

Product Bulletin No.J2023-021 Date: 24 May, 2023 TOSHIBA CARRIER CORPORATION PRODUCT PLANNING DIVISION 72-34 HORIKAWA-CHO SAIWAI-KU, KAWASAKI-SHI, KANAGAWA 212-8585, JAPAN PHONE: +81-44-331-7415 FAX: +81-44-548-9573

Release information

# UNIVERSAL SMART X series 4 and UNIVERSAL SMART X series EDGE 2 for SEA

Appendix 1 : Model name list

(Product Bulletin No.J2023-021 : 3/12)

#### Model Name List

#### <Universal Smart X series 4 for Asia>

		HP	30	)HP	40	)HP		50HP	
Power sup	bly	3ph 60Hz 220V		~		$\checkmark$			~
		3ph 50/60Hz 380V	$\checkmark$		~		~		
		3ph 50/60Hz 400V	$\checkmark$		~			~	
		3ph 50/60Hz 415V	$\checkmark$		~			~	
		3ph 60Hz 440V	$\checkmark$		~			~	
		Model Name				RUA-SP			
Standard	Pumpless	Heat pump	244HL5S	244HL6S	334HL5S	334HL6S	244HL1S	244HL7S	244HL6S
			244HL5SM	244HL6SM	334HL5SM	334HL6SM	244HL1SM	244HL7SM	244HL6SM
		Cooling Only	244HLN5S	244HLN6S	334HLN5S	334HLN6S	244HLN1S	244HLN7S	244HLN6S
			244HLN5SM	244HLN6SM	334HLN5SM	334HLN6SM	244HLN1SM	244HLN7SM	244HLN6SM
		Heat pump (High EER)	244CL5S	244CL6S	334CL5S	334CL6S	244CL1S	244CL7S	244CL6S
			244CL5SM	244CL6SM	334CL5SM	334CL6SM	244CL1SM	244CL7SM	244CL6SM
		Cooling Only (High EER)	244CLN5S	244CLN6S	334CLN5S	334CLN6S	244CLN1S	244CLN7S	244CLN6S
			244CLN5SM	244CLN6SM	334CLN5SM	334CLN6SM	244CLN1SM	244CLN7SM	244CLN6SM
	Integrated Pump	Heat pump	244H5S	244H6S	334H5S	334H6S	244H1S	244H7S	244H6S
			244H5SM	244H6SM	334H5SM	334H6SM	244H1SM	244H7SM	244H6SM
		Cooling Only	244HN5S	244HN6S	334HN5S	334HN6S	244HN1S	244HN7S	244HN6S
			244HN5SM	244HN6SM	334HN5SM	334HN6SM	244HN1SM	244HN7SM	244HN6SM
		Heat pump (High EER)	244C5S	244C6S	334C5S	334C6S	244C1S	244C7S	244C6S
			244C5SM	244C6SM	334C5SM	334C6SM	244C1SM	244C7SM	244C6SM
		Cooling Only (High EER)	244CN5S	244CN6S	334CN5S	334CN6S	244CN1S	244CN7S	244CN6S
			244CN5SM	244CN6SM	334CN5SM	334CN6SM	244CN1SM	244CN7SM	244CN6SM

#### <Universal Smart X EDGE series 2 for Asia>

		HP	60	HP	70	НР	60HP (Powerfu	I Heating Type)
Power sup	ply	3ph 60Hz 220V		~		~		$\checkmark$
		3ph 50/60Hz 380V	$\checkmark$		~		~	
		3ph 50/60Hz 400V	~		~		~	
		3ph 50/60Hz 415V	$\checkmark$		~		~	
		3ph 60Hz 440V	$\checkmark$		~		~	
		Model Name			RU	A-SP		
Standard	Pumpless	Heat pump	512HL5S	512HL6S	562HL5S	562HL6S	512FL5S	512FL6S
			512HL5SM	512HL6SM	562HL5SM	562HL6SM	512FL5SM	512FL6SM
		Cooling Only	512HLN5S	512HLN6S	562HLN5S	562HLN6S	512FLN5S	512FLN6S
			512HLN5SM	512HLN6SM	562HLN5SM	562HLN6SM	512FLN5SM	512FLN6SM
		Heat pump (High EER)	512CL5S	512CL6S	562CL5S	562CL6S		
			512CL5SM	512CL6SM	562CL5SM	562CL6SM		
		Cooling Only (High EER)	512CLN5S	512CLN6S	562CLN5S	562CLN6S		
			512CLN5SM	512CLN6SM	562CLN5SM	562CLN6SM		
	Integrated Pump	Heat pump	512H5S	512H6S	562H5S	562H6S	512F5S	512F6S
			512H5SM	512H6SM	562H5SM	562H6SM	512F5SM	512F6SM
		Cooling Only	512HN5S	512HN6S	562HN5S	562HN6S	512FN5S	512FN6S
			512HN5SM	512HN6SM	562HN5SM	562HN6SM	512FN5SM	512FN6SM
		Heat pump (High EER)	512C5S	512C6S	562C5S	562C6S		
			512C5SM	512C6SM	562C5SM	562C6SM		
		Cooling Only (High EER)	512CN5S	512CN6S	562CN5S	562CN6S		
			512CN5SM	512CN6SM	562CN5SM	562CN6SM		

# Nomenclature : USX Series 4 and USX EDGE Series 2

1 2 3 4 5 6	789	0 10	11	12	13	14	15	16	17	18	
R U A - S P	244	I C	L	Ν	5	S	Μ	*	*	*	
#1-#3 RUA :	Air Cooleo	l Chille	er					-			
#4 - :	Dash (or	nyphe	n)								
#5-#6 :	Series										
SP UP	Universal Universal	Smart Smart	: X ( : X -	R41 ED0	0A) GE (	R41	0A)				
#7-#8 : 24 33 42 51 56	Cooling C 24RT / 85 33RT / 11 42RT / 15 51RT / 18 56RT / 20	apacity kW / 8kW / 60kW / 60kW / 00kW /	y (U 30H / 40 / 50 / 60 / 70	ISRT IP HP HP HP HP	)						
#9 0,1,2···· :	Developm	ent se	eries	nur	nbe	r					
#10 : C H F	Type of re Cooling O Heat Pum Heat Pum	efriger nly p p (Pov	ant werf	cycle ful he	e eatii	ng ty	ype)	)			
#11 : (Blank) L	Type of p Pre-instal Pumpless	ump ed inv	rte	er Pu	ımp						
#12 : (Blank) N	Option standard High COP	type									
#13 : 1 5 6 7	Power Su 3ph 50/60 3ph 50/60 3ph 60Hz 3ph 50/60	oply )Hz 38 )Hz 38 220V )Hz 40	30V 30/4 00/4	00/4 15/	415 <u></u> 60ŀ	/ 60 Iz 4	Hz 4 40V	440` ,	V		
#14 S :	For South Thail Malay * For	East / and, Iı /sia, M other	Asia ndor 1yan <sup>.</sup> cou	mo nesia nmar untri	del a, Ir <sup>-</sup> , Au es, <sup>1</sup>	ndia, ustra the i	Vie alia regu	etnai (To ulatio	m, S tal: ons	Singa 12 c neec	apore, Philippine, Brune countries) d to be confirmed.
#15 : (Blank) M	Module Co None Equipped	ontroll	er								

Integrated pump																	
Model Name		RUA	-SP	244C5S(M)	244H5S(M)	244C6S(M)	244H6S(M)	334C5S(M)	334H5S(M)	334C6S(M)	334H6S(M)	424C1S(M)	424H1S(M)	424C7S(M)	424H7S(M)	424C6S(M)	424H6S(M)
Cooling Capacit	ty *1	k	W		85	5.0			11	8.0				150	.0		
Heating Capacit	ty *1	k	W	-	85.0	-	85.0	-	118.0	-	118.0	-	150.0	-	150.0	-	150.0
Unit Color	-				1Y8.5/0.5(S	Silky Shade)			1Y8.5/0.5(S	Silky Shade)				1Y8.5/0.5(Si	ilky Shade)		
	Height	n	nm		2,3	300			2,?	300				2,30	00		
Dimensions	Width	n	nm		1,0	080			1,0	080				1,08	80		
*2	Depth	n	nm		3,4	400			3,4	400				3,40	00		
Shipping Weigh	nt	k	kg	1,273	1,303	1,231	1,261	1,273	1,303	1,231	1,261	1,308	1,338	1,308	1,338	1,266	1,296
Operating Weig	ht	k	kg	1,301	1,331	1,259	1,289	1,301	1,331	1,259	1,289	1,343	1,373	1,343	1,373	1,301	1,331
Power Source *	4	h		380V - 3Ph	i - 50/60Hz	220V - 31	Ph - 60Hz	380V - 3Ph	1 - 50/60Hz	220V - 3	Ph - 60Hz	380V - 3PI	n - 50/60Hz	400V - 3Ph	- 50/60Hz	220V - 3	Ph - 60Hz
Electrical	Cooling	Nominal Current	A	32.		56	5.5	50	1.6	8	7.5	73	3.1	69.	4	12	6.0
Data *1,3		Nominal Input k	W		21	1.3			33	3.0				47.	6		
		EER *1			3.0	.99			3.	.58				3.1	5		
	**	Power Factor	%		9	99			9	99			(0, 0	99	)		
	Heating	Nominal Current	A	-	33.5	-	57.8	-	49.4	-	85.4	-	68.0	-	64.6	-	117.0
		Nominal Input k	W	-	21.8	-	21.8	-	32.2	-	32.2	-	44.3	-	44.3	-	44.3
		COP *1		-	3.90	-	3.90	-	3.66	-	3.66	-	3.39	-	3.39	-	3.39
	T.	Power Factor	%	-	99	-	99	-	99	-	99	-	99	-	99	-	99
a	Type		***		Hermeti	ic Rotary			Hermeti	ic Rotary				Hermetic	Rotary		
Compressor	Motor Output	k	W		<u> </u>	x 4			/.5	x 4				9.25	x 4		
	Type of Start	4 - 11 - 11 - 11 - 11 - 11 - 11 - 11 -	<b>11</b> 7		27	erter				erter				Inve	rter		
Commence on Oil	Compressor Hea	ter	W		3/2	X 4			3/	<u>x 4</u>				3/X	. 4		
Compressor On	AirSido		L		2.0 Dista I	Ein Coil			2.0 Dista I	Fin Coil				2.0 I Diata Fi	n Coil		
Condenser Con	- All Slue				Propell	lar Type			Propel	ler Type				Propelle	r Tune		
Fons	Air Quantity	3	/		1 050	at max			1.050	at max				1.050 a	t max		
1 4115	Motor Output		-W		1,050 2	x 4			1,030 2	at 111ax				1,030 a	x 4		
Cooler - Water	side *5	ĸ			Brazed P	Plate Type			Brazed F	Plate Type				Brazed Pl	ate Tyne		
Refrigerant	Refrigerant				R4	10A			R4	10A				R41			
itemgerunt	Charge amount	k	kσ	82x4	86x4	82x4	86x4	8 2 x 4	86x4	82x4	86x4	8 2 x 4	86x4	82x4	86x4	8 2 x 4	86x4
	Control		-0		EX	XV			E	XV				EX	V		
Capacity Contro	ol Steps *8	0	%		0 and 9	$0 \sim 100$			0 and 5	$5 \sim 100$				0 and 5	$\sim 100$		
Operation Cont	rol		]	Microprocessor contro	ol based on Leaving w	ater temperature and T	emperature difference	Microprocessor control	ol based on Leaving w	ater temperature and T	emperature difference		Microprocessor contr	ol based on Leaving wa	ter temperature and Te	emperature difference	
Operating Limit	- LWT *9	Cooling °	°C	*	4 ~	~ 30	*	1	4 ~	~ 30	1			4~	30	1	
1 0		Heating °	°C	-	$25\sim55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25\sim55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$
Operating Limit	- OAT	Cooling °	°C		-15 ~	48 DB			-15 ~	48 DB	•			-15 ~ 4	48 DB		•
		Heating °	°C	-	$-15\sim21~{ m DB}$	-	$-15\sim21~{ m DB}$	-	$-15\sim21~{ m DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$
				High Pressure S	witch, Over Current P	rotection, Inverter Ove	rload Protection	High Pressure S	witch, Over Current P	Protection, Inverter Ove	erload Protection						
				(Compressor, Fa	an, Pump) Compressor	r Heater, Open Phase P	rotection, Fuses	(Compressor, F	an, Pump) Compresso	r Heater, Open Phase I	Protection, Fuses	High Pressure Swit	ch, Over Current Protec	ction, Inverter Overload	Protection (Compress	sor, Fan, Pump) Comp	ressor Heater, Open
Protective Dev	ices		N	Microprocessor Contro	ol (Compressor time gi	uard, Low water temp.	cutout, Low flow rate	Microprocessor Contro	ol (Compressor time g	uard, Low water temp	. cutout, Low flow rate	Phase Protection, F	uses Microprocessor Co	ontrol (Compressor time	e guard, Low water te	emp. cutout, Low flow i	rate protection, Low
	protection, Low Pressure Cutout, Discharge gas overheat protection, Thermistor					n, Thermistor failure,	protection, Low Press	sure Cutout, Discharge	gas overheat protectio	n, Thermistor failure,	Pres	sure Cutout, Discharge	gas overheat protection	, Thermistor failure,	High water pressure fai	ilure)	
	High water pressure failure)							High water pr	ressure failure)								
Piping	Water Inlet Conn	1.			2" Flar	nge $\times$ 1			2" Flar	nge × 1				2-1/2" Fla	inge × 1		
Diameters	Water Outlet Con	nn.			2" Flar	nge × 1			2" Flar	nge × 1				2-1/2" Fla	ange × 1		
	Coil Drain Conn				PT 1-1/2" Exte	ernal thread $\times 1$			PT 1-1/2" Exte	ernal thread $\times$ 1				PT 1-1/2" Exter	mal thread $\times 1$		
Internal Pump *	17		Standard						Stan	ndard				Stanc	lard		
	Motor Output	k	W		<u> </u>	.J Dumn			<u>l</u> , т:	.J Dump				1.5 T 200 - D	)		
	Control Inverter						Line	r uilip erter				Line P	ump rter				
	Max Current	Inverter			3	1	6	1		2	8		5	6			
	Max. Input kW 20			5.	2	.0			2.	- 18	3	ı <i>5</i> .	~				
	1 ··· 1 ···	K			Control Bo	x side :59.3			Control Bc	ox side :61.9				Control Box	side :64.2		
Sound Level (F	or one module) *1	4 dl	BA		Coil sid	de : 65.5			Coil sic	de : 68.8				Coil side	e : 72.0		
È la companya di la compa	· · · · ·				Water Pipe	e side : 61.4			Water Pipe	e side : 64.5				Water Pipe	side : 67.7		
Controller *15	*15 Module controller (MC)						Module cor	ntroller (MC)				Module cont	roller (MC)				

Module controller (MC)

Module controller (MC) 

 Note 1: 15
 Module controller (MC)

 Note 1: Rated conditions for cooling operation are as follows. Cooling : 12°C entering (EWT), 7°C leaving (LWT), 35°CDB/24°CWB outdoor air (OAT). Design water flow rate must be within the range of 5 to 10°C

 \*2 Dimensions do not include projections of water pipe connections.

 \*3 Electrical data do not include internal pump. The pump data are shown in the column of "Internal Pump". Current and input of internal pump vary with water flow rate and lifting height.

 \*4 Supply voltage must normally be used within ±5% of the rated voltage, must be within ±10% of the rated voltage even if there is voltage fluctuation, and the inter phase imbalance must be less than 2%.

 \*5 Maximum working pressure is 0.7MPa.

 \*8 Range of capacity control may vary depending on the unit's operating condition.

 \*9 LWT not higher than 35°C at cooling operation is allowable till 1 hour after. After then, LWT must be within the operating range. Control it with bypass pipe if needed.

 \*10 Water quality must meet JRA euideline "JRA-GL-02-1994"

\*10 Water quality must meet JRA guideline "JRA-GL-02-1994"

\*14 The on-site sound level will be higher due to the effects of background noise and sound reflection. \*15 MC (Module Controller) is assembled at our factory. MC is installed in products with "M" in the model name. It is necessary one MC when placing multiple modules side by side (Max 16 modules).

\*16 Connecting fitting is attached at all module. (Except MC-installed module)

\*17 depending on the outlet pump head required to comply with the indent. The power supply design at that time differs from those of a standard pump. Refer to the power supply design items. In addition, refer to pump performance features for operating conditions (pushing pressure range, etc.).

2-1/2" Flange × 1	
2-1/2" Flange × 1	
PT 1-1/2" External thread × 1	
Standard	
1.5	
Line Pump	
Inverter	
3	5.6
1.8	
Control Box side :64.2	
Coil side : 72.0	
Water Pipe side : 67.7	
Module controller (MC)	

Integrated pu	ımp, High EE	R type															
Model Name		R	RUA-SP	244CN5S(M)	244HN5S(M)	244CN6S(M)	244HN6S(M)	334CN5S(M)	334HN5S(M)	334CN6S(M)	334HN6S(M)	424CN1S(M)	424HN1S(M)	424CN7S(M)	424HN7S(M)	424CN6S(M)	424HN6S(M)
Cooling Capacit	y *1		kW		8.	5.0			11	18.0				15	0.0		
Heating Capacit	y *1		kW	-	85.0	-	85.0	-	118.0	-	118.0	-	150.0	-	150.0	-	150.0
Unit Color					1Y8.5/0.5(5	Silky Shade)			1Y8.5/0.5(	Silky Shade)				1Y8.5/0.5(8	Silky Shade)		
	Height		mm		2,3	300			2,1	300				2,3	300		
Dimensions	Width		mm		1,0	080			1,0	080				1,0	)80		
*2	Depth		mm		3,4	400			3,4	400				3,4	400		
Power Source *	4			380V - 3Ph	a - 50/60Hz	220V - 2	3Ph - 60Hz	380V - 3P	'h - 50/60Hz	220V - 3	Ph - 60Hz	380V - 3Pł	n - 50/60Hz	400V - 3Ph	n - 50/60Hz	220V - 3	Ph - 60Hz
Electrical	Cooling	Nominal Current	t A	21	1.0	3	36.3	3.	3.1	5	7.3	48	3.5	46	5.1	8.	3.8
Data *1,3		Nominal Input	kW		1	3.7			2	1.6				31	.6		
		EER *1			6	.20			5.	.46				4.	75		
		Power Factor	%		ç	99			ç	99				9	9		
	Heating	Nominal Current	t A	-	33.5	-	57.8	-	49.4	-	85.4	-	68.0	-	64.6	-	117.0
		Nominal Input	kW	-	21.8	-	21.8	-	32.2	-	32.2	-	44.3	-	44.3	-	44.3
		COP *1		-	3.90	-	3.90	-	3.66	-	3.66	-	3.39	-	3.39	-	3.39
		Power Factor	%	-	99	-	99	-	99	-	99	-	99	-	99	-	99
	Туре			1	Hermet	ic Rotary	•	1	Hermet	ic Rotary	•	1		Hermeti	c Rotary	•	
Compressor	Motor Output		kW		5.5	5 x 4			7.5	5 x 4				9.25	5 x 4		
	Type of Start				Inv	erter			Inv	verter				Inve	erter		
	Compressor He	ater	W		37	x 4			37	x 4				37	x 4		
Compressor Oil	Charge		L		2.0	) x 4			2.0	) x 4				2.0	x 4		
Condenser Coil	- Air Side				Plate J	Fin Coil			Plate I	Fin Coil				Plate F	in Coil		
	Type				Propel	ler Type			Propel	ler Type				Propell	er Type		
Fans	Air Quantity		m <sup>3</sup> /min		1.050	at max			1.050	at max				1.050 a	at max		
1 4110	Motor Output		kW		1,000	) x 4			1.0	) x 4				1,000	x 4		
Water spray	Water Spray vo	lume	L/min		13	6 x 1			13 (	6 x 1				13.6	5x1		
system *5_12	Feed-water Pres	sure *6	MPa			12			0	) 2				0	2		
5,12	r eeu water rret	joure o		Water spra	aving above set compre	essor capacity and abo	ove set OAT	Water spr	raving above set compre	essor capacity and abov	ve set OAT		Water spra	aving above set compre	essor capacity and abov	ve set OAT	
	Operation Cont	rol		1	(Set OAT adjust	tment: $20 \sim 40^{\circ}$ C)		1	(Set OAT adjust	tment: $20 \sim 40^{\circ}$ C)			1	(Set OAT adjust	ment: $20 \sim 40^{\circ}$ C)		
Cooler - Water s	ide *7				Brazed F	Plate Type			Brazed F	Plate Type				Brazed P	late Type		
Refrigerant	Refrigerant				R4	10A			R4	10A				R41	10A		
8	Charge amount		kg	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4
	Control		8		E	XV			E	XV		0.2.0.1		ΕΣ	XV	0.2.00	1
Capacity Contro	l Steps *8		%		0 and c	$0 \sim 100$			0 and 5	$5 \sim 100$				0 and 5	$\sim 100$		
Operation Contr	ol			Microprocessor contro	ol based on Leaving w	ater temperature and	Temperature difference	Microprocessor contr	rol based on Leaving w	ater temperature and T	emperature difference		Microprocessor contr	ol based on Leaving wa	ater temperature and T	emperature difference	
Operating Limit	- LWT *9	Cooling	°C		4 ~	~ 30			4~	$\sim 30$				4~	- 30		
operating Emit	Eur >	Heating	°C	_	$25 \sim 55$	-	$25 \sim 55$		$25 \sim 55$	-	$25 \sim 55$		$25 \sim 55$	-	$25 \sim 55$		$25 \sim 55$
Operating Limit	- OAT	Cooling	°C		-15~	48 DB	25 55		-15~	48 DB	20 55		25 55	-15~	48 DB	Ļ	20 00
operating Emit	0.111	Heating	°C	_	$-15 \sim 21 \text{ DB}$		$-15 \sim 21 \text{ DB}$		$-15 \sim 21 \text{ DB}$		$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-15	$-15 \sim 21 \text{ DB}$	_	$_{-15} \sim 21 \text{ DB}$
		Treating	0	High Pressure S	Switch Over Current F	Protection Inverter Ov	erload Protection	High Pressure	Switch Over Current P	Protection Inverter Ove	Protection		-15 21 00	_	-15 21 00	_	-15 21 DB
				(Compressor F	Fan Pump) Compresso	r Heater Open Phase	Protection Fuses	(Compressor	Ean Pump) Compresso	r Heater Open Phase F	Protection Fuses	High Pressure Swite	ch Over Current Protec	ction Inverter Overload	d Protection (Compres	sor Fan Pumn) Comn	oressor Heater Open
Protective Devi	ces			Microprocessor Contro	ol (Compressor time g	uard. Low water tem	cutout. Low flow rate	Microprocessor Cont	rol (Compressor time g	uard. Low water temp	cutout. Low flow rate	Phase Protection, F	uses Microprocessor Co	ontrol (Compressor tim	e guard. Low water te	emp. cutout. Low flow	rate protection. Low
				protection. Low Press	sure Cutout. Discharge	gas overheat protection	on Thermistor failure.	protection. Low Pres	sure Cutout. Discharge	e gas overheat protectio	n Thermistor failure	Press	sure Cutout. Discharge	gas overheat protection	n. Thermistor failure.	High water pressure fa	uilure)
				r,	High water pr	ressure failure)	· , · · · · · · · · · · · · · · · · · ·	F	High water pr	ressure failure)	,			<b>0</b>	,	5 F	
Pining	Water Inlet Cor	et Conn 2"Flange × 1							2" Fla	nge x 1				2-1/2" Fl	ange × 1		
Diameters	Water Inter Conn. 2 Flange × 1							2" Fla	$nge \times 1$				2-1/2" Fl	lange × 1			
	Coil Drain Con	n.	PT 1-1/2" External thread $\times$ 1						PT 1-1/2" Exte	ernal thread $\times 1$				PT 1-1/2" Exte	ernal thread $\times 1$		
Internal Pump *	17				Star	ndard			Star	ndard				Stan	dard		
	Motor Output		kW		1	.5			1					1.	5		
	Туре		kW		Line	Pump			Line	Pump				Line	Pump		
	Control				Inv	erter			Inv	verter				Inve	erter		
	Max. Current		Α	3.	.1		6.1	3	3.1	6	5.1		2.	8		5	.6
	Max. Input		kW	W 2.0					2	2.0				1.	8		
Shipping Weigh	t		kg	1,283	1,313	1,241	1,271	1,283	1,313	1,241	1,271	1,318	1,348	1,318	1,348	1,276	1,306
Operating Weig	ht		kg	1,313	1,343	1,271	1,301	1,313	1,343	1,271	1,301	1,355	1,385	1,355	1,385	1,313	1,343
					Control Be	ox side :59.3		I	Control Bo	ox side :61.9				Control Bo	x side :64.2		
Sound Level (F	or one module) *	14	dBA		Coil sic	de : 65.5		I	Coil sid	de : 68.8				Coil sid	le : 72.0		
a . 11					Water Pipe	e side : 61.4			Water Pipe	e side : 64.5				Water Pipe	side : 67.7		
Controller *15	troller *15				Module cor	ntroller (MC)		1	Module cor	ntroller (MC)		I		Module con	troller (MC)		

Note \*1 Rated conditions for cooling operation are as follows. Cooling : 12°C entering (EWT), 7°C leaving (LWT), 35°CDB/24°CWB outdoor air (OAT). Design water flow rate must be within the range of 5 to 10°C

\*2 Dimensions do not include projections of water pipe connections. \*3 Electrical data do not include internal pump. The pump data are shown in the column of "Internal Pump". Current and input of internal pump vary with water flow rate and lifting height.

\*4 Supply voltage must normally be used within ±5% of the rated voltage, must be within ±10% of the rated voltage even if there is voltage fluctuation, and the inter phase imbalance must be less than 2%.
\*5 Depending on the feed-water quality, scale may adhere to the coil surface. If needed, install a softening apparatus for feed-water (by local arrangement)
\*6 Adjust the water flow rate so that the feed-water pressure become this value with the hand valve at the feed-water inlet part. When feed-water pressure is insufficient, install a pressurization pump. (by local arrangement)

\*7 Maximum working pressure is 0.7MPa.

\*8 Range of capacity control may vary depending on the unit's operating condition.

\*9 LWT not higher than 35°C at cooling operation is allowable till 1 hour after. After then, LWT must be within the operating range. Control it with bypass pipe if needed. \*12 Water quality must meet JRA guideline "JRA-GL-02-1994"

\*14 The on-site sound level will be higher due to the effects of background noise and sound reflection.

\*15 MC (Module Controller) is assembled at our factory. MC is installed in products with "M" in the model name. It is necessary one MC when placing multiple modules side by side (Max 16 modules).
\*16 Connecting fitting is attached at all module. (Except MC-installed module)
\*17 depending on the outlet pump head required to comply with the indent. The power supply design at that time differs from those of a standard pump. Refer to the power supply design items. In addition, refer to pump performance features for operating conditions (pushing pressure range, etc.).

Pumpless																	
Model Name		]	RUA-SP	244CL5S(M)	244HL5S(M)	244CL6S(M)	244HL6S(M)	334CL5S(M)	334HL5S(M)	334CL6S(M)	334HL6S(M)	424CL1S(M)	424HL1S(M)	424CL7S(M)	424HL7S(M)	424CL6S(M)	424HL6S(M)
Cooling Capaci	ity *1		kW		8	5.0			11	8.0				15	0.0		•
Heating Capaci	ity *1		kW	-	85.0	-	85.0	-	118.0	-	118.0	-	150.0	-	150.0	-	150.0
Unit Color	•				1Y8.5/0.5(	Silky Shade)			1Y8.5/0.5(5	Silky Shade)				1Y8.5/0.5(S	Silky Shade)	-	•
	Height		mm		2,	300			2,3	300				2,3	300		
Dimensions	Width		mm		1,	080			1,0	080				1,0	080		
*2	Depth		mm		3,	400			3,4	400				3,4	400		
Shipping Weig	ht		kg	1,232	1,262	1,190	1,220	1,232	1,262	1,190	1,220	1,254	1,284	1,254	1,284	1,212	1,242
Operating Weig	ght		kg	1,260	1,290	1,218	1,248	1,260	1,290	1,218	1,248	1,289	1,319	1,289	1,319	1,247	1,277
Power Source	*4			380V - 3PI	h - 50/60Hz	220V - 3	3Ph - 60Hz	380V - 3P	h - 50/60Hz	220V - 3	Ph - 60Hz	380V - 3Pł	n - 50/60Hz	400V - 3Ph	h - 50/60Hz	220V - 3	Ph - 60Hz
Electrical	Cooling	Nominal Curren	nt A	32	2.7	5	6.5	5	0.6	87	7.5	73	3.1	69	9.4	12	26.0
Data *1,3		Nominal Input	kW		2	1.3			33	3.0				47	7.6		
		EER *1			3	.99			3.	.58				3.	15		
		Power Factor	%			99			ç	99				9	9		
	Heating	Nominal Curren	nt A	-	33.5	-	57.8	-	49.4	-	85.4	-	68.0	-	64.6	-	117.0
		Nominal Input	kW	-	21.8	-	21.8	-	32.2	-	32.2	-	44.3	-	44.3	-	44.3
		COP *1		-	3.90	-	3.90	-	3.66	-	3.66	-	3.39	-	3.39	-	3.39
		Power Factor	%	-	99	-	99	-	99	-	99	-	99	-	99	-	99
	Туре				Hermet	ic Rotary			Hermeti	ic Rotary				Hermeti	ic Rotary		
Compressor	Motor Output		kW		5.5	5 x 4			7.5	5 x 4				9.25	5 x 4		
	Type of Start				Inv	rerter			Inv	erter				Inve	erter		
	Compressor Hea	ater	W		37	x 4			37	x 4				37 :	x 4		
Compressor Oi	l Charge		L		2.0	) x 4			2.0	) x 4				2.0	x 4		
Condenser Coi	l - Air Side				Plate	Fin Coil			Plate F	Fin Coil				Plate F	Fin Coil		
	Туре				Propel	ler Type			Propell	ler Type				Propell	ler Type		
Fans	Air Quantity	Quantity m <sup>3</sup> /min 1,050 at max					1,050	at max				1,050 a	at max				
	Motor Output		kW		1.0	) x 4			1.0	) x 4				1.0	x 4		
Cooler - Water	side *5				Brazed I	Plate Type			Brazed P	Plate Type				Brazed P	Plate Type		
Refrigerant	Refrigerant				R4	-10A			R4	10A	1			R41	10A	<del></del>	
	Charge amount		kg	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4
	Control				E	XV			E	XV				EΣ	XV		
Capacity Contr	ol Steps *8		%		0 and 9	$9 \sim 100$		20	0 and 5	$5 \sim 100$	11.00			0 and 5	$\sim 100$	11.00	
Operation Cont	trol			Microprocessor contr	rol based on Leaving w	ater temperature and T	l'emperature difference	Microprocessor contr	rol based on Leaving w	ater temperature and T	emperature difference		Microprocessor cont	ol based on Leaving wa	ater temperature and T	emperature difference	
Operating Limi	it - LWT *9	Cooling	°C		4 ~	~ 30			4 ~	~ 30				4 ~	~ 30	<del></del>	
		Heating	°C	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$		$25 \sim 55$
Operating Limi	it - OAT	Cooling	°C		-15 ~	~ 48 DB	15 01 00		-15~	48 DB	15 01 DD		15 01 DD	-15 ~	48 DB	<del></del>	15 01 DD
$\begin{array}{c c c c c c c c c c c c c c c c c c c $					-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$		$-15 \sim 21 \text{ DB}$	
				High Pressure S	Switch, Over Current F	rotection, Inverter Ove	erload Protection	High Pressure	Pressure Switch, Over Current Protection, Inverter Overload Protection								II ( O
				(Compressor, F	an, Pump) Compresso	or Heater, Open Phase I	Protection, Fuses	(Compressor, I	Fan, Pump) Compresso	r Heater, Open Phase P	rotection, Fuses	High Pressure Swite	ch, Over Current Prote	ction, Inverter Overload	d Protection (Compres	sor, Fan, Pump) Comp	ressor Heater, Open
Protective Dev	lces			Microprocessor Contr	rol (Compressor time g	uard, Low water temp	. cutout, Low now rate	Microprocessor Conti	rol (Compressor time g	uard, Low water temp.	cutout, Low now rate	Phase Protection, F	uses Microprocessor C	ontrol (Compressor tim	te guard, Low water te	mp. cutout, Low now n	rate protection, Low
				protection, Low Press	Sure Cutout, Discharge	gas overneat protectio	on, Thermistor failure,	protection, Low Pres	Sure Cutout, Discharge	gas overneat protection	n, Thermistor failure,	Pies	sure Cutout, Discharge	gas overneat protection	n, Thermistor failure,	Aigh water pressure fai	nure)
<b>D</b> <sup>1</sup>	Water Inlet Conn 2" Flange × 1					High water pr	ressure failure)				2.1/21/17						
Piping	Water Inlet Con	n.			2" Fla	nge × 1			2" Flai	nge × 1				2-1/2" Fl	lange × I		
Diameters	Coil Drain Corre	onn.			2" Fla	nge × 1 arnal thraad × 1			2" Flai	$lige \times 1$				2-1/2" Fl	ange × 1		
	Con Drain Conr	1.			Control D	ernar thread × 1		}	Control Do	$r_{\rm rinar}$ thread $\times 1$				Control Do	x  side :  64.2		
Sound Level (	For one module) *	14	dBA		Coil ci	de : 65 5			Coil sic	1e · 68 8				Coil eid	le · 72 0		
Sound Lever (I	i or one module)		ubr		Water Pin	e side : 61 4			Water Pine	e side : 64 5				Water Pine	e side : 67 7		
Controller *15	Controller *15 Module controller (MC)					1	Module con	ntroller (MC)				Module con	troller (MC)				
				1000					include con					include con			

Note\*1 Rated conditions for cooling operation are as follows. Cooling : 12°C entering (EWT), 7°C leaving (LWT), 3°CDB/24°CWB outdoor air (OAT). Design water flow rate must be within the range of 5 to 10°C
 \*2 Dimensions do not include projections of water pipe connections.
 \*3 Electrical data do not include internal pump. The pump data are shown in the column of "Internal Pump". Current and input of internal pump vary with water flow rate and lifting height.
 \*4 Supply voltage must normally be used within ±5% of the rated voltage, must be within ±10% of the rated voltage even if there is voltage fluctuation, and the inter phase imbalance must be less than 2%.

\*5 Maximum working pressure is 0.7MPa.

\*8 Range of capacity control may vary depending on the unit's operating condition.
\*9 LWT not higher than 35°C at cooling operation is allowable till 1 hour after. After then, LWT must be within the operating range. Control it with bypass pipe if needed.
\*10 Water quality must meet JRA guideline "JRA-GL-02-1994"

\*14 The on-site sound level will be higher due to the effects of background noise and sound reflection.
\*15 MC (Module Controller) is assembled at our factory. MC is installed in products with "M" in the model name. It is necessary one MC when placing multiple modules side by side (Max 16 modules).
\*16 Connecting fitting is attached at all module. (Except MC-installed module)

Pumpless, H	ligh EER type																
Model Name		R	UA-SP	244CLN5S(M)	244HLN5S(M)	244CLN6S(M)	244HLN6S(M)	334CLN5S(M)	334HLN5S(M)	334CLN6S(M)	334HLN6S(M)	424CLN1S(M)	424HLN1S(M)	424CLN7S(M)	424HLN7S(M)	424CLN6S(M)	424HLN6S(M)
Cooling Capaci	ty *1		kW		8	5.0			11	18.0				15	0.0		
Heating Capaci	ty *1		kW	-	85.0	-	85.0	-	118.0	-	118.0	-	150.0	-	150.0	-	150.0
Unit Color					1Y8.5/0.5(	Silky Shade)			1Y8.5/0.5(	Silky Shade)				1Y8.5/0.5(8	Silky Shade)		
	Height		mm		2,	300			2,	300				2,3	300		
Dimensions	Width		mm		1,	080			1,	080				1,0	080		
*2	Depth		mm		3,	400			3,4	400				3,4	400		
Shipping Weig	ht		kg	1,242	1,272	1,200	1,230	1,242	1,272	1,200	1,230	1,264	1,293	1,264	1,293	1,222	1,252
Operating Weig	ght		kg	1,272	1,302	1,230	1,260	1,272	1,302	1,230	1,260	1,301	1,331	1,301	1,331	1,259	1,289
Power Source	*4			380V - 3Ph	n - 50/60Hz	220V - 3	Ph - 60Hz	380V - 3PI	h - 50/60Hz	220V - 3	Ph - 60Hz	380V - 3Pł	n - 50/60Hz	400V - 3Ph	n - 50/60Hz	220V - 3	Ph - 60Hz
Electrical	Cooling	Nominal Current	Α	21	.0	3	6.3	33	3.1	5	7.3	- 48	3.5	46	5.1	83	3.8
Data *1,3		Nominal Input	kW		1	3.7			2	1.6				31	1.6		
		EER *1			6	.20			5.	.46				4.	75		
		Power Factor	%		9	99			9	99				9	9		-
	Heating	Nominal Current	Α	-	33.5	-	57.8	-	49.4	-	85.4	-	68.0	-	64.6	-	117.0
		Nominal Input	kW	-	21.8	-	21.8	-	32.2	-	32.2	-	44.3	-	44.3	-	44.3
		COP *1		-	3.90	-	3.90	-	3.66	-	3.66	-	3.39	-	3.39	-	3.39
		Power Factor	%	-	99	-	99	-	99	-	99	-	99	-	99	-	99
	Туре				Hermet	ic Rotary			Hermet	ic Rotary				Hermeti	c Rotary		
Compressor	Motor Output		kW		5.5	5 x 4			7.5	5 x 4				9.25	5 x 4		
	Type of Start				Inv	erter			Inv	verter				Inve	erter		
	Compressor Hea	ter	W		37	x 4			37	x 4				37 :	x 4		
Compressor Oi	l Charge		L		2.0	) x 4			2.0	) x 4				2.0	x 4		
Condenser Coil	- Air Side				Plate 1	Fin Coil			Plate I	Fin Coil				Plate F	Fin Coil		
	Туре				Propel	ler Type			Propel	ler Type				Propell	er Type		
Fans	Air Quantity		m <sup>3</sup> /min		1,050	at max			1,050	at max				1,050 a	at max		
	Motor Output		kW		1.0	) x 4			1.0	) x 4				1.0	x 4		
Water spray	Water Spray volu	ume	L/min		13.	6 x 1			13.	6 x 1				13.6	5 x 1		
system *5, 12	Feed-water Press	sure *6	MPa		(	).2			0	).2				0.	.2		
	Operation Contr	al		Water spra	ying above set compr	essor capacity and abov	ve set OAT	Water spr	aying above set compre	essor capacity and abov	ve set OAT		Water spr	aying above set compre	essor capacity and abo	ve set OAT	
	Operation Contro	51			(Set OAT adjus	tment: 20~40°C)			(Set OAT adjust	tment: 20~40°C)				(Set OAT adjust	ment: 20~40°C)		
Cooler - Water	side *7				Brazed I	Plate Type			Brazed I	Plate Type				Brazed P	late Type		
Refrigerant	Refrigerant				R4	10A			R4	10A				R41	10A		-
	Charge amount		kg	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4	8.2 x 4	8.6 x 4
	Control				E	XV			E	XV				EΣ	XV		
Capacity Control	ol Steps *8		%		0 and 9	$0 \sim 100$			0 and 5	$5 \sim 100$				0 and 5	$\sim 100$		
Operation Cont	rol			Microprocessor control	ol based on Leaving w	ater temperature and T	emperature difference	Microprocessor contr	rol based on Leaving w	vater temperature and T	emperature difference		Microprocessor cont	rol based on Leaving wa	ater temperature and T	Temperature difference	
Operating Limi	t - LWT *9	Cooling	°C		4 ~	~ 30	•		4 ~	~ 30	•			4 ~	- 30		
		Heating	°C	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$
Operating Limi	t - OAT	Cooling	°C		-15 ~	48 DB	•		-15 ~	48 DB	1			-15 ~	48 DB	1	
		Heating	°C	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$
				High Pressure S	witch, Over Current F	Protection, Inverter Ove	erload Protection	High Pressure S	Switch, Over Current P	Protection, Inverter Ove	erload Protection						
				(Compressor, F	an, Pump) Compresso	r Heater, Open Phase I	Protection, Fuses	(Compressor, I	Fan, Pump) Compresso	or Heater, Open Phase I	Protection, Fuses	High Pressure Swite	ch, Over Current Prote	ction, Inverter Overload	d Protection (Compres	sor, Fan, Pump) Comp	ressor Heater, Open
Protective Dev	ices			Microprocessor Contro	ol (Compressor time g	uard, Low water temp	. cutout, Low flow rate	Microprocessor Contr	rol (Compressor time g	guard, Low water temp	. cutout, Low flow rate	Phase Protection, F	uses Microprocessor C	Control (Compressor tim	ne guard, Low water t	emp. cutout, Low flow 1	rate protection, Low
	prote				ure Cutout, Discharge	gas overheat protectio	n, Thermistor failure,	protection, Low Press	sure Cutout, Discharge	e gas overheat protectio	n, Thermistor failure,	Press	sure Cutout, Discharge	gas overheat protection	n, Thermistor failure,	High water pressure fai	ilure)
					High water p	ressure failure)			High water pi	ressure failure)							
Piping	g Water Inlet Conn.				2" Fla	nge × 1			2" Fla	nge × 1				2-1/2" Fl	lange × 1		
Diameters	iameters Water Outlet Conn.				2" Fla	nge × 1			2" Fla	nge × 1				2-1/2" Fl	lange × 1		
	Coil Drain Conn				PT 1-1/2" Ext	ernal thread $\times$ 1		ļ	PT 1-1/2" Exte	ernal thread $\times 1$				PT 1-1/2" Exte	ernal thread × 1		
a 17 1 ~					Control Bo	ox side :59.3			Control Bo	ox side :61.9				Control Bo	x side :64.2		
Sound Level (I	or one module) *1	4	dBA		Coil si	ae : 65.5		<b> </b>	Coil si	de : 68.8				Coil sid	ie : 72.0		
Controllar *15					Water Pip	e side : 61.4			Water Pipe	e side : 64.5				Water Pipe	e side : 67.7		
Controller 15	ntroller *15				Module con	moner (MC)			Module cor	nuoner (NIC)				Module con	uoner (MC)		

Note \*1 Rated conditions for cooling operation are as follows. Cooling : 12°C entering (EWT), 7°C leaving (LWT), 35°CDB/24°CWB outdoor air (OAT). Design water flow rate must be within the range of 5 to 10°C

\*2 Dimensions do not include projections of water pipe connections.
\*3 Electrical data do not include internal pump. The pump data are shown in the column of "Internal Pump". Current and input of internal pump vary with water flow rate and lifting height.
\*4 Supply voltage must normally be used within ±5% of the rated voltage, must be within ±10% of the rated voltage even if there is voltage fluctuation, and the inter phase imbalance must be less than 2%.

\*5 Depending on the feed-water quality, scale may adhere to the coil surface. If needed, install a softening apparatus for feed-water. (by local arrangement)

\*6 Adjust the water flow rate so that the feed-water pressure become this value with the hand valve at the feed-water inlet part. When feed-water pressure is insufficient, install a pressurization pump. (by local arrangement) \*7 Maximum working pressure is 0.7MPa.

\*8 Range of capacity control may vary depending on the unit's operating condition.

\*9 LWT not higher than 35°C at cooling operation is allowable till 1 hour after. After then, LWT must be within the operating range. Control it with bypass pipe if needed. \*12 Water quality must meet JRA guideline "JRA-GL-02-1994" \*14 The on-site sound level will be higher due to the effects of background noise and sound reflection.

\*15 MC (Module Controller) is assembled at our factory. MC is installed in products with "M" in the model name. It is necessary one MC when placing multiple modules side by side (Max 16 modules).

\*16 Connecting fitting is attached at all module. (Except MC-installed module) \*17 depending on the outlet pump head required to comply with the indent. The power supply design at that time differs from those of a standard pump. Refer to the power supply design items. In addition, refer to pump performance features for operating conditions (pushing pressure range, etc.).

# Integrated pump

Model Name		RI	UA-UP	512C5S(M)	512H5S(M) 512C6S(M) 512H6S(M) 562C5S(M) 562H5S(M) 562C6S(M)				562H6S(M)	512F5S(M)	512F6S(M)		
Cooling Capac	ity *1		kW	18	30.0	18	30.0		20	0.0		180.	0
Heating Capaci	ity *1		kW	-	180.0	-	180.0	-	200.0	-	200.0	180.	0
Unit Color					1Y8.5/0.5(5	Silky Shade)			1Y8.5/0.5(8	Silky Shade)		1Y8.5/0.5(Sil	ky Shade)
	Height		mm		2,3	300			2,3	300		2,30	0
Dimensions	Width		mm		1,0	)80			1,0	080		1,08	0
*2	Depth		mm		3,4	400			3,4	400		3,40	0
Power Source	*4			380V - 3PI	h - 50/60Hz	220V - 3	SPh - 60Hz	380V - 3PI	h - 50/60Hz	220V - 3	Ph - 60Hz	380V - 3Ph - 50/60Hz	220V - 3Ph - 60Hz
Electrical	Cooling	Nominal Current	А	89	9.2	15	54.0	11	1.3	19	2.2	89.2	154.0
Data *1,3	_	Nominal Input	kW		58	3.1			72	2.5		58.1	
		EER *1			3.	10			2.	76		3.10	)
		Power Factor	%		9	9			9	19		99	
	Heating	Nominal Current	А	-	83.5	-	144.2	-	97.1	-	167.8	83.5	144.0
	_	Nominal Input	kW	-	54.4	-	54.4	-	63.3	-	63.3	54.4	ł
		COP *1		-	3.31	-	3.90	-	3.16	-	3.16	3.31	
		Power Factor	%	-	99	-	99	-	99	-	99	99	
	Туре	•			Hermeti	c Rotary	•		Hermeti	c Rotary	•	Hermetic	Rotary
Compressor	Motor Output		kW		12.4	4 x 4			15.4	4 x 4		12.4 x	4
-	Type of Start				Inve	erter			Inve	erter		Invert	er
	Compressor Heat	ter	W		37	x 4			37	x 4		37 x -	4
Compressor Oi	l Charge		L		2.0	x 4			2.0	x 4		2.0 x	4
Condenser Coi	l - Air Side				Plate F	in Coil			Plate F	Fin Coil		Plate Fin	Coil
	Туре				Propell	er Type			Propell	er Type		Propeller	Туре
Fans	Air Quantity		m <sup>3</sup> /min		1,230	at max			1,230 :	at max		1,230 at	max
	Motor Output		kW		1.2	x 4			1.2	x 4		1.2 x	4
Cooler - Water	side *5				Brazed P	late Type			Brazed P	late Type		Brazed Pla	te Type
Refrigerant	Refrigerant				R4	10A			R4	10A		R410	A
-	Charge amount		kg	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.6 x	x 4
	Control				Ež	KV			EX	XV		EXV	/
Capacity Contr	ol Steps *8		%		0 and 5	$\sim 100$			0 and 5	$\sim 100$		0 and 5 ~	~ 100
Operation Cont	trol			Microprocessor contr	rol based on Leaving w	ater temperature and T	Temperature difference	Microprocessor contr	ol based on Leaving wa	ater temperature and T	emperature difference	Microprocessor control based on Leaving water	er temperature and Temperature difference
Operating Limi	it - LWT *9	Cooling	°C		4 ~	- 30			4 ~	~ 30		$4 \sim 3$	30
		Heating	°C	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	$25 \sim$	55
Operating Limi	it - OAT	Cooling	°C		-15 ~	52 DB			-15 ~	52 DB		$-15 \sim 52$	2 DB
		Heating	°C	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	$-15 \sim 2$	1 DB
				High Pressure Switch	. Over Current Protecti	on. Inverter Overload	Protection	High Pressure Switch	Over Current Protection	on. Inverter Overload I	Protection	High Pressure Switch, Over Current Protectio	n.Inverter Overload Protection
				(Compressor, Fan, Pu	ump) Compressor Heat	er, Open Phase Protect	tion, Fuses	(Compressor, Fan, Pu	imp) Compressor Heate	er, Open Phase Protect	ion, Fuses	(Compressor, Fan, Pump) Compressor Heater	r, Open Phase Protection, Fuses
Protective Dev	vices			Microprocessor Contr	ol (Compressor time g	ard, Low water temp	. cutout, Low flow rate	Microprocessor Contr	ol (Compressor time gu	ard, Low water temp.	cutout, Low flow rate	Microprocessor Control (Compressor time gu	ard, Low water temp. cut-out, Low flow
				protection, Low Press	ure Cutout, Discharge	gas overheat protection	n, Thermistor failure,	protection, Low Press	ure Cutout, Discharge	gas overheat protection	, Thermistor failure,	rate protection, Low Pressure Cutout, Dischar	ge gas overheat protection, Thermistor
				High water pressure fa	ailure)			High water pressure fa	ailure)			failure, High water pressure failure)	
Piping	Water Inlet Conn	1.			2-1/2" F	ange × 1			3" Flar	nge × 1		2-1/2" Flat	$1ge \times 1$
Diameters	Water Outlet Con	nn.			2-1/2" F	ange × 1			3" Flar	nge × 1		2-1/2" Flar	$1 \text{ set } \times 1$
	Coil Drain Conn.	•			PT 1-1/2" Exte	ernal thread $\times 1$			PT 1-1/2" Exte	ernal thread $\times 1$		PT 1-1/2" Extern	al thread $\times 1$
Internal Pump	*17				Stan	dard			Stan	ıdard		Standa	ard
	Motor Output		kW		1.	5			2.	.2		1.5	
	Туре				Centrifu	gal Pump			Centrifu	gal Pump		Centrifuga	l Pump
	Control				Inve	erter			Inve	erter		Invert	er
	Max. Current		A	3	.1	6	5.1	4	.3	8	.5	3.1	6.1
	Max. Input		kW		2.	0			2.	.8		2.0	
Shipping Weig	ht		kg	1,286	1,323	1,281	1,318	1,295	1,332	1,290	1,327	1,334	1,324
Operating Weig	ght		kg	1,322	1,359	1,317	1,354	1,331	1,368	1,326	1,363	1,370	1,360
Sound Loval	For one module) *1	4	dD A		Control Bo	x side :09.0			Control Bo	x side :/0.5			side .09.0 • 72.2
Sound Level (I	for one module) *1	4	uВА		Uoll Sic Water Ding	10. 12.3 side: 68.5			Uoll Sic Water Ding	10.74.9		Uoli side	. 12.3 ida : 68 5
Controller *15					Module con	troller (MC)			Module con	troller (MC)		Module contra	oller (MC)

Note \*1 Rated conditions for cooling operation are as follows. Cooling : 12°C entering (EWT), 7°C leaving (LWT), 35°CDB/24°CWB outdoor air (OAT). Design water flow rate must be within the range of 5 to 10°C
 \*2 Dimensions do not include projections of water pipe connections.
 \*3 Electrical data do not include internal pump. The pump data are shown in the column of "Internal Pump". Current and input of internal pump vary with water flow rate and lifting height.
 \*4 Supply voltage must normally be used within ±5% of the rated voltage, must be within ±10% of the rated voltage even if there is voltage fluctuation, and the inter phase imbalance must be less than 2%.

\*5 Maximum working pressure is 0.7MPa.
\*8 Range of capacity control may vary depending on the unit's operating condition.
\*9 LWT not higher than 35°C at cooling operation is allowable till 1 hour after. After then, LWT must be within the operating range. Control it with bypass pipe if needed.
\*10 Water quality must meet JRA guideline "JRA-GL-02-1994"

\*14 The on-site sound level will be higher due to the effects of background noise and sound reflection.
\*15 MC (Module Controller) is assembled at our factory. MC is installed in products with "M" in the model name. It is necessary one MC when placing multiple modules side by side (Max 16 modules).
\*16 Connecting fitting is attached at all module. (Except MC-installed module)

\*17 depending on the outlet pump head required to comply with the indent. The power supply design at that time differs from those of a standard pump. Refer to the power supply design items. In addition, refer to pump performance features for operating conditions (pushing pressure range, etc.).

Integrated pu	ump, High EEF	R type												
Model Name		R	UA-UP	512CN5S(M)	512HN5S(M)	512CN6S(M)	512HN6S(M)	562CN5S(M)	562HN5S(M)	562CN6S(M)	562HN6S(M)	512FN5S(M)		512FN6S(M)
Cooling Capaci	ty *1		kW		18	0.0	•		20	0.0			180.0	
Heating Capacit	ty *1		kW	-	180.0	-	180.0	-	200.0	-	200.0		180.0	
Unit Color					1Y8.5/0.5(5	Silky Shade)			1Y8.5/0.5(S	Silky Shade)		11	8.5/0.5(Silky Shade	e)
	Height		mm		2,3	300			2,3	300			2,300	
Dimensions	Width		mm		1,0	080			1,0	080			1,080	
*2	Depth		mm		3,4	400			3,4	400			3,400	
Power Source *	<sup>\$</sup> 4			380V - 3Pł	h - 50/60Hz	220V - 3	Ph - 60Hz	380V - 3Pł	h - 50/60Hz	220V - 3	Ph - 60Hz	380V - 3Ph - 50/60Hz		220V - 3Ph - 60Hz
Electrical	Cooling	Nominal Current	A	60	).6	10	4.7	74	4.4	12	8.6	60.6		104.7
Data *1,3		Nominal Input	kW		39	9.5			48	8.5			39.5	
		EER *1	0/		4.	56			4.	.12			4.56	
	II time	Power Factor	%		9	9	144.2		07.1	19	1(7.0	92.5	99	144.2
	Heating	Nominal Current	A	-	83.5	-	144.2	-	97.1	-	16/.8	83.5	54.4	144.2
		Nominal Input	KW	-	34.4	-	54.4	-	63.3	-	03.3		34.4	
		COP *1	0/	-	3.31	-	3.31	-	3.10	-	3.10		3.31	
	Trues	Power Factor	%0	-	99 Hommosti	- Dotomy	99	-	99	-	99		99 Hammatia Datama	
Compressor	1 ype Motor Output		LW/	87 × 1	11 0 x 4		11 Q x 4	10.7 x 4	12.5 x 4	$10.7 \times 4$	12.5 x /		11.0 x 4	
Compressor	Type of Start		K VV	0.7 X 4	11.7 A 4	0.7 A 4	11.7 Å 4	10.7 X 4	15.5 X 4	10.7 X 4	15.5 X 4		II.7 X 4	
	Compressor Hea	tor	W		37	x 4			27	v 4			27 x 4	
Compressor Oil	Charge		VV I		2.0	x 4			20	x 4			20x4	
Condenser Coil	- Air Side		Ľ		Plate F	in Coil			Plate F	Fin Coil			Plate Fin Coil	
condenser con	Type				Propell	er Type			Propell	ler Type			Propeller Type	
Fans	Air Quantity		m <sup>3</sup> /min		1 230	at max			1 230	at max			1 230 at max	
i uno	Motor Output		kW		1,2303	x 4			1,230	x 4			1.2 x 4	
Water sprav	Water Sprav volu	ume	L/min		13.6	5 x 1			13.0	5 x 1			Brazed Plate Type	
system *5, 12	Feed-water Press	sure *6	MPa		0	.2			0	.2			0.2	
<b>,</b>		1		Water spra	aying above set compre	essor capacity and abov	ve set OAT	Water spra	aying above set compre	essor capacity and abov	e set OAT	Water spraying above s	et compressor capac	ity and above set OAT
	Operation Contro	01			(Set OAT adjust	ment: 20~40°C)			(Set OAT adjust	tment: 20~40°C)		(Set O	AT adjustment: 20~	~40°C)
Cooler - Water	side *7				Brazed P	late Type			Brazed F	Plate Type			Brazed Plate Type	
Refrigerant	gerant Refrigerant				R41	10A			R4	10A			R410A	
	Charge amount		kg	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4		10.6 x 4	
	Control				EX	XV			E	XV			EXV	
Capacity Contro	ol Steps *8		%		0 and 5	$\sim 100$			0 and 5	$5 \sim 100$			0 and 5 $\sim$ 100	
Operation Cont	rol	1		Microprocessor contr	ol based on Leaving w	ater temperature and T	emperature difference	Microprocessor contr	ol based on Leaving w	ater temperature and T	emperature difference	Microprocessor control based on I	eaving water temper	ature and Temperature difference
Operating Limit	t - LWT *9	Cooling	°C		4 ~	- 30	1		4 ~	~ 30			$4 \sim 30$	
		Heating	°C	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$		$25 \sim 55$	
Operating Limit	t - OAT	Cooling	°C		-15 ~	52 DB			-15 ~	52 DB			$-15 \sim 52 \text{ DB}$	
		Heating	°C	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$		$-15 \sim 21 \text{ DB}$	
				High Pressure Switch,	, Over Current Protection	on, Inverter Overload I	Protection	High Pressure S	Switch, Over Current P	rotection, Inverter Ove	load Protection	High Pressure Switch, Over Curre	at Protection, Inverte	er Overload Protection
				(Compressor, Fan, Pu	imp) Compressor Heat	er, Open Phase Protect	ion, Fuses	(Compressor, F	an, Pump) Compresso	r Heater, Open Phase P	rotection, Fuses	(Compressor, Fan, Pump) Compre	ssor Heater, Open P	Phase Protection, Fuses
Protective Devi	ices			microprocessor Contr	of (Compressor time gi	lard, Low water temp	Cutout, Low now rate	protoction Low Proc	ol (Compressor time g	uard, Low water temp.	Cutout, Low now rate	Microprocessor Control (Compres	sor time guard, Low	value remp. cutout, Low now
				High water pressure for	ailure)	gas overneat protection	i, Thermistor famure,	protection, Low Fless	High water pr	essure failure)	i, memistoi ianure,	failure High water pressure failure	ut, Discharge gas ov	verneat protection, Thermistor
Dining	Water Inlat Conr	•		ringii water pressure it	2 1/2" E	langa v 1			2" Flor			ianure, mgn water pressure ianur	2 1/2" Elango × 1	
r iping Diameters	Water Outlet Com	1. nn			2-1/2 FI 2-1/2" FI	lange × 1			3" Flai	nge × 1			2-1/2 Flange × 1 2-1/2" Flange × 1	
Diameters	Coil Drain Conn				PT 1-1/2" Exte	ernal thread $\times 1$			PT 1-1/2" Exte	ernal thread $\times 1$		PT 1.	$\frac{2-1/2}{1/2"}$ External thread	1 × 1
Internal Pump *	17	•			Stan	dard			Star	ndard			Standard	<u>·</u> · ·
	Motor Output kW 1.5						2	.2			1.5			
	Type kW				Centrifug	gal Pump			Centrifu	gal Pump			Centrifugal Pump	
	Control				Inve	erter			Inv	erter			Inverter	
	Max. Current		Α	3.	.1	6	.1	4.3 8.5			3.1		6.1	
al · · · · · · ·	Max. Input		kW	1.000	2.	.0	1.000	1.007	2.8		2.0			
Shipping Weigh	nt		kg	1,298	1,335	1,293	1,330	1,307	1,344	1,302	1,339	1,346		1,336
Operating Weig	int		кg	1,334	1,3/1 Control D -	1,329	1,366	1,343	1,380	1,338	1,375	1,382	ontrol Dor side (0	1,3/2
Sound Level (F	for one module) *1	4	dBA		Control Bo	x side .09.0		1	Control Bo	le · 74 9			Coil side · 72 2	<u>J</u>
Sound Lever (I	or one moune) "I		uDA		Water Pine	side : 68 5		1	Water Pine	e side : 71 0		u u	ater Pine side : 68 4	5
Controller *15				Module con	troller (MC)		1	Module con	troller (MC)		M	odule controller (MC	C)	
Controller 15					· /		-							

Note \*1 Rated conditions for cooling operation are as follows. Cooling : 12°C entering (EWT), 7°C leaving (LWT), 35°CDB/24°CWB outdoor air (OAT). Design water flow rate must be within the range of 5 to 10°C \*2 Dimensions do not include projections of water pipe connections. \*3 Electrical data do not include internal pump. The pump data are shown in the column of "Internal Pump". Current and input of internal pump vary with water flow rate and lifting height.

\*4 Supply voltage must normally be used within ±5% of the rated voltage, must be within ±10% of the rated voltage even if there is voltage fluctuation, and the inter phase imbalance must be less than 2%.
\*5 Depending on the feed-water quality, scale may adhere to the coil surface. If needed, install a softening apparatus for feed-water (by local arrangement)
\*6 Adjust the water flow rate so that the feed-water pressure become this value with the hand valve at the feed-water inlet part. When feed-water pressure is insufficient, install a pressurization pump. (by local arrangement)

\*7 Maximum working pressure is 0.7MPa.

\*8 Range of capacity control may vary depending on the unit's operating condition.

\*9 LWT not higher than 35°C at cooling operation is allowable till 1 hour after. After then, LWT must be within the operating range. Control it with bypass pipe if needed. \*12 Water quality must meet JRA guideline "JRA-GL-02-1994"

\*14 The on-site sound level will be higher due to the effects of background noise and sound reflection.

\*16 MC (Module Controller) is assembled at our factory. MC is installed in products with "M" in the model name. It is necessary one MC when placing multiple modules side by side (Max 16 modules).
\*16 Connecting fitting is attached at all module. (Except MC-installed module)
\*17 depending on the outlet pump head required to comply with the indent. The power supply design at that time differs from those of a standard pump. Refer to the power supply design items. In addition, refer to pump performance features for operating conditions (pushing pressure range, etc.).

Pumpless												
Model Name		R	UA-UP	512CL58(M)	512HL5S(M)	512CL6S(M)	512HL6S(M)	562CL5S(M)	562HL5S(M)	562CL6S(M)	562HL6S(M)	512FL5S(M)
Cooling Capac	city *1		kW		18	30.0			20	0.0		180.
Heating Capac	city *1		kW	-	180.0	-	180.0	-	200.0	-	200.0	180
Unit Color					1Y8.5/0.5(	Silky Shade)			1Y8.5/0.5(	Silky Shade)		1Y8.5/0.5(Si
	Height		mm		2,	300			2,	300		2,30
Dimensions	Width		mm		1,	080			1,	080		1,08
*2	Depth		mm		3,	400			3,	400		3,40
Power Source	*4			380V - 3Pł	n - 50/60Hz	220V - 3	Ph - 60Hz	380V - 3PI	h - 50/60Hz	220V - 3	Ph - 60Hz	380V - 3Ph - 50/60Hz
Electrical	Cooling	Nominal Current	Α	89	0.2	15	54.0	11	1.3	19	02.2	89.2
Data *1,3		Nominal Input	kW		5	8.1			7	2.5		58.
		EER *1			3	.10			2	.76		3.1
		Power Factor	%		9	99			9	99		99
	Heating	Nominal Current	Α	-	83.5	-	144.2	-	97.1	-	167.8	83.5
		Nominal Input	kW	-	54.4	-	54.4	-	63.3	-	63.3	54.4
		COP *1		-	3.31	-	3.31	-	3.16	-	3.16	3.3
		Power Factor	%	-	99	-	99	-	99	-	99	99
	Туре				Hermet	ic Rotary			Hermet	ic Rotary		Hermetic
Compressor	Motor Output		kW		12.	4 x 4			15.	4 x 4		12.4
	Type of Start				Inv	erter			Inv	erter		Inver
	Compressor H	eater	W		37	x 4			37	x 4		37 x
Compressor O	il Charge		L		2.0	) x 4			2.0	) x 4		2.0 x
Condenser Co	il - Air Side				Plate 1	Fin Coil			Plate 1	Fin Coil		Plate Fin
	Туре				Propel	ler Type			Propel	ler Type		Propeller
Fans	Air Quantity		m <sup>3</sup> /min		1,230	at max			1,230	at max		1,230 at
	Motor Output		kW		1.2	2 x 4			1.2	2 x 4		1.2 x
Cooler - Water	r side *5				Brazed I	Plate Type			Brazed I	Plate Type		Brazed Pla
Refrigerant	Refrigerant				R4	10A			R4	10A		R410
	Charge amoun	t	kg	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.6
	Control				E	XV			E	XV		EX
Capacity Cont	rol Steps *8		%		0 and 5	$5 \sim 100$			0 and 5	$5 \sim 100$		0 and 5 ~
Operation Cor	ntrol			Microprocessor control	ol based on Leaving w	rater temperature and T	emperature difference	Microprocessor contr	rol based on Leaving w	rater temperature and T	emperature difference	Microprocessor control based on Leavin
Operating Lin	nit - LWT *9	Cooling	°C		4 ~	~ 30			4 ~	~ 30		$4 \sim$
		Heating	°C	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	$25 \sim$
Operating Lin	nit - OAT	Cooling	°C		-15 ~	- 52 DB			-15 ~	52 DB		$-15 \sim 5$
		Heating	°C	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	$-15 \sim 2$
				High Pressure Switch,	Over Current Protect	ion, Inverter Overload	Protection	High Pressure Switch,	, Over Current Protecti	on, Inverter Overload I	Protection	High Pressure Switch, Over Current Protection
				(Compressor, Fan, Pu	mp) Compressor Heat	er, Open Phase Protect	tion, Fuses	(Compressor, Fan, Pu	ump) Compressor Heat	er, Open Phase Protect	ion, Fuses	(Compressor, Fan, Pump) Compressor Heate
Protective De	Protective Devices Microprocessor Control (Compressor time guar						. cutout, Low flow rate	Microprocessor Contr	ol (Compressor time g	uard, Low water temp	. cutout, Low flow rate	Microprocessor Control (Compressor time gu
				protection, Low Press	ure Cutout, Discharge	gas overheat protection	n, Thermistor failure,	protection, Low Press	ure Cutout, Discharge	gas overheat protectior	n, Thermistor failure,	rate protection, Low Pressure Cutout, Discha
				High water pressure fa	uilure)			High water pressure fa	ailure)			failure, High water pressure failure)
Piping	Water Inlet Co	nn.			2-1/2" F	lange × 1			3" Fla	nge × 1		2-1/2" Fla
Diameters	Water Outlet C	Conn.			2-1/2" F	lange × 1			3" Fla	$nge \times 1$		2-1/2" Fla
<u></u>	Coil Drain Cor	nn.	<u> </u>	1.000	PT 1-1/2" Ext	ernal thread $\times 1$	1.2(0)	1.005	PT 1-1/2" Ext	ernal thread $\times 1$	1.044	PT 1-1/2" Extern
Shipping Weig	kg 1,229				1,265	1,224	1,260	1,235	1,271	1,230	1,266	1,276
Operating We	ignt		кg	1,265	1,301 Control D	1,260	1,296	1,271	1,307	1,266	1,302	1,312
Sound Level	(For one module)	*14	dPA			de - 72.3		1	Control Bo	de : 74 9		Control Box
Sound Level	(i or one module)	1.1	uDA		Water Pin	e side : 68 5			Water Pin	e side : 71.0		Water Pine of
Controller *1*	5				Madula aa	strollor (MC)		1	Madula ao	strollor (MC)		Module contr

Note \*1 Rated conditions for cooling operation are as follows. Cooling : 12°C entering (EWT), 7°C leaving (LWT), 35°CDB/24°CWB outdoor air (OAT). Design water flow rate must be within the range of 5 to 10°C

\*2 Dimensions for county operating operating to be used to be a set of the set

\*5 Maximum working pressure is 0.7MPa.

\*8 Range of capacity control may vary depending on the unit's operating condition.
\*9 LWT not higher than 35°C at cooling operation is allowable till 1 hour after. After then, LWT must be within the operating range. Control it with bypass pipe if needed.
\*10 Water quality must meet JRA guideline "JRA-GL-02-1994"

\*14 The on-site sound level will be higher due to the effects of background noise and sound reflection.
\*15 MC (Module Controller) is assembled at our factory. MC is installed in products with "M" in the model name. It is necessary one MC when placing multiple modules side by side (Max 16 modules).
\*16 Connecting fitting is attached at all module. (Except MC-installed module)

512FL6S(M)
0
0
ky Shade)
0
0
0
220V - 3Ph - 60Hz
154.0
144.2
Rotary
: 4
er
4
4
Coil
Туре
max
4
te Type
A
<u> </u>
/
~ 100
g water temperature and Temperature
30
55
2 DB
1 DB
n, Inverter Overload Protection
r, Open Phase Protection, Fuses
ard, Low water temp. cutout, Low flow
ge gas overheat protection, Thermistor
$nge \times 1$
s = 1
al thread $\times$ 1
1,266
1,302
side :69.0
: 72.3

ide : 68.5

oller (MC)

Pumpless, High EER type													
Model Name RU			UA-SP	512CLN5S(M)	512HLN5S(N	(I) 512CLN6S(M)	512HLN6S(M)	562CLN5S(M)	562HLN5S(M)	562CLN6S(M)	562HLN6S(M)	512FLN5S(M)	512FLN6S(M)
Cooling Capaci	ity *1		kW		•	180.0			20	0.0		18	0.0
Heating Capacity *1				- 180.0 - 180.0			-	- 200.0 - 200.0			180.0		
Unit Color				1Y8.5/0.5(Silky Shade)			1Y8.5/0.5(Silky Shade)				1Y8.5/0.5(Silky Shade)		
Height			mm	2,300			2,300				2,300		
Dimensions Width			mm	1,080				1,080				1,080	
*2 Depth			mm	3,400				3,400				3,400	
Power Source *4				380V - 3Ph - 50/60Hz 220V - 3Ph - 60Hz			380V - 3Ph - 50/60Hz 220V - 3Ph - 60Hz			Ph - 60Hz	380V - 3Ph - 50/60Hz	220V - 3Ph - 60Hz	
Electrical	Cooling	Nominal Current	А	60	60.6		04.7	74.4		12	8.6	60.6	104.7
Data *1,3		Nominal Input	kW	39.5		3	39.5	48.:		.5		3	9.5
		EER *1		4.56			4.12				4.56		
		Power Factor	%	99			99				99		
	Heating	Nominal Current	Α	-	83.5	-	144.2	-	97.1	-	167.8	83.5	144.2
		Nominal Input	kW	-	54.4	-	54.5	-	63.3	-	63.3	54	4.4
		COP *1		-	3.31	-	3.90	-	3.16	-	3.16	3.	.31
		Power Factor	%	-	99	-	99	-	99	-	99	99	
	Туре				Hermetic Rotary		Hermetic Rotary				Hermetic Rotary		
Compressor	Motor Output		kW	8.7 x 4	11.9 x 4	8.7 x 4	11.9 x 4	10.7 x 4	13.5 x 4	10.7 x 4	13.5 x 4	11.9 x 4	
	Type of Start					Inverter			Inve	erter		Inverter	
	Compressor Heater		W	37 x 4				37 x 4				37 x 4	
Compressor Oil Charge			L	2.0 x 4				2.0 x 4				2.0 x 4	
Condenser Coil - Air Side				Plate Fin Coil				Plate Fin Coil				Plate Fin Coil	
	Туре			Propeller Type				Propeller Type				Propeller Type	
Fans	Air Quantity		m <sup>3</sup> /min	1,230 at max				1,230 at max				1,230 at max	
	Motor Output		kW	1.2 x 4				1.2 x 4				1.2 x 4	
Water spray Water Spray volume		L/min	13.6 x 1				13.6 x 1				13.6 x 1		
system *5, 12 Feed-water Pressure *6		MPa	0.2 Water spraying above set compressor capacity and above set OAT (Set OAT adjustment: 20~40°C)				0.2 Water spraying above set compressor capacity and above set OAT (Set OAT adjustment: 20~40°C)				0.2		
Operation Control												Water spraying above set compressor capacity and above set OAT	
operation control												(Set OAT adjustment: 20~40°C)	
Cooler - Water side *7				Brazed Plate Type				Brazed Plate Type				Brazed Plate Type	
Refrigerant Refrigerant			R410A			R410A				R410A			
Charge amount			kg	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.2 x 4	10.6 x 4	10.6 x 4	
Control				EXV				EXV				EXV	
Capacity Control Steps *8			%	3.6	$0 \text{ and } 5 \sim 100$			<b>)</b> (	$0 \text{ and } 5 \sim 100$			$0 \text{ and } 5 \sim 100$	
Operation Control				Microprocessor contr	ol based on Leavin	g water temperature and T	emperature difference	Microprocessor conti	rol based on Leaving wa	ater temperature and Te	emperature difference	Microprocessor control based on Leav	ing water temperature and Temperature
Operating Limit - LW1 *9 Cooling Heating Operating Limit - OAT Cooling		°C		25 - 55	$4 \sim 30$	25 - 55		4~	~ 30	25 - 55	$4 \sim 30$		
		<del>د</del> ۳	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	-	$25 \sim 55$	25 ~ 55		
		÷ر ۳		-13	$5 \sim 52 \text{ DB}$	15 - 21 DD		-15 ~	52 DB	15 - 01 DD	$-15 \sim 52 \text{ DB}$		
Heating			Ľ	- Itish Davana Caritah	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	- Uliah Daaraa Casidah	$-15 \sim 21 \text{ DB}$	-	$-15 \sim 21 \text{ DB}$	-15" 21 DB	
Protective Devices				High Pressure Switch, Over Current Protection, Inverter Overload Protection				High Pressure Switch, Over Current Protection, Inverter Overload Protection (Compressor, Fan, Pump) Compressor Heater, Open Phase Protection, Fuses Microprocessor Control (Compressor time guard, Low water temp, cutout, Low flow rate				High Pressure Switch, Over Current Protection, Inverter Overload Protection	
				Microprocessor Control (Compressor Heater, Open Phase Protection, Fuses) Microprocessor Control (Compressor time guard, Low water temp. cutout, Low flow rate N			(Compressor, Fail, Fullip) Compressor fime guard. Low water temp, cutout Low flow						
							rate protection Low Processor Cutout Discharge gas everbeet protection. Thermister						
				protection, Low Pressure Cutout, Discharge gas overneat protection, Thermistor failure, p				protection, Low Pressure Cutout, Discharge gas overneat protection, Thermistor failure,				failure. High water pressure failure)	
Disting Wester Int + C				High water pressure failure)				21 Element 1				$2 1/2" E^{1} = 2 1/2$	
Diameters Water Outlet Conn.				$\frac{2 - 1/2" \text{ Flange } \times 1}{2 \cdot 1/2" \text{ Flange } \times 1}$				ł	3" Flat	nge × I		$\frac{2-1/2^{n} \operatorname{Flange} \times 1}{2 \cdot 1/2^{n} \operatorname{Flange} \times 1}$	
Diameters	Coil Drain Corr	1111.		$\frac{2-1/2}{PT} \frac{1}{1-1/2} Fxternal thread \times 1$				ł	5" Flat DT 1 1/2" Even	$1gv \times 1$		$\frac{2-1/2}{\text{PT} 1-1/2!} \text{ Fyternal thread } \times 1$	
Shipping Weig	bt		ka	1 241	1 278		1 272	1 247	1 284		1 270	1 280	
Operating Weig	Operating Weight		ka	1,241	1,270	1,230	1,273	1,247	1,204	1,242	1,279	1,207	1,279
Sound Level (For one module) *14 Controller *15			ĸg	1,4//	Control	Box side :69.0	1,307	1,205	Control Bo	1,270	1,515	1,514 Control Re	1,515 ax side :69.0
			dBA	Coil side : 72 3				Coil side : 74.9				Coil side : 72 3	
			uD/1	Water Pipe side : 68 5				Water Pipe side : 71.0				Water Pine side : 68 5	
				Module controller (MC)				Module controller (MC)				Module controller (MC)	

Note \*1 Rated conditions for cooling operation are as follows. Cooling : 12°C entering (EWT), 7°C leaving (LWT), 35°CDB/24°CWB outdoor air (OAT). Design water flow rate must be within the range of 5 to 10°

\*2 Dimensions do not include projections of water pipe connections.

<sup>2</sup> Dimensions on normality by the proceedings of water pipe connections.
 \*3 Electrical data do not include internal pump. The pump data are shown in the column of "Internal Pump". Current and input of internal pump vary with water flow rate and lifting height.
 \*4 Supply voltage must normally be used within ±5% of the rated voltage, must be within ±10% of the rated voltage even if there is voltage fluctuation, and the inter phase imbalance must be less than 2%.

\*5 Depending on the feed-water quality, scale may adhere to the coil surface. If needed, install a softening apparatus for feed-water. (by local arrangement) \*6 Adjust the water flow rate so that the feed-water pressure become this value with the hand valve at the feed-water inlet part. When feed-water pressure is insufficient, install a pressurization pump. (by local arrangement) \*7 Maximum working pressure is 0.7MPa.

\*8 Range of capacity control may vary depending on the unit's operating condition.

\*9 LWT not higher than 35°C at cooling operation is allowable till 1 hour after. After then, LWT must be within the operating range. Control it with bypass pipe if needed. \*12 Water quality must meet JRA guideline "JRA-GL-02-1994" \*14 The on-site sound level will be higher due to the effects of background noise and sound reflection.

\*15 MC (Module Controller) is assembled at our factory. MC is installed in products with "M" in the model name. It is necessary one MC when placing multiple modules side by side (Max 16 modules).

\*16 Connecting fitting is attached at all module. (Except MC-installed module) \*17 depending on the outlet pump head required to comply with the indent. The power supply design at that time differs from those of a standard pump. Refer to the power supply design items. In addition, refer to pump performance features for operating conditions (pushing pressure range, etc.).