



**PRECISION COOLIG SYSTEM FOR**  
**TELECOMMUNICATION & DATA CENTER**

**IZUMI CORPORATION, TOKYO, JAPAN**

## Precision Cooling Unit for Data Center

### Data Sheet of CyberMate DX Units (Air Cooled, Water Cooled, Glycol Cooled)

Model	526	530	535	540	546	740	746	755	765	770	780	790	799	
Power Supply	380V 3Ph - 50Hz													
Air Discharge	Upflow / Downflow													
<b>Performance Specification</b>														
Total Cooling Capacity (kW)	26.8	30.9	35.9	40.3	46.9	40.7	47.6	55.6	65.8	71.6	80.2	92.6	100.2	
Sensible Cooling Capacity (kW)	24.2	27.9	32.6	36.4	42.3	36.8	42.9	50.2	59.3	64.5	72.7	83.6	90.6	
FLA-A	28.3	31.3	38.7	41.2	48.0	43.6	48.0	51.3	58.5	62.9	69.3	82.5	84.3	
Quantity of Compressor	1	1	1	1	1	2	2	2	2	2	2	2	2	
<b>Indoor Fan Section</b>														
Airflow - m <sup>3</sup> /h	8000	9000	10000	11000	13000	11000	13000	14000	17000	18000	21500	23000	25000	
Quantity of Fan	1	1	1	1	2	1	2	2	2	2	3*	3*	3*	
<b>Reheat Section</b>														
Capacity (kW)	6	6	9	9	9	9	9	9	9	9	9	9	9	
<b>Humidifier Section</b>														
Capacity (kg/h)	6	6	6	6	10	6	10	10	10	10	10	10	10	
<b>Connection Size</b>														
Liquid Pipe - OD (mm)	16	16	16	16	19	16	16	16	16	16	16	19	19	
Gas Pipe - OD (mm)	22	22	22	22	22	22	22	22	22	22	22	22	22	
Inlet Pipe of Humidifier (Female)	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	
Drain Pipe - ID (mm)	25	25	25	25	25	25	25	25	25	25	25	25	25	
<b>Physical Data</b>														
Width (mm)	1050	1050	1400	1400	1700	1400	1700	1700	2100	2100	2550	2550	2550	
Depth (mm)	890	890	890	890	890	890	890	890	890	890	890	890	890	
Height (mm)	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	
Weight (kg)	365	370	410	415	530	415	535	550	720	730	800	820	825	
<b>Water/Glycol Cool Unit Parameter</b>														
Water	Inlet/Outlet Connection (mm)	35.0	42.0	42.0	42.0	54.0	42.0	54.0	54.0	54.0	63.0	63.0	70.0	70.0
	Flow Rate - m <sup>3</sup> /h	6.0	7.0	8.2	9.2	10.7	9.2	10.8	12.5	14.9	16.4	18.3	21.0	22.8
	Pressure Drop (kPa)	86.0	99.2	76.0	83.1	94.7	82.8	95.4	75.1	85.6	93.1	71.0	77.6	82.5
Glycol (40%)	Inlet/Outlet Connection (mm)	35.0	42.0	42.0	54.0	54.0	42.0	54.0	54.0	54.0	63.0	63.0	70.0	70.0
	Flow Rate - m <sup>3</sup> /h	7.1	8.3	9.6	10.8	12.6	10.8	12.7	14.7	17.6	19.3	21.6	24.7	26.8
	Pressure Drop (kPa)	99.8	76.6	86.0	95.8	75.3	95.4	112.9	84.8	99.3	73.3	79.1	88.2	95.0
<b>Breakers &amp; Cables</b>														
Indoor Unit	Recommended Air Break Switch (A)	50	50	63	63	80	63	80	80	100	100	125	125	125
	Cables (mm <sup>2</sup> )	10	10	10	16	16	16	16	16	16	16	25	25	25
Outdoor Unit	Recommended Air Break Switch (A)	20	20	20	20	20	20	20	20	20	20	20	20	
	Cables (mm <sup>2</sup> )	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	

**Remark :**

- ③ Return air condition: 24C / 50% RH.
- ③ Water/Glycol low control valve: standard two-way valve, optional three-way valve.
- ③ EC fan configured as standard.
- ③ Electronic Expansion Valve as standard.
- ③ For modularized system, fan quantity is 2.



## Data Sheet for Dual Cool Units (DX +CW)

Model	526	530	535	540	546	740	746	755	765	770	780	790	799	
Power Supply	380V 3Ph - 50Hz													
Air Discharge	Upflow / Downflow													
<b>Performance Specification</b>														
DX	Total (kW)	26.8	30.9	35.9	40.3	46.9	40.7	47.6	55.6	65.8	71.6	80.2	92.6	100.2
	Sensible (kW)	24.2	27.9	32.6	36.4	42.3	36.8	42.9	50.2	59.3	64.5	72.7	83.6	90.6
	FLA-A	28.9	31.9	39.4	41.9	49.0	44.3	49.0	52.4	59.7	64.1	71.8	84.3	86.2
CW/ Glycol	Total (kW)	33.6	33.6	44.2	47.3	56.4	47.3	56.4	59.1	73.5	76.4	89.2	92.5	100.5
	Sensible (kW)	29.2	29.2	37.7	40.4	48.6	48.6	48.6	51.2	63.2	66.0	77.8	81.7	88.4
	Flow Rate (m <sup>3</sup> /h)	5.8	5.8	7.6	8.1	9.7	9.7	9.7	10.1	12.6	13.1	15.3	15.9	17.2
Quantity of Compressor	1	1	1	1	1	2	2	2	2	2	2	2	2	
<b>Indoor Fan Section</b>														
Airflow - m <sup>3</sup> /h	8000	9000	10000	11000	13000	11000	13000	14000	17000	18000	21500	23000	25000	
Quantity of Fan	1	1	1	1	2	1	2	2	2	2	3*	3*	3*	
<b>Reheat Section</b>														
Capacity (kW)	6	6	9	9	9	9	9	9	9	9	9	9	9	
<b>Humidifier Section</b>														
Capacity (kg/h)	6	6	6	6	10	6	10	10	10	10	10	10	10	
<b>Connection Size</b>														
DX Liquid Pipe - OD (mm)	16	16	16	16	19	16	16	16	16	16	16	19	19	
DX Gas Pipe - OD (mm)	22	22	22	22	22	22	22	22	22	22	22	22	22	
CW Inlet/Outlet	DN32	DN32	DN40	DN40	DN40	DN40	DN40	DN40	DN40	DN50	DN50	DN50	DN50	
Inlet Pipe of Humidifier (Female)	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	
Drain Pipe - ID (mm)	25	25	25	25	25	25	25	25	25	25	25	25	25	
<b>Physical Data</b>														
Width (mm)	1050	1050	1400	1400	1700	1400	1700	1700	2100	2100	2550	2550	2550	
Depth (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Height (mm)	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	
Weight (kg)	395	400	460	465	600	465	595	620	820	830	920	940	925	
<b>Water/Glycol Cool Unit Parameters</b>														
Water	Inlet/Outlet Connection (mm)	35.0	42.0	42.0	54.0	54.0	42.0	54.0	54.0	54.0	63.0	63.0	70.0	70.0
	Flow Rate - m <sup>3</sup> /h	6.0	7.0	8.2	9.2	10.7	9.2	10.8	12.5	14.9	16.4	18.3	21.0	22.8
	Pressure Drop (kPa)	86.0	99.2	76.0	83.1	94.7	82.8	95.4	75.1	85.6	93.1	71.0	77.6	82.5
Glycol (40%)	Inlet/Outlet Connection (mm)	35.0	42.0	42.0	54.0	54.0	42.0	54.0	54.0	54.0	63.0	63.0	70.0	70.0
	Flow Rate - m <sup>3</sup> /h	7.1	8.3	9.6	10.8	12.6	10.8	12.7	14.7	17.6	19.3	21.6	24.7	26.8
	Pressure Drop (kPa)	99.8	76.6	86.0	95.8	75.3	95.4	112.9	84.8	99.3	73.3	79.1	88.2	95.0
<b>Breakers &amp; Cables</b>														
Indoor Unit	Recommended Air Break Switch (A)	50	50	63	63	80	63	80	80	100	100	125	125	125
	Cables (mm <sup>2</sup> )	10	10	16	16	16	16	16	16	16	16	25	25	25
Outdoor Unit	Recommended Air Break Switch (A)	20	20	20	20	20	20	20	20	20	20	20	20	
	Cables (mm <sup>2</sup> )	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	

### Remark :

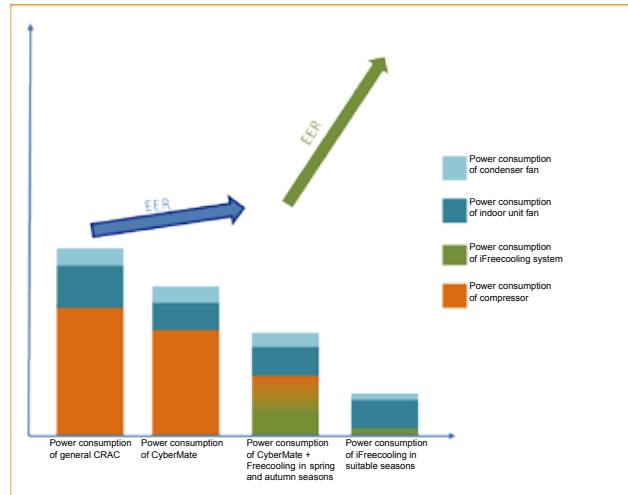
- ③ Return air condition: 24C / 50% RH.
- ③ Water/Glycol low control valve: standard two-way valve, optional three-way valve.
- ③ EC fan configured as standard.
- ③ Electronic Expansion Valve as standard.
- ③ For modularized system, fan quantity is 2.



## Precision Cooling Unit for Data Center

### Freecooling Technology

- 1) Through to stop the compressor running in suitable seasons to greatly reduce the power consumption of the cooling system, it s a realizing efficient cooling and will reduce PUE of data center by free cooling
  - 2) To protect the temperature, humidity and cleanness of data center from outside and ensure its high reliability
  - 3) When iFreecoolingrunning in suitable seasons, the compressor energy saving rate will exceeding 96% and the whole cooling system will exceeding 70%, overall energy consumption of data center reduction of 25%-35%
  - 4) Freecooling can running together with DX both in spring and autumn seasons to make best use of free cooling
- One Freecooling system can working together with multiple DX units



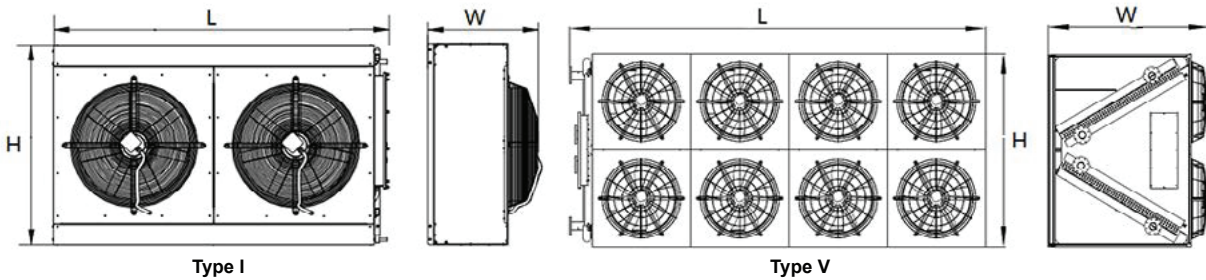
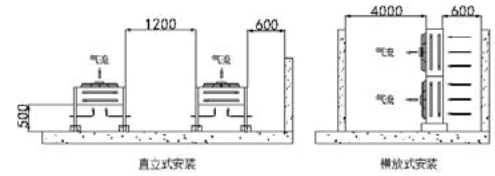
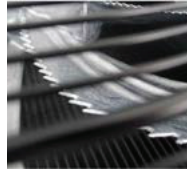
### Regions Effective for iFreecooling™ System



- Annual energy saving rate  $\geq 35\%$
- Annual energy saving rate  $\geq 25\%$
- Annual energy saving rate  $\geq 15\%$

## CyberMate (>20kW) Air Cooled Condenser

- ④ Strengthen aluminum alloy enclosure and stainless steel connection parts
- ④ Variable frequency fan speed control, efficient energy saving
- ④ Bionic-type fan, low noise
- ④ Integrated iFreecooling™ design
- ④ Adapting to various climate conditions
- ④ Single/dual circuit design



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

Model	Quantity of Fan (s)	Length (mm)	Height (mm)	Width (mm)	Weight (kg)	Liquid Line-OD (mm)	Hot Gas Line-OD (mm)	Type
CS25	1	1310	982	653	110	16	22	I
CS32	1	1310	982	653	115	19	22	I
CS38	1	1610	982	653	130	19	22	I
CS46	1	1610	1270	653	140	19	28	I
CS54	1	1910	1270	653	150	19	28	I
CS66	2	1910	1270	653	160	19	28	I
CS78	2	2410	1270	653	200	19	28	I
CS86	2	2410	1270	689	240	19	28	I
CD46	1	1610	1270	653	140	19	22	I
CD54	1	2110	1270	653	160	19	28	I
CD66	2	2110	1270	653	170	19	28	I
CD78	2	2410	1270	653	200	19	28	I
CD86	2	2410	1270	689	220	19	28	I

### Data Sheet of CyberMate™ Air Cooled+iFreecooling™ Integrated Condenser

Model	Quantity of Fan (s)	Length (mm)	Height (mm)	Width (mm)	Weight (kg)	Liquid Line for DX-OD (mm)	Hot Gas Line for DX-OD (mm)	Liquid Line for iF-OD (mm)	Hot Gas Line for iF-OD (mm)	Type
CS32F	1	1480	1270	687	135	19	22	16	22	I
CS38F	1	1630	1270	687	150	19	22	16	22	I
CS46F	1	2135	1270	687	170	22	28	16	28	I
CS54F	2	2135	1270	687	180	22	28	16	28	I
CS66F	2	2435	1270	687	210	22	28	16	28	I
CS78F	2	2435	1270	710	270	22	28	16	28	I
CS86F	2	2835	1270	710	310	22	28	16	28	I

### Data Sheet of CyberMate™ Air Cooled Condenser

Model	Quantity of Fan (s)	Length (mm)	Height (mm)	Width (mm)	Connection Size	Weight (kg)	Type
DC035	1	1650	1270	653	DN32	130	I
DC040	1	1650	1270	653	DN32	145	I
DC050	2	1950	1270	653	DN40	180	I
DC060	2	1950	1270	653	DN40	220	I
DC070	2	2450	1270	653	DN50	240	I
DC080	2	2450	1270	653	DN50	260	I
DC090	3	3650	1270	653	DN65	320	I
DC100	3	3650	1270	653	DN65	330	I
DC120	3	3650	1270	653	DN65	380	I
DC280	6	3660	2200	1840	DN65	1050	V
DC380	8	4760	2200	1840	DN80	1400	V

## CyberMate Series of CW Unit

### Highlights of CW Unit Design



#### High Reliability

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



#### High Energy Efficiency

- Precise valve and variable airflow control, adjust the cooling capacity output and airflow to suit the temperature change of rack
- EVO controller to ensure optimum cooling efficiency
- Efficient EC fan, continuous airflow adjustment, optional EC fan under floor design
- Efficient electrode humidifier to realize precise humidity control
- Efficient dehumidification design to ensure absolute humidity control



#### High Adaptability

- Various air discharge including downflow, upflow and so on
- Multiple monitoring interface
- Customized design available



#### Wide Range of Cooling Capacity

- 50kW -200kW



#### Single coil and Dual coil Unit

- Dual-coil unit can match the dual pipelined chilled water system design to increase the system reliability



### Highlights of CW Unit Design



#### EVO Display System

- 7-inch, 800x480 dot matrix true color touch screen
- Temperature and humidity curves
- Graphical display of device running status
- Multi-level password protection



#### EVO Storage System

- Multiple history alarms, expanded storage of history alarms is provided
- The running data will be stored every 60 seconds, and the history data can be maintained. The relevant data can be read directly through the computers



#### EVO Data Collection System

- Able 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

- Group multiple units easily
- Shared temperature and humidity setting
- Team work mode: demand management, trend management, rotation and standby (lead/lag), realizing adaptive energy saving



#### EVO Monitoring System

- RS485 interface as standard
- Optional SNMP and TCP/IP interface
- Optional GPRS DTU, SMS for alarm and maintenance reminding

Izumi Precision Cooling Unit

For Data Center

## CyberMate DX (6kW-20kW) Units



### Applications

- IT Equipment Room
- Small Data Center
- Industrial Clean Room
- Constant Temperature and Humidity Process Workshop
- Laboratory
- Electric Power Equipment Room
- Railway/Subway Machine Room
- Base Station and Small Telecom Switch Room
- SME Telecom Switch Room

### Features

- Design of appearance and color consistent with IT equipments
- Intelligent precise control function for constant temperature and humidity
- Design for the continuous 365X24 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
- Uniformity of room temperature by long-distance supply air
- Ensure room cleanness by high level air filter configuration and large air flow circuit
- 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 communication interface with open protocol
- Menu-based large LCD display with multi-level password protection function
- Standby (master/slave) mode and rotating mode available
- Self-diagnosis function, various system diagnosis, alarm, and protection function
- Parameter and operation/alarm record auto-protection under power loss
- 300 maximum storage for history alarm record
- Low noise level for condenser with compressor placed in indoor unit
- Various options and SFA capability



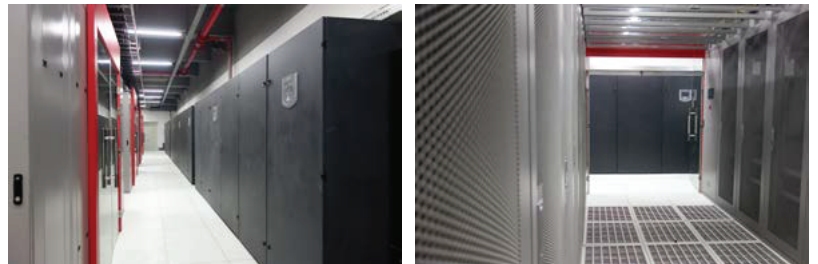


## Data Sheet of CyberMate Modular Chilled Water Unit

Model	40	50	60	70	80	90	100	120	130	150	160	180	200
Power Supply	380V 3Ph - 50Hz												
Air Discharge	Upflow / Downflow												
<b>Performance Specification</b>													
Total Cooling Capacity (kW)	45.3	50.0	60.4	70.7	80.4	93.9	100.0	126	131.7	150.0	160.8	181.2	202.2
Sensible Cooling Capacity (kW)	39.4	43.6	52.6	63.5	73.6	83.1	87.2	112.1	120.9	130.8	140.2	157.8	170.8
FLA-A	14.7	14.7	14.8	26.3	26.3	26.3	26.3	31.9	31.9	31.9	32.4	32.4	32.4
Flow Rate - m <sup>3</sup> /h	7.8	8.6	10.4	12.1	13.8	16.1	17.1	21.6	22.6	25.7	27.6	31.1	34.7
<b>Indoor Fan Section</b>													
Airflow - m <sup>3</sup> /h	11400	11400	14000	20800	24400	22800	22800	33000	34200	34200	37200	42000	42000
Quantity of Fan	1	1	1	2	2	2	2	3	3	3	3	3	3
<b>Reheat Section</b>													
Capacity (kW)	6	6	6	9	9	9	9	9	9	9	9	9	9
<b>Humidifier Section</b>													
Capacity (kg/h)	6	6	6	10	10	10	10	10	10	10	10	10	10
<b>Connection Size</b>													
Inlet Size	DN40	DN50	DN50	DN50	DN50	DN65	DN65	DN65	DN65	DN65	DN80	DN80	DN80
Outlet Size	DN40	DN50	DN50	DN50	DN50	DN65	DN65	DN65	DN65	DN65	DN80	DN80	DN80
Inlet Pipe of Humidifier (Female)	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"
Drain Pipe - ID (mm)	25	25	25	25	25	25	25	25	25	25	25	25	25
<b>Physical Data</b>													
Width (mm)	850	850	850	1700	1700	1700	1700	2550	2550	2550	2550	2550	2550
Depth (mm)	890	890	1000	890	890	890	890	890	890	890	1000	1000	1000
Height (mm)	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975
Weight (kg)	280	280	300	510	510	540	540	820	820	820	880	880	950
<b>Breakers &amp; Cables</b>													
Recommended Air Break Switch (A)	20	20	20	40	40	40	40	40	50	50	50	50	50
Cables (mm <sup>2</sup> )	4	4	4	6	6	6	6	6	6	6	6	6	6

**Remark :**

- ③ Return air condition: 24 / 50% RH.
- ③ Water/Glycol Low Control Valve: standard two-way valve, optional three-way valve.
- \* : EC fan configured as standard.

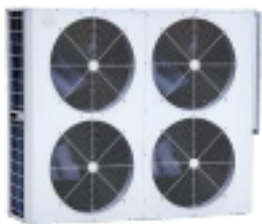




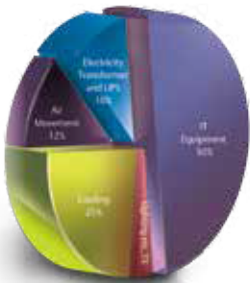
## Data Sheet of DX CyberMate (6kW-20kW) Units

Return air condition: 24 / 50%RH

Indoor Unit Model		505	505	508	508	512	516	520
Power Supply		220V 1Ph - 50Hz	380V 3Ph - 50Hz	220V 1Ph - 50Hz	380V 3Ph - 50Hz	380V 3Ph - 50Hz	380V 3Ph - 50Hz	380V 3Ph - 50Hz
Air Discharge		Upflow / Downflow						
<b>Performance Specification</b>								
AC Fan	Total (kW)	6.0	6.0	7.5	7.5	12.5	16.8	20.2
	Sensible (kW)	5.0	5.0	6.9	6.9	11.3	15.3	18.3
	FLA-A (Cooling)	14.0	14.0	17.3	6.8	12.8	12.9	17.9
	FLA-A (Cooling, Reheating, Humidifying)	27.7	18.6	44.6	15.9	21.9	22.0	27.0
EC Fan	Total (kW)	-	6.1	-	7.6	12.6	16.9	20.4
	Sensible (kW)	-	5.1	-	7.0	11.5	15.5	18.5
	FLA-A (Cooling)	-	13.2	-	6.0	10.9	12.6	17.3
	FLA-A (Cooling, Reheating, Humidifying)	-	17.8	-	15.1	19.9	21.7	26.4
Quantity of Compressor		1	1	1	1	1	1	1
Quantity of Fan		1	1	1	1	1	1	1
Airflow (m³/h)		1500	1500	2300	2300	2700	4500	5500
Reheating Capacity (kW)		3	3	6	6	6	6	6
Humidifying Capacity (kg/h)		-	2.8	-	2.8	2.8	6	6
<b>Connection Size</b>								
Liquid Pipe - OD (mm)		9.52	9.52	9.52	9.52	12.7	12.7	12.7
Gas Pipe - OD (mm)		12.7	12.7	12.7	12.7	15.88	19	19
Inlet Pipe of Humidifier (Female)		-	G1 / 2"	-	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"
Drain Pipe - ID (mm)		19	19	19	19	19	25	25
<b>Physical Data</b>								
Width (mm)		600	600	600	600	600	750	750
Depth (mm)		550	550	550	550	550	750	750
Height (mm)		1900	1900	1900	1900	1900	1950	1950
Weight (kg)		120	120	130	130	150	280	300
<b>Outdoor Unit Specification</b>								
Outdoor Unit Model	CyberMate 505EC	CyberMate 505EC	CyberMate 508EC	CyberMate 508EC	CyberMate 512EC	CyberMate 516EC	CyberMate 520EC	
Width (mm)	800	800	800	800	800	1500	1500	
Depth (mm)	360	360	360	360	360	360	360	
Height (mm)	790	790	790	790	1240	1240	1240	
Weight (kg)	45	45	45	45	60	100	110	
Operating Temperature Range (Standard)	-15 ~ 45	-15 ~ 45	-15 ~ 45	-15 ~ 45	-15 ~ 45	-15 ~ 45	-15 ~ 45	-15 ~ 45
Operating Temperature Range (with Low-temperature Startup Kits)	-40 ~ 45	-40 ~ 45	-40 ~ 45	-40 ~ 45	-40 ~ 45	-40 ~ 45	-40 ~ 45	-40 ~ 45
<b>Breakers &amp; Cables</b>								
Recommended Air Break Switch (A)	40	32	63	32	32	50	50	
Outdoor Unit Power Cables (mm²)	3*1.5	3*1.5	3*1.5	3*1.5	3*1.5	3*1.5	3*1.5	3*1.5
Main Power Cables (mm²) - Cooling	3*4	5*4	3*4	5*2.5	5*4	5*4	5*6	5*6
Main Power Cables (mm²) - Cooling, Reheating, Humidifying	3*6	5*4	3*10	5*4	5*6	5*6	5*6	5*6



## Date Center



The continual growing OPEX has become the bottleneck of the TCO control in data center. Improving the energy efficiency and enhancing the management level are the key actions to reduce the TCO of the data center. Low power consumption and easy manageability are appreciated in the construction of data center.

The power consumption for cooling system is a significant part, while accounting as 30-40% of the overall power consumption in a data center. Therefore, energy efficiency of CRAC unit will be great attention.

With the popularity of the green data center concept, the energy efficiency standards for precision cooling units keep increasing. More and more data centers are applying the CRAC units with high energy efficiency and integration of free cooling function.

### Izumi CyberMate Series Precision Cooling Unit:

With high AEER system design and team work function, CyberMate meets the cooling demand and reduce the PUE of the data center.

### Annual Energy Efficiency Ratio(AEER) :

$$AEER = \frac{\sum \text{the heats removed from the room}}{\sum \text{CRAC cooling electricity consumption}} \quad (\text{All year round})$$



### Applications

- 1 Computer room and data center
- 2 Switch room and mobile center station in telecommunication
- 3 High-tech environment and lab
- 4 Industrial automation control room and precision manufacturing workshop
- 5 Standard test room and calibration center
- 6 UPS and battery room
- 7 Test room in hospital
- 8 Biochemical culture chamber

**Precision Cooling Unit for Data Center**

**Coniguration Nomenclature for CyberMate™**

	Function	Code	Description
1	Series Name	CyberMate™	CyberMate CRAC
2	Series Code	5	DX, single circuit
		7	DX, dual circuit
		0	CW, capacity < 100kW
		1	CW, capacity ≥ 100kW
3	Cooling Capacity	0 ~ 9	DX: 50-50kW.
0 ~ 9		CW: 50-50kW (series code is 0), 50-150kW (series code is 1)	
5	Function	B	Cooling
		H	Cooling, Reheating
		P	Cooling, Reheating, Humidifying
6	Fan Type	E	EC fan
		I	AC fan
7	Air Discharge	F	Downflow
		S	Downflow, fan under floor
		U	Upflow, plenum
		D	Upflow, duct
8	Power Supply	1	380V 3Ph-50Hz
		2	220V 1Ph-50Hz
		3	Other power input
9	System Type	A	Air cooled
		F	Dual cool: Air cooled + iFreecooling™
		W	Water cooled
		G	Glycol cooled
		N	Integrated direct free cooling and humidification curtain
		C	Chilled water: Single coil
		T	Chilled water: Dual coil
		D	Dual cool: Chilled water + Air cooled
R	Dual cool: Glycol + Free cooling		
10	Speical Requirements	X	Customized. 1 means R407C refrigerant. M means mudular unit



controller



Efficient scroll compressor



Efficient EC fans



Owlet fan with various frequency fan speed control



## Izumi CyberMate Series of DX Unit (26kW -100kW)

### Highlights of DX Unit Design

#### High Reliability

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

#### High Energy Efficiency

- EVO controller ensure optimum cooling efficiency
- Efficient EC fan, continuous airflow adjustment, optional EC fan under floor design
- Efficient and quiet flexible scroll compressor
- High efficiency with precision Electronic Expansion Valve precision cooling control
- Efficient electrode humidifier to realize precise humidity control
- Efficient dehumidification design to ensure absolute humidity control
- High efficiency and variable frequency control for condenser fan
- Integrated iFreecooling™ indirect free cooling technology
- Utilization of natural cold source by integrating the direct free cooling option

#### High Adaptability

- Various air discharge choices including Downflow and Upflow and so on
- Multiple monitoring interface
- Suitable for various ambient temperature conditions
- (Optional low temperature startup kits)
- Customized design available

#### Wide Range of Cooling Capacity

- 26kW ~ 100kW
- Single circuit indoor unit, dual circuit indoor unit
- Single circuit condenser, dual circuit condenser

#### Various Cooling System Type

- Air cooled/Water cooled/Glycol cooled
- Dual Cool including: Chilled water+Air cooled, Chilled water+Water cooled (Glycol)
- Dual Cool: Air cooled+iFreecooling™
- Dual Cool : Aircooled+Direct free cooling

### Functions of EVO Control System

#### EVO Display System

- 7-inch, 800x480 dot true color touch screen
- Temperature and humidity curves
- Graphical display of device running status
- Multi-level password protection

#### EVO Storage System

- Multiple history alarms, expanded storage of history alarms is provided
- The running data will be stored every 60 seconds, and the history data can be maintained. The relevant data can be read directly through the computers

#### EVO Data Collection System

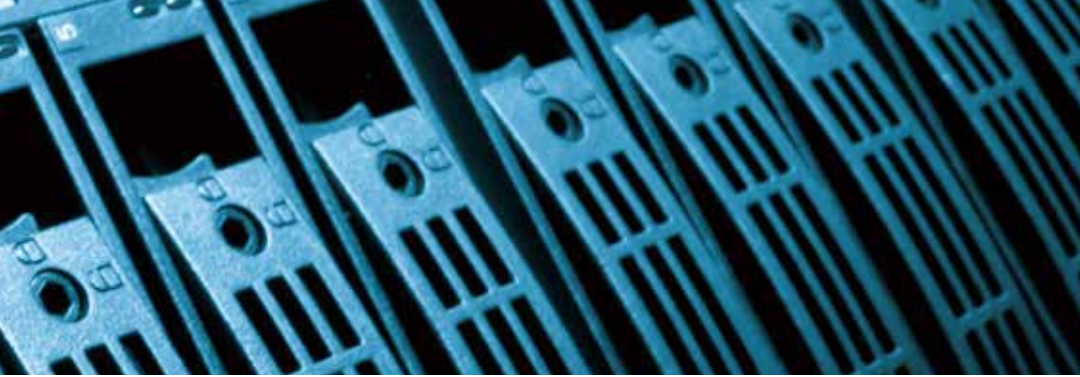
- Able to connect multiple temperature/humidity sensors and detect the temperature/humidity of the inlet/outlet air of racks
- Control mode selected according to the rack cooling demand, precise air supply to realize energy saving

#### EVO Team Work Function

- Group multiple units easily
- Shared temperature and humidity setting
- Team work mode: demand management, trend management, rotation and standby (lead/lag), realizing adaptive energy saving

#### EVO Monitoring System

- RS485 interface as standard
- Optional SNMP and TCP/IP interface
- Optional GPRS DTU, SMS for alarm and maintenance remind



## Data Sheet of Dual Cool Units (Air Cooled + Freecooling)

Model	526	530	535	540	546	740	746	755	765	770	780	790	799	
Power Supply	380V 3Ph - 50Hz													
Air Discharge	Upflow / Downflow													
<b>Performance Specification of DX Unit</b>														
Total Cooling Capacity (kW)	26.8	30.9	35.9	40.3	46.9	40.7	47.6	55.6	65.8	71.6	80.2	92.6	100.2	
Sensible Cooling Capacity (kW)	24.2	27.9	32.6	36.4	42.3	36.8	42.9	50.2	59.3	64.5	72.7	83.6	90.6	
FLA-A	28.3	31.3	38.7	41.2	48.0	43.6	48.0	51.3	58.5	62.9	69.3	82.5	84.3	
Quantity of Compressor	1	1	1	1	1	2	2	2	2	2	2	2	2	
<b>Indoor Fan Section</b>														
Airflow - m <sup>3</sup> /h	8000	9000	10000	11000	13000	11000	13000	14000	17000	18000	21500	23000	25000	
Quantity of Fan	1	1	1	1	2	1	2	2	2	2	3*	3*	3*	
<b>Reheat Section</b>														
Capacity (kW)	6	6	9	9	9	9	9	9	9	9	9	9	9	
<b>Humidifier Section</b>														
Capacity (kg/h)	6	6	6	6	10	6	10	10	10	10	10	10	10	
<b>Connection Size of DX Unit</b>														
Liquid Pipe - OD (mm)	16	16	16	16	19	16	16	16	16	16	16	19	19	
Gas Pipe - OD (mm)	22	22	22	22	22	22	22	22	22	22	22	22	22	
Inlet Pipe of Humidifier (Female)	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	G1 / 2"	
Drain Pipe - ID (mm)	25	25	25	25	25	25	25	25	25	25	25	25	25	
<b>Physical Data of DX Unit</b>														
Width (mm)	1050	1050	1400	1400	1700	1400	1700	1700	2100	2100	2550	2550	2550	
Depth (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Height (mm)	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	
Weight (kg)	410	420	440	445	560	445	565	580	760	770	840	850	865	
<b>Connection Size of iFreecooling™</b>														
Liquid Pipe - OD (mm)	16	16	16	16	16	16	16	16	19	19	19	19	19	
Gas Pipe - OD (mm)	22	22	22	22	22	22	22	22	28	28	28	28	28	
<b>Breakers &amp; Cables</b>														
Indoor Unit	Recommended Air Break Switch (A)	50	50	63	63	80	63	80	80	100	100	125	125	125
	Cables (mm <sup>2</sup> )	10	10	16	16	16	16	16	16	16	16	25	25	25
Outdoor Unit	Recommended Air Break Switch (A)	20	20	20	20	20	20	20	20	20	20	20	20	
	Cables (mm <sup>2</sup> )	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	

### Remark :

- ③ Return air condition: 24C / 50% RH.
- ③ EC fan configured as standard.
- ③ Electronic Expansion Valve as standard.
- ③ For modularized system, fan quantity is 2.

