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

Toshiba refrigeration and air-conditioning units are designed and manufactured on the assumption that the product is used with a specific refrigerant suitable for each unit.

The type of refrigerant used for each of our products is shown in the accompanying owners manual, or on the product label attached to the product itself.

Toshiba Carrier corporation shall not assume any liability for failures, malfunctions or safety in its products if the refrigerant used is different from the one specified.

SAFETY PRECAUTIONS

Please see the technical Document for details.

TOSHIBA

UNIVERSAL SMART X



Inverter Modular Chiller



Better Air Solutions

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.



Air-cooled Inverter Modular Chiller for Diverse Customer Needs







UNIVERSAL SMART X Series EDGE

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



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

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, UK : United Kingdom, TR : Turkey

- 8: 3ph 4wires 50Hz/60Hz
 - 380 415V
- - Blank: Water/R: Brine

• Blank: Standard type/ N: High - EER type

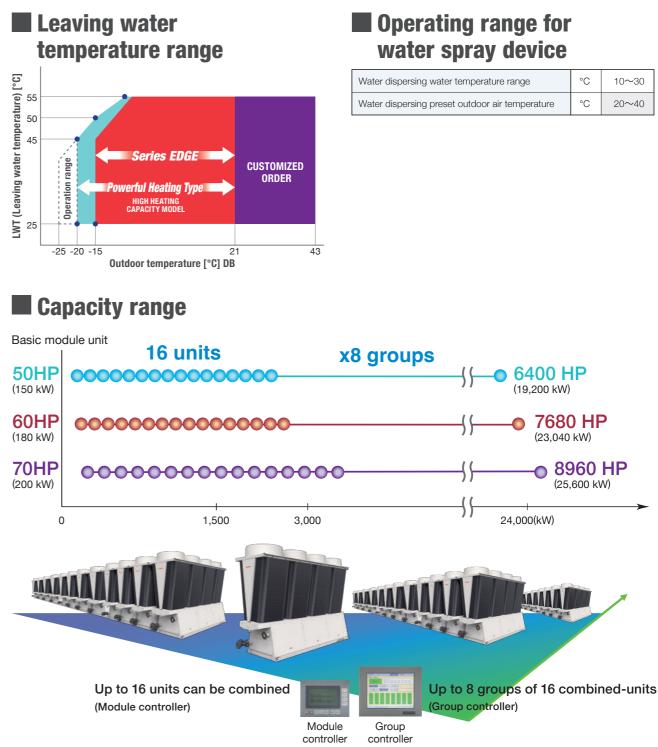
Operation range

Series EDGE 50HP 60HP 70HP

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

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

Note 3: Depending on the outdoor air temperature, leaving hot water temperature is limited as below.



Powerful	Powerful Heating Type 50HP 60HP												
(Note 1)	Cooling ^(Note 5)		4~30										
Leaving water temperature	Heating ^(Note 2 • 3)		25~55										
	Temperature difference (inlet/outlet)	°C	5~10										
Outside air	Cooling		-15~52 ^(Note 4)										
temperature	Heating ^(Note 2 • 3)		-20~21DB、15.5WB										

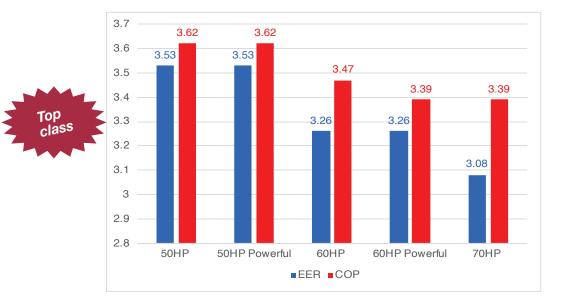
Note 4: The range of water temperature control may become larger when the cooling operation load is low.

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

Feature

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.



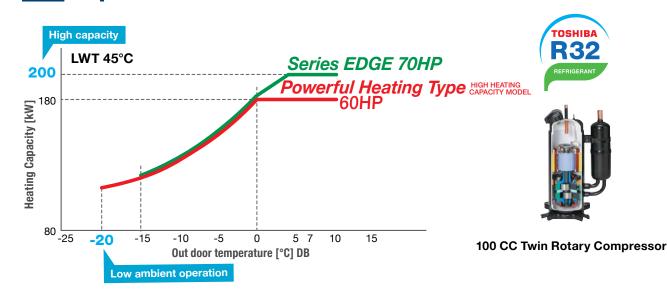
*Conditions:

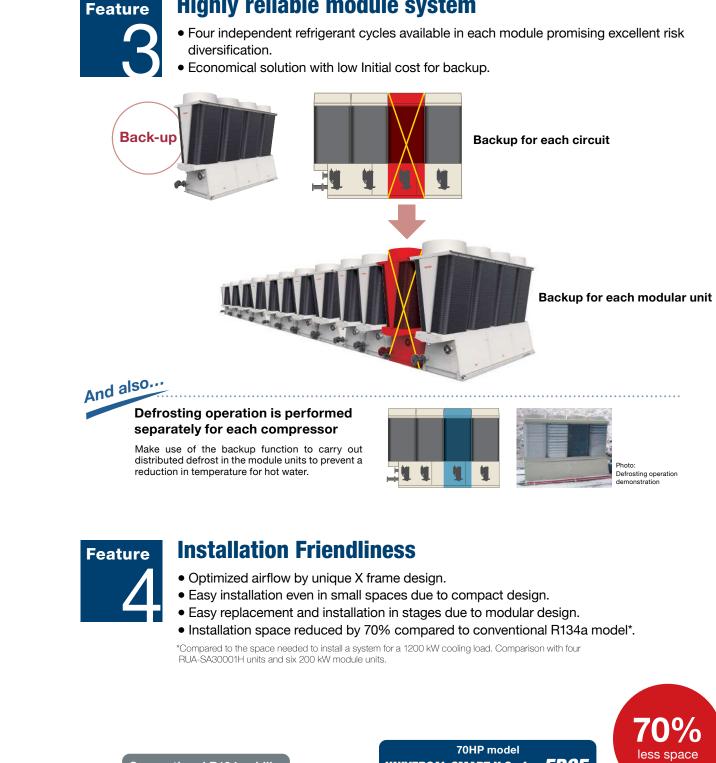
Cooling EER LWT 7C, EWT 12C, OAT 35C Heating COP LWT 45C, EWT 40C, OAT 7CDB, 8CWB

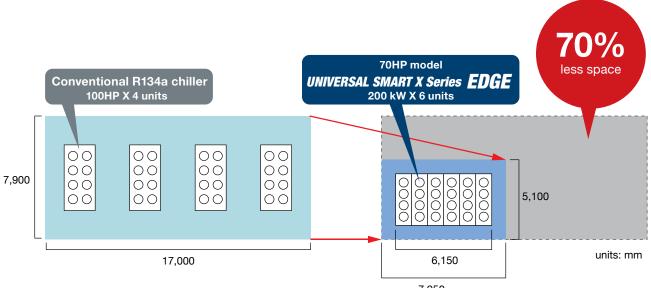


Large Capacity DC Inverter Twin Rotary Compressor

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.







Highly reliable module system

7,950

Outstanding Harmonic Suppression

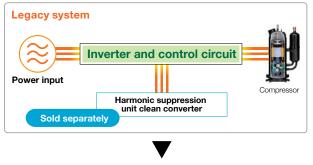




The harmonic suppression function is installed as a standard feature on all models and achieves a power factor of up to 99%. This decreases electric transformer volume as well as reducing installation costs.

PWM Converter Benefits

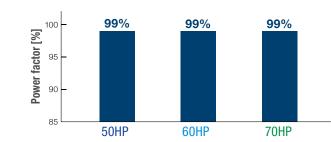
- 1 Eliminates problems caused by harmonic current
- 2 Reduces consumption volume of power generator and electrical equipment



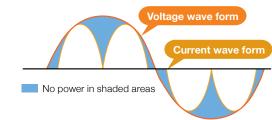


99% Power Factor Benefits

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



Efficiency reduction projection





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**

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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.

Exceptional environmental factors such as blizzard conditions or ice may

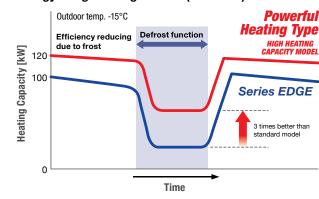
Performance between -20°C and -25°C is not guaranteed.

inhibit operation in temperatures of -20°C or lower.

Heating Type model is capable of reducing capacity loss by three times during defrost than standard models.

Thanks to a new, advanced controller, the Powerful

Energy Usage During Defrost (1 module)



Excellent Control System Feature Easy to use and collect data with several types of control available. Central Control -----Modbus® *Increased communication data volume will be charged Group Controller

(sold separately)

Flash Monitor (Optional part)

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

	ltem	Notes			
	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			
Operating	For each module controller	Start/Stop, Operational mode, Error code, Operational capacity, LWT/EWT, Flow conversion volume, Basic capabilities, Basic input, Basic COP			
status display	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			
Operation	al 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			
Operation	al mode settings (Switch)	Enables setting and switching the operation mode for entire system.			
Preset terr	nperature changes	All model temperature settings can be changed.			
Current de	emand settings	Electrical current demand can be configured.			
System se	ttings	All connected modules can be systematically classified. (for each module controller system)			
Schedule	settings	Operational schedule can be configured. (monthly, weekly, daily)			
Error histo	ory display	Error history can be verified.			
Operational data savings		Displayed data can be saved to MMC.			
Trend disp	blay	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 sav	ing	Enables switching the demand setting to validation or invalidation.			

Wifi Data Analysis

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

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

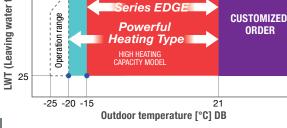


Supported tablets: Android 5.0 or higher 10.1" screen recommended *The machine is not designed for use in all regions. Please contact a representative for details



Operating Status/Main Screen Operating Status/System Data Operating Trends Confirmation Screen

(capacity, input, COP) Confirmation Screen Data displayed over a time frame which is easy to confirm or adjust.



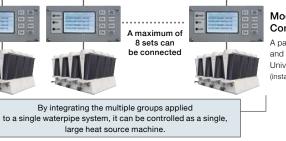
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11 50

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Piping systems are separated by the set applied to the different water pipe systems, and can be controlled individually according to their application and method of use.



Module Controller

A part sold separately and required for a Universal Smart X1 set nstalled inside the unit)

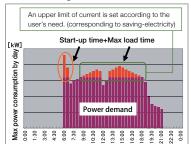


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Visualize the operating status of module controller and unit controller! It allows safe and quick operations even in bad weather!!

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



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



UNIVERSAL SMART X Series EDGE

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



Specifications Internal inverter pump

50HP Series EDGE Heat pump

				Standard type	High-EER type
				380V /400V/ 415V	380V /400V/ 415V
Model (A	A single modu	e unit)		RUAGP421H18	RUAGP421H1N8
	capacity	,	(Note 1) (kW)	150	150
	capacity		(Note 1) (kW)	150	150
	Unit color		()	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
o.		Height (mm)		2,350	2,350
Exterior	Dimensions	Width	(Note 2) (mm)	1,000	1,000
ш	Birnonorio	Depth	(Note 2) (mm)	3,300	3,300
Shipping	a weiaht		(kg)	1,348	1,360
	ng weight		(kg)	1,384	1,396
Power s			(Note 1- 3)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		wer supply design	(Note 4-5) (A)	82.1	82.1
		Nominal current	(A)	65.3	42.8
		Nominal input	(kW)	42.5	27.9
	Cooling	EER	()	3.53	5.38
lata		SEER		4.88	5.06
Electrical data		Power factor	(Note 6) (%)	99	99
ectri		Nominal current	(/3) (A)	63.6	63.6
Ē	Heating	Nominal input	(kW)	41.4	41.4
		COP	()	3.62	3.62
	liteating	SCOP		4.26	4.26
(Note 7)		Power factor	(Note 6) (%)	99	99
L	Туре		(70)	Hermetic rotary x 4	Hermetic rotary x 4
Compressor		t×number of units	(kW)	9.0 x 4	9.0 x 4
npre	Type of start		()	Inverter starter	Inverter starter
CO	Case heater (W)			37 x 4	37 x 4
	Туре		()	RB74AF	RB74AF
Compre	issor oil	Charge	(L)	2.0 × 4	2.0 x 4
Conden	ser coil - air si		(4)	Plate fin coil	Plate fin coil
	Туре			Propeller fan	Propeller fan
~	Air quantity		(m³/min)	1,230 (maximum)	1,230 (maximum)
Fan	Type of start		(,	Inverter starter	Inverter starter
		t x number of units	(kW)	1.2 x 4	1.2 x 4
litetskis	Water spray		(L/min)	-	13.6 x 1
Spray sys	Supply wate		(Note 9) (MPa)	-	0.2
(Note 8)	Control	prosourc	(1411 Cd)	-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor output		(kW)	1.5	1.5
	Туре		()	Centrifugal pump	Centrifugal pump
Pump	Flow control			Inverter	Inverter
đ	Maximum cu	rrent	(A)	3.1	3.1
	Minimum inp		(kW)		2
Cooler -	water side		(Note 10)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
	Type			R32	R32
Refrigerant	R32 charge		(kg)	8.8 x 4	8.8 x 4
Refri	Control		(19)	Electric expansion valve	Electric expansion valve
Canacity	y control steps	 ,	(Note 11) (%)	0; 5~100	0; 5~100
	on control		(70)	· · · · · · · · · · · · · · · · · · ·	ater temperature and temperature difference
Defrost :				Distributed reverse cycle system	Distributed reverse cycle system
	ve device			High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze t protection, low pressure cutout, thermistor error, high water pressure error)
22	Cold/Hot wa	ter inlet	(A)		2-1/2" flange (JIS10K)
Piping diameters					2-1/2" flange (JIS10K)
ä	Cold/Hot water outlet (A)				
Pipi	Coil drain		(A)	PT1-1/2" external thread	PT1-1/2" external thread

(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 (off) for High EER type) as indicated above.
Design water flow rate must be within the range of 5 to 10°C water temperature (off) 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 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)

(Provided locally)

(Provided locality) (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

50HP Powerful Heating Type Heat pump

				Standard type	High-EER type
				380V /400V/ 415V	380V /400V/ 415V
Model (A	A single modul	e unit)		RUAGP421F18	RUAGP421F1N8
Cooling	capacity		(Note 1) (V) 150	150
leating	capacity		(Note 1) (V) 150	150
	Unit color			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
Exterior	Height		(r	n) 2,350	2,350
EXte	Dimensions	Width	(Note 2) (Г	n) 1,000	1,000
		Depth	(Note 2) (r	n) 3,300	3,300
hipping	g weight			a) 1,359	1,371
peratir	ng weight			3) 1,395	1,407
ower s	upply		(Note 1-3)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
eferend	ce current for p	ower supply design	(Note 4-5)	A) 82.1	82.1
		Nominal current		A) 65.3	42.8
		Nominal input	(1	V) 42.5	27.9
σ	Cooling	EER		3.53	5.38
l dat		SEER		4.88	5.06
trica		Power factor	(Note 6)	6) 99	99
Electrical data		Nominal current		A) 63.6	63.6
		Nominal input	(1		41.4
	Heating	COP		3.62	3.62
		SCOP		4.26	4.26
(Note 7)		Power factor	(Note 6)	6) 99	99
sor	Туре			Hermetic rotary x 4	Hermetic rotary x 4
Compressor	Motor output × number of units (kW)				9.0 × 4
tu og	Type of start			Inverter starter	Inverter starter
0	Case heater			V) 37 x 4	37 x 4
Com	pressor oil	Туре		RB74AF	RB74AF
		Charge		L) 2.0 × 4	2.0 x 4
	1	coil - air side		Plate fin coil	Plate fin coil
	Туре			Propeller fan	Propeller fan
Fan	Air quantity		(m ³		1,230 (maximum)
-		Type of start		Inverter starter	Inverter starter
		x number of units	(1		1.2 x 4
Spray system	Water spray		(L/r		13.6 x 1
	Supply water	pressure	(Note 9) (N		0.2
(Note 8)	Control			-	Continuous spraying when outside temperature and compressor capacity exceeds setting value
	Motor output		(1		1.5
d	Туре			Centrifugal pump	Centrifugal pump
Pump	Flow control			Inverter	Inverter
	Maximum cu			A) 3.1	3.1
	Minimum inp		(Note 10)		2
	1	water side	(Note TO)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
jerant	Type			R32	R32
Refrigerar	R32 charge			g) 8.8 x 4	8.8 x 4
	Control			Electric expansion valve	Electric expansion valve
	an heater			V) 75 x 6	75 × 6
	y control steps		(NOLE 11)	6) 0; 5~100	0; 5~100
	on control				ring water temperature and temperature difference
	system ve device				Distributed reverse cycle system n, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze overheat protection, low pressure cutout, thermistor error, high water pressure error)
16	Cold/Hot	tor inlot			
Aping diameters	Cold/Hot wa			A) 2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
lping d	Cold/Hot wa Coil drain	ler Outlet		A) 2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
	u coll grain			A) PT1-1/2" external thread	PT1-1/2" external thread

(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 (BWT), 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 5) Arways initial at early relative and the area of the are (Note 1) Adjust the now rate to become close to this supply water pressure with the manual now adju (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
Coolina	capacity		(Note 1)	(kW)	150	150
	Unit color			. ,	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
j.		Height		(mm)	2,350	2,350
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	3,300
Shippin	g weight			(kg)	1,309	1,322
	ng weight			(kg)	1,345	1,358
Power s			(Note 1-3)	,	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		power supply design	(Note 4-5)	(A)	82.1	82.1
		Nominal current		(A)	66.2	44
al da		Nominal input		(kW)	43.1	28.7
Electrical data	Cooling	EER		()	3.48	5.23
Elec		SEER			4.9	5.08
(Note 7)		Power factor	(Note 6)	(%)	99	99
~	Туре	1		(, .,	Hermetic rotary x 4	Hermetic rotary x 4
Compressor		t×number of units		(kW)	8.7 x 4	7.2 x 4
npre	Type of start			((()))	Inverter starter	Inverter starter
Ö	Case heater			(W)	37 x 4	37 x 4
	Ouse rieuter	Туре		(**)	RB74AF	BB74AF
Compre	essor oil	Charge		(L)	2.0 x 4	2.0 x 4
Conden	iser coil - air si			(⊏)	Plate fin coil	Plate fin coil
Condon	Туре				Propeller fan	Propeller fan
_	Air quantity			(m³/min)	1,230 (maximum)	1,230 (maximum)
Fan	Type of start			un many	Inverter starter	Inverter starter
		Aotor output x number of units (kW)			1.2 x 4	1.2 x 4
> F	Water spray		(L/min)	-	13.6 x 1
Spray system	Supply wate			(MPa)	-	0.2
(Note 8)	Control	prosoure		(ivii d)	-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor output	t		(kW)	1.5	
	Туре			((())	Centrifugal pump	Centrifugal pump
Pump	Flow control				Inverter	Inverter
٦	Maximum cu			(A)	3.1	3.1
	Minimum ing			(kW)	2	2
Cooler -	• water side		(Note 10)	((())	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
	Type				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
Refri	Control			(rg)	Electric expansion valve	Electric expansion valve
Canacit	y control steps	3	(Note 11)	(%)	0; 5~100	0; 5~100
	on control	,	. ,	(70)		ater temperature and temperature difference
Defrost					Distributed reverse cycle system	Distributed reverse cycle system
	ve 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, low pressure cutout, thermistor error, high water pressure error)
Sig	Cold/Hot wa	iter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Piping diameters	Cold/Hot wa			(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Piping	Coil drain			(A)	PT1-1/2" external thread	PT1-1/2" external thread
<u> </u>	ower level			dB(A)	83.8	83.8

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows,

(Note 1) Frated continuous, such as capacity, electrical data, and standard not varie are as notices.
 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 instal 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 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 value 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.

60HP Series EDGE Heat pump

					Standard type	High-EER type
					380V /400V/ 415V	380V /400V/ 415V
Model (A	A single modu	le unit)			RUAGP511H18	RUAGP511H1N8
Cooling	capacity		(Note 1)	(kW)	180	180
	capacity		(Note 1)	(kW)	180	180
	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
ior		Height		(mm)	2,350	2,350
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	3,300
Shipping	g weight	1 .1		(kg)	1,348	1,360
	ng weight			(kg)	1,384	1,396
Power s			(Note 1-3)	(3/	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		wer supply design	(Note 4-5)	(A)	103	103
	1	Nominal current		(A)	84.8	57.3
		Nominal input		(kW)	55.2	37.3
	Cooling	EER		()	3.26	4.82
lata	Cooling	SEER			4.77	4.94
Electrical data		Power factor	(Note 6)	(%)	99	99
ectri		Nominal current		(70) (A)	79.6	79.6
Ш		Nominal input		(kW)	51.9	51.9
	Heating	COP		(RVV)	3.47	3.47
	rieating	SCOP			4.35	4.35
(Note 7)		Power factor	(Note 6)	(%)	99	99
	T./DO			(70)	Hermetic rotary x 4	Hermetic rotary x 4
Compressor					11.2 x 4	11.1 x 4
ubre	Motor output×number of units (kW)		(KVV)			
5	Type of start Case heater			0.0.0	Inverter starter	Inverter starter
	Case nealer	Time		(W)	37 x 4 RB74AF	37 x 4 RB74AF
Compre	ssor oil	Type		(1)		
0		Charge		(L)	2.0 x 4	2.0 x 4
Conden	ser coil - air si	de			Plate fin coil	Plate fin coil
	Туре			(2/ -)	Propeller fan	Propeller fan
Fan	Air quantity			(m³/min)	1,230 (maximum)	1,230 (maximum)
	Type of start				Inverter starter	Inverter starter
_		t x number of units		(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray		(Note 9)	(L/min)	-	13.6 x 1
	Supply wate	r pressure	(Note 9)	(MPa)	-	0.2
(Note 8)	Control				-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor outpu	t		(kW)	1.5	1.5
đ	Туре				Centrifugal pump	Centrifugal pump
Pump	Flow control				Inverter	Inverter
	Maximum cu			(A)	3.1	3.1
	Minimum inp	out		(kW)	2	2
	water side		(Note 10)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
Refrigerant	Туре				R32	R32
lefrige	R32 charge			(kg)	8.8 x 4	8.8 x 4
	Control				Electric expansion valve	Electric expansion valve
	y control steps	3	(Note 11)	(%)	0; 5~100	0; 5~100
Operatio	on control				Microprocessor control based on leaving wa	ater temperature and temperature difference
Defrost	system		_		Distributed reverse cycle system	Distributed reverse cycle system
Protecti	ve device					Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, low pressure cutout, thermistor error, high water pressure error)
eters	Cold/Hot wa	ter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Piping diameters	Cold/Hot wa	ter outlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Plain	Coil drain			(A)	PT1-1/2" external thread	PT1-1/2" external thread
				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) Dimensions of 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.

60HP Powerful Heating Type Heat pump

				Standard type	High-EER type
				380V /400V/ 415V	380V /400V/ 415V
Model (A	single modu	e unit)		RUAGP511F18	RUAGP511F1N8
Cooling			(Note 1) (KW)	180	180
	capacity		(Note 1) (kW)	200	200
	Unit color		()	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
jo,		Height	(mm)	2,350	2,350
Exterior	Dimensions	Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	3,300
Shipping	y weight		(kg)	1,359	1,371
	g weight		(kg)	1,395	1,407
Power s	upply		(Note 1-3)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		power supply design	(Note 4-5) (A)	113	113
		Nominal current	(A)	84.8	57.3
		Nominal input	(kW)	55.2	37.4
_	Cooling	EER		3.26	4.81
date	_	SEER		4.77	4.94
Electrical data		Power factor	(Note 6) (%)	99	99
lecti		Nominal current	(A)	90.6	90.6
ш		Nominal input	(kW)	59	59
	Heating	COP		3.39	3.39
		SCOP		4.23	4.23
(Note 7)		Power factor	(Note 6) (%)	99	99
ŗ	Туре			Hermetic rotary x 4	Hermetic rotary x 4
Compressor	Motor outpu	t × number of units	(kW)	12.5 x 4	12.5 x 4
duc	Type of start			Inverter starter	Inverter starter
ŏ	Case heater (W)			37 x 4	37 x 4
0	.,	Туре		RB74AF	RB74AF
Com	pressor oil	Charge	(L)	2.0 x 4	2.0 x 4
	Condenser	coil - air side		Plate fin coil	Plate fin coil
	Туре			Propeller fan	Propeller fan
Fan	Air quantity		(m³/min)	1,230 (maximum)	1,230 (maximum)
ű	Type of start			Inverter starter	Inverter starter
	Motor outpu	t x number of units	(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray	volume	(L/min)	-	13.6 x 1
SS SS	Supply wate	r pressure	(Note 9) (MPa)	-	0.2
(Note 8)	Control			-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor outpu	t	(kW)	1.5	1.5
<u>p</u>	Туре			Centrifugal pump	Centrifugal pump
Pump	Flow control			Inverter	Inverter
	Maximum cu	rrent	(A)	3.1	3.1
	Minimum inp	ut	(kW)	2	2
		water side	(Note 10)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
rant	Туре			R32	R32
Refrigerant	R32 charge		(kg)	8.8 x 4	8.8 x 4
ш	Control			Electric expansion valve	Electric expansion valve
Drain pa			(VV)	75 x 6	75 x 6
	control steps	3	(Note 11) (%)	0; 5~100	0; 5~100
· ·	n control				ater temperature and temperature difference
Defrost s	system re device				Distributed reverse cycle system , Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze
			(***		protection, low pressure cutout, thermistor error, high water pressure error)
ameters	Cold/Hot wa		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Aping diameters	Cold/Hot wa	ler 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 p	ower 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 offferences. 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 flactors may vary depending on site conditions.
(Note 7) The supply water guality 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) The supply water 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) Working pressure is below 0.7 MPa.

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
	Unit color			. ,	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
jo.		Height		(mm)	2,350	2,350
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	3,300
Shipping	g weight	[_ ebs.:		(kg)	1,309	1,322
	ng weight			(kg)	1,345	1,358
Power s			(Note 1- 3)	()/	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		power supply design	(Note 4-5)	(A)	103	103
		Nominal current		(A)	84.8	57.5
al da		Nominal input		(kW)	55	37.4
trice	Cooling	EER		()	3.27	4.81
Electrical data		SEER			4.8	4.99
(Note 7)		Power factor	(Note 6)	(%)	99	99
÷	Туре			(73)	Hermetic rotary x 4	Hermetic rotary x 4
Compressor		t×number of units		(kW)	11.2 x 4	8.6 x 4
npre	Type of start			(((())))	Inverter starter	Inverter starter
õ	Case heater			(VV)	37 x 4	37 x 4
	Case neater	Туре		(**)	RB74AF	RB74AF
Compre	ssor oil	Charge		(L)	2.0 x 4	2.0 x 4
Condon	ser coil - air si	-		(L)	Plate fin coil	Plate fin coil
Jonden	1	de				
	Type			(2/ 1)	Propeller fan	Propeller fan
Fan	Air quantity (m³/min)			(m³/min)	1,230 (maximum)	1,230 (maximum)
	Type of start			(1)40	Inverter starter	Inverter starter
	+ · · ·	t x number of units		(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray			(L/min)	-	13.6 x 1
(Note 8)	Supply wate	r pressure	(Note 9)	(MPa)	-	0.2
(Note 8)	Control					Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor outpu	t		(kW)	1.5	1.5
e	Туре				Centrifugal pump	Centrifugal pump
Pump	Flow control				Inverter	Inverter
	Maximum cu			(A)	3.1	3.1
	Minimum inp	out		(kW)	2	2
Cooler -	water side		(Note 10)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
arant	Туре				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
	Control				Electric expansion valve	Electric expansion valve
	y control steps	3	(Note 11)	(%)	0; 5~100	0; 5~100
peratic	on control				Microprocessor control based on leaving wa	ater temperature and temperature difference
efrost a	system				Distributed reverse cycle system	Distributed reverse cycle system
rotectiv	ve device					, Orankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, low pressure cutout, thermistor error, high water pressure error)
leters	Cold/Hot wa	ter inlet		(A)	2-1/2" flange	2-1/2" flange
Piping diameters	Cold/Hot wa	ter outlet		(A)	2-1/2" flange	2-1/2" flange
Pipin	Coil drain			(A)	PT1-1/2" external thread	PT1-1/2" external thread
Sound r	ower 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°C/WB 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) 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 guality 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 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 modul	e unit)		RUAGP561H28	RUAGP561H2N8		
	capacity		te 1) (kW)	200	200		
	capacity	(No	te 1) (kW)	200	200		
riodarig	Unit color		(((1))	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)		
jo.		Height	(mm)	2,350	2,350		
Exterior	Dimensions		te 2) (mm)	1,000	1,000		
ш	Birnonolorio		te 2) (mm)	3,300	3,300		
Shipping	g weight	Bopti	(kg)	1,357	1,369		
	ng weight		(kg)	1,393	1,405		
Power s		(Note		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V		
		oower supply design (Note	4-5) (A)	119	119		
		Nominal current	(A)	99.7	68.9		
		Nominal input	(kW)	64.9	44.8		
	Cooling	EER	(((())))	3.08	4.46		
ata	Cooling	SEER		4.75	4.92		
Salo		-	te 6) (%)	99	99		
Electrical data		Nominal current	(70) (A)	90.1	90.1		
Ш		Nominal input	(KW)	59	59		
	Heating	COP	(RVV)	3.39	3.39		
	ricating	SCOP		4.28	4.28		
(Note 7)			te 6) (%)	99	99		
	Туре		(70)	Hermetic rotary x 4	Hermetic rotary x 4		
Compressor	Motor output×number of units (kW)		(1200)	13.3 x 4	12.5 x 4		
ubre	Type of start		(KVV)	Inverter starter	Inverter starter		
Š	Case heater		(VV)	37 x 4	37 x 4		
				RB74AF	RB74AF		
Compre	Compressor oil		(L)	2.0 x 4	2.0 x 4		
Condon	iser coil - air si	Charge	(L)	Plate fin coil	Plate fin coil		
Conden	1			Propeller fan	Propeller fan		
	Type Air quantity		(m³/min)	1,230 (maximum)	1,230 (maximum)		
Fan	Type of start		(117/110)	Inverter starter	Inverter starter		
		w pumber of upita	(kW)	1.2 x 4	1.2 x 4		
		x number of units			1.2 x 4 13.6 x 1		
Spray system	Water spray		(L/min) ^(e 9) (MPa)		0.2		
(Note 8)	Supply water Control	pressure	(iviPa)	-			
((1.140)		Continuous spraying when outside temperature and compressor capacity exceeds setting values		
	Motor output		(kW)	2.2	2.2		
Pump	Type			Centrifugal pump	Centrifugal pump		
Pu	Flow control		(4)	Inverter	Inverter		
	Maximum cu		(A)	4.3	4.3		
0	Minimum inp	(Note	(kW)				
	water side	(40)	~	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)		
jeran			(1)	R32	R32		
Refrigerant	R32 charge Control		(kg)	8.8 x 4	8.8 x 4		
		(Note	11) (0/)	Electric expansion valve	Electric expansion valve		
	y control steps	(40)	e 11) (%)	0; 5~100	0; 5~100		
	on control				ater temperature and temperature difference		
Defrost	system			Distributed reverse cycle system	Distributed reverse cycle system		
	ve device			protection, high water temp. cutout, low flow rate, discharge gas overheat	, Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, low pressure cutout, thermistor error, high water pressure error)		
ng iters	Cold/Hot wa		(A)	3" flange (JIS10K)	3" flange (JIS10K)		
Piping diameters	Cold/Hot wa	ter outlet	(A)	3" flange (JIS10K)	3" flange (JIS10K)		
dį	Coil drain		(A)	PT1-1/2" external thread	PT1-1/2" external thread		
Coundr	ower 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) Briendson's 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 value 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.

70HP Series EDGE Cooling-only

					Standard type	High-EER type
					380V /400V/ 415V	380V /400V/ 415V
Model (A	A single modu	le unit)			RUAGP561C28	RUAGP561C2N8
Cooling	capacity		(Note 1)	(kW)	200	200
	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
jo.	Height			(mm)	2,350	2,350
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	3,300
Shipping	g weight			(kg)	1,318	1,331
	ng weight			(kg)	1,354	1,367
Power s			(Note 1- 3)	(3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		power supply design	(Note 4-5)	(A)	119	119
		Nominal current		(A)	99.1	68.1
Electrical data		Nominal input		(kW)	64.5	44,3
trica	Cooling	EER		(((())))	3.1	4.51
Elec	Cooling	SEER			4.75	4.92
(Note 7)		Power factor	(Note 6)	(%)	99	99
	Type			(70)	Hermetic rotary x 4	Hermetic rotary x 4
Compressor		typumbor of unite		(kW)	13.3 x 4	9.1 x 4
npre					Inverter starter	Inverter starter
Con	Type of start (W)					
			(VV)	37 x 4	37 x 4	
Compressor oil					RB74AF	RB74AF
<u> </u>			(L)	2.0 x 4	2.0 x 4	
Conden	ser coil - air si	de			Plate fin coil	Plate fin coil
	Туре				Propeller fan	Propeller fan
Fan	Air quantity			(m³/min)	1,230 (maximum)	1,230 (maximum)
-	Type of start				Inverter starter	Inverter starter
	-	t x number of units		(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray			(L/min)	-	13.6 x 1
	Supply wate	r pressure	(Note 9)	(MPa)	-	0.2
(Note 8)	Control				-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor outpu	t		(kW)	2.2	2.2
<u>e</u>	Туре				Centrifugal pump	Centrifugal pump
Pump	Flow control				Inverter	Inverter
	Maximum cu	urrent		(A)	4.3	4.3
	Minimum inp	out		(kW)	2.8	2.8
Cooler -	water side		(Note 10)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
ant	Туре				R32	R32
Refrigerant	R32 charge			(kg)	8.8 × 4	8.8 x 4
Å	Control				Electric expansion valve	Electric expansion valve
Capacity	y control steps	5	(Note 11)	(%)	0; 5~100	0; 5~100
Operatio	on control				Microprocessor control based on leaving wa	ater temperature and temperature difference
Defrost	system				Distributed reverse cycle system	Distributed reverse cycle system
Protecti	ve device					, Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, low pressure cutout, thermistor error, high water pressure error)
leis	Cold/Hot wa	iter inlet		(A)	3" flange (JIS10K)	3" flange (JIS10K)
Piping diameters	Cold/Hot wa	iter outlet		(A)	3" flange (JIS10K)	3" flange (JIS10K)
Piping	Coil drain			(A)	PT1-1/2" external thread	PT1-1/2" external thread
(v)				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°C/WB 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) 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 guality 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 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	A single modul	e unit)			RUAGP421HL8	RUAGP421HLN8		
Cooling capacity (Note 1) (kW)			(Note 1)	(kW)	150	150		
	capacity		(Note 1)	(kW)	150	150		
	Unit color			()	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)		
jo.		Height		(mm)	2,350	2,350		
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000		
ш		Depth	(Note 2)	(mm)	3,300	3,300		
Shipping	g weight	[]		(kg)	1,290	1,302		
	ng weight			(kg)	1,326	1,338		
Power s			(Note 1- 3)	(3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V		
		power supply design	(Note 4)	(A)	79	79		
		Nominal current		(A)	65.3	42.8		
		Nominal input		(kW)	42.5	27.9		
	Cooling	EER)	3.53	5.38		
data	Cooming	SEER			4.88	5.06		
Electrical data		Power factor	(Note 5)	(%)	99	99		
actri		Nominal current		(A)	63.6	63.6		
ũ		Nominal input		(kW)	41.4	41.4		
	Heating	COP		((()))	3.62	3.62		
	riodanig	SCOP			4.26	4.26		
(Note 6)		Power factor	(Note 5)	(%)	99	99		
L	Туре			(70)	Hermetic rotary x 4	Hermetic rotary x 4		
osso		×number of units		(kW)	9.0 x 4	9.0 x 4		
Compressor	Type of start			(((())))	Inverter starter	Inverter starter		
õ	Case heater (W)		000	37 x 4	37 x 4			
	Case fielder	Туре		(**)	RB74AF	RB74AF		
Compre	ssor oil	Charge		(L)	2.0 x 4	2.0 x 4		
Conden	ser coil - air si			(L)	Plate fin coil	Plate fin coil		
Conden	Type				Propeller fan	Propeller fan		
-	Air quantity			(m³/min)	1,230 (maximum)	1,230 (maximum)		
Fan	Type of start			(117711111)	Inverter starter	Inverter starter		
		x number of units		(kW)	1.2 x 4	1.2 x 4		
~ 5	Water spray			(L/min)	-	13.6 x 1		
Spray system	Supply water		(Note 8)	(MPa)	-	0.2		
(Note 7)	Control	prosoure		(1411 Cd)	_	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)		
	Type				R32	R32		
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4		
Refri	Control			(119)	Electric expansion valve	Electric expansion valve		
Canacity	control steps		(Note 10)	(%)	0; 5~100	0; 5~100		
	on control	·		(70)		ater temperature and temperature difference		
Defrost					Distributed reverse cycle system	Distributed reverse cycle system		
	ve device				Distributed reverse cycle system Distributed reverse cycle system 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)			
rs.	Cold/Hot wa	ter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)		
Piping diameters	Cold/Hot wa			(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)		
dian	Coil drain			(A)	PT1-1/2" external thread	PT1-1/2" external thread		
	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 4) Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent mattunction.
 (Note 5) Power factors may vary depending on site conditions.
 (Note 6) Electrical data does not include inbuilt pump.
 (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 8) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 9) Working pressure is below 0.7 MPa.
 (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

50HP Powerful Heating Type Heat pump

					Standard type	High-EER type	
					380V /400V/ 415V	380V /400V/ 415V	
Model (/	A single modu	le unit)			RUAGP421FL8	RUAGP421FLN8	
	capacity	· · · ·	(Note 1)	(kW)	150	150	
	capacity		(Note 1)	(kW)	150	150	
	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	
jo.	Height			(mm)	2,350	2,350	
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000	
		Depth	(Note 2)	(mm)	3,300	3,300	
Shipping	y weight			(kg)	1,302	1,314	
	ig weight			(kg)	1,338	1,350	
Power s			(Note 1- 3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V	
		power supply design	(Note 4)	(A)	79	79	
		Nominal current		(A)	65.3	42.8	
		Nominal input		(kW)	42.5	27.9	
~	Cooling	EER			3.53	5.38	
Electrical data		SEER			4.88	5.06	
Ical		Power factor	(Note 5)	(%)	99	99	
lectr		Nominal current		(A)	99	99	
ш		Nominal input		(kW)	63.6	63.6	
	Heating	COP			41.4	41.4	
		SCOP			4.26	4.26	
(Note 6)		Power factor	(Note 5)	(%)	99	99	
'n	Туре				Hermetic rotary x 4	Hermetic rotary x 4	
Compressor	Motor outpu	t×number of units		(kW)	9.0 × 4	9.0 x 4	
idua	Type of start				Inverter starter	Inverter starter	
ö	Case heater			(W)	37 x 4	37 x 4	
_		Туре			RB74AF	RB74AF	
Compre	ssor oil	Charge		(L)	2.0 × 4	2.0 x 4	
Conden	ser coil - air si	de			Plate fin coil	Plate fin coil	
	Туре				Propeller fan	Propeller fan	
Fan	Air quantity			(m³/min)	1,230 (maximum)	1,230 (maximum)	
ш	Type of start				Inverter starter	Inverter starter	
	Motor output	t x number of units		(kW)	1.2 x 4	1.2 x 4	
ray .em	Water spray	volume		(L/min)	-	13.6 x 1	
Spray system	Supply wate	r 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)	
rant	Туре				R32	R32	
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4	
Ве	Control				Electric expansion valve	Electric expansion valve	
Drain pa	in heater			(VV)	75 x 6	75 x 6	
Capacit	control steps	s (Note 10)		(%)	0; 5~100	0; 5~100	
Operatio	on control				Microprocessor control based on leaving w	ater temperature and temperature difference	
Defrost	system				Distributed reverse cycle system	Distributed reverse cycle system	
Protecti	ve 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)		
g ers	Cold/Hot wa	ter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)	
Piping diameters	Cold/Hot wa	ter outlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)	
dia	Coil drain			(A)	PT1-1/2" external thread	PT1-1/2" external thread	
Sound a	ower 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) 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 modul	e unit)			RUAGP421CL8	RUAGP421CLN8
Cooling	capacity		(Note 1)	(kW)	150	150
<u> </u>	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
jo.		Height		(mm)	2,350	2,350
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000
	Depth		(Note 2)	(mm)	3,300	3,300
Shipping	g weight			(kg)	1,251	1,264
	ng weight			(kg)	1,287	1,300
Power s			(Note 1-3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		ower supply design	(Note 4)	(A)	. 79	79
		Nominal current		(A)	66.2	44
al data		Nominal input		(kW)	43.1	28.7
Electrical	Cooling	EER			3.48	5.23
Elec		SEER			4.9	5.08
(Note 6)		Power factor (Note 5) (%)		(%)	99	99
Compressor	Туре				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
_	" Туре			RB74AF	RB74AF	
Compre	essor oil	Charge		(L)	2.0 x 4	2.0 x 4
Conden	enser coil - air side				Plate fin coil	Plate fin coil
	Туре				Propeller fan	Propeller fan
5	Air quantity			(m³/min)	1,230 (maximum)	1,230 (maximum)
Fan	Type of start				Inverter starter	Inverter starter
	Motor output	x number of units		(kW)	1.2 x 4	1.2 x 4
ay em	Water spray	volume		(L/min)	-	13.6 x 1
Spray system	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)
L.	Туре				R32	R32
Refriger- ant	R32 charge			(kg)	8.8 x 4	8.8 x 4
ď	Control				Electric expansion valve	Electric expansion valve
Capacit	y control steps		(Note 10)	(%)	0; 5~100	0; 5~100
Operatio	on control				Microprocessor control based on leaving w	ater temperature and temperature difference
Defrost	system				Distributed reverse cycle system	Distributed reverse cycle system
Protecti	ve device), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze t protection, low pressure cutout, thermistor error, high water pressure error)
ars	Cold/Hot wat	ter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Piping diameters	Cold/Hot wat	ter outlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
dia	Coil drain			(A)	PT1-1/2" external thread	PT1-1/2" external thread
Sound r	ower 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 (if the next range of a local state of the state of the

(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.

Electrical data does not include inbuilt pump.
 (Note 7) The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water side. (Provided locally)
 (Note 8) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
 (Note 9) Working pressure is below 0.7 MPa.
 (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

60HP Series EDGE Heat pump

					Standard type	High-EER type		
					380V /400V/ 415V	380V /400V/ 415V		
Model (A	single modul	le unit)			RUAGP511HL8	RUAGP511HLN8		
Cooling capacity (Note 1) (kW)					180	180		
	capacity		(Note 1)	(kW)	180	180		
	Unit color			()	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)		
jo.	Height			(mm)	2,350	2,350		
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000		
ш		Depth	(Note 2)	(mm)	3,300	3,300		
Shippinc	y weight	1-000		(kg)	1,290	1,302		
	ig weight			(kg)	1,326	1,338		
Power s			(Note 1- 3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V		
		power supply design	(Note 4)	(A)	99	99		
		Nominal current		(A)	84.8	57.3		
		Nominal input		(kW)	55.2	37.3		
	Cooling	EER		()	3.26	4.82		
data		SEER			4.77	4.94		
cal		Power factor	(Note 5)	(%)	99	99		
Electrical data		Nominal current		(A)	79.6	79.6		
Ē		Nominal input		(kW)	51.9	51.9		
	Heating	COP		()	3.47	3.47		
		SCOP			4.35	4.35		
(Note 6)		Power factor	(Note 5)	(%)	99	99		
2	Туре				Hermetic rotary x 4	Hermetic rotary x 4		
Compressor		t×number of units		(kW)	11.2 x 4	11.1 x 4		
du	Type of start				Inverter starter	Inverter starter		
8	Case heater (W)			(W)	37 x 4	37 x 4		
	Type				RB74AF	RB74AF		
Compre	ssor oil	Charge		(L)	2.0 x 4	2.0 × 4		
Condens	ser coil - air si				Plate fin coil	Plate fin coil		
	Туре				Propeller fan	Propeller fan		
C	Air quantity		((m³/min)	1,230 (maximum)	1,230 (maximum)		
Fan	Type of start				Inverter starter	Inverter starter		
		t x number of units		(kW)	1.2 x 4	1.2 x 4		
ay an	Water spray		(L/min)	-	13.6 x 1		
Spray system	Supply water	r 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)		
ant	Туре				R32	R32		
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4		
Ref	Control				Electric expansion valve	Electric expansion valve		
Capacity	control steps	3	(Note 10)	(%)	0; 5~100	0; 5~100		
Operatio	on control				Microprocessor control based on leaving w	vater temperature and temperature difference		
) efrost s	system				Distributed reverse cycle system			
rotectiv	ve device				High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guard protection, high water terms. cutout, bw flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water errors)			
SIS	Cold/Hot wa	ter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)		
Piping diameters	Cold/Hot wa	ter outlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)		
diar				(A)	PT1-1/2" external thread	PT1-1/2" external thread		
				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 value on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally) (Note 9) Working pressure is below 0.7 MPa.

(Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

60HP Powerful Heating Type Heat pump

					Standard type	High-EER type	
					380V /400V/ 415V	380V /400V/ 415V	
Model (A	A single modu	le unit)			RUAGP511FL8	RUAGP511FLN8	
	capacity		(Note 1)	(kW)	180	180	
	capacity		(Note 1)	(kW)	200	200	
	Unit color			()	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	
jo		Height		(mm)	2,350	2,350	
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000	
ш		Depth	(Note 2)	(mm)	3,300	3,300	
Shipping	g weight	_ • • • • • •		(kg)	1,302	1,314	
	ng weight			(kg)	1,338	1,350	
Power s			(Note 1-3)	()	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V	
		power supply design	(Note 4)	(A)	110	110	
		Nominal current		(A)	84.8	57.3	
		Nominal input		(kW)	55.2	37.4	
	Cooling	EER		()	3.26	4.81	
data	Cooming .	SEER			4.77	4.94	
cal o		Power factor	(Note 5)	(%)	99	99	
Electrical data		Nominal current		(A)	90.6	90.6	
ũ		Nominal input		(kW)	59	59	
	Heating	COP		()	3.39	3.39	
	liocating	SCOP			4.23	4.23	
(Note 6)		Power factor	(Note 5)	(%)	99	99	
	Туре			(70)	Hermetic rotary x 4	Hermetic rotary x 4	
Compressor		t×number of units		(kW)	12.5 x 4	12.5 x 4	
npre	Type of start			()	Inverter starter	Inverter starter	
õ	Case heater (W)			000	37 x 4	37 x 4	
	10000 Houtor	Туре		(**)	BB74AF	RB74AF	
Compre	essor oil	Charge		(L)	2.0 x 4	2.0 x 4	
Conden	iser coil - air si			(二)	Plate fin coil	Plate fin coil	
00110011	Туре				Propeller fan	Propeller fan	
_	Air quantity			(m³/min)	1,230 (maximum)	1,230 (maximum)	
Fan	Type of start			(Inverter starter	Inverter starter	
		t x number of units		(kW)	1.2 x 4	1.2 x 4	
>> E	Water spray			(L/min)	_	13.6 x 1	
Spray system	Supply wate		(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)	
	Туре				R32	B32	
Refriger- ant	R32 charge			(kg)	8.8 x 4	8.8 x 4	
Ref	Control			(Electric expansion valve	Electric expansion valve	
Drain pa	an heater			(W)	75 x 6	75 x 6	
	y control steps	s (Note 10)		(%)	0; 5~100	0; 5~100	
	on control			(, =)		ater temperature and temperature difference	
Defrost					Distributed reverse cycle system	Distributed reverse cycle system	
	ve device				High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pump) protection, high water termp, cutout, low flow rate, discharge gas overheat	Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze	
<u>ی</u>	Cold/Hot wa	ter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)	
ping netel				(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)	
Piping diameters	Coil drain				PT1-1/2" external thread	PT1-1/2" external thread	
	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 9) Working pressure is below 0.7 MPa. (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

(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.

60HP Series EDGE Cooling-only

					Standard type	High-EER type	
					380V /400V/ 415V	380V /400V/ 415V	
Model (A	A single modul	e unit)			RUAGP511CL8	RUAGP511CLN8	
Cooling	capacity		(Note 1)	(kW)	180	180	
	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	
jor.		Height		(mm)	2,350	2,350	
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000	
		Depth	(Note 2)	(mm)	3,300	3,300	
Shipping	g weight			(kg)	1,251	1,264	
Operatir	ng weight			(kg)	1,287	1,300	
Power s	upply		(Note 1-3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V	
Reference	ce current for	oower supply design	(Note 4)	(A)	99	99	
ata		Nominal current		(A)	84.8	57.5	
Electrical data		Nominal input		(kW)	55	37.4	
	Cooling	EER			3.27	4.81	
		SEER			4.8	4.99	
(Note 6)		Power factor	(Note 5)	(%)	99	99	
Compressor	Туре				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	
ŏ	Case heater			(W)	37 x 4	37 x 4	
~		Туре			RB74AF	RB74AF	
Compre	ISSOF OII	Charge		(L)	2.0 x 4	2.0 x 4	
Conden	ser coil - air si	de			Plate fin coil	Plate fin coil	
	Туре				Propeller fan	Propeller fan	
Fan	Air quantity			(m³/min)	1,230 (maximum)	1,230 (maximum)	
ш	Type of start				Inverter starter	Inverter starter	
	Motor output	x number of units		(kW)	1.2 x 4	1.2 x 4	
ray tem	Water spray	volume		(L/min)	-	13.6 x 1	
Spray system	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)	
÷.	Туре				R32	R32	
Refriger- ant	R32 charge			(kg)	8.8 x 4	8.8 x 4	
щ	Control				Electric expansion valve	Electric expansion valve	
Capacity	y control steps	;	(Note 10)	(%)	0; 5~100	0; 5~100	
Operatic	on control				Microprocessor control based on leaving wa	ater temperature and temperature difference	
Defrost :	system				Distributed reverse cycle system	Distributed reverse cycle system	
Protectiv	ve 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, tow flow rate, discharge gas overheat protection, low pressure cutout, thermistor error, high water pressure error)		
n s	Cold/Hot wa	ter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)	
Piping diameters	Cold/Hot wa	ter outlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)	
di n	Coil drain (A)				PT1-1/2" external thread	PT1-1/2" external thread	
Sound p	ower 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 value on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)

(rTowned 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	A single modul	le unit)			RUAGP561HL8	RUAGP561HLN8		
	Cooling capacity (Note 1) (kW				200	200		
	capacity		(Note 1)	(kW)	200	200		
leating	Unit color			(KVV)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)		
ŗ		Lloight		(mm)	2,350	2,350		
Exterior	Dimensions	Height Width	(Note 2)	(mm)		1,000		
ш			(Note 2)	(mm)	1,000			
		Depth	(NOTE 2)	(mm)	3,300	3,300		
	g weight			(kg)	1,296	1,308		
	ng weight			(kg)	1,332	1,344		
Power s			(Note 1- 3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V		
Reference	ce current for	power supply design	(Note 4)	(A)	115	115		
		Nominal current		(A)	99.7	68.9		
		Nominal input		(kW)	64.9	44.8		
a	Cooling	EER			3.08	4.46		
Electrical data		SEER			4.72	4.89		
trica		Power factor	(Note 5)	(%)	99	99		
Elect		Nominal current		(A)	90.1	90.1		
		Nominal input		(kW)	59	59		
	Heating	COP			3.39	3.39		
		SCOP			4.28	4.28		
(Note 6)		Power factor	(Note 5)	(%)	99	99		
'n	Туре				Hermetic rotary x 4	Hermetic rotary x 4		
Compressor	Motor output	t×number of units		(kW)	13.3 x 4	12.5 x 4		
du	Type of start				Inverter starter	Inverter starter		
8	Case heater (W)			Ŵ	37 x 4	37 x 4		
		Туре			RB74AF	RB74AF		
Compre	ssor oil	Charge		(L)	2.0 × 4	2.0 x 4		
Conden	ser coil - air si			. ,	Plate fin coil	Plate fin coil		
	Туре				Propeller fan	Propeller fan		
~	Air quantity			(m ³ /min)	1,230 (maximum)	1,230 (maximum)		
Fan	Type of start			(Inverter starter	Inverter starter		
		t x number of units		(kW)	1.2 x 4	1.2 x 4		
~ 5	Water spray			(L/min)	-	13.6 x 1		
Spray system	Supply water		(Note 8)	(MPa)		0.2		
(Note 7)		piessuie		(ivir a)	-	Continuous spraying when outside temperature and compressor capacity exceeds setting values		
	Control		(Note 9)					
	water side		(toto by		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)		
Refrigerant	Type			0	R32	R32		
Refrig	R32 charge			(kg)	8.8 x 4	8.8 x 4		
	Control		AL		Electric expansion valve	Electric expansion valve		
	/ control steps	3	(Note 10)	(%)	0; 5~100	0; 5~100		
Operation control						ater temperature and temperature difference		
Defrost	system				Distributed reverse cycle system	Distributed reverse cycle system		
	ve device					, Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze protection, low pressure cutout, thermistor error, high water pressure error)		
Piping diameters	Cold/Hot wa			(A)	3" flange (JIS10K)	3" flange (JIS10K)		
Pipir	Cold/Hot wa	ter outlet		(A)	3" flange (JIS10K)	3" flange (JIS10K)		
dia	Coil drain (A)			(A)	PT1-1/2" external thread	PT1-1/2" external thread		
Sound r	ower 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 3) Adjust the flow rate to become close to this supply value scales and outer in the test to active to the consultance. In eccessary, install a water sorterie on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump.
 (Provided locally)
 (Note 3) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment value on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump.
 (Provided locally)
 (Note 3) Working pressure is below 0.7 MPa.
 (Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

70HP Series EDGE Cooling-only

				- 1	Standard type	High-EER type	
				. [380V /400V/ 415V	380V /400V/ 415V	
Model (A single modul	e unit)			RUAGP561CL8	RUAGP561CLN8	
Cooling	capacity		(Note 1)	(kW)	200	200	
	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	
rior		Height	(1	(mm)	2,350	2,350	
Exterior	Dimensions	Width	(Note 2) (I	(mm)	1,000	1,000	
_				(mm)	3,300	3,300	
Shippin	g weight			(kg)	1,258	1,270	
	ng weight			(kg)	1,294	1,306	
· ower :			(Note 1-3)	(0/	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V	
		oower supply design	(Note 4)	(A)	. 115	115	
		Nominal current		(A)	99.1	68.1	
Electrical data		Nominal input		(kW)	64.5	44.3	
otrice	Cooling	EER		. /	3.1	4.51	
Elec		SEER			4.75	4.92	
(Note 6)		Power factor (Note 5)		(%)	99	99	
5	Туре			(,	Hermetic rotary x 4	Hermetic rotary x 4	
Compressor	Motor output×number of units (kW)			(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	
	1	Туре		()	BB74AF	BB74AF	
Compre	essor oil	Charge		(L)	2.0 x 4	2.0 x 4	
onder	iser coil - air si			(=)	Plate fin coil	Plate fin coil	
	Туре				Propeller fan	Propeller fan	
Ē	Air quantity			1 ³ /min)	1,230 (maximum)	1,230 (maximum)	
Fan	Type of start				Inverter starter	Inverter starter	
		x number of units		(kW)	1.2 x 4	1.2 x 4	
≳ ⊑	Water spray			(min)	-	13.6 x 1	
Spray system	Supply water		(Note 8) (N	vPa)	-	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)	
	Туре				R32	R32	
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4	
Ref	Control			(Electric expansion valve	Electric expansion valve	
apacit	y control steps	3	(Note 10)	(%)	0; 5~100	0: 5~100	
	on control			()		ater temperature and temperature difference	
·	system				Distributed reverse cycle system	Distributed reverse cycle system	
	ve 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 das overheat protection, low pressure cutout, thermistor error, high water error)		
L S	Cold/Hot wa	ter inlet		(A)	3" flange (JIS10K)	3" flange (JIS10K)	
pinc	Cold/Hot wa	ter outlet		(A)	3" flange (JIS10K)	3" flange (JIS10K)	
Piping diameters	Coil drain (A)				PT1-1/2" external thread	PT1-1/2" external thread	
	power level		h	iB(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°C/WB 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.

(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	A single modul	le unit)			RUAGP421H1N8	RUAGP421H1N8	
	capacity	,	(Note 1)	(kW)	150	2400	(Single unit value) x (number of module units in se
	capacity		(Note 1)	(kW)	150	2400	(Single unit value) x (number of module units in se
	Unit color			()	Silky shade (Mu	-	
jo.		Height		(mm)	2,350	2,350	
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	16,450	See General Charts
ш		Depth	(Note 2)	(mm)	3,300	3,300	
Shinning	g weight	Dobai		(kg)	1,360	21,760	(Single unit value) x (number of module units in se
	ng weight			(kg)	1,396	22,336	(Single unit value) x (number of module units in se
Power s			(Note 1-3)	(rtg)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V	
			(Note 4-5)	(A)	82.1	82.1 x 16	(Single unit value) x (number of module units in se
nelelelik					42.8	684.8	(Single unit value) x (number of module units in s
		Nominal input		(A) (kW)	27.9	446.4	(Single unit value) x (number of module units in s
	Cooling	EER	nai input (kvv)				(Single unit value) x (number of module units in s
ata	Cooling	SEER			5.38 5.06	5.38 5.06	-
alo			(Note 6)	(0/)			-
Electrical data		Power factor	((%)	99	99	-
Ш		Nominal current		(A)	63.6	1017.6	(Single unit value) x (number of module units in s
			ominal input (kW)		41.4	662.4	(Single unit value) x (number of module units in s
	Heating		COP		3.62	3.62	-
(Note 7)	-	SCOP			4.26	4.26	-
(Note 7)		Power factor	(Note 6)	(%)	99	99	-
sor	Туре					ic rotary	-
Compressor		t×number of units		(kW)	9.0 x 4	9.0 x 64	(Single unit value) x (number of module units in s
Dom	Type of start				Inverter starter	Inverter starter	
0	Case heater	1		(W)	37 x 4	37 x 64	(Single unit value) x (number of module units in s
Compressor oil				RB74AF	RB74AF		
Charge (L)			(L)	2.0 x 4	2.0 x 64	(Single unit value) x (number of module units in s	
Conden	Condenser coil - air side		Plate fin coil	Plate fin coil	-		
	Туре				Propeller fan	Propeller fan	-
Fan	Air quantity	ir quantity (m³/min)			1,230 (maximum)	19,680 (maximum)	(Single unit value) x (number of module units in s
	Type of start				Inverter starter	Inverter starter	
	Motor output	t x number of units		(kW)	1.2 x 4	1.2 x 64	(Single unit value) x (number of module units in s
Spray system	Water spray	volume		(L/min)	13.6 x 1	13.6 x 16	(Single unit value) x (number of module units in s
S S	Supply water	r pressure	(Note 9)	(MPa)	0.2	0.2	-
(Note 8)	Control				Continuous spraying when outside temperature and compressor capacity exceeds setting values	Continuous spraying when outside temperature and compressor capacity exceeds setting values	-
	Motor output	t		(kW)	1.5	1.5 x 16	(Single unit value) x (number of module units in s
	Туре				Centrifugal pump	Centrifugal pump	-
Pump	Flow control				Inverter	Inverter	-
	Maximum cu	irrent		(A)	3.1	3.1 x 16	(Single unit value) x (number of module units in s
	Minimum inp	out		(kW)	2	2.0 x 16	(Single unit value) x (number of module units in s
Cooler -	water side		(Note 10)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)	-
aut	Туре				R32	R32	-
Refrigers	R32 charge			(kg)	8.8 x 4	8.8 x 64	(Single unit value) x (number of module units in s
ä	Control				Electric expansion valve	Electric expansion valve	-
Capacity	y control steps	3	(Note 11)	(%)	0; 5~100	0; 5~100	-
Operatio	on control				Microprocessor control based on leaving wa	ater temperature and temperature difference	-
Defrost :	system				Distributed reverse cycle system	Distributed reverse cycle system	-
Protectiv	ve device				High-pressure switch, Over current protection, Inverter over Open-phase protection, Microprocessor control (compressor flow rate, discharge gas overheat protection, low press	-	
s	Cold/Hot wa	ter inlet		(A)	2-1/2" flange (JIS10K)		
ping nete	Cold/Hot wa			(A)	2-1/2" flange (JIS10K)	2-1/2" flange x 16 (JIS10K) 2-1/2" flange x 16 (JIS10K)	(Single unit value) x (number of module units in s
Piping diameters	Cold Hot water outlet (A) Coil drain (A)				PT1-1/2" external thread	PT1-1/2" external thread x 16	*Each module unit has one connection port
Cound r	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), 5°C leaving water (LWT), 3°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) Prover 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 value on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump.

(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.

50HP Series EDGE **Powerful Heating Type**

	Cooling capacity	Heating capacity	Dimensions (mm)		Sound Pressure Level	(Note 3)	
Number of modules	(KW)	(KW) (Note 1)	H×W×D (Note 2)	Control box side	Air heat exchanger side	Water heat exchange side	Sound Power Level
1	150	150	2,350×1,000×3,300	64.7	65.9	69.1	83.8
2	300	300	2,350×2,030×3,300	67.5	68.7	70.4	86.8
3	450	450	2,350×3,060×3,300	69.0	70.2	70.9	88.6
4	600	600	2,350×4,090×3,300	70.0	71.2	71.2	89.8
5	750	750	2,350×5,120×3,300	70.6	71.8	71.4	90.8
6	900	900	2,350×6,150×3,300	71.1	72.4	71.5	91.6
7	1050	1050	2,350×7,180×3,300	71.5	72.7	71.6	92.3
8	1200	1200	2,350×8,210×3,300	71.8	73.0	71.7	92.8
9	1350	1350	2,350×9,240×3,300	72.0	73.2	71.8	93.3
10	1500	1500	2,350×10,270×3,300	72.2	73.4	71.8	93.8
11	1650	1650	2,350×11,300×3,300	72.3	73.5	71.8	94.2
12	1800	1800	2,350×12,300×3,300	72.4	73.7	71.9	94.6
13	1950	1950	2,350×13,360×3,300	72.5	73.7	71.9	94.9
14	2100	2100	2,350×14,390×3,300	72.6	73.9	71.9	95.3
15	2250	2250	2,350×15,420×3,300	72.7	73.9	71.9	95.6
16	2400	2400	2,350×16,450×3,300	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

	Cooling capacity	Heating capacity	Dimensions (mm)		Sound Pressure Level	(Note 3)	0 10 1 1
Number of modules	(KW)	(KW) (Note 1)	H×W×D (Note 2)	Control box side	Air heat exchanger side	Water heat exchange side	Sound Power Level
1	180	180	2,350×1,000×3,300	68.2	68.3	71.2	87.4
2	360	360	2,350×2,030×3,300	71.0	71.1	72.5	90.4
3	540	540	2,350×3,060×3,300	72.5	72.6	73.1	92.2
4	720	720	2,350×4,090×3,300	73.5	73.6	73.3	93.4
5	900	900	2,350×5,120×3,300	74.1	74.2	73.5	94.4
6	1080	1080	2,350×6,150×3,300	74.7	74.8	73.7	95.2
7	1260	1260	2,350×7,180×3,300	75.0	75.1	73.7	95.9
8	1440	1440	2,350×8,210×3,300	75.3	75.4	73.8	96.4
9	1620	1620	2,350×9,240×3,300	75.5	75.6	73.9	96.9
10	1800	1800	2,350×10,270×3,300	75.7	75.8	73.9	97.4
11	1980	1980	2,350×11,300×3,300	75.8	75.9	74.0	97.8
12	2160	2160	2,350×12,300×3,300	76.0	76.1	74.0	98.2
13	2340	2340	2,350×13,360×3,300	76.0	76.1	74.0	98.5
14	2520	2520	2,350×14,390×3,300	76.1	76.2	74.0	98.9
15	2700	2700	2,350×15,420×3,300	76.2	76.3	74.1	99.2
16	2880	2880	2,350×16,450×3,300	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

	Cooling capacity	Heating capacity	Dimensions (mm)		Sound Pressure Level	(Note 3)	0 10 1 1
Number of modules	(KW)	(KW) (Note 1)	H×W×D (Note 2)	Control box side	Air heat exchanger side	Water heat exchange side	Sound Power Level
1	180	200	2,350×1,000×3,300	68.2	68.3	71.2	87.4
2	360	400	2,350×2,030×3,300	71.0	71.1	72.5	90.4
3	540	600	2,350×3,060×3,300	72.5	72.6	73.1	92.2
4	720	800	2,350×4,090×3,300	73.5	73.6	73.3	93.4
5	900	1000	2,350×5,120×3,300	74.1	74.2	73.5	94.4
6	1080	1200	2,350×6,150×3,300	74.7	74.8	73.7	95.2
7	1260	1400	2,350×7,180×3,300	75.0	75.1	73.7	95.9
8	1440	1600	2,350×8,210×3,300	75.3	75.4	73.8	96.4
9	1620	1800	2,350×9,240×3,300	75.5	75.6	73.9	96.9
10	1800	2000	2,350×10,270×3,300	75.7	75.8	73.9	97.4
11	1980	2200	2,350×11,300×3,300	75.8	75.9	74.0	97.8
12	2160	2400	2,350×12,300×3,300	76.0	76.1	74.0	98.2
13	2340	2600	2,350×13,360×3,300	76.0	76.1	74.0	98.5
14	2520	2800	2,350×14,390×3,300	76.1	76.2	74.0	98.9
15	2700	3000	2,350×15,420×3,300	76.2	76.3	74.1	99.2
16	2880	3200	2,350×16,450×3,300	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 second day	Cooling capacity	Heating capacity	Dimensions (mm)		Sound Pressure Level	(Note 3)	Coursed Document or red
Number of modules	(kW)	(KW) (Note 1)	H×W×D (Note 2)	Control box side	Air heat exchanger side	Water heat exchange side	Sound Power Level
1	200	200	2,350×1,000×3,300	69.7	68.6	74.0	90.9
2	400	400	2,350×2,030×3,300	72.5	71.5	75.3	93.9
3	600	600	2,350×3,060×3,300	74.0	72.9	75.9	95.7
4	800	800	2,350×4,090×3,300	75.0	74.0	76.2	96.9
5	1000	1000	2,350×5,120×3,300	75.6	74.6	76.3	97.9
6	1200	1200	2,350×6,150×3,300	76.1	75.1	76.5	98.7
7	1400	1400	2,350×7,180×3,300	76.5	75.4	76.6	99.4
8	1600	1600	2,350×8,210×3,300	76.8	75.7	76.6	99.9
9	1800	1800	2,350×9,240×3,300	77.0	75.9	76.7	100.4
10	2000	2000	2,350×10,270×3,300	77.2	76.1	76.7	100.9
11	2200	2200	2,350×11,300×3,300	77.3	76.2	76.8	101.3
12	2400	2400	2,350×12,300×3,300	77.4	76.4	76.8	101.7
13	2600	2600	2,350×13,360×3,300	77.5	76.5	76.8	102.0
14	2800	2800	2,350×14,390×3,300	77.6	76.6	76.8	102.4
15	3000	3000	2,350×15,420×3,300	77.7	76.6	76.9	102.7
16	3200	3200	2,350×16,450×3,300	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.

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	ltem			(Outsid	e air te	mpera	ture (°	C) (DB)	
temperature (°C)	llem		15	20	25	30	35	40	43	48	52
	Cooling capacity	(kW)	168	163	154	145	136	127	121	106	95.0
4	Power consumption	(kW)	25.5	29.2	32.9	36.8	40.8	44.9	47.1	46.9	48.0
4	Chilled water flow rate	(L/min)	344	335	316	297	278	259	248	217	195
	Operation current	(A)	37.6	42.5	48.0	53.7	59.5	65.4	68.6	68.4	70.0
	Cooling capacity	(kW)	186	181	171	160	150	140	132	114	97.3
7	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
	Cooling capacity	(kW)	199	193	182	171	160	149	138	120	98.8
9	Power consumption	(kW)	25.4	29.6	33.8	38.0	42.3	46.6	47.1	47.1	43.9
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
	Cooling capacity	(kW)	219	211	200	189	176	164	150	131	100
12	Power consumption	(kW)	25.4	29.9	34.3	38.8	43.1	47.7	47.3	47.5	41.2
12	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
	Cooling capacity	(kW)	230	222	210	198	187	174	159	141	101
4.5	Power consumption	(kW)	25.2	30.1	34.6	39.1	43.9	47.8	47.5	48.0	38.3
15	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
	Cooling capacity	(kW)	230	221	211	201	191	178	162	146	102
20	Power consumption	(kW)	25.2	30.0	34.6	39.3	44.1	47.8	47.2	48.3	36.6
20	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
	Cooling capacity	(kW)	230	221	211	201	190	178	162	146	102
05	Power consumption	(kW)	25.2	30.0	34.6	39.3	43.9	47.8	47.2	48.3	36.4
25	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
	Cooling capacity	(kW)	230	221	211	201	191	178	162	102	102
00	Power consumption	(kW)	29.2	30.0	34.6	39.3	44.1	47.8	47.2	36.6	36.6
30 F	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

50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421C(L)

Chilled water outlet	Item				Outsid	e air te	mpera	ture (°	C) (DB		
temperature (°C)	Item		15	20	25	30	35	40	43	48	52
	Cooling capacity	(kW)	168	163	154	145	136	127	120	104	94.6
4	Power consumption	(kW)	24.9	28.6	32.5	36.8	41.1	45.2	46.9	46.6	48.5
4	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
	Cooling capacity	(kW)	186	180	170	160	150	140	129	111	97.2
7	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
	Cooling capacity	(kW)	199	193	182	171	160	149	136	117	98.7
9	Power consumption	(kW)	24.6	29.0	33.3	38.0	42.7	47.0	46.9	46.2	44.
9	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
	Cooling capacity	(kW)	219	210	199	189	176	162	147	128	100
12	Power consumption	(kW)	24.6	29.2	33.7	38.8	43.6	47.2	46.8	46.7	41.
12	Chilled water flow rate	(L/min)	*430	*430	408	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
	Cooling capacity	(kW)	227	220	210	198	186	171	155	138	10
15	Power consumption	(kW)	24.6	29.3	34.1	39.1	44.1	47.4	46.8	47.6	38.
15	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
	Cooling capacity	(kW)	228	220	210	200	189	174	159	142	102
20	Power consumption	(kW)	24.6	29.3	34.0	39.2	44.2	47.4	47.0	47.7	37.2
20	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	64.4	69.1	68.6	69.5	54.3
	Cooling capacity	(kW)	228	220	210	200	189	174	159	142	102
25	Power consumption	(kW)	24.6	29.3	34.0	39.2	44.3	47.4	47.0	47.7	37.2
20	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
	Cooling capacity	(kW)	228	220	210	200	189	174	159	102	102
20	Power consumption	(kW)	28.6	29.3	34.1	39.2	44.2	47.3	47.0	37.4	37.4
- 30 E	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	68.9	68.6	54.5	54.5

_ist of heating	a capacities	RUA-GP421H(L)
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Narm water outlet			(Dutsid	e air te	mpera	ture (°	C) (DB	
temperature (°C)	ILEITI		-15	-10	-5	0	4	7	15
	Heating capacity	(kW)	103	118	134	151	166	153	182
25	Power consumption	(kW)	30.4	31.1	31.2	31.4	31.9	26.0	25.0
25	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
	Heating capacity	(kW)	103	118	134	150	165	152	181
30	Power consumption	(kW)	33.3	34.4	34.9	35.0	35.9	29.3	29.0
30	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
	Heating capacity	(kW)	103	117	133	150	164	151	180
05	Power consumption	(kW)	36.4	37.4	38.2	39.0	39.8	32.9	33.2
35	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
	Heating capacity	(kW)	102	116	132	149	163	151	178
40	Power consumption	(kW)	39.2	40.4	41.6	42.8	43.9	36.8	37.3
40	Warm water flow rate	(L/min)	209	239	271	305	334	308	365
	Operation current	(A)	58	60	61	62	64	54	54
	Heating capacity	(kW)	102	116	131	148	163	150	177
45	Power consumption	(kW)	42.1	43.9	45.2	46.7	48.4	40.8	41.7
40	Warm water flow rate	(L/min)	209	237	269	304	334	307	363
	Operation current	(A)	62	65	66	68	71	59	61
	Heating capacity	(kW)		115	130	144	154	149	176
50	Power consumption	(kW)		47.1	48.7	49.5	49.5	44.9	46.3
50	Warm water flow rate	(L/min)		236	267	295	316	305	360
	Operation current	(A)		69	71	72	72	65	68
	Heating capacity	(kW)			123	134	141	148	169
55	Power consumption	(kW)			49.8	49.6	49.1	49.2	49.0
22	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 Powerful Heating Type Heat pump

List of heating capacities RUA-GP421F(L)

Varm water outlet				Out	side ai	r temp	erature	∋ (°C) (DB)	
temperature (°C)	ILEITI		-20	-15	-10	-5	0	4	7	15
	Heating capacity	(kW)	80.2	89.9	103	117	132	144	153	182
25	Power consumption	(kW)	25.7	26.1	26.5	26.7	26.8	26.8	26.0	25.0
20	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
	Heating capacity	(kW)	80.1	89.8	103	117	131	143	152	181
30	Power consumption	(kW)	28.2	28.8	29.5	29.9	29.9	30.0	29.3	29.0
30	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
	Heating capacity	(kW)	79.8	89.7	102	116	130	143	151	180
35	Power consumption	(kW)	30.7	31.5	32.3	32.9	33.1	33.6	32.9	33.2
30	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
	Heating capacity	(kW)	79.6	89.5	102	115	129	142	151	178
40	Power consumption	(kW)	33.2	34.2	35.3	35.8	36.4	37.3	36.8	37.3
40	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
	Heating capacity	(kW)	79.2	89.2	101	115	129	141	150	177
45	Power consumption	(kW)	35.7	36.9	38.0	39.2	40.2	41.1	40.8	41.7
40	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
	Heating capacity	(kW)		88.9	101	111	122	131	149	176
50	Power consumption	(kW)		39.7	41.2	41.3	41.4	41.6	44.9	46.3
50	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
	Heating capacity	(kW)				103	112	119	148	169
55	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	ltem				Outside			<u> </u>					Warm water outlet	ltem						ture (°(C) (DB)	
temperature (°C)	itoin		15	20	25	30	35	40	43	48	52		temperature (°C)			-15	-10	-5	0	4	7	15
	Cooling capacity	(kW)	204	196	185	174	164	153	146	130	95.0			Heating capacity	(kW)	122	139	158	177	194	183	215
4	Power consumption	(kW)	34.1	39.1	43.6	48.1	52.7	57.3	59.3	59.1	47.7		25	Power consumption	(kW)	37.2	38.0	38.5	38.7	39.7	33.2	32.6
4	Chilled water flow rate	(L/min)	417	401	380	357	335	313	300	266	194		20	Warm water flow rate	(L/min)	249	285	323	363	396	375	440
	Operation current	(A)	49.7	57.0	63.6	70.1	76.9	83.5	86.5	86.2	69.6			Operation current	(A)	55	55.9	56.8	57.0	58.4	48.3	47.5
	Cooling capacity	(kW)	219	216	204	192	180	168	157	141	97.6			Heating capacity	(kW)	122	139	157	176	193	182	214
7	Power consumption	(kW)	34.6	39.6	44.4	49.2	53.9	58.7	59.2	60.0	45.4		30	Power consumption	(kW)	40.7	41.7	42.5	43.2	44.6	37.5	37.3
1	Chilled water flow rate	(L/min)	449	442	417	393	369	344	322	288	200		30	Warm water flow rate	(L/min)	249	284	322	361	394	373	438
	Operation current	(A)	50.4	57.8	64.8	71.8	78.6	85.6	86.4	87.5	66.2			Operation current	(A)	61	61	63	64	66	55	54
	Cooling capacity	(kW)	230	228	217	204	191	179	165	149	99			Heating capacity	(kW)	121	138	156	176	192	181	213
9	Power consumption	(kW)	35.8	39.6	44.8	49.8	54.6	59.7	59.4	60.6	43.8		35	Power consumption	(kW)	43.7	45.4	46.4	47.8	49.2	41.9	42.3
9	Chilled water flow rate	(L/min)	471	467	445	418	392	366	337	305	203		30	Warm water flow rate	(L/min)	248	283	320	360	393	371	436
	Operation current	(A)	52.2	57.7	65.4	72.5	79.6	87.0	86.5	88.3	63.9			Operation current	(A)	64	67	68	70	72	61	62
	Cooling capacity	(kW)	244	245	238	224	210	194	178	155	101			Heating capacity	(kW)	120	137	156	175	191	181	212
12	Power consumption	(kW)	37.7	39.9	45.6	50.7	55.9	59.9	59.3	58.3	41.4		40	Power consumption	(kW)	46.9	48.9	50.6	52.1	53.8	46.4	47.3
12	Chilled water flow rate	(L/min)	500	502	487	460	430	397	364	317	206		40	Warm water flow rate	(L/min)	246	281	319	359	392	370	434
	Operation current	(A)	54.9	58.2	66.5	73.9	81.4	87.3	86.5	85.0	60.4			Operation current	(A)	69	72	75	77	78	68	69
	Cooling capacity	(kW)	252	252	248	236	223	205	189	158	101			Heating capacity	(kW)	119	136	155	175	189	180	211
15	Power consumption	(kW)	38.9	40.6	45.8	51.3	56.7	59.9	59.2	55.2	38.0		45	Power consumption	(kW)	50.0	52.5	54.6	56.8	58.0	51.0	52.5
15	Chilled water flow rate	(L/min)	*516	*516	508	483	457	420	387	324	208		40	Warm water flow rate	(L/min)	244	279	317	358	386	369	431
	Operation current	(A)	56.8	59.2	66.8	74.8	82.7	87.4	86.4	80.5	55.4			Operation current	(A)	74	77	80	83	85	74	77
	Cooling capacity	(kW)	252	252	248	237	226	210	194	159	102			Heating capacity	(kW)		135	152	167	177	179	209
20	Power consumption	(kW)	39.1	40.5	45.8	51.4	56.9	60.0	59.1	53.5	36.4		50	Power consumption	(kW)		56.3	57.8	58.2	58.2	55.6	57.4
20	Chilled water flow rate	(L/min)	*516	*516	508	485	462	431	398	326	209		50	Warm water flow rate	(L/min)		277	311	342	363	367	429
	Operation current	(A)	57.0	59.1	66.8	75.0	83.0	87.5	86.2	78.1	53.1			Operation current	(A)		83	85	85	85	81	84
	Cooling capacity	(kW)	252	252	248	237	226	210	194	160	102			Heating capacity	(kW)			143	155	164	172	194
25	Power consumption	(kW)	39.0	40.6	45.8	51.3	56.9	60.0	59.1	54.1	36.4		55	Power consumption	(kW)			58.4	58.1	58.0	57.9	57.4
20	Chilled water flow rate	(L/min)	*516	*516	508	485	462	431	398	327	209		55	Warm water flow rate	(L/min)			292	318	335	351	397
	Operation current	(A)	56.9	59.2	66.8	74.8	83.0	87.5	86.2	78.8	53.1			Operation current	(A)			85	85	84	84	84
	Cooling capacity	(kW)	245	245	243	232	220	209	195	102	102	1	Note 1: The val	ues shown in the table a	bove are	for an i	nlet / c	outlet c	hilled	water t	emper	ature
30	Power consumption	(kW)	39.1	38.7	43.5	48.8	54.1	59.5	59.5	36.3	36.3		differer	ntial of 7°C, RH 85%								
30	Chilled water flow rate	(L/min)	502	502	498	474	450	428	398	209	209	1		oling capacity has been	measured	d when	the m	odule	was op	perating	g at the	э
	Operation current	(A)	54.7	56.4	63.4	71.2	78.8	86.8	86.7	52.9	52.9		rated fr	equency.								

60HP Series EDGE Cooling-only

List of cooling capacities RUA-GP511C(L)

Chilled water outlet	li e e e				Outsi <u>d</u>	e air te	mpera	ture <u>(</u> °	C) (D <u>B</u>)		W	/arm water outlet	li e e			Out	side ai	r temp	erature	e (°C <u>) (</u>	DB)	
temperature (°C)	ltem		15	20	25	30	35	40	43	48	52	t	emperature (°C)			-20	-15	-10	-5	0	4	7	15
	Cooling capacity	(kW)	204	196	185	174	164	153	145	127	94.6			Heating capacity	(kW)	137	153	174	196	214	231	203	237
	Power consumption	(kW)	33.4	38.0	42.5	47.5	52.7	57.1	58.7	58.0	48.5		25	Power consumption	(kW)	48.8	49.7	50.9	51.4	51.3	52.4	38.5	37.9
4	Chilled water flow rate	(L/min)	418	402	379	357	335	313	296	260	194		25	Warm water flow rate	(L/min)	280	314	356	401	437	473	415	485
	Operation current	(A)	48.8	55.4	62.0	69.3	76.9	83.2	85.6	84.6	70.7			Operation current	(A)	73	74	76	76	76	77	57	55
	Cooling capacity	(kW)	219	216	204	192	180	168	155	137	96.8			Heating capacity	(kW)	137	154	175	196	213	230	202	235
7	Power consumption	(kW)	34.2	38.4	43.3	48.6	53.9	58.7	58.5	58.5	45.9		30	Power consumption	(kW)	52.9	54.6	56.1	56.8	56.8	58.2	43.4	43.2
1	Chilled water flow rate	(L/min)	448	443	418	393	369	344	317	281	198		30	Warm water flow rate	(L/min)	280	315	357	402	436	471	414	482
	Operation current	(A)	49.9	56.0	63.1	70.9	78.6	85.6	85.3	85.4	66.9			Operation current	(A)	79	81	83	84	84	86	63	63
	Cooling capacity	(kW)	230	229	217	204	191	178	162	146	98.6			Heating capacity	(kW)	136	153	175	197	213	229	201	235
9	Power consumption	(kW)	35.6	38.9	43.7	49.2	54.6	59.1	58.3	59.6	44.4		35	Power consumption	(kW)	56.7	58.8	61.2	62.5	62.3	63.6	48.2	48.9
9	Chilled water flow rate	(L/min)	471	468	445	418	392	364	332	298	202		30	Warm water flow rate	(L/min)	279	314	357	402	436	469	412	481
	Operation current	(A)	51.9	56.7	63.7	71.7	79.6	86.2	85.0	86.9	64.8			Operation current	(A)	85	88	90	92	92	94	70	71
	Cooling capacity	(kW)	244	244	239	225	210	192	175	155	100			Heating capacity	(kW)	135	153	174	196	212	229	200	234
12	Power consumption	(kW)	37.7	39.5	44.4	50.2	55.9	59.1	58.3	59.2	41.7		40	Power consumption	(kW)	60.5	63.5	65.9	67.8	67.3	69.2	53.1	54.3
12	Chilled water flow rate	(L/min)	501	501	490	460	430	393	358	318	206		40	Warm water flow rate	(L/min)	276	312	356	402	434	468	410	479
	Operation current	(A)	54.9	57.7	64.8	73.2	81.4	86.1	85.0	86.3	60.8			Operation current	(A)	91	94	97	100	99	102	77	79
	Cooling capacity	(kW)	252	252	249	237	223	203	185	158	101			Heating capacity	(kW)	132	151	173	192	208	221	200	233
15	Power consumption	(kW)	38.9	40.2	44.7	50.7	56.6	59.0	58.2	56.2	38.7		45	Power consumption	(kW)	63.5	67.4	70.6	71.4	71.0	71.3	58.1	59.9
15	Chilled water flow rate	(L/min)	*516		510	485	457	416		323	207		40	Warm water flow rate	(L/min)	270	309	354	392	426	453	410	477
	Operation current	(A)	56.8		65.2	74.0	82.5	86.0	84.8	82.0	56.4			Operation current	(A)	95	99	104	105	105	104	85	87
	Cooling capacity	(kW)	252		249	238	226	208		159	102			Heating capacity	(kW)		148	164	180	196	208	200	232
20	Power consumption	(kW)	39.1	40.3	44.7	50.9	56.8	59.1	58.4	54.6			50	Power consumption	(kW)		70.8	71.3	70.9	70.8	71.0	63.3	65.7
20	Chilled water flow rate	(L/min)	*516	*516	511	487	463	427	391	326	209		50	Warm water flow rate	(L/min)		304	336	369	401	425	410	474
	Operation current	(A)	57.0		65.2	74.1	82.8	86.2	85.2	79.7	54.3			Operation current	(A)		104	105	104	103	104	92	96
	Cooling capacity	(kW)	252	252	249	238	226	208	191	159	102			Heating capacity	(kW)				159	181	193	196	222
25	Power consumption	(kW)	39.0		44.7	50.9	56.8	59.1	58.4	54.6	37.1		55	Power consumption	(kW)				65.7	69.1	69.9	67.4	67.1
20	Chilled water flow rate	(L/min)	*516	*517	510	487	463	427	391	326	209		00	Warm water flow rate	(L/min)				327	371	396	401	454
	Operation current	(A)	56.9	58.6	65.2	74.1	82.8	86.2	85.2	79.7	54.1			Operation current	(A)				97	101	102	98	98
	Cooling capacity	(kW)	245		244	232	221	209		102	102	No	ote 1: The val	ues shown in the table al	bove are t	or an i	nlet / c	outlet o	hilled	water t	emper	ature	
30	Power consumption	(kW)	38.0		42.5	48.3	54.3	59.2		37.1	37.1		differen	itial of 7°C, RH 85%									
00	Chilled water flow rate	(L/min)	502		499	476	452	427	391	209	209	No		oling capacity has been i	neasured	when	the m	odule	was op	peratin	g at th	Э	
	Operation current	(A)	55.0	56.5	62.0	70.5	79.2	86.3	85.2	54.1	54.1			equency.									

List of heating capacities RUA-GP511H(L)

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 Powerful Heating Type Heat pump

List of heating capacities RUA-GP511F(L)

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.

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

70HP Series EDGE Heat pump

List of cooling capacities RUA-GP561H(L)

ist of co	oling capacitie	es RU	A-C	AP5	61 ⊢	I (L)						L	ist of he	ating capacitie	es RL	IA-C	P5	61⊢	I (L))
Chilled water outlet	ltem					e air te	_	<u> </u>					Warm water outlet					e air te		atu
temperature (°C)			15	20	25	30	35	40	43	48	52		temperature (°C)			-15	-10	-5	0	Ļ
	Cooling capacity	(kW)	226	217	205	194	182	171	163	144	95.6			Heating capacity	(kW)	153	174	196	214	+
4	Power consumption	(kW)	40.9	46.6	51.6		61.5	66.8	68.5	67.0	47.8		25	Power consumption	(kW)	49.7	50.9	51.4	51.3	-
	Chilled water flow rate	(L/min)	463	444	420	397	374	350	334	294	196			Warm water flow rate	(L/min)	314	356	401	437	+
	Operation current	(A)	59.7	67.9	75.3	-	89.6	97.4	99.9	97.7	69.7			Operation current	(A)	74	76	76	76	-
	Cooling capacity	(kW)	244	237	225	212	200	187	174	150	97.6			Heating capacity	(kW)	154	175	196	213	+
7	Power consumption	(kW)	42.1	47.0	52.6		63.3	68.5	68.0	64.7	45.0		30	Power consumption	(kW)	54.6	56.1	56.8	56.8	+
	Chilled water flow rate	(L/min)	500	486	461	435	410	383	357	307	200			Warm water flow rate	(L/min)	315	357	402	436	-
	Operation current	(A)	61.3	68.6	76.6	-	92.3	99.9	99.1	94.3	65.6	-		Operation current	(A)	81	83	84	84	+-
	Cooling capacity	(kW)	256	250	239	226	212	198	183	152	99.1			Heating capacity	(kW)	153	175	197	213	+
9	Power consumption	(kW)	43.0	47.2	53.1	58.7	64.0	68.8	68.0	61.8	43.5		35	Power consumption	(kW)	58.8	61.2	62.5	62.3	-
	Chilled water flow rate	(L/min)	523	512	489	462	435	405	375	311	203			Warm water flow rate	(L/min)	314	357	402	436	-
	Operation current	(A)	62.6	68.8	77.4	85.6	93.4	100.2	99.2	90.1	63.4			Operation current	(A)	88	90	92	92	-
	Cooling capacity	(kW)	270	267	258	245	232	214	197	156	101			Heating capacity	(kW)	153	174	196	212	
12	Power consumption	(kW)	44.6	47.8	53.6	59.5	65.4	69.0	68.2	58.2	41.1		40	Power consumption	(kW)	63.5	65.9	67.8	67.3	
12	Chilled water flow rate	(L/min)	552	548	528	502	475	438	403	319	206		40	Warm water flow rate	(L/min)	312	356	402	434	
	Operation current	(A)	65.1	69.8	78.2	86.7	95.3	100.6	99.4	84.9	59.9			Operation current	(A)	94	97	100	99	
	Cooling capacity	(kW)	274	273	265	254	242	224	208	158	101			Heating capacity	(kW)	151	173	192	208	
15	Power consumption	(kW)	45.0	48.0	53.9	59.9	65.9	68.9	68.2	54.9	37.7		45	Power consumption	(kW)	67.4	70.6	71.4	71.0	
15	Chilled water flow rate	(L/min)	561	559	542	520	497	458	426	325	208		45	Warm water flow rate	(L/min)	309	354	392	426	
	Operation current	(A)	65.6	70.0	78.5	87.3	96.1	100.5	99.4	80.0	54.9			Operation current	(A)	99	104	105	105	
	Cooling capacity	(kW)	274	273	264	253	243	227	213	160	102			Heating capacity	(kW)		164	180	196	Γ
	Power consumption	(kW)	45.1	48.0	53.8	59.8	66.2	69.0	68.3	53.7	36.2		=0	Power consumption	(kW)		71.3	70.9	70.8	
20	Chilled water flow rate	(L/min)	561	559	541	519	497	465	436	328	209		50	Warm water flow rate	(L/min)		336	369	401	Γ
	Operation current	(A)	65.7	70.0	78.4	87.2	96.5	100.6	99.5	78.3	52.7			Operation current	(A)		105	104	103	Γ
	Cooling capacity	(kW)	266	266	260	249	238	226	213	160	102	Ì		Heating capacity	(kW)			159	181	Γ
	Power consumption	(kW)	42.8	44.9	50.7	56.6	62.5	68.3	68.3	53.7	36.2			Power consumption	(kW)			65.7	69.1	t
25	Chilled water flow rate	(L/min)	545	545	532	509	487	463	436	327	209		55	Warm water flow rate	(L/min)			327	371	Г
	Operation current	(A)	62.5	65.4	78.4	82.5	91.1	99.5	99.5	78.3	52.7			Operation current	(A)			97	101	Γ
	Cooling capacity	(kW)	249	250	248	237	225	214	207	102	102									1
	Power consumption	(kW)	46.6	40.5	44.9	50.4	55.6	61.3	64.7	36.3	36.3	٢		ies shown in the table at	ove are f	or an ir	nlet / o	utlet cl	hilled v	Wá
30	Chilled water flow rate	(L/min)	510	511	508	485	462	437	423	209	209			tial of 7°C, RH 85%			4 m m m			
	Operation current	(<u> (</u> A)	57.3	59.1	65.5	73.5	81.0	89.4	94.3	52.9	52.9	ſ	lote 2: The coo rated fre	ling capacity has been n	neasured	wnen	the mo	odule v	vas op	e

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

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

50HP Series EDGE Heat pump

List of cooling capacities RUA-GP421HN(L)

Chilled water outlet	Item		Οι	utside a	ir temp	erature	(°C) (D	IB)
temperature (°C)	петт		30	35	40	43	48	52
	Cooling capacity	(kW)	143	136	129	125	118	112
4	Power consumption	(kW)	23.2	26.2	29.1	30.8	34.2	36.8
4	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
	Cooling capacity	(kW)	158	150	143	138	130	124
7	Power consumption	(kW)	23.6	26.8	29.8	31.4	34.9	37.7
1	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
	Cooling capacity	(kW)	168	160	152	147	139	132
9	Power consumption	(kW)	23.6	27.3	30.2	31.7	35.5	38.2
9	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
	Cooling capacity	(kW)	182	174	166	162	153	146
12	Power consumption	(kW)	23.8	27.6	30.9	32.7	36.4	39.1
12	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
	Cooling capacity	(kW)	190	183	175	170	161	155
15	Power consumption	(kW)	24.0	28.0	31.5	33.3	36.9	39.8
15	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
	Cooling capacity	(kW)	190	183	175	171	164	158
20	Power consumption	(kW)	24.0	28.0	31.4	33.3	37.2	40.1
20	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
	Cooling capacity	(kW)	190	182	175	171	164	158
25	Power consumption	(kW)	24.0	27.9	31.4	33.3	37.2	40.0
20	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
	Cooling capacity	(kW)	190	182	175	171	158	158
30	Power consumption	(kW)	26.2	27.9	31.4	33.3	40.0	40.0
30	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

60HP Series EDGE Heat pump

List of cooling capacities RUA-GP511HN(L)

Chilled water outlet	ltem		Ou	ıtside a	ir temp	erature	(°C) (D	B)
temperature (°C)	llem		30	35	40	43	48	52
	Cooling capacity	(kW)	172	164	156	152	144	137
4	Power consumption	(kW)	31.1	35.0	38.4	40.5	44.3	47.1
4	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
	Cooling capacity	(kW)	189	180	171	166	158	151
7	Power consumption	(kW)	31.9	35.9	39.5	41.3	45.5	48.6
1	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
	Cooling capacity	(kW)	201	191	182	177	168	160
9	Power consumption	(kW)	32.4	36.5	40.4	42.4	46.4	49.2
9	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
	Cooling capacity	(kW)	219	209	200	194	184	176
12	Power consumption	(kW)	32.9	37.5	41.6	43.8	47.8	50.9
12	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
	Cooling capacity	(kW)	230	219	209	204	194	187
15	Power consumption	(kW)	33.0	37.8	42.1	44.5	48.6	51.9
15	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
	Cooling capacity	(kW)	230	220	212	207	199	192
20	Power consumption	(kW)	33.0	37.8	42.3	44.6	49.0	52.3
20	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
	Cooling capacity	(kW)	230	220	212	207	199	192
25	Power consumption	(kW)	33.1	37.8	42.3	44.6	49.0	52.2
20	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
	Cooling capacity	(kW)	229	220	212	207	192	192
30	Power consumption	(kW)	35.0	37.8	42.3	44.6	52.3	52.3
30	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

70HP Series EDGE Cooling-only

List of cooling capacities RUA-GP561C(L)

Chilled water outlet	lk			(Dutside	e air te	mpera	ture (°	C) (DB))	
temperature (°C)	ltem		15	20	25	30	35	40	43	48	52
	Cooling capacity	(kW)	225	217	206	194	182	171	163	144	94.8
4	Power consumption	(kW)	40.1	45.5	50.1	55.9	61.1	66.0	67.6	66.7	48.1
4	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
	Cooling capacity	(kW)	244	238	225	212	200	187	174	149	97.1
7	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
	Cooling capacity	(kW)	255	250	239	226	212	198	182	152	98.9
9	Power consumption	(kW)	41.9	46.3	51.8	57.8	63.5	68.0	67.2	62.3	44.2
9	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
	Cooling capacity	(kW)	269	267	259	246	232	214	196	155	100
12	Power consumption	(kW)	43.7	47.1	52.6	58.9	64.8	68.2	67.1	58.5	41.2
12	Chilled water flow rate	(L/min)	551	547	530	503	476	437	401	318	205
	Operation current	(A)	63.8	68.7	76.8	85.8	94.5	99.4	97.9	85.3	60.0
	Cooling capacity	(kW)	274	274	266	254	243	224	207	158	101
15	Power consumption	(kW)	44.4	46.7	52.8	59.1	65.5	68.3	67.2	55.8	38.4
15	Chilled water flow rate	(L/min)	561	561	545	521	497	458	424	323	208
	Operation current	(A)	64.7	68.1	77.0	86.1	95.5	99.6	98.0	81.4	56.0
	Cooling capacity	(kW)	274	274	266	254	243	227	212	159	102
20	Power consumption	(kW)	44.4	46.7	52.9	59.1	65.5	68.2	67.3	54.3	37.0
20	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
	Cooling capacity	(kW)	267	267	262	250	238	227	212	159	102
25	Power consumption	(kW)	42.4	44.1	50.1	56.2	62.3	68.2	67.3	54.3	37.0
25	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
	Cooling capacity	(kW)	250	250	249	238	226	214	207	102	102
30	Power consumption	(kW)	45.5	40.3	43.9	50.0	55.9	61.3	64.7	37.0	37.0
30	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.

50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421CN (L)

Chilled water outlet			Ou	itside a	ir temp	erature	(°C) (D)B)
temperature (°C)	Item		30	35	40	43	48	52
	Cooling capacity	(kW)	143	136	129	125	118	112
4	Power consumption	(kW)	23.8	26.9	29.8	31.4	35.0	37.6
4	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
	Cooling capacity	(kW)	157	150	143	138	130	124
7	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
	Cooling capacity	(kW)	168	160	152	147	139	133
9	Power consumption	(kW)	24.3	28.1	31.1	32.6	36.4	39.3
9	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
	Cooling capacity	(kW)	182	174	166	162	153	146
12	Power consumption	(kW)	24.5	28.4	31.8	33.5	37.3	40.1
12	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
	Cooling capacity	(kW)	190	183	174	170	161	155
15	Power consumption	(kW)	24.7	28.8	32.2	34.3	37.9	40.9
15	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
	Cooling capacity	(kW)	190	182	175	171	164	158
20	Power consumption	(kW)	24.7	28.7	32.3	34.2	38.1	41.0
20	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
	Cooling capacity	(kW)	190	182	175	171	164	158
25	Power consumption	(kW)	24.7	28.8	32.3	34.2	38.1	41.0
20	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
	Cooling capacity	(kW)	190	182	175	171	158	158
30	Power consumption	(kW)	26.9	28.7	32.3	34.2	41.0	41.0
30	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 Cooling-only

List of cooling capacities RUA-GP511CN(L)

Chilled water outlet	Item		Ou	itside a	ir temp	erature	(°C) (D)B)
temperature (°C)	ILEITI		30	35	40	43	48	52
	Cooling capacity	(kW)	172	164	157	152	144	137
4	Power consumption	(kW)	31.2	35.0	38.7	40.5	44.2	47.1
4	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
	Cooling capacity	(kW)	189	180	172	167	158	151
7	Power consumption	(kW)	31.9	35.9	39.7	41.8	45.5	48.6
1	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
	Cooling capacity	(kW)	201	191	183	177	168	161
9	Power consumption	(kW)	32.4	36.5	40.7	42.3	46.4	49.5
9	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
	Cooling capacity	(kW)	219	208	200	194	184	176
12	Power consumption	(kW)	32.9	37.3	41.6	43.7	47.8	50.9
12	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
	Cooling capacity	(kW)	230	219	209	203	194	186
15	Power consumption	(kW)	33.0	37.9	42.1	44.1	48.6	51.7
15	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
	Cooling capacity	(kW)	229	219	211	206	198	191
20	Power consumption	(kW)	33.0	37.8	42.2	44.5	49.0	52.2
20	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
	Cooling capacity	(kW)	229	219	211	206	198	191
25	Power consumption	(kW)	33.0	37.8	42.2	44.5	49.0	52.2
20	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
	Cooling capacity	(kW)	228	219	211	206	191	191
30	Power consumption	(kW)	35.0	37.8	42.2	44.5	52.2	52.2
30	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.

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	ltem		Ou	itside a	ir temp	erature	(°C) (D	B)
temperature (°C)	Item		30	35	40	43	48	52
	Cooling capacity	(kW)	192	183	174	169	161	154
4	Power consumption	(kW)	37.9	42.2	45.8	47.6	51.9	55.0
4	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
	Cooling capacity	(kW)	210	200	190	185	176	168
7	Power consumption	(kW)	38.7	43.3	47.1	49.2	53.5	56.0
I	Chilled water flow rate	(L/min)	430	410	390	379	360	34
	Operation current	(A)	56.5	63.1	68.7	71.7	78.0	82.
	Cooling capacity	(kW)	223	212	202	196	187	179
9	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	36
	Operation current	(A)	57.1	64.3	70.3	73.1	79.7	84.
	Cooling capacity	(kW)	244	232	221	214	204	19
12	Power consumption	(kW)	39.7	44.8	49.6	51.4	56.4	59.
12	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.
	Cooling capacity	(kW)	254	243	233	226	216	20
15	Power consumption	(kW)	39.7	45.1	50.2	52.3	57.3	60.
15	Chilled water flow rate	(L/min)	520	498	476	463	442	42
	Operation current	(A)	57.9	65.7	73.2	76.3	83.5	88.
	Cooling capacity	(kW)	254	243	234	228	219	21
20	Power consumption	(kW)	39.7	45.1	50.2	52.5	57.5	61.
20	Chilled water flow rate	(L/min)	519	498	478	467	448	43
	Operation current	(A)	57.9	65.7	73.2	76.6	83.8	89.
	Cooling capacity	(kW)	253	243	234	228	219	21
25	Power consumption	(kW)	39.7	45.1	50.2	52.5	57.5	61.
20	Chilled water flow rate	(L/min)	519	497	478	467	449	43
	Operation current	(A)	57.8	65.7	73.2	76.6	83.8	89.
	Cooling capacity	(kW)	246	238	229	223	208	20
00	Power consumption	(kW)	42.2	43.0	47.9	50.1	58.8	58.
30	Chilled water flow rate	(L/min)	504	487	468	457	425	42
	Operation current	(A)	55.7	62.7	69.9	73.1	85.7	85.

Chilled water outlet	ltem		Οι	itside a	ir temp	erature	(°C) (D	B)
temperature (°C)	iterri		30	35	40	43	48	52
	Cooling capacity	(kW)	192	183	174	169	161	154
4	Power consumption	(kW)	37.4	41.6	45.2	46.8	51.3	54.4
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
	Cooling capacity	(kW)	210	200	191	185	176	169
7	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
	Cooling capacity	(kW)	223	212	202	197	187	179
9	Power consumption	(kW)	38.6	43.4	47.5	49.9	54.0	57.2
9	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
	Cooling capacity	(kW)	244	232	221	215	204	196
12	Power consumption	(kW)	39.2	44.4	48.8	51.1	55.6	59.0
12	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
	Cooling capacity	(kW)	253	243	232	226	216	208
15	Power consumption	(kW)	39.2	44.6	49.4	51.8	56.7	60.1
15	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
	Cooling capacity	(kW)	253	242	233	228	219	212
20	Power consumption	(kW)	39.2	44.4	49.5	52.1	56.9	60.6
20	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
	Cooling capacity	(kW)	253	242	233	228	219	212
25	Power consumption	(kW)	39.3	44.5	49.5	52.1	56.9	60.6
20	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
	Cooling capacity	(kW)	246	238	229	223	208	208
	-							

70HP Series EDGE Cooling-only

List of cooling capacities RUA-GP561CN(L)

62.6 69.7 Operation current (A) 55.6 Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 7°C.

(kW) 41.6

(L/min) 505

43.0 47.8

487 468

49.9 58.6 58.6

457 425 425

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.

Power consumption

Chilled water flow rate

30

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**

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		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	717	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		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	260	288
9	3,317	150~5400	860	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

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.

(Internal inverter pump

60HP Powerful Heating Type

(Internal inverter pump)

Number of modules	Standard flow	rate (L/min) (Note 1)	Flow rate range		Minimum water loop volume	In-unit water volume
Number of modules	Cooling	Heating	(L/min)	(Note 4)	(L) (Note 2 • 3 • 4)	(L)
1	369	410	150~600			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		050	288
9	3,317	3,686	150~5400		956	324
10	3,686	4,095	150~6000			360
11	4,054	4,505	150~6600			396
12	4,423	4,914	150~7200			432
13	4,791	5,324	150~7800			468
14	5,160	5,733	150~8400			504
15	5,529	6,143	150~9000			540
16	5,897	6,552	150~9600			576

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

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

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

70HP Series EDGE

Number of modules	Standard flow rate (L/min) (Note 2)	Flow rate range (L/min) (Note 3 • 6)	Minimum water loop volume (L) (Note 4 • 5 • 6)	In-unit water volume (L)
1	410	150~650		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	050	288
9	3,686	150~5850	956	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

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.

50HP Series EDGE **Powerful Heating Type**

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		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	29.9	1,200~4,800	5,734	288
9	2,764	2010	1,350~5,400	6,451	324
10	3,071		1,500~6,000	7,168	360
11	3,379		1,650~6,600	7,884	396
12	3,686		1,800~7,200	8,601	432
13	3,993		1,950~7,800	9,318	468
14	4,300		2,100~8,400	10,035	504
15	4,607		2,250~9,000	10,751	540
16	4,914		2,400~9,600	11,468	576

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

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

60HP Series EDGE

Number of modules	Standard flow rate (L/min) (Note 2)	Water pressure loss (kPa) (Note 1)	Flow rate range (L/min) (Note 4)	Minimum water loop volume (L) (Note 2 • 3 • 4)	In-unit water volume (L)
1	369		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	42.1	1,200~4,800	6,881	288
9	3,317	72.1	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.

Pumpless

Water Volume for set of modules

60HP Powerful Heating Type

Number of modules	Standard flow	rate (L/min) _(Note 1)	Water pressure	e loss (kPa) _(Note 1)	Flow rate range	Minimum water loop volume	In-unit water volume
Number of modules	Cooling	Heating	Cooling	Heating	(L/min) (Note 4)	(L) (Note 2 • 3 • 4)	(L)
1	369	410			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	42.1	51.2	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

Pumpless

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		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	51.2	1,200~5200	7,645	288
9	3,686	0112	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

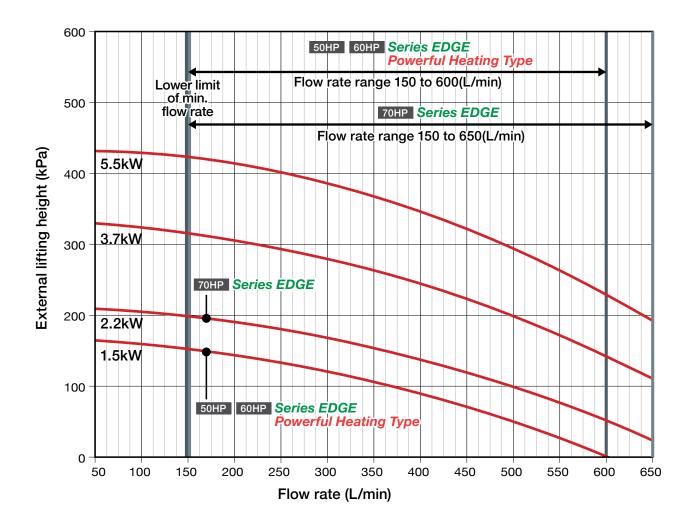
Note 1: For both at cooling/heating. Indicates the flow rate and water pressure loss when leaving/entering water temperature difference is 7°C at rated capacity. (water pressure loss is only for pumpless models) Note 2: Within the indicated flow rate range, the flow rate automatically changes from the 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

			50HP, 601	HP model			70HP model	70HP model 3.7 5.5 150~650 5000000000000000000000000000000000000		
Pump output		1.5	2.2	3.7	5.5	2.2	3.7	5.5		
Flow rate range (*1)	(L/min)		150)~600			3.7 5.5 150~650			
External lifting height ("2)	(kPa)	43~151	92~198	190~315	284~422	64~198	158~315	247~422		
Max. operation current (13)	(A)	3.3	4.5	7.3	10.5	4.5	7.3	10.5		
Max. power consumption (13)	(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 6: In case the nominal current is 380V.

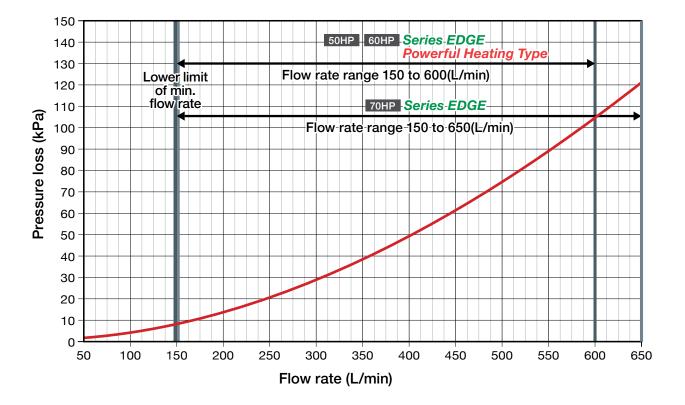
Note 7: Please refer to 7.5kW pump information in the full technical document (databook).

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.

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





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)

				50H	P Serie Powe	es EDG erful He	E eating 1	ӯре		60HP	Series	EDGE	
	Power supply			50/60Hz 380V/400V/415V						50/60	Hz 380V/400\	//415V	
		·		Pumpless Pumple		Dumalaaa		Internal inv	verter pump				
Pump	Motor Output		(kW)	Pumpiess	1.5	2.2	3.7	5.5	Pumpless	1.5	2.2	3.7	5.5
L L	Туре			-		Centrifug	gal pump		-		Centrifu	gal pump	
Internal	Type of start			_		Inverte	er start		- 1		Invert	er start	
nte	Control			-		Inve	erter		-		Inve	erter	
_	Max. Current		(A)	_	3.1	4.3	6.9	10	-	3.1	4.3	6.9	10
	Max. Input		(kW)	_	2.0	2.8	4.5	6.4	—	2.0	2.8	4.5	6.4
	No. of primary conr	necting parts for power supply wi	iring	No. of po	wer connection	on terminals ir	nside each mo	dule(M10)	No. of po	wer connecti	on terminals i	nside each mo	odule(M10)
	Standard Currer	nt	(A)	79.0	82.1	83.3	85.9	89.0	99.0	103	104	106	109
-	Power Source C	apacity	(kVA)	54.8	56.9	57.8	59.6	61.7	68.6	70.8	71.6	73.4	75.5
Design	Power	IV: Power Supply ≤ 20m	(mm ²)			38			3	38 60			
Dei		IV: Power Supply ≤ 50m	(mm ²)			38			3	8		60	
Supply	Wiring	CV: Power Supply ≤ 20m	(mm ²)			22					38		
l g	(mm2)	CV: Power Supply ≤ 50m	(mm ²)			22					38		
ē	Ground					22			22		3	38	
Power	Switch (/					100			100		1	25	
-	Fuse (A					100			100		1	25	
	Earth Leakage Circuit Breaker (Capacity) (A			A) 100					100	125			
	Earth Leakage (Circuit Breaker (Sensibility)	(mA)			100			100		2	00	

				60H	P Powe	erful He	eating 1	јур е		70HP Se	eries EDG	E
	Power supply				50/60H		//415V			50/60Hz 3	80V/400V/415V	
_				Pumpless		Internal inv	/erter pump		Pumpless	In	iternal inverter pun	ιр
Internal Pump	Motor Output		(kW)	1.5 2.2 3.7 5.5 Put		Fumpless	2.2	3.7	5.5			
ΠÞ	Туре			_	Centrifugal pump						Centrifugal pump	
erna	Type of start			_		Inverte	er start		—		Inverter start	
Inte	Control			_		Inve	erter		—		Inverter	
	Max. Current (-	3.1	4.3	6.9	10	—	4.3	6.9	10
	Max. Input (kV			_	2.0	2.8	4.5	6.4	—	2.8	4.5	6.4
	No. of primary connecting parts for power supply wiring			No. of po	wer connection	on terminals i	nside each mo	odule(M10)	No. of po	wer connection te	rminals inside eac	h module(M10)
	Standard Currer	nt	(A)	110	113	114	117	120	115	119	122	125
_	Power Source C	apacity	(kVA)	75.9	78.1	78.9	80.7	82.8	79.4	82.4	84.2	86.3
Supply Design	Power	IV: Power Supply ≤ 20m	(mm ²)			60					60	
De	Supply	IV: Power Supply ≤ 50m	(mm ²)			60					60	
ply	Wiring	CV: Power Supply ≤ 20m	(mm ²)			38					38	
Sup	(mm2)	CV: Power Supply ≤ 50m	(mm ²)			38					38	
/er	Ground					38					38	
Power	Switch (A					125					125	
	Fuse (A					125					125	
	Earth Leakage Circuit Breaker (Capacity) (A		(A)			125					125	
	Earth Leakage 0	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 oss-sectional area of the external

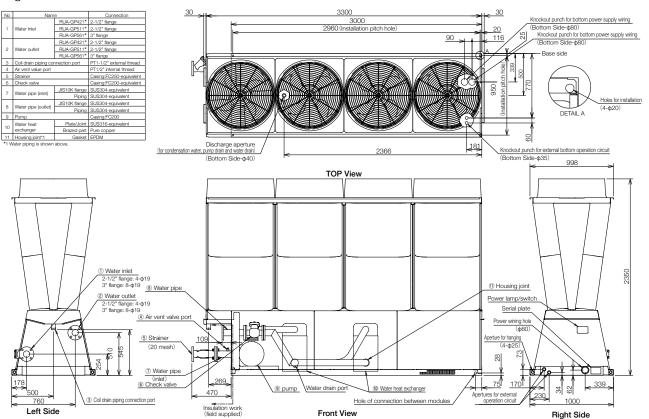
P	
Cross-sectional area of copper phase conductors supplying the equipment $$\rm S\ mm^2$	Minimum cross-sectional area of the external protective copper conductor Sp mm ²
S≤16	S
16 <s≤35< th=""><th>16</th></s≤35<>	16
S>35	S/2

 Fuse capacities in the tables are for B class fuses.
 Select a power supply transformer that can support values greater than those shown in the tables. Power supply line thickness values are for metal conduits with three or fewer wires inside a single conduit. (or six or fewer wires when two wires are used for one pole)
 Selected based on Japanese regulations. Select the appropriate unit based on the laws and regulations of the location where the unit is to be installed. Note 2: Check databook for 7.5kW pump and Module controller power supply information

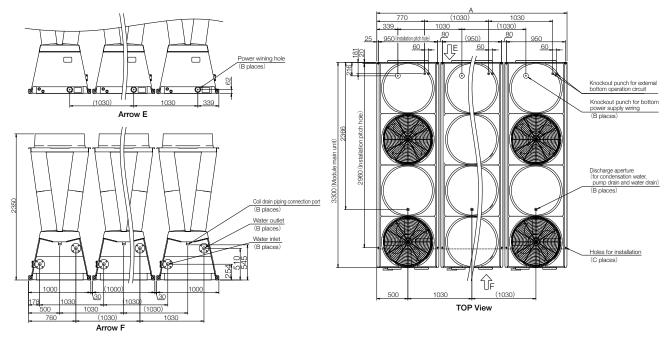
Outline Drawing

50, 60HP Series EDGE / Powerful Heating Type, 70HP Series EDGE With Pump/Pumpless *Pumpless model does not include check valve

A single module unit



Combined installation



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

Note 1: The values indicated above are applied to A through C.

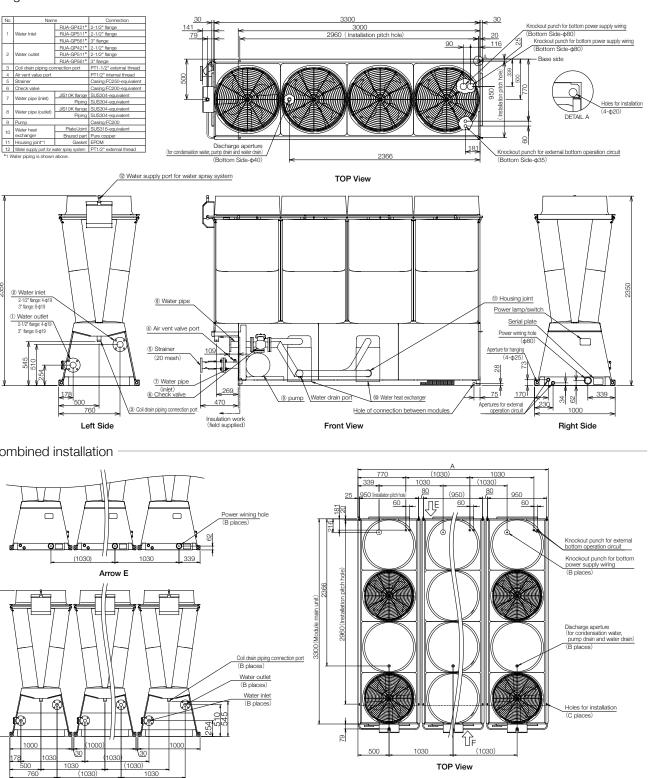
Note 2: When the power supply wiring kit (optional) is not used. Regarding the dimensions when the power supply wiring kit is installed, refer to the document of consent for power supply wiring kit.

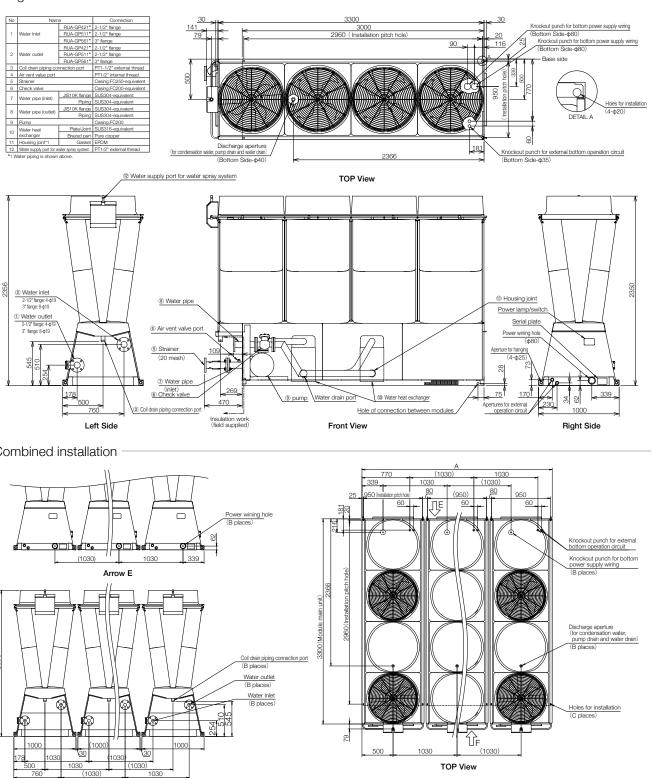
Note 3: 30mm clearance space between modules is only minimum requirement for Japanese service man. Please consider larger space for European service man.

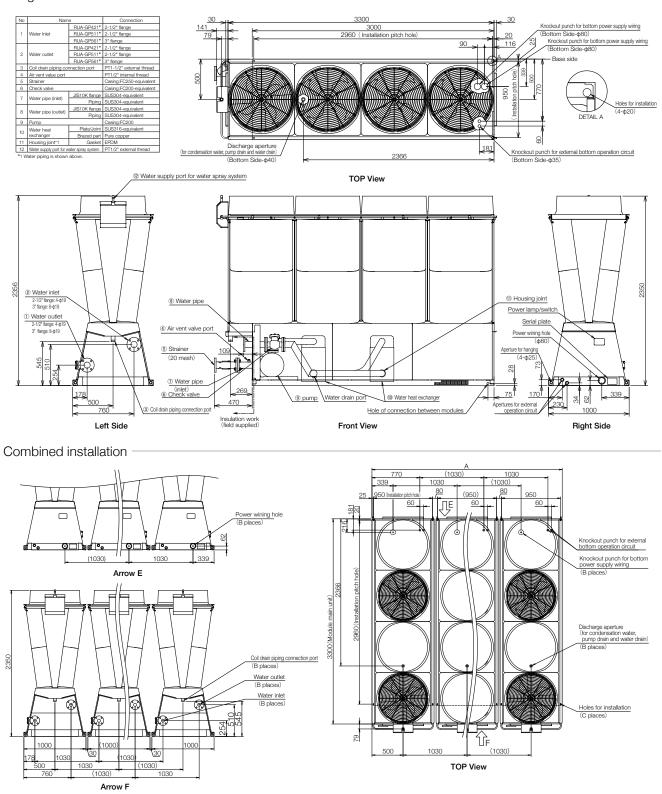
Outline Drawing

50, 60HP Series EDGE / Powerful Heating Type, 70HP Series EDGE - High EER - With Pump/Pumpless *Pumpless model does not include check valve

A single module unit







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

Note 1: The values indicated above are applied to A through C.

Note 2: When the power supply wiring kit (optional) is not used. Regarding the dimensions when the power supply wiring kit is installed, refer to the document of consent for power supply wiring kit.

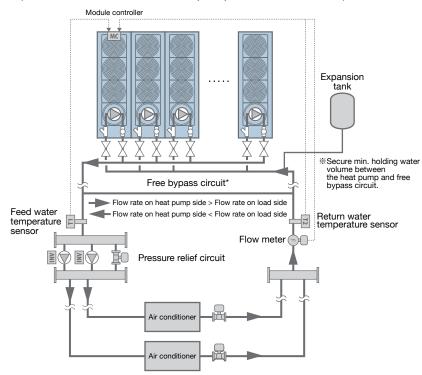
Note 3: 30mm clearance space between modules is only minimum requirement for Japanese service man. Please consider larger space for European service man.

System Examples for Internal Inverter Pump Units

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

1. Example of duplex pump system



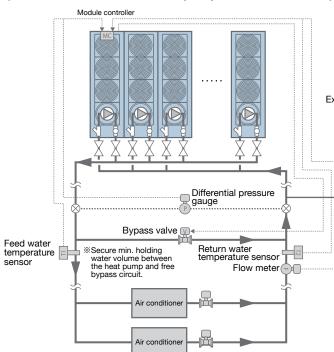


1. As there may be an unbalance in the load side pump flow rate and the heat pump flow rate, construct a normally open free bypass circuit

- 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

System Examples for Internal Inverter Pump Units

2. Single Pump: Example of standard system (load side: variable flow, heat pump side: variable flow)



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	0
Flow meter	Able to measure instantaneous value support voltage/current output* (Able to adjust input range span: DC 0 to 5V)	1	0	0
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	0	0
	Globe valve which can perform proportional control at current input DC 4 to 20mA (Able to adjust span)	1	0	0

* 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)

List of equipment for control

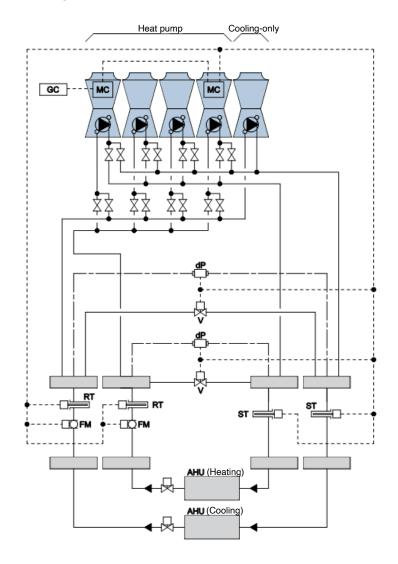
Part name	Specifications	Quantity	Provided locally	Constructed locally
Water temperature sensor (mandatory)	10k Ω external sensor	2	Attached to module controller	0
Flow meter	Able to measure instantaneous value support voltage/current output* (Able to adjust input range span: DC 0 to 5V)	1	0	0

* Attach $250\Omega\pm1\%$ metal film resistor (provided locally) when the signal has current 4-20mA. (In that case, input range span is DC 1 to 5 V)

- Expansion tank
- 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).

System Examples for Internal Inverter Pump Units

3. Example of Chilled/Warm Water Simultaneous Use System



 Install a valve for switching between the inlet and outlet of heat pumps that switch between chilled and warm water. (If it is a motor-operated valve, ensure it works with the local instrumentation panel.)

2. Connect each cooling and heating component (FM, ST, RT, dP, V) to the module controller (MC).

Option List

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

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

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

Note 3: Factory fitting is available as a custom option

	Item		Locally constructed and locally set up
	Ext. temp setpoint input	MC and GC standard functions	Required
	External capacity input	indent (MC)	Required (Note 3)
	Maximum number of modules that can be operated input	indent (MC)	Required (Note 3)
	Demand capacity input	indent (MC)	Required (Note 3)
	Run/Stop input, make signal supported	MC and GC standard functions	Required
	Run/Stop input, pulse signal supported (over 500 msec)	MC and GC standard functions	Required
	Operation pattern input	MC and GC standard functions	Required
	Enabling operation by each system input	MC standard functions	Required
	Demand input	MC standard functions	Required
	Pump interlock input	MC standard functions	Required
	Forced fan operation input	indent (MC)	Required (Note 3)
	Power outage recovery input	indent (MC+GC)	Required (Note 3)
	Anti-freezing pump interlock input	indent (MC)	Required (Note 3)
	Operation mode output (for each system)	indent (MC)	Required (Note 3)
	Operating capacity output	MC and GC standard functions	Required
	Simple input display (instant values)	GC standard functions	Not necessary
	Simple watt-hour display (daily usage)	GC standard functions	Not necessary
	Simple input/output (instant values)	GC standard functions	Required
E	Simple capacity display (instant values)	MC and GC standard functions	Not necessary
5	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;

	Туре	Model Code
	Standard Water Application	RBP-MC003SSE
	Standard Water Application + Modbus	RBP-MC003SSDE
Standard Model	Brine Water Application	RBP-MC003SSRE
	Brine Water Application + Modbus	RBP-MC003SSRDE
	Standard Water Application	RBP-MC003SSFE
	Standard Water Application + Modbus	RBP-MC003SSFDE
Powerful Heating Type Model	Brine Water Application	RBP-MC003SSFRE
	Brine Water Application + Modbus	RBP-MC003SSFRDE

Custom Options

	Custom Option	Remarks
	Anti corrosion & heavy anti corrosion models	- Follows JRA standards
	Large ∆T 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	
Unit	Stainless steel water strainer & check valve	
	Special pump specification	
	Heat storage system specification	
	UPS connecting software	
	Fast start up specification	
	Automatic system recovery	
Mark to October Harr (MO)	Factory fitting	
Module Controller (MC)	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

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

		With an inverter pump					
Mc	del	Series EDGE Cooling-only	Series EDGE Heat pump	Powerful Heating Type Heat pump			
FOHD	Standard type	RUA-GP421C(*1)R8-E	RUA-GP421H(*1)R8-E	RUA-GP421F(*1)R8-E			
50HP	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			
бонр	High-EER type	RUA-GP511C(*1)NR8-E	RUA-GP511H(*1)NR8-E	RUA-GP511F(*1)NR8-E			
70110	Standard type	RUA-GP561C(*1)R8-E	RUA-GP561H(*1)R8-E				
70HP	High-EER type	RUA-GP561C(*1)NR8-E	RUA-GP561H(*1)NR8-E				

			Pumpless					
Model		Series EDGE Cooling-only	Series EDGE Heat pump	Powerful Heating Type Heat pump				
	Standard type	RUA-GP421CLR8-E	RUA-GP421HLR8-E	RUA-GP421FLR8-E				
50HP	High-EER type	RUA-GP421CLNR8-E	RUA-GP421HLNR8-E	RUA-GP421FLNR8-E				
	Standard type	RUA-GP511CLR8-E	RUA-GP511HLR8-E	RUA-GP511FLR8-E				
60HP	High-EER type	RUA-GP511CLNR8-E	RUA-GP511HLNR8-E	RUA-GP511FLNR8-E				
	Standard type	RUA-GP561CLR8-E	RUA-GP561HLR8-E					
70HP	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. *Note 2:-E is for countries in Europe except United Kingdom, Turkey. Please use -UK for United Kingdom and -TR for Turkey.

• Brine leaving temperature and brine density

① Refer to the capacity table regarding the performance of the brine chiller. In addition, the density of the brine (ethylene glycol) is the density noted below so the freezing temperature is (brine outlet temperature) - (8°C).

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

50HP Powerful Heating Type Heat pump

		_			
				380V /400V/ 415V	380V /400V/ 415V
single module	e unit)			RUA-GP421F(*1)R8-E	RUA-GP421F(*1)NR8-E
capacity		(Note 1,7)	(kW)	100	100
capacity		(Note 1,7)	(kW)	150	150
Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
	Height		(mm)	2350	2350
Dimensions	Width	(Note 2)	(mm)	1000	1000
	Depth	(Note 2)	(mm)	3300	3300
weight			(kg)	1,363	1,376
g weight			(kg)	1,399	1,412
upply		(Note 1,3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
e current for p	ower supply design	(Note 4,5)		82.1	82.1
	Nominal current		(A)	61.1(60.9)	41.5(42.2)
	Nominal input		(kW)	39.8(39.7)	27.0(27.5)
Cooling	EER			2.51(2.52)	3.70(3.64)
	SEER			4.88	5.06
	Power factor	(Note 6)	(%)	99	99
	Nominal current		(A)	63.1(63.9)	63.1(63.9)
	Nominal input		(kW)	41.1(41.7)	41.1(41.7)
Heating	COP			3.65(3.60)	3.65(3.60)
	SCOP			4.26	4.26
	Power factor	(Note 6)	(%)	99	99
Туре				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
	Туре			RB74AF	RB74AF
sor oil	Charge		(L)	2.0 x 4	2.0 x 4
er coil - air sic	le			Plate fin coil	Plate fin coil
Туре				Propeller fan	Propeller fan
			(m ³ /min)	1,230 (max. value)	1,230 (max. value)
			. ,		Inverter starter
	x number of units		(kW)	1.2 x 4	1.2 x 4
		(_	13.6 x 1
				_	0.2
			. ,	_	Continuous spraying when outside temperature and compressor capacity exceeds setting value
			(kW)	2.2	2.2
			()		Centrifugal pump
					Inverter
	rent		(A)		4.5
					2.8
		(Note 11)	(,		Brazed plate heat exchanger (SUS316 equivalent)
					R32
			(ka)		8.8 x 4
			((19)		Electric expansion valve
			(\\)		75 × 6
		(Note 12)			6 ~ 100
			(70)		
Operation control					
e device				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pur	np), crankcase heater, open-phase protection, microcomputer controller (compressor timegua
Cold/Hot wat	er inlet				2-1/2" flange x 1 (JIS10K)
					2-1/2 flange x 1 (JIS10K) 2-1/2" flange x 1 (JIS10K)
					PT1-1/2" external thread × 1
					83.8
	oprotoly				
	Unit color Unit color Unit color Dimensions weight upply e current for p cooling Cooling Gooling Heating Type Coolor Heating Type Coolor Goolor Unit Case heater Cool - air sice Type Air quantity Type of start Motor output Water spray v Supply water Control Motor output Type Flow control Motor output Type Flow control Motor output Type R32 charge Control Naximum cur Minimum inpu water side Type R32 charge Control Naximum cur Minimum inpu water side Type R32 charge Control Naximum cur Minimum inpu water side Type R32 charge Control Notor output Control steps n control System e device Cold/Hot wat Coil drain power level	HeightDimensionsHeightDimensionsWidtha weightDeptha weightNominal currentapplyNominal currenta current for >vwer supply designAnninal inputEERSEERPower factorMominal currentNominal currentNominal currentNominal inputECODINGBernerMotor output > number of unitsType of startCase heaterType of startSor oilType of startType of startMotor output > number of unitsWater spray >olumeSupply water pressureControlMotor output > number of unitsWater spray >olumeSupply water pressureControlMotor output > number of unitsWater spray >olumeSupply water pressureControlMaximum currentMinimum inputwater sideTypeR32 chargeControl stepsn control stepscontrol stepscondrinenceCold/Hot water outletCold/Hot water outletCold/Hot water outletCold/Hot water outletCold/Hot water outletCold/Hot water outlet </td <td>Linit color Unit color Dimensions Height Width (Note 2) Depth (Note 2) weight (Note 2) gweight (Note 2) Mominal input (Note 4.0) Mominal input (Note 4.0) Mominal input (Note 4.0) Mominal input (OP SCOP (Note 6) Type [Type Type of start (Carge Air quantity [Type Type of start (Noto routput × number of units) Motor output × number of units (Notor 10)<</td> <td></td> <td>backbody (v) 100 backbody (v) 100 backbody (v) 300 Width (v) 300 weight (v) 1,833 g weight (v) 3.9 mominal input (V) 3.9 Mominal input (V) 3.163.9 Mominal input (V) 3.163.9 More output × number of units (V) 3.163.9 Type (V) 3.7 4 Type of start (V) 3.7 4 Type of start (V) 3.7 4<</td>	Linit color Unit color Dimensions Height Width (Note 2) Depth (Note 2) weight (Note 2) gweight (Note 2) Mominal input (Note 4.0) Mominal input (Note 4.0) Mominal input (Note 4.0) Mominal input (OP SCOP (Note 6) Type [Type Type of start (Carge Air quantity [Type Type of start (Noto routput × number of units) Motor output × number of units (Notor 10)<		backbody (v) 100 backbody (v) 100 backbody (v) 300 Width (v) 300 weight (v) 1,833 g weight (v) 3.9 mominal input (V) 3.9 Mominal input (V) 3.163.9 Mominal input (V) 3.163.9 More output × number of units (V) 3.163.9 Type (V) 3.7 4 Type of start (V) 3.7 4 Type of start (V) 3.7 4<

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 of 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 values at based on (Co)(Not Plaze) and (Co)(Not Plaze).
 (Note 2) Dimensions do not include projections of values 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

 (Note 6) Shows values based on the outdoor air temperature and outlet water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time coefficient performance test. Please note that the variable flow control is performed under conditions in which the entering / leaving water temperature differential is 7 °C and constant. (Note 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) This supply water quality states and others and values satisfy the Japan Befrigeration and Air Conditioning in later a value supply water solar (Power Coality) (Note 9) Ensure that the water quality state and and terms and values satisfy the Japan Befrigeration and Air Conditioning industry Association's "Water Quality Gualences 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 for Pumpless model) (Note 12) The capacity control range varies with operating conditions.

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

50HP Series EDGE Heat pump

				Standard type	High EER type
				380V /400V/ 415V	380V /400V/ 415V
Model (A	single module	e 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
,	Unit color			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
Exterior		Height	(mm)	2350	2350
EXte	Dimensions	Width	(Note 2) (mm)	1000	1000
		Depth	(Note 2) (mm)	3300	3300
Shipping	weight		(kg)	1,353	1,365
Operatin	g weight		(kg)	1,389	1,401
Power su	upply		(Note 1,3)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referenc	ce current for p	ower supply design	(Note 4,5)	82.1	82.1
		Nominal current	(A)	61.1(60.9)	41.5(42.2)
		Nominal input	(kW)	39.8(39.7)	27.0(27.5)
	Cooling	EER		2.51 (2.52)	3.70(3.64)
Electrical data		SEER		4.88	5.06
rical		Power factor	(Note 6) (%)	99	99
lect		Nominal current	(A)	63.1(63.9)	63.1(63.9)
ш		Nominal input	(kW)	41.1(41.7)	41.1(41.7)
	Heating	COP		3.65(3.60)	3.65(3.60)
		SCOP		4.26	4.26
(Note 14)		Power factor	(Note 6) (%)	99	99
لم ا	Туре			Hermetic rotary	Hermetic rotary
Compressor	Motor output × number of units (kW)		(kW)	9.0 x 4	9.0 × 4
du	Type of start			Inverter starter	Inverter starter
8	Case heater		(VV)	37 x 4	37 x 4
		Туре		RB74AF	RB74AF
Compres	ssor oil	Charge	(L)	2.0 x 4	2.0 x 4
Condens	ser coil - air sic	le		Plate fin coil	Plate fin coil
	Туре			Propeller fan	Propeller fan
_	Air quantity		(m³/min)	1,230 (max. value)	1,230 (max. value)
Fan	Type of start			Inverter starter	Inverter starter
		x number of units	(kW)	1.2 x 4	1.2 x 4
ay em	Water spray v	volume	(L/min)	-	13.6 x 1
Spray system	Supply water	pressure	(Note 10) (MPa)	-	0.2
(Note 8, 9)				-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor output		(kW)	2.2	2.2
	Туре			Centrifugal pump	Centrifugal pump
Pump	Flow control			Inverter	Inverter
	Maximum cu	rent	(A)	4.5	4.5
	Minimum inp	ut	(kW)	2.8	2.8
Cooler -	water side		(Note 11)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
Ħ	Туре			R32	R32
Refrigera	R32 charge		(kg)	8.8 x 4	8.8 x 4
Be	Control			Electric expansion valve	Electric expansion valve
Capacity	control steps		(Note 12) (%)	6 ~ 100	6 ~ 100
Operatio	n control			Microprocessor controls flow rate contr	ol and chilled (warm) water temperature
Defrost s	system			Distributed reve	rse cycle system
					p), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, ge temperature, low pressure protection, sensor failure, water pressure alarm)
ers Srs	Cold/Hot wat	er inlet		2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wat	er outlet		2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
dia	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound p	ower level			83.8	83.8
	l parts sold se	parately		Module controller (MC) (exter	nal 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), -5°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).
Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
Capacities and the ardromance values are have on [EUNA0016/2281 and (EUNA016/2281 and (EUNA016/2281

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) Even when there is a fluctuation in supply voltage, do not exceed ± 10% and keep imbalances between the supply voltages within 2%. (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 coll surface. If necessary, install a water softener on the supply water guality Guidelines for Cooling and Air Conditioning Devices" (JRA-GL-02-1994). (Note 9) Ensure that the water duality tiens 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 into advaries 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 tor Pumpless mode)) (Note 12) The capacity control range varies with operating conditions.

(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.

(Note 14) Electrical data is not including inbuilt pump.

60HP Series EDGE Heat pump

				Standard type	High EER type
				380V /400V/ 415V	380V /400V/ 415V
Model (A	A single modul	e unit)		RUA-GP511H(*1)R8-E	RUA-GP511H(*1)NR8-E
Cooling	capacity		(Note 1,7) (kW)	118	118
	capacity		(Note 1,7) (kW)	180	180
	Unit color			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
arior		Height	(mm)	2350	2350
Exterior	Dimensions	Width	(Note 2) (mm)	1000	1000
_		Depth	(Note 2) (mm)	3300	3300
Shipping	g weight		(kg)	1,353	1,365
Operatir	ng weight		(kg)	1,389	1,401
Power s	upply		(Note 1,3)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referen	ce current for	power supply design	(Note 4,5)	103	103
		Nominal current	(A)	74.2(73.9)	51.0(51.6)
		Nominal input	(kW)	48.4(48.2)	33.2(33.6)
	Cooling	EER		2.44(2.45)	3.55(3.51)
Electrical data		SEER		4.77	4.94
rical		Power factor	(Note 6) (%)	99	99
lecti		Nominal current	(A)	78.7(80.1)	78.7(80.1)
ш		Nominal input	(kW)	51.3(52.2)	51.3(52.2)
	Heating	COP		3.51 (3.45)	3.51(3.45)
		SCOP		4.35	4.35
(Note 14)		Power factor	(Note 6) (%)	99	99
r	Туре			Hermetic rotary	Hermetic rotary
Compressor	Motor output × number of units (kW)		(kW)	11.0 x 4	11.0 x 4
īduo	Type of start			Inverter starter	Inverter starter
ö	Case heater (W)		(W)	37 x 4	37 x 4
_				RB74AF	RB74AF
Compre	Charge (L)		(L)	2.0 x 4	2.0 x 4
Conden	ser coil - air si	de		Plate fin coil	Plate fin coil
	Туре			Propeller fan	Propeller fan
Fan	Air quantity		(m³/min)	1,230 (max. value)	1,230 (max. value)
ш	Type of start			Inverter starter	Inverter starter
	Motor output	t x number of units	(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray	volume	(L/min)	-	13.6 x 1
sys sys	Supply water	r pressure	(Note 10) (MPa)	-	0.2
(Note 8, 9)	Control			-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor output	t	(kW)	2.2	2.2
0.	Туре			Centrifugal pump	Centrifugal pump
Pump	Flow control			Inverter	Inverter
	Maximum cu	rrent	(A)	4.5	4.5
	Minimum inp	ut	(kW)	2.8	2.8
Cooler -	water side		(Note 11)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
ant	Туре			R32	R32
Refrigerant	R32 charge		(kg)	8.8	x 4
æ	Control			Electric expansion valve	Electric expansion valve
Capacit	y control steps	3	(Note 12) (%)	4 ~ 100	4 ~ 100
Operatio	on control			Microprocessor controls flow rate control	rol and chilled (warm) water temperature
Defrost	system			Distributed reve	rse cycle system
Protecti	ve device				p), crankcase heater, open-phase protection, microcomputer controller (compressor time guards ge temperature, low pressure protection, sensor failure, water pressure alarm)
g ers	Cold/Hot wa	ter inlet		2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wa	ter outlet		2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
di	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound p	ower level			83.8	83.8
Destruction	d parts sold se	eparately		Module controller (MC) (exter	nal 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 (EWT), -5°C leaving water (EWT), -5°C leaving water (LWT). Design water flow rate must be within the range 5 to 10°C of entering / eaving water temperature differences. Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2013. Nota 20

(Note 2) Dimensions do not include projections of values at based on (Co)(Not Projections).
 (Note 2) Dimensions do not include projections of values for pipe connections.
 (Note 3) Even when there is a fluctuation in supply voltage, do not exceed ± 10% and keep inbalances 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

(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 watel 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) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)
(Note 13) The external sensor's lead wire length is 30 m.
(Note 14) Electrical data is not including inbultity pump.

50HP	Series	EDGE	Cooling-only
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				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)			(Note 1,7) (k		100
oooning	Unit color		(14	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
ŗ		Height	(m		2350
Exterior	Dimensions	Width	(Note 2) (m	1	1000
ш	Diriciloiorio	Depth	(Note 2) (IT	1 1	3300
Shinning	g weight	Dopin	(1		1,326
	ng weight		(1		1,362
Power s			(Note 1,3)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		ower supply design	(Note 4,5)	82.1	82.1
		Nominal current		61.1(61.4)	42.3(43.0)
Electrical data		Nominal input	(k		27.5(28.0)
trica	Cooling	EER	//)	2.51(2.50)	3.63(3.57)
Elect	Cooling	SEER		4.90	5.08
(Note 14)		Power factor	(Note 6) (99
	Туре	Fower lactor	(Hermetic rotary	Hermetic rotary
SSOI		× number of units	(k		6.2 x 4
Compressor		x humber of units	(K		
Con	Type of start				Inverter starter
	Case heater	-	(37 x 4
Compre	ssor oil	Туре		RB74AF	RB74AF
Charge (L)					2.0 x 4
Conden	ser coil - air si	de		Plate fin coil	Plate fin coil
	Type			Propeller fan	Propeller fan
Fan	Air quantity (m³/min)		(m³/i		1,230 (max. value)
	Type of start			Inverter starter	Inverter starter
	Motor output	x number of units	(k	1.2 x 4	1.2 x 4
Spray system	Water spray		(L/m		13.6 x 1
	Supply water	r pressure	(Note 10) (MF	a)	0.2
(Note 8, 9)	Control			-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor output		(k	0 2.2	2.2
ę	Туре			Centrifugal pump	Centrifugal pump
Pump	Flow control			Inverter	Inverter
	Maximum cu	rrent		4.5	4.5
	Minimum inp	ut	(k	0 2.8	2.8
Cooler -	water side		(Note 11)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
ant	Туре			R32	R32
Refrigerant	R32 charge		(1) 8.8 × 4	8.8 x 4
č	Control			Electric expansion valve	Electric expansion valve
Capacity control steps (Note 12) (%)			(Note 12)	6 ~ 100	6 ~ 100
Operatio	on control			Microprocessor controls flow rate con	trol and chilled (warm) water temperature
Protectiv	ve device				mp), crankcase heater, open-phase protection, microcomputer controller (compressor time guard low pressure protection, sensor failure, water pressure alarm)
SIS	Cold/Hot wa	ter inlet		2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wa	ter outlet		2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
diai	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Coundin	ower level			83.8	83.8
Sound L					

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 Cooling: 2°C entering water (EVI), -5°C, leaving water (LWI), 35°C DB outdoor air (OA1) (High EEH type: 35°C DB, 24°C WB (OA1), 21°C spray water device feed 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)Ne313/2013.
 (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, refor 0⁺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) Ower 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 scales are other coil surface. If necessary install a vater scale coil scale (Provided locally)
 (Note 9)
 Ensure that the variable is the scale of the locally)

(Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model) (Note 12) The capacity control range varies with operating conditions.

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

(Note 14) Electrical data is not including inbuilt pump.

60HP Powerful Heating Type Heat pump

					Standard type	High EER type
					380V /400V/ 415V	380V /400V/ 415V
Model (A	A single modu	le unit)			RUA-GP511F(*1)R8-E	RUA-GP511F(*1)NR8-E
Cooling capacity (Note 1.7) (kW)				(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)
		Height		(mm)	2350	2350
EXT	Dimensions	Width	(Note 2)	(mm)	1000	1000
Dimensions Width Note 2) (mm) Depth (Note 2) (mm)		(mm)	3300	3300		
Shipping	g weight			(kg)	1,363	1,376
Operatir	ng weight			(kg)	1,399	1,412
Power s			(Note 1,3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Reference	ce current for	power supply design	(Note 4,5)		113	113
		Nominal current		(A)	74.2(73.9)	51.0(51.6)
		Nominal input		(kW)	48.4(48.2)	33.2(33.6)
ata	Cooling	EER			2.44(2.45)	3.55(3.51)
a a		SEER			4.77	4.94
Electrical data		Power factor	(Note 6)	(%)	99	99
Шe		Nominal current		(A)	89.7(90.8)	89.7(90.8)
		Nominal input		(kW)	58.5(59.2)	58.5(59.2)
	Heating	COP			3.42 (3.38)	3.42 (3.38)
(Note 14)		SCOP	(Note 6)	(0()	4.23	4.23
	-	Power factor	(NULE D)	(%)	99	99
ssor	Туре			(1) 4.0	Hermetic rotary	Hermetic rotary
Compressor	· · ·	t × number of units		(kW)	12.5 x 4	12.5 x 4
Con	Type of start				Inverter starter	Inverter starter
	Case heater	T		(W)	37 x 4	37 x 4
Compre	ssor oil	Type		(L)	RB74AF	RB74AF
Condon	ser coil - air si	Charge		(L)	2.0 x 4 Plate fin coil	2.0 x 4 Plate fin coil
Jonden		ue			Propeller fan	Propeller fan
_	Type Air quantity			(m³/min)	1,230 (max. value)	1,230 (max. value)
Fan	Type of start			(III /IIIII)	Inverter starter	Inverter starter
		t x number of units		(kW)	1.2 x 4	1.2 x 4
> E	Water spray			(L/min)	-	13.6 x 1
Spray system	Supply wate		(Note 10)	(MPa)		0.2
(Note 8, 9)	Control	piccourc		(ivii cu)	_	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor outpu	t		(kW)	2.2	
	Туре	·		()	Centrifugal pump	Centrifugal pump
Pump	Flow control				Inverter	Inverter
đ	Maximum cu	rrent		(A)	4.5	4.5
	Minimum inp			(kW)	2.8	2.8
Cooler -	water side		(Note 11)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
ŧ	Туре				R32	R32
rigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
Refriç	Control				Electric expansion valve	Electric expansion valve
Drain pa	n heater			(W)	75 × 6	75 × 6
Capacity	y control steps	3	(Note 12)	(%)	4 ~ 100	4 ~ 100
	on control				Microprocessor controls flow rate control	rol and chilled (warm) water temperature
Defrost s	system				Distributed reve	rse cycle system
	ve device				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pur	np), crankcase heater, open-phase protection, microcomputer controller (compressor timeguards, ge temperature, low pressure protection, sensor failure, water pressure alarm)
s.	Cold/Hot wa	ter inlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wa				2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
diar	Coil drain				PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound r	ower level				87.4	87.4
	d parts sold se	paratoly				rnal 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 (EVT), -5°C, leaving water (LVT), 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: 35°C entering water (EVT), 45°C leaving water (LVT), 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 (EVT), -5°C leaving water (EVT). -5°C leaving water (EVT), -5°C leaving water (LVT). 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 2)
 Even when there is a fluctuation in supply voltage, do not exceed ± 10% and keep imbalances between the supply voltages within 2%.

 (Note 3)
 Even when there is a fluctuation 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

 (Note 6) The power consumptions 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 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 9) Ensure that the water quality standard terms and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water Quality Guidentees for Conditioning and Air Conditioning and Air Conditioning Industry Association's "Water guality and and terms and values satisfy the Japan Refrigeration and Air Conditioning Industry Association's "Water guality Guidentees for Conditioning and Air Conditioning Devices" (JRA-GL-02-1994). (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally) (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)

(Note 12) The capacity control range varies with operating conditions. (Note 13) The external sensor's lead wire length is 30 m.

(Note 14) Electrical data is not including inbuilt pump

60HP Series EDGE Cooling-only

					Standard type	High EER type
				_	380V /400V/ 415V	380V /400V/ 415V
Model (A single module unit)					RUA-GP511C(*1)R8-E	RUA-GP511C(*1)NR8-E
	capacity		(Note 1,7)	(kW)	118	118
COOMING	Unit color			(RVV)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
o.		Height		(mm)	2350	2350
Exterior	Dimensions	Width	(Note 2)	(mm)	1000	1000
ш	Dimensions	Depth	(Note 2)	(mm)	3300	3300
Shipping	g weight	Грерин		(kg)	1,314	1,326
	ng weight			(kg)	1,350	1,362
Power s			(Note 1,3)	(Ky)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		power supply design	(Note 4.5)		103	103
		Nominal current		(A)	73.9(73.6)	49.5(51.4)
data		Nominal input		(kW)	48.2(48.0)	32.2(33.5)
rrical	Cooling	EER		(KVV)	2.45(2.46)	3.66(3.52)
Electrical	Cooling	SEER			4.80	4.99
(Note 14)		Power factor	(Note 6)	(%)	99	4.99
	Turne	Fower lactor	,	(70)	Hermetic rotary	Hermetic rotary
ssor	Type Motor output	tpumbar of unita		(14) 0.0	9.8 x 4	7.4 x 4
Compresso	<u> </u>	Motor output × number of units (kW)			9.8 x 4 Inverter starter	Inverter starter
Con	Type of start		(W)	37 x 4	37 x 4	
	Case heater	T		(VV)	BB74AF	BB74AF
Compre	ompressor oil					
0	Charge (L) Condenser coil - air side		(L)	2.0 x 4	2.0 x 4	
Conden	1	de			Plate fin coil	Plate fin coil
	Type			(44.3/44.14)	Propeller fan	Propeller fan
Fan	Air quantity			(m³/min)	1,230 (max. value)	1,230 (max. value)
	Type of start			(1) 4.0	Inverter starter	Inverter starter
		t x number of units		(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray		(Note 10)	(L/min)	_	13.6 x 1
(Note 8, 9)	Supply wate	r pressure	(14018-10)	(MPa)	-	0.2
(1010-0, 0)	Control			(1.) 6.0	- 2.2	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor outpu	1		(kW)		2.2
Pump	Туре				Centrifugal pump	Centrifugal pump
ШЧ	Flow control			(4)	Inverter	Inverter
	Maximum cu			(A)	4.5	4.5
0 1	Minimum inp	out	(Note 11)	(kW)	2.8	2.8
	water side		(4018 11)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
erant	Type				R32	R32
Refrigerant	R32 charge			(kg)	8.8 × 4	8.8 x 4
	Control		(Note 12)	(01)	Electric expansion valve	Electric expansion valve
	y control steps	5	(Note 12)	(%)	4 ~ 100	4 ~ 100
	on control				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pur	 ol and chilled (warm) water temperature p), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, w pressure protection, sensor failure, water pressure alam)
Ś	Cold/Hot wa	ter inlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wa				2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Pig	Coil drain				PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
	power level				83.8	83.8
		anarately				nal sensor × 2 included) ^(Note13)
Required parts sold separately					Module controller (MC) (exter	

(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 soray water device feed water temperature). For Cooling: 2*C entering water (LWI), 3*C, leaving water (LWI), 3*C UB outcode (10A1), (High EEH type: 3*C UB, 24*C WB (DA1), 2*C spray water device feed same capacity, outdoor air temperature and supplied water temperature (only for high EEH 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 (EUN)x0216/2281 and (EU)Nx0813/2013.
 (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%,

a flight requery compatible product or prevent main action (Note 6) Ower 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 nacesary, instal 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.

(Note 4) 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

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)				RUA-GP561C(*1)R8-E	RUA-GP561C(*1)NR8-E	
	capacity	(Note	e 1,7) (kW)	132	132	
COOMING	Unit color		(RVV)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	
ď		Height	(mm)	2350	2350	
Exterior	Dimensions			1000	1000	
ш	Dimensions		^{ote 2)} (mm)	3300	3300	
Shipping	l g weight	Deptit	(kg)	1,337	1,350	
	g weight		(kg)	1,373	1,386	
Power s		(Note		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V	
		oower supply design (Note		119	119	
		Nominal current	(A)	84.1(84.4)	58.2(58.9)	
dat		Nominal input	(KW)	54.8(55.0)	37.9(38.4)	
rrical	Cooling		(KVV)			
Electrical data	Cooling	EER		<u>2.41(2.40)</u> 4.75	3.48(3.44) 4.92	
(Note 14)		SEER	ote 6) (%)	4.75	99	
	-	Power factor (No	ote 6) (%)			
Compressor	Туре			Hermetic rotary	Hermetic rotary	
brei		× number of units	(kW)	11.1 x 4	8.5 x 4	
Con	Type of start			Inverter starter	Inverter starter	
	Case heater		(W)	37 x 4	37 x 4	
Compre	ssor oil	Туре		RB74AF	RB74AF	
		Charge	(L)	2.0 x 4	2.0 x 4	
Conden	ser coil - air si	de		Plate fin coil	Plate fin coil	
	Туре			Propeller fan	Propeller fan	
Fan	Air quantity		(m³/min)	1,230 (max. value)	1,230 (max. value)	
u.	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		(L/min)	-	13.6 x 1	
	Supply water	pressure (Note	^{e 10)} (MPa)	-	0.2	
(Note 8, 9)	Control			-	Continuous spraying when outside temperature and compressor capacity exceeds setting values	
	Motor output		(kW)	3.7	3.7	
Q	Туре			Centrifugal pump	Centrifugal pump	
Pump	Flow control			Inverter	Inverter	
	Maximum cu	rrent	(A)	7.3	7.3	
	Minimum inp	ut	(kW)	4.5	4.5	
Cooler -	water side	(Note	e 11)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)	
aut	Туре			R32	R32	
Refrigerant	R32 charge		(kg)	8.8 x 4	8.8 × 4	
č	Control			Electric expansion valve	Electric expansion valve	
Capacit	/ control steps	(Note	e 12) (%)	4 ~ 100	4 ~ 100	
Operatio	on control			Microprocessor controls flow rate control	rol and chilled (warm) water temperature	
Protectiv	ve device				p), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, ow pressure protection, sensor failure, water pressure alarm)	
ars	Cold/Hot wa	ter inlet		3" flange × 1 (JIS10K)	3" flange × 1 (JIS10K)	
Piping diameters	Cold/Hot wa	ter outlet		3" flange × 1 (JIS10K)	3" flange × 1 (JIS10K)	
dian D	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1	
Sound p	ower level			90.9	90.9	
	d parts sold se	narately		Module controller (MC) (exte		

(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 soray water device feed water temperature). For Cooling: 2*C entering water (LWI), 3*C, leaving water (LWI), 3*C UB outcode (10A1), (High EEH type: 3*C UB, 24*C WB (DA1), 2*C spray water device feed same capacity, outdoor air temperature and supplied water temperature (only for high EEH 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 (EUN)x0216/2281 and (EU)Nx0813/2013.
 (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 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

a high-frequency-compatible product to prevent mainunction (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 1) 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 localty) locally)

(Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model) (Note 12) The capacity control range varies with operating conditions.

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

(Note 14) Electrical data is not including inbuilt pump.

70HP Series EDGE Heat pump

					Standard type	High EER type
					380V /400V/ 415V	380V /400V/ 415V
Model (A single module unit)			RUA-GP561H(*1)R8-E	RUA-GP561H(*1)NR8-E		
Cooling	capacity		(Note 1,7)	(kW)	132	132
Heating	capacity		(Note 1,7)	(kW)	200	200
Ļ	Unit color	1			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
Exterior		Height		(mm)	2350	2350
й	Dimensions	Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	3300
Shipping				(kg)	1,376	1,389
	ng weight			(kg)	1,412	1,425
Power s			(Note 1,3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referenc	ce current for j	oower supply design	(Note 4,5)		119	119
		Nominal current		(A)	84.8(85.1)	59.2(59.6)
		Nominal input		(kW)	55.2(55.5)	38.6(38.8)
ita		EER			2.39(2.38)	3.42(3.40)
Electrical data		SEER			4.72	4.89
		Power factor	(Note 6)	(%)	99	99
Шe		Nominal current		(A)	89.7(90.8)	89.7(90.8)
		Nominal input		(kW)	58.5(59.2)	58.5(59.2)
	Heating	COP			3.42 (3.38)	3.42 (3.38)
		SCOP			4.28	4.28
(Note 14)		Power factor	(Note 6)	(%)	99	99
ssor	Туре				Hermetic rotary	Hermetic rotary
bree		× number of units		(kW)	12.5 x 4	12.5 x 4
Compressor	Type of start				Inverter starter	Inverter starter
	Case heater	-		(W)	37 x 4	37 x 4
Compre	ssor oil	Туре			RB74AF	RB74AF
0 1		Charge		(L)	2.0 x 4	2.0 x 4
Condens	ser coil - air si I+	de			Plate fin coil	Plate fin coil
	Type			(m3/min)	Propeller fan	Propeller fan
Fan	Air quantity			(m³/min)	1,230 (max. value)	1,230 (max. value)
	Type of start	w number of units		(1.4) A A	Inverter starter	Inverter starter 1.2 x 4
~ =		x number of units		(kW)	1.2 × 4	
Spray system	Water spray		(Note 10)	(L/min)		13.6 x 1 0.2
(Note 8, 9)	Supply water Control	pressure	(1010-10)	(MPa)		
(1010-0)-0)				(1.4) A A	3.7	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor output			(kW)	Centrifugal pump	3.7
Pump	Type Flow control				Inverter	Centrifugal pump Inverter
Ъ		mont		(4)	7.3	7.3
	Maximum cu Minimum inp			(A) (kW)	4.5	4.5
Cooler -	water side	ut	(Note 11)	(KVV)	Brazed plate heat exchanger (SUS316 equivalent)	4.5 Brazed plate heat exchanger (SUS316 equivalent)
	Type				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
Refri	Control			(KY)	Electric expansion valve	Electric expansion valve
Canacity	control steps		(Note 12)	(%)	4 ~ 100	4 ~ 100
	on control			(70)		rol and chilled (warm) water temperature
Defrost s						rse cycle system
	ve device				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pum	(se cycle system) p), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, ge temperature, low pressure protection, sensor failure, water pressure alarm)
ş	Cold/Hot wa	ter inlet			3" flange × 1 (JIS10K)	3" flange × 1 (JIS10K)
ping neter	Cold/Hot wa				3" flange × 1 (JIS10K)	3" flange × 1 (JIS10K)
Piping diameters	Coil drain				PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
	ower level				90.9	90.9

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

 (Note 3)
 Even when there is a fluctuation 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 Performance in necessary, instant a value subtraction is "Water Quality Standard items and values satisfy the Japan Performance in necessary, instant a value subtraction"s "Water Quality Standard items and values satisfy the Japan Performance in necessary, instant a value subtractions" Water Quality Standard items and values satisfy the Japan Performance in necessary, instant a value subtractions "Water Quality Standard items and values satisfy the Japan Performance in necessary, instant a value subtractions" (Water Quality Standard items and values satisfy the Japan Performance in necessary instant a value subtractions "Water Quality Standard items and values satisfy the Japan Performance in necessary instant a value subtractions" (Water Quality Standard items and values satisfy the Japan Performance in necessary instant a value subtractions "Water Quality Standard items and values satisfy the Japan Performance in necessary with the manual flow adjustment value on the water spray system inter. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally) (Note 1) Water circuit normal pressure: Or MPa or below (1.0 Mpa or below for Pumpless model) (Note 11) The capacity control range varies with operating conditions.

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

(Note 14) Electrical data is not including inbuilt pump

50HP Powerful Heating Type Heat pump

				Standard type	High EER type
				380V /400V/ 415V	380V /400V/ 415V
Model (A single module unit)				RUA-GP421FLR8-E	RUA-GP421FLNR8-E
Cooling	capacity	(Note 1	7) (kW)	100	100
	capacity	(Note 1	7) (kW)	150	150
	Unit color			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
īġ.		Height	(mm)	2350	2350
Exterior	Dimensions	Width (Note	²⁾ (mm)	1000	1000
		Depth (Note	²⁾ (mm)	3300	3300
Shipping	, weight		(kg)	1,304	1,316
Operatin	ig weight		(kg)	1,340	1,352
Power s	upply	(Note 1,	3)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referenc	ce current for p	oower supply design (Note 4,	5)	79	79
		Nominal current	(A)	61.1(60.9)	41.5(42.2)
		Nominal input	(kW)	39.8(39.7)	27.0(27.5)
	Cooling	EER		2.51(2.52)	3.70(3.64)
ata		SEER		4.88	5.06
Electrical data		Power factor (Note	6) (%)	99	99
ctric		Nominal current	(A)	63.1(63.9)	63.1(63.9)
Ele		Nominal input	(kW)	41.1(41.7)	41.1(41.7)
	Heating	COP		3.65(3.60)	3.65(3.60)
		SCOP		4.26	4.26
		Power factor (Note	6) (%)	99	99
ŗ	Туре			Hermetic rotary	Hermetic rotary
Compressor	Motor output	× number of units	(kW)	9.0 x 4	9.0 x 4
dmo	Type of start			Inverter starter	Inverter starter
ŏ	Case heater (W)			37 x 4	37 x 4
0		Туре		RB74AF	RB74AF
Compre	ssor oli	Charge	(L)	2.0 x 4	2.0 x 4
Condens	ser coil - air sid	de		Plate fin coil	Plate fin coil
	Туре			Propeller fan	Propeller fan
Fan	Air quantity		(m³/min)	1,230 (max. value)	1,230 (max. value)
ű	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
s/s	Supply water	pressure (Note 1	0) (MPa)	-	0.2
(Note 8, 9)	Control			-	Continuous spraying when outside temperature and compressor capacity exceeds setting values
Cooler -	water side	(Note 1	1)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
ant	Туре			R32	R32
Refrigerant	R32 charge		(kg)	8.8 x 4	8.8 x 4
Å	Control			Electric expansion valve	Electric expansion valve
Drain pa	n heater		(VV)	75 × 6	75 × 6
Capacity	/ control steps	(Note 1	²⁾ (%)	6 ~ 100	6 ~ 100
Operatio	on control			Microprocessor controls flow rate cont	rol and chilled (warm) water temperature
Defrost s	system			Distributed reve	rse cycle system
Protectiv	ve device				np), crankcase heater, open-phase protection, microcomputer controller (compressor timeguards ge temperature, low pressure protection, sensor failure, water pressure alarm) ^a
ars	Cold/Hot wat	ter inlet		2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wat	ter outlet		2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
dia	Coil drain			PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound p	ower level			83.8	83.8
Required	d parts sold se	eparately		Module controller (MC) (exte	rnal 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 Cooling: 2°C entering water (EVI), 45°C, leaving water (LWI), 35°C DB outdoor air (OAT)
 For Heating: 38°C entering water (EVI), 45°C leaving water (LWT), 5°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 (EVI), -5°C leaving water (LWT), -5°C leaving water (

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

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
	capacity	,	(Note 1,7)	(kW)		100
	capacity		(Note 1,7)	(kW)		150
loading	Unit color			()	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
ō.		Height		(mm)	2350	2350
Exterior	Dimensions	Width	(Note 2)	(mm)	1000	1000
ш	Dimonolono	Depth	(Note 2)	(mm)		3300
hinning	ı weight	Bopti		(kg)		1,304
	g weight			(kg)		1,340
Power s			(Note 1,3)	(Kg)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		oower supply design	(Note 4,5)		79	79
		Nominal current	,	(A)		41.5(42.2)
		Nominal input		(kW)		27.0(27.5)
	Cooling	EER		(KVV)	2.51 (2.52)	3.70(3.64)
σ	Cooling	SEER			4.88	5.06
Electrical data		Power factor	(Note 6)	(%)		99
rical		1	(1010-0)	. ,		
Elect		Nominal current		(A) (kW)		63.1(63.9)
ш	l la atia a	Nominal input		(KVV)	41.1(41.7)	41.1(41.7)
	Heating	COP	_		3.65(3.60)	3.65(3.60)
		SCOP	(Note 6)	(0/)	4.26	4.26
	-	Power factor	(NOLE 6)	(%)		99
ssor					Hermetic rotary	Hermetic rotary
bree				(kW)	9.0 x 4	9.0 × 4
Compressor	Type of start				Inverter starter	Inverter starter
0			(W)		37 x 4	
Compre	ssor oil	Туре			RB74AF	RB74AF
		Charge		(L)		2.0 x 4
Conden	ser coil - air si	de			Plate fin coil	Plate fin coil
	Туре				Propeller fan	Propeller fan
Fan	Air quantity			(m³/min)	1,230 (max. value)	1,230 (max. value)
uL.	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	r pressure	(Note 10)	(MPa)	-	0.2
(Note 8, 9)	Control				-	Continuous spraying when outside temperature and compressor capacity exceeds setting value
Cooler -	water side		(Note 11)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
ant	Туре				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
č	Control				Electric expansion valve	Electric expansion valve
Capacity	control steps	1	(Note 12)	(%)	6 ~ 100	6 ~ 100
Operatic	n control				Microprocessor controls flow rate control	rol and chilled (warm) water temperature
Defrost s	system				Distributed reve	rse cycle system
Protectiv	e device				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pum freeze protection, high water temperature protection, low water flow, dischar	(p), crankcase heater, open-phase protection, microcomputer controller (compressor time gua ge temperature, low pressure protection, sensor failure, water pressure alarm)
Srs.	Cold/Hot wa	ter inlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wa				2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
diar	Coil drain				PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
	ower level				83.8	83.8
			_			

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.

The concentration of ethylene glycol : 28wt%

The concentration of ethylene glycol : 28/4% For Cooling: 2°C entering water (EWT), 5°C, leaving water (LWT), 35°C DB outdoor air (QAT) (High EER type: 35°C DB, 24°C WB (QAT), 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 (QAT). 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 the control of Please note that the variable flow control is performed under conditions in the control of 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 (Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model)

(Note 12) The capacity control range varies with operating conditions (Note 13) The external sensor's lead wire length is 30 m.

60HP Series EDGE Heat pump

					Standard type	High EER type
					380V /400V/ 415V	380V /400V/ 415V
Model (A single module unit)					RUA-GP511HLR8-E	RUA-GP511HLNR8-E
	capacity		(Note 1,7)	(kW)	118	118
-	capacity		(Note 1,7)	(kW)	180	180
	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
Ţ.				(mm)	2350	2350
Exterior	Dimensions	Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	3300
Shipping	g weight			(kg)	1,292	1,304
Operatir	ng weight			(kg)	1,328	1,340
Power s	supply		(Note 1,3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referen	ce current for	power supply design	(Note 4,5)		99	99
		Nominal current		(A)	74.2(73.9)	51.0(51.6)
		Nominal input		(kW)	48.4(48.2)	33.2(33.6)
	Cooling	EER			2.44(2.45)	3.55(3.51)
ata		SEER			4.77	4.94
Electrical data		Power factor	(Note 6)	(%)	99	99
ctric		Nominal current		(A)	78.7(80.1)	78.7(80.1)
Ele		Nominal input		(kW)	51.3(52.2)	51.3(52.2)
	Heating	COP			3.51 (3.45)	3.51(3.45)
		SCOP			4.35	4.35
		Power factor	(Note 6)	(%)	99	99
õ	ъ Туре			Hermetic rotary	Hermetic rotary	
ress	Motor outpu	it × number of units		(kW)	11.0 x 4	11.0 x 4
Compressor	Type of start	art			Inverter starter	Inverter starter
ŏ	Case heater			(W)	37 x 4	37 x 4
Compre	ocor oil	Туре			RB74AF	RB74AF
Compre	ISSUE OIL	Charge		(L)	2.0 x 4	2.0 x 4
Conden	ser coil - air s	ide			Plate fin coil	Plate fin coil
	Туре				Propeller fan	Propeller fan
Fan	Air quantity			(m³/min)	1,230 (max. value)	1,230 (max. value)
ш	Type of start	t			Inverter starter	Inverter starter
	Motor outpu	It 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 wate	er pressure	(Note 10)	(MPa)	-	0.2
(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)
rant	Туре				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
ш.	Control				Electric expansion valve	Electric expansion valve
	y control step	s	(Note 12)	(%)	4 ~ 100	4 ~ 100
	on control					rol and chilled (warm) water temperature
Defrost	system					erse cycle system
Protecti	ve device					np), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, ge temperature, low pressure protection, sensor failure, water pressure alarm)
lg ers	Cold/Hot wa	ater inlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wa	ater outlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
ği	Coil drain				PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound p	ower level				83.8	83.8
Require	d parts sold s	eparately			Module controller (MC) (exte	rnal sensor × 2 included) ^(Note13)

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)			(Note 1,7)	(kW)	100	100
	Unit color			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	
Exterior		Height		(mm)	2350	2350
Exte	Dimensions	Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	3300
Shipping	g weight			(kg)	1,253	1,266
Operatir	ng weight			(kg)	1,289	1,302
Power s	upply		(Note 1,3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referen	ce current for p	ower supply design	(Note 4,5)		79	79
		Nominal current		(A)	61.1(61.4)	42.3(43.0)
Electrical data		Nominal input		(kW)	39.8(40.0)	27.5(28.0)
	Cooling	EER			2.51(2.50)	3.63(3.57)
llecti		SEER			4.90	5.08
ш		Power factor	(Note 6)	(%)	99	99
or	Туре				Hermetic rotary	Hermetic rotary
essi	Motor output	× number of units		(kW)	8.4 x 4	6.2 x 4
Compressor	Type of start				Inverter starter	Inverter starter
ŏ	Case heater (W)			(W)	37 x 4	37 x 4
		Туре			RB74AF	RB74AF
Compre	ssor oil	Charge		(L)	2.0 x 4	2.0 x 4
Conden	ser coil - air sic	e			Plate fin coil	Plate fin coil
	Туре				Propeller fan	Propeller fan
5	Air quantity			(m³/min)	1,230 (max. value)	1,230 (max. value)
Fan	Type of start				Inverter starter	Inverter starter
	Motor output	x number of units		(kW)	1.2 x 4	1.2 x 4
ay iem	Water spray v	olume		(L/min)	-	13.6 x 1
Spray system	Supply water	pressure	(Note 10)	(MPa)	-	0.2
(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)
t	Туре				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
Re	Control				Electric expansion valve	Electric expansion valve
Capacit	y control steps		(Note 12)	(%)	6 ~ 100	6 ~ 100
Operatio	on control				Microprocessor controls flow rate control	ol and chilled (warm) water temperature
Protecti	ve device					p), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, w pressure protection, sensor failure, water pressure alarm)
g srs	Cold/Hot wat	er inlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wat	er outlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
dia	Coil drain				PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound p	ower level				83.8	83.8
Reauire	d parts sold se	parately			Module controller (MC) (exte	nal 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).

some capacity, outdoor air temperature on supplied water temperature (only for high EET 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 3) Power lactors may vary depending on site conducts.
 (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 achieve 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 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions. The concentration of efficiency local is 2004% 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 (EVT), -5°C leaving water (LVT). Heating: 40°C entering water (EWT) / 45°C leaving water (LVT). 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 value of the most and control is performed under conditions in which the entering / leaving value regretative 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

(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
- leating ((Note 1,7)	(kW)	200	200
	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
rior		Height		(mm)	2350	2350
Exterior	Dimensions	Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	3300
Shipping	weight			(kg)	1,304	1,316
Operatin	g weight			(kg)	1,340	1,352
Power su	upply		(Note 1,3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referenc	e current for p	oower supply design	(Note 4,5)		110	110
		Nominal current		(A)	74.2(73.9)	51.0(51.6)
		Nominal input		(kW)	48.4(48.2)	33.2(33.6)
	Cooling	EER			2.44(2.45)	3.55(3.51)
ata		SEER			4.77	4.94
Electrical data		Power factor	(Note 6)	(%)	99	99
octric		Nominal current		(A)	89.7(90.8)	89.7(90.8)
Ē		Nominal input		(kW)	58.5(59.2)	58.5(59.2)
	Heating	COP			3.42 (3.38)	3.42 (3.38)
		SCOP			4.23	4.23
	Power factor (Note 6) (%)			(%)	99	99
ğ	Туре				Hermetic rotary	Hermetic rotary
Compressor	Motor output × number of units (kW)			(kW)	12.5 x 4	12.5 x 4
duc	Type of start				Inverter starter	Inverter starter
0	Case heater			(W)	37 x 4	37 x 4
Compres	eor oil	Туре			RB74AF	RB74AF
Joinprea	301 01	Charge		(L)	2.0 x 4	2.0 x 4
Condens	er coil - air sic	le			Plate fin coil	Plate fin coil
	Туре				Propeller fan	Propeller fan
Fan	Air quantity			(m³/min)	1,230 (max. value)	1,230 (max. value)
ш	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 v			(L/min)	-	13.6 x 1
	Supply water	pressure	(Note 10)	(MPa)	-	0.2
(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)
arant	Туре				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
	Control				Electric expansion valve	Electric expansion valve
Drain pai				(W)	75 × 6	75 × 6
	control steps		(Note 12)	(%)	4 ~ 100	4 ~ 100
	n control					rol and chilled (warm) water temperature
Pefrost s Protectiv	ystem e device				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pun	
						ge temperature, low pressure protection, sensor failure, water pressure alarm)
aters	Cold/Hot wat			_	2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wat	er 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
	ower level				87.4	87.4

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions. The concentration of ethylene glycol : 28/W⁴% 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) Aways instal and earning away group of the away of the away of the away and the product to prevent mainfulction
 (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 entring / 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 risk. (Provided locally)
 (Note 10) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment value on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)

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
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					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
	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
Exterior		Height		(mm)	2350	2350
EXT	Dimensions	Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	3300
Shipping	g weight			(kg)	1,253	1,266
Operatir	ng weight			(kg)	1,289	1,302
Power s	upply		(Note 1,3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referen	ce current for p	ower supply design	(Note 4,5)		99	99
		Nominal current		(A)	73.9(73.6)	49.5(51.4)
Electrical data		Nominal input		(kW)	48.2(48.0)	32.2(33.5)
	Cooling	EER			2.45(2.46)	3.66(3.52)
		SEER			4.80	4.99
ш		Power factor	(Note 6)	(%)	99	99
ŗ	Туре				Hermetic rotary	Hermetic rotary
oress(Motor output	× number of units		(kW)	9.8 x 4	7.4 x 4
	Type of start				Inverter starter	Inverter starter
ŏ	Case heater (W)			(W)	37 x 4	37 x 4
		Туре			RB74AF	RB74AF
Compre	ssor oil	Charge		(L)	2.0 x 4	2.0 x 4
Conden	ser coil - air sid	de			Plate fin coil	Plate fin coil
	Туре				Propeller fan	Propeller fan
5	Air quantity			(m³/min)	1,230 (max. value)	1,230 (max. value)
Fan	Type of start				Inverter starter	Inverter starter
	Motor output	x number of units		(kW)	1.2 x 4	1.2 x 4
em	Water spray	/olume		(L/min)	-	13.6 x 1
Spray system	Supply water	pressure	(Note 10)	(MPa)	_	0.2
(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)
ŧ	Туре				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
Ве	Control				Electric expansion valve	Electric expansion valve
Capacit	/ control steps		(Note 12)	(%)	4 ~ 100	4 ~ 100
Operatio	on control				Microprocessor controls flow rate cont	rol and chilled (warm) water temperature
Protecti	ve device					 (p), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, w pressure protection, sensor failure, water pressure alarm)
ars	Cold/Hot wat	er inlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wat	er outlet			2-1/2" flange × 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
dia	Coil drain				PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound p	ower level				83.8	83.8
Require	d parts sold se	parately			Module controller (MC) (exte	rnal 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 Cooling: 2*C entering water (EWI), -5*C, leaving water (EWI), 5*C DB outdoor at (OA1) (High EEH type: 3*C DB, 24*C WB (OA1), 21*C spray water device feed same capacity, outdoor air temperature and supplied water temperature (IN) for high EEH 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 (EUI)v2016/2281 and (EUI)v8013/2013.
 (Note 2) Dimensions do not include projections of water pipe connections.

(Note 3) Even when there is a fluctuation in supply outrage, 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 outload or 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 13) The capacity control range varies with operating conditions (Note 13) The external sensor's lead wire length is 30 m.

70HP Series EDGE Cooling-only

					Standard type	High EER type
				_	380V /400V/ 415V	380V /400V/ 415V
Model (A single module unit)					RUA-GP561CLR8-E	RUA-GP561CLNR8-E
	capacity	,	(Note 1,7)	(kW)	132	132
	Unit color			. ,	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
rior		Height		(mm)	2350	2350
Exterior	Dimensions	Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	3300
Shipping	g weight			(kg)	1,260	1,272
Operatir	ng weight			(kg)	1,296	1,308
Power s	supply		(Note 1,3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referen	ce current for	power supply design	(Note 4,5)		115	115
~		Nominal current		(A)	84.1(84.4)	58.2(58.9)
Electrical data		Nominal input		(kW)	54.8(55.0)	37.9(38.4)
ica	Cooling	EER			2.41(2.40)	3.48(3.44)
lectr		SEER			4.75	4.92
ш		Power factor	(Note 6)	(%)	99	99
ŗ	Туре				Hermetic rotary	Hermetic rotary
esso	Motor output	t × number of units		(kW)	11.1 x 4	8.5 x 4
Compressor	Type of start				Inverter starter	Inverter starter
ŏ	Case heater (W)			(W)	37 x 4	37 x 4
		Туре			RB74AF	RB74AF
Compre	issor oil	Charge (L)		(L)	2.0 x 4	2.0 x 4
Conden	ser coil - air si	de			Plate fin coil	Plate fin coil
	Туре				Propeller fan	Propeller fan
Fan	Air quantity			(m³/min)	1,230 (max. value)	1,230 (max. value)
ш	Type of start				Inverter starter	Inverter starter
	Motor output	t x number of units		(kW)	1.2 x 4	1.2 x 4
Spray system	Water spray	volume		(L/min)	-	13.6 x 1
Sys Sys	Supply water	r pressure	(Note 10)	(MPa)	-	0.2
(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)
ant	Туре				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
Ä	Control				Electric expansion valve	Electric expansion valve
Capacit	y control steps	3	(Note 12)	(%)	4 ~ 100	4 ~ 100
Operatio	on control				Microprocessor controls flow rate control	ol and chilled (warm) water temperature
Protecti	ve device				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pum freeze protection, low water flow, discharge temperature, lo	p), crankcase heater, open-phase protection, microcomputer controller (compressor time guards w pressure protection, sensor failure, water pressure alarm)
g	Cold/Hot wa	ter inlet			3" flange × 1 (JIS10K)	3" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wa	ter outlet			3" flange × 1 (JIS10K)	3" flange × 1 (JIS10K)
dia	Coil drain				PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound p	ower level				90.9	90.9
Require	d parts sold se	eparately			Module controller (MC) (exter	nal 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 Cooling: 2*C entering water (EWI), -5*C, leaving water (EWI), 5*C DB outdoor at (OA1) (High EEH type: 3*C DB, 24*C WB (OA1), 21*C spray water device feed same capacity, outdoor air temperature and supplied water temperature (IN) for high EEH 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 (EUI)v2016/2281 and (EUI)v8013/2013.
 (Note 2) Dimensions do not include projections of water pipe connections.

(Note 3) Even when there is a fluctuation in supply outrage, 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 outload or 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 13) The capacity control range varies with operating conditions (Note 13) The external sensor's lead wire length is 30 m.

70HP Series EDGE Heat pump

					Standard type	High EER type
					380V /400V/ 415V	380V /400V/ 415V
Model (A	A single modul	e unit)			RUA-GP561HLR8-E	RUA-GP561HLNR8-E
Cooling	capacity		(Note 1,7)	(kW)	132	132
Heating	capacity		(Note 1,7)	(kW)	200	200
	Unit color				Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
Exterior		Height		(mm)	2350	2350
Exte	Dimensions	Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	3300
Shipping	g weight			(kg)	1,298	1,310
Operatir	ng weight			(kg)	1,334	1,346
Power s	upply		(Note 1,3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referen	ce current for p	ower supply design	(Note 4,5)		115	115
		Nominal current		(A)	84.8(85.1)	59.2(59.6)
		Nominal input		(kW)	55.2(55.5)	38.6(38.8)
	Cooling	EER			2.39(2.38)	3.42(3.40)
lata		SEER			4.72	4.89
Electrical data		Power factor	(Note 6)	(%)	99	99
octric		Nominal current		(A)	89.7(90.8)	89.7(90.8)
Ē		Nominal input		(kW)	58.5(59.2)	58.5(59.2)
	Heating	COP			3.42 (3.38)	3.42 (3.38)
		SCOP			4.28	4.28
		Power factor	(Note 6)	(%)	99	99
ñ	Туре				Hermetic rotary	Hermetic rotary
Compressor	Motor output	× number of units		(kW)	12.5 x 4	12.5 x 4
duc	Type of start				Inverter starter	Inverter starter
Õ	Case heater			(W)	37 x 4	37 x 4
	ooor oil	Туре			RB74AF	RB74AF
Compre	SSOF OIL	Charge		(L)	2.0 x 4	2.0 x 4
Conden	ser coil - air sid	de			Plate fin coil	Plate fin coil
	Туре				Propeller fan	Propeller fan
Fan	Air quantity			(m³/min)	1,230 (max. value)	1,230 (max. value)
űĽ	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	/olume		(L/min)	-	13.6 x 1
Sys Sys	Supply water	pressure	(Note 10)	(MPa)	-	0.2
(Note 8, 9)	Control				-	Continuous spraying when outside temperature and compressor capacity exceeds setting value
Cooler -	water side		(Note 11)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
aut	Туре				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
Ä	Control				Electric expansion valve	Electric expansion valve
Capacit	y control steps		(Note 12)	(%)	4 ~ 100	4 ~ 100
Operatio	on control				Microprocessor controls flow rate cont	trol and chilled (warm) water temperature
Defrost	system				Distributed reve	erse cycle system
Protecti	ve device				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, pur freeze protection, high water temperature protection, low water flow, discha	mp), crankcase heater, open-phase protection, microcomputer controller (compressor time guar irge temperature, low pressure protection, sensor failure, water pressure alarm)
g srs	Cold/Hot wat	er inlet			3" flange × 1 (JIS10K)	3" flange × 1 (JIS10K)
Piping diameters	Cold/Hot wat				3" flange × 1 (JIS10K)	3" flange × 1 (JIS10K)
diai	Coil drain				PT1-1/2" external thread × 1	PT1-1/2" external thread × 1
Sound p	ower level				90.9	90.9
	d parts sold se	narately			Module controller (MC) (exte	arnal 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). Sand Carlo (CAT), 4°C WB (CAT), 2°C Shaw water (EWT), 45°C leaving water (LWT), 45°C leaving water (LWT), 45°C leaving water (LWT). 45°C leaving water (LWT).

() show a levalues for 50 clineer link county. O clineting water (EVT), *50 clearly water (EVT), *10 and 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 scale. (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.

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

Heat pump

50HP Series EDGE

Powerful Heating Type

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

Chilled water	Brine				Oute	side aiı	r temp	eratur	e (°C)	(DB)	
outlet temperature (°C)	density (wt%)	ltem		25	30	35	40	43	45	50	52
		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
-5	28	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
		Cooling capacity	[kW]	140	132	124	115	109	103	89.4	87.0
0		Power consumption	[kW]	35.4	39.1	42.6	46.4	47.8	47.5	47.1	49.2
0	20	Chilled water flow rate	[L/min]	429	405	380	353	334	316	274	267
		Operation current	[A]	52.0	57.0	62.5	68.0	70.0	69.5	69.0	72.0

Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 5°C.

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

Note 3: The value shown in the table above are when the ethylene glycol is used

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

Note 5: This table is subject to change without notice

50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421C(L)R

Chilled water	Brine				Outs	side ai	r temp	eratur	e (°C)	(DB)	
outlet temperature (°C)	density (wt%)	ltem		25	30	35	40	43	45	50	52
		Cooling capacity	[kW]	75.6	72.2	68.8	65.3	63.1	61.6	57.7	56.1
-15	40	Power consumption	[kW]	29.1	31.8	34.6	37.3	39.0	40.0	42.7	44.2
-15	40	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
		Cooling capacity	[kW]	91.5	87.4	83.3	79.1	76.6	74.9	70.4	66.9
10		Power consumption	[kW]	30.9	34.1	37.2	40.2	41.9	43.0	46.3	46.5
-10	34	Chilled water flow rate	[L/min]	296	283	269	256	248	242	228	216
		Operation current	[A]	45.1	49.8	54.5	59.0	61.5	63.0	68.0	68.0
		Cooling capacity	[kW]	102	97.7	93.1	88.8	86.5	85.0	76.0	72.7
-7	30	Power consumption	[kW]	32.0	35.4	38.8	42.1	44.1	45.7	46.3	46.9
-7	30	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
		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
-5	28	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
		Cooling capacity	[kW]	140	132	124	115	107	101	87.1	84.9
	00	Power consumption	[kW]	34.8	38.9	43.1	46.7	47.3	47.0	46.6	48.5
0	20	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

Manage states as 11.1				Jutoid	e air te	mnore	turo (Q		
Warm water outlet temperature(°C)	Item		-15	-10	-5	nipera 0	ure (с) (DB 7	15
	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
25	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
	Heating capacity	(kW)	103	118	134	150	165	152	181
00	Power consumption	(kW)	33.3	34.4	34.9	35.0	35.9	29.3	29.0
30	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
	Heating capacity	(kW)	103	117	133	150	164	151	180
05	Power consumption	(kW)	36.4	37.4	38.2	39.0	39.8	32.9	33.2
35	Warm water flow rate	(L/min)	210	240	273	307	336	310	368
	Operation current	(A)	53.6	55.1	56.3	57.4	58.0	48.0	48.4
	Heating capacity	(kW)	102	116	132	149	163	151	178
40	Power consumption	(kW)	39.2	40.4	41.6	42.8	43.9	36.8	37.3
40	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
	Heating capacity	(kW)	102	116	131	148	163	150	177
45	Power consumption	(kW)	42.1	43.9	45.2	46.7	48.4	40.8	41.7
45	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
	Heating capacity	(kW)		115	130	144	154	149	176
50	Power consumption	(kW)		47.1	48.7	49.5	49.5	44.9	46.3
50	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
55	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.

Capacity Chart

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	Brine				Outs	ide ai	r temp	eratur	e (°C)	(DB)		Warm water outlet	Item			Dutsid	e air te	mpera	ture (°C) (DB)	
outlet	density	ltem										temperature(°C)	itein		-15	-10	-5	0	4	7	15
temperature	(wt%)	nom		25	30	35	40	43	45	50	52		Heating capacity	(kW)	122	139	158	177	194	183	215
(°C)	(· · · · ·											25	Power consumption	(kW)	37.2	38.0	38.5	38.7	39.7	33.2	32.6
		Cooling capacity	[kW]	129	124	118	113	111	110	101	88.1	23	Warm water flow rate	(L/min)		285	323	363	396	375	440
		Power consumption	[kW]	40.7	44.4	48.2	52.3	55.2	57.3	59.1	55.4		Operation current	(A)	55.3	55.9	56.8	57.0	58.4	48.3	47.5
-5	28	Chilled water flow rate	[L/min]	407	391	372	356	350	347	318	278		Heating capacity	(kW)		139	157	176	193	182	214
		Operation current	[A]	59.5	64.8			81.0	84.0	86.5	81.0	30	Power consumption	(kW)		41.7	42.5	43.2	44.6		37.3
		Cooling capacity	[kW]					-	125	1	91.4	50	Warm water flow rate	(L/min)		284	322	361	394	373	438
					-								Operation current	(A)		61.5	62.7	63.7	65.7	-	54.5
0	20	Power consumption		44.3	-			59.5			52.2		Heating capacity	(kW)		138			192	181	213
		Chilled water flow rate								-	280	35	Power consumption	(kW)		45.4	46.4	47.8	49.2	-	
		Operation current	[A]	65.0	71.0	77.0	83.0	87.0	87.0	88.0	76.5	00	Warm water flow rate	(L/min)		283	320	360		371	436
Note 1: The va	alues shown ir	n the table above are for	an inlet	/ outle	et chille	ed wa	ter ten	nnerat	ure				Operation current	(A)		66.9	68.4	70.4	71.8	-	61.6
	ential of 5°C.		arrinot	/ outil		50 110		porac	aro				Heating capacity	(kW)		137	156	175	191	181	212
Note 2: The c	ooling capacit	y has been measured w	hen the	modu	le was	opera	ating a	at the				40	Power consumption	(kW)		48.9			53.8		47.3
	frequency.											40	Warm water flow rate	(L/min)		281	319	359		370	434
		the table above are whe											Operation current	(A)		72.1		76.7	78.4	-	69.0
		the table above are in c		nomin	al capa	acity is	s 400V	/.					Heating capacity	(kW)		136	155	175	189	180	211
Note 5: This ta	able is subject	to change without notic	се									45	Power consumption	(kW)		52.5	54.6	56.8	58.0		52.5
												40	Warm water flow rate	(L/min)		279	317	358		369	431
													Operation current	· · · ·	73.6	77.3	80.4	82.8	84.5		
													Heating capacity	(kW)		135	152	167	177	179	209
												50	Power consumption	(kW)		56.3	57.8	58.2	58.2		-
												00	Warm water flow rate	(L/min)		277	311	342	363	367	429
													Operation current	(A)		82.8		84.8	84.9		83.7
													Heating capacity	(kW)			143	155		172	194
			_ [0			1					55	Power consumption	(kW)			58.4	58.1	58.0		57.4
-60H	IF S	eries EDC	jE	C	DOIII	ng-	only	y				00	Warm water flow rate	(L/min)			292	318		351	397
													Operation current	(A)			85.1	84.6	84.5	84.4	83.7
												Marke dy The surel	والمراجع والالمراجع والمراجع والمراجع والمراجع والمراجع			-1-+ / -					A



List of cooling capacities RUA-GP511C (L)R

Chilled water	Brine				Outs	side ai	r temp	eratur	e (°C)	(DB)	
outlet temperature (°C)	density (wt%)	ltem		25	30	35	40	43	45	50	52
		Cooling capacity	[kW]	88.5	84.6	80.7	76.6	74.1	72.3	67.8	66.1
-15	40	Power consumption	[kW]	34.4	37.6	40.6	43.5	45.2	46.3	49.5	50.8
-15	40	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
		Cooling capacity	[kW]	107	103	97.8	93.0	90.1	88.1	83.0	81.9
10	34	Power consumption	[kW]	36.9	40.6	44.1	47.2	49.2	50.6	53.9	56.9
-10	34	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
		Cooling capacity	[kW]	120	115	110	105	102	101	95.5	86.7
-7	30	Power consumption	[kW]	38.5	42.4	46.2	49.8	52.3	54.0	57.9	56.7
-7	30	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
		Cooling capacity	[kW]	129	123	118	113	111	110	99.3	87.6
-	28	Power consumption	[kW]	39.6	43.8	48.0	52.1	55.0	57.0	58.1	55.4
-5	28	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
		Cooling capacity	[kW]	163	154	145	135	131	124	110	90.8
0	00	Power consumption	[kW]	42.9	47.5	52.3	56.5	59.0	58.8	59.1	52.5
0	20	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

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50HP Series EDGE **Powerful Heating Type**

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

Brine specifications

Heat pump

60HP Series EDGE Heat pump

List of heating capacities RUA-GP511H (L)R

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. Δ 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 Powerful Heating Type Heat pump

List of heating capacities RUA-GP511F (L)R

Warm water outlet			(Outsid	e air te	mpera	ture (°	C) (DB)	
temperature(°C)	ltem		-20	-15	-10	-5	0	4	7	15
	Heating capacity	(kW)	137	153	174	196	214	231	203	237
25	Power consumption	(kW)	48.8	49.7	50.9	51.4	51.3	52.4	38.5	37.9
20	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
	Heating capacity	(kW)	137	154	175	196	213	230	202	235
30	Power consumption	(kW)	52.9	54.6	56.1	56.8	56.8	58.2	43.4	43.2
30	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
	Heating capacity	(kW)	136	153	175	197	213	229	201	235
35	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
	Heating capacity	(kW)	135	153	174	196	212	229	200	234
40	Power consumption	(kW)	60.5	63.5	65.9	67.8	67.3	69.2	53.1	54.3
40	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
	Heating capacity	(kW)	132	151	173	192	208	221	200	233
45	Power consumption	(kW)	63.5	67.4	70.6	71.4	71.0	71.3	58.1	59.9
40	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
	Heating capacity	(kW)		148	164	180	196	208	200	232
50	Power consumption	(kW)		70.8	71.3	70.9	70.8	71.0	63.3	65.7
50	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
	Heating capacity	(kW)				159	181	193	196	222
55	Power consumption	(kW)				65.7	69.1	69.9	67.4	67.1
55	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 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.

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	Brine				Oute	side ai	r temp	eratur	e (°C)	(DB)	
outlet temperature (°C)	density (wt%)	ltem		25	30	35	40	43	45	50	52
		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
-5	28	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
		Cooling capacity	[kW]	179	169	160	150	144	137	116	91.5
0	00	Power consumption	[kW]	51.1	56.0	60.4	64.9	66.7	66.2	62.7	52.0
0	20	Chilled water flow rate	[L/min]	549	518	491	460	442	420	356	281
		Operation current	[A]	75.0	82.0	88.5	95.0	97.5	96.5	91.5	76.0

Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of 5°C.

- Note 2: The cooling capacity has been measured when the module was operating at the rated frequency.
- Note 3: The value shown in the table above are when the ethylene glycol is used. Note 4: The value shown in the table above are in case the nominal capacity is 400V.
- Note 5: This table is subject to change without notice

70HP Series EDGE Cooling-only

List of cooling capacities RUA-GP561C (L)R

Chilled water	Brine				Outs	side ai	r temp	eratur	e (°C)	(DB)	
outlet temperature (°C)	density (wt%)	ltem		25	30	35	40	43	45	50	52
		Cooling capacity	[kW]	98.7	94.5	90.2	85.6	82.7	80.8	75.6	73.5
-15	40	Power consumption	[kW]	39.0	42.6	45.8	48.9	50.7	51.8	54.8	57.4
-15	40	Chilled water flow rate	[L/min]	329	315	300	285	275	269	252	245
		Operation current	[A]	56.9	62.1	66.8	71.4	74.0	75.6	79.9	83.8
		Cooling capacity	[kW]	119	114	109	104	101	98.5	93.2	84.9
-10	34	Power consumption	[kW]	42.2	46.2	50.0	53.3	55.5	56.9	60.9	59.4
-10	-04	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
		Cooling capacity	[kW]	134	128	123	117	115	113	108	86.9
-7	30	Power consumption	[kW]	44.1	48.5	52.8	56.8	59.3	61.1	66.3	56.8
-7	30	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
		Cooling capacity	[kW]	144	138	132	127	125	124	113	87.8
-5	28	Power consumption	[kW]	45.6	50.4	55.0	59.6	62.8	64.9	66.9	55.2
-5	20	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
		Cooling capacity	[kW]	180	170	160	150	145	138	116	90.7
0	20	Power consumption	[kW]	49.9	54.8	59.9	64.7	66.8	66.7	63.0	52.1
0	20	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

Warm water outlet	Item			Dutsid	e air te	mpera	ture (°	<u>C) (DB</u>	
temperature(°C)	ILEITI		-15	-10	-5	0	4	7	15
	Heating capacity	(kW)	153	174	196	214	231	203	237
25	Power consumption	(kW)	49.7	50.9	51.4	51.3	52.4	38.5	37.9
25	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
	Heating capacity	(kW)	154	175	196	213	230	202	235
30	Power consumption	(kW)	54.6	56.1	56.8	56.8	58.2	43.4	43.2
30	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
	Heating capacity	(kW)	153	175	197	213	229	201	235
05	Power consumption	(kW)	58.8	61.2	62.5	62.3	63.6	48.2	48.9
35	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
	Heating capacity	(kW)	153	174	196	212	229	200	234
40	Power consumption	(kW)	63.5	65.9	67.8	67.3	69.2	53.1	54.3
40	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
	Heating capacity	(kW)	151	173	192	208	221	200	233
45	Power consumption	(kW)	67.4	70.6	71.4	71.0	71.3	58.1	59.9
45	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
	Heating capacity	(kW)		164	180	196	208	200	232
50	Power consumption	(kW)		71.3	70.9	70.8	71.0	63.3	65.7
50	Warm water flow rate	(L/min)		336	369	401	425	410	474
	Operation current	(A)		105	104	103	104	92.3	95.8
	Heating capacity	(kW)			159	181	193	199	227
	Power consumption	(kW)			65.7	69.1	69.9	68.9	69.8
55	Warm water flow rate	(L/min)			327	371	396	408	464
	Operation current	(A)			96.8	101	102	100	102

70HP Series EDGE Heat pump

List of heating capacities RUA-GP561H (L)R

Brine specifications

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.

 Δ 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
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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	Brine			C	outside	e air te		ature (°	'C) (De	3)
outlet temperature (°C)	density (wt%)	ltem		30	35	40	43	45	50	52
		Cooling capacity	[kW]	104	100	95.9	93.4	91.7	87.8	86.8
5	00	Power consumption	[kW]	24.7	27.5	30.3	32.0	33.2	36.3	37.6
-5	28	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
		Cooling capacity	[kW]	134	127	120	116	114	107	104
0	0 20	Power consumption	[kW]	25.9	29.0	32.1	33.8	35.1	38.2	39.5
0		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

60HP Series EDGE

Heat pump

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

Chilled water	Brine					e air te	mpera	ature (°	'C) (De	3)
outlet temperature (°C)	density (wt%)	ltem		30	35	40	43	45	50	52
-5 28		Cooling capacity	[kW]	122	118	113	111	109	104	103
	00	Power consumption	[kW]	30.3	33.6	36.9	38.7	40.1	43.5	45.2
	28	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
	20	Power consumption	[kW]	32.8	36.5	39.8	41.8	43.2	47.0	48.4
		Chilled water flow rate	[L/min]	478	454	432	420	411	386	377
		Operation current	[A]	47.8	53.5	58.5	61.0	63.5	69.0	71.0

70HP Series EDGE Heat pump

List of cooling capacities RUA-GP561H(L)NR

Chilled water	Brine	isity Item		С	outside	air te	mpera		C) (DE	3)
outlet temperature (°C)	density (wt%)			30	35	40	43	45	50	52
		Cooling capacity	[kW]	137	132	127	124	122	118	117
-5 28	00	Power consumption	[kW]	35.2	38.8	42.3	44.4	45.9	49.4	51.1
	28	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
		Cooling capacity	[kW]	173	164	157	152	149	142	138
0	00	Power consumption	[kW]	39.0	43.0	46.4	48.6	50.0	53.6	55.4
	20	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

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50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421C(L)NR

Chilled water	Brine				Dutside	e air te	mpera	ature (°	°C) (De	3)
outlet temperature (°C)	density (wt%)	ltem		30	35	40	43	45	50	52
		Cooling capacity	[kW]	72.0	69.0	66.0	64.2	63.0	59.8	58.4
-15	40	Power consumption	[kW]	23.1	25.6	28.0	29.3	30.4	32.9	34.0
-15	40	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
		Cooling capacity	[kW]	87.1	83.6	80.1	77.9	76.5	72.9	71.4
10	0.4	Power consumption	[kW]	24.1	26.7	29.3	30.9	32.0	34.7	35.7
-10	34	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
	30	Cooling capacity	[kW]	97.3	93.3	89.5	87.2	85.6	81.8	80.6
7		Power consumption	[kW]	24.7	27.5	30.2	31.9	33.1	35.9	37.1
-7		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
		Cooling capacity	[kW]	104	100	95.9	93.4	91.8	87.8	86.8
_	00	Power consumption	[kW]	25.2	28.0	30.8	32.5	33.8	36.9	38.2
-5	28	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
		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
0	20	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 Cooling-only

List of cooling capacities RUA-GP511C(L)NR

Chilled water	Brine				Outside	e air te	mpera	ature (°	°C) (De	3)
outlet temperature (°C)	density (wt%)	Item		30	35	40	43	45	50	52
		Cooling capacity	[kW]	84.8	81.4	78.0	75.9	74.6	71.0	69.5
-15	40	Power consumption	[kW]	27.1	29.8	32.5	34.0	35.2	37.8	39
-15	40	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
		Cooling capacity	[kW]	102	98.4	94.5	92.1	90.5	86.4	84.7
10	34	Power consumption	[kW]	28.5	31.5	34.5	36.1	37.4	40.4	41.5
-10	34	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
_	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
-7		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
		Cooling capacity	[kW]	123	118	114	111	109	105	103
-5	28	Power consumption	[kW]	30.2	33.5	36.7	38.7	39.9	43.2	45.2
-D		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
		Cooling capacity	[kW]	156	149	142	137	134	127	124
0		Power consumption	[kW]	32.7	36.3	39.7	41.8	43.2	46.5	47.9
0	20	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 Cooling-only

List of cooling capacities RUA-GP561C(L)NR

Chilled water	Brine				Dutside	e air te	mpera	ature (°	C) (DE	3)
outlet temperature (°C)	density (wt%)	Item		30	35	40	43	45	50	52
		Cooling capacity	[kW]	94.4	90.9	87.2	85.0	83.5	79.6	78.0
-15	40	Power consumption	[kW]	30.5	33.4	36.3	37.9	39.2	42.1	43.3
-15	40	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
		Cooling capacity	[kW]	114	110	106	103	101	96.8	95.0
-10	34	Power consumption	[kW]	32.3	35.5	38.7	40.7	41.9	45.0	46.3
-10	34	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
	30	Cooling capacity	[kW]	128	123	118	115	114	109	107
-7		Power consumption	[kW]	33.6	37.2	40.5	42.4	43.8	47.2	48.9
-7		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
		Cooling capacity	[kW]	137	132	127	124	122	117	116
-	00	Power consumption	[kW]	34.7	38.3	41.8	44.0	45.4	49.2	50.9
-5	28	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
		Cooling capacity	[kW]	173	164	157	152	149	141	138
0	00	Power consumption	[kW]	38.4	42.4	45.8	47.9	49.5	53.4	54.8
0	20	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

50HP, 60HP Series EDGE and Powerful Heating Type,

70HP Series EDGE internal pump 60Hz performance curve

Brine specifications

Pump Characteristics / Internal Resistance Curve (For pumpless)

Ethylene glycol 40wt% - 15°C, Propylene glyco 32wt% - 8°C 600 550 70HP Series EDGE Flow rate range 150 to 650[L/min] 500 50HP 60HP Series EDGE **Powerful Heating Type** 5.5kW 450 Flow rate range 150 to 600[L/min] 400 pressure (kPa) 3.7kW 70HP Series EDGE 350 300 External 250 2.2kW 50HP 60HP Series EDGE **Powerful Heating Type** 200 150 100 50 0 0 50 100 150 200 250 300 350 400 450 500 550 600 650 Flow rate(L/min)

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			~650		
External lifting height (*2)	(kPa)	0~184	$35 \sim 302$	$115 \sim 409$	$0 \sim 302$	$61 \sim 409$		
Max. operation current (13)	(A)	4.6	7.4	11.4	7.4	11.4		
Max. power consumption (13)	(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 mode

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).

