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

Toshiba branded 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.
Carrier Japan 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.

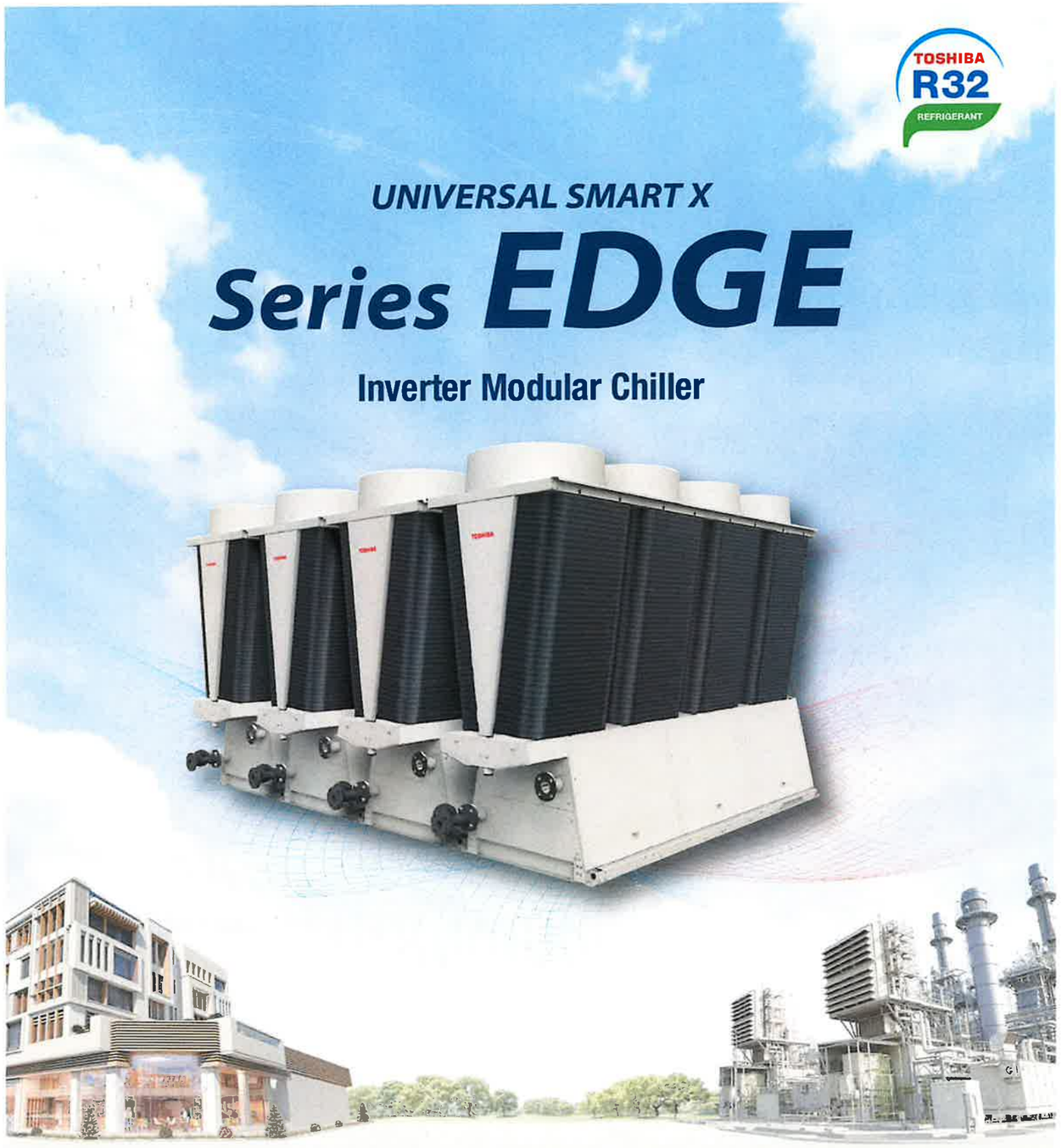
Notice : Toshiba is committed to continuously improving its products to ensure the highest quality and reliability standards, and to meet local regulations and market requirements. All features and specifications are subject to change without prior notice.

USXEE202202FL

TOSHIBA

3nd version
2022-02

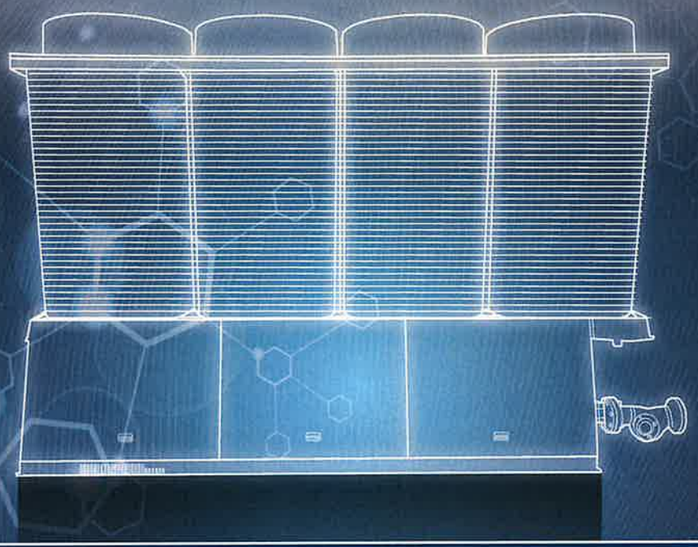
Air-cooled Inverter Modular Chiller
for Diverse Customer Needs



TOSHIBA
R32
REFRIGERANT

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	3 phase 4 wires 50Hz/60Hz 380-415V
		High EER	

Models

RUA - GP 51 1 H L N R 8 - E

- Air Coold 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 & Asia Pacific, 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

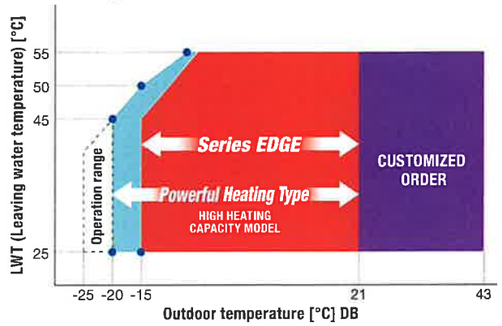
Leaving water temperature (Note 1)	Cooling (Note 5)	℃	4～30
	Heating (Note 2 • 3)		25～55
	Temperature difference (inlet/outlet)		5～10
Outside air temperature	Cooling		-15～52 (Note 4)
	Heating (Note 2 • 3)		-15～21DB、15.5WB

Powerful Heating Type 50HP 60HP

Leaving water temperature (Note 1)	Cooling (Note 5)	℃	4～30
	Heating (Note 2 • 3)		25～55
	Temperature difference (inlet/outlet)		5～10
Outside air temperature	Cooling		-15～52 (Note 4)
	Heating (Note 2 • 3)		-20～21DB、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.
Note 4: The range of water temperature control may become larger when the cooling operation load is low.

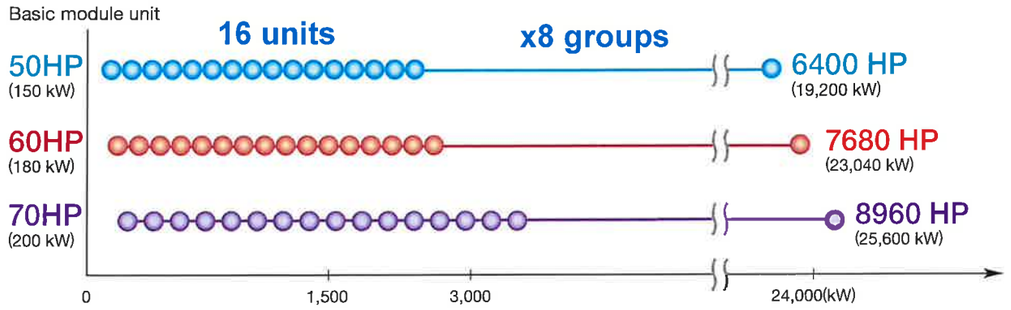
Leaving water temperature range

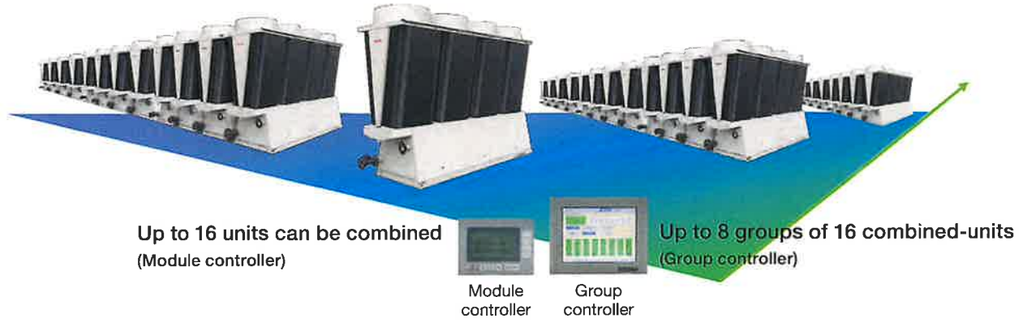


Operating range for water spray device

Water dispersing water temperature range	℃	10～30
Water dispersing preset outdoor air temperature	℃	20～40

Capacity range



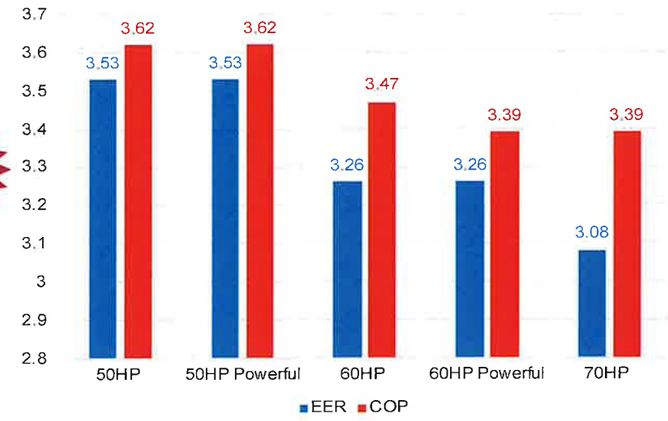


Feature 1

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 bypass0 control resulting in even higher system efficiency.

Top class

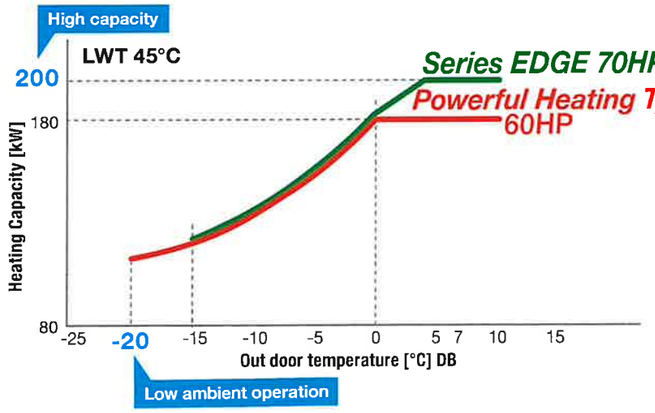


*Conditions:
Cooling EER LWT 7C, EWT 12C, OAT 35C
Heating COP LWT 45C, EWT 40C, OAT 7CDB, 8CWB

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.



TOSHIBA R32 REFRIGERANT

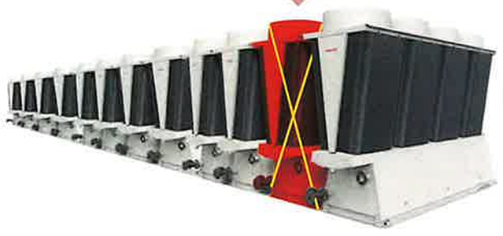
100 CC Twin Rotary Compressor

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.

Backup for each circuit



Backup for each modular unit

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.

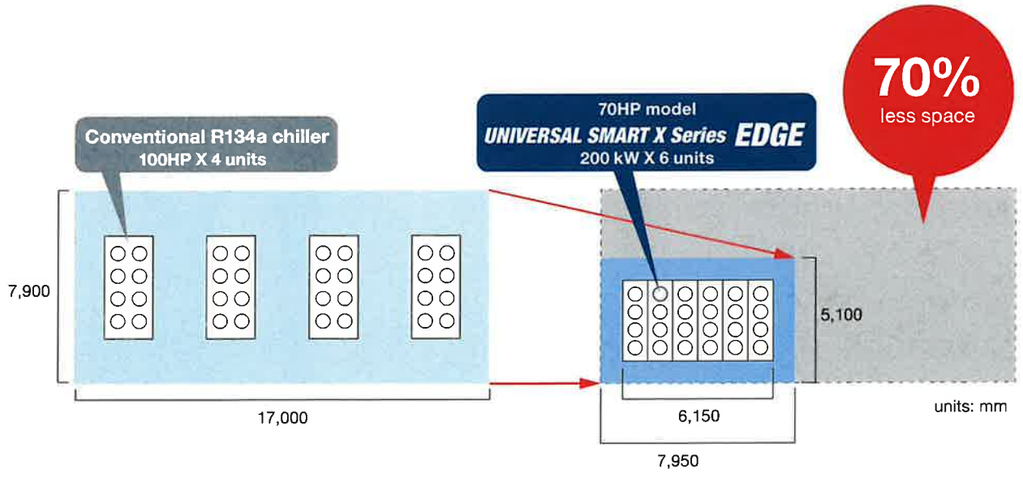
Photo: Defrosting operation demonstration

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

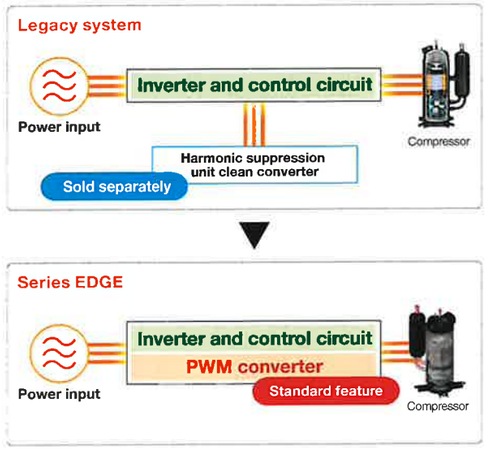
Outstanding Harmonic Suppression

Unique to Toshiba

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.

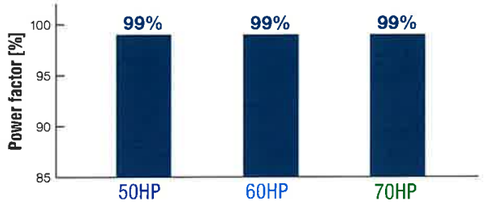
PWM Converter Benefits

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

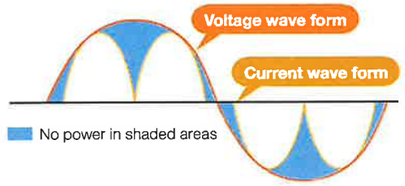


99% Power Factor Benefits

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

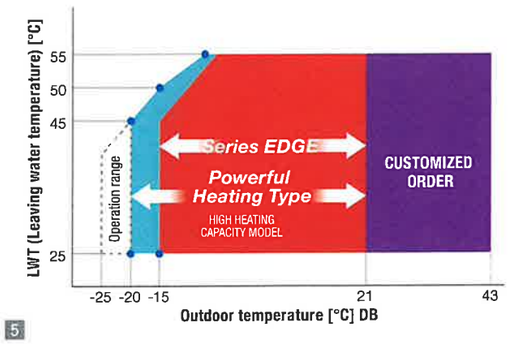
Powerful Heating Type achieves high level heating capacity, even in outdoor temperatures as low as -25°C, and minimises capacity drop during defrost operations.

Powerful Heating Type

HIGH HEATING CAPACITY MODEL

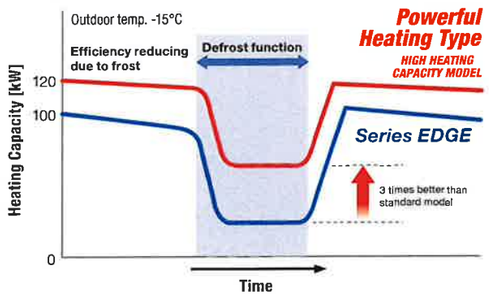
In outdoor temperatures down to -15°C, the system is still capable of producing hot water up to 50°C. At -20°C hot water produced is up to 45°C.

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.

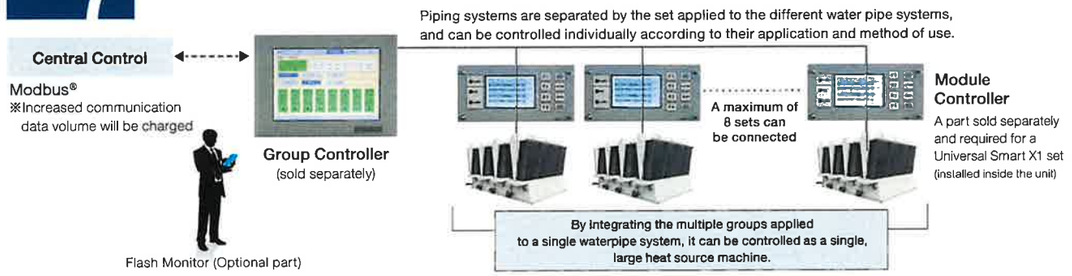
Energy Usage During Defrost (1 module)



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 coversion 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.

Confirm run time | Confirm run pressure | Confirm breakdown history

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.

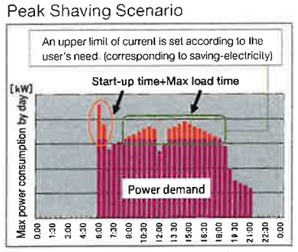
Operating Status/Main Screen | Operating Status/System Data Confirmation Screen | Operating Trends (capacity, input, COP) Confirmation Screen

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.

TOSHIBA
R32
REFRIGERANT

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			(kW)	150	150
Heating capacity			(kW)	150	150
Exterior	Unit color			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2,350	2,350
		Width	(mm)	1,000	1,000
		Depth	(mm)	3,300	3,300
Shipping weight			(kg)	1,348	1,360
Operating weight			(kg)	1,384	1,396
Power supply				3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Reference current for power supply design			(A)	82.1	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	(%)	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	(%)	99	99
Compressor	Type			Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units		(kW)	9.0 x 4	9.0 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		(m³/min)	1,230 (maximum)	1,230 (maximum)
	Type of start			Inverter starter	Inverter starter
	Motor output x number of units		(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray volume		(L/min)	-	13.6 x 1
	Supply water pressure		(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	Centrifugal pump
	Flow control			inverter	Inverter
	Maximum current		(A)	3.1	3.1
	Minimum input		(kW)	2	2
Cooler - water side				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			(%)	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 flanges	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 Powerful Heating Type Heat pump

					Standard type	High-EER type
					380V /400V/ 415V	380V /400V/ 415V
Model (A single module unit)					RUAGP421F18	RUAGP421F1N8
Cooling capacity				(Note 1) (kW)	150	150
Heating capacity				(Note 1) (kW)	150	150
Exterior	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height		(mm)	2,350	2,350
		Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	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	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	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	Hermetic rotary x 4
	Motor output x number of units			(kW)	9.0 x 4	9.0 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			(m³/min)	1,230 (maximum)	1,230 (maximum)
	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)	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	Centrifugal pump
	Flow control				Inverter	Inverter
	Maximum current			(A)	3.1	3.1
	Minimum input			(kW)	2	2
Cooler - water side				(Note 10)	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
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	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)	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	RUAGP421C1N8
Cooling capacity				(Note 1) (kW)	150	150
Exterior	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height		(mm)	2,350	2,350
		Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	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	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	44
		Nominal input		(kW)	43.1	28.7
		EER			3.48	5.23
		SEER			4.9	5.08
		Power factor	(Note 6)	(%)	99	99
Compressor	Type				Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units			(kW)	8.7 x 4	7.2 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			(m³/min)	1,230 (maximum)	1,230 (maximum)
	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)	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	Centrifugal pump
	Flow control				Inverter	Inverter
	Maximum current			(A)	3.1	3.1
	Minimum input			(kW)	2	2
Cooler - water side				(Note 10)	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 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 (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	RUAGP511H1N8
Cooling capacity			(Note 1)	(kW)	180	180
Heating capacity			(Note 1)	(kW)	180	180
Exterior	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height		(mm)	2,350	2,350
		Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	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	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	Hermetic rotary x 4
	Motor output×number of units			(kW)	11.2 x 4	11.1 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			(m³/min)	1,230 (maximum)	1,230 (maximum)
	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)	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	Centrifugal pump
	Flow control				Inverter	Inverter
	Maximum current			(A)	3.1	3.1
	Minimum input			(kW)	2	2
Cooler - water side			(Note 10)		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 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 (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	RUAGP511F1N8
Cooling capacity			(Note 1)	(kW)	180	180
Heating capacity			(Note 1)	(kW)	200	200
Exterior	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height		(mm)	2,350	2,350
		Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	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	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	Hermetic rotary x 4
	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			(m³/min)	1,230 (maximum)	1,230 (maximum)
	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)	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	Centrifugal pump
	Flow control				Inverter	Inverter
	Maximum current			(A)	3.1	3.1
	Minimum input			(kW)	2	2
Cooler - water side			(Note 10)		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
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	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) 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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2,350	2,350
		Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	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	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	57.5
		Nominal input	(kW)	55	37.4
		EER		3.27	4.81
		SEER		4.8	4.99
		Power factor	(Note 6) (%)	99	99
Compressor	Type			Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units		(kW)	11.2 x 4	8.6 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		(m³/min)	1,230 (maximum)	1,230 (maximum)
	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 9)	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	Centrifugal pump
	Flow control			Inverter	Inverter
	Maximum current		(A)	3.1	3.1
	Minimum input		(kW)	2	2
Cooler - water side			(Note 10)	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 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	2-1/2" flange
	Cold/Hot water outlet		(A)	2-1/2" flange	2-1/2" flange
	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
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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2,350	2,350
		Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	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	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	68.9
		Nominal input	(kW)	64.9	44.8
		EER		3.08	4.46
		SEER		4.75	4.92
		Power factor	(Note 6) (%)	99	99
	Heating	Nominal current	(A)	90.1	90.1
		Nominal input	(kW)	59	59
		COP		3.39	3.39
		SCOP		4.28	4.28
		Power factor	(Note 6) (%)	99	99
Compressor	Type			Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units		(kW)	13.3 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		(m³/min)	1,230 (maximum)	1,230 (maximum)
	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 9)	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	Centrifugal pump
	Flow control			Inverter	Inverter
	Maximum current		(A)	4.3	4.3
	Minimum input		(kW)	2.8	2.8
Cooler - water side			(Note 10)	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 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)	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
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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2,350	2,350
		Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	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	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	68.1
		Nominal input	(kW)	64.5	44.3
		EER		3.1	4.51
		SEER		4.75	4.92
		Power factor	(Note 6) (%)	99	99
Compressor	Type			Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units		(kW)	13.3 x 4	9.1 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		(m³/min)	1,230 (maximum)	1,230 (maximum)
	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)	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	Centrifugal pump
	Flow control			Inverter	Inverter
	Maximum current		(A)	4.3	4.3
	Minimum input		(kW)	2.8	2.8
Cooler - water side			(Note 10)	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 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)	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) 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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2,350	2,350
		Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	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	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	42.8
		Nominal input	(kW)	42.5	27.9
		EER		3.53	5.38
		SEER		4.88	5.06
		Power factor	(Note 5) (%)	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 5) (%)	99	99
Compressor	Type			Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units		(kW)	9.0 x 4	9.0 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		(m³/min)	1,230 (maximum)	1,230 (maximum)
	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 7)	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
Cooler - water side			(Note 8)	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 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	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)	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.

Specifications Pumpless

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height		(mm)	2,350	2,350
		Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	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	3-phase 4-wire 50/60Hz 380V/400V/415V
Reference current for power supply design				(Note 4) (A)	79	79
Electrical data (Note 6)	Cooling	Nominal current		(A)	65.3	42.8
		Nominal input		(kW)	42.5	27.9
		EER			3.53	5.39
		SEER			4.88	5.06
		Power factor	(Note 5)	(%)	99	99
	Heating	Nominal current		(A)	99	99
		Nominal input		(kW)	63.6	63.6
		COP			41.4	41.4
		SCOP			4.26	4.26
		Power factor	(Note 5)	(%)	99	99
Compressor	Type				Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units			(kW)	9.0 x 4	9.0 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			(m³/min)	1,230 (maximum)	1,230 (maximum)
	Type of start				Inverter starter	Inverter starter
	Motor output x number of units			(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray volume			(L/min)	-	13.6 x 1
	Supply water pressure		(Note 8)	(MPa)	-	0.2
(Note 7)	Control				-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
Cooler - water side				(Note 9)	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
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	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)	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.

Specifications Pumpless

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height		(mm)	2,350	2,350
		Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	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	3-phase 4-wire 50/60Hz 380V/400V/415V
Reference current for power supply design				(Note 4) (A)	79	79
Electrical data (Note 6)	Cooling	Nominal current		(A)	66.2	44
		Nominal input		(kW)	43.1	28.7
		EER			3.48	5.23
		SEER			4.9	5.08
		Power factor	(Note 5)	(%)	99	99
Compressor	Type				Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units			(kW)	8.7 x 4	7.2 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			(m³/min)	1,230 (maximum)	1,230 (maximum)
	Type of start				Inverter starter	Inverter starter
	Motor output x number of units			(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray volume			(L/min)	-	13.6 x 1
	Supply water pressure		(Note 8)	(MPa)	-	0.2
(Note 7)	Control				-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
Cooler - water side				(Note 9)	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 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	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)	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) 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.

Specifications Pumpless

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2,350	2,350
		Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	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	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	57.3
		Nominal input	(kW)	55.2	37.3
		EER		3.26	4.82
		SEER		4.77	4.94
		Power factor	(Note 5) (%)	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 5) (%)	99	99
Compressor	Type			Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units		(kW)	11.2 x 4	11.1 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		(m³/min)	1,230 (maximum)	1,230 (maximum)
	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 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)	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 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	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.

Specifications Pumpless

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2,350	2,350
		Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	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	3-phase 4-wire 50/60Hz 380V/400V/415V
Reference current for power supply design			(Note 4) (A)	110	110
Electrical data (Note 6)	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 5) (%)	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 5) (%)	99	99
Compressor	Type			Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×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		(m³/min)	1,230 (maximum)	1,230 (maximum)
	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 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)	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
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	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.

Specifications Pumpless

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2,350	2,350
		Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	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	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	57.5
		Nominal input	(kW)	55	37.4
		EER		3.27	4.81
		SEER		4.8	4.99
		Power factor	(Note 5) (%)	99	99
Compressor	Type			Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units		(kW)	11.2 x 4	8.6 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		(m³/min)	1,230 (maximum)	1,230 (maximum)
	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 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)	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 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	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
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.

Specifications Pumpless

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2,350	2,350
		Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	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	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	68.9
		Nominal input	(kW)	64.9	44.8
		EER		3.08	4.46
		SEER		4.72	4.89
		Power factor	(Note 5) (%)	99	99
	Heating	Nominal current	(A)	90.1	90.1
		Nominal input	(kW)	59	59
		COP		3.39	3.39
		SCOP		4.28	4.28
		Power factor	(Note 5) (%)	99	99
Compressor	Type			Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units		(kW)	13.3 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		(m³/min)	1,230 (maximum)	1,230 (maximum)
	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 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)	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 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	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
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.

Specifications Pumpless

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2,350	2,350
		Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	3,300
Shipping weight			(kg)	1,258	1,270
Operating weight			(kg)	1,294	1,306
Power supply			(Note 3, 4)	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) (A)	115	115
Electrical data (Note 6)	Cooling	Nominal current	(A)	99.1	68.1
		Nominal input	(kW)	64.5	44.3
		EER		3.1	4.51
		SEER		4.75	4.92
		Power factor (Note 5)	(%)	99	99
Compressor	Type			Hermetic rotary x 4	Hermetic rotary x 4
	Motor output×number of units		(kW)	13.3 x 4	9.1 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		(m³/min)	1,230 (maximum)	1,230 (maximum)
	Type of start			Inverter starter	Inverter starter
	Motor output x number of units		(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray volume		(L/min)	-	13.6 x 1
	Supply water pressure		(Note 8) (MPa)	-	0.2
(Note 7)	Control			-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
Cooler - water side			(Note 10)	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 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	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.

Perspective on Set Specifications (Calculation Method)

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	2,350	See General Charts
		Width	(Note 2) (mm)	1,000	16,450	
		Depth	(Note 2) (mm)	3,300	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 3, 4)	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) (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 5) (%)	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	-
(Note 7)		Power factor	(Note 5) (%)	99	99	-
Compressor	Type			Hermetic rotary		-
	Motor output×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	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	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	Propeller fan	-
	Air quantity		(m³/min)	1,230 (maximum)	19,680 (maximum)	(Single unit value) x (number of module units in set)
	Type of start			Inverter starter	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	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 8) (MPa)	0.2	0.2	-
(Note 9)	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	Centrifugal pump	-
	Flow control			Inverter	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)	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 64	(Single unit value) x (number of module units in set)
	Control			Electric expansion valve	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) (Note 1)	Dimensions (mm) HxWxD (Note 2)	Sound Pressure Level (Note 3)			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) (Note 1)	Dimensions (mm) HxWxD (Note 2)	Sound Pressure Level (Note 3)			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) (Note 1)	Dimensions (mm) HxWxD (Note 2)	Sound Pressure Level (Note 3)			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) (Note 1)	Dimensions (mm) HxWxD (Note 2)	Sound Pressure Level (Note 3)			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		Outside air temperature (°C) (DB)								
			15	20	25	30	35	40	43	48	52
4	Cooling capacity	(kW)	168	163	154	145	136	127	121	106	95.0
	Power consumption	(kW)	25.5	29.2	32.9	36.8	40.8	44.9	47.1	46.9	48.0
	Chilled water flow rate	(L/min)	344	335	316	297	278	259	246	217	195
	Operation current	(A)	37.6	42.5	48.0	53.7	59.5	65.4	68.6	68.4	70.0
7	Cooling capacity	(kW)	186	181	171	160	150	140	132	114	97.3
	Power consumption	(kW)	25.4	29.5	33.5	37.5	41.7	45.9	47.5	46.9	45.5
	Chilled water flow rate	(L/min)	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
9	Cooling capacity	(kW)	199	193	182	171	160	149	136	120	98.8
	Power consumption	(kW)	25.4	29.6	33.8	38.0	42.3	46.6	47.1	47.1	43.9
	Chilled water flow rate	(L/min)	408	396	374	350	327	305	283	245	202
	Operation current	(A)	37.3	43.2	49.2	55.4	61.7	67.9	68.7	68.6	64.0
12	Cooling capacity	(kW)	219	211	200	189	176	164	150	131	100
	Power consumption	(kW)	25.4	29.9	34.3	38.8	43.1	47.7	47.3	47.5	41.2
	Chilled water flow rate	(L/min)	*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
15	Cooling capacity	(kW)	230	222	210	198	187	174	159	141	101
	Power consumption	(kW)	25.2	30.1	34.6	39.1	43.9	47.8	47.5	48.0	38.3
	Chilled water flow rate	(L/min)	*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
20	Cooling capacity	(kW)	230	221	211	201	191	178	162	146	102
	Power consumption	(kW)	25.2	30.0	34.6	39.3	44.1	47.8	47.2	48.3	36.6
	Chilled water flow rate	(L/min)	*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
25	Cooling capacity	(kW)	230	221	211	201	190	178	162	146	102
	Power consumption	(kW)	25.2	30.0	34.6	39.3	43.9	47.8	47.2	48.3	36.4
	Chilled water flow rate	(L/min)	*430	*430	*430	411	390	364	332	299	209
	Operation current	(A)	37.1	43.8	50.4	57.4	64.0	69.8	68.9	70.5	53.1
30	Cooling capacity	(kW)	230	221	211	201	191	178	162	102	102
	Power consumption	(kW)	29.2	30.0	34.6	39.3	44.1	47.8	47.2	36.6	36.6
	Chilled water flow rate	(L/min)	*430	*430	430	411	391	364	332	208	208
	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		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
30	Heating capacity	(kW)	103	118	134	150	165	152	181
	Power consumption	(kW)	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
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)	54	55	56	57	58	48.0	48.4
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)	58	60	61	62	64	54	54
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	65	66	68	71	59	61
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	71	72	72	65	68
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)			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: ▭ are displaying maximum capacities. Other values indicate performance when operating at rated frequency.
* indicates maximum flow rate. ⊿t 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.

50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421C(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)	168	163	154	145	136	127	120	104	94.6
	Power consumption	(kW)	24.9	28.6	32.5	36.6	41.1	45.2	46.9	46.6	48.5
	Chilled water flow rate	(L/min)	344	334	316	297	278	259	246	213	194
	Operation current	(A)	36.3	41.8	47.4	53.7	59.9	65.9	68.3	68.0	70.7
7	Cooling capacity	(kW)	186	180	170	160	150	140	129	111	97.2
	Power consumption	(kW)	24.7	28.8	32.9	37.5	42.0	46.4	46.7	46.3	46.1
	Chilled water flow rate	(L/min)	381	369	349	328	307	286	265	228	199
	Operation current	(A)	36.4	42.0	48.0	54.6	61.3	67.6	68.1	67.4	67.2
9	Cooling capacity	(kW)	199	193	182	171	160	149	136	117	98.7
	Power consumption	(kW)	24.6	29.0	33.3	38.0	42.7	47.0	46.9	46.2	44.5
	Chilled water flow rate	(L/min)	408	395	373	350	327	305	279	240	202
	Operation current	(A)	36.3	42.3	48.6	55.4	62.2	68.5	68.4	67.4	64.8
12	Cooling capacity	(kW)	219	210	199	189	176	162	147	128	100
	Power consumption	(kW)	24.6	29.2	33.7	38.8	43.6	47.2	46.8	46.7	41.5
	Chilled water flow rate	(L/min)	*430	*430	406	386	361	332	301	263	206
	Operation current	(A)	36.2	42.5	49.2	56.6	63.5	68.9	68.3	68.1	60.5
15	Cooling capacity	(kW)	227	220	210	198	186	171	155	138	101
	Power consumption	(kW)	24.6	29.3	34.1	39.1	44.1	47.4	46.8	47.6	38.7
	Chilled water flow rate	(L/min)	*430	*430	429	405	381	349	318	282	208
	Operation current	(A)	35.8	42.7	49.7	57.1	64.3	69.1	68.3	69.4	56.4
20	Cooling capacity	(kW)	226	220	210	200	189	174	159	142	102
	Power consumption	(kW)	24.6	29.3	34.0	39.2	44.2	47.4	47.0	47.7	37.2
	Chilled water flow rate	(L/min)	*430	*430	*430	409	386	356	325	292	209
	Operation current	(A)	35.9	42.7	49.6	57.2	64.4	69.1	68.6	69.5	54.3
25	Cooling capacity	(kW)	226	220	210	200	189	174	159	142	102
	Power consumption	(kW)	24.6	29.3	34.0	39.2	44.3	47.4	47.0	47.7	37.2
	Chilled water flow rate	(L/min)	*430	*430	*430	409	388	356	325	292	209
	Operation current	(A)	35.9	42.7	49.6	57.2	64.5	69.1	68.6	69.5	54.3
30	Cooling capacity	(kW)	226	220	210	200	189	174	159	102	102
	Power consumption	(kW)	28.6	29.3	34.1	39.2	44.2	47.3	47.0	37.4	37.4
	Chilled water flow rate	(L/min)	*430	*430	*430	409	388	356	325	208	208
	Operation current	(A)	35.9	42.7	49.7	57.2	64.4	69.8	68.6	54.5	54.5

50HP Powerful Heating Type Heat pump

List of heating capacities RUA-GP421F(L)

Warm water outlet temperature (°C)	Item		Outside air temperature (°C) (DB)							
			-20	-15	-10	-5	0	4	7	15
25	Heating capacity	(kW)	80.2	89.9	103	117	132	144	153	182
	Power consumption	(kW)	25.7	26.1	26.5	26.7	26.8	26.8	26.0	25.0
	Warm water flow rate	(L/min)	164	184	211	240	269	296	314	373
	Operation current	(A)	38.3	38.5	39.1	39.3	39.5	39.5	19.0	18.2
30	Heating capacity	(kW)	80.1	89.8	103	117	131	143	152	181
	Power consumption	(kW)	28.2	28.8	29.5	29.9	29.9	30.0	29.3	29.0
	Warm water flow rate	(L/min)	164	184	210	239	268	294	312	371
	Operation current	(A)	41.5	42.4	43.5	44.1	44.1	43.8	21.4	21.1
35	Heating capacity	(kW)	79.8	89.7	102	116	130	143	151	180
	Power consumption	(kW)	30.7	31.5	32.3	32.9	33.1	33.6	32.9	33.2
	Warm water flow rate	(L/min)	163	184	209	238	266	292	310	368
	Operation current	(A)	45.2	46.4	47.5	48.4	48.2	49.1	24.0	24.2
40	Heating capacity	(kW)	79.6	89.5	102	115	129	142	151	178
	Power consumption	(kW)	33.2	34.2	35.3	35.8	36.4	37.3	36.8	37.3
	Warm water flow rate	(L/min)	163	183	208	236	265	290	308	365
	Operation current	(A)	48.9	50.3	52.0	52.8	53.1	54.3	26.8	27.2
45	Heating capacity	(kW)	79.2	89.2	101	115	129	141	150	177
	Power consumption	(kW)	35.7	36.9	38.0	39.2	40.2	41.1	40.8	41.7
	Warm water flow rate	(L/min)	162	183	207	235	264	289	307	363
	Operation current	(A)	52.5	54.3	55.9	57.2	58.6	59.9	29.7	30.4
50	Heating capacity	(kW)		88.9	101	111	122	131	149	176
	Power consumption	(kW)		39.7	41.2	41.3	41.4	41.6	44.9	46.3
	Warm water flow rate	(L/min)		182	206	228	250	267	305	360
	Operation current	(A)		58.5	60.7	60.2	60.3	60.6	32.7	33.8
55	Heating capacity	(kW)				103	112	119	148	169
	Power consumption	(kW)				41.4	41.3	41.2	49.2	49.0
	Warm water flow rate	(L/min)				211	229	243	304	346
	Operation current	(A)				60.3	60.3	60.0	35.8	35.7

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. ⊿t 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		Outside air temperature (°C) (DB)								
			15	20	25	30	35	40	43	48	52
4	Cooling capacity	(kW)	204	196	185	174	164	153	146	130	95.0
	Power consumption	(kW)	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
7	Cooling capacity	(kW)	219	216	204	192	180	168	157	141	97.6
	Power consumption	(kW)	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
9	Cooling capacity	(kW)	230	228	217	204	191	179	165	149	99
	Power consumption	(kW)	35.8	39.6	44.8	49.8	54.6	59.7	59.4	60.6	43.8
	Chilled water flow rate	(L/min)	471	467	445	418	392	366	337	305	203
	Operation current	(A)	52.2	57.7	65.4	72.5	79.6	87.0	86.5	88.3	63.9
12	Cooling capacity	(kW)	244	245	238	224	210	194	178	155	101
	Power consumption	(kW)	37.7	39.9	45.6	50.7	55.9	59.9	59.3	58.3	41.4
	Chilled water flow rate	(L/min)	500	502	487	460	430	397	364	317	206
	Operation current	(A)	54.9	58.2	66.5	73.9	81.4	87.3	86.5	85.0	60.4
15	Cooling capacity	(kW)	252	252	248	236	223	205	189	158	101
	Power consumption	(kW)	38.9	40.6	45.8	51.3	56.7	59.9	59.2	55.2	38.0
	Chilled water flow rate	(L/min)	*516	*516	508	483	457	420	387	324	208
	Operation current	(A)	56.8	59.2	66.8	74.8	82.7	87.4	86.4	80.5	55.4
20	Cooling capacity	(kW)	252	252	248	237	226	210	194	159	102
	Power consumption	(kW)	39.1	40.5	45.8	51.4	56.9	60.0	59.1	53.5	36.4
	Chilled water flow rate	(L/min)	*516	*516	508	485	462	431	398	326	209
	Operation current	(A)	57.0	59.1	66.8	75.0	83.0	87.5	86.2	78.1	53.1
25	Cooling capacity	(kW)	252	252	248	237	226	210	194	160	102
	Power consumption	(kW)	39.0	40.6	45.8	51.3	56.9	60.0	59.1	54.1	36.4
	Chilled water flow rate	(L/min)	*516	*516	508	485	462	431	398	327	209
	Operation current	(A)	56.9	59.2	66.8	74.8	83.0	87.5	86.2	78.8	53.1
30	Cooling capacity	(kW)	245	245	243	232	220	209	195	102	102
	Power consumption	(kW)	39.1	38.7	43.5	48.8	54.1	59.5	59.5	36.3	36.3
	Chilled water flow rate	(L/min)	502	502	498	474	450	428	398	209	209
	Operation current	(A)	54.7	56.4	63.4	71.2	78.8	86.8	86.7	52.9	52.9

List of heating capacities RUA-GP511H (L)

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	55.9	56.8	57.0	58.4	48.3	47.5
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)	61	61	63	64	66	55	54
35	Heating capacity	(kW)	121	138	156	176	192	181	213
	Power consumption	(kW)	43.7	45.4	46.4	47.8	49.2	41.9	42.3
	Warm water flow rate	(L/min)	248	283	320	360	393	371	436
	Operation current	(A)	64	67	68	70	72	61	62
40	Heating capacity	(kW)	120	137	156	175	191	181	212
	Power consumption	(kW)	46.9	48.9	50.6	52.1	53.8	46.4	47.3
	Warm water flow rate	(L/min)	246	281	319	359	392	370	434
	Operation current	(A)	69	72	75	77	78	68	69
45	Heating capacity	(kW)	119	136	155	175	189	180	211
	Power consumption	(kW)	50.0	52.5	54.6	56.8	58.0	51.0	52.5
	Warm water flow rate	(L/min)	244	279	317	356	388	369	431
	Operation current	(A)	74	77	80	83	85	74	77
50	Heating capacity	(kW)		135	152	167	177	179	209
	Power consumption	(kW)		56.3	57.8	58.2	58.2	55.6	57.4
	Warm water flow rate	(L/min)		277	311	342	363	367	429
	Operation current	(A)		83	85	85	85	81	84
55	Heating capacity	(kW)			143	155	164	172	194
	Power consumption	(kW)			58.4	58.1	58.0	57.9	57.4
	Warm water flow rate	(L/min)			292	318	335	351	397
	Operation current	(A)			85	85	84	84	84

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 raled frequency.

Note 3: ▭ are displaying maximum capacities. Other values indicate performance when operating at rated frequency.
* indicates maximum flow rate. ⊿t 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.

60HP Series EDGE Cooling-only

List of cooling capacities RUA-GP511C (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)	204	196	185	174	164	153	145	127	94.6
	Power consumption	(kW)	33.4	38.0	42.5	47.5	52.7	57.1	58.7	58.0	48.5
	Chilled water flow rate	(L/min)	416	402	379	357	335	313	296	260	194
	Operation current	(A)	48.8	55.4	62.0	69.3	76.9	83.2	85.6	84.6	70.7
7	Cooling capacity	(kW)	219	216	204	192	180	168	155	137	96.8
	Power consumption	(kW)	34.2	38.4	43.3	48.6	53.9	58.7	58.5	58.5	45.9
	Chilled water flow rate	(L/min)	448	443	418	393	369	344	317	281	198
	Operation current	(A)	49.9	56.0	63.1	70.9	78.6	85.6	85.3	85.4	66.9
9	Cooling capacity	(kW)	230	229	217	204	191	178	162	146	98.6
	Power consumption	(kW)	35.6	38.9	43.7	49.2	54.6	59.1	58.3	59.6	44.4
	Chilled water flow rate	(L/min)	471	468	445	418	392	364	332	298	202
	Operation current	(A)	51.9	56.7	63.7	71.7	79.6	86.2	85.0	86.9	64.8
12	Cooling capacity	(kW)	244	244	239	225	210	192	175	155	100
	Power consumption	(kW)	37.7	39.5	44.4	50.2	55.9	59.1	58.3	59.2	41.7
	Chilled water flow rate	(L/min)	501	501	490	460	430	393	358	318	206
	Operation current	(A)	54.9	57.7	64.8	73.2	81.4	86.1	85.0	86.3	60.8
15	Cooling capacity	(kW)	252	252	249	237	223	203	185	158	101
	Power consumption	(kW)	38.9	40.2	44.7	50.7	56.6	59.0	58.2	56.2	38.7
	Chilled water flow rate	(L/min)	*516	*516	510	485	457	416	379	323	207
	Operation current	(A)	56.8	58.6	65.2	74.0	82.5	86.0	84.8	82.0	56.4
20	Cooling capacity	(kW)	252	253	249	238	226	208	191	159	102
	Power consumption	(kW)	39.1	40.3	44.7	50.9	56.8	59.1	58.4	54.6	37.2
	Chilled water flow rate	(L/min)	*516	*516	511	487	463	427	391	326	209
	Operation current	(A)	57.0	58.7	65.2	74.1	82.8	86.2	85.2	79.7	54.3
25	Cooling capacity	(kW)	252	252	249	238	226	208	191	159	102
	Power consumption	(kW)	39.0	40.2	44.7	50.9	56.8	59.1	58.4	54.6	37.1
	Chilled water flow rate	(L/min)	*516	*517	510	487	463	427	391	326	209
	Operation current	(A)	56.9	58.6	65.2	74.1	82.8	86.2	85.2	79.7	54.1
30	Cooling capacity	(kW)	245	246	244	232	221	209	191	102	102
	Power consumption	(kW)	38.0	38.7	42.5	48.3	54.3	59.2	58.4	37.1	37.1
	Chilled water flow rate	(L/min)	502	503	499	476	452	427	391	209	209
	Operation current	(A)	55.0	56.5	62.0	70.5	79.2	86.3	85.2	54.1	54.1

60HP Powerful Heating Type Heat pump

List of heating capacities RUA-GP511F (L)

Warm water outlet temperature (°C)	Item		Outside air temperature (°C) (DB)							
			-20	-15	-10	-5	0	4	7	15
25	Heating capacity	(kW)	137	153	174	196	214	231	203	237
	Power consumption	(kW)	48.8	49.7	50.9	51.4	51.3	52.4	38.5	37.9
	Warm water flow rate	(L/min)	280	314	356	401	437	473	415	485
	Operation current	(A)	73	74	75	76	76	77	57	55
30	Heating capacity	(kW)	137	154	175	196	213	230	202	235
	Power consumption	(kW)	52.9	54.6	56.1	56.8	56.8	58.2	43.4	43.2
	Warm water flow rate	(L/min)	280	315	357	402	436	471	414	482
	Operation current	(A)	79	81	83	84	84	86	63	63
35	Heating capacity	(kW)	136	153	175	197	213	229	201	235
	Power consumption	(kW)	56.7	58.8	61.2	62.5	62.3	63.6	48.2	48.9
	Warm water flow rate	(L/min)	279	314	357	402	436	469	412	481
	Operation current	(A)	85	88	90	92	92	94	70	71
40	Heating capacity	(kW)	135	153	174	196	212	229	200	234
	Power consumption	(kW)	60.5	63.5	65.9	67.8	67.3	69.2	53.1	54.3
	Warm water flow rate	(L/min)	276	312	356	402	434	468	410	479
	Operation current	(A)	91	94	97	100	99	102	77	79
45	Heating capacity	(kW)	132	151	173	192	208	221	200	233
	Power consumption	(kW)	63.5	67.4	70.6	71.4	71.0	71.3	58.1	59.9
	Warm water flow rate	(L/min)	270	309	354	392	426	453	410	477
	Operation current	(A)	95	99	104	105	105	104	85	87
50	Heating capacity	(kW)		148	164	180	196	208	200	232
	Power consumption	(kW)		70.8	71.3	70.9	70.8	71.0	63.3	65.7
	Warm water flow rate	(L/min)		304	336	369	401	425	410	474
	Operation current	(A)		104	105	104	103	104	92	96
55	Heating capacity	(kW)				159	181	193	196	222
	Power consumption	(kW)				65.7	69.1	69.9	67.4	67.1
	Warm water flow rate	(L/min)				327	371	396	401	454
	Operation current	(A)				97	101	102	98	98

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. ⊿t 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 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	94.8
	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	206	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	48.0	53.8	59.6	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	236	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	78.4	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	51.8	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. ⊿t 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.

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	205	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	99.9
	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 rate	(L/min)	551	547	530	503	476	437	401	318	205
	Operation current	(A)	63.8	68.7	76.6	85.8	94.5	99.4	97.9	85.3	60.0
15	Cooling capacity	(kW)	274	274	266	254	243	224	207	158	101
	Power consumption	(kW)	44.4	46.7	52.8	59.1	65.5	68.3	67.2	55.8	38.4
	Chilled water flow rate	(L/min)	561	561	545	521	497	456	424	323	208
	Operation current	(A)	64.7	68.1	77.0	86.1	95.5	99.6	98.0	81.4	56.0
20	Cooling capacity	(kW)	274	274	266	254	243	227	212	159	102
	Power consumption	(kW)	44.4	46.7	52.9	59.1	65.5	68.2	67.3	54.3	37.0
	Chilled water flow rate	(L/min)	561	561	544	521	497	465	434	326	209
	Operation current	(A)	64.7	68.1	77.1	86.1	95.5	99.4	98.1	79.1	53.9
25	Cooling capacity	(kW)	267	267	262	250	238	227	212	159	102
	Power consumption	(kW)	42.4	44.1	50.1	56.2	62.3	68.2	67.3	54.3	37.0
	Chilled water flow rate	(L/min)	547	547	536	512	488	465	434	326	209
	Operation current	(A)	61.9	64.3	77.1	81.9	90.8	99.4	98.1	79.1	53.9
30	Cooling capacity	(kW)	250	250	249	238	226	214	207	102	102
	Power consumption	(kW)	45.5	40.3	43.9	50.0	55.9	61.3	64.7	37.0	37.0
	Chilled water flow rate	(L/min)	512	512	510	486	462	439	424	208	208
	Operation current	(A)	57.3	58.7	64.0	72.9	81.6	89.4	94.3	53.9	53.9

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.

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.

60HP Series EDGE Heat pump

List of cooling capacities RUA-GP511HN (L)

Chilled water outlet temperature (°C)	Item		Outside air temperature (°C) (DB)					
			30	35	40	43	48	52
4	Cooling capacity	(kW)	172	164	156	152	144	137
	Power consumption	(kW)	31.1	35.0	38.4	40.5	44.3	47.1
	Chilled water flow rate	(L/min)	353	336	320	310	294	280
	Operation current	(A)	45.3	51.1	56.0	59.1	64.6	68.6
7	Cooling capacity	(kW)	189	180	171	166	158	151
	Power consumption	(kW)	31.9	35.9	39.5	41.3	45.5	48.6
	Chilled water flow rate	(L/min)	387	369	351	341	323	308
	Operation current	(A)	46.5	52.4	57.6	60.2	66.4	70.8
9	Cooling capacity	(kW)	201	191	182	177	168	160
	Power consumption	(kW)	32.4	36.5	40.4	42.4	46.4	49.2
	Chilled water flow rate	(L/min)	412	392	373	362	343	328
	Operation current	(A)	47.2	53.2	58.8	61.9	67.7	71.8
12	Cooling capacity	(kW)	219	209	200	194	184	176
	Power consumption	(kW)	32.9	37.5	41.6	43.8	47.8	50.9
	Chilled water flow rate	(L/min)	448	428	409	396	376	360
	Operation current	(A)	48.0	54.6	60.6	63.8	69.7	74.2
15	Cooling capacity	(kW)	230	219	209	204	194	187
	Power consumption	(kW)	33.0	37.8	42.1	44.5	48.6	51.9
	Chilled water flow rate	(L/min)	471	449	428	417	398	382
	Operation current	(A)	48.2	55.1	61.3	64.9	70.9	75.7
20	Cooling capacity	(kW)	230	220	212	207	199	192
	Power consumption	(kW)	33.0	37.8	42.3	44.6	49.0	52.3
	Chilled water flow rate	(L/min)	471	451	434	423	407	393
	Operation current	(A)	48.2	55.1	61.7	65.0	71.5	76.3
25	Cooling capacity	(kW)	230	220	212	207	199	192
	Power consumption	(kW)	33.1	37.8	42.3	44.6	49.0	52.2
	Chilled water flow rate	(L/min)	471	451	434	423	407	393
	Operation current	(A)	48.3	55.1	61.7	65.0	71.5	76.1
30	Cooling capacity	(kW)	229	220	212	207	192	192
	Power consumption	(kW)	35.0	37.8	42.3	44.6	52.3	52.3
	Chilled water flow rate	(L/min)	469	451	434	423	393	393
	Operation current	(A)	48.2	55.1	61.7	65.0	76.3	76.3

60HP Series EDGE Cooling-only

List of cooling capacities RUA-GP511CN (L)

Chilled water outlet temperature (°C)	Item		Outside air temperature (°C) (DB)					
			30	35	40	43	48	52
4	Cooling capacity	(kW)	172	164	157	152	144	137
	Power consumption	(kW)	31.2	35.0	38.7	40.5	44.2	47.1
	Chilled water flow rate	(L/min)	353	336	320	311	294	281
	Operation current	(A)	45.4	51.1	56.4	59.1	64.4	68.6
7	Cooling capacity	(kW)	189	180	172	167	158	151
	Power consumption	(kW)	31.9	35.9	39.7	41.8	45.5	48.6
	Chilled water flow rate	(L/min)	387	369	352	341	323	309
	Operation current	(A)	46.5	52.4	57.9	60.9	66.4	70.8
9	Cooling capacity	(kW)	201	191	183	177	168	161
	Power consumption	(kW)	32.4	36.5	40.7	42.3	46.4	49.5
	Chilled water flow rate	(L/min)	412	392	374	363	344	329
	Operation current	(A)	47.2	53.2	59.3	61.7	67.7	72.2
12	Cooling capacity	(kW)	219	208	200	194	184	176
	Power consumption	(kW)	32.9	37.3	41.6	43.7	47.8	50.9
	Chilled water flow rate	(L/min)	447	427	409	397	377	360
	Operation current	(A)	48.0	54.4	60.6	63.7	69.7	74.2
15	Cooling capacity	(kW)	230	219	209	203	194	186
	Power consumption	(kW)	33.0	37.9	42.1	44.1	48.6	51.7
	Chilled water flow rate	(L/min)	470	448	428	416	397	382
	Operation current	(A)	48.2	55.2	61.4	64.3	70.9	75.3
20	Cooling capacity	(kW)	229	219	211	206	198	191
	Power consumption	(kW)	33.0	37.8	42.2	44.5	49.0	52.2
	Chilled water flow rate	(L/min)	469	449	432	421	405	391
	Operation current	(A)	48.1	55.1	61.5	64.9	71.5	76.1
25	Cooling capacity	(kW)	229	219	211	206	198	191
	Power consumption	(kW)	33.0	37.8	42.2	44.5	49.0	52.2
	Chilled water flow rate	(L/min)	469	449	432	421	405	391
	Operation current	(A)	48.2	55.1	61.5	64.9	71.5	76.1
30	Cooling capacity	(kW)	228	219	211	206	191	191
	Power consumption	(kW)	35.0	37.8	42.2	44.5	52.2	52.2
	Chilled water flow rate	(L/min)	467	449	432	421	391	391
	Operation current	(A)	48.1	55.1	61.5	64.9	76.1	76.1

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.

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	166
	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	236	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	226	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	226	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 400V.
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・5)	Minimum water loop volume (L) (Note 4・5・6)	In-unit water volume (L)
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 raled 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.

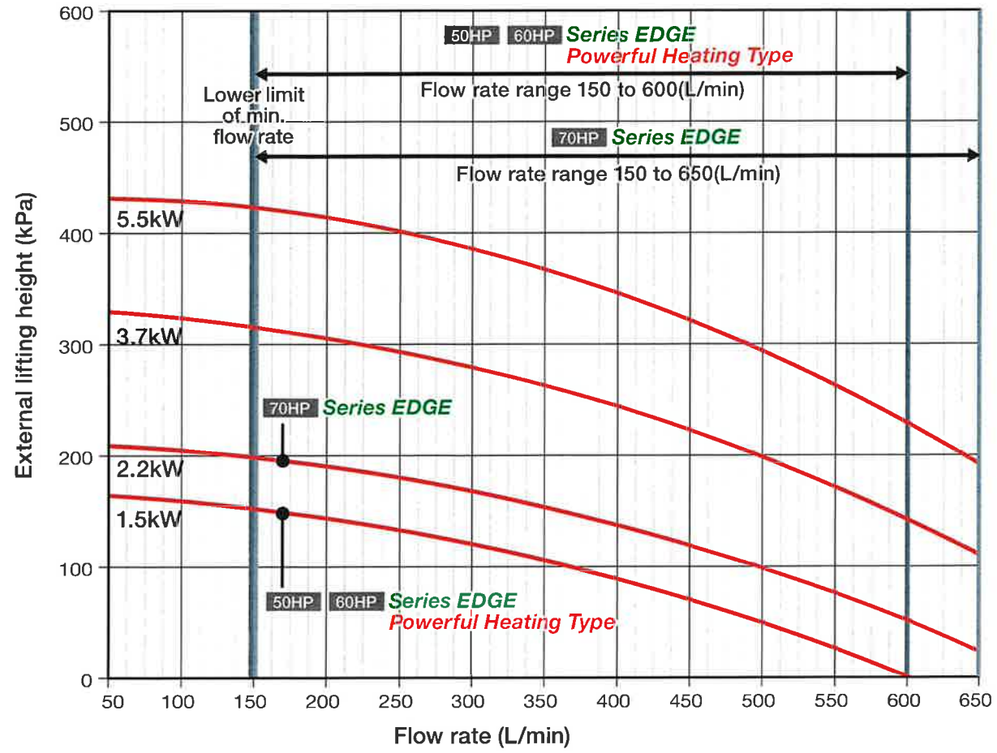
70HP Series EDGE

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)
1	410	51.2	150~650	956	36
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				150~650		
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.

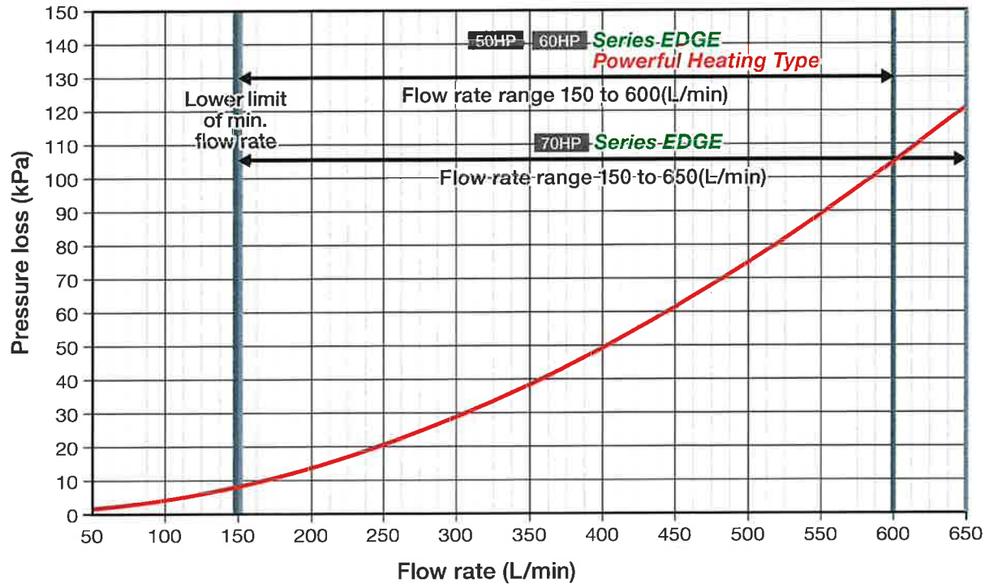
> Minimum flow rate=capacity x 860/60/10 (maximum temperature difference)
> *However, minimum flow amount must be at or above 150L/min
> Maximum flow amount=capacity x 860/60/5 (minimum temperature difference)
> *However, maximum flow amount must be at or below 600L/min for the 50HP and 60HP model, and 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				
Internal Pump	Power supply		50/60Hz 380V/400V/415V					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
Power Supply Design	No. of primary connecting parts for power supply wiring		No. of power connection terminals inside each module(M10)					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 Wiring (mm2)	IV: Power Supply ≤ 20m (mm²)	38					38	60			
		IV: Power Supply ≤ 50m (mm²)	38					38	60			
		CV: Power Supply ≤ 20m (mm²)	22					38				
		CV: Power Supply ≤ 50m (mm²)	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			
Internal Pump	Power supply		50/60Hz 380V/400V/415V					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
Power Supply Design	No. of primary connecting parts for power supply wiring		No. of power connection terminals inside each module(M10)					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 Wiring (mm2)	IV: Power Supply ≤ 20m (mm²)	60					60			
		IV: Power Supply ≤ 50m (mm²)	60					60			
		CV: Power Supply ≤ 20m (mm²)	38					38			
		CV: Power Supply ≤ 50m (mm²)	38					38			
	Ground		38					38			
	Switch	(A)	125					125			
	Fuse	(A)	125					125			
	Earth Leakage Circuit Breaker (Capacity)	(A)	125					125			
	Earth Leakage Circuit Breaker (Sensibility)	(mA)	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 mm²	Minimum cross-sectional area of the external protective copper conductor Sp mm²
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

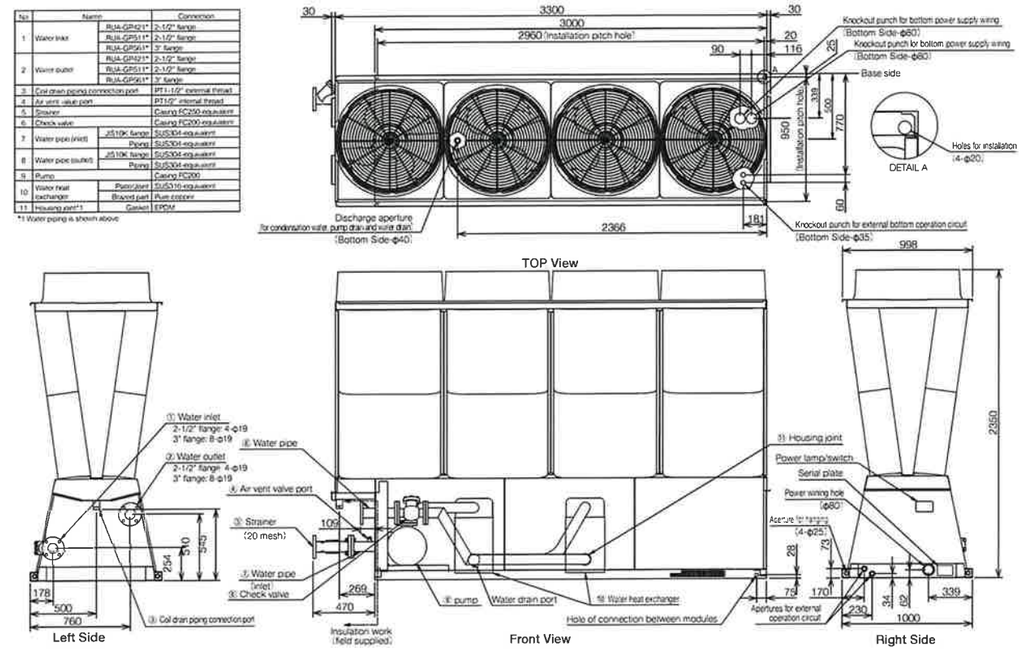
50, 60HP Series EDGE / Powerful Heating Type, 70HP Series EDGE With Pump/Pumpless

*Pumpless model does not include check valve

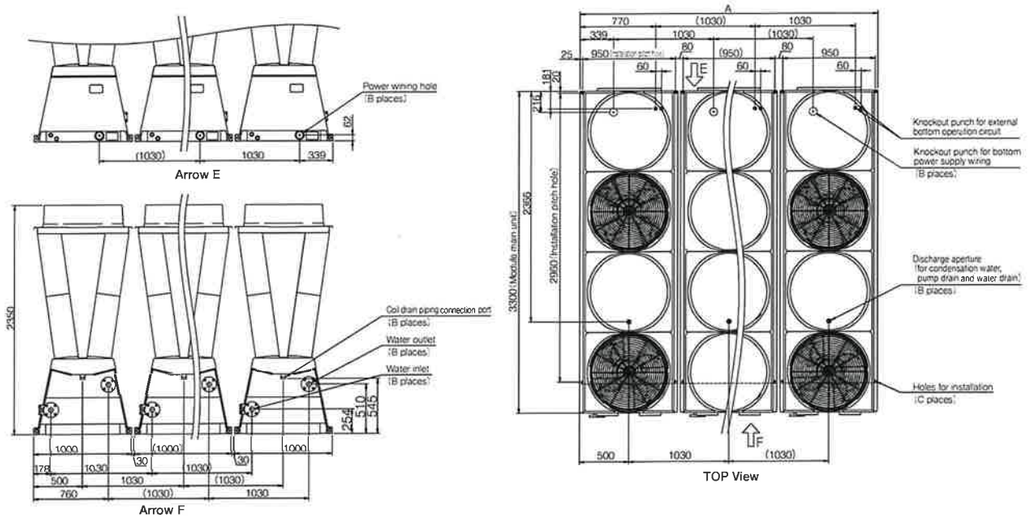
A single module unit

No.	Name		Connection
1	Water inlet	RUA-GP421*	2-1/2" flange
		RUA-GP511*	2-1/2" flange
		RUA-GP561*	3" flange
2	Water outlet	RUA-GP421*	2-1/2" flange
		RUA-GP511*	2-1/2" flange
		RUA-GP561*	3" flange
3	Coil drain piping connection port		PT1-1/2" external thread
4	Air vent valve port		PT1/2" internal thread
5	Strainer		Casing FC250 equivalent
6	Check valve		Casing FC200 equivalent
7	Water pipe (inlet)	JIS10K flange	SUS304 equivalent
		Piping	SUS304 equivalent
8	Water pipe (outlet)	JIS10K flange	SUS304 equivalent
		Piping	SUS304 equivalent
9	Pump		Casing FC200
10	Water heat exchanger	Plate/joint	SUS316 equivalent
		Brazed part	Pure copper
11	Housing joint*1	Gasket	EPDM

*1 Water piping is shown above



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 local service man.

Outline Drawing

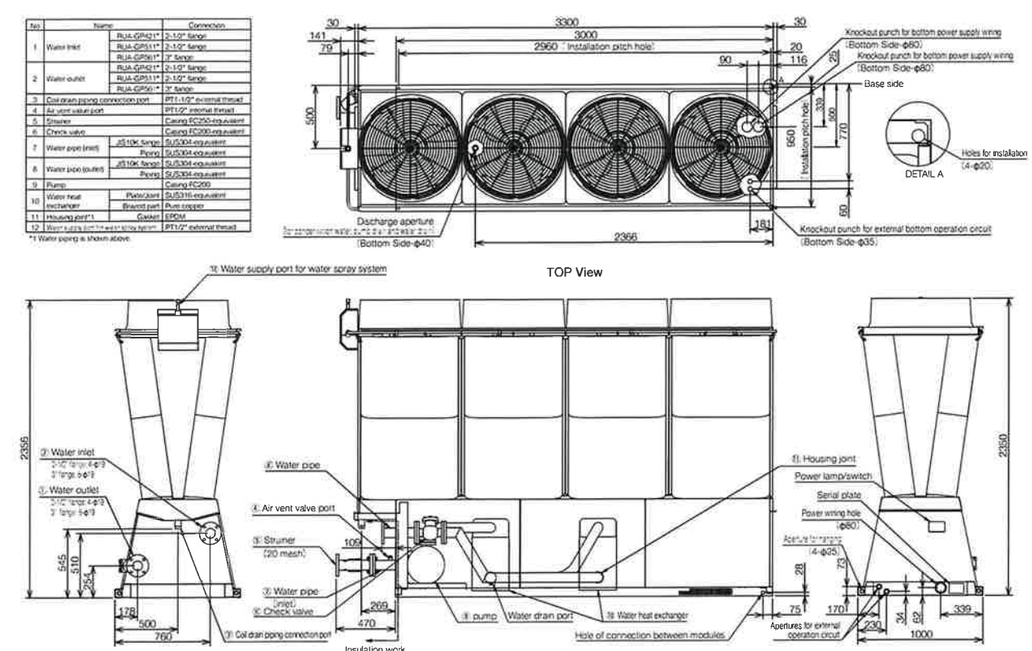
50, 60HP Series EDGE / Powerful Heating Type, 70HP Series EDGE - High EER - With Pump/Pumpless

*Pumpless model does not include check valve

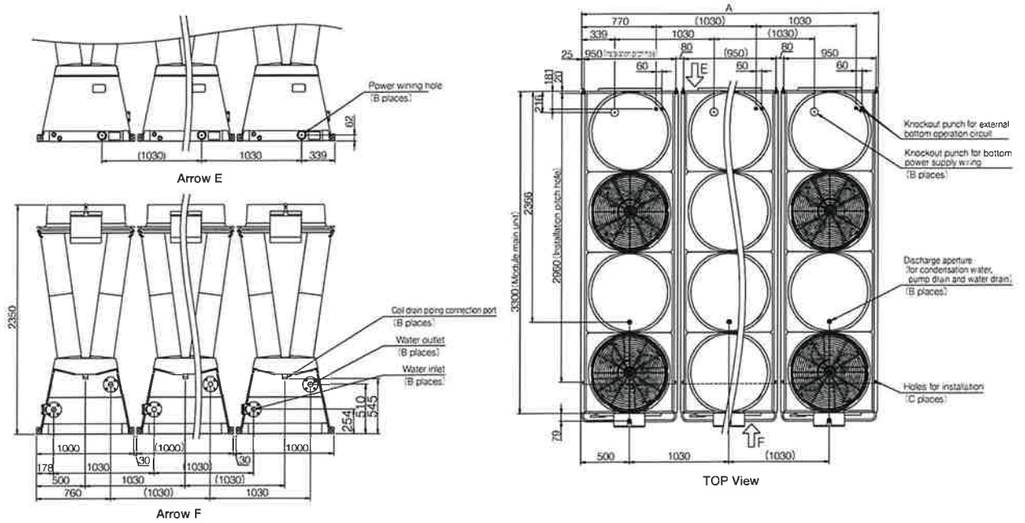
A single module unit

No.	Name		Connection
1	Water inlet	RUA-GP421*	2-1/2" flange
		RUA-GP511*	2-1/2" flange
		RUA-GP561*	3" flange
2	Water outlet	RUA-GP421*	2-1/2" flange
		RUA-GP511*	2-1/2" flange
		RUA-GP561*	3" flange
3	Coil drain piping connection port		PT1-1/2" external thread
4	Air vent valve port		PT1/2" internal thread
5	Strainer		Casing FC250 equivalent
6	Check valve		Casing FC200 equivalent
7	Water pipe (inlet)	JIS10K flange	SUS304 equivalent
		Piping	SUS304 equivalent
8	Water pipe (outlet)	JIS10K flange	SUS304 equivalent
		Piping	SUS304 equivalent
9	Pump		Casing FC200
10	Water heat exchanger	Plate/joint	SUS316 equivalent
		Brazed part	Pure copper
11	Housing joint*1	Gasket	EPDM
12	Water supply port for water spray system		PT1/2" external thread

*1 Water piping is shown above.



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

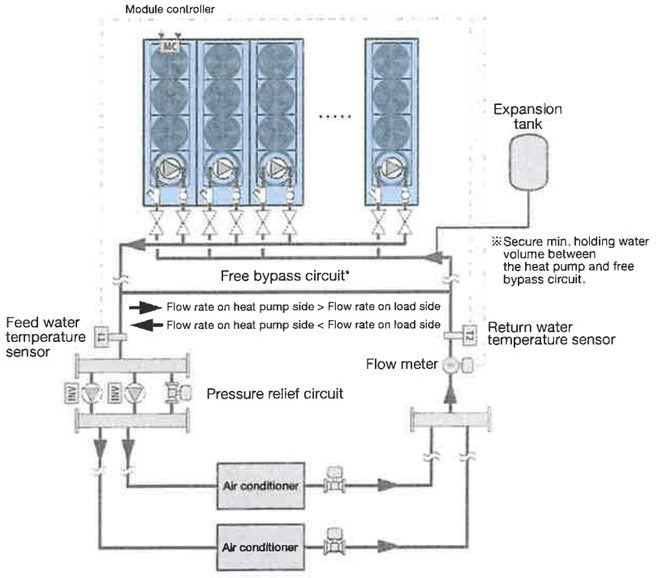
Note 1: The values indicated above are applied to A through C.
Note 2: When the power supply wiring kit (optional) is not used. Regarding the dimensions when the power supply wiring kit is installed, refer to the document of consent for power supply wiring kit.
Note 3: 30mm clearance space between modules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

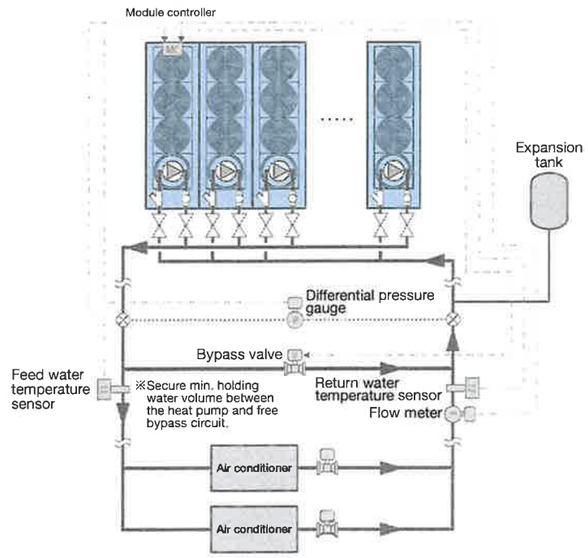
Part name	Specifications	Quantity	Provided locally	Constructed locally
Water temperature sensor (mandatory)	10kΩ external sensor	2	Attached to module controller	○
Flow meter	Able to measure instantaneous value support voltage/current output* (Able to adjust input range span: DC 0 to 5V)	1	○	○

* 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 5 V)

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).

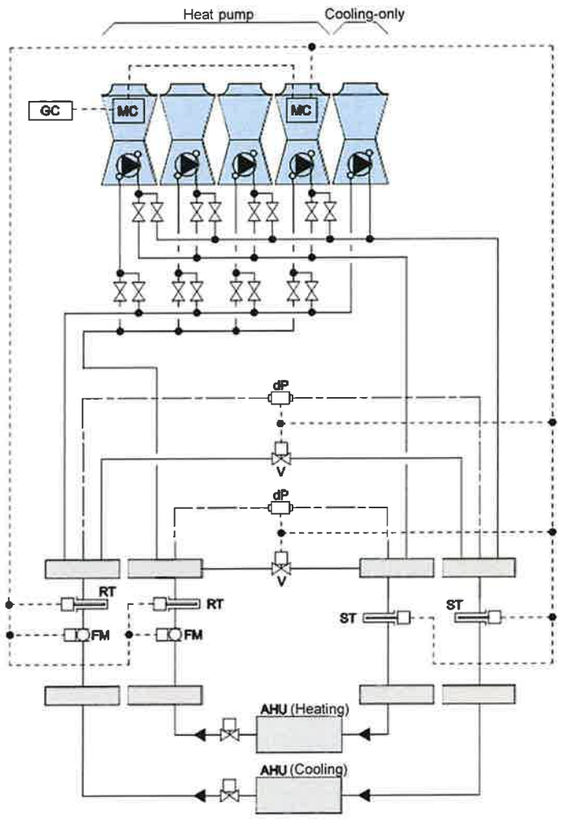
❁List of equipment for control

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 3 V)

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
Other	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-MC003SSFE
	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 Cooling-only	Series EDGE Heat pump	Powerful Heating Type Heat pump
50HP	Standard type	RUA-GP421C(*1)R8-E	RUA-GP421H(*1)R8-E	RUA-GP421F(*1)R8-E
	High-EER type	RUA-GP421C(*1)NR8-E	RUA-GP421H(*1)NR8-E	RUA-GP421F(*1)NR8-E
60HP	Standard type	RUA-GP511C(*1)R8-E	RUA-GP511H(*1)R8-E	RUA-GP511F(*1)R8-E
	High-EER type	RUA-GP511C(*1)NR8-E	RUA-GP511H(*1)NR8-E	RUA-GP511F(*1)NR8-E
70HP	Standard type	RUA-GP561C(*1)R8-E	RUA-GP561H(*1)R8-E	
	High-EER type	RUA-GP561C(*1)NR8-E	RUA-GP561H(*1)NR8-E	

Model		Pumpless		
		Series EDGE Cooling-only	Series EDGE Heat pump	Powerful Heating Type Heat pump
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 catalouge page 2 for model name's rules.

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) - (8°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)

Specifications Internal inverter pump

Brine specifications

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2350	2350
		Width	(Note 2) (mm)	1000	1000
		Depth	(Note 2) (mm)	3300	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	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 1,4)	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	Hermetic rotary
	Motor output × number of units		(kW)	9.0 x 4	9.0 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		(m³/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 8,11)	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	
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 × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Cold/Hot water outlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound power level				83.8	83.8
Required parts sold separately				Module controller (MC) (external sensor × 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.

Specifications Internal inverter pump

Brine specifications

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2350	2350
		Width	(Note 2) (mm)	1000	1000
		Depth	(Note 2) (mm)	3300	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	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 1,4)	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	Hermetic rotary
	Motor output × number of units		(kW)	9.0 x 4	9.0 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		(m³/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 8,11)	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
Drain pan heater			(W)	75 x 6	75 x 6
Capacity control steps			(Note 12) (%)	6 – 100	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 × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Cold/Hot water outlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound power level				83.8	83.8
Required parts sold separately				Module controller (MC) (external sensor × 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.

Specifications Internal inverter pump

Brine specifications

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	2350
		Width	(Note 2) (mm)	1000	1000
		Depth	(Note 2) (mm)	3300	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	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)	42.3(43.0)
		Nominal input	(kW)	39.8(40.0)	27.5(28.0)
		EER		2.51(2.50)	3.63(3.57)
		SEER		4.90	5.08
		Power factor	(Note 6) (%)	99	99
Compressor	Type			Hermetic rotary	Hermetic rotary
	Motor output × 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		(m³/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 fail uns, water pressure alarm)	
Piping diameters	Cold/Hot water inlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Cold/Hot water outlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound power level				83.8	83.8
Required parts sold separately				Module controller (MC) (external sensor × 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.

Specifications Internal inverter pump

Brine specifications

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	2350
		Width	(Note 2) (mm)	1000	1000
		Depth	(Note 2) (mm)	3300	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	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)	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
		Power factor	(Note 6) (%)	99	99
	Heating	Nominal current	(A)	78.7(80.1)	78.7(80.1)
		Nominal input	(kW)	51.3(52.2)	51.3(52.2)
		COP		3.51 (3.45)	3.51(3.45)
		SCOP		4.35	4.35
		Power factor	(Note 6) (%)	99	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		(m³/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	
	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 × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Cold/Hot water outlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound power level				83.8	83.8
Required parts sold separately				Module controller (MC) (external sensor × 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.

Specifications Internal inverter pump

Brine specifications

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-GP511F(*1)NR8-E
Cooling capacity				(kW)	118	118
Heating capacity				(kW)	200	200
Exterior	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height		(mm)	2350	2350
		Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	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	3-phase 4-wire 50/60Hz 380V/400V/415V
Reference current for power supply design			(Note 4, 5)		113	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
		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			4.23	4.23
		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			(m³/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
Drain pan heater				(W)	75 x 6	75 x 6
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 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					87.4	87.4
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) 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.

Specifications Internal inverter pump

Brine specifications

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				(kW)	118	118
Exterior	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height		(mm)	2350	2350
		Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	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	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)	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	Hermetic rotary
	Motor output x number of units			(kW)	9.8 x 4	7.4 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			(m³/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	
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)(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).
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.

Specifications Internal inverter pump

Brine specifications

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2350	2350
		Width (Note 2)	(mm)	1000	1000
		Depth (Note 2)	(mm)	3300	3300
Shipping weight			(kg)	1,376	1,389
Operating weight			(kg)	1,412	1,425
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)	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		(m³/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)	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
(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.

Specifications Internal inverter pump

Brine specifications

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
Exterior	Unit color			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height	(mm)	2350	2350
		Width (Note 2)	(mm)	1000	1000
		Depth (Note 2)	(mm)	3300	3300
Shipping weight			(kg)	1,337	1,350
Operating weight			(kg)	1,373	1,386
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)	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		(m³/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)	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.

Specifications Pumpless

Brine specifications

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)	Silky shade (Munsell 1Y8.5/0.5)
Exterior	Dimensions	Height	(mm)	2350	2350
Exterior	Dimensions	Width (Note 2)	(mm)	1000	1000
Exterior	Dimensions	Depth (Note 2)	(mm)	3300	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	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(60.9)	41.5(42.2)
Electrical data	Cooling	Nominal input	(kW)	39.8(39.7)	27.0(27.5)
Electrical data	Cooling	EER		2.51 (2.52)	3.70(3.64)
Electrical data	Cooling	SEER		4.88	5.06
Electrical data	Cooling	Power factor (Note 6)	(%)	99	99
Electrical data	Heating	Nominal current	(A)	63.1(63.9)	63.1(63.9)
Electrical data	Heating	Nominal input	(kW)	41.1(41.7)	41.1(41.7)
Electrical data	Heating	COP		3.65(3.60)	3.65(3.60)
Electrical data	Heating	SCOP		4.26	4.26
Electrical data	Heating	Power factor (Note 6)	(%)	99	99
Compressor	Type			Hermetic rotary	Hermetic rotary
Compressor	Motor output x number of units		(kW)	9.0 x 4	9.0 x 4
Compressor	Type of start			Inverter starter	Inverter starter
Compressor	Case heater		(W)	37 x 4	37 x 4
Compressor oil	Type			RB74AF	RB74AF
Compressor oil	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
Fan	Air quantity		(m³/min)	1,230 (max. value)	1,230 (max. value)
Fan	Type of start			Inverter starter	Inverter starter
Fan	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
Spray system (Note 8, 9)	Supply water pressure	(Note 10)	(MPa)	–	0.2
Spray system (Note 8, 9)	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
Refrigerant	R32 charge		(kg)	8.8 x 4	8.8 x 4
Refrigerant	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	
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)
Piping diameters	Cold/Hot water outlet			2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
Piping diameters	Coll 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)(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.

Specifications Pumpless

Brine specifications

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)	Silky shade (Munsell 1Y8.5/0.5)
Exterior	Dimensions	Height	(mm)	2350	2350
Exterior	Dimensions	Width (Note 2)	(mm)	1000	1000
Exterior	Dimensions	Depth (Note 2)	(mm)	3300	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)	79	79
Electrical data	Cooling	Nominal current	(A)	61.1(60.9)	41.5(42.2)
Electrical data	Cooling	Nominal input	(kW)	39.8(39.7)	27.0(27.5)
Electrical data	Cooling	EER		2.51(2.52)	3.70(3.64)
Electrical data	Cooling	SEER		4.88	5.06
Electrical data	Cooling	Power factor (Note 6)	(%)	99	99
Electrical data	Heating	Nominal current	(A)	63.1(63.9)	63.1(63.9)
Electrical data	Heating	Nominal input	(kW)	41.1(41.7)	41.1(41.7)
Electrical data	Heating	COP		3.65(3.60)	3.65(3.60)
Electrical data	Heating	SCOP		4.26	4.26
Electrical data	Heating	Power factor (Note 6)	(%)	99	99
Compressor	Type			Hermetic rotary	Hermetic rotary
Compressor	Motor output x number of units		(kW)	9.0 x 4	9.0 x 4
Compressor	Type of start			Inverter starter	Inverter starter
Compressor	Case heater		(W)	37 x 4	37 x 4
Compressor oil	Type			RB74AF	RB74AF
Compressor oil	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
Fan	Air quantity		(m³/min)	1,230 (max. value)	1,230 (max. value)
Fan	Type of start			Inverter starter	Inverter starter
Fan	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
Spray system (Note 8, 9)	Supply water pressure	(Note 10)	(MPa)	–	0.2
Spray system (Note 8, 9)	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
Refrigerant	R32 charge		(kg)	8.8 x 4	8.8 x 4
Refrigerant	Control			Electric expansion valve	Electric expansion valve
Drain pan heater			(W)	75 x 6	75 x 6
Capacity control steps			(Note 12) (%)	6 ~ 100	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)
Piping diameters	Cold/Hot water outlet			2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
Piping diameters	Coll 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)(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.

Specifications Pumpless

Brine specifications

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	2350
		Width	(Note 2) (mm)	1000	1000
		Depth	(Note 2) (mm)	3300	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)	79	79
Electrical data	Cooling	Nominal current	(A)	61.1(61.4)	42.3(43.0)
		Nominal input	(kW)	39.8(40.0)	27.5(28.0)
		EER		2.51(2.50)	3.63(3.57)
		SEER		4.90	5.08
		Power factor	(Note 6) (%)	99	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		(m³/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	Water spray volume		(L/min)	–	13.6 x 1
	Supply water pressure		(Note 10) (MPa)	–	0.2
	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)	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)(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).
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.

Specifications Pumpless

Brine specifications

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	2350
		Width	(Note 2) (mm)	1000	1000
		Depth	(Note 2) (mm)	3300	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	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)	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
		Power factor	(Note 6) (%)	99	99
	Heating	Nominal current	(A)	78.7(80.1)	78.7(80.1)
		Nominal input	(kW)	51.3(52.2)	51.3(52.2)
		COP		3.51 (3.45)	3.51(3.45)
		SCOP		4.35	4.35
		Power factor	(Note 6) (%)	99	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		(m³/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	Water spray volume		(L/min)	–	13.6 x 1
	Supply water pressure		(Note 10) (MPa)	–	0.2
	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)	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)(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.

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	2350
		Width	(Note 2) (mm)	1000	1000
		Depth	(Note 2) (mm)	3300	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)	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
		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		4.23	4.23
		Power factor	(Note 6) (%)	99	99
Compressor	Type			Hermetic rotary	Hermetic rotary
	Motor output × 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		(m³/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 8,11)	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
Drain pan heater			(W)	75 x 6	75 x 6
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 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 × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Cold/Hot water outlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound power level				87.4	87.4
Required parts sold separately				Module controller (MC) (external sensor × 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.

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	2350
		Width	(Note 2) (mm)	1000	1000
		Depth	(Note 2) (mm)	3300	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)	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	Hermetic rotary
	Motor output × number of units		(kW)	9.8 x 4	7.4 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		(m³/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 8,11)	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			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Cold/Hot water outlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound power level				83.8	83.8
Required parts sold separately				Module controller (MC) (external sensor × 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).
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.

Specifications Pumpless

Brine specifications

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height		(mm)	2350	2350
		Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	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	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	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			(m³/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				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)(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)NoB13/2013.
(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.

Specifications Pumpless

Brine specifications

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)	Silky shade (Munsell 1Y8.5/0.5)
	Dimensions	Height		(mm)	2350	2350
		Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	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	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	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			(m³/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	
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)(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).
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)NoB13/2013.
(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 Powerful Heating Type — Heat pump

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
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 Powerful Heating Type — Heat pump

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
30	Heating capacity	[kW]	103	118	134	150	165	152	181
	Power consumption	[kW]	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	50.7	51.4	51.6	52.3	42.7	42.3
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	369
	Operation current	[A]	53.6	55.1	56.3	57.4	58.0	46.0	48.4
40	Heating capacity	[kW]	102	116	132	149	163	151	176
	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
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
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
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: ▭ are displaying maximum capacities. * indicates maximum flow rate. ⊿t 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.

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
-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	226	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

Capacity Chart

Brine specifications

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

60HP Series EDGE Powerful Heating Type — Heat pump

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
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 — Heat pump

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
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
35	Heating capacity	[kW]	121	138	156	176	192	181	213
	Power consumption	[kW]	43.7	45.4	46.4	47.8	49.2	41.9	42.3
	Warm water flow rate	[L/min]	248	283	320	360	393	371	436
	Operation current	[A]	64.3	66.9	68.4	70.4	71.8	61.1	61.6
40	Heating capacity	[kW]	120	137	156	175	191	181	212
	Power consumption	[kW]	46.9	48.9	50.6	52.1	53.8	46.4	47.3
	Warm water flow rate	[L/min]	246	281	319	359	392	370	434
	Operation current	[A]	69.0	72.1	74.6	76.7	78.4	67.7	69.0
45	Heating capacity	[kW]	119	136	155	175	189	180	211
	Power consumption	[kW]	50.0	52.5	54.6	56.8	58.0	51.0	52.5
	Warm water flow rate	[L/min]	244	279	317	358	386	369	431
	Operation current	[A]	73.6	77.3	80.4	82.8	84.5	74.3	76.5
50	Heating capacity	[kW]		135	152	167	177	179	209
	Power consumption	[kW]		56.3	57.8	58.2	58.2	55.6	57.4
	Warm water flow rate	[L/min]		277	311	342	363	367	429
	Operation current	[A]		82.8	85.1	84.8	84.9	81.1	83.7
55	Heating capacity	[kW]			143	155	164	172	194
	Power consumption	[kW]			58.4	58.1	58.0	57.9	57.4
	Warm water flow rate	[L/min]			292	318	335	351	397
	Operation current	[A]			85.1	84.6	84.5	84.4	83.7

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. ⊿t 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.

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
-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	58.6	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 Powerful Heating Type — Heat pump

List of heating capacities RUA-GP511F (L)R

Warm water outlet temperature(°C)	Item		Outside air temperature (°C) (DB)							
			-20	-15	-10	-5	0	4	7	15
25	Heating capacity	[kW]	137	153	174	196	214	231	203	237
	Power consumption	[kW]	48.8	49.7	50.9	51.4	51.3	52.4	38.5	37.9
	Warm water flow rate	[L/min]	280	314	356	401	437	473	415	485
	Operation current	[A]	73.2	73.9	75.7	75.8	75.6	77.2	56.7	55.2
30	Heating capacity	[kW]	137	154	175	196	213	230	202	235
	Power consumption	[kW]	52.9	54.6	56.1	56.8	56.8	58.2	43.4	43.2
	Warm water flow rate	[L/min]	280	315	357	402	436	471	414	482
	Operation current	[A]	79.4	81.3	83.5	83.7	83.7	85.8	63.3	63.0
35	Heating capacity	[kW]	136	153	175	197	213	229	201	235
	Power consumption	[kW]	56.7	58.8	61.2	62.5	62.3	63.6	48.2	48.9
	Warm water flow rate	[L/min]	279	314	357	402	436	469	412	481
	Operation current	[A]	85.0	87.6	90.1	92.1	91.7	93.7	70.3	71.2
40	Heating capacity	[kW]	135	153	174	196	212	229	200	234
	Power consumption	[kW]	60.5	63.5	65.9	67.8	67.3	69.2	53.1	54.3
	Warm water flow rate	[L/min]	276	312	356	402	434	468	410	479
	Operation current	[A]	90.8	94.5	97.1	99.9	99.1	102	77.3	79.2
45	Heating capacity	[kW]	132	151	173	192	208	221	200	233
	Power consumption	[kW]	63.5	67.4	70.6	71.4	71.0	71.3	58.1	59.9
	Warm water flow rate	[L/min]	270	309	354	392	426	453	410	477
	Operation current	[A]	95.1	99.3	104	105	105	104	84.8	87.3
50	Heating capacity	[kW]		148	164	180	196	208	200	232
	Power consumption	[kW]		70.8	71.3	70.9	70.8	71.0	63.3	65.7
	Warm water flow rate	[L/min]		304	336	369	401	425	410	474
	Operation current	[A]		104	105	104	103	104	92.3	95.8
55	Heating capacity	[kW]				159	181	193	196	222
	Power consumption	[kW]				65.7	69.1	69.9	67.4	67.1
	Warm water flow rate	[L/min]				327	371	396	401	454
	Operation current	[A]				96.8	101	102	98.0	98.0

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. ⊿t 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)

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 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	56.6	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	406	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. ⊿t 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.

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]	99.7	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	75.5	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	62.6	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

Capacity Chart

Brine specifications

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

50HP Series EDGE Powerful Heating Type Heat pump

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 Powerful Heating Type Heat pump

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	39.6	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	57.0
-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	118	114	111	109	105	103
		Power consumption	[kW]	30.2	33.5	36.7	38.7	39.9	43.2	45.2
		Chilled water flow rate	[L/min]	388	372	359	350	344	331	325
		Operation current	[A]	44.1	48.9	53.5	56.5	58.5	63.0	66.0
0	20	Cooling capacity	[kW]	156	149	142	137	134	127	124
		Power consumption	[kW]	32.7	36.3	39.7	41.8	43.2	46.5	47.9
		Chilled water flow rate	[L/min]	478	457	435	420	411	389	380
		Operation current	[A]	47.7	53.0	58.0	61.0	63.5	68.0	70.0

70HP Series EDGE Heat pump

List of cooling capacities RUA-GP561H(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]	137	132	127	124	122	118	117
		Power consumption	[kW]	35.2	38.8	42.3	44.4	45.9	49.4	51.1
		Chilled water flow rate	[L/min]	432	416	400	391	385	372	369
		Operation current	[A]	51.5	57.0	62.0	65.0	67.0	72.0	74.5
0	20	Cooling capacity	[kW]	173	164	157	152	149	142	138
		Power consumption	[kW]	39.0	43.0	46.4	48.6	50.0	53.6	55.4
		Chilled water flow rate	[L/min]	531	503	481	466	457	435	423
		Operation current	[A]	57.0	63.0	68.0	71.0	73.0	78.5	81.0

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

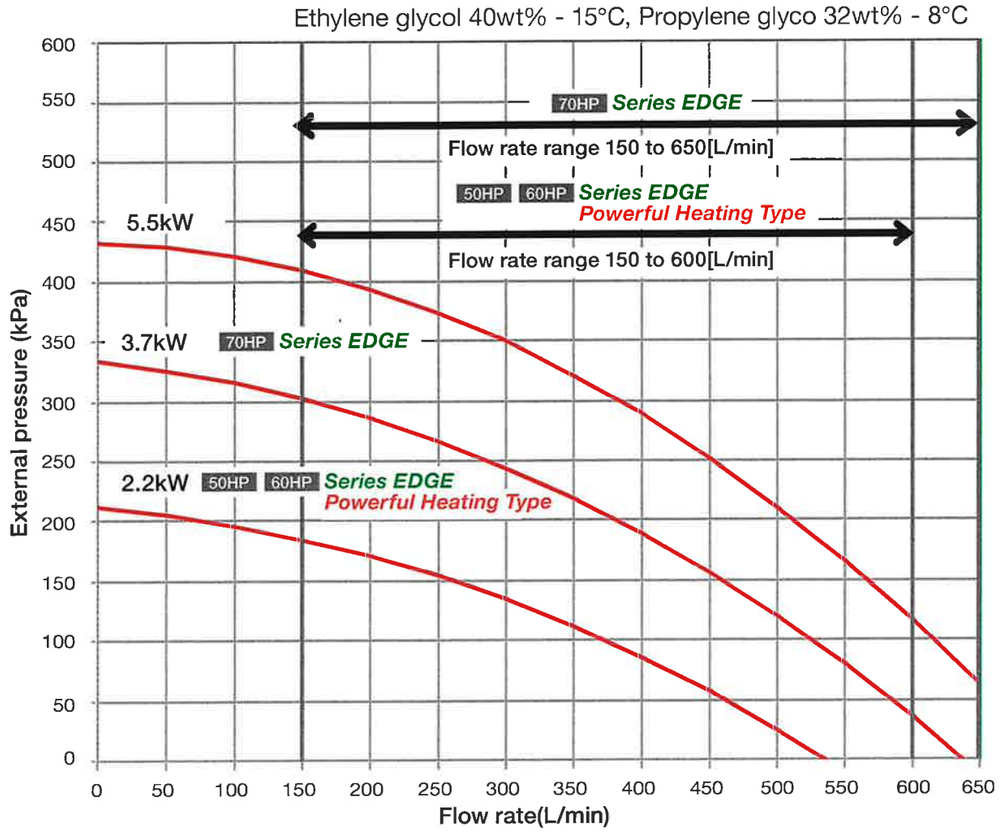
List of cooling capacities RUA-GP561C(L)NR

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]	94.4	90.9	87.2	85.0	83.5	79.6	78.0
		Power consumption	[kW]	30.5	33.4	36.3	37.9	39.2	42.1	43.3
		Chilled water flow rate	[L/min]	314	303	290	283	278	265	260
		Operation current	[A]	44.4	48.8	53.0	55.5	57.5	61.5	63.5
-10	34	Cooling capacity	[kW]	114	110	106	103	101	96.8	95.0
		Power consumption	[kW]	32.3	35.5	38.7	40.7	41.9	45.0	46.3
		Chilled water flow rate	[L/min]	369	356	343	333	327	313	307
		Operation current	[A]	47.1	52.0	56.5	59.5	61.5	66.0	68.0
-7	30	Cooling capacity	[kW]	128	123	118	115	114	109	107
		Power consumption	[kW]	33.6	37.2	40.5	42.4	43.8	47.2	48.9
		Chilled water flow rate	[L/min]	407	391	375	366	362	347	340
		Operation current	[A]	49.0	54.5	59.5	62.0	64.0	69.0	71.5
-5	28	Cooling capacity	[kW]	137	132	127	124	122	117	116
		Power consumption	[kW]	34.7	38.3	41.8	44.0	45.4	49.2	50.9
		Chilled water flow rate	[L/min]	432	416	400	391	385	369	366
		Operation current	[A]	51.0	56.0	61.0	64.5	66.5	72.0	74.5
0	20	Cooling capacity	[kW]	173	164	157	152	149	141	138
		Power consumption	[kW]	38.4	42.4	45.8	47.9	49.5	53.4	54.8
		Chilled water flow rate	[L/min]	531	503	481	466	457	432	423
		Operation current	[A]	56.0	62.0	67.0	70.0	72.5	78.0	80.0

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

		50HP, 60HP model			70HP model	
Pump output	(kW)	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

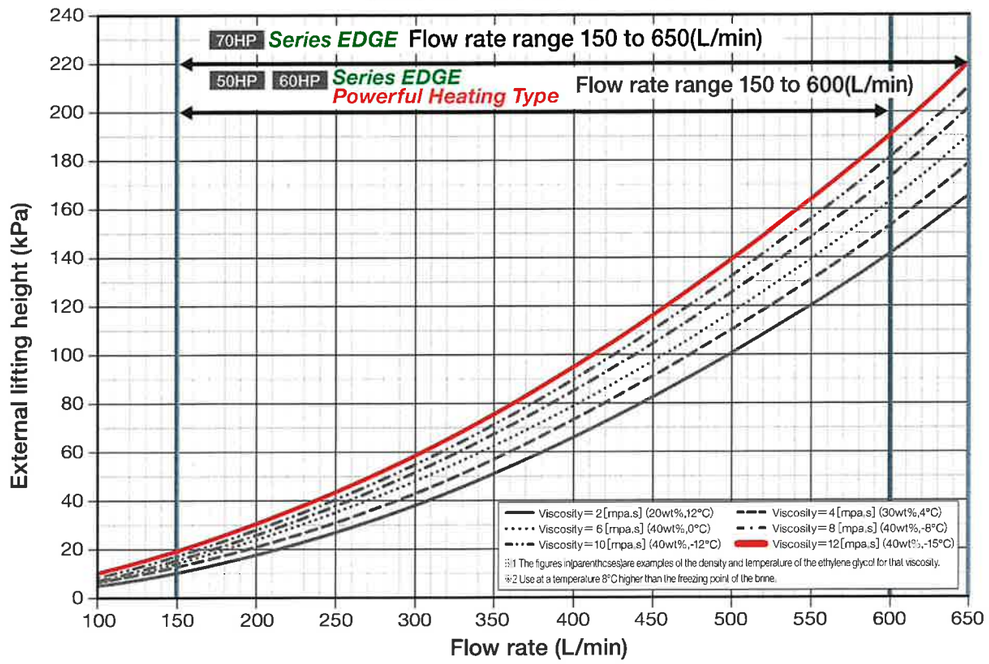
Note 2: Lifting height outside of the unit shown in the table is the value when the pump frequency is 60Hz at the flow rate range above.
The pump lift outside of the machine is the value reached when subtracting the resistance inside the machine from the total pump lift.
Note 3: Max. current and max. 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.

Internal resistance curve during brine use
(pumpless model, ethylene glycol)



Internal resistance curve during brine use
(pumpless model, propylene glycol)