

Envicool · Data Center and Equipment Thermal Expert

Data Center Cooling

- CyberMate V series inverter CRAC
- XRow series row-based cooling unit
- X Rack series micro-modularized solution
- XSpace series modularized solution
- HumidMate series data center constant humidity solution
- XFlex series IEC solution
- iFreecooling series economization system
- XStorm series fan wall solution

Industrial Cooling

- EIA series air conditioner
- EIB series air conditioner
- EIX series air/water heat exchanger
- EIW series water cooler

Energy Storage & Electricity Cooling

- MC series split air conditioner
- MC series door mounted integrated air conditioner
- MC series wall mounted integrated air conditioner
- MC series floor standing integrated air conditioner
- MC series corner standing integrated air conditioner
- MX series heat exchanger
- EMW series air cooled chiller

Telecom Cabinet Cooling

- DC series air conditioner
- EC series air conditioner
- HC series combo air conditioner
- EF series inverter air conditioner
- EX series heat exchanger

CyberMate Precision Cooling Unit for Data Center



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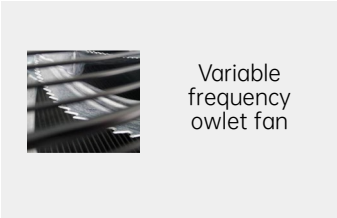
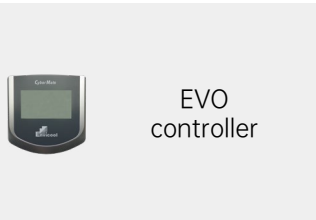
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Configuration Nomenclature for CyberMate

No.	Item	Code	Description
1	Series Name	CyberMate	CyberMate CRAC
2	Series Code	6	DX, single circuit
		8	DX, dual circuit
		9	CW
3	Cooling Capacity	0~9	DX: 6-120kW CW: 40-200kW
		0~9	
		0~9	
4	Function	B	Cooling
		C	Cooling, humidifying
		H	Cooling, reheating
		P	Cooling, reheating, humidifying
5	Fan Type	E	EC fan
		I	AC fan
6	Air Discharge	F	Downflow
		S	Downflow, fan under floor
		U	Upflow, plenum
		D	Upflow, duct
7	Power Supply	1	380V 3Ph 50Hz
		2	220V 1Ph 50Hz
		3	380V 3Ph 60Hz
		4	208V 3Ph 60Hz
		5	Other power input
8	System Type	A	Air cooled
		W	Water cooled
		O	iFreecooling
		G	Glycol cooled
		C	Chilled water: single coil
		T	Chilled water: dual coil
		D	Dual cool: chilled water + air cooled
		R	Dual cool: glycol + free cooling
9	Compressor Type	V	Variable speed
		I	Fixed speed

Remark: Please contact Envicool for dual cooling or other customized designs.



CyberMate Series (DX: 30kW - 120kW)

CyberMate V Series Inverter CRAC Features

Full Variable Frequency Design

- DC variable frequency, dynamic cooling, reducing the OPEX during the full life cycle
- DC variable frequency compressor, soft start, reducing the impact on power grid system
- High efficient EC fan, energy saving up to 20%-30%
- Electronic expansion valve with wide adjustment range to achieve precision control
- High return air temperature design, and energy efficiency is improved by 20%-30%

Modular Design

- Modular design, flexible installation
- Disassembly without cutting copper pipe
- Electric control box with pull-out design, easy to maintain
- Extensive V/A-type coil design, compact and space saving

Low Load Dehumidification

- Equipped with double electronic expansion valves for each circuit
- Dehumidification with variable coil capacity, low power consumption
- Excellent performance with stable dehumidification under 10% load

Flexible Configuration

- Optional centralized condenser, saving space up to 60%
- Standard low noise high chimney fan, reducing noise at least 5dB(A)
- Modular assembly
- Optional outdoor spray system
- Optional economized refrigerant pump, making full use of free cooling under low ambient temperature

EVO Intelligent Control System

EVO Display System

- 7-inch, 800×480 dot matrix true color touch screen
- Temperature and humidity curves
- Graphical display of device running status
- Alarm information display, easy for operation and maintenance

EVO Team Work System

- Team work 32 units, connecting network easily
- Optional zone of temperature control
- Shared temperature and humidity setting
- Team work modes: demand management, trend management, rotation and breakdown shift automatically, realizing adaptive energy saving

EVO Control & Storage System

- The running data will be stored regularly, and the history data can be maintained. The relevant data can be read directly through the computer
- Multiple history alarms, expanded storage of history alarms is provided
- According to the cooling requirements of the rack, select the control mode, including supply and return air temperature control, pressure difference control, supply and return air humidity control, temperature difference control, etc., to achieve data center precise temperature & humidity control and high energy efficiency
- Optional connection of multiple temperature and humidity sensors, multi-point detection

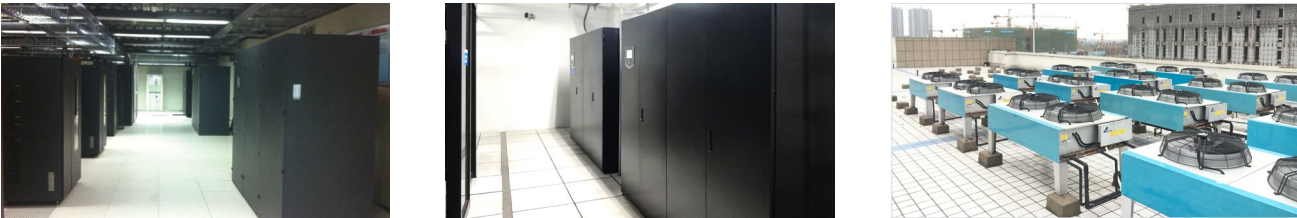
EVO Intelligent Monitoring System

- Optional ethernet interface, support TCP/IP, SNMP protocol
- Optional environment control cloud remote monitoring module, read unit info. remotely through web pages,
- WeChat official account and APP
- Support upgrading air conditioner's software and importing parameter remotely

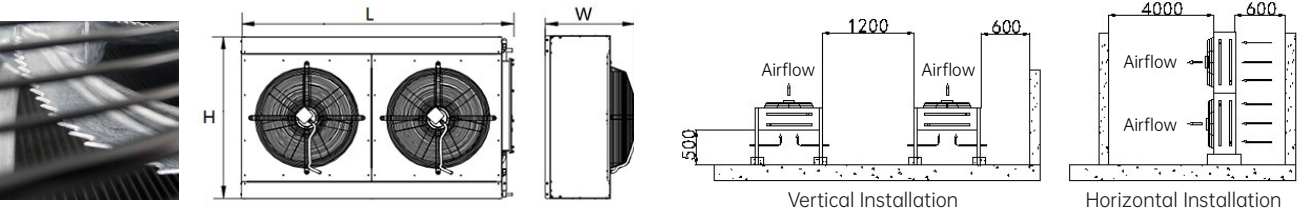
Data Sheet of CyberMate V Inverter DX Unit (30kW - 120kW)

Indoor Unit Model	6030	6040	8050	8060	8070	8080	8090	8100	8120
Power Supply	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz
Return Air Condition	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH
Performance Technical Data									
Total Cooling Capacity (kW)	30.3	38.9	53.1	61.4	71.3	78.2	89.2	97.6	120.1
Sensible Cooling Capacity (kW)	27.3	35.0	47.8	55.3	64.2	70.4	80.3	88.3	108.1
Sensible Heat Ratio (%)	90.1%	90.0%	90.0%	90.1%	90.0%	90.0%	90.0%	90.5%	90.0%
Max. Power Consumption (kW)	23.6	27.6	36	41.1	50.4	47.3	51.1	53	65.6
Full Load Amps (A)	39.2	44.3	60.2	69.3	72.2	76.5	87.7	91.2	109.4
Quantity of Compressor	1	1	2	2	2	2	2	2	2
Rated Power Consumption of Compressor (kW)	9.78	12.78	15.16	19.56	21.22	25.56	30.3	32.82	35.94
Indoor EC Fan Technical Data									
Airflow (m³/h)	9,000	10,500	14,000	17,000	18,000	21,500	23,000	25,000	32,000
Quantity of EC Fan	1	1	2	2	2	2	2	2	3
Rated Power Consumption of EC Fan (kW)	2.7	2.5	3.7	4.6	5.3	5.6	6.1	6.6	7.5
External Static Pressure (Pa)	20	20	20	20	20	20	20	20	20
Heating									
Heating Capacity (kW)	6	9	9	9	9	9	9	9	9
Humidification									
Humidification Capacity (kg/h)	6	6	10	10	10	10	10	10	10
Connection Size									
Gas (mm)	22	22	22	22	22	22	22	22	22
Liquid (mm)	16	16	16	16	16	16	16	16	16
Drain Pipe (ID,mm)	19	19	19	19	19	19	19	19	19
Physical Data									
Width (mm)	900	1,100	1,800	1,800	1,800	2,200	2,200	2,200	2,550
Depth (mm)	995	995	995	995	995	995	995	995	995
Height (mm)	1,975	1,975	1,975	1,975	1,975	1,975	1,975	1,975	1,975
Weight (kg)	310	415	580	600	620	660	670	680	820
Breakers & Cables									
Indoor Unit Breaker (A)	50	63	100	100	125	125	125	125	160
Indoor Unit Cable (mm²)	5*10	5*10	4*16+ 1*10	4*25+ 1*16	4*25+ 1*16	4*25+ 1*16	4*25+ 1*16	4*25+ 1*16	4*35+ 1*16
Outdoor Unit Cable (mm²)	5*1.5	5*1.5	5*1.5	5*1.5	5*2.5	5*2.5	5*2.5	5*2.5	5*2.5

Remark: 1. Condensing temperature at 45°C .
2. The listed data is being continuously updated and is for reference only. For customized requirements, please feel free to contact us.



CyberMate (>20kW) Air Cooled Condenser



- Variable frequency fan with speed control, high efficiency
 - Owlet fan, low noise
- Integrated iFreecooling design
 - Adapting to various climate conditions
 - Single/dual circuit design

Data Sheet of CyberMate (>20kW) Air Cooled Condenser

Model	Quantity of Fan	Liquid Line-OD (mm)	Gas Line-OD (mm)	Length (mm)	Width (mm)	Height (mm)	Weight (kg)
CS32	1	19	22	1,211	933	651	130
CS38	1	19	22	1,190	955	731	130
CS46	1	19	28	1,340	1,039	737	140
CS54	1	19	28	1,340	1,207	737	150
CS66	2	19	28	1,944	997	658	160
CS78	2	19	28	2,263	1,039	736	200
CS86	2	19	28	2,335	1,207	734	240

Remark: The listed data is being continuously updated and is for reference only. For customized requirements, please feel free to contact us.

Centralized Air Cooled Condenser

- Low Noise

 - High chimney fan with low noise
 - Optimized design of guide vanes to reduce exhaust turbulence
 - Aerodynamically optimized air inlet blast ring
- High Energy Efficiency

 - Adapting to various climate conditions
 - Variable speed fan
- Space-saving

 - V-type compact coil design
 - Modular assembly
 - Optional integrated refrigerant pump

Data Sheet of Centralized Air Cooled Condenser

Model	Quantity of Fan	Liquid Line-OD (mm)	Gas Line-OD (mm)	Length (mm)	Width (mm)	Height (mm)	Weight (kg)
CS38U	1	16	22	1,099	1,020	1,840	120
CS46U	1	16	22	1,089	1,020	1,840	130
CS54U	1	16	22	1,089	1,020	1,840	140
CS66U	1	19	28	1,139	1,080	1,950	155
CS78U	1	19	28	1,139	1,080	1,950	165
CS86U	1	19	28	1,129	1,080	1,950	175
CS96U	1	19	28	1,339	1,080	1,950	195



Remark: The listed data is being continuously updated and is for reference only. For customized requirements, please feel free to contact us.

iFreecooling Technology

Multi-mode Operation

- Economization refrigerant pump with much lower power consumption to achieve cooling under low ambient temperature
- Compressor mode, mixed mode, economization refrigerant pump mode switch automatically

High Energy Efficiency

- Equipped with EC fan, DC inverter compressor, refrigerant pump, saving energy up to 40% all year round

Flexible Configuration

- Centralized condenser with refrigerant pump as standard, space-saving up to 60%
- Optional refrigerant pump + standard condenser, vertical & horizontal installation condenser, widely applied
- Optional refrigerant pump + centralized condenser, suitable for reconstruction project



Annual Energy Saving Rate for iFreecooling System

No.	Country	City	Latitude	Energy Saving Rate	No.	Country	City	Latitude	Energy Saving Rate
1	China	Beijing	39° N	28%	7	UK	London	52° N	41%
2	China	Harbin	44° N	39%	8	Spain	Madrid	40° N	28%
3	China	Shanghai	31° N	20%	9	Canada	Ottawa	45° N	41%
4	Japan	Tokyo	36° N	28%	10	America	Washington	38° N	33%
5	Russia	Moscow	55° N	45%	11	Australia	Canberra	35° N	32%
6	Sweden	Stockholm	59° N	46%	12	South Africa	Johannesburg	26° N	18%

Remark: The listed data is being continuously updated and is for reference only. For customized requirements, please feel free to contact us.

Applications



Data Sheet of Centralized Air Cooled Condenser

Model	Inlet OD (mm)	Outlet OD (mm)	Length (mm)	Width (mm)	Height (mm)
IFP-3-C	19	19	600	300	900
IFP-5-C	19	19	600	300	900

Data Sheet of CyberMate + iFreecooling Unit

Indoor Unit Model	6030	6040	8050	8060	8070	8080	8090	8100	8120
Power Supply	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz
Return Air Condition	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH	24°C / 50%RH
Performance Technical Data									
Total Cooling Capacity (kW)	30.3	38.9	53.1	61.4	71.3	78.2	89.2	97.6	120.1
Sensible Cooling Capacity (kW)	27.3	35.0	47.8	55.3	64.2	70.4	80.3	88.3	108.1
Sensible Heat Ratio (%)	90.1%	90.0%	90.0%	90.1%	90.0%	90.0%	90.0%	90.5%	90.0%
Full Load Amps (A)	39.2	44.3	60.2	69.3	72.2	76.5	87.7	91.2	109.4
Quantity of Compressor	1	1	2	2	2	2	2	2	2
Quantity of Compressor	1	1	2	2	2	2	2	2	2
Rated Power Consumption of Compressor (kW)	9.78	12.78	15.16	19.56	21.22	25.56	30.3	32.82	35.94
Indoor EC Fan Technical Data									
Airflow (m³/h)	9,000	10,500	14,000	17,000	18,000	21,500	23,000	25,000	32,000
Quantity of EC Fan	1	1	2	2	2	2	2	2	3
External Static Pressure (Pa)	20	20	20	20	20	20	20	20	20
Heating									
Heating Capacity (kW)	6	9	9	9	9	9	9	9	9
Humidification									
Humidification Capacity (kg/h)	6	6	10	10	10	10	10	10	10
Physical Data									
Width (mm)	900	1,100	1,800	1,800	1,800	2,200	2,200	2,200	2,550
Depth (mm)	995	995	995	995	995	995	995	995	995
Height (mm)	1,975	1,975	1,975	1,975	1,975	1,975	1,975	1,975	1,975
Weight (kg)	310	415	580	600	620	660	670	680	820
Breakers & Cables									
Indoor Unit Breaker (A)	50	63	100	100	125	125	125	125	160
Indoor Unit Cable (mm²)	5*10	5*10	4*16+ 1*10	4*25+ 1*16	4*25+ 1*16	4*25+ 1*16	4*25+ 1*16	4*25+ 1*16	4*35+ 1*16
Outdoor Unit Cable (mm²)	5*1.5	5*1.5	5*1.5	5*1.5	5*2.5	5*2.5	5*2.5	5*2.5	5*2.5

Remark: 1. For upflow plenum unit, the height is 1990mm; condensing temperature at 45°C .
2. The listed data is being continuously updated and is for reference only.

Data Sheet of Integrated Refrigerant Pump Centralized Condenser

Model	Quantity of Fan	Liquid Line-OD (mm)	Gas Line-OD (mm)	Length (mm)	Width (mm)	Height (mm)	Weight (kg)
CS38P	1	16	22	1,099	1,020	1,840	175
CS46P	1	16	22	1,089	1,020	1,840	185
CS54P	1	16	22	1,089	1,020	1,840	195
CS66P	1	19	28	1,139	1,080	1,950	210
CS78P	1	19	28	1,139	1,080	1,950	220
CS86P	1	19	28	1,129	1,080	1,950	235
CS96P	1	19	28	1,339	1,080	1,950	250

Remark: The listed data is being continuously updated and is for reference only. For customized requirements, please feel free to contact us.

CyberMate Series Chilled Water Unit

Highlights of CW Unit Design

High Reliability

- High quality components with strict certification
- Running test of each unit in factory before delivery

High Energy Efficiency

- Precise water valve control and variable airflow control, can adjust cooling capacity, airflow and air pressure according to the rack temperature and air pressure
- EVO controller ensures optimum cooling efficiency
- Efficient EC fan, downflow and fan under floor design
- Efficient humidifier and dehumidifier to realize precise humidity control

High Adaptability

- Various air discharge choices including downflow, upflow and so on
- Multiple monitoring interface
- Modularized design with "V" or "A" type evaporator

Wide Range of Cooling Capacity

- 40kW~200kW



Functions of EVO Control System

EVO Display System

- 7-inch, 800×480 dot matrix true color touch screen
- Temperature and humidity curves
- Graphical display of device running status
- Multi-level password protection

EVO Control & Storage System

- Multiple history alarms, expanded storage of history alarms is provided
- The running data will be stored regularly, and the history data can be maintained. The relevant data can be read directly through the computer

EVO Data Collection System

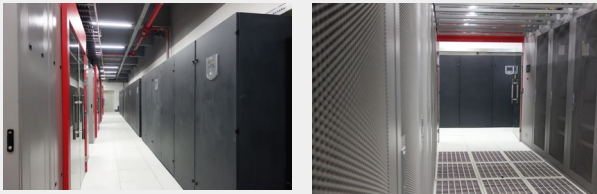
- Available to connect multiple temperature/ humidity sensors and detect the temperature/ humidity of the inlet/outlet air of racks
- Control mode selected according to the rack cooling demand, precise air supply to realize energy saving

EVO Team Work Function

- Team work 32 units, connecting network easily
- Shared temperature and humidity setting
- Team work modes: demand management, trend management, rotation and breakdown shift automatically, realizing adaptive energy saving

EVO Monitoring System

- Standard RS485 interface, support ModBus protocol
- Optional ethernet interface, support TCP/IP, SNMP protocol



Data Sheet of CyberMate Modular Chilled Water Unit

Unit Model	CyberMate 9040	CyberMate 9070	CyberMate 9100	CyberMate 9130	CyberMate 9160	CyberMate 9180	CyberMate 9200
Power Supply	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz	380V/3Ph 50Hz
Air Discharge Mode	Up/Down	Up/Down	Up/Down	Up/Down	Up/Down	Up/Down	Up/Down
Inlet Water Temperature (°C)	15	15	15	15	15	15	15
Outlet Water Temperature (°C)	21	21	21	21	21	21	21
Return Air Condition	35°C /30%RH	35°C /30%RH	35°C /30%RH	35°C /30%RH	35°C /30%RH	35°C /30%RH	35°C /30%RH
Performance Technical Data							
Total Cooling Capacity (kW)	41.6	69.3	103.0	130.3	159.1	182.3	202.2
Sensible Cooling Capacity(kW)	41.6	69.3	103.0	130.3	159.1	182.3	202.2
Rated Power Consumption (kW)	1.3	3.6	4.0	6.6	7.2	9.0	9.9
Water Flow Rate (m³/h)	6.1	10.4	15.3	19.6	23.8	27.3	30.3
Water Side Pressure Drop (kPa)	64.2	71.7	67.7	73.2	84.8	93.7	98.1
Main Fan Technical Data							
Airflow (m³/h)	9,500	13,500	21,000	25,000	33,000	38,000	39,000
Quantity of EC Fan	1	1	2	2	3	3	3
External Static Pressure (Pa)	100	100	100	100	100	100	100
Heating							
Heating Capacity (kW)	6	6	9	9	9	9	9
Humidification							
Humidification Capacity (kg/h)	6	6	10	10	10	10	10
Connection Size							
Gas (mm)	DN40	DN50	DN65	DN65	DN80	DN80	DN80
Liquid (mm)	DN40	DN50	DN65	DN65	DN80	DN80	DN80
Drain Pipe (ID,mm)	25	25	25	25	25	25	25
Physical Data							
Width (mm)	795	795	1,590	1,590	2,385	2,385	2,385
Depth (mm)	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Height (mm)	1,975	1,975	1,975	1,975	1,975	1,975	1,975
Weight (kg)	240	270	510	520	670	700	720
Breakers & Cables							
Unit Breaker (A)	32	32	40	40	50	50	50
Unit Cable (mm²)	5*4	5*4	5*6	5*6	5*6	5*6	5*6

Remark: 1. Equipped two-way valve and EC fan as standard.
2.The listed data is being continuously updated and is for reference only. For customized requirements, please feel free to contact us.



CyberMate DX Unit (6kW-20kW)



Applications

- IT server room
- Small data center
- Laboratory
- Electric power equipment room
- Railway server room
- Subway server room
- Small and medium telecom switch room
- Constant temperature and humidity manufacturing workshop

Features

- Intelligent precise control, constant temperature and humidity
- 365 x 24 operation under full range of climate
- Long lifetime design with low operating and maintenance costs
- Large airflow supply with high SHR and low power consumption
- Long-distance supply air to ensure temperature uniformity
- Ultra-wide input power adaptability, automatic phase sequence switching function, optional automatic re-start and delayed startup function
- Remote monitoring and control through dry contact or RS485
- 4.3 inch LCD display with multi-level password protection function
- Standby (master/slave) mode and rotating mode available
- Various system diagnosis, alarm and protection function
- Parameter and operation/alarm record auto-protection under power loss
- Storage history alarm up to 500 records
- R410A refrigerant



Data Sheet of CyberMate DX Unit (6kW-20kW)

Indoor Unit Model	6005	6005	6007	6012	6016	6020
Power Supply	220V/1Ph/50Hz	380V/3Ph/50Hz	380V/3Ph/50Hz	380V/3Ph/50Hz	380V/3Ph/50Hz	380V/3Ph/50Hz
Air Discharge Mode	Up/Down	Up/Down	Up/Down	Up/Down	Up/Down	Up/Down
Return Air Condition	24°C /50%RH	24°C /50%RH	24°C /50%RH	24°C /50%RH	24°C /50%RH	24°C /50%RH
Performance Technical Data						
Total Cooling Capacity (kW)	6.6	6.6	7.0	12.2	16.6	20.0
Sensible Cooling Capacity (kW)	5.6	5.6	6.0	10.3	14.5	17.6
Max. Power Consumption (kW)	14.8	14.8	8.1	13.0	17.6	21.5
Full Load Amps FLA (A)	19.3	19.3	17.2	22.1	26.6	30.6
Quantity of Compressor	1	1	1	1	1	1
Rated Power Consumption of Compressor (kW)	1.7	1.7	1.8	3.2	4.2	5.2
Indoor Fan Technical Data						
Airflow (m³/h)	1,860	1,860	1,860	2,700	4,500	5,500
Quantity of Fan	1	1	1	1	1	1
Rated Power Consumption of Fan (kW)	0.24	0.24	0.24	0.55	0.90	1.55
Heating						
Heating Capacity (kW)	3	3	6	6	6	6
Humidification						
Humidification Capacity (kg/h)	/	2.8	2.8	2.8	6.0	6.0
Connection Size						
Gas (mm)	12.7	12.7	12.7	16	19	19
Liquid (mm)	9.52	9.52	9.52	12.7	12.7	12.7
Drain Pipe ID (mm)	19	19	19	19	25	25
Physical Data						
Width (mm)	600	600	600	600	750	750
Depth (mm)	555	555	555	555	755	755
Height (mm)	1,750	1,750	1,750	1,750	1,950	1,950
Weight (kg)	110	110	115	140	185	200
Outdoor Unit Technical Data						
Outdoor Unit Model	CyberMate 6005EC	CyberMate 6005EC	CyberMate 6007EC	CyberMate 6012EC	CyberMate 6016EC	CyberMate 6020EC
Physical Data						
Width (mm)	800	800	800	800	1,500	1,500
Depth (mm)	360	360	360	360	360	360
Height (mm)	790	790	790	1,285	1,285	1,285
Weight (kg)	40	40	40	60	90	110
Breakers & Cables						
Breaker (A)	40	32	32	32	40	40
Indoor Unit Cable (mm²) Cooling	3*4	5*4	5*1.5	5*2.5	5*4	5*4
Indoor Unit Cable (mm²) Reheating + Humidifying	3*6	5*4	5*4	5*6	5*6	5*6
Outdoor Unit Cable (mm²)	3*1.5	3*1.5	3*1.5	3*1.5	3*1.5	3*1.5

Remark: 1. Condensing temperature at 45°C .
2. Compressor type - fixed speed.
3. The listed data is being continuously updated and is for reference only. For customized requirements, please feel free to contact us.