 | 304 | 276 |
| | | Operation current [A] | 57 | 62 | 68 | 73 | 77 | 79 | 85 | 83 |
| -5 | 28 | Cooling capacity [kW] | 129 | 123 | 118 | 113 | 111 | 110 | 99.3 | 87.6 |
| | | Power consumption [kW] | 39.6 | 43.8 | 48.0 | 52.1 | 55.0 | 57.0 | 58.1 | 55.4 |
| | | Chilled water flow rate [L/min] | 407 | 388 | 372 | 356 | 350 | 347 | 313 | 276 |
| | | Operation current [A] | 58 | 64 | 70 | 76 | 81 | 84 | 85 | 81 |
| 0 | 20 | Cooling capacity [kW] | 163 | 154 | 145 | 135 | 131 | 124 | 110 | 90.8 |
| | | Power consumption [kW] | 42.9 | 47.5 | 52.3 | 56.5 | 59.0 | 58.8 | 59.1 | 52.5 |
| | | Chilled water flow rate [L/min] | 500 | 472 | 445 | 414 | 402 | 380 | 337 | 278 |
| | | Operation current [A] | 63 | 70 | 77 | 83 | 87 | 86 | 87 | 77 |

- Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 5°C.
- Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.
- Note 3: The value shown in the table above are when the ethylene glycol is used.
- Note 4: The value shown in the table above are in case the nominal capacity is 400V.
- Note 5: This table is subject to change without notice

60HP Series EDGE Heat pump Powerful Heating Type

List of heating capacities RUA-GP511H(L/R)

| Warm water outlet temperature (°C) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|------------------------------------|------------------------------|-----------------------------------|------|------|------|------|------|------|--|
| | | -15 | -10 | -5 | 0 | 4 | 7 | 15 | |
| 25 | Heating capacity [kW] | 122 | 139 | 158 | 177 | 194 | 183 | 215 | |
| | Power consumption [kW] | 37.2 | 38.0 | 38.5 | 38.7 | 39.7 | 33.2 | 32.6 | |
| | Warm water flow rate [L/min] | 249 | 285 | 323 | 363 | 396 | 375 | 440 | |
| | Operation current [A] | 55.3 | 55.9 | 56.8 | 57.0 | 58.4 | 48.3 | 47.5 | |
| | Power consumption [kW] | 122 | 139 | 157 | 176 | 193 | 182 | 214 | |
| 30 | Heating capacity [kW] | 122 | 139 | 157 | 176 | 193 | 182 | 214 | |
| | Power consumption [kW] | 40.7 | 41.7 | 42.5 | 43.2 | 44.6 | 37.5 | 37.3 | |
| | Warm water flow rate [L/min] | 249 | 284 | 322 | 361 | 394 | 373 | 438 | |
| | Operation current [A] | 60.5 | 61.5 | 62.7 | 63.7 | 65.7 | 54.7 | 54.5 | |
| | Power consumption [kW] | 121 | | | | | | | |

Capacity Chart

Brine specifications

Standard Type (for both internal inverter pump models and pumpless models)

70HP Series EDGE Heat pump

List of cooling capacities RUA-GP561H (L/R)

| Chilled water outlet temperature (°C) | Brine density (wt%) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|---------------------------------------|---------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|------|
| | | | 25 | 30 | 35 | 40 | 43 | 45 | 50 | 52 |
| -5 | 28 | Cooling capacity [kW] | 144 | 138 | 132 | 127 | 125 | 124 | 113 | 88.5 |
| | | Power consumption [kW] | 47.1 | 51.3 | 55.5 | 59.9 | 63.1 | 65.3 | 66.9 | 55.3 |
| | | Chilled water flow rate [L/min] | 454 | 435 | 416 | 400 | 394 | 391 | 356 | 279 |
| | | Operation current [A] | 69.0 | 75.0 | 81.0 | 87.5 | 92.5 | 95.5 | 97.5 | 81.0 |
| 0 | 20 | Cooling capacity [kW] | 179 | 169 | 160 | 150 | 144 | 137 | 116 | 91.5 |
| | | Power consumption [kW] | 51.1 | 56.0 | 60.4 | 64.9 | 66.7 | 66.2 | 62.7 | 52.0 |
| | | Chilled water flow rate [L/min] | 549 | 518 | 491 | 460 | 442 | 420 | 356 | 281 |
| | | Operation current [A] | 75.0 | 82.0 | 88.5 | 95.0 | 97.5 | 96.5 | 91.5 | 76.0 |

- Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 5°C.
- Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.
- Note 3: The value shown in the table above are when the ethylene glycol is used.
- Note 4: The value shown in the table above are in case the nominal capacity is 400V.
- Note 5: This table is subject to change without notice

70HP Series EDGE Cooling-only

List of cooling capacities RUA-GP561C (L/R)

| Chilled water outlet temperature (°C) | Brine density (wt%) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|---------------------------------------|---------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|------|
| | | | 25 | 30 | 35 | 40 | 43 | 45 | 50 | 52 |
| -15 | 40 | Cooling capacity [kW] | 98.7 | 94.5 | 90.2 | 85.6 | 82.7 | 80.8 | 75.6 | 73.5 |
| | | Power consumption [kW] | 39.0 | 42.6 | 45.8 | 48.9 | 50.7 | 51.8 | 54.8 | 57.4 |
| | | Chilled water flow rate [L/min] | 329 | 315 | 300 | 285 | 275 | 269 | 252 | 245 |
| | | Operation current [A] | 56.9 | 62.1 | 66.8 | 71.4 | 74.0 | 75.6 | 79.9 | 83.8 |
| -10 | 34 | Cooling capacity [kW] | 119 | 114 | 109 | 104 | 101 | 98.5 | 93.2 | 84.9 |
| | | Power consumption [kW] | 42.2 | 46.2 | 50.0 | 53.3 | 55.5 | 56.9 | 60.9 | 59.4 |
| | | Chilled water flow rate [L/min] | 385 | 369 | 353 | 336 | 327 | 319 | 301 | 275 |
| | | Operation current [A] | 61.6 | 67.3 | 72.9 | 77.8 | 81.0 | 83.1 | 88.9 | 86.6 |
| -7 | 30 | Cooling capacity [kW] | 134 | 128 | 123 | 117 | 115 | 113 | 108 | 86.9 |
| | | Power consumption [kW] | 44.1 | 48.5 | 52.8 | 56.8 | 59.3 | 61.1 | 66.3 | 56.8 |
| | | Chilled water flow rate [L/min] | 426 | 407 | 391 | 372 | 366 | 359 | 343 | 276 |
| | | Operation current [A] | 64.3 | 70.7 | 77.0 | 82.9 | 86.5 | 89.1 | 96.6 | 82.9 |
| -5 | 28 | Cooling capacity [kW] | 144 | 138 | 132 | 127 | 125 | 124 | 113 | 87.8 |
| | | Power consumption [kW] | 45.6 | 50.4 | 55.0 | 59.6 | 62.8 | 64.9 | 66.9 | 55.2 |
| | | Chilled water flow rate [L/min] | 454 | 435 | 416 | 400 | 394 | 391 | 356 | 277 |
| | | Operation current [A] | 66.5 | 73.5 | 80.2 | 87.0 | 91.6 | 94.7 | 97.5 | 80.6 |
| 0 | 20 | Cooling capacity [kW] | 180 | 170 | 160 | 150 | 145 | 138 | 116 | 90.7 |
| | | Power consumption [kW] | 49.9 | 54.8 | 59.9 | 64.7 | 66.8 | 66.7 | 63.0 | 52.1 |
| | | Chilled water flow rate [L/min] | 552 | 521 | 491 | 460 | 445 | 423 | 356 | 278 |
| | | Operation current [A] | 72.7 | 80.0 | 87.4 | 94.3 | 97.5 | 97.2 | 92.0 | 76.0 |

- Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 5°C.
- Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.
- Note 3: The value shown in the table above are when the ethylene glycol is used.
- Note 4: The value shown in the table above are in case the nominal capacity is 400V.
- Note 5: This table is subject to change without notice

70HP Series EDGE Heat pump

List of heating capacities RUA-GP561H (L/R)

| Warm water outlet temperature (°C) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|------------------------------------|------------------------------|-----------------------------------|------|------|------|-------|------|------|--|
| | | -15 | -10 | -5 | 0 | 4 | 7 | 15 | |
| 25 | Heating capacity [kW] | 153 | 174 | 196 | 214 | 231 | 203 | 237 | |
| | Power consumption [kW] | 49.7 | 50.9 | 51.4 | 51.3 | 52.4 | 38.5 | 37.9 | |
| | Warm water flow rate [L/min] | 314 | 356 | 401 | 437 | 473 | 415 | 485 | |
| | Operation current [A] | 73.9 | 75.7 | 75.8 | 75.6 | 77.2 | 56.7 | 55.2 | |
| 30 | Heating capacity [kW] | 154 | 175 | 196 | 213 | 230 | 202 | 235 | |
| | Power consumption [kW] | 54.6 | 56.1 | 56.8 | 56.8 | 58.2 | 43.4 | 43.2 | |
| | Warm water flow rate [L/min] | 315 | 357 | 402 | 436 | 471 | 414 | 482 | |
| | Operation current [A] | 81.3 | 83.5 | 83.7 | 83.7 | 85.8 | 63.3 | 63.0 | |
| 35 | Heating capacity [kW] | 153 | 175 | 197 | 213 | 229 | 201 | 235 | |
| | Power consumption [kW] | 58.8 | 61.2 | 62.5 | 62.3 | 63.6 | 48.2 | 48.9 | |
| | Warm water flow rate [L/min] | 314 | 357 | 402 | 436 | 469 | 412 | 481 | |
| | Operation current [A] | 87.6 | 90.1 | 92.1 | 91.7 | 93.7 | 70.3 | 71.2 | |
| 40 | Heating capacity [kW] | 153 | 174 | 196 | 212 | 229 | 200 | 234 | |
| | Power consumption [kW] | 63.5 | 65.9 | 67.8 | 67.3 | 69.2 | 53.1 | 54.3 | |
| | Warm water flow rate [L/min] | 312 | 356 | 402 | 434 | 468 | 410 | 479 | |
| | Operation current [A] | 94.5 | 97.1 | 99.9 | 99.1 | 101.9 | 77.3 | 79.2 | |
| 45 | Heating capacity [kW] | 151 | 173 | 192 | 208 | 221 | 200 | 233 | |
| | Power consumption [kW] | 67.4 | 70.6 | 71.4 | 71.0 | 71.3 | 58.1 | 59.9 | |
| | Warm water flow rate [L/min] | 309 | 354 | 392 | 426 | 453 | 410 | 477 | |
| | Operation current [A] | 99.3 | 104 | 105 | 105 | 104 | 84.8 | 87.3 | |
| 50 | Heating capacity [kW] | 164 | 180 | 196 | 208 | 200 | 232 | | |
| | Power consumption [kW] | 71.3 | 70.9 | 70.8 | 71.0 | 63.3 | 65.7 | | |
| | Warm water flow rate [L/min] | 336 | 369 | 401 | 425 | 410 | 474 | | |
| | Operation current [A] | 105 | 104 | 103 | 104 | 92.3 | 95.8 | | |
| 55 | Heating capacity [kW] | 159 | 181 | 193 | 199 | 227 | | | |
| | Power consumption [kW] | 65.7 | 69.1 | 69.9 | 68.9 | 69.8 | | | |
| | Warm water flow rate [L/min] | 327 | 371 | 396 | 408 | 464 | | | |
| | Operation current [A] | 96.8 | 101 | 102 | 100 | 102 | | | |

- Note 1: The values shown in the table above are for an inlet / outlet warm water temperature differential of 7°C, RH85%.
- Note 2: The heating capacity has been measured when the module was operating at the rated frequency.
- Note 3: are displaying maximum capacities. * indicates maximum flow rate. Δt is larger than 7°C.
- Note 4: The values shown in the table above are in case there is no effect of frost formation / defrosting.
- Note 5: The values shown in the table above are for brine density 0%.
- Note 6: The value shown in the table above are in case the nominal capacity is 400V.
- Note 7: This table is subject to change without notice.

Capacity Chart

Brine specifications

High EER Type (for both internal inverter pump models and pumpless models)

50HP Series EDGE Heat pump

Powerful Heating Type

List of cooling capacities RUA-GP421H/F (L) NR

| Chilled water outlet temperature (°C) | Brine density (wt%) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|---------------------------------------|---------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|--|
| | | | 30 | 35 | 40 | 43 | 45 | 50 | 52 | |
| -5 | 28 | Cooling capacity [kW] | 104 | 100 | 95.9 | 93.4 | 91.7 | 87.8 | 86.8 | |
| | | Power consumption [kW] | 24.7 | 27.5 | 30.3 | 32.0 | 33.2 | 36.3 | 37.6 | |
| | | Chilled water flow rate [L/min] | 328 | 315 | 302 | 295 | 289 | 277 | 274 | |
| | | Operation current [A] | 36.1 | 40.1 | 44.2 | 46.7 | 48.5 | 53.0 | 55.0 | |
| 0 | 20 | Cooling capacity [kW] | 134 | 127 | 120 | 116 | 114 | 107 | 104 | |
| | | Power consumption [kW] | 25.9 | 29.0 | 32.1 | 33.8 | 35.1 | 38.2 | 39.5 | |
| | | Chilled water flow rate [L/min] | 411 | 389 | 368 | 356 | 350 | 328 | 319 | |
| | | Operation current [A] | 37.8 | 42.3 | 46.8 | 49.4 | 51.5 | 56.0 | 58.0 | |

50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421C(L)NR

| Chilled water outlet temperature (°C) | Brine density (wt%) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|---------------------------------------|---------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|--|
| | | | 30 | 35 | 40 | 43 | 45 | 50 | 52 | |
| -15 | 40 | Cooling capacity [kW] | 72.0 | 69.0 | 66.0 | 64.2 | 63.0 | 59.8 | 58.4 | |
| | | Power consumption [kW] | 23.1 | 25.6 | 28.0 | 29.3 | 30.4 | 32.9 | 34.0 | |
| | | Chilled water flow rate [L/min] | 240 | 230 | 220 | 214 | 210 | 199 | 194 | |
| | | Operation current [A] | 33.7 | 37.3 | 40.8 | 42.8 | 44.4 | 48.0 | 49.6 | |
| -10 | 34 | Cooling capacity [kW] | 87.1 | 83.6 | 80.1 | 77.9 | 76.5 | 72.9 | 71.4 | |
| | | Power consumption [kW] | 24.1 | 26.7 | 29.3 | 30.9 | 32.0 | 34.7 | 35.7 | |
| | | Chilled water flow rate [L/min] | 282 | 270 | 259 | 252 | 247 | 236 | 231 | |
| | | Operation current [A] | 35.1 | 39.0 | 42.8 | 45.1 | 46.7 | 51.0 | 52.5 | |
| -7 | 30 | Cooling capacity [kW] | 97.3 | 93.3 | 89.5 | 87.2 | 85.6 | 81.8 | 80.6 | |
| | | Power consumption [kW] | 24.7 | 27.5 | 30.2 | 31.9 | 33.1 | 35.9 | 37.1 | |
| | | Chilled water flow rate [L/min] | 309 | 297 | 285 | 277 | 272 | 260 | 256 | |
| | | Operation current [A] | 36.1 | 40.2 | 44.1 | 46.6 | 48.2 | 52.5 | 54.5 | |
| -5 | 28 | Cooling capacity [kW] | 104 | 100 | 95.9 | 93.4 | 91.8 | 87.8 | 86.8 | |
| | | Power consumption [kW] | 25.2 | 28.0 | 30.8 | 32.5 | 33.8 | 36.9 | 38.2 | |
| | | Chilled water flow rate [L/min] | 328 | 315 | 302 | 295 | 289 | 277 | 274 | |
| | | Operation current [A] | 36.8 | 40.9 | 45.0 | 47.5 | 49.3 | 54.0 | 56.0 | |
| 0 | 20 | Cooling capacity [kW] | 134 | 127 | 120 | 116 | 114 | 107 | 104 | |
| | | Power consumption [kW] | 26.4 | 29.6 | 32.7 | 34.5 | 35.7 | 38.9 | 40.3 | |
| | | Chilled water flow rate [L/min] | 411 | 389 | 368 | 356 | 350 | 328 | 319 | |
| | | Operation current [A] | 38.6 | 43.2 | 47.7 | 50.5 | 52.5 | 57.0 | 59.0 | |

60HP Series EDGE Heat pump

Powerful Heating Type

List of cooling capacities RUA-GP511H/F(L)NR

| Chilled water outlet temperature (°C) | Brine density (wt%) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|---------------------------------------|---------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|--|
| | | | 30 | 35 | 40 | 43 | 45 | 50 | 52 | |
| -5 | 28 | Cooling capacity [kW] | 122 | 118 | 113 | 111 | 109 | 104 | 103 | |
| | | Power consumption [kW] | 30.3 | 33.6 | 36.9 | 38.7 | 40.1 | 43.5 | 45.2 | |
| | | Chilled water flow rate [L/min] | 385 | 372 | 356 | 350 | 344 | 328 | 325 | |
| | | Operation current [A] | 44.2 | 49.1 | 54.0 | 56.5 | 58.5 | 63.5 | 66.0 | |
| 0 | 20 | Cooling capacity [kW] | 156 | 148 | 141 | 137 | 134 | 126 | 123 | |
| | | Power consumption [kW] | 32.8 | 36.5 | 39.8 | 41.8 | 43.2 | 47.0 | 48.4 | |
| | | Chilled water flow rate [L/min] | 478 | 454 | 432 | 420 | 411 | 386 | 377 | |
| | | Operation current [A] | 47.8 | 53.5 | 58.5 | 61.0 | 63.5 | 69.0 | 71.0 | |

60HP Series EDGE Cooling-only

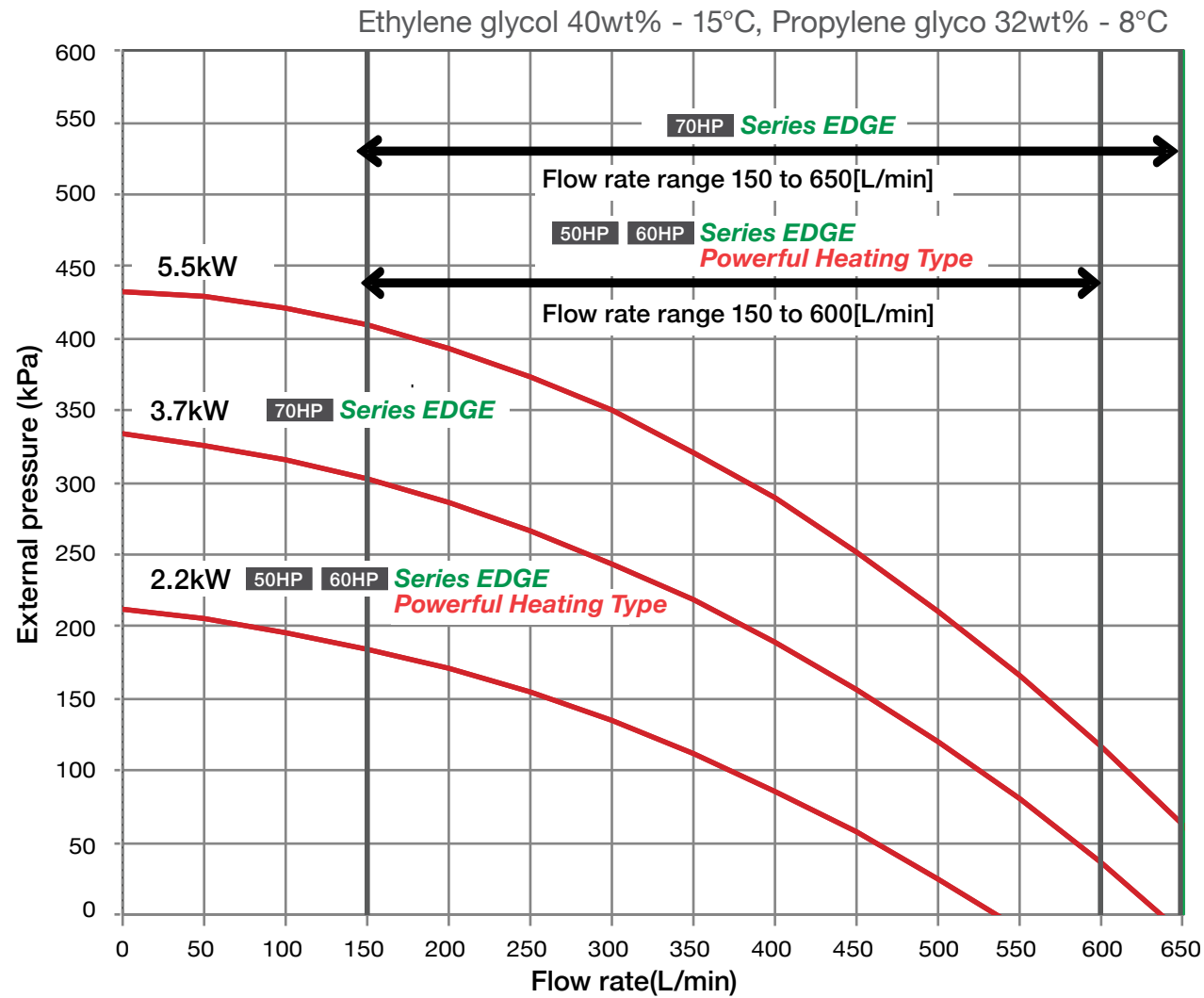
List of cooling capacities RUA-GP511C(L)NR

| Chilled water outlet temperature (°C) | Brine density (wt%) | Item | Outside air temperature (°C) (DB) | | | | | | | |
|---------------------------------------|---------------------|---------------------------------|-----------------------------------|------|------|------|------|------|------|--|
| | | | 30 | 35 | 40 | 43 | 45 | 50 | 52 | |
| -15 | 40 | Cooling capacity [kW] | 84.8 | 81.4 | 78.0 | 75.9 | 74.6 | 71.0 | 69.5 | |
| | | Power consumption [kW] | 27.1 | 29.8 | 32.5 | 34.0 | 35.2 | 37.8 | 39 | |
| | | Chilled water flow rate [L/min] | 282 | 271 | 260 | 253 | 248 | 236 | 231 | |
| | | Operation current [A] | 39.5 | 43.5 | 47.4 | 49.7 | 51.5 | 55.5 | 57.1 | |
| -10 | 34 | Cooling capacity [kW] | 102 | 98.4 | 94.5 | 92.1 | 90.5 | 86.4 | 84.7 | |
| | | Power consumption [kW] | 28.5 | 31.5 | 34.5 | 36.1 | 37.4 | 40.4 | 41.5 | |
| | | Chilled water flow rate [L/min] | 330 | 318 | 306 | 298 | 293 | 279 | 274 | |
| | | Operation current [A] | 41.6 | 46.0 | 50.5 | 53.0 | 55.0 | 59.0 | 61.0 | |
| -7 | 30 | Cooling capacity [kW] | 114 | 110 | 106 | 103 | 101 | 97.0 | 95.7 | |
| | | Power consumption [kW] | 29.5 | 32.6 | 35.6 | 37.6 | 38.8 | 42 | 43.3 | |
| | | Chilled water flow rate [L/min] | 362 | 350 | 337 | 327 | 321 | 308 | 304 | |
| | | Operation current [A] | 43.0 | 47.6 | 52.0 | 55.0 | 57.0 | 61.5 | 63.5 | |
| -5 | 28 | Cooling capacity [kW] | 123 | | | | | | | |

Pump Characteristics / Internal Inverter Pump

Brine specifications

50HP, 60HP Series EDGE and Powerful Heating Type,
70HP Series EDGE internal pump 60Hz performance curve



Pump specification values

| Pump output (kW) | 50HP, 60HP model | | | 70HP model | |
|--|------------------|----------|-----------|------------|----------|
| | 2.2 | 3.7 | 5.5 | 3.7 | 5.5 |
| Flow rate range (L/min) | 150~600 | | | 150~650 | |
| External lifting height (2) (kPa) | 0 ~ 184 | 35 ~ 302 | 115 ~ 409 | 0 ~ 302 | 61 ~ 409 |
| Max. operation current (3) (A) | 4.6 | 7.4 | 11.4 | 7.4 | 11.4 |
| Max. power consumption (3) (kW) | 2.9 | 4.6 | 6.9 | 4.6 | 6.9 |
| Max. allowable boost pressure (MPa) | 0.27 | 0.16 | 0.05 | 0.16 | 0.05 |
| Max. suction head (water temp. 60°C or less) (kPa) | 40 | 40 | 40 | 40 | 40 |

Note 1: Flow rate range (upper limit), max. current and max. power consumption in the table above are values for a single pump. Multiply the number of pumps (modules) by these values depending on the unit size.
When selecting anything other than rated output, you can also use values outside of the flow amount range shown in the graph. Use the formula below to find the flow amount range outside of the rated capacity.

Minimum flow rate=capacity x 860/60/10 (maximum temperature difference)
*However, minimum flow amount must be at or above 150L/min
Maximum flow amount=capacity x 860/60/5 (minimum temperature difference)
*However, maximum flow amount must be at or below 600L/min for the 50HP and 60HP model, and at or below 650L/min for the 70HP model

Note 2: Lifting height outside of the unit shown in the table is the value when the pump frequency is 60Hz at the flow rate range above.
The pump lift outside of the machine is the value reached when subtracting the resistance inside the machine from the total pump lift.
Note 3: Max. current and max. power consumption are the max. values when the pump operation frequency is 60Hz. (In case the nominal current is 380V)
Note 4: 60Hz pumps are commonly used in the 50Hz area.
Note 5: There are some ranges where pump capacity is not enough for the system to run within flow rate range so please increase pump's horsepower.
Note 6: In case of different brine density and leaving temperature, the pump characteristics will be different. Please make an inquiry separately.
Note 7: Please refer to 7.5kW pump information in the full technical document (databook).

Pump Characteristics / Internal Resistance Curve (For pumpless)

Brine specifications

(note) Please select a pump external to the heat source machine in consideration of the internal resistance indicated below for pumpless models.

