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

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

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

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



Please see the Technical Document for details.

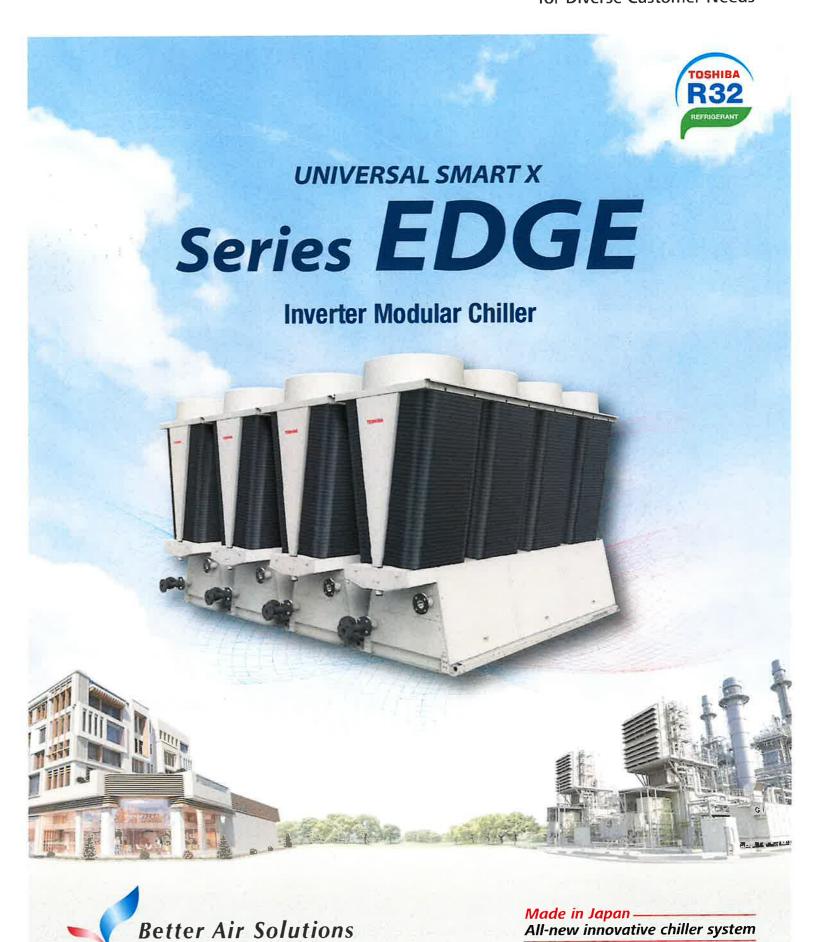
Notice: Toshiba is committed to continuously improving its products to ensure the highest quality and reliability standards, and to meet local regulations and market requirements. All features and specifications are subject to change without prior notice,

U\$XEE202202FL



3nd version

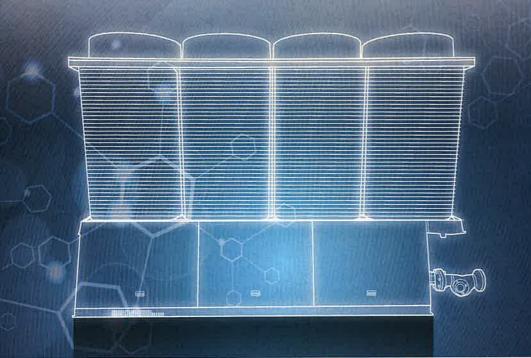
Air-cooled Inverter Modular Chiller for Diverse Customer Needs





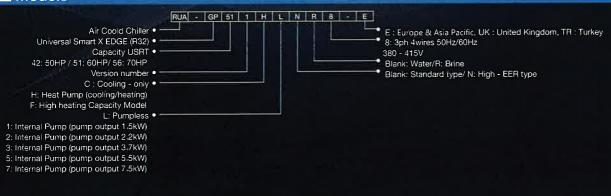
# UNIVERSAL SMART X Series EDGE

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



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

#### ■ Models



#### Operation range

#### Series EDGE 50HP 60HP 70HP

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

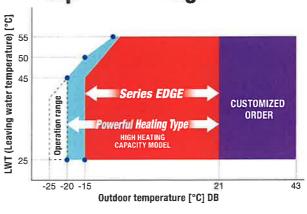
#### Powerful Heating Type 50HP 60HP

(Note 1) Leaving water temperature	Cooling (Note 5)		4~30		
	Heating (Note 2 • 3)		25~55		
	Temperature difference (inlet/outlet)	℃	5~10		
Outside air	Cooling		-15~52 <sup>(Note 4)</sup>		
temperature	Heating (Note 2 • 3)		-20~21DB、15.5WB		

Note 1: LWT not higher than 35°C at cooling or not lower than 20°C at heating operation is allowable till 1 hour after starting up. After then, however, LWT must be within the operating range. Control it with bypass pipe if needed.

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

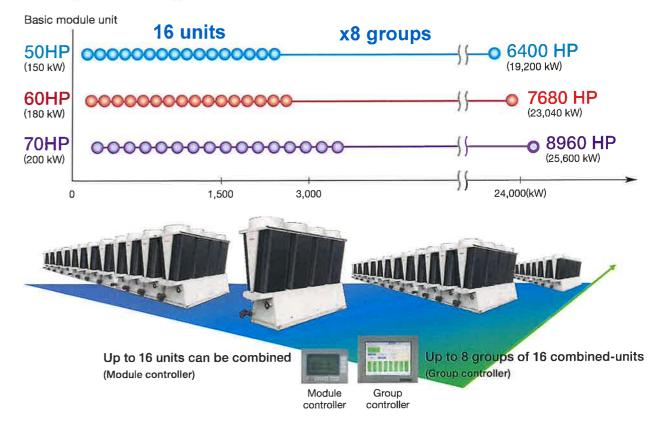
# Leaving water temperature range



# Operating range for water spray device

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

#### Capacity range



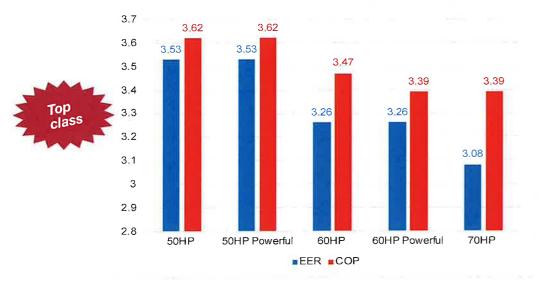
Note 2: For heat pump models only, -20°C is for 60HP powerful heating,

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



#### **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.



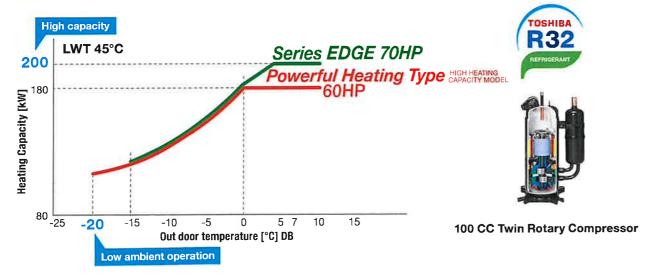
\*Conditions:
Cooling EER LWT 7C, EWT 12C, OAT 35C
Heating COP LWT 45C, EWT 40C, OAT 7CDB, 8CWB



3

#### **Large Capacity DC Inverter Twin Rotary Compressor**

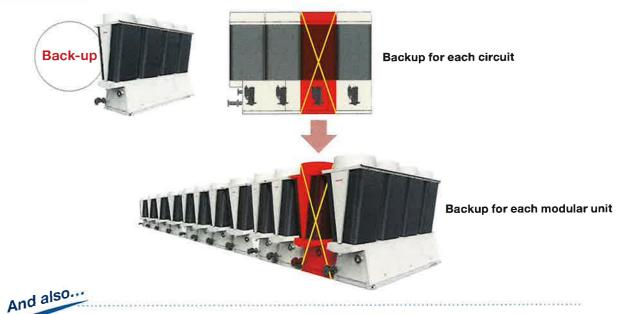
Impressive heating capacity and operation range even in low ambient temperature by using world's largest capacity DC twin rotary compressor equipped with R32 refrigerant.





#### **Highly reliable module system**

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



## Defrosting operation is performed separately for each compressor

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





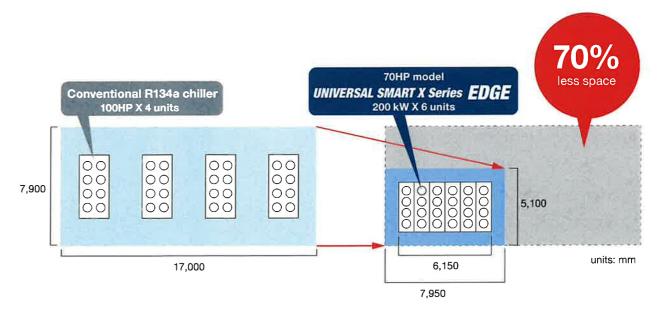
4

## Feature

#### **Installation Friendliness**

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

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



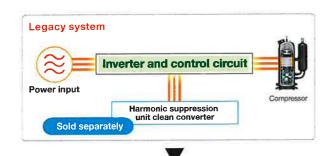


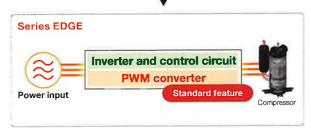
## **Outstanding Harmonic Suppression** Toshiba

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

#### **PWM Converter Benefits**

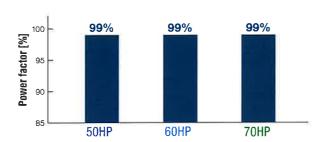
- Eliminates problems caused by harmonic current
- Reduces consumption volume of power generator and electrical equipment



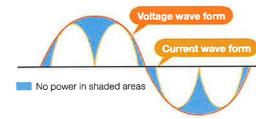


#### 99% Power Factor Benefits

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



#### Efficiency reduction projection





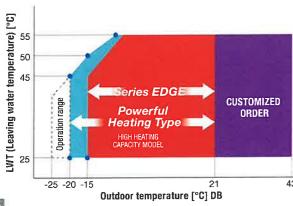
#### Reinforced heating capacity in low ambient temperatures

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

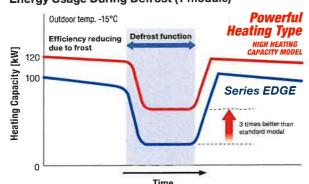
In outdoor temperatures down to -15°C, the system is still capable of producing hot water up to 50°C. At -20°C hot water produced is up to 45°C.

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



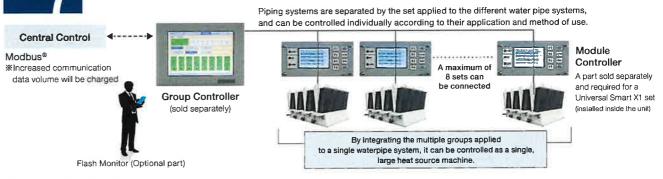
Thanks to a new, advanced controller, the Powerful Heating Type model is capable of reducing capacity loss by three times during defrost than standard models.

#### **Energy Usage During Defrost (1 module)**



#### **Excellent Control System** Feature

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



#### **Group Controller**

#### Batch control of heat source unit using the group controller

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

#### ■Function List

2500	Item	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 COP			
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			
u.sp.uy	For each circuit	Refrigeration cycle information, Compressor operation time, Compressor startup counts			
Operation	nal 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	nal mode settings (Switch)	Enables setting and switching the operation mode for entire system.			
Preset terr	perature 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	olay	Water temperature, putside air temperature, operational capacity, basic capabilities, basic input, basic COP, basic production heat capacity and basic integral power can be displayed on a grap			
Power sav	pning	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.



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



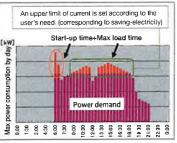
Operating Status/Main Screen Operating Status/System Data Operating Trends Confirmation Screen

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



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

		1,000,000	Standard type	High-EER type
			380V /400V/ 415V	380V /400V/ 415V
single modu	le unit)		RUAGP421H18	RUAGP421H1N8
apacity		Note 1) (kW)	150	150
apacity		pt/m t) (kW)	150	150
Unit color			Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8,5/0,5)
Height		(mm)	2,350	2,350
Dimensions	Width	(mm)	1,000	1,000
Depth		<sup>(hine 2</sup> , (mm)	3,300	3,300
weight		(kg)	1,348	1,360
weight		(kg)	1,384	1,396
pply			3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
current for po	wer supply design	(Notridia) (A)	82.1	82.1
	Nominal current	(A)	65,3	42,8
Cooling	Nominal input	(kW)		27,9
	EER			5,38
	SEER			5,06
	Power factor	(/0)		99
	Nominal current	(A)		63.6
	Nominal input	(kW)	41.4	41.4
Heating	COP			3.62
	SCOP		4.26	4,26
	Power factor	(%) (%)		99
Түре				Hermetic rotary x 4
Motor output×number of units (kW)				9.0 x 4
Type of start				Inverter starter
Case heater		(vv)		37 x 4
sor oil	Type			RB74AF
	Charge	(L)		2,0 x 4
er coil - air si	de			Plate fin coil
Туре			Propeller fan	Propeller fan
Air quantity		(m <sup>3</sup> /min)	1,230 (maximum)	1,230 (maximum)
Type of start			Inverter starter	Inverter starter
		(kW)		1,2 x 4
Water spray	volume	(L/min)	20	13,6 x 1
Supply water	r pressure	Note 9 (MPa)		0.2
Control			300	Continuous spraying when outside temperature and compressor capacity exceeds setting val
Motor output (kW)				1.5
Туре				Centrifugal pump
				Inverter
				3.1
	ut			2
vater side		(Note 10)		Brazed plate heat exchanger (SUS316 equivalent)
Type				R32
R32 charge		(kg)		8.8 x 4
Control				Electric expansion valve
	S	NNU11). (%)		0; 5-100
control				
stem				Distributed reverse cycle system
device			High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pl. protection, high, water Termu, curtout, low flow rate, discharge gas over	ump), Cranicose healer, Oper-priase protection, Microprocessor control (compressor time guards, free theat protection, low pressure cutout, them istor error, high water pressure error)
Cold/Hot wa	ter inlet	(A)		2-1/2" flange (JIS10K)
Cold/Hot wa		(A)	2-1/2* flange (JIS10K)	2-1/2" flange (JIS10K)
Coil drain	tor outlet	(A)	PT1-1/2" external thread	PT1-1/2" external thread
on arail		dB(A)	83.8	83.8
	Dimensions  weight weight poly current for po  Cooling  Heating  Fype  Motor outpu Fype of start Case heater sor oil er coil - air si Fype Air quantity Fype of start Wotor outpu Motor outpu Motor outpu Motor outpu Motor outpu Motor outpu Motor outpu Fype Flow control Maximum cu Minimum inp water side Fype Raze control control steps control steps control steps control steps control steps Cold/Hot was	Dimensions  Height Width Depth Weight Liveight L	Dimensions Height (mm)  Width (max 2) (mm)  Depth (low 2) (mm)  Weight (kg)  Weight (kg)  Weight (kg)  Weight (kg)  Weight (kg)  Weight (kg)  Work in 12  Depth (kg)  Depth (kg)  Work in 12  Depth (kg)  Depth (kg)  Work in 12  Depth (kg)  Depth (k	Height   (mm)   2,350   (mm)   1,000   (mm)   1,000   (mm)   1,000   (mm)   1,000   (mm)   1,348   (mm)   1,3

8

#### Specifications Internal inverter pump

## 50HP Powerful Heating Type Heat pump

23,					Standard type	High-EER type
	No. 11				380V /400V/ 415V	380V /400V/ 415V
Aodel (A	single modul	e unit)			RUAGP421F18	RUAGP421F1N8
Cooling	capacity		(Note I)	(kW)	150	150
leating	capacity		(Note I)	(kW)	150	150
Unit color					Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8.5/0.5)
Exterior		Height		(mm)	2,350	2,350
쬤	Dimensions	Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	3,300
nipping	weight			(kg)	1,359	1,371
peratir	ng weight			(kg)	1,395	1,407
wer s	upply		(Note 1=3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
eferen	ce current for p	power supply design	(Note 4-5)	(A)	82.1	82.1
		Nominal current		(A)	65.3	42.8
	i i	Nominal input		(kW)	42.5	27.9
_	Cooling	EER			3.53	5,38
data		SEER			4.88	5.06
3		Power factor	(Note 6)	(%)	99	99
Electrical data		Nominal current		(A)	63.6	63.6
Ш		Nominal input		(kW)	41.4	41.4
	Heating	COP			3,62	3.62
		SCOP			4.26	4.26
Valu 7)		Power factor	(Note 5)	(%)	99	99
'n	Туре				Hermetic rotary x 4	Hermelic rotary x 4
Compressor	Motor output	× number of units		(kW)	9.0 x 4	9,0 x 4
mp	Type of start				Inverter starter	Inverter starter
ဝိ	Case heater (W)			(W)	37 x 4	37 x 4
		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
	Type				Propeller fan	Propeller fan
_	Air quantity				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			(L/min)		13,6 x 1
system	Supply water		(Note St	(MPa)	*	0.2
tota 6)	Control			Ò		Continuous spraying when outside temperature and compressor capacity exceeds setting value
	Motor output			(kW)	1.5	1.5
	Туре				Centritugal pump	Centrifugal pump
Pump	Flow control				Inverter	Inverter
<u>a</u>	Maximum cu	rrent		(A)	3.1	3,1
	Minimum inp			(kW)	2	2
		water side	(Note 10)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
<del>+</del>	Туре				R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
Ref	Control				Electric expansion valve	Electric expansion valve
	n heater			(W)	75×6	75 x 6
_	control steps		(Note 11)	(%)	0; 5~100	0; 5-100
	on control			` '		g water temperature and temperature difference
	system				Distributed reverse cycle system	Distributed reverse cycle system
	e device				High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, p	ump), Crankcase heeter, Open-phase protection, Microprocessor control (compressor time guards, trea rheat protection, low pressure cutout, themristor error, high water pressure error)
10	Cold/Hot wal	ter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
P. ny deretes	Cold/Hot wal			(A)	2-1/2* flange (JIS10K)	2-1/2* flange (JIS10K)
	JUIG. IOL WA	301101				
g.	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 (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 a 10% and keep imbaliances between the supply voltages within 2%.
(Note 4) The power supply differs from pump capacity. Please refer to pump information lable 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 inter. If sufficient supply water pressure is not available, install a pressure pump.
(Provided locally) (Provided locally)

(Note 10) Working pressure is below 0.7 MPa.
(Note 11) Range of capacity control sometimes can very depending on the unit's operating condition.

#### Specifications (Internal inverter pump)

## 50HP Series EDGE Cooling-only

( NEE	-	LINE THE PARTY	U. FU	Standard type	High-EER type
			3/1	380V /400V/ 415V	380V /400V/ 415V
Indel (	A single modu	le unit)	_	RUAGP421C18	RUAGP421C1N8
_	capacity	(Note I)	(kW)	150	150
ooling	Unit color		(KYY)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
5	OF IIL COIO!	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
ninnin	a unolobt	рерш	(kg)	1,309	1,322
	g weight ng weight		(kg)	1,345	1,358
_		(Note 1-3)	(Ng)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 3B0V/400V/415V
	supply		(A)	82.1	82 <sub>.</sub> 1
	ice current for	Power supply design Noninal current	(A)	66,2	44
dat		Nominal input	(kW)	43.1	28.7
rical	0		(KVV)	3,48	5.23
Electrical data	Cooling	EER	-	4.9	5.08
LLI 404a 71		SEER No. 1	(%)	99	99
	Too	Power factor Note A	(70)	99 Hermetic rotary x 4	Hermetic rotary x 4
ssor	Туре	4	4345	8.7 x 4	7.2 x 4
Compressor	Motor output×number of units (kW)				Inverter starter
20	Type of start			Inverter starter	37 x 4
_	Case heater		(W)	37 x 4 RB74AF	RB74AF
mpre	essor oil	Туре			2,0 x 4
_		Charge	(L)	2.0 x 4	
onden	ser coil - air side			Plate fin coil	Plate (in coil
	Туре			Propeller fan	Propeller fan
Fan	Air quantity (m²/min)			1,230 (maximum)	1,230 (maximum)
_	Type of start			Inverter starter	Inverter starter 1.2 x 4
		t x number of units	(kW)	1.2 x 4	
syslem syslem	Water spray		(L/min)		13.6 x 1
	Supply water	r pressure (Note 3)	(MPa)	*	0,2
Note 8)	Control		_		Continuous spraying when outside temperature and compressor capacity exceeds setting value
	Motor outpu	t	(kW)	1.5	1,5
ф	Туре			Centrifugal pump	Centrifugal pump
Pump	Flow control		_	Inverter	Inverter
	Maximum co		(A)	3.1	3.1
_	Minimum inp		(kW)	2	2
oler -	- water side	(Note 10)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
Hard	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 (1)	(%)	0, 5~100	0; 5~100
eratio	on control				water temperature and temperature difference
frost	system			Distributed reverse cycle system	Distributed reverse cycle system
otecti	ve device			High-pressure switch, Over ourrent protection, Inverter overload protection (compressor, fan, pur protection, high water temp. cutout, low flow rate, discharge gas overh	np), Crankcase healer, Open-phase prolection, Microprocessor control (compressor time guards, freez eat protection, low pressure cutout, thermistor error, high water pressure error)
Blers	Cold/Hot wa	iter inlet	(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Pyrny damelers	Cold/Hot wa	iter outlet	(A)	2-1/2" flange (JI\$10K)	2-1/2" (lange (JIS10K)
B	Coil drain		(A)	PT1-1/2" external thread	PT1-1/2" external thread
ound r	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°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) 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 inbuil pump.

(Note 7) Electrical data does not include inbuilt pump.

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

(Note 9) Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump.

(Provided locally)

(Note 10) Working pressure is below 0.7 MPa.

(Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

#### Specifications Internal inverter pump

## 60HP Series EDGE Heat pump

-			5 1 (1.55	Standard type	High-EER type
	THE !			380V /400V/ 415V	380V /400V/ 415V
/lodel (	A single modu	le unit)		RUAGP511H18	RUAGP511H1N8
ooling	capacity	0	Note 1) (kW)	180	180
eating	capacity	0	Name 1) (kW)	180	180
	Unit color			Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8,5/0,5)
TOF		Height	(mm)	2,350	2,350
Exterior	Dimensions	Width	Note 2) (mm)	1,000	1,000
		Depth *	Note 2) (mm)	3,300	3,300
nippin	g weight		(kg)	1,348	1,360
	na weight		(kg)	1,384	1,396
	supply	9	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 9 (A)	103	103
		Nominal current	(A)	84.8	57.3
		Nominal input	(kW)	55.2	37.3
	Cooling	EER		3.26	4,82
data	J GGGIMING	SEER		4.77	4.94
Electrical data			Note 6 (%)	99	99
actri		Nominal current	(A)	79.6	79,6
ŭ	Heating	Nominal input	(kW)	51.9	51.9
		COP	(1447)	3.47	3.47
	1 teating	SCOP		4,35	4.35
Note 7)			Note (%)	99	99
_	Time	Power lactor	(70)	Hermetic rotary x 4	Hermetic rotary x 4
SSOF	Туре	t and a straite	(IAAA)	11.2 x 4	11.1 x 4
Compressor	Motor output×number of units (kW)		(KVV)	Inverter starter	Inverter starter
Con	Type of start		242		37 x 4
_	Case heater		(W)	37 x 4	RB74AF
mpre	essor oil	Туре		RB74AF	2.0 x 4
÷		Charge	(L)	2.0 x 4	
onder	nser coil - air s	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
	Motor outpu	t x number of units	(kW)	1,2 x 4	1.2 x 4
Stray Ster	Water spray		(L/min)	*	13.6 x 1
	Supply water	r pressure P	Note 9) (MPa)		0,2
(Noto 8)	Control				Continuous spraying when outside temperature and compressor capacity exceeds selting value
	Motor outpu	t	(kW)	1,5	1,5
Б	Туре			Centrifugal pump	Centrifugal pump
Pump	Flow control			Inverter	Inverter
	Maximum cu	ırrent	(A)	3.1	3.1
	Minimum ing	ut	(kW)	2	2
ooler -	water side		Note 10)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
ari ari	Туре			R32	R32
lefrigerant	R32 charge		(kg)	8.8 x 4	8.8 x 4
æ	Control			Electric expansion valve	Electric expansion valve
apacit	y control step	\$	Note 111 (%)	0; 5~100	0; 5-100
peration	on control			Microprocessor control based on leavin	g water temperature and temperature difference
efrost	system			Distributed reverse cycle system	Distributed reverse cycle system
otecti	ve device			High-pressure switch, Over current protection, inverter overload protection (compressor, fan, p protection, high water temp, cultout, low flow rate, discharge gas over	oump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, free arheat protection, low pressure outout, thermistor error, high water pressure error)
25	Cold/Hot wa	ter inlet	(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Paing nfamaters	Cold/Hot wa		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Paris Paris	Coil drain	112	(A)	PT1-1/2" external thread	PT1-1/2" external thread
	CON GIORI		6.4		87.4

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows
For cooling: 12°C entering water (EVM), 7°C leaving water (LVM), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
For heating: 40°C entering water (EVM), 45°C leaving water (LVM), 7°CDB, 6°CWB outdoor air (OAT)
Same capacities, outdoor air temperature, and supplied water temperature floor floor by for High Ethype) 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 side. (Provided locally)

(Note 9) Electrical data does not include inbuilt pump.
(Note 9) 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 gradity may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water gide. (Provided locally)
(Note 9) Adjust the flow rate to become dose to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump.
(Provided locally)
(Note 10) Working pressure is below 0.7 MPa.
(Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

#### Specifications (Internal inverter pump)

## 60HP Powerful Heating Type Heat pump

-			18	Standard type	High-EER type
UV				380V /400V/ 415V	380V /400V/ 415V
Aodel (	A single modul	e unit)		RUAGP511F18	RUAGP511F1N8
ooling	capacity		(kW)	180	180
eating	capacity		(Note I) (KW)	200	200
	Unit color			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8,5/0,5)
Exterior		Height	(mm).	2,350	2,350
ă	Dimensions	Width	(Note 2) (mm)	1,000	1,000
		Depth	(Note 2) (mm)	3,300	3,300
hippin	g weight		(kg)	1,359	1,371
peratir	ng weight		(kg)	1,395	1,407
ower s	supply		Note I- 3	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
eferen	ce current for	power supply design	Note 4 Si (A)	113	113
		Nominal current	(A)	84,8	57.3
		Nominal Input	(kW)	55.2	37.4
æ	Cooling	EER		3.26	4,81
dat		SEER		4.77	4.94
Electrical data		Power factor	(%)	99	99
Elec		Nominal current	(A)	90.6	90.6
	Heating	Nominal input	(kW)	59	59
		COP		3.39	3.39
		SCOP		4,23	4,23
(Note 7)		Power factor	(%) P elo(4)	99	99
30	Type			Hermetic rotary x 4	Hermetic rotary x 4
Compressor	Motor output × number of units (kW)			12,5 x 4	12.5 x 4
E	Type of start			Inverter starter	Inverter starter
0	Case heater (W)			37 x 4	37 x 4
Com	pressor oil	Туре		RB74AF	RB74AF
	ipiessoi oii	Charge	(L)	2.0 x 4	2.0 x 4
	Condenser	coil - air side		Plate fin coil	Plate fin coil
	Type			Propeller fan	Propeller fan
Fan	Air quantity		(m²/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
Spray	Water spray	volume	(L/min)		13.6 x 1
ST &	Supply water	pressure	(Note 9) (MPa)	· · · · · · · · · · · · · · · · · · ·	0.2
Name &	Control				Continuous spraying when outside termoerature end compressor capacity exceeds setting value
	Motor output		(kW)	1,5	1.5
٥	Type			Centrifugal pump	Centrifugal pump
Pump	Flow control			Inverter	Inverter
	Maximum cu	rrent	(A)	3,1	3,1
	Minimum inp		(kW)	2	2
	Cooler - 1	water side	(Note 10)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
15	Туре			R32	R32
Refrigerant	R32 charge		(kg)	8.8 x 4	8.8 x 4
	Control			Electric expansion valve	Electric expansion valve
_	n heater		(VV)	75×6	75 x 6
_	control steps		(Note 11) (%)	0; 5~100	0; 5-100
_	on control				ng water temperature and temperature difference
efrost	system			Distributed reverse cycle system	Distributed reverse cycle system
rotection	ve device				pump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freazi enheat protection, low pressure culcut, thermistor error, high water pressure error)
,	Cold/Hot wal	ter inlet	(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
RATE PA	Cold/Hot wal		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Рірту овитежня	Coil drain	ioi Juliol	(A)	PT1-1/2" external thread	PT1-1/2" external thread
	Internation in the International Internation		(A)	1 11-1/2 EXTERNAL UNEAU	TITIVE CALCULAR LINESCO

(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 healing 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 EFB 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 5) 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)

<sup>(</sup>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 MPs.
(Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

#### Specifications (Internal inverter pump)

#### 60HP Series EDGE Cooling-only

			1	TO S	Standard type	High-EER type
					380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	le unit)			RUAGP511C18	RUAGP511C1N8
Model (A single module unit)  Cooling capacity (kW)					180	180
Jooling	Unit color			(1/44)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
ь	OTHE COLO	Heighl		(mm)	2,350	2,350
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000
ш		Depth	(Note 2)	(mm)	3,300	3,300
hlopio	 g weight	Deptil		(kg)	1,309	1,322
	na weight			(kg)	1,345	1,358
ower s			(Note 1-3)	(Ng)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
_	111-41	power supply design	(Note 4 S)	(A)	103	103
	ce current for	Nominal current		(A)	84.8	57.5
Electrical data		Nominal input	_	(kW)	55	37.4
rca	05			(KVV)	3.27	4.81
Elect	Cooling	SEER	_	_	4,8	4.99
(Note 7)			8Note 6)	(%)	99	99
	Time	Power factor		(70)	Hermetic rotary x 4	Hermetic rotary x 4
Compressor	Type		_	(kW)	11.2 x 4	8.6 x 4
pre		txnumber of units		(KVV)	Inverter starter	Inverter starter
9	Type of start  Case heater (W)				37 x 4	37 x 4
_	Case heater	T	_	(44)	RB74AF	RB74AF
ompre	ssor oil	Type Charge	-	(L)	2.0 x 4	2.0 x 4
	Iser coil - air side			(L)	Plate fin coil	Plate fin coil
onden	_	08		_	Propeller fan	Propeller fan
	Type			(m²/min)	1,230 (maximum)	1,230 (maximum)
Fan				hiestinia	Inverter starter	Inverter starter
	Type of start			(kW)	1,2 x 4	1.2 × 4
		x number of units		(L/min)	1,2 A 4	13.6 x 1
Spray	Water spray		(Note 9)	(MPa)	:•:	0.2
(Note of	Supply water	pressure		(IVIPa)		Continuous spraying when outside temperature and compressor capacity exceeds setting value
fearuse of	Control		_	(kW)	1,5	1,5
	Motor output		_	(KVV)	Centrifugal pump	Centrifugal pump
Ритр	Type		_	_	Inverter	Inverter
P	Flow control			(A)	3,1	3.1
	Maximum cu		_	(kW)	2	2
o alaz	Minimum inp water side	ul	(Note 10)	(KVV)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
				_	R32	R32
Refrigerant	Type			(kg)	8.8 x 4	8.8 x 4
Refi	R32 charge Control		-	(K9)	Electric expansion valve	Electric expansion valve
_			(Note I1)	(%)	0; 5~100	0; 5~100
	y control steps			(70)		g water temperature and temperature difference
	on control		_		Distributed reverse cycle system	Distributed reverse cycle system
	system ve device				High-pressure switch. Over current protection, loverter overload protection (compressor, fan. p.	ump), Crankcase healer, Open-phase protection, Microprocessor control (compressor time guards, freeze sheet protection, low pressure cutous, thermatic amor, high water pressure error)
ь	Cold/Hot wa	ter inlet		(A)	2-1/2* flange	2-1/2* flange
Piping dameters	Cold/Hot wa			(A)	2-1/2" flange	2-1/2" flange
Ppingo	Coid/Hot wa	to: Juliet		(A)	PT1-1/2" external thread	PT1-1/2" external thread
_	ower level			dB(A)	87.4	87.A

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

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
For cooling: 12°C entering water (EWT), 2°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 (only for High EER type) as indicated above.
Design water flow rate must be within the range of 5 to 10°C 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) 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)
(Provided locally)

(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

1			- 1	Standard type	High-EER type
	5			380V /400V/ 415V	380V /400V/ 415V
A) lebon	single modul	e unit)		RUAGP561H28	RUAGP561H2N8
cooling c	apacity	(Note	i (kW)	200	200
leating c	capacity	(Note	) (kW)	200	200
	Unit color			Silky shade (Munsell 1Y8.5/0,5)	Silky shade (Munsell 1Y8.5/0.5)
Exterior	Height (mm)			2,350	2,350
ă	Dimensions	Width 0400-2	(mm)	1,000	1,000
		Depth (Note:	(mm)	3,300	3,300
hipping	weight		(kg)	1,357	1,369
perating	g weight		(kg)	1,393	1,405
ower su	pply	(Note 1-	20	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
eference	e current for	power supply design (Note 4:	(A)	119	119
		Nominal current	(A)	99,7	68.9
		Nominal input	(kW)	64,9	44,8
_	Cooling	EER		3.08	4.46
Electrical data		SEER		4.75	4.92
rica		Power factor Note:	i (%)	99	99
lect		Nominal current	(A)	90.1	90.1
ш		Nominal input	(kW)	59	59
	Heating	COP		3,39	3.39
		SCOP		4.28	4.28
Note 7)		Power factor (Note !	n (%)	99	99
<u> </u>	Type			Hermetic rotary x 4	Hermetic rotary x 4
ess(	Motor output×number of units (kW)		(kW)	13.3 x 4	12.5 x 4
Compressor	Type of start			Inverter starter	Inverter starter
Š į	Case heater (W)			37 x 4	37 x 4
		Туре		RB74AF	RB74AF
ompres	sor oll	Charge	(L)	2.0 x 4	2.0 x 4
ondense	er coil - air si	de		Plate fin coil	Plate fin coil
	Туре			Propeller (an	Propeller fan
- 1	Air quantity		(m²/min)	1,230 (maximum)	1,230 (maximum)
Fan	Type of start			Inverter starter	Inverter starter
- 1		t x number of units	(kW)	1.2 x 4	1.2 x 4
	Water spray		(L/min)		13.6 x 1
0 10	Supply water		MPa)	(6)	0.2
- 1	Control			*	Continuous spraying when outside temperature end compressor capacity exceeds setting val
	Motor output		(kW)	2,2	2.2
- 1	Type		`	Centrifugal pump	Centrifugal pump
7 1	Flow control			Inverter	Inverter
	Maximum cu	rrent	(A)	4.3	4.3
- 1	Minimum inp		(kW)	2.8	2.8
	water side	(Note IC		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
	Туре			R32	R32
8 1	R32 charge		(kg)	8.8 x 4	8.8 x 4
Per l	Control		v · · Ø/	Electric expansion valve	Electric expansion valve
	control steps	9-iote 11	) (%)	0; 5–100	0; 5~100
	control		(,,,)		water temperature and temperature difference
efrost sy				Distributed reverse cycle system	Distributed reverse cycle system
	e device			High-pressure switch. Over current protection, Inverter overload protection (compressor, fan, pur	<ul> <li>p), Cranicase heater, Open-phase protection, Microprocessor control (sompressor time guards, free heat protection, low pressure cutout, thermistor error, high water pressure error)</li> </ul>
Б (	Cold/Hot wa	ter inlet	(A)	3" flange (JIS10K)	3" flenge (JIS10K)
ping	Cold/Hot wa		(A)	3" flange (JIS10K)	3° flange (JIS10K)
西南上	Coil drain		(A)	PT1-1/2" external thread	PT1-1/2" external thread
- '	- 311 31 4111		6.4		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 healing: 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 (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)NoB13/2013.

[Note 2] Dimensions do not include projections of water pipe connections.
[Note 3] Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
[Note 4] Exhern there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply vortages within 2%.
[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 close not include intbuilt 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 intel. If sufficient supply water pressure is not available, install a pressure pump.
[Provided locally]

(Provided locally)
(Note 10) Working pressure is below 0.7 MPa
(Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

#### Specifications Internal inverter pump

#### 70HP Series EDGE Cooling-only

				Standard type	High-EER type
		VIII TO THE REAL PROPERTY.		380V /400V/ 415V	380V /400V/ 415V
/lodel (	A single modu	ule unit)		RUAGP561C28	RUAGP561C2N8
	capacity	(Note I)	(kW)	200	200
	Unit color			Silky shade (Munsell 1Y8,5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
101		Height	(mm)	2,350	2,350
Exterior	Dimensions		-	1,000	1,000
ш	9	Silky shade (Munsell 1Y8.5/0.5)   2,350   2,350   2,350   3,300	3,300		
hippin	g weight			1,318	1,331
	ng weight				1,367
_	supply	Akain 1-3			3-phase 4-wire 50/60Hz 380V/400V/415V
		nower supply design ************************************	(A)		119
	T T T T T T T T T T T T T T T T T T T	T			68.1
-8	1				44.3
t Ca	Cooling		gurg		4,51
Electrical data	1555				4,92
Noto 7)			(%)		99
_	Туре	I diversal	(/4)	Hermetic rotary x 4	Hermetic rotary x 4
SSC		itynumber of units	(kW)		
Pig.	Type of star		(1.1.7)		Inverter starter
ompress	Case heater		۸۸۸		
_	Toase Heater		(**)		
ompre	pressor oil		0.1		
	ana nail nis n	1	(L)		
		side			
	Type Air quantity		(mi)(min)		
Fan					
	Type of star		Propeller fan   Propeller fan		
Spray system	Water spray				
No.	Control	er pressure	(IVIF a)		
	Motor oulpt		(12) 6.0		
		n e e e e e e e e e e e e e e e e e e e	(KAA)		
Pump	Туре			Inverter	Inverter
P	Flow contro		(A)	4.3	4.3
	Maximum co		(kW)	2.8	2.8
	Minimum in	PUL Non 10:		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
	water side			R32	R32
neue	Type		(lea)	8.8 x 4	8.8 x 4
Reingerant	R32 charge		(kg)	Electric expansion valve	Electric expansion valve
	Control	Note 11)	(%)	0; 5~100	0; 5~100
	y control step on control	10 (10)	(70)		water temperature and temperature difference
_				Distributed reverse cycle system	Distributed reverse cycle system
	system ve device			High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, pun	p), Crankcase healer, Open-phase protection, Microprocessor control (compressor time guards, freez eat protection, low pressure cutout, thermistor error, high water pressure error)
12	Cold/Hot wa	ator inlot	(A)	3" flange (JIS10K)	3° flange (JIS10K)
Poing dameters	Cold/Hot wa		(A)	3" flange (JIS10K)	3° flange (JIS10K)
ping	Coil drain	ater outlet	(A)	PT1-1/2" external thread	PT1-1/2* external thread
	con drain		dB(A)	90.9	90.9

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.

Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EU)No2016/2281.

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

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

(Note 4) The power supply differs from pump capacity. Please refer to pump information table to design power supply correctly.

(Note 5) Aways 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 archine to the coil surface. If necessary, install a water softener on the sunnity water side. (Powided for

[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 guality may cause scales and other matter to adhere to the coil surface. If necessary, install a water softener on the supply water gide. (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 infet. 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

, A B	-			0	Standard type	High-EER type
					380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	ıle unit)			RUAGP421HL8	RUAGP421HLN8
		no orny	(Note I)	(kW)	150	150
			(Note 1)	(kW)	150	150
licating	Unit color			(ICAA)	Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8,5/0.5)
ь	Offic Color	Height		(mm)	2,350	2,350
xteri	Dimensions	Width	(Note 2)	(mm)	1,000	1,000
ш		Depth	(Note 2)	(mm)	3,300	3,300
Chinnin	o utoight	Бери		(kg)	1,290	1,302
			_	(kg)	1,326	1,338
			(Note 1-3)	(NG)	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
tolcici	Ce Content for	Nominal current		(A)	65.3	42.8
		Nominal Input	_	(kW)	42.5	27.9
	Cooling	EER		(KFF)	3,53	5.38
Cooling case deating case deati	Cooung	SEER		_	4,88	5.06
न		Power factor	(Nota 5)	(%)	99	99
actric		Nominal current		(A)	63.6	63.6
Cooling called the property of		Nominal input		(kW)	41.4	41.4
	Heating	COP		fixaal	3,62	3.62
	lieding	SCOP			4.26	4.26
(Note 5		Power factor	(Notu 5)	(%)	99	99
-	Туре	I OWCI IDUIO		(/0)	Hermetic rotary x 4	Hermetic rotary x 4
0880	Motor output×number of units (kW)			(kW)	9,0 x 4	9,0 x 4
ηbre	Type of start			(1117)	Inverter starter	Inverter starter
Ö	Case heater				37 × 4	37 x 4
-	Case Heater	Туре		(11)	RB74AF	RB74AF
Compre	essor oil	Charge		(L)	2.0 x 4	2.0 x 4
`onder	ser coil - air si			(=)	Plate fin coil	Plate fin coil
Jonach	Туре	100			Propeller fan	Propeller tan
_	Air quantity			(m³/min)	1,230 (maximum)	1,230 (maximum)
Fa	Type of start			20000	Inverter starter	Inverter starter
Condensus Conden		t x number of units		(kW)	1,2 x 4	1.2 x 4
> E	Water spray			(L/min)		13.6 x 1
Spra	Supply water		(Note 15	(MPa)		0.2
(Note 7)	Control	, p. 000		(*** - /	*>	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
igeral	R32 charge			(kg)	8.8 x 4	8.8 x 4
Refr	Control			, D'	Electric expansion valve	Electric expansion valve
Capacit	y control steps	5	(Note 10)	(%)	0; 5~100	0; 5~100
						water temperature and temperature difference
					Distributed reverse cycle system	Distributed reverse cycle system
					High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, puri	p), Crankcase heater, Open-phase protection, Microprocassor control (compressor time guards, freeze at protection, low pressure outout, thermistor error, high water pressure error)
60	Cold/Hot wa	iter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
ping	Cold/Hot wa			(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
Pi	Coil drain			(A)	PT1-1/2" external thread	PT1-1/2" external thread
	130 310011			6.4		

dB(A)

(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°C DB, 6°CWB outdoor air (OAT)
Same capacities, outdoor air temperature, and supplied water temperature (injent EER type) as indicated above.
Design water flow rater 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 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 9) Working pressure is below 0.7 MPa.
(Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

83.8

Sound power level

## 50HP Powerful Heating Type Heat pump

. 10				1	Standard type	High-EER type
			_		380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	ıle unit)			RUAGP421FL8	RUAGP421FLN8
Cooling	capacity		(Note 1)	(kW)	150	150
Heating	capacity		(Note 1)	(kW)	150	150
	Unit color				Silky shade (Munsell 1Y8,5/0.5)	Silky shade (Munsell 1Y8,5/0,5)
10.		Height		(mm)	2,350	2,350
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Nota 2)	(mm)	3,300	3,300
Shippin	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)	79	79
		Nominal current		(A)	65,3	42,8
		Nominal input		(kW)	42.5	27.9
	Cooling	EER		,/	3,53	5.38
Jata	1-009	SEER			4.88	5.06
Electrical data		Power factor	(Note 5)	(%)	99	99
ectri		Nominal current		(A)	99	99
ŭ		Nominal input	_	(kW)	63.6	63.6
	Heating	COP		0.112	41.4	41.4
	licating	SCOP			4,26	4.26
(Noto (i)		Power factor	(Note 5)	(%)	99	99
_	Timo	Туре			Hermetic rotary x 4	Hermetic rotary x 4
Compressor	-	ity number of unite	_	(kW)	9.0 x 4	9.0 x 4
npre	Motor output×number of units (kW)  Type of start			(1/44)	Inverter starter	Inverter starter
Sol	Case heater (W)			000	37 x 4	37 x 4
	Case neater	Туре		(44)	RB74AF	RB74AF
Compre	essor oil		_	(L)	2.0 x 4	2.0 x 4
	ser coil - air s	Charge		(L)	Plate fin coil	Plate fin coil
Joridei		ide		_	Propeller fan	Propeller fan
	Type			(m³/min)	1,230 (maximum)	1,230 (maximum)
Fan	Air quantity			(myrns)	Inverter starter	Inverter starter
	Type of start		_	0.000	1.2 x 4	1,2 x 4
		ıt x number of units	_	(kW)	1,2 X 4	13.6 x 1
Spray system	Water spray		(Note FII	(L/min)		0.2
(Bects 7)	Supply water	er pressure	( acre in	(MPa)	· · · · · · · · · · · · · · · · · · ·	Continuous spraying when outside temperature and compressor capacity exceeds setting value
35.00	Control		(Note 1/)		December 101 10216 agricultural	Brazed plate heat exchanger (SUS316 equivalent)
	water side		0 1012 23	_	Brazed plate heat exchanger (SUS316 equivalent) R32	R32
eran	Type		-		8,8 x 4	8.8 x 4
Refrigerant	R32 charge		_	(kg)	Electric expansion valve	Electric expansion valve
_	Control		-	440		75 x 6
	an heater			(W)	75 x 6	0; 5-100
_	y control step	s (Note 10)		(%)	0; 5–100	
	on control					g water temperature and temperature difference
	system ve device				Distributed reverse cycle system  High pressure switch, Over current protection, Inverter overload protection (compressor, fan, proceedings binh water forms, geford forwards of protection in the protection of t	Distributed reverse cycle system  unp), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze theat protection, low pressure cutout, thermistor error, high water pressure error)
	1	to a lates	_	(0)		2-1/2" flange (JIS10K)
ing	Cold/Hot wa			(A)	2-1/2* flange (JIS10K)	2-1/2" flange (JIS10K) 2-1/2" flange (JIS10K)
Piping diameters	Cold/Hot wa	ater outlet	_	(A)	2-1/2" flange (JIS10K)	2-1/2 liange (dis for)  PT1-1/2* external thread
	Coil drain (A)			(A)	PT1-1/2" external thread	F11-1/2 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 (only for High EER Itype) 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.
(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)

(Provided locally)
(Note 9) Working pressure is below 0.7 MPa.
(Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

#### Specifications (Pumpless)

#### 50HP Series EDGE Cooling-only

		- ilviava	300	Standard type	High-EER type
			100	380V /400V/ 415V	380V /400V/ 415V
vlodel (	A single modu	le unit)		RUAGP421CL8	RUAGP421CLN8
_	capacity	(Note 1)	(kW)	150	150
	Unit color		1100	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
hippin	g weight		(kg)	1,251	1,264
_	ng weight		(kg)	1,287	1,300
owers		(Note 1 - 3)	1 0/	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
_		power supply design New 4)	(A)	79	79
	T	Nominal current	(A)	66.2	44
al data		Nominal input	(kW)	43,1	28,7
Electrical	Cooling	EER	,,	3.48	5,23
Elec	10.10	SEER		4.9	5,08
(Paulo S)		Power factor (Note 5)	(%)	99	99
-	Type			Hermetic rotary x 4	Hermetic rotary x 4
assc		txnumber of units	(kW)	8.7 × 4	7.2 × 4
Compressor	Type of start			Inverter starter	Inverter starter
	Case heater		w	37 x 4	37 x 4
		Туре		RB74AF	RB74AF
compre	ompressor oil		(L)	2.0 x 4	2.0 x 4
onder	ser coil - air si	de		Plate fin coil	Plate fin coil
	Туре			Propeller fan	Propeller fan
_	Air quantity		(m²/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
≥ €	Water spray		(L/min)		13.6 x 1
Spray system	Supply water		(MPa)		0.2
(Nuto 7)	Control				Continuous spraying when outside temperature and compressor capacity exceeds setting value
cooler -	water side	from 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
B.	Control			Electric expansion valve	Electric expansion valve
apacit	y control steps	(Note 10)	(%)	0; 5~100	0; 5-100
_	on control			Microprocessor control based on leavin	g water temperature and temperature difference
-	system			Distributed reverse cycle system	Distributed reverse cycle system
	ve device				oump), Crankcase healer, Open-phase protection, Microprocessor control (compressor time guards, freez artiset protection, low pressure cutout, thermistor error, high water pressure error)
6	Cold/Hot wa	ter inlet	(A)	2-1/2" (lange (JIS10K)	2-1/2" flange (JIS10K)
Piping diameters	Cold/Hot wa		(A)	2-1/2" flange (JIS10K)	2-1/2" flange (JIS10K)
dia P	Coil drain		(A)	PT1-1/2" external thread	PT1-1/2° external thread
Sound -	oower level		dB(A)	83.8	83.8

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
Same capacities, outdoor air temperature, and supplied water temperature (only for High EER type) as indicated above.
Design water flow rate must be within the range of 5 to 10°C water temperature differences. Capacities and performance values are based on (EUJNo2016/2281,
[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 circrait 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 7] The supply water quality may cause scales and other matter to adhere to the coil surface. If necessary, install a water spray system inlet. If sufficient supply water pressure is not available, install a pressure pump.
[Provided locally]

(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

-3-		BUILD FO	W		Standard type	High-EER type
					380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	ale unit)			RUAGP511HL8	RUAGP511HLN8
	capacity	,	(Note 1)	(kW)	180	180
_	capacity		(Note 1)	(kW)	180	180
100th 10	Unit color					Silky shade (Munsell 1Y8.5/0.5)
ō	OTIL COICE	Height		(mm)		2,350
Extenor	Dimensions		(Noin Z)			1,000
ш			(Note 2)	-		3,300
Shinnin	g weight	Бориг				1,302
_	ng weight					1,338
-	supply		(Note: 1- 3)	(1.97		3-phase 4-wire 50/60Hz 380V/400V/415V
		power supply design	(Note 4.)	(A)	99	99
1010101	T T	1			84.8	57.3
				-	55.2	37,3
	Cooling			(/	3,26	4.82
lala	Cooming					4.94
(Nota (i)			(Note 5)	(%)	99	99
actric					79.6	79.6
ŭ				-		51.9
	Heating		_	8117		3.47
	liouxing					4,35
(Nota G			(Note 5)	(%)		99
_	Туре	T OTTO, ILLOTO		(70)		Hermetic rotary x 4
9880		typumber of units		(kW)		
Compressor	Type of start		(111)		Inverter starter	
Ö	Case heater			w		37 x 4
	TOGO HOGIO	T		(1.7)		RB74AF
Compre	essor oil			63		2.0 x 4
Conder	ser coil - air s			- 12		Plate fin coil
MIGGI	Туре			_		Propeller tan
_	Air quantity			m³/min)		1,230 (maximum)
Fan	Type of start					Inverter starter
		Height	1.2 x 4			
> F						
Spray				_		0,2
(Note 7)	Control	Process				Continuous spraying when outside temperature and compressor capacity exceeds setting value
Cooler -	water side		(Note 9)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
277	Туре					
Refrigerant	R32 charge			(kg)		8.8 x 4
Per	Control			. 3/		Electric expansion valve
Canacit	y control step	5	(Notu 10)	(%)		
	on control			-		
_	system			=1		Distributed reverse cycle system
	ve device				High-pressure switch, Over current protection, inverter overload protection (compressor, fan, p	ump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze
ъ	Cold/Hot wa	ater inlet		(A)		2-1/2" flange (JIS10K)
ping	Cold/Hot wa					2-1/2* flange (JIS10K)
Piping dlameters	Coil drain					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 D8, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°C D8, 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 (fifternocs, Capacities and performance values are based on (EUJNo2016/2281 and (EUJNo813/2013.

(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 inholall 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 fide. (Provided locally)
(Note 8) Adjust the flow rate to become close to this supply water pressure is not available, install a pressure pump.
(Provided locally)

(Provided locally)

(Note 9) Working pressure is below 0.7 MPa.

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

#### Specifications (Pumpless)

## 60HP Powerful Heating Type Heat pump

7		No. of Persons III			Standard type	High-EER type	
					380V /400V/ 415V	380V /400V/ 415V	
Aodel (	A single mod	ule unit)			RUAGP511FL8	RUAGP511FLN8	
_	capacity		(Note th)	kW)	180	180	
_	capacity			kW)	200	200	
	Unit color			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8,5/0,5)		
Po	OTHE GOTO	Height	(1	nm)	2,350		
Exterior	Dimensions			nm)	1,000		
ш		Depth		nm)	3,300		
hinnin	g weight	рория		(kg)	1,302		
	ng weight			(kg)	1,338		
owers			Nov. 1-3)	(-5/	3-phase 4-wire 50/60Hz 380V/400V/415V		
		power supply design	(Note 4)	(A)	110		
ici Gi Ci i	T CONTENT TO	T		(A)	84.8		
			-	kW)	55.2		
	Cooling	_		KVV)	3,26		
ata	Cooling			-	4.77		
ल			Pk#15	(%)	99		
octric		-		(A)	90.6		
Nove St.				_	59		
		_	- 1	KVVJ	3,39		
	Heating			-	4,23		
alv. C			Note 5)	/0/3	99		
(MD-C-19	-	Power factor	74010 37	(%)			
ssor	Туре				Hermetic rotary x 4		
pre				KW)	12,5 x 4		
Com					Inverter starter		
	Case heater			(W)	37 x 4		
ompre	essor oil			-	RB74AF		
				(L)	2.0 x 4		
conden	15	side		-	Plate fin coil		
	Туре				Propeller tan		
Fan	Air quantity		(m <sup>3</sup> )	min)	1,230 (maximum)		
_	Type of star			4	Inverter starter		
				kW)	1.2 x 4		
Spray				nin)		180   200   Silky shade (Munsell 1Y8.5/0.5)   2,350   1,000   3,300   1,314   1,350   3-phase 4-wire 50/60Hz 380V/400V/415V   110   57,3   37,4   4,81   4,94   99   90.6   59   3.39   4,23   99   Hermetic rotary x 4   12.5 x 4   Inverter starter   37 x 4   RB74AF   2.0 x 4   Plate fin coil   Propeller fan   1,230 (maximum)   Inverter starter   1.2 x 4   13.6 x 1   0,2   Continuous sprajing within outside temperature and compressor capacity exceeds sel Brazed plate heat exchanger (SUS316 equivalent)   R32   8.8 x 4   Electric expansion valve   75 x 6   0; 5-100   nig water temperature and temperature difference   Distributed reverse cycle system	
		Nominal current Nominal current Nominal input COP SCOP Power factor  pe lotor outputxnumber of units rpe of start asse heater Type Charge coil - air side rpe of start lotor output x number of units fater spray volume upply water pressure ontrol atter side lotor output x number of units fater spray volume upply water pressure pre 32 charge ontrol leater side lotor output x number of units fater side lotor output x number of units fater spray volume upply water pressure lotor output later side lotor output x number of units fater side lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater side lotor output x number of units fater side lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lotor output x number of units fater spray volume upply water pressure lot	(Note 5) (N	Pa)	· · · · · · · · · · · · · · · · · · ·		
(Note 7)	Control			_			
ooler -	water side		(Note 9	_	Brazed plate heat exchanger (SUS316 equivalent)		
-10	Type			_	R32		
Refriger- ant	R32 charge			(kg)	8.8 x 4		
ш	Control			_	Electric expansion valve	Electric expansion valve	
rain pa	an heater			(W)	75 x 6		
apacit	y control step	s (Note 10)		(%)	0; 5~100	0; 5~100	
peratio	on control				Microprocessor control based on leaving	water temperature and temperature difference	
efrost:	system				Distributed reverse cycle system		
rotecti	ve device				High-pressure switch, Over current prolection, Inverter overload protection (compressor, fan, pu prolection, high waler temp, culout, low flow rale, discharge gas over	ump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, freeze theat protection, low pressure cutout, thermistor error, high water pressure error)	
g ers	Cold/Hot wa	ater inlet		(A)	2-1/2* flange (JIS10K)	2-1/2" flange (JIS10K)	
Piping dlameters	Cold/Hot wa	ater outlet		(A)	2-1/2" flange (JIS10K)	2-1/2" (lange (JIS10K)	
G a	Coil drain			(A)	PT1-1/2" external thread	PT1-1/2" external thread	
	ower level			B(A)	87,4	97.4	

(Nole 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
For healing: 40°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C/WB 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 (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.
[Selectrical 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 6] Adjust the flow rate to become close to this supply water pressure with the manual flow adjustment valve on the water spray system linet. If sufficient supply water pressure is not available, install a pressure pump.
[Provided locally]

(Provided locally)
(Note 9) Working pressure is below 0.7 MPa.
(Note 10) Range of capacity control sometimes can vary depending on the unit's operating condition.

#### 60HP Series EDGE Cooling-only

					Standard type	High-EER type
		THE REAL PROPERTY.			380V /400V/ 415V	380V /400V/ 415V
Model (A	single modu	e unit)			RUAGP511CL8	RUAGP511CLN8
Cooling			(Nota 1,	(kW)	180	180
	Unit color			(,	Silky shade (Munsell 1Y8,5/0.5)	Silky shade (Munsell 1Y8,5/0.5)
	Drint deller	Height		(mm)	2,350	2,350
Exterior	Dimensions	Width	(Note 2)	(mm)	1,000	1,000
		Depth	(Note 2)	(mm)	3,300	3,300
hipping	weiahl	1		(kg)	1,251	1,264
	weight			(kg)	1,287	1,300
ower su			Note 1-3y	, U	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)	64.8	57.5
Electrical dala		Nominal input		(kW)	55	37.4
thica	Cooling	EER			3.27	4.81
<u> </u>		SEER			4.8	4.99
(Note 5)		Power factor	(Note 5)	(%)	99	99
-	Туре				Hermetic rotary x 4	Hermetic rotary x 4
<i>a</i>		xnumber of units		(kW)	11.2 x 4	8,6 x 4
d d	Type of start				Inverter starter	inverter starter
8	Case heater			(W)	37 x 4	37 x 4
		Туре			RB74AF	RB74AF
compressor oil		(L)	2.0 x 4	2.0 x 4		
ondens	er coil - air si	de			Plate fin coil	Plate fin coil
	Type				Propeller fan	Propeller fan
1	Air quantity			(m³/min)	1,230 (maximum)	1,230 (maximum)
Fan	Type of start				inverter starter	Inverter starter
Ī	Molor outpu	x number of units		(kW)	1.2 x 4	1.2 x 4
æ €	Water spray	volume		(L/min)		13.6 x 1
Spray	Supply water	pressure	(Note %	(MPa)	(5/)	0,2
(Note 7)	Control					Continuous spraying when outside temperature and compressor capacity exceeds setting value
ooler - v	water side		(Note 9)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
١ ـ	Туре				R32	R32
Refriger- ant	R32 charge			(kg)	8.8 x 4	8,8 x 4
2	Control				Electric expansion valve	Electric expansion valve
apacity	control steps		(Note 10)	(%)	0; 5–100	0; 5–100
peration	control				Microprocessor control based on leavin	g water temperature and temperature difference
efrost sy	ystem				Distributed reverse cycle system	Distributed reverse cycle system
rotective	e device				High-pressure switch, Over current protection, inverter overload protection (compressor, fan, p protection, high water temp. cutourl, low flow rate, discharge gas ow	oump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guards, treeze erheet protection, low pressure culout, thermistor error, high water pressure error)
SIS	Cold/Hot wa	ter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2" llange (JIS10K)
Piping dameters	Cold/Hot wa	ter outlet		(A)	2-1/2* flange (JIS10K)	2-1/2" flange (JIS10K)
유	Coil drain			(A)	PT1-1/2" external thread	PT1-1/2° external thread
Sound no	wer 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 (EVrT), 7°C leaving water (LVrT), 35°C DB, 24°C/VIB 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 mallunction.

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

(Note 9) Working pressure is below 0.7 MPa.

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

#### Specifications (Pumpless)

## 70HP Series EDGE Heat pump

		W. 77-5			Standard type	High-EER type
		THE STATE OF	-		380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	ule unit)			RUAGP561HL8	RUAGP561HLN8
_	capacity	,	(Note to	(kW)	200	200
	capacity		Note 1)	(kW)	200	200
	Unit color	T		1	Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8.5/0.5)
Į0	Drink Golds	Height		(mm)	2,350	2,350
Exterior	Dimensions	Width	04ote 2 <sub>j</sub>	(mm)	1,000	1,000
ш		Depth	(Note 2)	(mm)	3,300	
Shinnin	g weight	Бориг		(kg)	1,296	
	ng weight		_	(kg)	1,332	
Powers			Plote 1-3	(rig)	3-phase 4-wire 50/60Hz 380V/400V/415V	
_		power supply design	(Name 4)	(A)	115	
reletell	Ce current for	Nominal current		(A)	99.7	
			-	(kW)	64.9	
	Cooling	Nominal input		(KAA)	3,08	
ata	Cooling	SEER SEER		_	4,72	
Electrical data		-	(Note 5)	1013		
Stric		Power factor	(NOTE S)	(%)	99	
E		Nominal current	-	(A)	90.1	
		Nominal input		(kW)	59	
	Heating	COP	_	_	3,39	
		SCOP		-	4.28	
(Nr≤e G		Power factor	(Note 5)	(%)	99	
SO	Туре				Hermetic rotary x 4	
)F8S	Motor output×number of units (kW)		(kW)	13.3 x 4		
Compressor	Type of start			Inverter starter		
0	Case heater (W)		(W)	37 x 4	37 x 4	
Compre	essor oil	Туре			RB74AF	RB74AF
DOMPIE	SSOI OII	Charge		(L)	2.0 × 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			(m²/min)	1,230 (maximum)	1,230 (maximum)
Ψ,	Type of start				Inverter starter	Inverter starter
	Motor outpu	t x number of units		(kW)	1.2 x 4	2,350 2,350 1,000 3,300 1,308 1,344 00//415V 3-phase 4-wire 50/60Hz 380V/400V/415V 115 68.9 44.8 4,46 4,89 99 90.1 59 3,39 4,28 99 Hermetic rotary x 4 12.5 x 4 Inverter starter 37 x 4 RB74AF 2.0 x 4 Plate fin coil Propeller fan 1,230 (maximum) Inverter starter 1,2 x 4 13.6 x 1 0.2 Continuous straying when outside temperature and compressor capacity exceeds seltin R32 8.8 x 4 Electric expansion valve 0; 5-100 itrol based on leaving water temperature and temperature difference
e Ha	Water spray	volume		(L/min)		1,308 1,344 3-phase 4-wire 50/60Hz 380W/400W/415V 115 68.9 44.8 4.46 4.89 99 90.1 59 3.39 4.28 99 Hermetic rotary x 4 12.5 x 4 Inverter starter 37 x 4 RB74AF 2.0 x 4 Plate fin coil Propeller fan 1,230 (maximum) Inverter starter 1.2 x 4 13.6 x 1 0.2 Continuous spraying when outside temperature and compressor capacity exceeds setting Brazed plate heat exchanger (SUS316 equivalent) R32 8.8 x 4 Electric expansion valve 0; 5-100 g water temperature and temperature difference Distributed reverse cycle system sump), Crankcase heater, Open-phase protection, Microprocessor control (compressor time guardathed protection, two pressure actiout, themistor error, high water pressure error) 3" flange (JIS10K) PT1-1/2" external thread
Spray syslem	Supply water	r pressure	Note is	(MPa)		0.2
(Note 7)	Control				*	Continuous spraying when outside temperature and compressor capacity exceeds setting value
Cooler -	water side		#Note 9]		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
=	Туре				F32	R32
Refrigeran	R32 charge			(kg)	8.8 x 4	8.8 x 4
PB JB	Control				Electric expansion valve	Electric expansion valve
Capacit	y control step	s	(Noto 10)	(%)	0; 5–100	0; 5~100
	on control				Microprocessor control based on leaving	g water temperature and temperature difference
	system				Distributed reverse cycle system	
	ve device				High-pressure switch, Over current protection, Inverter overload protection (compressor, fan, p.	ump), Crenicase healer, Open-phase protection, Microprocessor control (compressor time guards, freeze heat protection, low pressure cutout, thermistor error, high water pressure error)
- 60	Cold/Hot wa	ater inlet	-	(A)	3" flange (JIS10K)	
ping	Cold/Hot wa			(A)	3" flange (JIS10K)	
Piping diameters	Coil drain			(A)	PT1-1/2" external thread	
	ower level			dB(A)	90.9	

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 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), 3°C DB, 6°CWB outdoor air (OAT)
Same capacities, outdoor air temperature, and supplied water temperature (only for High EERI type) as indicated above.
Design water flow rate must be within the range of 5 to 10°C water temperature (only for High EERI type) as indicated above.
Design water flow rate must be within the range of 5 to 10°C water temperature (only for High EERI type) as indicated above.
Design water flow rate must be within the range of 5 to 10°C water temperature (only for High EERI type) as indicated above.
Design water flow rate must be within the range of 5 to 10°C water temperature (only for High EERI type) as indicated above.
Design water flow rate must be within the range of 5 to 10°C water temperature (only for High EERI type) as indicated above.
Design water flow rate on the flow rate in the conditions.
(Note 4) Dimensions do not include projections of water pipe connections.
(Note 5) 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 5) Electrical data does not include inbuilt pump.
(Note 5) Electrical data does not include inbuilt pump.
(Note 7) The supply water qualify 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 5) Adjust the flow rate io become close to this supply water pressure with the manual flow adjustment valve on the water spray system inlet. If sufficient supply water pre

#### 70HP Series EDGE Cooling-only

			Standard type	High-EER type
TO X			380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	ule unit)	RUAGP561CL8	RUAGP561CLN8
_			200	200
	_		Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8.5/0.5)
lor		Height (mm)	2,350	2,350
Xe	Dimensions	Width (Note 2) (mm)	1,000	1,000
	RUAGP561CL8   RUAGP561CL8	3,300		
Shippin	a weight		1,258	1,270
			1,294	1,306
				3-phase 4-wire 50/60Hz 380V/400V/415V
		nower supply design (Note 4) (A)		115
	OU CONTONIC TO			68,1
dal			64.5	44.3
E C	Cooling			4.51
Elec	Cooling			
(Note G				99
_	Timo	i ower lactor (rote of		
SSOI		the number of units (KW)		
audu	7			
2	npressor oil			
_	Case Heater			
ompre	essor oil			
`andan	one coll pie di			
onuen	100	ide		
		(m²/min)		
Fan				
	-			
Spray system	-			
Note 7)	100000	r pressure (WPa)		
_		Alain I		
- 5	1	.,,,,,,,		
erani		4.3		
Pefrig		(kg)		
_	•	Note 10, (0/)		0; 5-100
	y control steps	S (Note 10, (%)	0; 5~100	
_	on control			ng water temperature and temperature difference
	system ve device		Open-phase protection, Microprocessor control (compressor	Distributed reverse cycle system overload protection (compressor, fan, pump), Crankcase heater, time guards, freeze protection, high water temp, cutout, low flow rate, sure cutout, thermistor error, high water pressure error)
ъ	Cold/Hot wa	ater inlet (A)	3" flange (JIS10K)	3" flange (JIS10K)
Piping dameters	Cold/Hot wa		3" flange (JIS10K)	3* flange (JIS10K)
Pi	Coil drain	(A)	PT1-1/2" external thread	PT1-1/2" external thread
_	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), 3°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) Aways 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 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 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.

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

## Perspective on Set Specifications (Calculation Method)

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

					Ex.) 50HP x 1 (single unit)	Ex.) 50HP x 16 units	Calculation Method	
Model (/	A single modu	le unit)			RUAGP421H1N8	RUAGP421H1N8		
Cooling	capacity		(Note 1)	(kW)	150	2400	(Single unit value) x (number of module units in	
Heating	capacity		Note 1j	(kW)	150	2400	(Single unit value) x (number of module units in	
	Unit color				Silky shade (Mu	1.0		
ıoı		Height		(mm)	2,350	2,350		
Exterior	Dimensions	Width	(Notu 2)	(mm)	1,000	16,450	See General Charts	
		Depth	(Note 2)	(mm)	3,300	3,300		
Shipping	g weight			(kg)	1,360	21,760	(Single unit value) x (number of module units in	
Operatir	ng weight			(kg)	1,396	22,336	(Single unit value) x (number of module units in	
Power s	ypply		9Not+ 1- 3r		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	64 to 4 Q	(A)	82,1	82.1 x 16	(Single unit value) x (number of module units in	
		Nominal current		(A)	42,8	684.8	(Single unit value) x (number of module units in	
		Nominal input		(kW)	27,9	446.4	(Single unit value) x (number of module units in	
	Cooling	EER			5.38	5.38		
data		SEER			5,06	5.06	Nie:	
8		Power factor	Note G	(%)	99	99	2.50	
Electrical data		Nominal current		(A)	63,6	1017.6	(Single unit value) x (number of module units in	
		Nominal input		(kW)	41.4	662,4	(Single unit value) x (number of module units in	
	Heating				3,62	3.62	722	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				4.26	4.26		
(Nato 7)	1	Power factor	Note Si	(%)	99	99		
L	Type	) Over idates	_	(10)	Hermeti			
Compressor	Motor output×number of units (kW)			(kW)	9.0 x 4	9.0 x 64	(Single unit value) x (number of module units in	
npre				gerry	Inverter starter	Inverter starter		
Ö				(VV)	37 x 4	37 x 64	(Single unit value) x (number of module units in	
_	Case Heater	Time		(**)	RB74AF	RB74AF	tonigle and value of the trace of the and a trace of	
Compre	ssor oil			(L)	2.0 x 4	2.0 × 64	(Single unit value) x (number of module units in	
^d				(L)	Plate fin coil	Plate fin coil	Congression value) x (number of modulo difficult	
Conden		08		_	Propeller fan	Propeller fan		
					1,230 (maximum)	19,680 (maximum)	(Single unit value) x (number of module units in	
, Es				Inverter starter	Inverter starter	Complete and value of A frightness of Theodic and a		
	-	L		0460		1.2 x 64	(Single unit value) x (number of module units in	
			_	(kW)	1,2 x 4 13,6 x 1	13.6 x 16	(Single unit value) x (number of module units in	
Spray Fan system			(Note: 9)	(L/min)		0.2	Consider of the value of thouse dring in	
(Note Fi)	Dimensions  Height Width Depth  Ding weight ating weight are supply ence current for power supply ence for power facility for the following for the fo	r pressure		(MPa)	0,2  Continuous spraying when outside temperature and	Continuous spraying when outside temperature and	N*X	
_			_		compressor capacity exceeds setting values	compressor capacity exceeds setting values	(Circle - it relies) where of module wells in	
				(kW)	1.5	1.5 x 16	(Single unit value) x (number of module units in	
					Centrifugal pump	Centrifugal pump		
ump					Inverter	Inverter	(O) - 1 - 16 - 10 - 10 - 10 - 10 - 10 - 10	
	$\overline{}$			(A)	3,1	3.1 x 16	(Single unit value) x (number of module units in	
		ut		(kW)	2	2,0 x 16	(Single unit value) x (number of module units in	
			(Note 10)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)		
xant					R32	R32		
Refrigerant	-			(kg)	8,8 x 4	8.8 x 64	(Single unit value) x (number of module units in	
_			1.70	-	Electric expansion valve	Electric expansion valve	- 4	
Capacity	control steps		264.4.11)	(%)	0; 5~100	0; 5–100		
Operatio	n control				Microprocessor control based on leaving wa			
Defrost	system				Distributed reverse cycle system	Distributed reverse cycle system	3	
Protectiv	ve device				High-pressure switch, Over current protection, Inverter overl Open-phase protection, Microprocessor control (compressor flow rate, discharge gas overheat protection, low press	time guards, freeze protection, high water temp, cutout, low		
ω	Cold/Hot was	ter inlet		(A)	2-1/2" flange (JIS10K)	2-1/2* flange x 16 (JIS10K)		
Piping diameters				(A)	2-1/2" flange (JIS10K)	2-1/2" flange x 16 (JIS10K)	(Single unit value) x (number of module units in	
.e. F	-	ter outlet	-	_	PT1-1/2" external thread	PT1-1/2" external thread x 16	*Each module unit has one connection port	
ਰੂਹ					See General Charts			

(Note 1) Rated conditions, such as capacity, electrical data, and standard flow rate are as follows.
For cooling: 12°C entering water (EWT), 7°C leaving water (LWT), 35°C DB, 24°CWB outdoor air (OAT) and 21°C feed-water temperature
For heating: 40°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 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 3) Even when there is a fluctuation in supply voltage, do not exceed ±10% and keep imbalances between the supply voltages within 2%.
(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) Power factors may vary depending on site conditions.
(Note 7) Electrical data does not include intbuill 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 intel. If sufficient supply water pressure is not available, install a pressure pump. (Provided locally)
(Note 10) Working pressure is below 0.7 MPa.
(Note 11) Range of capacity control sometimes can vary depending on the unit's operating condition.

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

## 50HP Series EDGE

## **Powerful Heating Type**

	Cooling capacity	Heating capacity	Dimensions (mm)		Sound Pressure Level	(Nate 3)	Sound Power Level	
Number of modules	(kW)	(KW) (Note 1)	HxWxD (Note 2)	Control box side	Air heat exchanger side	Water heat exchange side	Soulid Fower 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 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)	Count Downs Low
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 lypes.

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	(Nate 3)	Sound Power Leve
Number of modules	(kW)	(KW) (Note 1)	HxWxD (Note 2)	Control box side	Air heat exchanger side	Water heat exchange side	Sound Fower Leve
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 2: Dimensions (width, depth) do not include projections of water pipe connections and power cable kil, (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

	Cooling capacity	Heating capacity	Dimensions (mm)	ALC: NO. O. L.	Sound Pressure Level  Control box side Air heat exchanger side Wa		Sound Power Leve
Number of modules	(kW)	(kW) (Note 1)	HxWxD (Note 2)	Control box side	Air heat exchanger side	Water heat exchange side	Sound Fower Fave
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.A	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.

#### Capacity Chart

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

#### 50HP Series EDGE Heat pump

List of cooling capacities RUA-GP421H (L)

Challed water outlet	lion				Dutsid	e uir fe	mpera	ture (*	G) (DE		
temperature (°C)	nem .		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
	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
	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
	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
0.5	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
	Power consumption	(kW)	29.2	30.0	34.6	39.3	44.1	47.8	47.2	36.6	36.6
30	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.El	68.9	53,3	53.3

#### 50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421C(L)

Ohitled water outlet	tim			ليسار	Outsid	e ar to	mpsra	ture (*	C) (DB	)	
lemperature (°C)	91111		15	20	25	30	35	40	43	48	52
	Cooling capacity	(kW)	168	163	154	145	136	127	120	104	94.6
	Power consumption	(kW)	24.9	28.6	32.5	36.8	41.1	45.2	46.9	46.6	48.
4	Chilled water flow rate	(L/min)	344	334	316	297	278	259	246	213	19
	Operation current	(A)	36.3	41.8	47.4	53.7	59.9	65.9	68.3	68.0	70.:
	Cooling capacity	(kW)	186	180	170	160	150	140	129	111	97.
7	Power consumption	(kW)	24.7	28.8	32.9	37.5	42.0	46.4	46.7	46.3	46.
′	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.
	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	20
	Operation current	(A)	36.3	42.3	48.6	55.4	62.2	68.5	68.4	67.4	64.4
	Cooling capacity	(kW)	219	210	199	189	176	162	147	128	10
40	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	20
	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
45	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	20
	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	103
	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.
	Cooling capacity	(kW)	228	220	210	200	189	174	159	142	103
05	Power consumption	(kW)	24.6	29.3	34.0	39.2	44.3	47.4	47.0	47.7	37.2
25	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	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

List of heating capacities RUA-GP421H(L)

Warm water outlet	Contract of the Contract of th			Outsid	a air to	прега	dure (*	C) (D6	)
Lemoerature (°C)	Item		-15	-10	-5	0	4	7	15
	Heating capacity	(kW)	103	118	134	151	166	153	182
05	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	51	51	52	52	42.7	42.3
	Heating capacity	(kW)	103	117	133	150	164	151	180
	Power consumption	(kW)	36.4	37.4	38.2	39.0	39.8	32.9	33.2
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
	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	(k/M)	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	65	66	68	71	59	61
	Heating capacity	(kW)	1	115	130	144	154	149	176
	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
	Power consumption	(kW)	200	1	49.8	49.6	49.1	49.2	49,0
55	Warm water flow rate	(L/min)	TE I	100	251	273	289	304	346
	Operation current	(A)	1	35	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.
- lote 3: \_\_\_\_\_ are displaying maximum capacities, Other values indicate perfo when operating at rated frequency,
  - indicales maximum flow rate. \( \Delta \) 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)

Warm water outlet	100000			Out	side a	r tomp	eratur	e (°Ci (	DB)	11
temperature (°C)	barn		-20	-15	-10	-5	0	4	7	15
	Heating capacity	(kW)	80.2	89.9	103	117	132	144	153	182
0.5	Power consumption	(kW)	25,7	26.1	26.5	26.7	26.8	26.8	26.0	25.0
25	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
.00-00	Heating capacity	(kW)	80.1	89.8	103	117	131	143	152	181
00	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	37
	Operation current	(A)	41.5	42.4	43.5	44.1	44.1	43.8	21.4	21.
	Heating capacity	(kW)	79.8	89.7	102	116	130	143	151	180
0.5	Power consumption	(kW)	30.7	31.5	32.3	32.9	33.1	33.6	32.9	33.2
35	Warm water flow rate	(L/min)	163	184	209	238	266	292	310	36
	Operation current	(A)	45.2	46.4	47.5	48.4	48.2	49.1	24.0	24
	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,
40	Warm water flow rate	(L/min)	163	183	208	236	265	290	308	36
	Operation current	(A)	48.9	50.3	52.0	52.8	53.1	54.3	26.8	27.
	Heating capacity	(kW)	79.2	89.2	101	115	129	141	150	17
	Power consumption	(kW)	35.7	36.9	38.0	39.2	40.2	41.1	40.8	41.
45	Warm water flow rate	(L/min)	162	183	207	235	264	289	307	360
	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)	100	39.7	41,2	41.3	41.4	41.6	44.9	46.3
50	Warm water flow rate	(L/min)	900	182	206	228	250	267	305	360
	Operation current	(A)	100	58.5	60.7	60.2	60.3	60.6	32.7	33.
	Heating capacity	(kW)		bloc	6	103	112	119	148	169
	Power consumption	(kW)			10.3	41,4	41.3	41.2	49.2	49.0
55	Warm water flow rate	(L/min)		15	221	211	229	243	304	346
	Operation current	(A)	170	100	304	60.3	60.3	60.0	35.8	35.7

- Note 1: The values shown in the table above are for an intel / 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
- 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)

Orded water outlet	The Real Property lives				Outsid	e air te	mpera	iture (*	C) (DE	)	MAN .
temperature (°C)	liem:		15	20	25	30	35	40	43	48	52
	Cooling capacity	(kW)	204	196	185	174	164	153	146	130	95.
	Power consumption	(kW)	34.1	39.1	43.6	48.1	52.7	57,3	59.3	59.1	47.
4	Chilled water flow rate	(L/min)	417	401	380	357	335	313	300	266	.19
	Operation current	(A)	49,7	57,0	63.6	70.1	76.9	83.5	86.5	86.2	69.
	Cooling capacity	(kW)	219	216	204	192	180	168	157	141	97.
7	Power consumption	(kW)	34.6	39.6	44.4	49.2	53.9	58.7	59.2	60.0	45.
	Chilled water flow rate	(L/min)	449	442	417	393	369	344	322	288	20
	Operation current	(A)	50.4	57.8	64.8	71.8	78.6	85.6	86.4	87.5	66
	Cooling capacity	(kW)	230	228	217	204	191	179	165	149	9
9	Power consumption	(kW)	35.8	39.6	44.8	49.8	54.6	59.7	59.4	60.6	43.
9	Chilled water flow rate	(L/min)	471	467	445	418	392	366	337	305	20
	Operation current	(A)	52.2	57.7	65.4	72.5	79.6	87.0	86.5	88.3	63.
	Cooling capacity	(kW)	244	245	238	224	210	194	178	155	10
10	Power consumption	(kW)	37.7	39.9	45.6	50.7	55.9	59.9	59.3	58.3	41.
12	Chilled water flow rate	(L/min)	500	502	487	460	430	397	364	317	20
	Operation current	(A)	54.9	58.2	66.5	73.9	81.4	87.3	86.5	85.0	60.
	Cooling capacity	(kW)	252	252	248	236	223	205	189	158	10
46	Power consumption	(kW)	38.9	40.6	45.8	51.3	56.7	59.9	59.2	55.2	38
15	Chilled water flow rate	(L/min)	*516	*516	508	483	457	420	387	324	20
	Operation current	(A)	56.8	59.2	66.8	74.8	82.7	87.4	86.4	80.5	55.
	Cooling capacity	(kW)	252	252	248	237	226	210	194	159	10
00	Power consumption	(kW)	39.1	40.5	45.8	51.4	56.9	60.0	59.1	53.5	36
20	Chilled water flow rate.	(L/min)	*516	*516	508	485	462	431	398	326	20
	Operation current	(A)	57.0	59.1	66.8	75.0	83.0	87.5	86.2	78.1	53.
	Cooling capacity	(kW)	252	252	248	237	226	210	194	160	10
05	Power consumption	(kW)	39.0	40.6	45.8	51.3	56.9	60.0	59.1	54.1	36
25	Chilled water flow rate	(L/min)	'516	<b>'</b> 516	508	485	462	431	398	327	20
	Operation current	(A)	56.9	59,2	66.8	74.8	83,0	87.5	86.2	78.8	53
	Cooling capacity	(kW)	245	245	243	232	220	209	195	102	10
00	Power consumption	(kW)	39.1	38.7	43.5	48.8	54,1	59.5	59.5	36.3	36
30	Chilled water flow rate	(L/min)	502	502	498	474	450	428	398	209	20
	Operation current	(A)	54.7	56.4	63.4	71.2	78.8	86.8	86.7	52.9	52.

60HP Series EDGE Cooling-only

Chilled water flow rate (L/min) 418 402 379 357 335 313 296 260 194

Chilled water flow rate (L/min) 448 443 418 393 369 344 317 281 198

Chilled water flow rate (L/min) 471 468 445 418 392 364 332 298 202

Chilled water flow rate (L/min) \*516 \*516 511 487 463 427 391 326 209

 Power consumption
 (kW)
 39.0
 40.2
 44.7
 50.9
 56.8
 59.1
 58.4
 54.6
 37.1

 Chilled water flow rate
 (L/min)
 \*516
 \*517
 510
 487
 463
 427
 391
 326
 209

(kW) 244 244 239 225 210 192

15 20 25 30 35 40 43 48 52 (kW) 204 196 185 174 164 153 145 127 94.6 (kW) 33.4 38.0 42.5 47.5 52.7 57.1 58.7 58.0 48.5

(A) 48.8 55.4 62.0 69.3 76.9 83.2 85.6 84.6 70.7

(kW) 219 216 204 192 180 168 155 137 96.8

(kW) 34.2 38.4 43.3 48.6 53.9 58.7 58.5 58.5 45.9

(A) 49.9 56.0 63.1 70.9 78.6 85.6 85.3 85.4 66.9 (kW) 230 229 217 204 191 178 162 146 98.6

(kW) 35.6 38.9 43.7 49.2 54.6 59.1 58.3 59.6 44.4

(L/min) 501 501 490 460 430 393 358 318 206

(L/min) \*516 \*516 510 485 457 416 379 323 207

(A) 56.8 58.6 65.2 74.0 82.5 86.0 84.8 82.0 56.4

(kW) 252 253 249 238 226 208 191 159 102

(A) 57.0 58.7 65.2 74.1 82.8 86.2 85.2 79.7 54.3 (kW) 252 252 249 238 226 208 191 159 102

(A) 56.9 58.6 65.2 74.1 82.8 86.2 85.2 79.7 54.1

(kW) 245 246 244 232 221 209 191 102 102

(kW) 38.0 38.7 42.5 48.3 54.3 59.2 58.4 37.1 37.1

(L/min) 502 503 499 476 452 427 391 209 209 (A) 55.0 56.5 62.0 70.5 79.2 86.3 85.2 54.1 54.1

(A) 54.9 57.7 64.8 73.2 81.4 86.1 85.0 86.3 60.8 (kW) 252 252 249 237 223 203 185 158 101 (kW) 38.9 40.2 44.7 50.7 56.6 59.0 58.2 56.2 38.7

List of cooling capacities RUA-GP511C (L)

Cooling capacity Power consumption

Operation current

Power consumption

peration current Cooling capacity

Power consumption

Operation current

Cooling capacity Power consumption Chilled water flow rate

Operation current

Chilled water flow rate

Operation current

Cooling capacity Power consumption

Operation current

Power consumption

Operation current

hilled water flow rate

Cooling capacity

Cooling capacity

Cooling capacity Power consumption

Cooling capacity

Chilled water outlet

#### List of heating capacities RUA-GP511H(L)

Warm water outliet	A SHARE WELL AND			Outsid	ë sir te	mpera	dure (*	C) (DB	
lemperature (°C)	Born!		-15	-10	-5	0	4	7	15
	Heating capacity	(kW)	122	139	158	177	194	183	215
05	Power consumption	(kW)	37.2	38.0	38.5	38.7	39.7	33.2	32.6
25	Warm water flow rate	(L/min)	249	285	323	363	396	375	440
	Operation current	(A)	55	55.9	56.8	57.0	58.4	48.3	47.5
	Heating capacity	(kW)	122	139	157	176	193	182	214
00	Power consumption	(kW)	40.7	41.7	42.5	43.2	44.6	37.5	37.3
30	Warm water flow rate	(L/min)	249	284	322	361	394	373	438
	Operation current	(A)	61	61	63	64	66	55	54
	Heating capacity	(kW)	121	138	156	176	192	181	213
05	Power consumption	(kW)	43.7	45.4	46.4	47.8	49.2	41.9	42.3
35	Warm water flow rate	(L/min)	248	283	320	360	.393	371	436
	Operation current	(A)	64	67	68	70	72	61	6
	Heating capacity	(KW)	120	137	156	175	191	181	213
	Power consumption	(kW)	46.9	48.9	50.6	52.1	53.8	46.4	47.
40	Warm water flow rate	(L/min)	246	281	319	359	392	370	434
	Operation current	(A)	69	72	75	77	78	68	69
	Heating capacity	(kW)	119	136	155	175	189	180	21
	Power consumption	(kW)	50.0	52.5	54.6	56.8	58.0	51.0	52.5
45	Warm water flow rate	(L/min)	244	279	317	358	386	369	43
	Operation current	(A)	74	77	80	83	85	74	7
	Heating capacity	(KW)		135	152	167	177	179	209
50	Power consumption	(kW)		56.3	57.8	58.2	58.2	55.6	57.4
50	Warm water flow rate	(L/min)		277	311	342	363	367	429
	Operation current	(A)		83	85	85	85	81	84
	Heating capacity	(kW)			143	155	164	172	194
	Power consumption	(kW)	1		58.4	58.1	58.0	57.9	57.4
55	Warm water flow rate	(L/min)	-	175	292	318	335	351	39
	Operation current	(A)		10-5	85	85	84	84	84

differential of 7°C, RH 85%

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

Note 3: are displaying maximum capacities. Other values indicate performance when operating at rated frequency.

'indicates maximum flow rate. \( \Delta 1 \) is larger than 7°C.

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

## 60HP Powerful Heating Type Heat pump

List of heating capacities RUA-GP511F(L)

Warm water outlet	ton		100	_		-	eretur	_	_	
temperature (°C)	10001	-000	-20	-15	-10	-5	0	4	7	1:
	Heating capacity	(kW)	137	153	174	196	214	231	203	2
25	Power consumption	(kW)	48.8	49.7	50.9	51.4	51.3	52.4	38.5	37
25	Warm water flow rate	(L/min)	280	314	356	401	437	473	415	4
	Operation current	(A)	73	74	76	76	76	. 77	57	
	Heating capacity	(kW)	137	154	175	196	213	230	202	2
30	Power consumption	(k)M)	52.9	54.6	56.1	56.8	56.8	58.2	43.4	43
30	Warm water flow rate	(L/min)	280	315	357	402	436	471	414	4
	Operation current	(A)	79	81	83	84	84	86	63	
	Heating capacity	(k)M)	136	153	175	197	213	229	201	-2
05	Power consumption	(kW)	56.7	58.8	61.2	62.5	62.3	63.6	48.2	48
35	Warm water flow rate	(L/min)	279	314	357	402	436	469	412	4
	Operation current	(A)	85	88	90	92	92	94	70	
	Heating capacity	(kW)	135	153	174	196	212	229	200	2
	Power consumption	(KW)	60.5	63.5	65.9	67.8	67.3	69.2	53.1	54
40	Warm water flow rate	(L/min)	276	312	356	402	434	468	410	4
	Operation current	(A)	91	94	97	100	99	102	77	
	Heating capacity	(kW)	132	151	173	192	208	221	200	2
	Power consumption	(kW)	63.5	67.4	70.6	71.4	71-0	71.3	58.1	59
45	Warm water flow rate	(L/min)	270	309	354	392	426	453	410	4
	Operation current	(A)	95	99	104	105	105	104	85	
	Heating capacity	(kW)		148	164	180	196	208	200	2
	Power consumption	(kW)		70.8	71.3	70.9	70.8	71.0	63.3	65
50	Warm water flow rate	(L/min)	ing.	304	336	369	401	425	410	4
	Operation current	(A)	1000	104	105	104	103	104	92	
	Heating capacity	(kW)				159	181	193	196	2
**	Power consumption	(kW)		8	-	65.7	69.1	69.9	67.4	67
55	Warm water flow rate	(L/min)		1		327	371	396	401	4
	Operation current	(A)				97	101	102	98	

differential of 7°C, RH 85%

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

Note 3: \_\_\_\_\_ are displaying maximum capacities, Other values indicate performance

when operating at rated frequency. \* indicates maximum flow rate. \( \Delta t \) is larger than 7°C.

Note 4: The value shown in the table above are in case the nominal capacity is 400V. Nole 5: This lable is subject to change without notice.

#### Capacity Chart

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

#### 70HP Series EDGE Heat pump

List of cooling capacities RUA-GP561H (L)

Chilled water outlet		-			Cutaki	e air le	mpera	dure ("	C) (DE		<i>u</i>
temperatura (°C)	ten.		15	20	25	30	35	40	43	48	52
	Cooling capacity	(kW)	226	217	205	194	182	171	163	144	95.6
	Power consumption	(kW)	40.9	46.6	51.6	56.7	61,5	66.8	68.5	67.0	47.8
4	Chilled water flow rate	(L/min)	463	444	420	397	374	350	334	294	19
	Operation current	(A)	59.7	67.9	75.3	82.7	89.6	97.4	99.9	97.7	69.
	Cooling capacity	(kW)	244	237	225	212	200	187	174	150	97.
_	Power consumption	(kW)	42.1	47.0	52.6	57.8	63.3	68.5	68.0	64.7	45.
7	Chilled water flow rate	(L/min)	500	486	461	435	410	383	357	307	20
	Operation current	(A)	61.3	68.6	76.6	84.2	92.3	99,9	99,1	94.3	65.
	Cooling capacity	(kW)	256	250	239	226	212	198	183	152	99.
9	Power consumption	(kW)	43.0	47.2	53.1	58.7	64.0	68.8	68,0	61,8	43.
9	Chilled water flow rate	(L/min)	523	512	489	462	435	405	375	311	20
	Operation current	(A)	62.6	68.8	77,4	85,€	93.4	100.2	99.2	90.1	63
	Cooling capacity	(kW)	270	267	258	245	232	214	197	156	10
12	Power consumption	(kW)	44.6	47.8	53.6	59.5	65.4	69.0	68.2	58.2	41.
12	Chilled water flow rate	(L/min)	552	548	528	502	475	438	403	319	20
	Operation current	(A)	65.1	69.8	78.2	86.7	95.3	100.6	99.4	84.9	59.
	Cooling capacity	(kW)	274	273	265	254	242	224	208	158	10
	Power consumption	(KW)	45.0	48.0	53.9	59.9	65,9	68,9	68.2	54.9	37.
15	Chilled water flow rate	(L/min)	561	559	542	520	497	458	426	325	20
	Operation current	(A)	65.6	70.0	78,5	87,3	96.1	100.5	99.4	80.0	54.
	Cooling capacity	(kW)	274	273	264	253	243	227	213	160	10
20	Power consumption	(kW)	45.1	48.0	53.8	59.8	66.2	69.0	68.3	53.7	36.
20	Chilled water flow rate	(L/min)	561	559	541	519	497	465	436	328	20
	Operation current	(A)	65,7	70.0	78.4	87.2	96.5	100.6	99.5	78.3	52
	Cooling capacity	(kW)	266	266	260	249	238	226	213	160	10
O.E.	Power consumption	(kW)	42.8	44.9	50.7	56.6	62.5	68.3	68.3	53.7	36.
25	Chilled water flow rate	(L/min)	545	545	532	509	487	463	436	327	20
	Operation current	(A)	62,5	65.4	78.4	82.5	91.1	99.5	99.5	78.3	52
	Cooling capacity	(kW)	249	250	248	237	225	214	207	102	10
30	Power consumption	(kW)	46.6	40.5	44.9	50.4	55.6	61,3	64.7	36,3	36
30	Chilled water flow rate	(L/min)	510	511	508	485	462	437	423	209	20
	Operation current	(A)	57,3	59.1	65.5	73.5	81.0	89,4	94.3	52.9	52

List of heating capacities RUA-GP561H (L)

Warm water outlet				Outeid	e mir te	mpeni	dure (1	C) (DB	1
lemperature (°C)	ten		-15	-10	-5	0	4	7	15
_	Heating capacity	(kW)	153	174	196	214	231	203	23
0.5	Power consumption	(kW)	49.7	50.9	51.4	51.3	52.4	38,5	37.
25	Warm water flow rate	(L/min)	314	356	401	437	473	415	48
	Operation current	(A)	74	76	76	76	77	57	- 5
	Heating capacity	(kW)	154	175	196	213	230	202	23
30	Power consumption	(kW)	54.6	58.1	56.8	56.8	58.2	43.4	43.
30	Warm water flow rate	(L/min)	315	357	402	436	471	414	48
	Operation current	(A)	81	83	84	84	86	63	6
	Heating capacity	(kW)	153	175	197	213	229	201	23
05	Power consumption	(kW)	58.8	61.2	62.5	62.3	63.6	48.2	48.
35	Warm water flow rate	(L/min)	314	357	402	436	469	412	48
	Operation current	(A)	88	90	92	92	94	70	7
	Heating capacity	(kW)	153	174	196	212	229	200	23
40	Power consumption	(kW)	63.5	65.9	67.8	67.3	69.2	53.1	54
40	Warm water flow rate	(L/min)	312	356	402	434	468	410	47
	Operation current	(A)	94	97	100	99	102	77	7
	Heating capacity	(kW)	151	173	192	208	221	200	23
45	Power consumption	(kW)	67.4	70.6	71.4	71.0	71.3	58.1	59.
40	Warm water flow rate	(L/min)	309	354	392	426	453	410	47
	Operation current	(A)	99	104	105	105	104	85	8
	Heating capacity	(kW)	14	164	180	196	208	200	23
50	Power consumption	(kW)		71.3	70.9	70.8	71.0	63.3	65
50	Warm water flow rate	(L/min)		336	369	401	425	410	47
	Operation current	(A)	-3	105	104	103	104	92	9
	Heating capacity	(kW)			159	181	193	199	22
55	Power consumption	(kW)			65.7	69.1	69.9	68,9	69
55	Warm water flow rate	(L/min)	Wald		327	371	396	408	46
	Operation current	(A)	110		97	101	102	100	10

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. \( \Delta \) is larger than 7°C.

Note 4: The value shown in the table above are in case the nominal capacity is 400V. Note 5: This table is subject to change without notice.

#### 70HP Series EDGE Cooling-only

List of cooling capacities RUA-GP561C(L)

Chilled water outlet	item					e air te					
temperature (*C)	1100	. 85	15	20	25	30	35	40	43	48	52
	Cooling capacity	(kW)	225	217	208	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.
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.
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
	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	20%
	Operation current	(A)	61.2	67.5	75.€	84.3	92.5	99.2	97.9	90.8	64.4
	Cooling capacity	(KW)	269	267	259	246	232	214	196	155	100
	Power consumption	(kW)	43.7	47.1	52.E	58.9	64.8	68.2	67.1	58.5	41.3
12	Chilled water flow rate	(L/min)	551	547	530	503	476	437	401	318	20
	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	26€	254	243	224	207	158	10
	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
	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	103
0.5	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	8.02	99.4	98.1	79.1	53.9
	Cooling capacity	(kW)	250	250	249	238	226	214	207	102	102
00	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 lable above are in case the nominal capacity is 400V.

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

**Capacity Chart** 

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

#### 50HP Series EDGE Heat pump

List of cooling capacities RUA-GP421HN (L)

Chiffed water outlet	200		O.	neide a	ir temp	orature	r(C)(D	6)
temperature (°C)	Kern:	-	30	35	40	43	48	52
	Cooling capacity	(kW)	143	136	129	125	118	112
	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
_	Power consumption	(kW)	23.6	26.8	29.8	31.4	34.9	37.7
7	Chilled water flow rate	(L/min)	323	307	292	283	267	25
	Operation current	(A)	34.4	39.1	43.4	45.7	50,8	55,0
	Cooling capacity	(kW)	168	160	152	147	139	133
	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	27
	Operation current	(A)	34.4	39.8	44.0	46.3	51.8	55.6
	Cooling capacity	(kW)	182	174	166	162	153	14
	Power consumption	(kW)	23.8	27.6	30.9	32.7	36.4	39.
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.
	Cooling capacity	(kW)	190	183	175	170	161	15
	Power consumption	(kW)	24.0	28.0	31.5	33.3	36.9	39.6
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.
	Cooling capacity	(kW)	190	183	175	171	164	158
	Power consumption	(kW)	24.0	28.0	31.4	33.3	37.2	40.
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.
	Cooling capacity	(kW)	190	182	175	171	164	15
0.5	Power consumption	(kW)	24.0	27.9	31.4	33.3	37.2	40.0
25	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
	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	NEW COLUMN		_ 0.	tsido e	ir temp	erature	(°C) (C	6)
temperature (°C)	ttem		30	35	40	43	48	52
	Cooling capacity	(kW)	172	164	156	152	144	13
	Power consumption	(kW)	31.1	35.0	38.4	40.5	44.3	47.
4	Chilled water flow rate	(L/min)	353	336	320	310	294	28
	Operation current	(A)	45.3	51,1	56.0	59.1	64.6	68.
	Cooling capacity	(kW)	189	180	171	166	158	15
7	Power consumption	(kW)	31.9	35,9	39.5	41,3	45.5	48,
	Chilled water flow rate	(L/min)	387	369	351	341	323	30
	Operation current	(A)	46.5	52.4	57.6	60.2	66.4	70.
	Cooling capacity	(kW)	201	191	182	177	168	16
9	Power consumption	(kW)	32.4	36.5	40.4	42.4	46.4	49
	Chilled water flow rate	(L/min)	412	392	373	362	343	32
	Operation current	(A)	47.2	53.2	58.8	61.9	67.7	71.
	Cooling capacity	(kW)	219	209	200	194	184	17
	Power consumption	(kW)	32.9	37.5	41.6	43.8	47.8	50.
12	Chilled water flow rate	(L/min)	448	428	409	396	376	36
	Operation current	(A)	48,0	54.6	60,6	63.8	69.7	74:
	Cooling capacity	(kW)	230	219	209	204	194	18
	Power consumption	(kW)	33.0	37.8	42.1	44.5	48.6	51.
15	Chilled water flow rate	(L/min)	471	449	428	417	398	38
	Operation current	(A)	48.2	55.1	61.3	64.9	70.9	75.
	Cooling capacity	(kW)	230	220	212	207	199	19
	Power consumption	(kW)	33.0	37.8	42.3	44.6	49.0	52,
20	Chilled water flow rate	(L/min)	471	451	434	423	407	39
	Operation current	(A)	48.2	55,1	61.7	65,0	71.5	76.
	Cooling capacity	(kW)	230	220	212	207	199	19
0.5	Power consumption	(kW)	33.1	37.8	42.3	44.6	49.0	52.
25	Chilled water flow rate	(L/min)	471	451	434	423	407	39
	Operation current	(A)	48.3	55.1	61.7	65.0	71.5	76.
	Cooling capacity	(kW)	229	220	212	207	192	19
00	Power consumption	(kW)	35.0	37.8	42.3	44.6	52.3	52.
30	Chilled water flow rate	(L/min)	469	451	434	423	393	39
	Operation current	(A)	48.2	55.1	61.7	65.0	76.3	76.

#### 50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421CN(L)

Chilled water outlet	ttem		O.	ilside a	ir temp	entlure	PC) (C	8)
temperature (°C)	(Crit		30	35	40	43	48	52
	Cooling capacity	(kW)	143	136	129	125	118	112
	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
1	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
0	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
	Power consumption	(kW)	24.5	28.4	31.B	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
	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
	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
	Power consumption	(kW)	24.7	28.8	32.3	34.2	38.1	41.0
25	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
	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	Control of the Control		O	itside a	r temp	erature	(°C) (C	(8)
temperature (°C)	Hem:		30	35	40	43	48	52
	Cooling capacity	(kW)	172	164	157	152	144	13
	Power consumption	(kW)	31.2	35.0	38.7	40.5	44.2	47
4	Chilled water flow rate	(L/min)	353	336	320	311	294	28
	Operation current	(A)	45.4	51.1	56.4	59.1	64.4	68
	Cooling capacity	(kW)	189	180	172	167	158	.15
_	Power consumption	(kW)	31.9	35.9	39.7	41.8	45.5	48
7	Chilled water flow rate	(L/min)	387	369	352	341	323	3
	Operation current	(A)	46.5	52,4	57.9	60.9	66.4	70
	Cooling capacity	(kW)	201	191	183	177	168	1
	Power consumption	(kW)	32.4	36.5	40_7	42.3	46.4	49
9	Chilled water flow rate	(L/min)	412	392	374	363	344	3
	Operation current	(A)	47.2	53.2	59.3	61.7	67.7	72
	Cooling capacity	(kW)	219	208	200	194	184	1
	Power consumption	(kW)	32.9	37.3	41.6	43.7	47.8	50
12	Chilled water flow rate	(L/min)	447	427	409	397	377	3
	Operation current	(A)	48.0	54.4	60.6	63.7	69.7	74
	Cooling capacity	(kW)	230	219	209	203	194	- 1
4.5	Power consumption	(kW)	33.0	37.9	42.1	44.1	48.6	51
15	Chilled water flow rate	(L/min)	470	448	428	416	397	3
	Operation current	(A)	48.2	55.2	61.4	64.3	70.9	75
	Cooling capacity	(kW)	229	219	211	206	198	1
	Power consumption	(kW)	33.0	37.8	42.2	44.5	49.0	52
20	Chilled water flow rate	(L/min)	469	449	432	421	405	3
	Operation current	(A)	48.1	55.1	61.5	64.9	71.5	76
	Cooling capacity	(kW)	229	219	211	206	198	15
95	Power consumption	(kW)	33.0	37.8	42.2	44.5	49.0	52
25	Chilled water flow rate	(L/min)	469	449	432	421	405	3
	Operation current	(A)	48.2	55.1	61.5	64.9	71.5	76
	Cooling capacity	(kW)	228	219	211	206	191	-19
00	Power consumption	(kW)	35.0	37.8	42,2	44.5	52.2	52
30	Chilled water flow rate	(L/min)	467	449	432	421	391	3
	Operation current	(A)	48.1	55.1	61.5	64.9	76.1	76

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

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

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

#### Capacity Chart

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

70HP Series EDGE Heat pump

70HP Series EDGE Cooling-only

List of cooling capacities RUA-GP561HN(L)

Chilled water outlet	10 TO	1450	Ot	Itside a	ir temp	erature	(°C) (C	<b>6</b> )
temperature (°C)	Item		30	35	40	43	48	52
	Cooling capacity	(kW)	192	183	174	169	161	15
	Power consumption	(kW)	37.9	42.2	45.8	47.6	51.9	55
4	Chilled water flow rate	(L/min)	393	374	357	346	329	31
	Operation current	(A)	55.2	61.5	66.8	69.4	75.7	80
	Cooling capacity	(kW)	210	200	190	185	176	16
-	Power consumption	(kW)	38.7	43,3	47.1	49.2	53.5	56
7	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	17
0	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
40	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	39
	Operation current	(A)	57.8	65.3	72.2	75,0	82.2	86
	Cooling capacity	(kW)	254	243	233	226	216	20
4.5	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	4
	Operation current	(A)	57.9	65.7	73.2	76.3	83.5	88
	Cooling capacity	(kW)	254	243	234	228	219	2
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	4:
	Operation current	(A)	57,9	65.7	73.2	76.6	83.8	89
	Cooling capacity	(kW)	253	243	234	228	219	2
25	Power consumption	(kW)	39.7	45.1	50.2	52.5	57.5	61
25	Chilled water flow rate	(L/min)	519	497	478	467	449	4
	Operation current	(A)	57.8	65.7	73.2	76.6	83.8	89
	Cooling capacity	(kW)	246	238	229	223	208	2
30	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	4
	Operation current	(A)	55.7	62.7	69.9	73.1	85.7	85

List of cooling capacities RUA-GP561CN(L)

Chilled water outlet	190	-	O.	desdo a	ir temp	erndure	COL	8)
temperature (°C)	(leg)		30	35	40	43	48	52
	Cooling capacity	(kW)	192	183	174	169	161	154
	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.
	Cooling capacity	(kW)	210	200	191	185	176	169
7	Power consumption	(kW)	38.2	42.7	46.8	48.6	52.9	56,
,	Chilled water flow rate	(L/min)	430	410	391	379	361	34
	Operation current	(A)	55.7	62.3	68.3	70.8	77.1	81.
	Cooling capacity	(kW)	223	212	202	197	187	17
9	Power consumption	(KW)	38.6	43.4	47.5	49.9	54.0	57.
	Chilled water flow rate	(L/min)	458	435	415	403	383	36
	Operation current	(A)	56.3	63.3	69.3	72.7	78.8	83.
	Cooling capacity	(kW)	244	232	221	215	204	19
40	Power consumption	(kW)	39.2	44.4	48.8	51.1	55.6	59.
12	Chilled water flow rate	(L/min)	499	475	453	440	418	40
	Operation current	(A)	57.1	64.7	71.1	74.5	81.0	86.
	Cooling capacity	(kW)	253	243	232	226	216	20
	Power consumption	(kW)	39.2	44.6	49.4	51.8	56.7	60.
15	Chilled water flow rate	(L/min)	518	497	476	463	442	42
	Operation current	(A)	57.1	65.0	72.0	75.6	82.7	87.
	Cooling capacity	(kW)	253	242	233	228	219	-21
	Power consumption	(kW)	39.2	44,4	49,5	52.1	56.9	60.
20	Chilled water flow rate	(L/min)	518	496	477	466	448	43
	Operation current	(A)	57.2	64.7	72.1	75.9	82.9	88.
	Cooling capacity	(kW)	253	242	233	228	219	21
05	Power consumption	(kW)	39.3	44.5	49.5	52.1	56.9	60.
25	Chilled water flow rate	(L/min)	517	496	477	466	448	43
	Operation current	(A)	57,3	64.9	72.1	75.9	82.9	88
	Cooling capacity	(kW)	246	238	229	223	208	20
00	Power consumption	(kW)	41.6	43.0	47,8	49,9	58.6	58.
30	Chilled water flow rate	(L/min)	505	487	468	457	425	42
	Operation current	(A)	55,6	62.6	69.7	72.7	85.4	85.

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

#### Water Volume for set of modules

Standard Water Flow Rate / Water Volume Range (Leaving (LVG)/Entering (ETG) water temperature difference =  $7^{\circ}$ C)

#### 50HP Series EDGE

#### Internal inverter pump

## **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	747	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/healing, 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

#### 60HP Series EDGE

Number of modules	Standard flow rate (L/mln) :Note 2	Flow rate range (L/min) [Note 3-6]	Minimum water loop volume (L) (Note 4-5-8)	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 5,529 150~9	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: The cooling capacity has been measured when the module was operating at the rated

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

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.

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

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

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

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

#### Water Volume for set of modules

## 60HP Powerful Heating Type

Internal inverter pump

Number of modules	Standard flov	v 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)	ote 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	056	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	6 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

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 now rate range, the now rate automatically changes not the pump integrated into each model could not have represented to the control of the pump of th

Note 5. When operating at the rated flow capacity, even with internal inverter pump models, set the flow amount range and system relained 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/mln) (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	Ü	396
12	4,914	150~7800	V_	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

inicials.)
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/intel temperature difference = 7°C)
When calculating the retained water amount, calculate the greatest water loss in the piping flow channel, giving consideration to the bypass channel etc.

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

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

#### Water Volume for set of modules

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

Pumpless

Number of modules	Standard flow rate (L/mln) (Note 2)	Water pressure loss (kPa) Note 10	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	29.3	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
	1.011		0.400 0.000	11.460	E76

Note 1: For both at cooling/neating. 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. (anly 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
В	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 relained water amount is with a standard flow armount. (Rated capacity, change in water outlet/inlet temperature difference = 7°C) When calculating the retained water amount, calculate the greatest water loss in the piping flow channel, giving consideration to the bypass channel etc.

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

#### Water Volume for set of modules

## 60HP Powerful Heating Type

Pumpless

N	Standard flow	rate (L/min)(Note 1)	Water pressure	loss (kPa)(Note ()	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	720	0112	1,350~5,400	8,601	324
10	3,686	4,095			1,500~6,000	9.557	360
11	4,054	4,505			1,650~6,600	10,512	396
12	4,423	4,914			1,800~7,200	11,468	432
13	4,791	5,324			1,950~7,800	12,424	468
14	5,160	5,733			2,100~8,400	13,379	504
15	5,529	6,143			2,250~9,000	14,335	540
16	5,897	6,552			2,400~9,600	15,291	576

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

Note 3: Value indicated for retained water amount is with a standard flow armount. (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	51.2	1,350~5850	8,601	324
10	4,095		1,500~6500	9,557	360
11	4,505	1	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

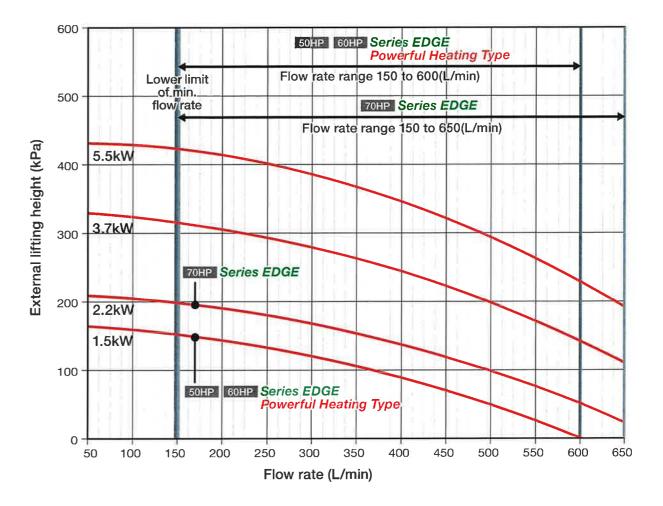
Note 1: For both at cooling/heating, Indicates the flow rate and water pressure loss when leaving/entering water temperature difference is 7°C at rated capacity. (water pressure loss is only for pumpless models) Note 2: Within the indicated flow rate range, the flow rate automatically changes from the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

Note 3: Value indicated for relained 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, 60	HP model	70HP model				
Pump output		1.5	2.2	3.7	5.5	2.2	3.7	5.5	
Flow rate range (1)	(L/min)		15	0~600			150~650		
External lifting height (2)	(kPa)	43~151	92~198	190~315	284~422	64~198	158~315	247~422	
Max. operation current (3)	(A)	3.3	4.5	7.3	10.5	4.5	7.3	10.5	
Max. power consumption can	(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

Minimum flow rate=capacity x 860/60/10 (maximum temperature difference)

'However, minimum flow amount must be at or above 150L/min

Maximum flow amount=capacity x 860/60/5 (minimum temperature difference

\*However, maximum flow amount must be at or below 600L/min for the 50HP and 60HP model, and at or below 650L/min for the 70HP model

Note 2: Lifting height outside of the unit shown in the table is the value when the pump frequency is 60Hz at the flow rate range above-

The pump lift outside of the machine is the value reached when subtracting the resistance inside the machine from the total pump lift.

Note 3: Max. current and max. power consumption are the max. values when the pump operation frequency is 60Hz. (In case the nominal current is 380V)

Note 4: 60Hz pumps are commonly used in the 50Hz area

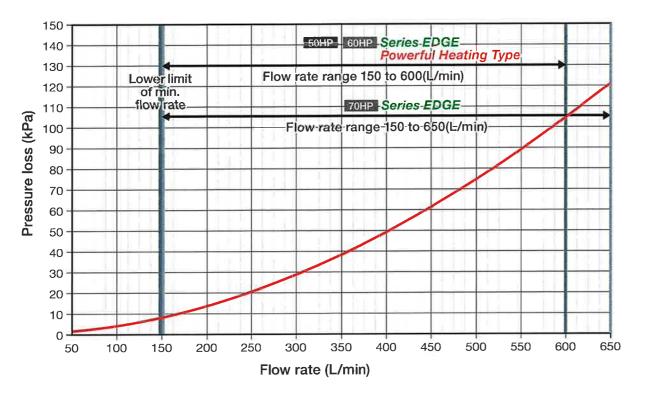
Note 5: There are some ranges where pump capacity is not enough for the system to run within flow rate range so please increase pump's horsepower

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

#### Pump Characteristics / Internal Resistance Curve (For pumpless)

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

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



#### **Power Supply Design**

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

Power supply design (380V/400V/415V specifications) (Internal inverter pump/Pumpless) (Heat pump/Cooling-only)

(Standard type and High-EER type in common)

		50H		es EDG erful He	E eating 1	уре		60HP	Series	EDGE	
Power sur	ply		50/60	Hz 380V/400\	V/415V			50/60	Hz 380V/400\	//415V	
				Internal inv	verter pump		D		Internal inv	erter pump	
Motor Out	put (kW)	Pumpless	1.5	2.2	3,7	5,5	Pumpless	1,5	2.2	3.7	5,5
L Type		-		Centrifu	gal pump		775		Centrifug	gal pump	
Type of sta	art	-		Invert	er start		-		Inverte	er start	
Type of sta		-		Inv	erter		-		Inve	erter	
Max. Cum	ent (A)	_	3.1	4,3	6.9	10	_	3.1	4.3	6.9	10
Max. Input	t (kW)	-	2,0	2,8	4,5	6.4		2,0	2,8	4.5	6.4
No. of prima	ry connecting parts for power supply wiring	No. of po	wer connecti	on terminals i	nside each me	odule(M10)	No. of por	wer connecti	on terminals i	nside each mo	odule(M10)
Standard (	Current (A)	79.0	82,1	83.3	85,9	89.0	99.0	103	104	106	109
	urce Capacity (kVA)	54.8	56.9	57.8	59.6	61.7	68.6	70.8	71,6	73.4	75.5
Power	IV: Power Supply ≤ 20m (mm²)			38			38			60	
Supply	IV: Power Supply ≤ 50m (mm²)			38			38			60	
Wiring	CV: Power Supply ≤ 20m (mm²)			22					38		
Wiring (mm2)	CV: Power Supply ≤ 50m (mm²)			22					38		
Ground				22			22		3	8	
Switch	witch (A		100						12	25	
Fuse	Fuse (A								12	25	
Earth Leal	kage Circuit Breaker (Capacity) (A)						100	125			
Earth Leal	kage Circuit Breaker (Sensibility) (mA)			100			100		20	00	

		60	HP Pow	erful H	eating 1	Гуре		70HP Se	eries EDG	E
Power sup	ply		50/60	Hz 380V/400	V/415V			50/60Hz 3	80V/400V/415V	
		D		Internal in	verter pump		Dlass	li	nternal inverter pur	mp
Motor Out	ut (	kW) Pumpless	1.5	2.2	3.7	5.5	Pumpless	2.2	3.7	5.5
				Centrifu	gal pump		-		Centrifugal pump	
Type of sta	rt			Invert	er start				Inverter start	
Type of sta		_		lnv	erter		<u> </u>		Inverter	
Max, Curre	nt	(A) —	3.1	4,3	6.9	10	-	4.3	6.9	10
Max. Input	(	kW) —	2.0	2.8	4.5	6,4	-	2.8	4,5	6.4
No. of primar	y connecting parts for power supply wiring	No. of	ower connect	ion terminals i	inside each m	odule(M10)	No. of pow	er connection te	erminals inside eac	h module(M10)
Standard C	andard Current (A)		113	114	117	120	115	119	122	125
Power Sou	rce Capacity (k	(VA) 75.9	78.1	78,9	80.7	82.8	79.4	82.4	84.2	86.3
Power Supply	IV: Power Supply ≤ 20m (IT	nm²)		60					60	
Supply	IV: Power Supply ≤ 50m (m	nm²)		60					60	
Wiring	CV: Power Supply ≤ 20m (m	nm²)		38					38	
(mm2)	CV: Power Supply ≤ 50m (m	nm²)		38					38	
Ground				38					38	
Ground Switch		(A)		125					125	
Fuse		(A)		125					125	
Earth Leak	age Circuit Breaker (Capacity)	(A)		125					125	
Earth Leak	age Circuit Breaker (Sensibility) (I	mA)		200					200	

<sup>\*1.</sup> 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.

Note.1: The Ihickness 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.

Cross-sectional area of copper phase conductors supplying the equipment S mm²	Minimum cross-sectional area of the external protective copper conductor Sp mm²
S≤16	S
16<\$≤35	16
S>35	S/2

adepending 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.

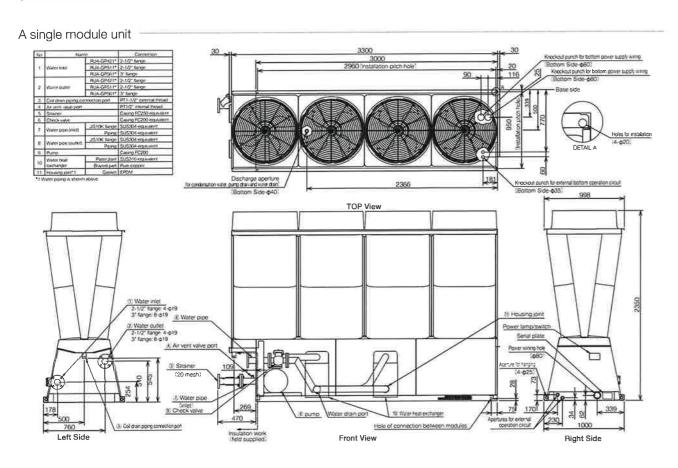
4. Standard Current is the value considering the imbalance of 2% between power supply voltages.

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



# Combined installation Top View Top View Top View Top View Top View Top View

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

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

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

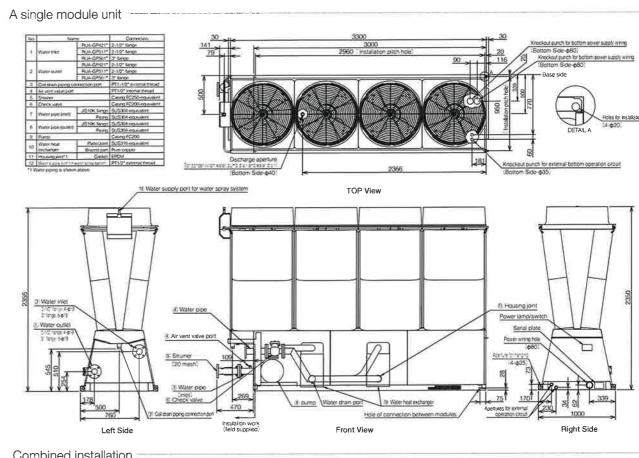
Note 3: 30mm clearance space between modules is only minimum requirement for Japanese service man. Please consider larger space for local service man.

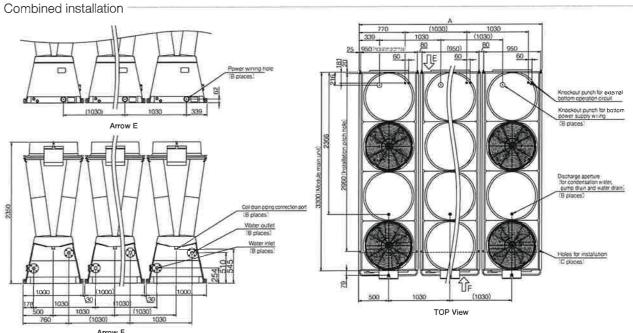
#### **Outline Drawing**

50, 60HP Series EDGE / Powerful Heating Type, 70HP Series EDGE

- High EER - With Pump/Pumpless

\*Pumpless model does not include check valve





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

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

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

for power supply wiring kit.

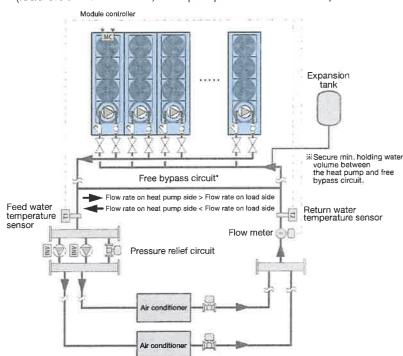
Note 3: 30mm clearance space between modules is only minimum requirement for Japanese service man. Please consider larger space for local service man.

#### System Examples for Internal Inverter Pump Units

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

#### 1. Example of duplex pump system

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



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

#### List of equipment for control

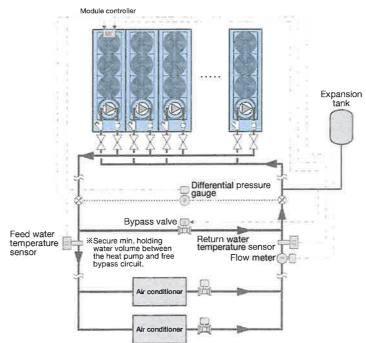
Part name	Specifications	Quantity	Provided locally	Constructed locally
Water temperature sensor (mandatory)	10kΩ external sensor	2	Attached to module controller	0
Flow meter	Able to measure instantaneous value support voltage/current output* (Able to adjust input range span: DC 0 to 5V)	1	0	0

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

#### System Examples for Internal Inverter Pump Units

#### 2. Single Pump: Example of standard system

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



- 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.
- 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).
- The module compressor with internal pump for cold/hot-water circulation controls the number of compressors and frequency so that the leaving water temperature approaches the set temperature.
- 4. As there may be an imbalance in the load side required flow rate and the heat pump flow rate, construct a bypass valve V (provided locally) which is operated according to detection of differential pressure between the feed/return water pipes. The bypass valve V is controlled by a module controller.
- 5. While the operation is stopped, the freeze protection control may automatically operate the internal pump. The bypass valve may be forcibly opened to secure the flow path. In this case, water may not be supplied to equipment on the load side (to feed water to the equipment on the load side, be sure to open the 2-way valve on the load side in accordance with freeze protection control of the heat pump, instead of configuring settings not to open the bypass valve).

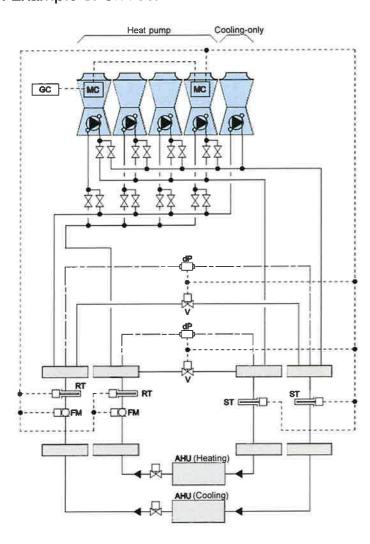
#### List of equipment for control

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

<sup>\*</sup> Attach 150 $\Omega\pm1\%$  metal film resistor (provided locally) when the signal has current 4-20mA. (In that case, input range span is DC 0.6 to 3 V)

## **System Examples for Internal Inverter Pump Units**

#### 3. Example of Chilled/Warm Water Simultaneous Use System



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

## Option List

Option Parts	Model Code	Locally constructed (*Note2)	Availability of factory assembly (*Note3)	Remarks
Module Controller (MC) See following page for Model Codes.	For Standard model For Powerful Heating type	·	1	- One controller required for one group
Group Controller (GC)	RBP-GC003S-E	~	n/a	
Connect fitting Kit	RBP-BT923TYS-E	1	n/a	- N-1 kits required (N = no, modules)
Fin Guard Kit	RBP-BG901S-E	✓ ·	i.	
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	1	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 lemperature) 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

	ltem		Locally constructed and locally set up
	Ext. temp setpoint input	MC and GC standard functions	Required
	External capacity input	indent (MC)	Required (Nate 3)
	Maximum number of modules that can be operated input	indent (MC)	Required (Note 3)
	Demand capacity input	indent (MC)	Required (Nore 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 (Nate 3)
	Anti-freezing pump interlock input	indent (MC)	Required (Note 3)
	Operation mode output (for each system)	indent (MC)	Required (Nate 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
ı	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 (Non-3)
d	Scheduled operation function	GC standard functions	Required
	Double setpoints (temperature setpoint) (Note 4)	MC standard functions	Required
	Module operating time display	MC standard functions	Not necessary
	Compressor run hours display	MC standard functions	Not necessary
	Module startup counts display	MC standard functions	Not necessary
	Compressor startup counts display	MC standard functions	Not necessary
	Module operating time averaging control	MC standard functions	Not necessary
	Compressor run hours averaging control	MC standard functions	Not necessary

#### **Module Controller (MC):**

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

	Type	Model Code
	Standard Water Application	RBP-MC003SSE
Standard Model	Standard Water Application + Modbus	RBP-MC003SSDE
	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 ΔT specification	- The temperature difference ranges from 10 °C to 16 °C.		
	Heat machine specification	- Heating only. Operable OAT ranges more than 21°C(DB) up to 43°C(DB		
	Heat machine specification with cooling operation	- Heat pump with expanded range for heating operation		
	Stainless steel screw set			
Unit	Stainless steel water strainer & check valve			
	Special pump specification			
	Heat storage system specification			
	UPS connecting software			
	Fast start up specification			
	Automatic system recovery			
	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

Brine specifications

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

#### Brine-Spec Line-Up and Module Names

		With an inverter pump						
	Model	Series EDGE Cooling-only	Series EDGE Heat pump	Powerful Heating Type Heat pump				
FOUR	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				
COLUB	Standard type	RUA-GP511C(*1)R8-E	RUA-GP511H(*1)R8-E	RUA-GP511F(*1)R8-E				
60HP	High-EER type	RUA-GP511C(*1)NR8-É	RUA-GP511H(*1)NR8-E	RUA-GP511F(*1)NR8-E				
Talla	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-É					

		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						

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

#### Brine leaving temperature and brine density

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

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

Brine specifications

## 50HP Series EDGE Heat pump

					Standard type	High EER type
					380V /400V/ 415V	380V /400V/ 415V
Aodel (A	single modul	e unit)			RUA-GP421H(*1)R8-E	RUA-GP421H(*1)NR8-E
Cooling capacity (kW)					100	100
leating	capacity		(Note 1.7)	(kW)	150	150
	Unit color				Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8,5/0,5)
jo		Height		(mm)	2350	2350
Exterior	Dimensions	Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	3300
hipping	weight			(kg)	1,353	1,365
peratin	g weight			(kg)	1,389	1,401
owers	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	power 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)
data		SEER			4.88	5.06
평		Power factor	(Note 19	(%)	99	99
Electrical data		Nominal current		(A)		63.1(63.9)
ū		Nominal input		(kW)	41.1(41.7)	41,1(41,7)
	Heating	COP		(,	3.65(3.60)	3.65(3.60)
	, iodaii ig	SCOP			4.26	4,26
Note 14)	1	Power factor	(Note 6)	(%)	99	99
	Total laster (74)			(10)	Hermetic rotary	Hermelic rolary
Compressor	Type Motor output	× number of units		(kW)	9.0 x 4	9.0 x 4
npre	Type of start	× Harrioer or drike		(1111)	Inverter starter	Inverter starter
S				(W)	37 x 4	37 x 4
-	Case heater	Туре		(44)	RB74AF	RB74AF
ompre	ssor oil			(L)		2.0×4
		Charge		(L)	Plate fin coil	Plate fin coil
ondens	ser coil - air si	je		-	Propeller fan	Propeller fan
	Туре			-1/1	1,230 (max, value)	1,230 (max, value)
Fan	Air quantity				Inverter starter	Inverter starter
	Type of start			(kW)	1.2 x 4	1,2 x 4
_		x number of units		_	1.2.4	13.6 x 1
Spray system	Water spray			/min)		0.2
NAME OF	Supply water	pressure	(1000)	MPa)	<del></del>	Continuous spraying when outside temperature and compressor capacity exceeds setting value
esen w	Control			4346	-	2,2
	Motor output			(kW)	22	
du	Type			-	Centrifugal pump	Centrifugal pump
Pump	Flow control		_		Inverter	Inverter
	Maximum cu			(A)	4.5	4.5
	Minimum inp	ut	2000	(kW)	2.8	2.8
ooler -	water side		Note 11)	_	Brazed plate heat exchanger (SUS316 equivalent)	Brezed plate heat exchanger (SUS316 equivalent)
tant	Туре			_	R32	R32
Refrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
	Control			_	Electric expansion valve	Electric expansion valve
apacity	control steps		(Note 12)	(%)	6 - 100	6 ~ 100
peratio	n control					ontrol and chilled (warm) water temperature
efrost s	system					everse cycle system
rotectiv	e device					pump), crankcase healer, open-phase protection, microcomputer controller (compressor time guan charge temperature, low pressure protection, sensor failure, water pressure afarm)
SIS.	Cold/Hot wat	er inlet			2-1/2" flange x 1 (JIS10K)	2-1/2* flange x 1 (JIS10K)
Piping diamelers	Cold/Hot wat	er outlet			2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
g ig	Coil drain				PT1-1/2" external thread x 1	PT1-1/2" external thread x 1
ound p	ower level				83.8	83.8
onuiroc	parts sold se	parately			Module controller (MC) (er	xternal sensor x 2 included) <sup>(histo 13)</sup>

| Required parts sold separately | Module controller (MC) (external sensor x 2 included)\*\*\*
| Research | Resea

(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.

47

Specifications (Internal inverter pump)

Brine specifications

## 50HP Powerful Heating Type Heat pump

		-			Standard type	High EER type
				_	380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	le unit)			RUA-GP421F(*1)R8-E	RUA-GP421F(*1)NR8-E
Cooling capacity (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
ă	Dimensions	Width	(Note 2)	(mm)	1000	1000
		Depth	(Nota 2)	(mm)	3300	3300
Shippin	g weight			(kg)	1,363	1,376
Operatio	ng weight			(kg)	1,399	1,412
owers	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)		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)
data		SEER			4.88	5.06
8		Power factor	(Note E)	(%)	99	99
Electrical data		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)
	1,1-4-11-13	SCOP			4.26	4.26
(Note 14)		Power factor	₹Note f)	(%)	99	99
	Type	T OTTO REGION		(10)	Hermetic rotary	Hermetic rotary
Compressor		t × number of units		(kW)	9.0 x 4	9.0 x 4
		Type of start			Inverter starter	Inverter starter
	Case heater (W)			AAA	37 x 4	37 x 4
			(**)	RB74AF	RB74AF	
ompre	essor oil	Туре		(L)	2.0 x 4	2.0 x 4
		Charge	_	(L)	Plate fin coil	Plate fin coil
onaen	nser coil - air si	OB .				Propeller fan
	Type			1-21-3	Propeller fan	1,230 (max, value)
Fan	Air quantity			(m²/m/n)	1,230 (max, value)	Inverter starter
	-	pe of start			inverter starter	1.2 x 4
_		t x number of units		(kW)	1.2 x 4	
Spray system	Water spray			(L/min)	-	13.6 x 1
	Supply water	r pressure	(Note 10)	(MPa)		0.2
Note P. 19	Control					Continuous spraying when outside temperature and compressor capacity exceeds setting
	Motor output			(kW)	2.2	2.2
6	Type				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
ooler -	water side		(Note 11)	_	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
ran	Type				R32	R32
lefrigerant	R32 charge			(kg)	8.8 x 4	8.8 x 4
æ	Control				Electric expansion valve	Electric expansion valve
rain pa	an heater			(W)	75 × 6	75 × 6
apacit	y control steps		(Note 12)	(%)	6 - 100	6 – 100
peratio	on control					ntrol and chilled (warm) water temperature
efrost	system					verse cycle system
rotecti	ve device				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, p. freeze protection, high water temperature protection, low water flow, disc	nump), crankcase healer, open-phase protection, microcomputer controller (compressor lime harge temperature, low pressure protection, sensor failure, water pressure alarm)
55	Cold/Hot wa	ter inlet			2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
Piping diameters	Cold/Hot wa	ter outlet			2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
д ig	Coil drain				PT1-1/2" external thread × 1	PT1-1/2" external thread x 1
ound r	oower level				83.8	83.8
						lernal 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), -5°C, leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT),
same capacity, outdoor air temperature and supplied water temperature (Dr brigh 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 / feaving water temperature differences.
Capacities and performance values are based on (EU)No2107/2281 and (EU)No513/2013.

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

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

(Note 5)
The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker. This machine includes an inverter, so please use a high-frequency-compatible product to prevent imaffunction.

(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 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 pressures with operating conditions.

(Note 13) The external sensor's lead wire length is 30 m.
(Note 14) Electrical data is not including inbuilt pump.

#### 50HP Series EDGE Cooling-only

				Standard type	High EER type
				380V /400V/ 415V	380V /400V/ 415V
Model (	A single modul	le unit)		RUA-GP421C(*1)R8-E	RUA-GP421C(*1)NR8-E
	capacity		(kW)	100	100
Jooling	Unit color		(KAA)	Silky shade (Munsell 1Y8,5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
ь	OTIL COIO	Height	(mm)	2350	2350
Exterior	Dimensions	Width	(Mm)	1000	1000
ш	Differences	Depth	(Note 2) (mm)	3300	3300
Phinnin	y weight	Depair	(kg)	1,314	1,326
				1,350	1,362
Operating weight (kg) Power supply			(Note 1.3)	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		- ourse ourselv design	(Note 4,5)	82.1	82.1
	Ce current for	power supply design  Nominal current	(A)	61.1(61.4)	42,3(43,0)
dala			(kW)	39.8(40.0)	27.5(28.0)
<u>8</u>	. "	Nominal input	(KAA)	2,51(2.50)	3.63(3.57)
Electrical	Cooling	EER		4.90	5.08
(Note  4)		SEER	(Note 6) (96)	99	99
[14010]		Power factor	(%)	Hermetic rotary	Hermetic rotary
SSOF	Type		0.145		6.2 x 4
Compressor	- "	t × number of units	(kW)	8.4 x 4	Inverter starter
Don	Type of start			Inverter starter	37 × 4
	Case heater		(W)	37 x 4	RB74AF
compre	Compressor oil Type		-	RB74AF	2.0 x 4
		Charge	(L)	2.0 x 4	Plate fin coil
Conden	nser coil - air side			Plate fin coil	Propeller fan
	Type			Propeller fan	1,230 (max. value)
Fan	Air quantity (m²/min)			1,230 (max_value)	
_	Type of start			inverter starter	inverter starter
		t x number of units	(kW)	1.2 x 4	
Spray system	Water spray		(L/min)		13.6 x 1
	Supply water	r pressure	(MPa)		
(Note 8 9)	Control			<u> </u>	Continuous spraying when outside temperature and compressor capacity exceeds setting values
	Motor output (kW)			2.2	2.2
d-	Туре			Centrifugal pump	Centrifugal pump
Pump	Flow control			Inverter	Inverter
	Maximum cu		(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)
Tire.	Туре			R32	R32
Refrigerant	R32 charge		(kg)	8.8 x 4	8.8 x 4
œ	Control			Electric expansion valve	Electric expansion valve
apacit	control steps		(Note 12) (%)	6 ~ 100	6 - 100
operation	on control				ontrol and chilled (warm) water temperature
rotecti	ve device			High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, j freeze protection, low water flow, discharge temperatu	pump), crankcase heater, open-phase protection, microcomputer controller (compressor time gu re, low pressure protection, sensor failure, water pressure alarm)
_ &	Cold/Hot wa	ter inlet		2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
Piping diameters	Cold/Hot wa			2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
를 교	Coil drain			PT1-1/2" external thread x 1	PT1-1/2" external thread x 1
Sound r	ower level			83.8	83.8
	parts sold se				xternal sensor x 2 included) <sup>(No.e13)</sup>

(Nole 1) These are the capacilies, electric characteristics, and standard flow rates under the following conditions
The concentration of ethylene glycol: 28w1%
For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT), (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature)
same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.
() shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).
Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.
Capacities and performance values are based on (EUNo2016/2281 and (EUNo813/2013)

(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) Please refer to pump information lable 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

(Note 5) The power consumption of the integrated pump is not included in the decinical characteristics displayed in the specifications label. Aways install a label in the appendix of prevent in mallunction.

(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 9) 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 Guidefines 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 Install)

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

#### Specifications Internal inverter pump

#### 60HP Series EDGE Heat pump

		100		Standard type	High EER type
				380V /400V/ 415V	380V /400V/ 415V
Aodel (A	single modul	e unit)		RUA-GP511H(*1)R8-E	RUA-GP511H(*1)NR8-E
Cooling	capacity		(Note 1,7) (kV	0 118	118
leating	capacity		(Note 1,7) (k)	180	180
	Unit color			Silky shade (Munsell 1Y8.5/0,5)	Silky shade (Munsell 1Y8.5/0.5)
Exterior		Height	(mr	2350	2350
ğ	Dimensions	Width	Parts 2) (mr	1000	1000
Ш Біпавіоть		Depth	(Note 2) (mr	3300	3300
Shipping	weight		(k	1,353	1,365
Operatin	a weight		(k	1,389	1,401
Power s			(Nate 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)	103	103
		Nominal current		74.2(73.9)	51.0(51.6)
		Nominal input	(k)		33.2(33.6)
	Cooling	EER		2.44(2.45)	3.55(3.51)
Jata		SEER		4.77	4.94
Electrical data		Power factor	(Note 6) (9		99
sctri		Nominal current	(		78.7(80.1)
ū		Nominal input	(k\		51,3(52.2)
	Heating	COP	(1/4)	3.51 (3.45)	3.51(3.45)
	i learling	SCOP		4,35	4.35
(Nate i 4		Power factor	(Note S) (S)		99
	Timo	r ower ractor		Hermetic rotary	Hermetic rotary
Compressor	Туре		(le)		11.0 x 4
ртв	Motor output × number of units (kW)			Inverter starter	Inverter starter
Con	Type of start		Δ.		37 x 4
	Case heater		(/	7) 37 x 4 RB74AF	RB74AF
Compre	ssor oil	Туре			2,0 x 4
		Charge	(		Plate fin coil
Condens	ser coil - air si	ie		Plate fin coil	Propeller fan
	Туре		1.24	Propeller fan	
Fan	Air quantity		(m <sup>3</sup> /m		1,230 (max, value)
_	Type of start			Inverter starter	Inverter starter
		x number of units	(kV		1.2 x 4
Spray	Water spray		(L/mi		13.6 x 1
	Supply water	pressure	Mote 10) (MP		0.2
(Note 8 9)	Control			T	Continuous spraying when outside temperature and compressor capacity exceeds setting
	Motor output		(kV		2.2
ъ.	Type			Centrifugal pump	Centrifugal pump
Pump	Flow control			Inverter	Inverter
	Maximum cu		(		4.5
	Minimum inp	ut	(kV		2.8
Cooler -	waler side		(Note 11)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
rani	Type			R32	R32
elrigeran	R32 charge		(k	0	8.8 x 4
	Control			Electric expansion valve	Electric expansion valve
Capacity	control steps		(Note 12) (9		4 ~ 100
peratio	n control			Microprocessor controls flow rate co	ontrol and chilled (warm) water temperature
Defrost s	ystem				everse cycle system
Protectiv	e device			High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, p freeze protection, high water temperature protection, low water flow, disc	charge temperature, low pressure protection, sensor failure, water pressure alarm)
5	Cold/Hot wat	er inlet		2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
Piping dameters	Cold/Hot wat	er outlet		2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
교룡	Coil drain			PT1-1/2" external thread x 1	PT1-1/2" external thread x 1
Sound p	ower level			83.8	83.8
				Module controller (MC) (ex	

The concentration of ethylene glycol: 28wt%

The concentration of ethylene glycol: 28wt%

For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).

For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT).

same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.

() shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).

Design water flow rate must be within the range 5 to 10°C of entering / leaving water water 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) 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) Flease refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
(Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker, This machine includes an inverter, so please use a high-frequency-compatible product to prevent mathunction.
(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 10) Adjust the llow rate to become dose to this supply water pressure with the manual flow adjustment valve on the water spray system intet. 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 12) The capacity control range varies with operating condition (Note 13) The external sensor's lead wire length is 30 m.

(Note 14) Electrical data is not including inbuilt pump

#### Brine specifications

#### 60HP Powerful Heating Type Heat pump

KALL				Standard type	High EER type
			_	380V /400V/ 415V	380V /400V/ 415V
Model (A	A single modul			RUA-GP511F(*1)R8-E	RUA-GP511F(*1)NR8-E
	capacity	(Note 1,7)	(kW)		118
leating	capacity	(Note 17)	(kW)	200 Silky shade (Munsell 1Y8.5/0,5)	Silky shade (Munsell 1Y8,5/0.5)
ь	Unit color	Height	(mm)		2350
Exterior	Dimensions	Width (Note 2)	(mm)		1000
Ш	Dirierisions	Depth Note Z	(mm)		3300
Shipping	weight	1	(kg)		1,376
	ng weight		(kg)		1,412
ower s		(Not+1,3)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
Referenc	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)		33.2(33.6)
ā	Cooling	EER		2,44(2,45)	3,55(3,51)
Electrical data		SEER		4,77	4.94
iği.		Power factor (Note 5)	(%)		99 89.7(90.8)
H		Nominal current	(A)		58.5(59.2)
	Li-ti-	Nominal input	(kW)	3.42 (3.38)	3.42 (3.38)
	Heating	SCOP	_	4.23	4,23
500/14/		Power factor (Note 5)	(%)		99
L. T. L.	Type	I OWEI IZOLOI	(/0)	Hermetic rotary	Hermetic rotary
Compressor		× number of units	(kW)		12.5 x 4
mpre	Type of start		0,1007	Inverter starter	Inverter starter
රි	Case heater		(VV)		37 x 4
		Туре		RB74AF	RB74AF
Compre	ssor oil	Charge	(L)	2.0 x 4	2.0 x 4
Conden	ser coil - air si	de		Plate fin coil	Plate fin coil
Fan	Туре			Propeller fan	Propeller fan
	Air quantity		(m²/min)	1,230 (max. value)	1,230 (max. value)
	Type of start			Inverter starter	Inverter starter
	Motor output x number of units (kW)		(kW)	1.2 x 4	1,2 x 4
Spray system	Water spray volume (L/min)			-	13.6 x 1
क्षे क्ष	Supply water pressure (Note 10) (MPa)				0.2
(Note 8, 9)	Control				Continuous spraying when outside temperature and compressor capacity exceeds setting value
	Motor output (kW)				2/2
윤	Type			Centrifugal pump	Centrifugal pump Inverter
Ритр	Flow control		/45	Inverter	4.5
	Maximum current (A)				2.8
Spolar -	Minimum inp water side	Note 111	(kW)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
_	Type			R32	R32
Rehigeran	R32 charge		(kg)		8.8 x 4
쿌	Control			Electric expansion valve	Electric expansion valve
Drain pa	n heater		(W)	75×6	75×6
Capacity	control steps	Picto LD	(%)	4 ~ 100	4 ~ 100
Operatio	n control			Microprocessor controls flow rate or	ontrol and chilled (warm) water temperature
Defrost s	system				everse cycle system
rotectio	e device			High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan,	pump), crankcase heeter, open-phase protection, microcomputer controller (compressor timegual
	1	ton inlat			charge temperature, low pressure protection, sensor failure, water pressure alarm)  2-1/2" flange × 1 (JIS10K)
ing eters	Cold/Hot wa			2-1/2" flange x 1 (JIS10K) 2-1/2" flange x 1 (JIS10K)	2-1/2 liange x 1 (JIS10K) 2-1/2* flange x 1 (JIS10K)
Piping dlameters	Cold/Hot wai	or dutiet		PT1-1/2" external thread x 1	PT1-1/2" external thread x 1
_	ower level			87.4	87.4
	d parts sold se	parately			xternal sensor × 2 included)(Nore13)
lote 2) lote 3) lote 4) lote 5) lote 6) lote 7)	For Cooling: 2° For Heating: 3° same capacity. () shows the ve Design water file Capacities and Dimensions do Even when their Please refer to The power can high-frequency Power factors of Shows values be Please note that The supply wat Ensure that the Adjust the flow	°C entering water (EWT). 45°C leave outdoor air temperature and supplied ulues for 5°C differential. Cooling: 0° we rate must be within the range 5 to performance values are based on (E not include projections of water pipe e is a fluctuation in supply voltage, do pump information lable to design posumption of the integrated pump is recompatible product to prevent malit, may vary depending on site condition assed on the outdoor air temperature it the variable lilow control is performer cipulity may cause scales and othe water nuality standard items and val	ing water d water c entering 10°C o U)No20° connect o not extended inclination s and out ed under ures salis water pre-	tions.  ceed ± 10% and keep imbalances between the supply vollages within 2%.  by correctly. For the maximum electric current, refer to "7-2. Power supply designed in the electrical characteristics displayed in the specifications table. Always in  the water temperature for the JRA4066-2014 "Water Chilling Unit" cooling time or  conditions in which the entering / leaving water temperature differential is 7 °C a  to adhere to the coil surface. If necessary, install a water softener on the supply  with the Janan Refioeration and Air Conditioning Industry Association's "Water Qx  water Qx  water Qx   w	/ 45°C leaving water (LWT).  yn" in the technical document.  sstall an earth leakage circuit breaker. This machine includes an inverter, so please to coefficient performance test. and constant.  water side. (Provided locally)

Specifications Internal inverter pump

Brine specifications

## 60HP Series EDGE

Cooling-only
--------------

	1100				Standard type	High EER type
		P. CALL			380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	e unit)			RUA-GP511C(*1)R8-E	RUA-GP511C(*1)NR8-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)
힏		Height		(mm)	2350	2350
Exterior	Dimensions	Width	(Note 2)	(mm)	1000	1000
		Depth	(Note 2)	(mm)	3300	3300
Shipping	g weight			(kg)	1,314	1,326
Operating weight (kg)				(kg)	1,350	1,362
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)		103	103
deta		Nominal current		(A)	73.9(73.6)	49.5(51.4)
90 Tel		Nominal input		(kW)	48.2(48.0)	32,2(33,5)
Electrical	Cooling	EER			2,45(2,46)	3.66(3.52)
E E		SEER			4.80	4.99
(Note 14)		Power factor	(Note P)	(%)	99	99
<u>_</u>	Туре				Hermetic rotary	Hermetic rotary
988	Motor output × number of units (kW)			(kW)	9.8 x 4	7.4 x 4
Compressor	Type of start				Inverter starter	Inverter starter
റ്റ	Case heater			(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 si	de			Plate fin coil	Plate fin coil
	Туре				Propeller fan	Propeller fan
_	Air quantity			(m²/min)	1,230 (max., value)	1,230 (max. value)
Fa	Type of start				Inverter starter	Inverter starter
	Motor output x number of units (kW)			(kW)	1,2 x 4	1.2 x 4
£ ₩	Water spray	volume		(L/min)		13.6 x 1
Spray	Supply water	r pressure	(Note 10)	(MPa)	-	0,2
Note R. 9	Control					Continuous spraying when outside temperature and compressor capacity exceeds setting val
	Motor output			(kW)	2,2	2,2
_	Туре				Centrifugal pump	Centrifugal pump
Pump	Flow control				Inverter	Inverter
Q.	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)
	Туре				R32	R32
Refrigeran	R32 charge			(kg)	8.8 x 4	8.8 x 4
28	Control				Electric expansion valve	Electric expansion valve
Capacit	y control steps		(Note 12)	(%)	4 ~ 100	4 ~ 100
	on control				Microprocessor controls flow rate cr	ontrol and chilled (warm) water temperature
Protecti	ve device				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan,	pump), crankcase heater, open-phase protection, microcomputer controller (compressor time gu re, low pressure protection, sensor failure, water pressure aterm)
ø	Cold/Hot wa	ter inlet			2-1/2" flange x 1 (JIS10K)	2-1/2" (lange x 1 (JIS10K)
oing Weters	Cold/Hot wa				2-1/2" flange x 1 (JIS10K)	2-1/2' flange x 1 (JIS10K)
Piping diameters	Coil drain	UI JUIIOL			PT1-1/2" external thread × 1	PT1-1/2" external thread x 1
_	ower level			-	83.8	83.8
Journa L	WHO ISAGI			_	Module controller (MC) (e:	

The concentration of ethylene glycol: 28wf%
For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature).

same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.

() shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (WT). 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 persure differences.

Capacities and performance values are based on (EU)No2016/2281 and (EU)No813/2015.

(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 7.7.2. 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 instalt an earth leakage circuit breaker. This machine includes an inverter, so please use

(Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specification's table. Aways install at Partin learning account integrated pump is not included in the electrical characteristics displayed in the specification's table. Aways install at Partin learning account integrated pump is not included in the includes a native in the properties.

(Note 7) Power factors may vary depending on site conditions.

(Note 8) Power factors may vary depending on site conditions.

(Note 8) Power factors may vary depending on site conditions.

(Note 9) Power factors may vary depending on site conditions.

(Note 9) Power factors may vary depending on site conditions.

(Note 9) Power factors may vary depending on site conditions.

(Note 9) Power factors may vary depending on site conditions.

(Note 9) Power factors may vary depending on site conditions.

(Note 9) Power factors may vary depending on site conditions.

(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 14) Water 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.

52

70HP Series EDGE Heat pump

Brine specifications

## Specifications Internal inverter pump

Brine specifications

Cooling-only

1				Standard type	High EER type		
				380V /400V/ 415V	380V /400V/ 415V		
Model (/	A single modul	e unit)		RUA-GP561C(*1)R8-E	RUA-GP561C(*1)NR8-E		
			Note 1,7) {kW	132	132		
Cooming	Unit color		(111)		Silky shade (Munsell 1Y8,5/0.5)		
Cooling cape  Din  Shipping we Operating we Operating we Operating we Operation  Tyr  Cooling See  Compressor  Condenser  Condenser  Condenser  Condenser  Cooling See  Mo Mi Mi Cooler  Coperation  Cooperation  Coo	OTHE GOIGH	Height	(mm)		2350		
Cooling care  Shipping w Operating v Power sup Reference of the cooling care  Ty Air Signature  Condenser  Letter Signature  Condenser  Letter Signature  Coperation of Co	Dimensions	Width			1000		
Ш	Dirichsion			RUA-GP561 C(*1)R8-E			
Shinnin	n weight	рорит		-	1,350		
			Note 1.3				
		power supply design	Note 4.St				
_	Ce current for p	Nominal current					
Cooling ca  Shipping v Operating Power sup Reference entry Ref		Nominal input					
	Cooling		livas				
Hect	Cooling	SEER					
Cooling Shipping Operatir Power's Reference Local Conden Conden Cooler - Local Cooler - Cooler - Coperatir Operatir Protectin			(Note Gr /Q/)				
_	T	Power factor	(70)				
SSOF	Туре						
pre		× number of units	(KVV)				
Sol	Type of start		040				
	Case heater				Sell C(*1)R8-E   RUA-GP561C(*1)NR8-E		
Compre	essor oil	Туре					
		Charge	(L)				
Conden	_	de					
Operating Power sup Reference  Base of 14  Compress  Condense  Led  Compress  Condense  Led  Condense  Con	Type						
	Type of start						
	_	x number of units					
pray	Water spray						
	Supply water	pressure	Note 10) (MPa)				
(Note 6 9)	Control						
	Motor output		(kW)				
ę.	Туре						
2	Flow control						
	Maximum cu						
	Minimum inp						
Cooler -			Note Iti	· · · · · · · · · · · · · · · · · · ·			
ran l	Туре						
efrige	R32 charge		(kg)				
~	Control						
Capacit	y control steps		Note (2) (%)		- 10 A		
Operation	on control						
Protecti	ve device			High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, freeze protection, low water flow, discharge temperati	pump), orankcase heater, open-phase protection, microcomputer controller (compressor time guard- ure, low pressure protection, sensor failure, water pressure alarm)		
- 5	Cold/Hot wa	ter inlet		3" flange × 1 (JIS10K)	3" flange x 1 (JIS10K)		
ping	Cold/Hot wat	ter outlet		3" flange × 1 (JIS10K)	3" flange x 1 (JIS10K)		
dia.	Coil drain			PT1-1/2" external thread x 1	PT1-1/2" external thread x 1		
Sound r	ower level			90.9	90.9		

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

These are the capacities, electric characteristics, and standard flow rates under the toflowing conditions.

The concentration of ethylene glycol: 28M9%

For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (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), -6°C leaving water (EWT), -6°C entering water (EWT), -6°C leaving water (EWT), -6°C entering water (EWT), -6°C leaving wa

(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) Elease refer to pump information table to design power supply correctly. For the maximum electric current, refer to "7-2. Power supply design" in the technical document.
(Note 5) The power consumption of the integrated pump is not included in the electrical characteristics displayed in the specifications table. Always install an earth leakage circuit breaker. This machine includes an inverter, so please use

a high-frequency-compatible product to prevent malfunction

a high-requency-companier product to prevent manufactors
(Note 8) Dever 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) Ensure that the water quality may cause scales and other matter to adhere to the coll surface. If necessary, install a water soften or not he supply water side. (Provided locally)
(Note 9) Ensure that the water quality standard items and values satisfy the Japan Retrigeration 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 infet. 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 confrol 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	<b>EDGE</b>
------	--------	-------------

201		da Finales	10.00	Standard type	High EER type
				380V /400V/ 415V	380V /400V/ 415V
Model /	A single madu	lo unit)		RUA-GP561H(*1)R8-E	RUA-GP561H(*1)NR8-E
			Note 1,7) (kW/)	132	132
			Note 1,7) (kW)	200	200
Heating	T		(KAA)	Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8.5/0.5)
- lo	Unit color		(mm)	2350	2350
xter	Dimensions	Height Width	(Mote 2) (mm)	1000	1000
ш	Dimensions	AAIGUT	(Note 2) (mm)	3300	3300
Chinnin	a weight	Debtil	(kg)	1,376	1,389
			(kg)	1,412	1,425
		0	Note 1.3	3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
			Note 4.5)	119	119
Helelell	Ce current for	Nominal current	(A)	84,8(85,1)	59.2(59.6)
		Nominal input	(kW)	55.2(55.5)	38.6(38.8)
	Cooling	EER	(IVAA)	2.39(2.38)	3.42(3.40)
ata	Cooling	SEER		4.72	4.89
ल्			(Note 6) (%)	99	99
otric		Power factor  Nominal current	(A)	89,7(90.8)	89.7(90.8)
Shipping w Operating w Operati		Nominal input	(kW)	58.5(59.2)	58.5(59.2)
	Heating	COP	(IVAA):	3.42 (3.38)	3.42 (3.38)
	neating	SCOP		4.28	4,28
(Note 14)			(Note 5) (%)	99	99
_				Hermelic rotary	Hermetic rotary
pressor	Type  Motor output × number of units (kW)			12.5 x 4	12.5 × 4
			(KVV)	Inverter starter	Inverter starter
6	Type of start  Case heater (W)			37 x 4	37 x 4
Co			(44)	RB74AF	RB74AF
Compre	essor oil	Туре	(L)	2.0 x 4	2.0 x 4
0		Charge	(L)	Plate fin coil	Plate (in coil
Conden		de		Propeller fan	Propeller fan
	Туре		(m²/min)	1,230 (max, value)	1,230 (max, value)
Fan	Air quantity		(III-711III)	Inverter starter	Inverter starter
	Type of start		(kW)	1.2 x 4	1,2×4
		t x number of units	(L/min)	12.44	13.6 x 1
Spray	Water spray		Note 10) (MPa)		0.2
	Supply wate Control	piessure	(IVII-a)		Continuous spraying when outside temperature and compressor capacity exceeds setting values
30000	Motor outpu	•	(kW)	3.7	3.7
Compress Condense Fau			(KVV)	Centrifugal pump	Centrifugal pump
Ę	Type Flow control			Inverter	Inverter
₽.	Maximum cu		(A)	7,3	7.3
	Minimum ing		(kW)	4.5	4.5
Coolor			Notetti	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
The second			1000	R32	R32
Beau	Type R32 charge		(kg)	8.8 x 4	8.8 x 4
Refi	Control		(1/9)	Electric expansion valve	Electric expansion valve
Canacit		s 0	Note 12) (%)	4 ~ 100	4 - 100
_			(70)		ontrol and chilled (warm) water temperature
					overse cycle system
				High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan, p	nump), crankcase heater, open-phase protection, microcomputer controller (compressor time guards, tharge temperature, low pressure protection, sensor failure, water pressure alarm)
co.	Cold/Hot wa	ter inlet		3" flange x 1 (JIS10K)	3" flange x 1 (JIS10K)
oing eters	Cold/Hot wa			3" flange x 1 (JIS10K)	3" flange x 1 (JIS10K)
유튜	Coil drain	ire: Odlier		PT1-1/2" external thread × 1	PT1-1/2" external thread x 1
	power level			90.9	90.9
JUUITU (	POMAI IRARI				ternal sensor x 2 included)Nate 13

Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions:
The concentration of ethylerie glycol. 28W/5
For Cooling: 2°C entering water (EWT), 5°C, leaving water (LWT), 3°C DB outdoor air (OAT) (High EER lype: 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, 5°C WB outdoor air (OAT).
same capacity, cutdoor air temperature and suspicial water temperature (in ly high EER lype only) as indicated above.
() shows the values for 5°C differential. Cooling: 0°C entering water (EWT), 5°C leaving water (LWT), 16aling: 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) Ever 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 lable 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-compabile product to prevent maitunction
(Note 6) 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-compabile product to prevent maitunction
(Note 7) Shows values based on the outdoor air temperature and outlet water temperature of the preventive differential is 7 °C and constant

#### 50HP Series EDGE Heat pump

		Section 1997		Standard type	High EER type
		No. of the last of		380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	le unit)		RUA-GP421HLR8-E	RUA-GP421HLNR8-E
		(Nota 1,7)	(kW)	100	100
_		(Note 1,7)	(kW)	150	150
	Unit color			Silky shade (Munsell 1Y8.5/0,5)	Silky shade (Munsell 1Y8.5/0.5)
ō		Height	(mm)	2350	2350
톲	Dimensions	Width Note 2	(mm)	1000	1000
		Depth Plate 2)	(mm)	3300	3300
Shippin	a weight		(kg)	1,292	1,304
	Operating weight (kg)		(kg)	1,328	1,340
		(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		79	79
	T	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)
Cooling call Heating cal July 1  Shipping w Operating v Power supi Reference of call		SEER		4.88	5.06
eg -		Power factor (Note 6)	(%)	99	99
5		Nominal current	(A)	63.1(63.9)	63.1(63.9)
E90		Nominal input	(kW)	41.1(41.7)	41,1(41.7)
	Heating	COP	()	3.65(3.60)	3.65(3.60)
Shipping weight of the properties of the propert	i iodanig	SCOP		4.26	4.26
		Power factor (Note 6)	(%)	99	99
ssor				Hermetic rotary	Hermelic rotary
	Motor output × number of units (KW)			9.0 x 4	9,0 x 4
andr.	Type of start		(1117)	Inverter starter	Inverter starter
Ö	Case heater		(VV)	37 x 4	37 x 4
-	Toase Heater	Туре	(**)	RB74AF	RB74AF
Compre	essor oil	Charge	(L)		2.0 x 4
Condor	neor coll - air ei		11-1	Plate fin coil	Plate fin coil
COHOO	7	ide		Propeter fan	Propeller fan
_	Air quantity		(m²/min)	1,230 (max. value)	1,230 (max. value)
Condense	Type of start		Attend	Inverter starter	Inverter starter
		t x number of units	(kW)	1.2 x 4	1.2 x 4
> =	Water spray		(L/min)	2	13.6 x 1
Spray	Supply water		(MPa)	_	0,2
		produit	(ivii G)		Continuous spraying when outside temperature and compressor capacity exceeds setting values
_	Joanas	(Noi e 11)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
2/60				R32	R32
Seran	R32 charge		(kg)	8.8 x 4	8.8 x 4
Refix	Control		(rig)	Electric expansion valve	Electric expansion valve
Canacii		(Note 12)	(%)	6 ~ 100	6 - 100
			(70)		control and chilled (warm) water temperature
			_		reverse cycle system
N				Figh-pressure switch, overcurrent protection, inverter overload protection (compressor, fan,	revenue systement of the system of the projection, microcomputer controller (compressor time guard scharge temperature, low pressure protection, sensor failure, water pressure alarm)
cn.	Cold/Hot wa	iter inlet		2-1/2" flange × 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
ing Jelen	Cold/Hot wa		-	2-1/2" flenge x 1 (JIS10K)	2-1/2" flange × 1 (JIS10K)
FP.	Coll drain	itor oddot	_	PT1-1/2" external thread x 1	PT1-1/2" external thread × 1
	1			83.8	83.8
				4 00.0	

(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 : 28w/1%

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 (repressure (not) for high EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature),

same capacity, outdoor air temperature and supplied water temperature (FWT), -5°C leaving water (LWT),

Design water flow rate must be within the range 5 to 10°C of entering water (EWT), -5°C leaving water (LWT),

Design water flow rate must be within the range 5 to 10°C of entering vater temperature differences.

Capacities and performance values are based on (EUN)o2016/2281 and (EUN)o813/2013.

(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 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 treaker. 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 w

(Note 11) Water circuit normal pressure: 0.7 MPa or below (1.0 Mpa or below for Pumpless model) (Note 12) The capacity control range varies with operating conditions. (Note 13) The external sensor's lead wire length is 30 m.

#### Specifications Pumpless

Brine specifications

## 50HP Powerful Heating Type Heat pump

				Standard type	High EER type
				380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	le unit)		RUA-GP421FLR8-E	RUA-GP421FLNR8-E
			(Note 1,7) (KW		100
			(Note 1,7) (kW		150
Unit color			Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8.5/0.5)	
卢		Height		2350	2350
Xe	Dimensions	_	(Note 2) (mm		1000
			(Noto 2) (mm	3300	3300
Shippin	a weight	1	(kg		1,316
			(kg		1,352
			(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)	79	79
	T	T	(A	61,1(60.9)	41,5(42.2)
			(kW		27.0(27.5)
	Cooling			2,51(2.52)	3,70(3.64)
ā	1	SEER		4.88	5.06
da			#Notes 6) (%		99
FICE		-	(A		63.1(63.9)
			(kW		41.1(41.7)
	Heating		(	3.65(3.60)	3.65(3.60)
	licaning			4.26	4,26
					99
ssor	Tyne	T ONG IGOIO	(/-	Hermetic rolary	Hermetic rotary
npresso					9.0 x 4
				Inverter starter	Inverter starter
Ö	172		(W		37 x 4
	Todase Hodge	Tyne		RB74AF	RB74AF
compre	essor oil		(L		2.0 x 4
`onder	ser coil - air s		,	Plate fin coil	Plate fin coil
ondo	1			Propeller fan	Propeller fan
_		4 4	(m³/mir		1,230 (max, value)
Ē			(41,112	Inverter starter	Inverter starter
			(kW		1.2 x 4
Dimensions  Inipping weight perating weight perating weight perating weight perating weight perating weight perating  Cooling  Type  Motor outp Type of sta Case heate Case heate Case heate Case heate Type  Water spra Supply wet Figure 1  Supply wet Control color - water side Figure 2  Control color - water side Figure 3  Control color - water side Figure 3  Control color - water side Figure 3  Control color - water side Control color - water side Figure 3  Cold/Hot w Cold/Hot w Cold drain cound power level equired parts sold :		(L/min		13.6 x 1	
Spra syste			Note 105 (MPa		0.2
(Note 8 9)		process			Continuous spraying when outside temperature and compressor capacity exceeds setting
cooler	g capacity  Unit color  Height Depth Note 2 Depth Note 3 Depth Nominal current Nominal input EER SEER Power factor Nominal current Nominal input COP SCOP Power factor Power factor Power factor Type Motor output x number of units Type of start Case heater  Type Air quantity Type of start Motor output x number of units Type Air quantity Type of start Motor output x number of units Type Air quantity Type Air quantity Type Air quantity Type Ray olume Supply water pressure Supply water pressure Nominal neater Nominal input Depth Nominal current Nominal input Depth Nominal current Nominal input COP SCOP Power factor Nominal input Type Scope Depth Nominal current Nominal input Depth Nominal current Nominal input Depth Nominal input Depth Nominal current Nominal input Depth Nominal current Nominal input Depth Depth Nominal input Depth Nominal input Depth Nominal input Depth Depth Nominal input Depth Depth Nominal input Depth Nominal input Depth Nominal in	(Note 11)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)	
	10			R32	R32
beau			(kg		8.8 x 4
Refri			ing	Electric expansion valve	Electric expansion valve
main n	1		(W		75 × 6
					6~100
_			(70		control and chilled (warm) water temperature
_					I reverse cycle system
	**			"High-pressure switch, overcurrent protection, inverter overload protection (compressor, fa	an, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time discharge temperature, low pressure protection, sensor failure, water pressure darm)*
90	Cold/Hot was	ter inlet		2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
ping				2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
ela Pi				PT1-1/2" external thread x 1	PT1-1/2* external thread × 1
_				83.8	83,8
-vuille	POTTOI IOVOI			Module controller (MC)	

These are the capacities, electric characteristics, and standard flow rates under the following conditions.

The concentration of ethylene glycol: 28wt%

For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature),

For Heating: 38°C entering water (EWT), 45°C leaving water (LWT), 7°C DB, 6°C WB outdoor air (OAT),

same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.

() shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT). Heating: 40°C entering water (EWT) / 45°C leaving water (LWT).

Design water flow rate must be within the range 5 to 10°C of entering / leaving water temperature differences.

Capacities and performance values are based on (EUI)No21016/2281 and (EUI)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 reter 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 2) Hows 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 range causes scales and other matter to adhere to the coil surface. If necessary, install a water solitener on the supply water guality range causes scales and other matter to adhere to the coil surface. If necessary install a water solitener on the supply water guality for 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 books)

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

Brine specifications

#### 50HP Series EDGE Cooling-only

			Standard type	High EER type
		C I ( ) C C C C C C C C C C C C C C C C C C	380V /400V/ 415V	380V /400V/ 415V
Model	(A single modu	le unit)	RUA-GP421CLR8-E	RUA-GP421CLNR8-E
Cooling	capacity	(Note 1,7) (KW)	100	100
	Unit color		Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8,5/0,5)
ror		Height (mm)	2350	2350
EX.	Dimensions	Width (Note 2) (mm)	1000	1000
		Depth (Note 2) (mm)	3300	3300
Shippin	ng weight	(kg)	1,253	1,266
Operati	ing weight	(kg)	1,289	1,302
_		(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)	79	79
		Nominal current (A)	61.1(61.4)	42,3(43.0)
dala		Nominal input (kW)	39.8(40.0)	27.5(28.0)
res Car	Cooling	EER	2,51(2,50)	3 63(3.57)
ectr		SEER	4,90	5.08
		Power factor (%)	99	99
Type Motor Type Coordinates of Compressor	Type		Hermetic rotary	Hermetic rotary
		t × number of units (kW)	8.4 x 4	6.2 x 4
			Inverter starter	Inverter starter
	Case heater (W)		37 x 4	37 x 4
		Type	RB74AF	RUA-GP421 CLNR8-E   100   Silky shade (Munsell 1Y8,5/0,5)   2350   1000   3390   1,266   1,302   3-phase 4-wire 50/60Hz 380V/400V/415V   79   42,3(43,0)   27.5(28,0)   3,63(3,57)   5,08   99   Hermetic rotary   6,2 x 4   Inverter starter   37 x 4   RB74AF   2,0 x 4   Plate fin coil   Propeller fan   1,230 (max. value)   Inverter starter   1,2 x 4   13,6 x 1   0,2   Continuous sprajing when outside temperature and compressor capacity exceeds setting values   Brazed plate heat exchanger (SUS316 equivalent)   R32   8,8 x 4   Electric expansion valve   6 - 100   Introl and chilled (warm) water temperature   6 - 100   Introl and chilled (warm) water temperature   2-1/2* flange x 1 (JIS10K)   2-1/2* flange x 1 (JIS10K)   PT1-1/2* external thread x 1   83.8
Compr	essor oil	Charge (L)	2.0 x 4	2.0 x 4
Conde	nser coil - air si		Plate fin coil	Plate fin coil
	Type		Propeller fan	Propeller fan
_		(m²/min)	1,230 (max, value)	1,230 (max. value)
<u>r</u>			Inverter starter	Inverter starter
		x number of units (kW)	1,2 x 4	1,2 x 4
æ				13.6 x 1
Spire system			=	0,2
pionen is	111111111111111111111111111111111111111			Continuous spraying when outside temperature and compressor capacity exceeds setting val
Cooler	- water side	(Note 11)	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
Dimensions    Height   Width   Depth		R32	R32	
gea		(kg)	8.8 x 4	8,8 x 4
B.	Control		Electric expansion valve	Electric expansion valve
Ty Months and the second and the sec	ty control steps	(Note 12) (%)	6 ~ 100	6~100
perati	ion control		Microprocessor controls flow rate	control and chilled (warm) water temperature
rotect	ive device		High-pressure switch, overcurrent protection, inverter overload protection (compressor, la freeze protection, low water flow, discharge tempera	in, pump), crankcase healer, open-phase prolection, microccimputer controller (compressor time guar alure, low pressure protection, sensor failure, water pressure alarm)
- v	Cold/Hot wa	ter inlet	2-1/2" flange x 1 (JIS10K)	
iping	-		2-1/2" flange x 1 (JIS10K)	2-1/2* flange x 1 (JIS10K)
da P			PT1-1/2* external thread x 1	PT1-1/2* external thread x 1
Sound	power level		83,8	83.8
_		angrately	Module controller (MC)	(external sensor x 2 included)***********************************

(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/w1%
For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature), same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.

() shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT), Healing: 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 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 to 7°C and constant.

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, instell a water softener on the supply water side. (Provided locally)

(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 intel. 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.

57

#### Specifications (Pumpless)

Brine specifications

## 60HP Series EDGE Heat pump

-					Standard type	High EER type
No.			1		380V /400V/ 415V	380V /400V/ 415V
Model (	A single mod	ule unit)			RUA-GP511HLR8-E	RUA-GP511HLNR8-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)
0		Height		(mm)	2350	2350
Exterior	Dimensions Width		(Nota 2)	(mm)	1000	1000
	Depth		(Note 2)	(mm)	3300	3300
Shippin	a weight			(kg)	1,292	1,304
				(kg)	1,328	1,340
			E,1 a tot/)		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		r power supply design	(Note 4,5)		99	99
1010101		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)
ta Ea	Jooning	SEER			4.77	4.94
da		Power factor	(Note 5)	(%)	99	99
trica		Nominal current		(A)	78.7(80.1)	78.7(80.1)
BC		Nominal input		(kW)	51,3(52,2)	51.3(52.2)
_	Hostina	COP		(1000)	3.51 (3.45)	3.51(3.45)
	neading	SCOP			4,35	4,35
	i	Power factor	(Note 6)	(%)	99	99
-	Total rector			(70)	Hermetic rotary	Hermetic rotary
SSO	Motor output × number of units (kW)			// / / / /	11.0 x 4	11.0 x 4
pre				(KVV)		Inverter starter
Son				000	Inverter starter	37 x 4
	Case heate			(VV)	37 x 4	8874AF
Compre	essor oil	Туре			RB74AF	2.0 x 4
		Charge	_	(L)	2.0 x 4	
Conder	_	side		_	Plate fin coil	Plate fin coil
					Propeller fan	Propeller tan
ä	Air quantity			(m²/min)	1,230 (max, value)	1,230 (max, value)
-					Inverter starter	Inverter starter
	_	ut x number of units		(kW)	1,2 x 4	1,2 x 4
Shipping weight Operating weight Power supply Reference current if  Lang Cooling  Heating  Type Motor out Type of st Case hea  Compressor oil Condenser coil - ai Type of st Motor out Type of st Case hea  Compressor oil Condenser coil - ai Type of st Case hea  Compressor oil Condenser coil - ai Type of st Motor out Type of	Water spray	y volume		(L/min)	*	13.6 x 1
	Supply wat	er pressure	(Note 10)	(MPa)	*	0,2
(Note 5, 5)	Control				*	Continuous spraying when outside temperature and compressor capacity exceeds setting val
Cooler -	water side		(Not a 11)		Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
av	Type				R32	R32
	R32 charge			(kg)	B.8 x 4	8.8 x 4
ď	Control				Electric expansion valve	Electric expansion valve
Capacit	y control ster	OS .	(Note 12)	(%)	4 - 100	4 ~ 100
Operation	on control				Microprocessor controls flow rate co	ntrol and chilled (warm) water temperature
Defrost	system				Distributed re	verse cycle system
Protecti	ve device				High-pressure switch, overcurrent protection, inverter overload protection (compressor, bun, p freeze protection, high water temperature protection, low water flow, disc	ump), crankcase heater, open-phase protection, microcomputer controller (compressor time gu harge temperature, low pressure protection, sensor failure, water pressure afarm)
5	Cold/Hot w	ater inlet			2-1/2" flange x 1 (JIS10K)	2-1/2° flange x 1 (JIS10K)
ping	Cold/Hot w				2-1/2* flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
d a	Coil drain				PT1-1/2" external thread x 1	PT1-1/2" external thread x 1
					83.8	83.8
						ternal sensor × 2 included) <sup>(Nota13)</sup>

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

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 officential. 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 performance values are based on (EU)No2016/2281 and (EU)No813/2013.

Capacilies 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 77-2, 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 5) 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 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 intel. 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  $_{\odot}$ 

## 60HP Powerful Heating Type Heat pump

PAR			Standard type	High EER type
			380V /400V/ 415V	380V /400V/ 415V
Model (	A single modul	le unit)	RUA-GP511FLR8-E	RUA-GP511FLNR8-E
_		(Note 1.7) (KW)	118	118
		(Note 1.7) (kW)	200	200
-	1		Silky shade (Munself 1Y8,5/0,5)	Silky shade (Munsell 1Y8,5/0,5)
Ţ.		Height (mm)	2350	2350
i Xte	Dimensions	Width (Note 2) (mm)	1000	1000
_	Depth poing weight poing weight wer supply elemence current for power supp	Depth (Nota 2) (mm)	3300	3300
Shippin	weight	(kg)	1,304	1,316
		(kg)	1,340	1,352
		(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)	110	110
		Nominal current (A)	74.2(73.9)	51,0(51,6)
Enipping w Operating Power sup Reference  Reference  H  In the state of the state o		Nominal input (kW)	48.4(48.2)	33.2(33.6)
	Cooling		2 44(2 45)	3,55(3,51)
			4.77	4.94
al da		Power factor (%)	99	99
itice.		Nominal current (A)	89.7(90.8)	89.7(90.8)
E E		Nominal input (kW)	58.5(59.2)	58.5(59,2)
	Heating		3.42 (3.38)	3.42 (3.38)
	10		4,23	4,23
			99	99
	Type		Hermetic rotary	Hermetic rotary
ompresso	Motor output × number of units (kW)		12.5 x 4	12,5 x 4
		, , ,	Inverter starter	Inverter starter
			37 x 4	37 x 4
	TOGGO HOGAO		RB74AF	3.42 (3.38)  4,23  99  Hermetic rotary  12.5 x 4  Inverter starter  37 x 4  RB74AF  2.0 x 4  Plate fin coil  Propeller fen  1,230 (max, value)  Inverter starter
ompre	ssor oil		2.0×4	2.0 x 4
onden	cor coil , air si	1	Plate fin coil	Plate (in coil
OHOOH			Propeller fan	Propeller fan
_		(m²/min)	1,230 (max, value)	1,230 (max, value)
편		1,1,1,1,1	Inverter starter	
	**	t x number of units (kW)	1.2 x 4	1.2 x 4
> F				13.6 x 1
Spra syste		, , ,		0.2
		(All Sy		Continuous spraying when outside temperature and compressor capacity exceeds setting value
ooler -		(Note 3Ti	Brazed plate heat exchanger (SUS316 equivalent)	Brazed plate heat exchanger (SUS316 equivalent)
	T .		R32	R32
geran		(kg)	8.8 x 4	8,8 x 4
量		1.97	Electric expansion valve	Electric expansion valve
rain na	,	(W)	75 × 6	75×6
			4 - 100	4 ~ 100
_		, (70)		ontrol and chilled (warm) water temperature
				everse cycle system
			High-pressure switch, overcurrent protection, inverter overload protection (compressor, fan,	pump), crankcase heater, open-phase protection, microcomputer controller (compressor timeguar charge temperature, low pressure protection, sensor failure, water pressure alarm)
60	Cold/Hot wa	ter inlet	2-1/2" flange × 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
oing naten:			2-1/2" flange x 1 (JIS10K)	2-1/2" flange x 1 (JIS10K)
diam Pi		tol Outlot	PT1-1/2" external thread x 1	PT1-1/2* external thread × 1
			87.4	87.4
wuna t	ower level	parately		dernal sensor × 2 included) <sup>(Note 13)</sup>

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

The concentration of ethylene glycol: 28w1%

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), 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 flowing water

(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) 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 5) Aways install an earth leakage circuit preaker, in its macrine includes an inverier, so please use a right-requency-companie product to prevent institutions (Note 7) Shows variety away depending on site conditions.

(Note 8) 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 and varies scales and other matter to adhere to the cod surface. If necessary, install a water side, @Provided locally)

(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 Cooling-only

				Standard type	High EER type
				380V /400V/ 415V	380V /400V/ 415V
Model (	A single modul	e unit)		RUA-GP511CLR8-E	RUA-GP511CLNR8-E
			(kW)	118	118
	Unit color			Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8.5/0,5)
þ		Height	(mm)	2350	2350
Xe	Dimensions		(mm)	1000	1000
ш		Self-April   Sel	3300		
Shippine	g weight		(kg)	1,253	1,266
				1,289	1,302
		(Note 1,		3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
		nower supply design (Note 4.	9	99	99
		Nominal current	(A)	73,9(73,6)	49.5(51,4)
Cooling call  Shipping w Operating v Operation o Opera					32.2(33.5)
	Cooling		92		3,66(3,52)
	Cooming				4.99
ŭ	1		9 (%)		99
_	Time	T OTTO TOTO	(70)	Hermetic rolary	Hermetic rotary
Shipping of Operating Power sure Reference Power su		v number of units	(kW)		
	_	A harriser of drifts	(1000)		
-	Case Heater	Type	(**)		The color
Compressor oil		0)			
Condon	cor coil - air ei		(12)		Plate fin coil
		30			
_			/m²/min		
Ē			y		Inverter starter
		y number of units	(kW)		
> F	_				13.6 x 1
Shipping weight Operating weight Power supply Reference current for page of the page of th		<u> </u>		0.2	
		procedic	(1111 02)		Continuous soreving when outside temperature and compressor capacity exceeds setting value
		Note I	0	Brazed plate heat exchanger (SUS316 equivalent)	
	1				
Condenses			(kn)		8.8 x 4
Refri			(1.9)		Electric expansion valve
Canacit		Piote 1:	9 (96)		4 - 100
_			(70)		control and chilled (warm) water temperature
				High-pressure switch, overcurrent protection, inverter overload protection (compressor, far	, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guar
γo	Cold/Hot wa	ter inlet			
ping					
를 들는	-				
Comprison unaisse su management unaisse su mancier su management unaisse su management unaisse su management u					

(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 : 28w/5%
For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT). 21°C spray water device feed water temperature), same capacity, outdoor air temperature and supplied water temperature (only for high EER type only) as indicated above.

() shows the values for 5°C differential. Cooling: 0°C entering water (EWT), -5°C leaving water (LWT), Heating: 40°C entering water (EWT) / 45°C leaving water (EWT).

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 mailtunction Note 6).

(Note 5) Always install an earth leakage circuit breaker, this machine includes an inverter, so please use a night-requency-companied product to prevent inalumicition (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 cod surface. If no coll surface it not not in the supply water side. (Provided locally)

(Note 9) Ensure that the water quality slandard 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 dose to this supply water pressure with the manual flow adjustment valve on the water spray system intet, 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)

Brine specifications

## 70HP Series EDGE Heat pump

				Standard type	High EER type
			200	380V /400V/ 415V	380V /400V/ 415V
Model (	A single modu	le unit)		RUA-GP561HLR8-E	RUA-GP561HLNR8-E
_		(Note:	.7) (kW)	132	
_		(Note:	(,,,,,	200	200
пеаші	Unit color			Silky shade (Munsell 1Y8,5/0,5)	Silky shade (Munsell 1Y8.5/0.5)
ъ	DIN COIOI	Height	(mm)	2350	
xteri	Dimensions	Width		1000	
Ш	Dilliaisions			3300	
Shinnin	a wolaht	Борит	(kg)	1,298	1,310
			(kg)	1,334	
		(Note		3-phase 4-wire 50/60Hz 380V/400V/415V	
				115	
neieleil	Ce current to	power supply design	(A)	84.8(85.1)	
			(kW)	55.2(55.5)	
	Cooling		(144)	2,39(2,38)	
Cooling capella capell	Cooling		_	4.72	
			an (%)	99	
Tical			(A)	89.7(90.8)	
Shipping wei Operating we Power supply Reference cu  By Typ  Cas Condenser c  Conde			(kW)	58.5(59.2)	
			(KAA)	3.42 (3.38)	
	Heating			4.28	
			16 (%)	99	
pressor		Power lactor	(70)	Hermetic rotary	
npressor	7			12.5 x 4	
				Inverter starter	
Soir	Type of start  Case heater (W)			37 x 4	
	Case heater	T	(VV)	87 X 4 RB74AF	RUA-GP561HLNR8-E  132 200 Silky shade (Munsell 1Y8,5/0.5) 2350 1000 3300 1,310 1,346 3-phase 4-wire 50/60Hz 380V/400V/415V 115 59.2(59.6) 38.6(38.8) 3.42(3.40) 4.89 99 89.7(90.8) 58.5(59.2) 3.42 (3.38) 4.28 99 Hermetic rotary 12.5 x 4 Inverter starter 37 x 4 RB74AF 2.0 x 4 Plate fin coil Propeller fan 1,230 (max. value) Inverter starter 1.2 x 4 13.6 x 1 0.2 Continuous speying when outside temperature and compressor capacity exceeds setting value
Case heater Compressor oil Charge			(L)	2.0 x 4	
0 1			(L)	Plate fin coil	
Conden		Q9		Propeller fan	
			(m²/min)	1,230 (max. value)	
Fan	Air quantity		GUESTERNÝ	Inverter starter	
	Type of start		(1.280	1.2 x 4	
_			(kW)	1.2 X 4	
Spray			(L/min)		
		Depth Notes 1  pht 2  pht 2  pht 3  pht 4  pht 3  pht 4  pht 4  pht 4  pht 4  pht 6  pht 7  pht 6  pht 7  p	10) (MPa)		
_	Control	Aloue	100		
		(HA)		Brazed plate heat exchanger (SUS316 equivalent)	
erant			0.1	R32 8.8 x 4	
Refrig	R32 charge		(kg)		
	Control	Skie	17 (0/)	Electric expansion valve 4 ~ 100	_
_		5 (100)	12) (%)		
			_		
				High-pressure switch, overcurrent protection, inverter overload protection (compressor, lar	n, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time guard
(P	Cold/Hot uso	ter inlet		3" flange × 1 (JIS10K)	
ing elen				3" flange x 1 (JIS10K)	
diam Pi	Coil drain	to ouet		PT1-1/2" external thread x 1	
	-			90.9	
Sound b	power level				

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions.
The concentration of eithylene glycol: 28M/%
For Cooling: 2°C entering water (EWT), -5°C, leaving water (LWT), -5°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), -5°C DB, 5°C WB outdoor air (OAT), 45°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature (and supplied water temperature).
For Heating: 38°C entering water (EWT), -5°C leaving water (LWT), -7°C DB, 5°C WB outdoor air (OAT), 45°C per leaving water device feed water temperature of the temperature of the 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)vo2016/2281 and (EUN)No1873/2013.
(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 mallunction
(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 and constant.
(Note 8) Ensure that the water quality standard items a

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

Specifications Pumpless

Brine specifications

#### 70HP Series EDGE Cooling-only

100	-			Standard type	High EER type
				380V /400V/ 415V	380V /400V/ 415V
Model (A s	single modul	e unit)		RUA-GP561CLR8-E	RUA-GP561CLNR8-E
			kW)	132	132
	Unit color			Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8 5/0 5)
ē l		Height (r	nm)	2350	2350
Cooling cape  Un  Un  Shipping we Operating we Power supp Reference c  Reference c	Dimensions	Width (Note 2) (r	nm)	1000	1000
-		Substrate   Subs			
Shipping v	weight		(kg)	1,260	1,272
				1,296	1,308
				3-phase 4-wire 50/60Hz 380V/400V/415V	3-phase 4-wire 50/60Hz 380V/400V/415V
_		oower supply design Nate 4.5)		115	115
			(A)		58,2(58.9)
100 E			-		37.9(38.4)
8 0	Cooling			2.41(2.40)	3.48(3.44)
Shipping of Coperating Protective					4.92
<u> </u>			(%)		99
- T	Tyne	) one lactor	1707		Hermetic rotary
osso .					8.5 x 4
adu T					Inverter starter
Š			w		37 x 4
Power factor	RB74AF				
Compressor oil		4)		2.0 x 4	
Condense	er coil - air si		(=)		
				Propeller fan	Propeller fan
1		ím	/min)		
'@  -		· · · · · · · · · · · · · · · · · · ·			Inverter starter
-		x number of units	«W		1,2 x 4
_	Water spray		-		13.6 x 1
Condenser coil -  Condenser coil -  Type  Air quai  Type of Motor or  Water s Supply  Condenser Cooler - water si			_	-	0.2
- E		pressure			
		(Note 11)		Brazed plate heat exchanger (SUS316 equivalent)	
1					
Condense	R32 charge		(ka)		8.8 x 4
F F	Control		(rig)		
		(Note 12)	(96)		
			(70)		control and chilled (warm) water temperature
Protective			High-p	ressure switch, overcurrent protection, inverter overload protection (compressor, fan	, pump), crankcase heater, open-phase protection, microcomputer controller (compressor time gu
8 lc	Cold/Hot wa	ter inlot			
모으는	Cold/Hot wa		-		
是声	Coil drain	OI OUROL			
Sound pov				90.9	90.9
	parts sold se				external sensor × 2 included) <sup>(Notal 3)</sup>

(Note 1) These are the capacities, electric characteristics, and standard flow rates under the following conditions,
The concentration of ethylene glycol: 28wt%
For Cooling: 2°C entering water (EWT), -5°C. leaving water (LWT), 35°C DB outdoor air (OAT) (High EER type: 35°C DB, 24°C WB (OAT), 21°C spray water device feed water temperature),
same capacity, outdoor air lemperature 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). Healing: 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 perature 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 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 5) Aways install an earth leakage circuit breaker, Inis machine includes an inverter, so please use a night-requency-companie product to prevent realiunation (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 cod surface. If necessary, install a 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.

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

50HP Series EDGE **Powerful Heating Type** 

Heat pump

**Powerful Heating Type** 

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

Challed water	Brine				Outside air temperature (°C) (D8)							
outlet temperature (°C)	density (wt%)	Item	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	
	00	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

Chiled water outlet emperature CG -15 -10 -7	Brine				Out	side ei	rtemp	oratur	e (°C)	(DB)		
temperature	density (wt%)	hem		25	30	35	40	43	45	66 57.7 0 42.7 192 5 62.5 5 62.5 5 62.5 6 62.5	52	
		Cooling capacity	[kW]	75.6	72,2	68.8	65.3	63,1	61.6	57.7	56.	
45	40	Power consumption	[kW]	29.1	31,8	34,6	37.3	39,0	40,0	42.7	44.	
-15	40	Chilled water flow rate	[L/min]	252	240	229	217	210	205	192	18	
		Operation current	[A]	42.4	46,4	50.5	54.5	57.0	58,5	62,5	64.	
		Cooling capacity	[kW]	91.5	87.4	83.3	79.1	76.6	74.9	70,4	66,	
		Power consumption	[kW]	30.9	34,1	37.2	40.2	41,9	43,C	46.3	46,	
-10	34	Chilled water flow rate	[L/min]	296	283	269	256	248	242	228	210	
		Operation current	[A]	45.1	49,8	54.5	59.0	61,5	63,0	68.0	68.0	
7			Cooling capacity	[kW]	102	97.7	93.1	88.8	86,5	85.0	76.0	72.7
		Power consumption	[kW]	32.0	35,4	38.8	42.1	44.1	45.7	46.3	46.9	
-/	30	Chilled water flow rate	[L/min]	324	311	296	282	275	270	242	23	
		Operation current	[A]	46.7	52,0	57,0	61,5	64,5	67,C	68,0	68.5	
		Cooling capacity	[kW]	110	105	100	95.5	93.6	90.9	78.9	75.6	
_	00	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/mln]	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	
	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

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

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

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

Note 5: This table is subject to change without notice

## 50HP Series EDGE

Heat pump

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

Warm water outlet	Photos C			Outsid	e out le	mpera	iture (*)	C) (DE	
temperature(°C)	Item		-15	-10	-5	Ũ	4	7	15
	Heating capacity	(kW)	103	118	134	151	166	153	182
05	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
	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
0.5	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
	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
	Heating capacity	(kW)	-		123	134	141	148	169
55	Power consumption	(kW)	100	15	49.8	49.6	49.1	49.2	49.0
55	Warm water flow rate	(L/min)	10	100	251	273	289	304	346
	Operation current	(A)		110	72.6	72.A	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 healing capacity has been measured when the module was operating at the

Note 3: \_\_\_\_\_ are displaying maximum capacities, \* indicates maximum flow rate

△It is larger Ihan 7°C.

Note 4: The values shown in the table above are in case there is no effect of frost formation /

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 lable is subject to change without notice.

#### Capacity Chart

density (wt%)

differential of 5°C.

Note 5: This table is subject to change without notice

outlet temperature (°C)

Brine specifications

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

Chilled water flow rate [L/min] 407 391 372 356 350 347 318 2

Power consumption [kW] 44.3 48.4 52.5 56.7 59.5 59.5 Chilled water flow rate [L/min] 500 472 445 414 402 383 343 2

60HP Series EDGE **Powerful Heating Type** 

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

Cooling capacity

Power consumption

Operation current

Operation current

Note 3: The value shown in the table above are when the ethylene glycol is used Note 4: The value shown in the lable above are in case the nominal capacity is 400V

Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature

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

Cooling capacity

Heat pump

List of heating capacities RUA-GP511H (L)R

	W- 20	100	Outs	side ai	r temp	eratur	e i°C)	(DB)		Warm water outlet	ben			Dutaid	e uir te	прага	ture (*	C) (DB	11 . 1
										temperature(°C)	1001		-15	-10	-5	0	4	7	15
		25	30	35	40	43	45	50	52		Heating capacity	(kW)	122	139	158	177	194	183	215
E				N						0.5	Power consumption	(kW)	37.2	38.0	38.5	38.7	39.7	33.2	32.6
	[kW]	129	124	118	113	111	110	101	88.1	25	Warm water flow rate	(L/min)	249	285	323	363	396	375	440
Ξ	IkWI	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
0	(L/min)	407	391	372	_	350		_	_		Heating capacity	(kW)	122	139	157	176	193	182	214
Ç	IAI	-	-	_	76.5	_	-	_	_	30	Power consumption	(kW)	40.7	41.7	42.5	43.2	44.6	37.5	37.3
_	-	-	_	_		_	-	_	_	30	Warm water flow rate	(L/min)	249	284	322		394	373	438
_	[kW]	,	_			131			91.4		Operation current	(A)	60.5	61.5	62.7	63.7	65.7	54.7	54.5
	IkW	44.3	48.4	52.5	56.7	59,5	-	60.2	_		Heating capacity	(kW)	121	138	156	176	192	181	213
e	[L/min]	500	472	445	414	402	383	343	280	35	Power consumption	(kW)	43.7	45.4	46.4	47.8	49.2	41.9	42.3
Π	[A]	65,0	71,0	77,0	83,0	87.0	87,0	88.0	76.5	35	Warm water flow rate	(L/min)	248	283	320	360	393	371	438
_		4						_			Operation current	(A)	64.3	66.9	68.4	70.4	71.8	61.1	61.6
10	an inlet	/ outle	el Chill	ea wa	ter ten	nperat	ure				Heating capacity	(kW)	120	137	156	175	191	181	212
	vhen the	modu	lo was	oner	alina a	ıl the					Power consumption	(kW)	46.9	48.9	50.6	52.1	53.8	46.4	47.3
. *	ALIBIT ILIG	mode	ic was	оры	ating a	it tile				40	Warm water flow rate	(L/min)	246	281	319	359	392	370	434
he	en the et	hvlene	alvco	l is us	ed.						Operation current	(A)	69.0	72.1	74.6	76.7	78.4	67.7	69.0
	ase the r					<i>l</i> .					Heating capacity	(kW)	119	136	155	175	189	180	211
oti	ce			-						45	Power consumption	(KW)	50.0	52.5	54.6	56.8	58.0	51.0	52.5
										45	Warm water flow rate	(L/min)	244	279	317	358	386	369	431
											Operation current	(A)	73.6	77.3	80.4	82.8	84.5	74.3	76.5
											Heating capacity	(kW)		135	152	167	177	179	209
											Power consumption	(KVV)		56.3	57.8	58.2	58.2	55.6	57.4
										50	Warm water flow rate	(L/min)		277	311	342	363	367	429
											Operation current	(A)		82.8	85.1	84.8	84.9	81.1	83.7
											Heating capacity	(kW)			143	155	164	172	194

60HP Series EDGE Heat pump

Note 1: The values shown in the table above are for an inlet / outlet warm water temperature differential of 7°C, BH85%.

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

Note 3: \_\_\_\_\_ are displaying maximum capacities, \* indicates maximum flow rate \_\_\_\_\_ 1 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%.

Power consumption (kW)

Warm water flow rate (L/min) Operation current

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	hem			Out-d	e air to	трав	ture (*	C) (DE		-
temperature(°C)	in in	-4-3	-20	-15	-10	-5	0	4	7_	15
	Heating capacity	(kW)	137	153	174	196	214	231	203	237
05	Power consumption	(kW)	48.8	49.7	50.9	51.4	51.3	52.4	38.5	37.9
25	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
00	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
	Power consumption	(kW)	56.7	58.8	61.2	62.5	62.3	63.6	48.2	48.9
35	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	198	212	229	200	234
	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
1100	Power consumption	(kW)	63.5	67.4	70.6	71.4	71.0	71.3	58.1	59.9
45	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
1260	Power consumption	(kW)	100	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)	20			159	181	193	196	222
221	Power consumption	(kW)		4		65.7	89.1	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  $7^{\circ}$ 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,  $\Delta t$  is larger than  $7^{\circ}C_{\circ}$ 

Note 4: The values shown in the table above are in case there is no effect of frost formation /

Note 5: The values shown in the table above are for brine density 0%.

Note 6: The value shown in the table above are in case the nominal capacity is 400V. Note 7: This table is subject to change without notice,

60HP Series EDGE Cooling-only

List of cooling capacities RUA-GP511C (L)R

Chilled water	Brine	THE PERSON NAMED IN			Out	ide u	r temp	ocatur	u (°C)	(DE)	
outlet temperature (°C)	density (wt%)	ttern		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.£	40,6	43,5	45,2	46,3	49,5	50,8
-10	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
= 710	04	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	50 3 67.8 3 49.5 1 226 3 73 4 83.0 5 268 4 79 6 95.5 9 99.3 1 304 9 85.0 9 99.3 1 304 1 304 1 304 1 304 1 304 1 304 1 304 1 304 1 305 1 305	83
		Cooling capacity	[kW]	120	115	110	105	102	101	95.5	86.7
_		Power consumption	[kW]	38.5	42.4	46.2	49.8	52.3	54.0	57.9	56.7
-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	B3
		Cooling capacity	[kW]	129	123	118	113	111	110	99.3	87.6
_		Power consumption	[kW]	39.6	43.8	48.0	52.1	55.0	57.0	58.1	55.4
-5	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
.		Power consumption	[kW]	42.9	47.5	52.3	56.5	59.0	58,6	59.1	52.5
0	20	Chilled water flow rate	[L/min]	500	472	445	414	402!	380	337	278
		Operation current	IAI	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 lable above are when the ethylene glycol is used Note 4: The value shown in the lable above are in case the nominal capacity is 400V

Note 5: 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 weter	Brine	STATE PARTY			Outs	side eii	r temp	eralur	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	50 113 4 66.9 3 356 97.5 6 116 9 62.7 8	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
		Power consumption	[kW]	51.1	56.0	60.4	64,9	66,7	66.2	62,7	52,0
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

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 glycot 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

outlet de	Brine				Outs	side ai	r temp	eratur	e (°C)	(DB)	
temperature	density (wt%)	tem		25	30	35	40	43	45	50	52
		Cooling capacity	[kW]	98.7	94,5	90.2	85.E	82.7	80.8	75.6	73.5
45	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	24
		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
		Power consumption	[kW]	42.2	46,2	50.0	53.3	55.5	56,9	60.9	59.4
<sub>-10</sub>	34	Chilled water flow rate	[L/min]	385	369	353	336	327	319	301	27
		Operation current	[A]	61.6	67,3	72.9	77.8	81.0	83.1	50 75.6 54.8 252 79.9 93.2 60.9 301 88.9 108 66.3 343 96.6 113 66.9	86.
		Cooling capacity	[kW]	134	128	123	117	115	113	108	86.
		Power consumption	[kW]	44.1	48.5	52.8	56.8	59.3	61.1	66.3	56.
-7	30	Chilled water flow rate	[L/min]	426	407	391	372	366	359	343	27
		Operation current	[A]	64.3	70,7	77.0	82.9	86.5	89.1	96.6	82
		Cooling capacity	[kW]	144	138	132	127	125	124	113	87.
_ 1		Power consumption	[kW]	45.6	50,4	55.0	59.6	62.B	64.9	66.9	55.
-5	28	Chilled water flow rate	[L/min]	454	435	416	400	394	391	356	27
		Operation current	[A]	66.5	73.5	80.2	87.C	91.6	94.7	97.5	80.
		Cooling capacity	[kW]	180	170	160	150	145	138	116	90.
		Power consumption	[kW]	49.9	54.8	59.9	64.7	66.8	66.7	63.0	52.
0	20	Chilled water flow rate	[L/min]	552	521	491	460	445	423	356	27
		Operation current	[A]	72.7	80.0	87.4	94.3	97.5	97.2	92.0	76.

Note 1: The values shown in the table above are for an inlet / outlet chilled water temperature differential of  $5^{\circ}C_{\odot}$ 

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

Note 3: The value shown in the table above are when the ethylene glycol is used. Note 4: The value shown in the table above are in case the nominal capacity is 400V.

Note 5: This table is subject to change without notice

#### 70HP Series EDGE Heat pump

List of heating capacities RUA-GP561H (L)R

Warm water outlet	TANK PALLY			Dutsid	e aar te	mpara	ture ("	D) (DB)	
temperature(°C)	Rom		-15	-10	-5	0	4	7	15
	Heating capacity	(kW)	153	174	196	214	231	203	237
05	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
	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
	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.€	90.1	92.1	91.7	93.7	70.3	71.2
	Heating capacity	(kW)	153	174	196	212	229	200	234
	Power consumption	(kW)	63.5	65.9	67.8	67.3	69.2	53.1	54.3
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
	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
	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)	395	JSI.	65.7	69.1	69.9	68.9	69.8
55	Warm water flow rate	(L/min)		9	327	371	396	408	464
	Operation current	(A)	130		96.8	101	102	100	102

Note 1: The values shown in the table above are for an inlet / outlet warm water temperature differential of 7°C, RH85%...

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

Note 3: \_\_\_\_\_ are displaying maximum capacities, \* indicates maximum flow rate. \_\_\_\_\_ dt is larger than 7°C.

Note 4: The values shown in the table above are in case there is no effect of frost formation /

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

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

50HP Series EDGE

Heat pump Powerful Heating Type

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

~								b (6	C) IDE	)i
Chilled water outlet temperature (°C)	Brine density (wt%)	Item	30	35	40	43	45	C) (DE 50	52	
		Cooling capacity	[kW]	104	100	95.9	93.4	91.7	87.8	86.8
_ [		Power consumption	[kW]	24.7	27.5	30,3	32,0	33.2	36.3	37,6
-5	-5 28	Chilled water flow rate	[L/mln]	328	315	302	295	289	277	274
		Operation current	n current [A] 36.1 40.1 44.2 46.7 48.5 53.0 5	55.0						
		Cooling capacity	[kW]	134	127	120	116	114	107	104
0 20	Power consumption	[kW]	25.9	29.0	32.1	33.8	35.1	38.2	39.5	
	20	Chilled water flow rate	[L/min]	411	389	368	356	350	328	319
		Operation current	[A]	37.8	42.3	46.8	49.4	51,5	56,0	58,0

50HP Series EDGE Cooling-only

List of cooling capacities RUA-GP421C(L)NR

Chilled water	Brine	17		C	utuick	edir te	mpara	dura (	C) (DE	3)
outlet temperature (*C)	density (wl%)	tom		30	35	40	43	45	50	52
		Cooling capacity	[kW]	72.0	69.0	66.0	64.2	63.0	59.8	58.4
40	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
		Power consumption	[kW]	24.1	26.7	29,3	30.9	32.0	34.7	35.7
-10	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
		Cooling capacity	[kW]	97.3	93.3	89.5	87.2	85.6	81.8	80.6
	-7 30	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
		Power consumption	jkW	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
	-5 28	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
0 20	***	Power consumption	[kW]	26.4	29.6	32.7	34.5	35.7	38.9	40.3
	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

Powerful Heating Type

Heat pump

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

Chilled water	Brine			C	Oulside	e air le	mpera	dure (*	C) (DE	3)
outlet temperature (°C)	density (wt%)	Item		30	35	40	43	45	50	52
		Cooling capacity	[kW]	122	118	113	111	109	104	103
_		Power consumption	[kW]	30,3	33,6	36.9	38.7	40.1	43,5	45.2
-5	28	Chilled water flow rate	[L/min]	385	372	356	350	344	328	32
		Operation current	[A]	44.2	49.1	54.0	56,5	58.5	63.5	66.0
		Cooling capacity	[kW]	156	148	141	137	134	126	123
0		Power consumption	[kW]	32,8	36.5	39.8	41,8	43.2	47.0	48,4
0	20	Chilled water flow rate	[L/min]	478	454	432	420	411	386	37
		Operation current	[A]	47.8	53.5	58.5	61.0	63.5	69.0	71.0

60HP Series EDGE Cooling-only

List of cooling capacities RUA-GP511C(L)NR

Chilled water	Brine	Contract The Contract of the C		C	Outsick	sir te	nyen	atume (	GIO	3)
temperature (*C)	density (wt%)	Ken		30	35	40	43	45	50	52
		Cooling capacity	[kW]	84.8	81.4	78.0	75.9	74.6	71.0	69.5
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
CHAIL		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	50 71.0 37.8 236 55.5 86.4 40.4 279 59.0 97.0 42 308 61.5 105 43.2 331 63.0 127 46.5 389	61.0
-10 34 -7 30		Cooling capacity	[kW]	114	110	106	103	101	97.0	95.7
	00	Power consumption	[kW]	29.5	32.6	35.6	37.6	38.8	42	43.3
-/	30	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
		Power consumption	[kW]	30.2	33.5	36.7	38.7	39.9	43.2	45.2
-5	28	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
U	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 Heat pump

List of cooling capacities RUA-GP561H(L)NR

Chilled water	Brine density (wt%)			Outside air temperature (°C) (DB)						
outlet temperature (°C)		item		30	35	40	43	45	50	52
-5	28	Cooling capacity	[kW]	137	132	127	124	122	118	117
		Power consumption	[kW]	35.2	38.8	42.3	44.4	45.9	49.4	51.1
		Chilled water flow rate	[L/min]	432	416	400	391	385	372	369
		Operation current	[A]	51.5	57.0	62.0	65.0	67.0	72.0	74.5
Ō		Cooling capacity	[kW]	173	164	157	152	149	142	138
	20	Power consumption	[kW]	39.0	43.0	46.4	48.6	50.0	53.6	55.4
		Chilled water flow rate	[L/min]	531	503	481	466	457	435	423
		Operation current	[A]	57.0	63.0	68.0	71.0	73.0	78.5	81.0

Note 1: The values shown in the lable above are for an inlet / outlet chilled water temperature differential of  $S^{\circ}C_{\circ}$ 

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 wilhout notice

70HP Series EDGE Cooling-only

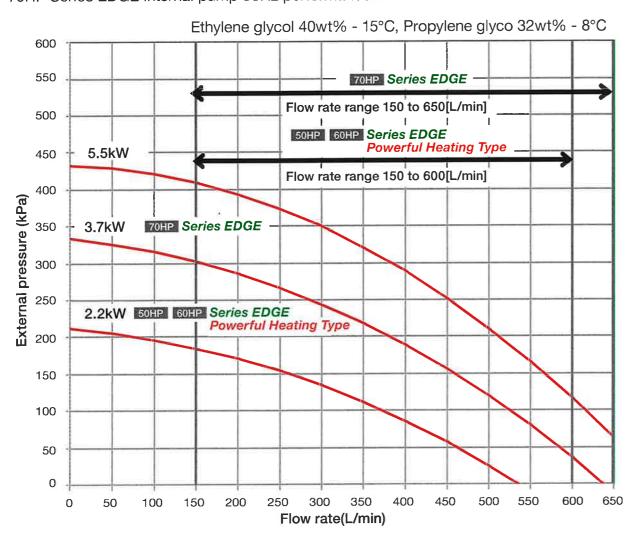
Chilled water outlet temperature (PQ)	Brine density (wt%)	STATE OF BUILDING		Outside air temperature (°C) (DB)						
		llem		30	35	40	43	45	50	52
		Cooling capacity	[kW]	94.4	90.9	87.2	85.0	83.5	79.6	78.0
-52	2-	Power consumption	[kW]	30.5	33.4	36.3	37.9	39.2	42.1	43.3
-15	40	Chilled water flow rate	[L/min]	314	303	290	283	278	265	260
		Operation current			48.8	53.0	55.5	57.5	61.5	63.5
-10 34		Cooling capacity	[kW]	114	110	106	103	101	96.8	95.0
	225	Power consumption	[kW]	32.3	35.5	38.7	40.7	41.9	45.0	46.3
	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
		Cooling capacity	[kW]	128	123	118	115	114	109	107
142		Power consumption	[kW]	33.6	37.2	40.5	42.4	43.8	47.2	48.9
-7	30	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
-5	200	Power consumption	[kW]	34.7	38.3	41.8	44.0	45.4	49.2	50.9
	28	Chilled water flow rate	[L/min]	432	416	400	391	385	369	366
		Operation current	IAI	51.0	56.0	61.0	64.5	66.5	72.0	74.5
0		Cooling capacity	[kW]	173	164	157	152	149	141	138
	20	Power consumption	[kW]	38.4	42.4	45.8	47.9	49.5	53.4	54.8
		Chilled water flow rate	[L/min]	531	503	481	466	457	432	423
		Operation current	[A]	56.0	62.0	67.0	70.0	72.5	78.0	80.0

65

#### Pump Characteristics / Internal Inverter Pump

Brine specifications

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



#### Pump specification values

112		50HP, 60HP model			70HP model		
Pump output	(kW)	2.2	3.7	5.5	3.7	5,5	
Flow rate range (L/min)		150~600			150~650		
External lifting height (2)	(kPa)	0~184	35 ~ 302	115 ~ 409	0~302	61 ~ 409	
Max. operation current (*3)	(A)	4.6	7.4	11,4	7.4	11.4	
Max. power consumption (2)	(kW)	2.9	4.6	6.9	4.6	6,9	
Max. allowable boost pressure	(MPa)	0.27	0.16	0.05	0.16	0.05	
Max. suction head (water temp. 60°C or less)	(kPa)	40	40	40	40	40	

Note 1: Flow rate range (upper limit), max, current and max, power consumption in the table above are values for a single pump, Multiply the number of pumps (modules) by these values depending on the unit size.

When selecting anything other than rated output, you can also use values outside of the flow amount range shown in the graph. Use the formula below to find the flow amount range outside of the rated capacity.

Minimum flow rate=capacity x 860/60/10 (maximum temperature difference)

\*However, minimum flow amount must be at or above 150L/min

Maximum flow amount=capacity x 860/60/5 (minimum temperature difference)

\*However, maximum flow amount must be at or below 600L/min for the 50HP and 60HP model, and at or below 650L/min for the 70HP model

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

Note 3: Max. current and max. power consumption are the max. values when the pump operation frequency is 60Hz. (In case the nominal current is 380V)

Note 4: 60Hz pumps are commonly used in the 50Hz area.

67

Note 5: There are some ranges where pump capacity is not enough for the system to run within flow rate range so please increase pump's horsepower.

Note 6: In case of different brine density and leaving temperature, the pump characteristics will be different. Please make an inquiry separately.

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

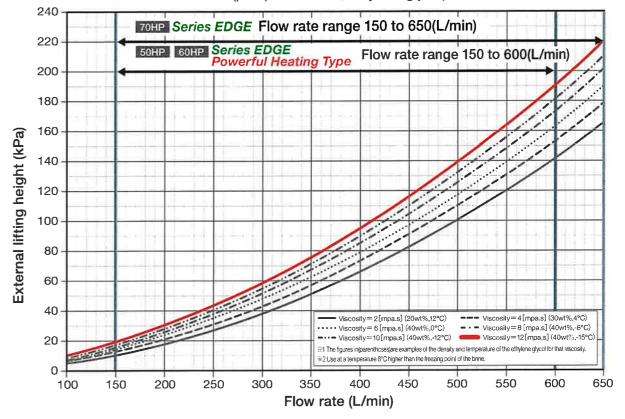
#### Pump Characteristics / Internal Resistance Curve (For pumpless)

Brine specifications

68

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

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



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

