COOLBLADE

Modular DX-M/CW-M Series

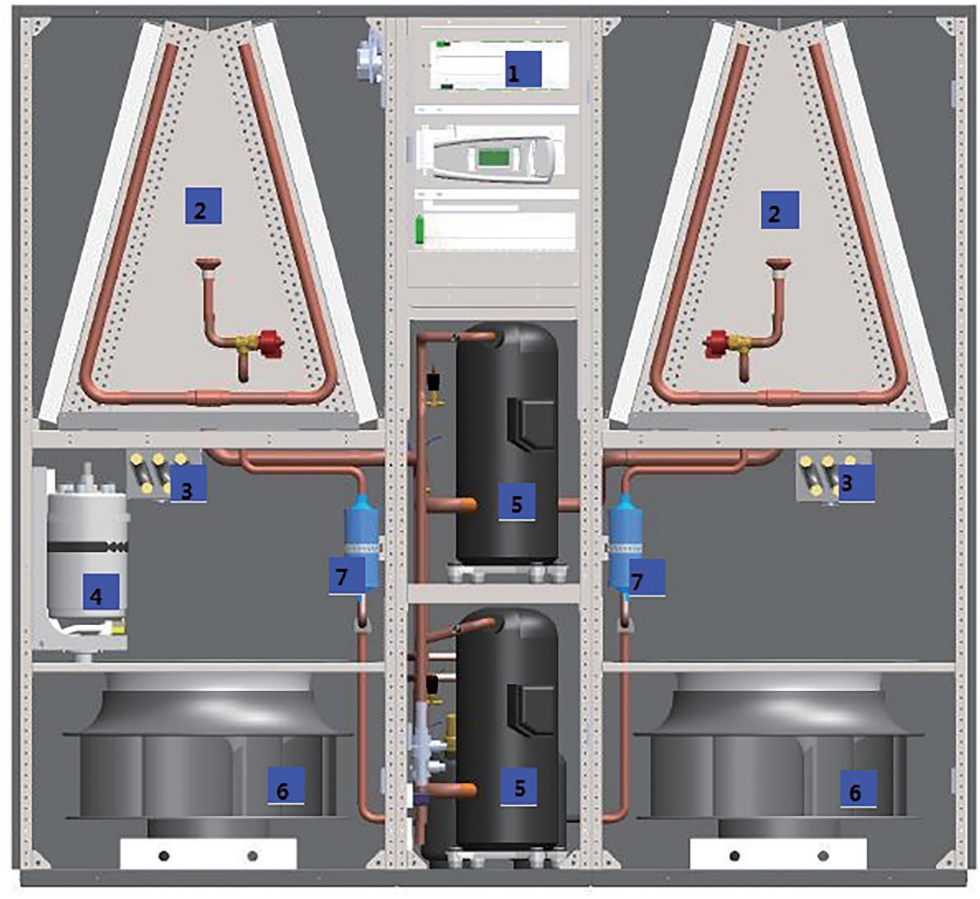
CLIMAVENETA

Modular DX-M/CW-M Series

PRODUCT DESCRIPTION

CLIMAVENETA computer room air conditioner COOLBLADE DX-M and CW-M series are suitable for communication rooms, switch rooms, data centers, museums, laboratory, etc. COOLBLADE DX-M and CW-M series strictly follow "Unitary air-conditioners for computer and data prcocessing room"(GB/T19413-2010) to design. COOLBLADE DX-M and CW-M series units are modular in design which can be combined according to user needs. The units are with flexible layout and easy to transport.

SYSTEM INTRODUCTION



1. MAIN CONTROL BOARD
2. V TYPE EVAPORATOR
3. ELECTRIC HEATER
4. HUMIDIFIER
5. HIGH EFFICIENCY SCROLL COMPRESSOR
6. EC FAN
7. DRY FILTER

UNIT FEATURES

-Galvanized sheet metal structure and powder coating layer facing panel

-Sound insulation is applied to the panel to reduce noise

-Standard high efficiency scroll compressor

-Standard high efficiency EC fan

-Standard filter G4

-Optional sunken EC fan design

-New modular design for increased air volume

COOLBLADE has an intelligent electronic control center that provides intelligent PID control of all operational and environmental parameters of the site. The COOLBLADE electronic unit is open and can be parameterized according to specific customer requirements, especially for customer-specified environments.

ELECTRONICS

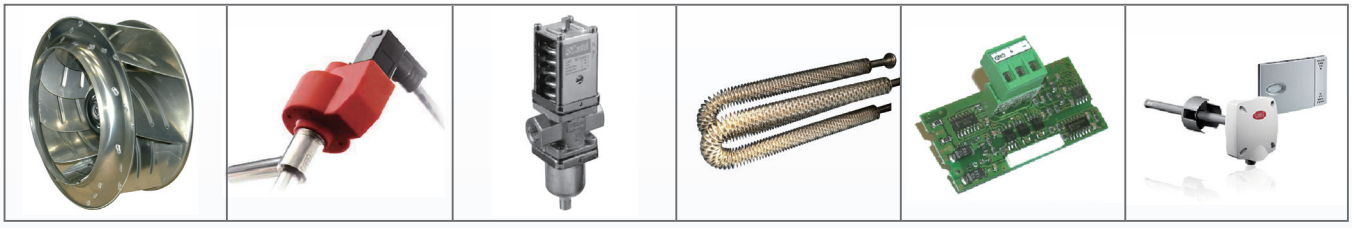
STANDARD FUNCTION

-Semi-graphic display 132x64 pixel
-Programmable software
-ICONS Graphic Display
-General alarm
-Automatic reset after blackout
-Compressor FIFO management
-Integral LAN system
-Standby management
-Automatic rotation
-Serious alarms
-Clock card
-Emergency function

MAIN OPTION

-Serial cards for BMS interconnection
-Fire-smoke alarms
-Flooding alarm
-Electronic thermostat control
-SMS alarm

OPTIONS AND MAIN ACCESSORIES



STANDARD

Structure

- Variable frequency EC fan
- High efficiency Copeland scroll compressor
- High and low pressure switch
- G4 standard filter configuration
- R-410A refrigerant
- Electrode humidifier
- electric heater
-Stepless speed regulation of outdoor fan

Electronic unit

- Through Lan connection, realize backup management function
- Delay start

OPITION

Structure

- Modbus, BACNET, SNMP communication card
- DC inverter compressor
- Water leak alarm
- Hood
- Electronic expansion valve

Electronic unit

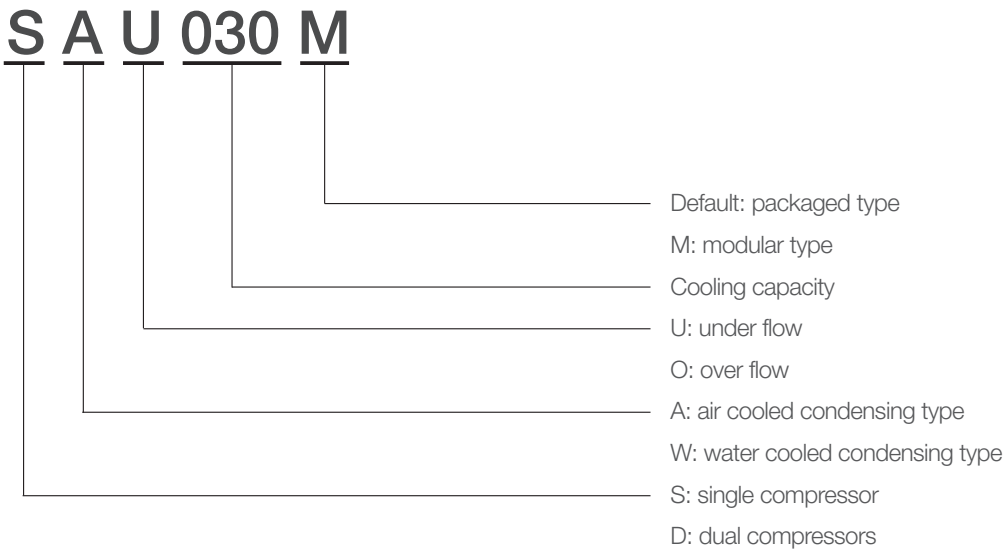
- Serial card for building management system interface connection
- 7 inch touch screen touch‘

Modular DX-M/CW-M Series

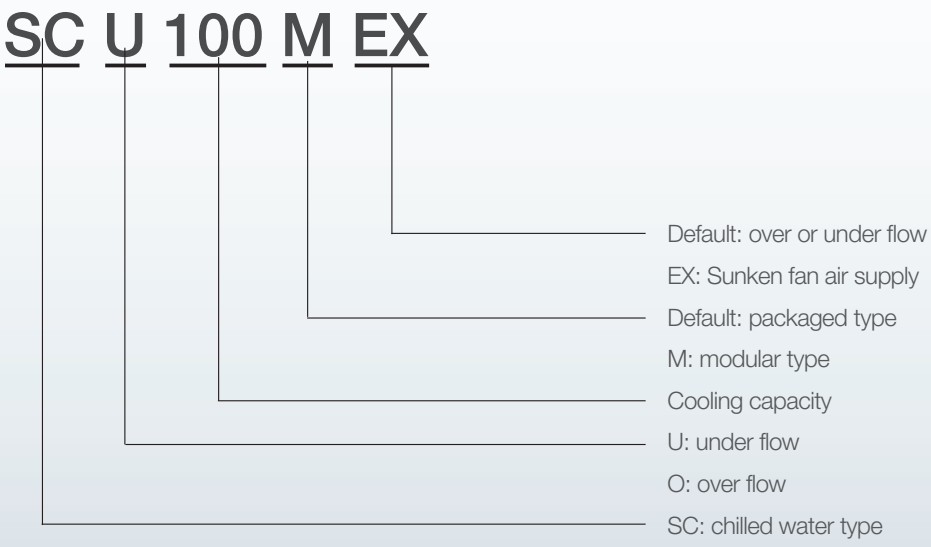
MODEL NOMENCLATURE

CLIMAVENETA COOLBLADE products include several series depending on cooling type: direct expansion air cooled, direct expansion water cooled, single coil chilled water, dual coil chilled water, dual fluid air cooled, dual fluid water cooled and water cooled with free cooling.

Direct Expansion Unit:



Chilled Water Unit:



DX-M

Model	SAU/O-M					DAU/O-M							
	025	030	035	040	045	035	045	050	060	070	080	090	100
Power supply V/Ph/Hz	380/3N/50												
The refrigerant	R410A												
Cooling Performance													
Total cooling capacity(1) kW	25.1	30.1	35.1	40.5	45.0	35.0	46.9	50.3	60.0	70.0	80.9	90.1	103.0
Sensible cooling capacity(1) kW	24.6	29.2	34.7	37.8	44.8	34.0	45.3	47.5	59.0	68.6	75.7	87.1	95.4
Sensible heat ratio SHR(1)	0.98	0.97	0.99	0.93	0.99	0.97	0.97	0.94	0.98	0.98	0.94	0.97	0.93
Compressor													
Number of compressors	1	1	1	1	1	2	2	2	2	2	2	2	2
Compressor power input (1) kW	6.00	6.98	8.02	9.19	10.20	8.10	11.20	12.10	13.30	16.00	18.40	20.40	24.00
Fan													
Air volume m^3/h	7870	9050	10500	10500	14200	10500	13500	14050	19400	20500	21000	27300	27500
Number of EC fans	1	1	1	1	1	1	1	1	2	2	2	2	2
EC fan power kW	1.63	1.94	2.64	2.40	3.57	2.65	3.10	3.43	4.66	4.93	4.80	6.39	6.47
External static pressure Pa	20~350												
Noise (2) dB(A)	52	53	56	55	62	56	61	62	57	57	57	63	63
Humidifier													
Humidification capacity kg/h	5	5	5	5	5	5	5	5	8	8	8	8	8
Humidifier power kW	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	6	6	6	6	6
Electric Heating													
Series	3	3	3	3	3	3	3	3	3	3	3	3	3
Heater power kW	9	9	9	9	9	9	9	9	18	18	18	18	18
Interface specifications reserved for the unit													
Liquid pipe mm	16	16	16	16	19	16	16	16	16	16	16	19	19
Trachea mm	16	19	22	22	22	19	19	19	19	22	22	22	22
The outdoor unit													
Outdoor unit model	C33	C42	C49	C58	C58	C24*2	C33*2	C33*2	C42*2	C49*2	C58*2	C58*2	C74*2
Outdoor unit powe kW	0.46	1.18	1.18	1.18	1.18	1.18	0.92	0.92	2.36	2.36	2.36	2.36	3.54
Whole machine													
Total power kW	8.1	10.1	11.8	12.8	15.0	11.9	15.2	16.5	20.3	23.3	25.6	29.2	34.0
Energy efficiency rating	2	2	2	1	2	2	1	2	2	2	1	1	1

(1)- Working conditions: return air 24°C, relative humidity 50%, external residual pressure 20Pa
(2)- Measured at 2 meters in front of the unit, 1.5 meters high
(3)- The electric heating capacity and humidification capacity in the table are standard configuration. If the customer needs to increase the heating or humidification capacity of the unit, please consult the Climaveneta factory
(4)- The unit design meets GB19413
(5)- If the project requires units with other energy efficiency levels, please consult the factory

Dimensions/Weight

Model	SAO/SAU-M					DAO/DAU-M							
	025	030	035	040	045	035	045	050	060	070	080	090	100
Length mm	890	890	890	890	1330	1330	1330	1330	1740	1740	1740	2180	2180
Width mm	990	990	990	990	990	990	990	990	990	990	990	990	990
Height mm	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990
Weight kg	315	320	325	330	400	420	430	435	640	650	660	690	700

Modular DX-M/CW-M Series

CW-M

Model		SCU/O-M (EX)															
		035	045	055	065	070	080	090	100	110	120	130	140	150	160	180	200
Power Supply V/Ph/Hz		380/3N/50															
Cooling Performance																	
Cooling Capacity(1)	kW	36.1	48.1	53.4	63.1	72.4	79.2	89.4	101.0	108.0	117.0	126.0	140.0	152.0	161.0	178.0	192.0
Sensible Cooling Capacity(1)	kW	35.1	42.2	46.6	55.0	70.3	78.0	79.5	88.7	94.3	98.8	109.0	124.0	134.0	146.0	150.0	165.0
SHR(1)		0.97	0.88	0.87	0.87	0.97	0.98	0.89	0.88	0.87	0.84	0.87	0.89	0.88	0.91	0.84	0.86
Water System																	
Water Flow(1)	m^3/h	6.23	8.28	9.18	10.87	12.46	13.64	15.41	17.35	18.54	20.12	21.78	24.08	26.14	27.72	30.60	33.08
EC Fan																	
Air Flow	m^3/h	11220	11025	12800	13500	22550	25800	23500	23500	26000	23600	26200	35250	35500	39900	36000	40000
Qty.		1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3
Power Input(over/under air flow)	kW	1.47	1.53	2.53	2.99	2.97	4.91	3.43	3.83	5.28	4.05	5.71	5.24	5.87	8.13	6.35	8.90
Power Input(sunken fan air flow)	kW	1.36	1.42	2.30	2.71	2.76	4.44	3.16	3.52	4.77	3.76	5.19	4.82	5.39	7.29	5.90	8.19
External Static Pressure	Pa	20~350															
Humidifier																	
Capacity	kg/h	5	5	5	5	8	8	8	8	8	8	8	10	10	10	10	10
Power Input	kW	3.75	3.75	3.75	3.75	6	6	6	6	6	6	6	7.5	7.5	7.5	7.5	7.5
Electric Heating																	
Step		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Capacity	kW	9.0	9.0	9.0	9.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	27.0	27.0	27.0	27.0	27.0
Unit Reserve Water Inlet/Outlet Pipe Connection Size																	
Connection Size		F 1 1/4"		F 1 1/2"		DN50							DN65				

(1)- Working condition: return air 24 ℃, relative humidity 50%, chilled water inlet and outlet water temperature 7 ℃ / 12 ℃, external pressure 20Pa.
(2)- The humidifying capacity and heating capacity showed in the table is standard data, if the customer needs to increase the heating or humidifying capacity of the unit, please contact CLIMAVENETA Factory.

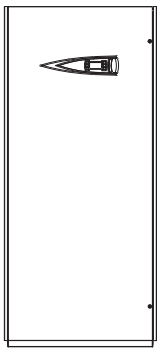
Dimensions/Weight

Model		SCU/O-M (EX)															
		035	045	055	065	070	080	090	100	110	120	130	140	150	160	180	200
Length	mm	890	890	890	890	1740	1740	1740	1740	1740	1740	1740	2590	2590	2590	2590	2590
Width	mm	990	990	990	990	990	990	990	990	990	990	990	990	990	990	990	990
Height	mm	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990
Weight	kg	326	352	356	386	430	434	490	492	494	550	554	638	640	642	730	732

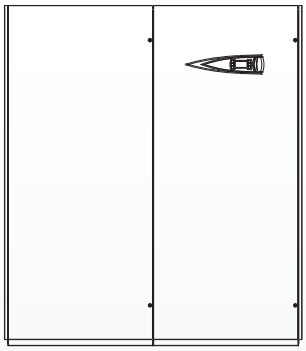
MODULAR COMBINATION TECHNICAL PARAMETERS

CLIMAVENETA Modular unit can be assembled on site to make installation and transportation easier especially in limited space.

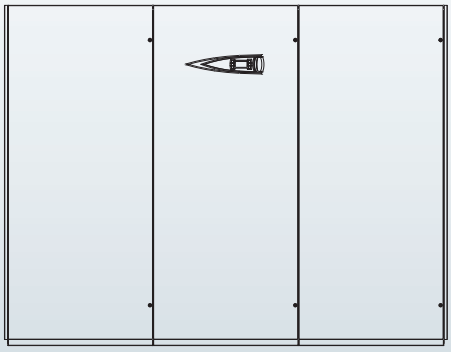
Chilled water modular combination technical parameters



Model	SCU/O-M(EX)			
	035	045	055	065
Modules Qty.	Single module			
Dimensions	890*990*1990			



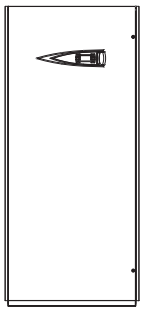
Model	SCU/O-M(EX)						
	070	080	090	100	110	120	130
Modules Qty.	Single module*2						
Dimensions	1740*990*1990						



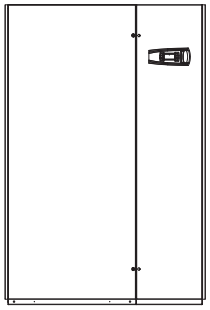
Model	SCU/O-M(EX)				
	140	150	160	180	200
Modules Qty.	Single module*3				
Dimensions	2590*990*1990				

Modular DX-M/CW-M Series

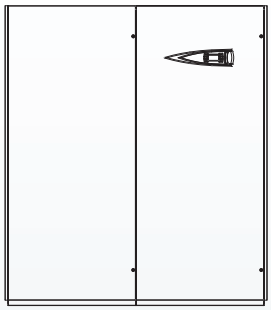
Air cooled modular combination technical parameters



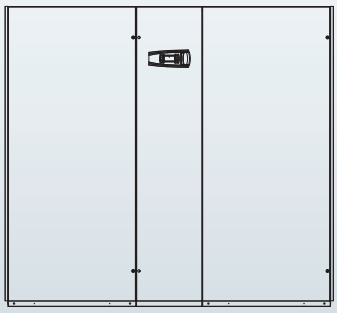
Model	SAO/SAU-M			
	025	030	035	040
Modules Qty.	Single module			
Dimensions	890*990*1990			



Model	SAO/SAU-M	DAO/DAU-M		
	045	035	045	050
Modules Qty.	Single module + control cabinet			
Dimensions	1330*990*1990			

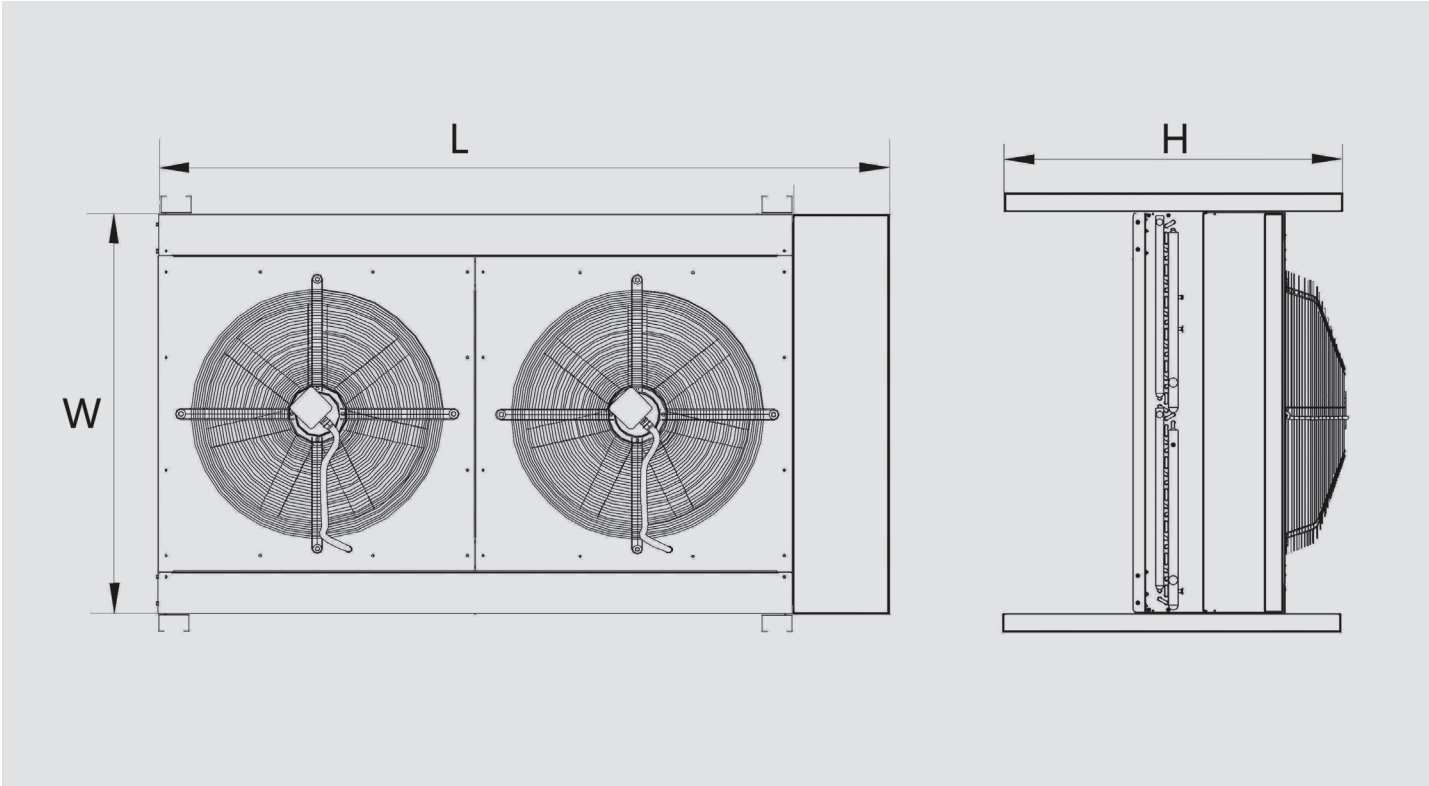


Model	DAO/DAU-M		
	060	070	080
Modules Qty.	Single module *2		
Dimensions	1740*990*1990		



Model	DAO/DAU-M	
	090	100
Modules Qty.	Single module *2+ control cabinet	
Dimensions	2180*990*1990	

Air-cooled unit outdoor condenser



Protective Coating
Stepless fan speed regulation control

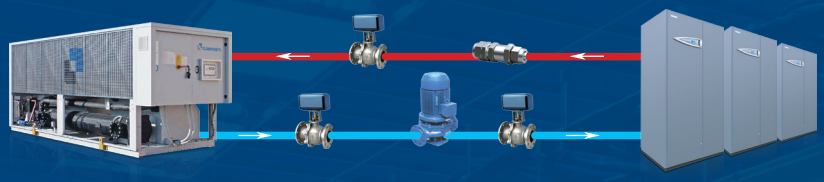
Air-cooled unit outdoor condenser

Model		C17	C24	C29	C33	C42	C49	C58	C74
Fan Qty.		1	1	1	2	2	2	2	3
Power Supply		220V/1/50							
FLA	A	1.3	3.0	3.0	2.5	6.0	6.0	6.0	9.0
L	mm	1115	1330		2005		2427		3488
W	mm	905	1108	1108	905	1108	1108	1108	1108
H	mm	830	830	830	830	830	830	830	830
Weight	kg	50	58	70	80	96	102	112	180

AIR-COOLED FREE COOLING AIR CONDITIONING SYSTEM

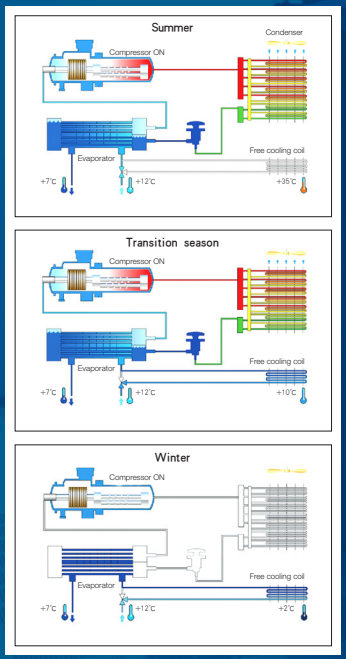
The unit comes with a dry cooler and a water distribution system. In the transitional season and winter, the air-conditioning water can be automatically cooling and cool down by the low-temperature air, and the compressor is cooled by the insufficient part. In this transitional season and winter, compressor refrigeration can be reduced or not, effectively reducing the energy consumption of electric refrigeration. The annual electricity saving can be as high as 20-60% according to different regions.

System Schematic



System Operation Characteristics

The system can automatically adjust the operating state of the unit according to the change of the outdoor ambient temperature, and realize the intelligent switching of the three operating modes, so as to make full use of the outdoor natural cold source to make the system more energy-saving.



Summer operating conditions: conventional mechanical cooling

Transition season operating conditions: combined cooling

When the outdoor ambient temperature is lower than the return water temperature by 2 °C, the free cooling function is turned on, and the insufficient portion is compensated by the compressor cooling.

Winter operating conditions: Fully FREE COOLING

Fully FREE COOLING when the outdoor ambient temperature is lower than the unit supply temperature by 5~8°C.

Project Reference

China Construction Bank Head Office (Taoxiang Lake)

Qingdao Union Data Center

China Mobile Beijing International Information Port

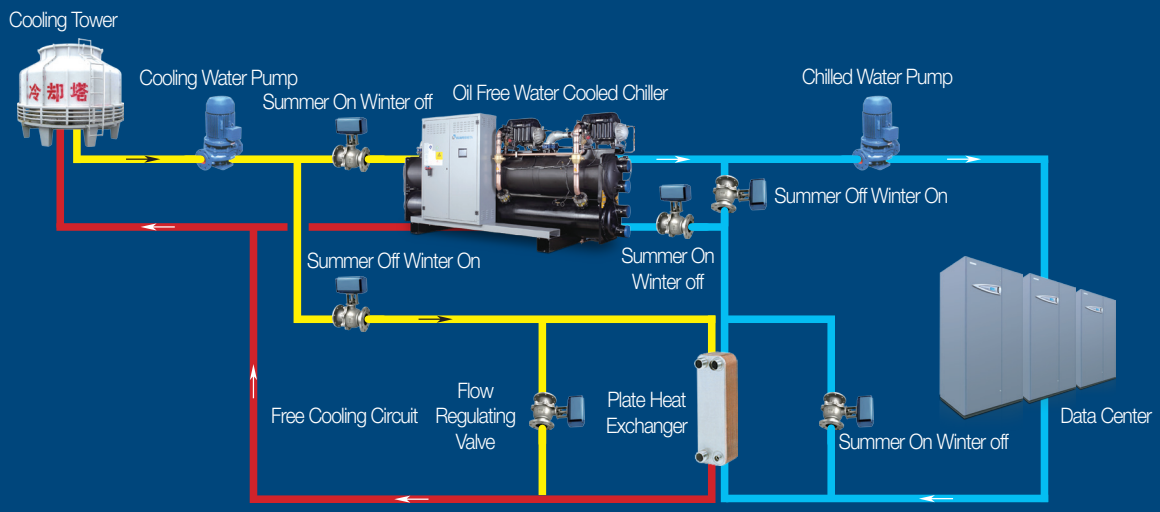
VARIABLE FREQUENCY OIL FREE CENTRIFUGAL COOLING SYSTEM

Oil free centrifugal compressor represents the trend of today's most advanced compressor technology.

Oil free centrifugal chiller adopts magnetic suspension bearing oil-free two-stage centrifugal compressor, variable frequency control, oil-free full liquid heat exchanger, which not only ensures the efficiency at full load, but also ensures high efficiency and energy saving operation under partial load, IPLV is up to The combined partial load efficiency of 10. And there is no surge, ultra-low mute, no peak current is generated, and there is no starting shock to the grid.

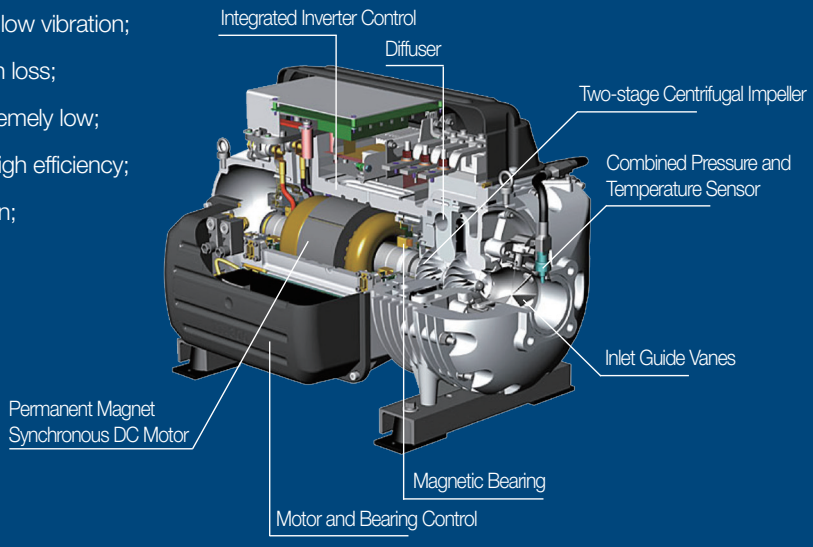
It is especially suitable for data center construction that is put into use step by step.

System schematic



System Features

- Two-stage centrifugal compression to improve compression efficiency;
- Magnetic suspension bearings, extremely low vibration;
- No speed increasing gear, no transmission loss;
- No lubrication required, friction loss is extremely low;
- Permanent magnet synchronous motor, high efficiency;
- Variable frequency drive / soft start function;
- Excellent partial load performance;
-Noise about running is extremely low;
- The compressor is light in weight.



Project Reference

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B603 CCUVN/04-07-2024 EN-VN

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