



## CFC-free Refrigerant Air-cooled Water Chiller

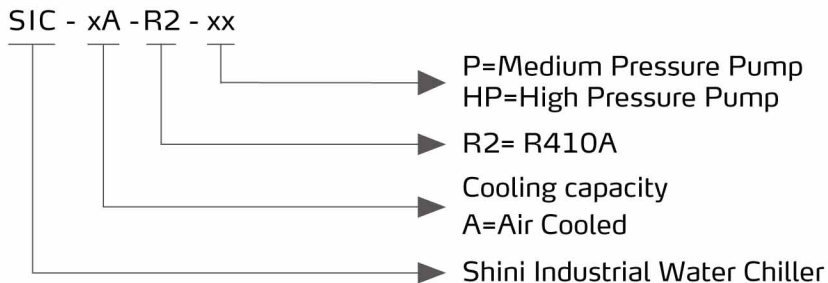
SIC-33A-R2



Refer carefully to the manual before operation.

# SIC-A-R2 Series

## ■ Coding Principle



Control Panel

## ■ Features

- Cooling range: 7~25°C
- Stainless steel insulated water tank
- Equipped with an anti-freeze thermostat
- Compressor and pump overload protection
- The refrigerating system has high and low-pressure alarm protection;
- R410A ozone-friendly refrigerant with a high efficient cooling result;
- A well-known compressor that ensures low noise, energy-efficient, and long service life;
- Fin style condenser with internal thread copper pipe features rapid and well heat transfer, no need for cooling tower or water;
- Adopt high precision temperature controller with a display precision of  $\pm 0.1^{\circ}\text{C}$
- It has a hot-gas bypass valve with a control accuracy of up to  $\pm 0.1^{\circ}\text{C}$
- RS485 communication interface to realize centralized monitoring;
- Circular stainless steel thermal insulated water tank and unique cyclone design for even distribution of chill water;
- Water loop with a return water filter that adopts PVC-U water pipe to ensure the cleanliness of the water quality. (suitable for models in Spec. 1);
- Plate heat exchanger ensures efficient heat exchanging (suitable for models in Spec. 1);
- Equipped with safety valves for stable system pressure. The inlet and outlet pipe adopt an adaptive bypass valve to ensure stable outlet water pressure (suitable for models in Spec. 1).
- Equipped with a flow switch to avoid the unit from operating without water flow (suitable for models in Spec. 1);
- The standard water tank level indicator for visualizing check of the water level ;
- Compact outline and small foot (suitable for models in Spec. 1);

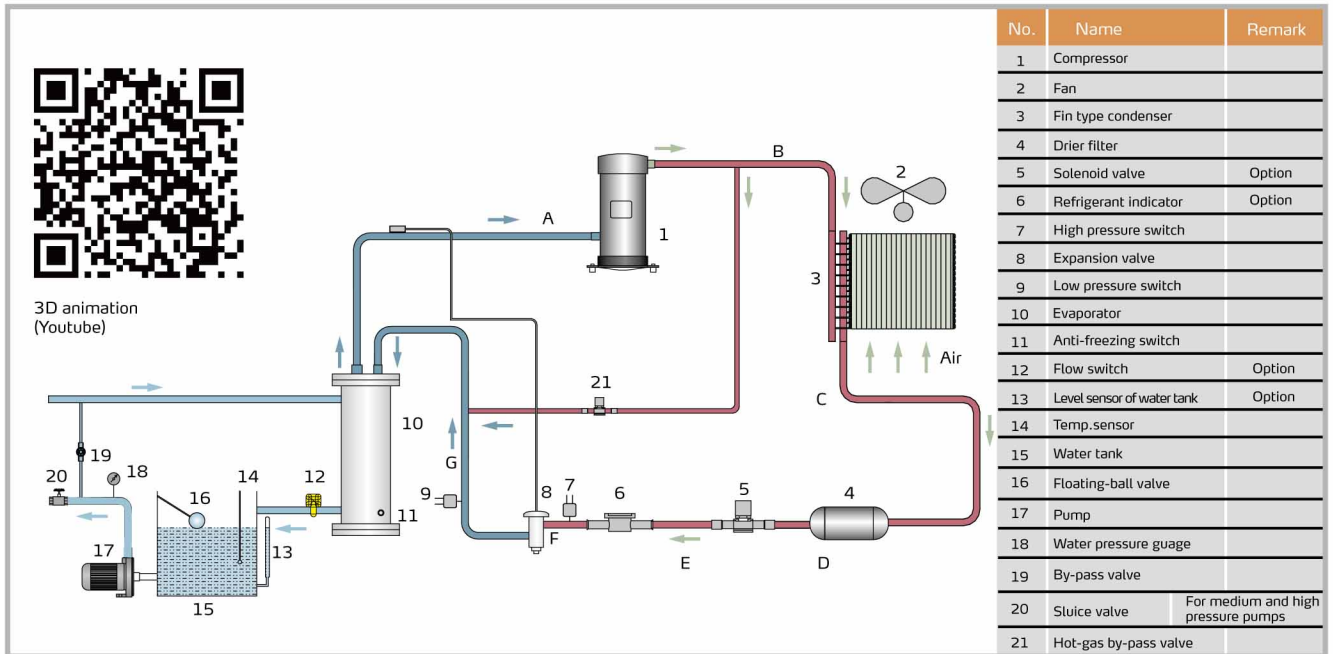
## ■ Options

- For models with a medium-pressure pump, add "P" at the end of the model code (suitable for models in Spec. 2), and for models optional with a high-pressure pump, add "HP" at the end of the model code.
- The level indicator in the water tank is optional to check whether the water level is within normal range and add "SG" at the end of the model code. (suitable for models in Spec. 2)
- The flow switch is optional to ensure that the unit is working under water flow, and add "FW" at the end of the model code (suitable for models in Spe.2);
- The level switch in the water tank is optional to check if the water level is normal, and add "LW" at the end of the model code (suitable for models in Spec.1);
- Liquid solenoid valve for pump down a refrigerant circuit to avoid liquid migration back to the compressor on the off-cycle, and it can potentially prevent liquid slug on startup. Add "LS" at the end of the model code.
- Optional refrigerant indicator for visual checking of refrigerant moisture content, and add "LSG" at the end of the model code.

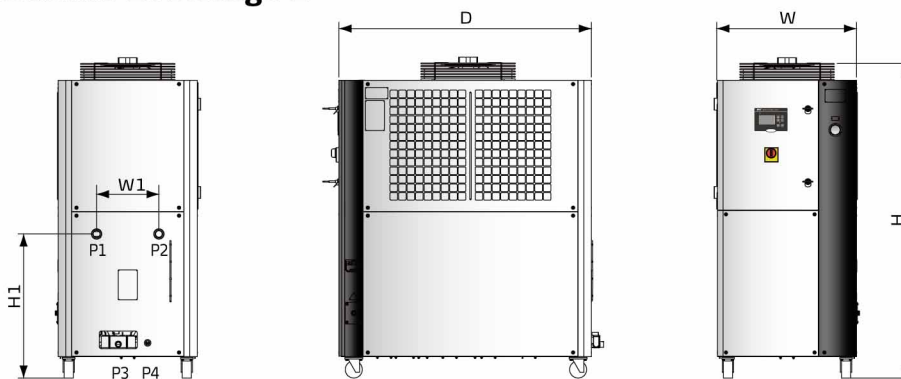
## Application

SIC-A-R2 series are applicable for cooling moulds to reduce the product moulding cycle; they are also available in the cooling of equipment to maintain a normal temperature. Besides, they are suitable for other industries with the need for water cooling.

## Working Principle



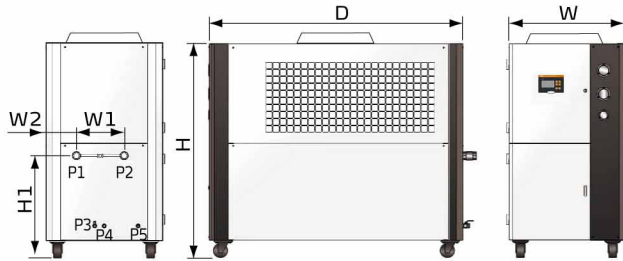
## Outline Drawings 1



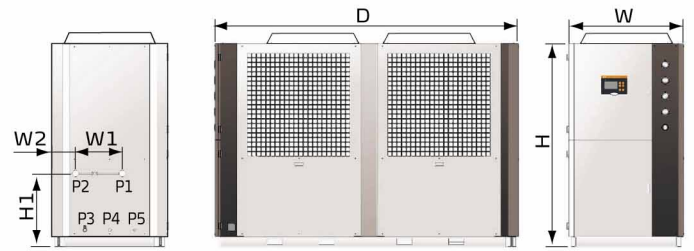
Model	H (mm)	H1 (mm)	W (mm)	W1 (mm)	D (mm)	P1 (inch) Cooling Water Inlet	P2 (inch) Cooling Water Outlet	P3 (inch) Water Tank Outlet Port	P4 (inch) Water Tank Overflow Port	Weight (kg)
SIC-15A-R2	1659	760	735	333	1333	Rc1.25	Rc1.25	Rc1/2	Rc1/2	350
SIC-25A-R2	1659	760	735	333	1333	Rc1.25	Rc1.25	Rc1/2	Rc1/2	366
SIC-33A-R2	1881	757	950	483	1210	Rc1.5	Rc1.5	Rc1/2	Rc1/2	421
SIC-49A-R2	1581	753	956	506	1512	Rc1.5	Rc1.5	Rc1/2	Rc1/2	520
SIC-66A-R2	1808	698	1053	435	2920	Rc2	Rc2	Rc1/2	Rc1/2	910
SIC-98A-R2	1868	701	1053	435	3102	Rc2	Rc2	Rc1/2	Rc1/2	1100

# SIC-A-R2 Series

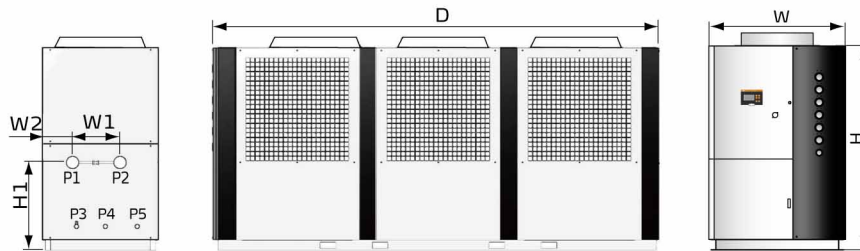
## Outline Drawings 2



SIC-7.5A-R2~SIC-38A-R2



SIC-48A-R2~SIC-75A-R2



SIC-100A-R2~SIC-114A-R2

Model	H (mm)	H1 (mm)	W (mm)	W1 (mm)	W2 (mm)	D (mm)	P1 (inch) Cooling Water Inlet	P2 (inch) Cooling Water Outlet	P3 (inch) Water Tank Outlet Port	P4 (inch) Water Tank Overflow Port	P5 (inch) Water Tank Refill Port	Weight (kg)
SIC-7.5A-R2	1200	625	685	277	200	1190	1	1	1/2	1/2	1/2	305
SIC-12A-R2	1490	640	735	360	174	1320	1	1	1/2	1/2	1/2	315
SIC-24A-R2	1440	640	735	300	204	1610	1 1/2	1 1/2	1/2	1/2	1/2	420
SIC-28A-R2	1560	726	905	390	223	1782	1 1/2	1 1/2	1/2	1/2	1/2	530
SIC-38A-R2	1560	726	905	390	223	1782	2	2	1/2	1/2	1/2	540
SIC-48A-R2	1942	755	1208	400	257	2922	2	2	1	1/2	1/2	775
SIC-58A-R2	1942	755	1208	400	257	2922	2	2	1	1/2	1/2	800
SIC-75A-R2	1942	755	1208	418	257	2922	2 1/2	2 1/2	1	1/2	1/2	840
SIC-100A-R2	1942	641	1300	800	243	3475	2 1/2	2 1/2	1	1	1	1400
SIC-114A-R2	1942	641	1300	900	255	3475	2 1/2	2 1/2	1	1	1	1600





## ■ Specifications 1(50Hz)

Item	Model Parameter	SIC-15A-R2	SIC-25A-R2	SIC-33A-R2	SIC-49A-R2	SIC-66A-R2	SIC-98A-R2
		Cooling Capacity <sup>1)</sup>	kW	15	25	33	49
Cooling Capacity <sup>2)</sup>	kW	13	21	30	44	56	87
Cooling Capacity <sup>3)</sup>	kW	12	19	27	40	52	77
Compressor	Type	Scroll					
	Power(kW)	3.8	6.18	8.5	12.35	8.5×2	12.35×2
Refrigerant	Filling volume(kg)	6.5	5.8	7.6	11	7.5×2	11×2
	Control Mode	Thermostatic expansion valve					
	Type	R410A					
Evaporator	Type	Plate style					
	Chilled water flow (L/min)	43	71.7	94.6	140.5	189.2	281
Condenser	Type	Fin style					
	Blower (kW)	0.42	0.42×2	0.7	0.7	0.7×2	0.7×2
Water Tank Capacity(L)		76	76	90	137	137	137
Pump <sup>4)</sup> (50Hz)	Power (kW)	0.75/1.1	1.1/1.1	1.5/2.2	1.5/2.2	2.4/3.0	3.0/4.0
	Working Pressure (kgf/cm <sup>2</sup> ) <sup>5)</sup>	3/4					
Total Power (kW) <sup>6)</sup>		4.64/4.99	8.12	10.7/11.4	14.55/15.25	21.4/22.4	29.1/30.1
Pipe Coupling (female thread) (inch)	Chilled Water Outlet	Rc1.25"		Rc1.5"		Rc2"	
	Chilled Water Inlet	Rc1.25"		Rc1.5"		Rc2"	
	Water Tank Drainage Port	Rc1/2"					
	Water Tank Overflow Port	Rc1/2"					
Protective Devices	Compressor	Overload relay					
	Pump	Overload relay					
	Cooling Water Circuit	High and low pressure switches/Anti-freeze switch					
	Water Circuit	Flow switch (Optional)/Water level switch (Optional)/By-pass valve					
Operation Noise dB(A)		78					
Use environment <sup>7)</sup>		Under the condition with good ventilation or ambient temperature not exceeding the service pressure					
Power(VAC) <sup>8)</sup>		3Φ, 400VAC, 50Hz					
Unit Conversion		1 kW = 860 kcal/hr		1 RT = 3,024 kcal/hr		10,000 Btu/hr = 2,520 kcal/hr	

### Notes:

- Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature of 15°C/59°F of chilled water under the environmental temperature of 35°C/95°F.
- Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 10°C/50°F of chilled water under the environmental temperature of 35°C/95°F.
- Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 7°C/44.6°F of chilled water under the environmental temperature of 35°C/95°F.
- Pump pressure of 3kgf/cm<sup>2</sup> is standard; customers can change for high-pressure pumps (use HP for short; e.g., SIC-and A-R2-HP), specific parameters in turn as shown above.
- The pressure value is the state when the pump inlet negative pressure is 0;
- Pump power, fan power, and compressor power are included in total power.
- The air-cooled water chiller applies to the environment temperature of 45°C or below.
- Special orders of machine voltage are available according to the request.

# SIC-A-R2 Series

## Specifications 1(60Hz)

Item	Parameter	Model	SIC-15A-R2	SIC-25A-R2	SIC-33A-R2	SIC-49A-R2	SIC-66A-R2	SIC-98A-R2
		Cooling Capacity <sup>1)</sup>	kW		18	29	38	56
Cooling Capacity <sup>2)</sup>	kW		15	24	35	50	65	93
Cooling Capacity <sup>3)</sup>	kW		14	22	31	46	60	88
Compressor	Type	Scroll						
	Power(kW)		4.56	7.42	10.2	14.82	10.2×2	14.82×2
Refrigerant	Filling volume(kg)		6.5	5.8	7.6	11	7.5×2	11×2
	Control Mode	Thermostatic expansion valve						
	Type	R410A						
Evaporator	Type	Plate style						
	Chilled water flow (L/min)		43	71.7	94.6	140.5	189.2	281
Condenser	Type	Fin style						
	Blower (kW)		0.5	0.5×2	1.2	1.2	1.2×2	1.2×2
Water Tank Capacity(L)			76	76	90	157	137	137
Pump <sup>4)</sup> (50Hz)	Power (kW)		1.1/1.5	1.1/1.5	1.5/2.2	1.5/2.2	2.2/3.0	4.0/5.5
	Working Pressure (kgf/cm <sup>2</sup> ) <sup>5)</sup>	3/4						
Total Power (kW) <sup>6)</sup>			6.16/6.56	9.52/9.92	12.9/13.6	18.22/19.02	25/25.8	36.04/37.54
Pipe Coupling (female thread) (inch)	Chilled Water Outlet		Rc1.25"		Rc1.5"		Rc2"	
	Chilled Water Inlet		Rc1.25"		Rc1.5"		Rc2"	
	Water Tank Drainage Port		Rc1/2"					
	Water Tank Overflow Port		Rc1/2"					
Protective Devices	Compressor	Overload relay						
	Pump	Overload relay						
	Cooling Water Circuit	High and low pressure switches/Anti-freeze switch						
	Water Circuit	Flow switch Optional/Water level switch (Optional)/By-pass valve						
Operation Noise dB(A)		78						
Use environment <sup>7)</sup>		Under the condition with good ventilation or ambient temperature not exceeding the service pressure						
Power(VAC) <sup>8)</sup>		3Φ, 230/400/460/575VAC, 60Hz						
Unit Conversion		1 kW = 860 kcal/hr    1 RT = 3,024 kcal/hr    10,000 Btu/hr = 2,520 kcal/hr						

### Notes:

- Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature of 15°C/59°F of chilled water under the environmental temperature of 35°C/95°F.
- Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 10°C/50°F of chilled water under the environmental temperature of 35°C/95°F.
- Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 7°C/44.6°F of chilled water under the environmental temperature of 35°C/95°F.
- Pump pressure of 3kgf/cm<sup>2</sup> is standard; customers can change for high-pressure pumps (use HP for short; e.g., SIC-and A-R2-HP), specific parameters in turn as shown above.
- The pressure value is the state when the pump inlet negative pressure is 0;
- Pump power, fan power, and compressor power are included in total power.
- The air-cooled water chiller applies to the environment temperature of 45°C or below.
- Special orders of machine voltage are available according to the request.



## CFC-free Refrigerant Air-cooled Water Chiller

SIC-12A-R2



Refer carefully to the manual before operation.

# SIC-A-R2 Series

## Specifications 2(50Hz)

Item	Model SIC-Parameter	7.5A-R2	12A-R2	24A-R2	28A-R2	38A-R2	48A-R2	58A-R2	75A-R2	100A-R2	114A-R2
		Cooling <sup>1)</sup> Capacity	kW	7.5	12	24	28	38	48	58	75
Cooling <sup>2)</sup> Capacity	kW	9.5	14	32	38	45	64	76	90	121	135
Compressor	Type	Scroll									
	Power(kW)	2.9	4.2	8.72	9.36	12.25	17.44	18.72	24.86	33.58	37.29
Refrigerant	Filling volume (kg)	3.5	5.0	5.5	9.0	12.5	7.5×2	8×2	8×2	7.8×2+6.8	8.7×3
	Control Mode	Thermostatic expansion valve									
	Type	R410A									
Evaporator	Type	Plate style									
	Chilled water flow (L/min)	21.5	34.4	68.8	80.3	108.9	137.6	166.3	215.0	286.7	326.8
Condenser	Type	Fin style									
	Blower (kW)	0.19	0.55	2×0.385	2×0.6	2×0.78	2×1.03	2×0.85	2×1.92	2×2.2+1.5	3×2.2
Water Tank	Capacity(L)	30		65	80		186		230	316	
Pump <sup>4)</sup>	Power (kW)	0.75/0.75/1.1		1.1/1.1/1.1	1.1 / 1.5 / 2.2		- / 1.8 / 2.4		- / 3.0 / 4.0		- / 4.0 / 5.5
	Working Pressure (kgf/cm <sup>2</sup> ) <sup>3)</sup>	Low pressure≥2, Medium pressure ≥3, High pressure≥4					Medium pressure ≥3, High pressure≥4				
Total Power (kW) <sup>5)</sup>		3.8/3.8/4.2	5.5/5.5/5.9	10.6/10.6/10.6	11.7/12/12.8	14.9/15.3/16	-/21.3/21.9	-/22.2/22.8	-/31.7/32.7	-/42.5/43.5	-/47.9/49.4
Pipe Coupling (female thread)	Chilled Water Outlet	1"G		1 <sup>1</sup> / <sub>2</sub> "G			2"G			2 <sup>1</sup> / <sub>2</sub> "G	
	Chilled Water Inlet	1"G		1 <sup>1</sup> / <sub>2</sub> "G			2"G			2 <sup>1</sup> / <sub>2</sub> "G	
	Water Tank Drainage Port	1/2"G					1"G				
	Water Tank Overflow Port	1/2"G							1"G		
Protective Devices	Compressor	Overload relay									
	Pump	Overload relay									
	Cooling Water Circuit	High and low pressure switches/Anti-freeze switch									
	Water Circuit	Flow switch Optional/Water level switch (Optional)/By-pass valve									
Operation Noise dB(A)		78	75	78	81	86	84	82	86	90	90
Power(VAC) <sup>6)</sup>		3 φ, 400VAC, 50Hz									
Unit Conversion		1 kW = 860 kcal/hr    1 RT = 3,024 kcal/hr    10,000 Btu/hr = 2,520 kcal/hr									

Notes: 1) Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 7°C of chilled water under the environmental temperature of 35°C.

2) Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 15°C of chilled water under the environmental temperature of 25°C.

3) It is the working pressure of water pump when negative pressure of inlet water is 0.

4) Low pressure pump is standard, customers can change for medium pressure pumps (use P for short; e.g.: SIC-and A-R2-P) or high pressure pumps (use HP for short; e.g.: SIC-and A-R2-HP), specific parameters in turn as shown above.

5) Pump power is included in total power.

6) Special orders of machine voltage can be acceptable according to customers's request.

7) The air-cooled water chiller is applicable to the conditions under the environment temperature of 43°C.





## Specifications 2 (60Hz)

Item	Model SIC-Parameter	12A-R2	24A-R2	28A-R2	38A-R2	48A-R2	58A-R2	75A-R2	100A-R2	114A-R2	
		Cooling <sup>1)</sup> Capacity	kW	15	30	35.5	45	60	70	90	122
Cooling <sup>2)</sup> Capacity	kW	17.5	37.5	41	48	75	82	96	133.5	144	
Compressor	Type	Scroll									
	Power(kW)	5.28	10.2	11.73	14.8	20.4	23.76	29.6	39.8	44.4	
Refrigerant	Filling Volume(kg)	5.0	5.5	9.0	12.5	7.5×2	8×2		7.8×2+6.8	8.7×3	
	Control Mode	Thermostatic expansion valve									
	Type	R410A									
Evaporator	Type	Plate style							Tube-in-shell style		
	Type	Fin style									
Condenser	Blower (kW)	0.91	2×0.57	2×0.91	2×1.1	2×2.2		2×2.2	2×2.2+2.2	3×2.2	
	Water Tank Capacity(L)	50	85	150		180	200	270	400		
Pump <sup>4)</sup>	Power (kW)	0.75/1.5	1.1/1.5	2.2/3.0		3.0/3.0		5.5/5.5			
	Pump Flow (L/min)	43.1	86.2	102	129.3	172.3	201.1	258.5	350.4	390.7	
	Working Pressure (kgf/cm <sup>2</sup> ) <sup>3)</sup>	-/3.1/5.1	-/3.0/4.2	-/2.7/4.1	-/2.5/3.9	-/4.5/5.6	-/3.9/4.8	-/2.8/2.8	-/4.5/4.5	-/4.1/4.1	
Total Power (kW) <sup>5)</sup>		-/6.9/7.6	-/12.4/12.8	-/15.7/16.5	-/19.2/20	27.8	31.1	39.5	51.9	56.5	
Pipe Coupling (female thread)	Chilled Water Outlet	1"G	1 1/2"G		2"G			2.5"G			
	Chilled Water Inlet	1"G	1 1/2"G		2"G			2.5"G			
	Water Tank Drainage Port	1/2"G				1"G					
	Water Tank Overflow Port	1/2"G							1"G		
Protective Devices	Compressor	Overload relay									
	Pump	Overload relay									
	Cooling Water Circuit	High and low pressure switches/Anti-freeze switch									
	Water Circuit	Flow switch/Water level switch (Optional)/By-pass valve									
Operation Noise dB(A)		75	78	81	86	84	82	86	90	90	
Power(VAC) <sup>6)</sup>		3Φ, 230/400/460/575VAC, 60Hz									
Unit Conversion		1 kW = 860 kcal/hr			1 RT = 3,024 kcal/hr		10,000 Btu/hr = 2,520 kcal/hr				

- Notes: 1) Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 7°C of chilled water under the environmental temperature of 35°C.  
2) Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 15°C of chilled water under the environmental temperature of 25°C  
3) It is the working pressure of water pump when negative pressure of inlet water is 0.  
4) Low pressure pump is standard, customers can change for medium pressure pumps (use P for short; e.g.: SIC-and A-R2-P) or high pressure pumps (use HP for short; e.g.: SIC-and A-R2-HP), specific parameters in turn as shown above.  
5) Pump power is included in total power.  
6) Special orders of machine voltage can be acceptable according to customers's request.  
7) The air-cooled water chiller is applicable to the conditions under the environment temperature of 43°C.

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