

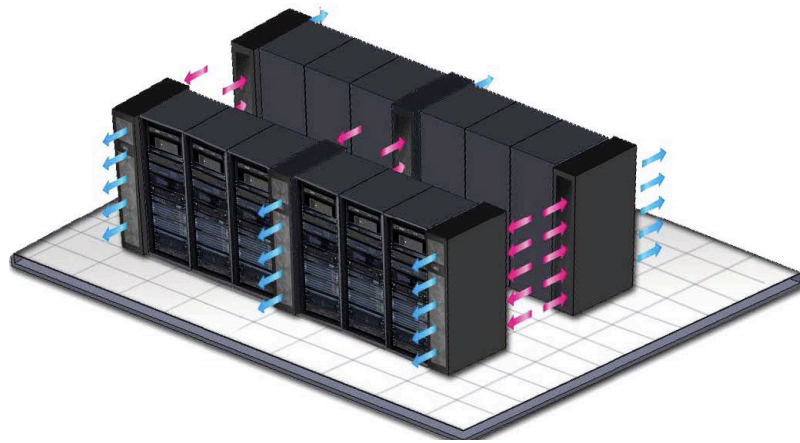
CHILLROW

Row Cooling Precision Air Conditioner

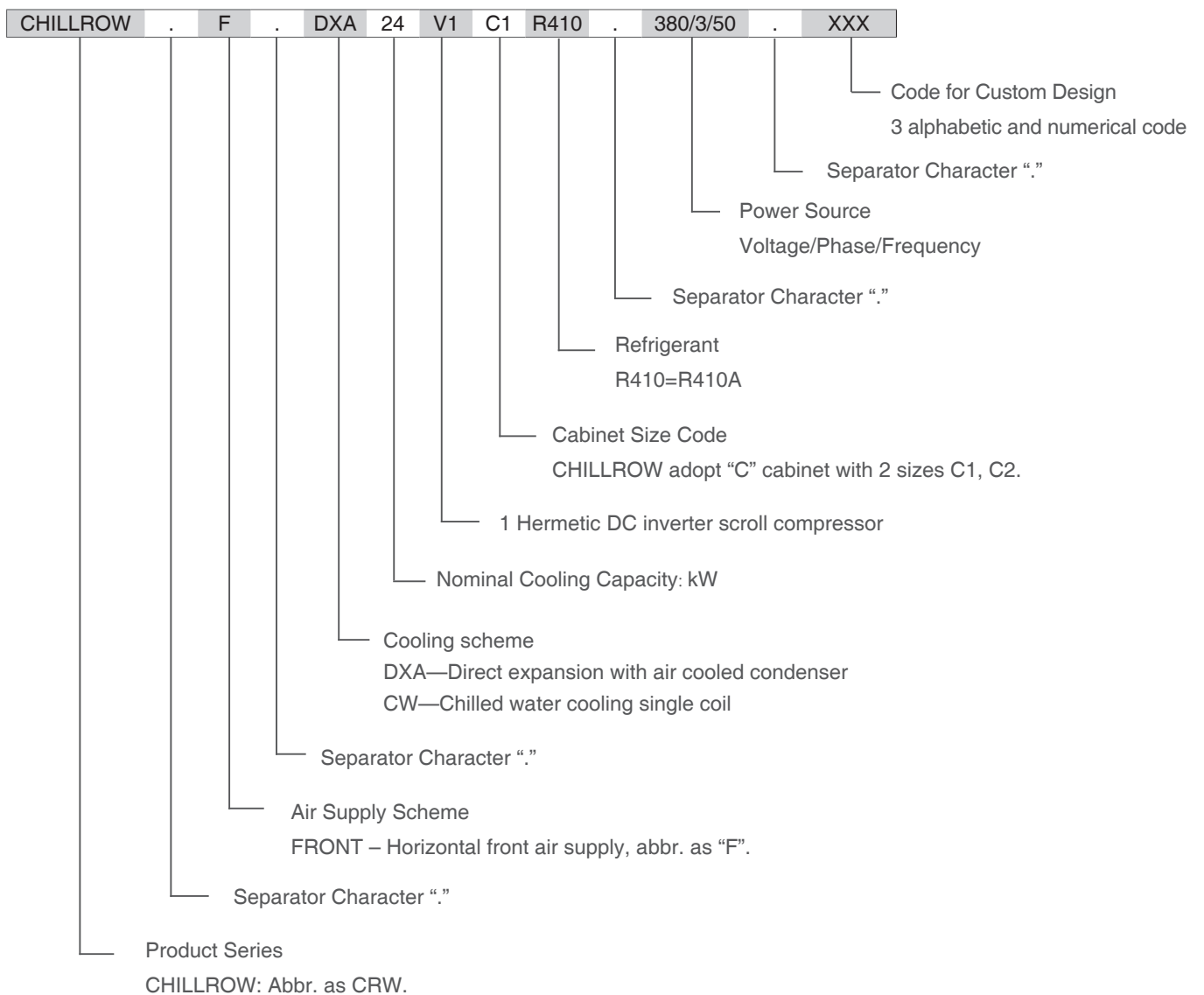
Cooling Capacity: 26.2kW~68.6kW



CHILLROW is installed closely with the server cabinets and refrigerating independently. The unit takes away the high density heat load through horizontal air supply scheme. Installed closely with the heat source, the unit can increase the cooling capacity of the cooling system. It is a new solution to increase energy efficiency for data centers.



Unit Identification



Working Range and Control Accuracy

CHILLROW.DXA

Operating Range

Outdoor Temperature:

-40°C~+55°C (special options are available for extreme temperature condition)

Piping Length:

Total length of 30 meters of gas and liquid refrigeration piping loop (consult Airsys sales representative for specific installation condition)

Piping Vertical Distance:

Condenser above indoor unit: max. 20m

Condenser below indoor unit: max. 5m

(consult Airsys sales representative for specific installation condition)

Control Accuracy

Temperature Range and Accuracy Range: 15~35°C, Accuracy: $\pm 1^{\circ}\text{C}$;

Humidity Range and Accuracy Range: 35~80%, Accuracy: $\pm 5\%$.

CHILLROW.CW

Operating Range

Water pressure: Higher than overall system pressure drop, lower than 1,250KPa.

Control Accuracy

Temperature Range and Accuracy Range: 15~35°C, Accuracy: $\pm 1^{\circ}\text{C}$;

Humidity Range and Accuracy Range: 35~80%, Accuracy: $\pm 5\%$.

Application

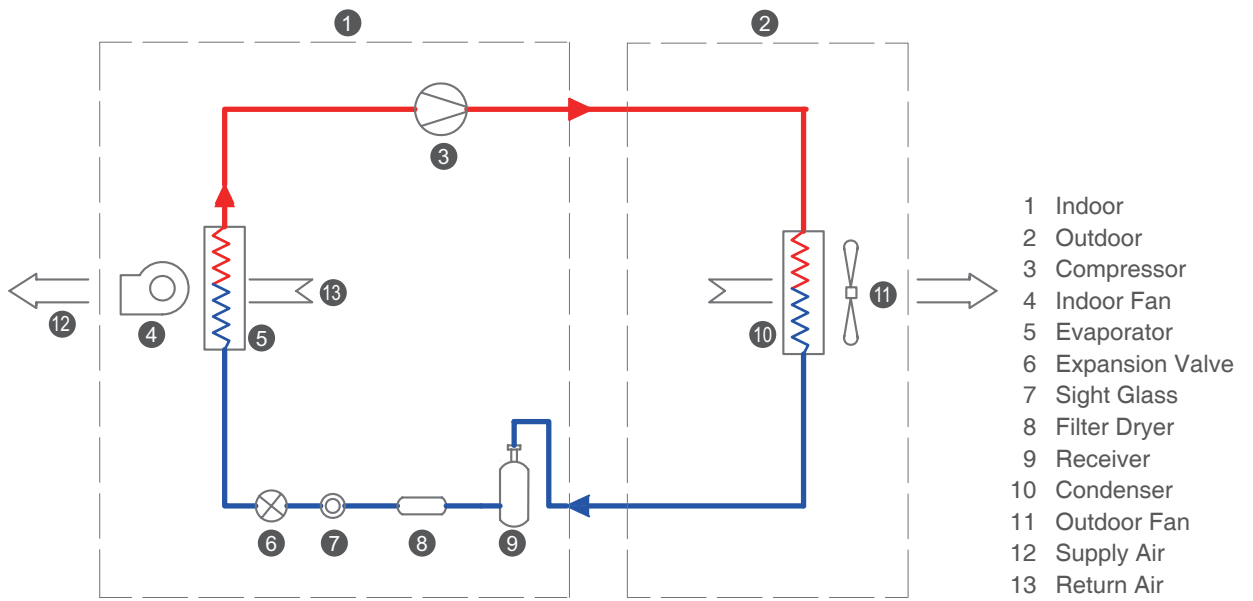
Middle and high telecommunication exchange room

Middle and big data center and computer room

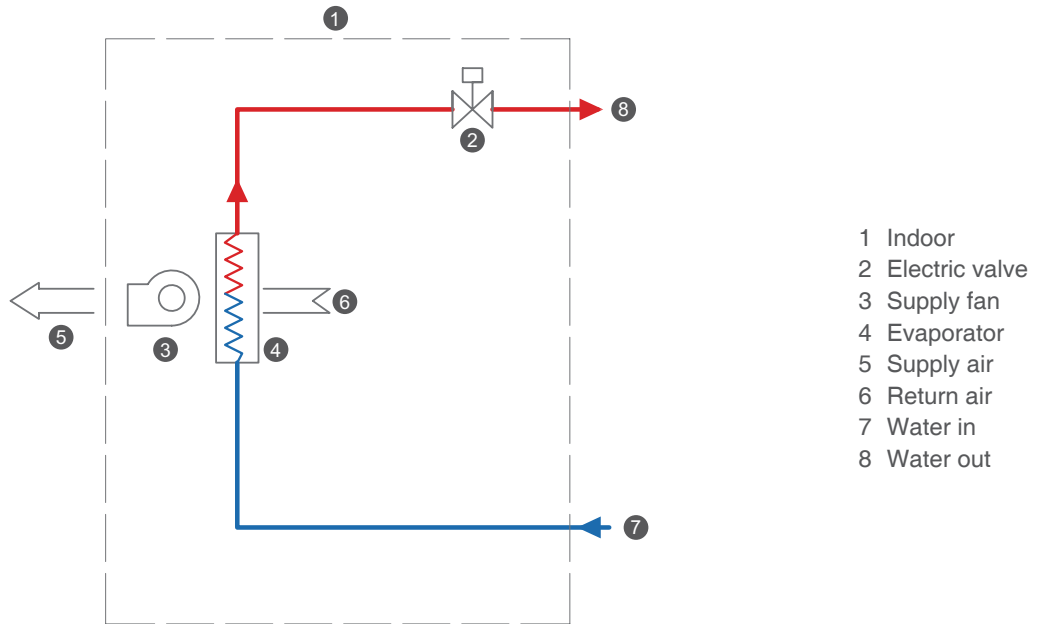
Museum and library

Precision machining equipment center

Working Principle
CHILLROW.DXA



CHILLROW.CW



Advantages

High Flexibility

- ⊙ Take away huge heat load separately through each unit installed closely to cabinet with horizontal air supply scheme, unit layout flexible;
- ⊙ Available for places no matter with raised floor or not, also available for both newly built data center and reconstruction project;
- ⊙ Scalable, the customer can scale the cooling capacity easily as demand grows to reduce initial investment pressure.

Saving Operation Cost

- ⊙ CHILLROW is installed between server cabinets, closely with heat load, avoiding hot and cold air mixture. The system efficiency will be increased by 30% to 45% compared with traditional cooling system;
- ⊙ Short supply airflow path, decreasing fan power consumption.

Easy Maintenance

- ⊙ It is easy to maintain the unit for the easy configuration. Units are independent. The system can still run normally when one unit fails.

High Lights

Matching Appearance

CHILLROW provides two widths (300mm and 600mm) for flexibility. The dimension is similar to standard server cabinet and matches with the server cabinets well.

Supply Air Scheme

Horizontal front air supply and back air return; air supply path is short in order to reduce fan power consumption.

Cooling Scheme

CHILLROW include 2 cooling schemes: CW and DXA. CW is applicable when the customer can provide Chiller while DXA can eliminate water leakage risk. The customer can choose the unit according to their demand.

Eco-friendly Refrigerant

R410A is used for DXA units.

Convenient Maintenance

Front and rear service access. Don't need to remove the unit at maintenance and don't influence other normal working units. It is important to data center's normal operation. CRW.F.CW25C1 and CRW.F.DXA24C1 have 5 hot swappable fans which can be controlled independently.

Convenient Installation

The unit has four composite castors and height adjustable fixed legs. It makes it easier to remove and install the unit. Besides, top or bottom pipe and line connection can be chosen according to customer's demand.

Unit Configuration

CHILLROW.DXA Standard Configuration

Standard Configuration	CRW.F.DXA24V1C1	CRW.F.DXA38V1C2
Black powder painted steel base, internal frame and top frame	●	●
Black powder painted steel panel with inside thermal and acoustic insulation	●	●
DC powered EC centrifugal fan	●	—
AC powered EC centrifugal fan	—	●
Compressor inverter	●	●
Hermetic DC inverter scroll compressor	●	●
Copper tube aluminum fin coil	●	●
Thermal expansion valve	●	●
Sight glass	●	●
Dry filter	●	●
Liquid receiver	●	●
High pressure transducer	●	●
Pressure switch for high/low pressure protection	●	●
Condensing water tray	●	●
Washable nylon air filter	●	●
Temperature sensor at supply air inlet	●	●
Temperature sensor at return air inlet	●	●
Installation support stand with adjustable legs	●	●
Composite castor	●	●
Microprocessor control system	●	●
Electrical control panel	●	●

Note: “●” standard configuration, “—” no option available.

CHILLROW.DXA Optional Configuration

Optional Configuration	CRW.F.DXA24V1C1	CRW.F.DXA38V1C2
Air pressure switch for clogged filter alarm	○	○
Floor water leakage alarm kit	○	○
RS232 communication card	○	○
RS485 communication card	○	○
Pcweb card	○	○
Clock card	○	○
Phase sequence protection relay for power supply	○	○

Note: “○” optional configuration.

Unit Configuration

CHILLROW.CW Standard Configuration

Standard Configuration	CRW.F.CW25C1	CRW.F.CW65C2
Black powder painted steel base, internal frame and top frame	●	●
Black powder painted steel panel with inside thermal and acoustic insulation	●	●
DC powered EC centrifugal fan	●	—
AC powered EC centrifugal fan	—	●
Copper tube aluminum fin coil	●	●
Condensing water tray	●	●
Washable nylon air filter	●	●
Motorized 2-way valve	●	●
Temperature sensor at supply air inlet	●	●
Temperature sensor at return air inlet	●	●
Air pressure switch for supply fan protection	●	●
Installation support stand with adjustable legs	●	●
Composite castor	●	●
Microprocessor control system	●	●
Electrical control panel	●	●

Note: “●” standard configuration, “—” no option available.

CHILLROW.CW Optional Configuration

Optional Configuration	CRW.F.CW25C1	CRW.F.CW65C2
Motorized 3-way valve	○	○
Air pressure switch for clogged filter alarm	○	○
Floor water leakage alarm kit	○	○
RS232 communication card	○	○
RS485 communication card	○	○
Pcweb card	○	○
Clock card	○	○
Phase sequence protection relay for power supply	○	○

Note: “○” optional configuration.

Microprocessor Control System

Indicative Parameters for Unit Working Status

Temperature

Return air temperature

Supply air temperature

Working Status

Supply fans

Compressor

Condenser fan

Humidifier water filling and drain valves

Dehumidification activation valve

2 stages electric heater working status

Automatic or manual status

High pressure of refrigeration system

Working Hours of Every Main Component

Supply fans

Compressor

Humidifier

Heaters working hours

Alarm Display

Display effective alarms, store and track up to 100 historical alarms (including alarm code, date, time and alarm description)

Other Control Functions

Self-diagnosis

The microprocessor will continuously monitor its own circuit and shut off automatically in case of malfunction.

Pressure Protections for Compressors

Double protection on high pressure by both high pressure transducer and pressure switch.

Protection on low pressure by pressure switch.

Motor Overload Alarm for Compressor, Supply Fan, Electric Heater and Condenser Fan

Prevent damages of component motor from voltage unbalance, low voltage and phase loss.

On-off Control Of Compressor

By setting the start-up relay time, minimum working time, minimum on-off interval and number of start-ups per hour to assure the reliability and to prolong the life of the compressor.

Sensor Failure Alarm

The microprocessor will shut down the unit and send out alarm signal in case of any failure of temperature sensor

and pressure transducer.

Power Supply Failure Alarm

The microprocessor will shut down the unit and send out alarm signal in case of any failure of the power supply such as phase loss, phase sequence mistake, and voltage out of range.

Unit Random Insertion

The units can start-up automatically after the power recovery. The microprocessor has 2~60 seconds of random insertion to avoid current shock caused by multiple unit start-up at the same time.

Floor Water Leakage Alarm

When detecting the water on the floor with the water leakage alarm kit, the microprocessor will send out an alarm.

Humidification System Alarm

Microprocessor provides various alarms to the humidification system, such as high/low current, high/low water level, cylinder life, high/low conductivity, to assure the reliability and to prolong the life of the humidifier.

Condenser Pressure Control

Microprocessor monitor the compressor discharge pressure and control the steadily control the pressure by changing the speed of the condenser fan. This feature enable more stable operation, low noise, energy saving and low ambient temperature start-up and operation.

Manual Control

It is able to manually switch on/off all the major components during the commissioning and service of the unit.

Operating Scheduling

This function allows the user to set daily or weekly operating schedule.

Multi-unit Group Control

When multiple units are installed in one room, the operating strategy such as rotation, standby, can be achieved by group networking.

Acoustic and Optical Alarm Signaling

The room temperature, humidity and working status of all the components are displayed on the controller. When a failure occurs, acoustic buzzer is energized and the failure message is displayed on the controller display.

4 Levels of Password

Unit has 4 password dedicated to different operation and maintenance jobs, this will prevent the unit from wrong or unauthorized operation.

Modified Parameter

Basic Running Parameter

Basic Running Parameters can be modified by customers according to the customer need, for example: temperature and humidification setting

Routine Parameter

The default parameters can be modified by service engineer during regularly maintenance, for example: temperature and humidity range, precision adjustment, temperature and humidity dead zone setting, highest and lowest temperature and humidity setting, high pressure alarm setting, start and stop schedule setting.

Advanced Parameter

For example: alarm delay adjustment, backup rotation setting, condensing fan working point setting, the compressor minimum start interval setting

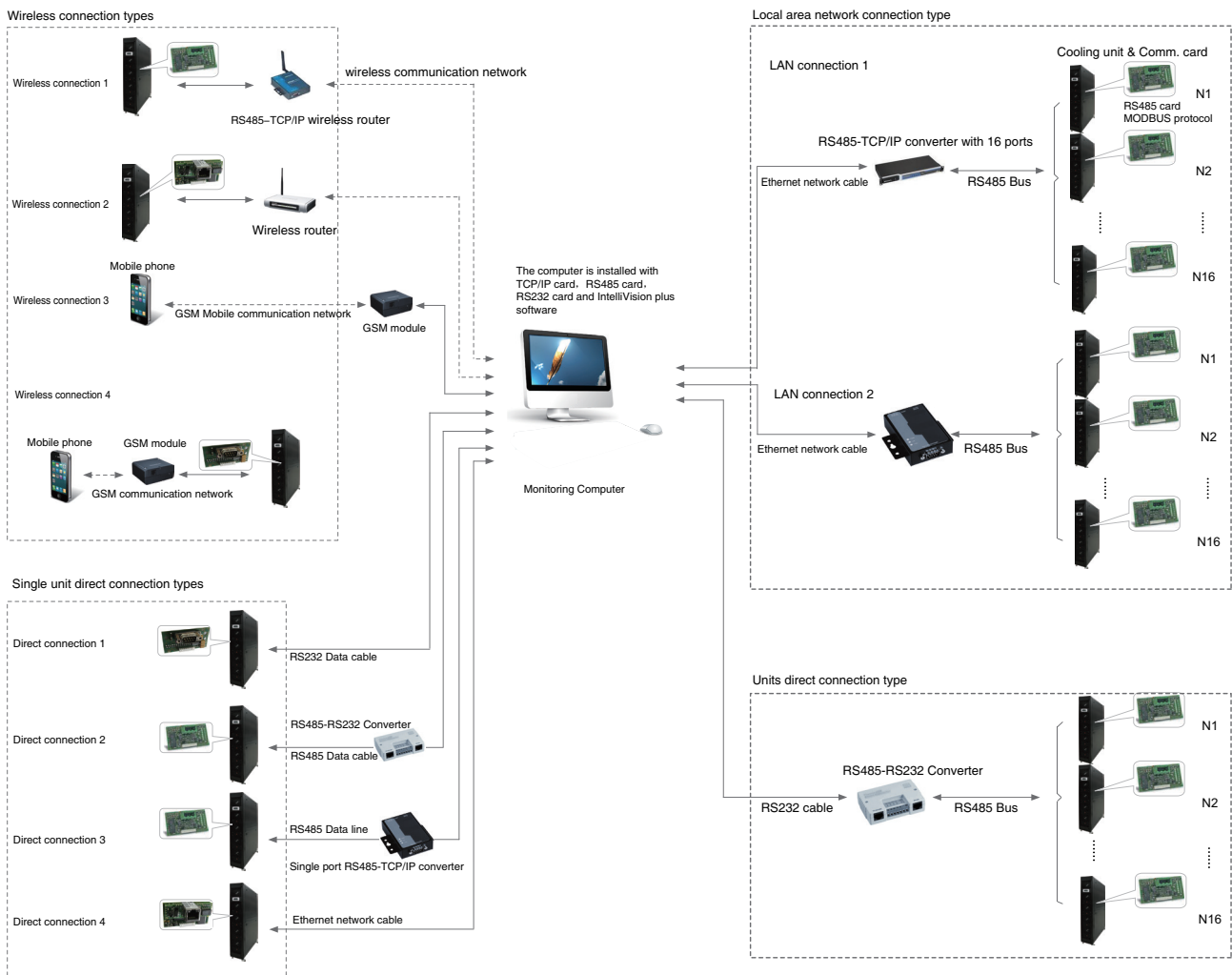
The unit can be initialized if necessary

Note: more details, please refer to the User Manual.

Remote Control and Monitoring Network

The unit can be remote controlled or monitored by many kinds of methods as follows:

- 3 kinds of local direct cable connection
- 3 kinds of LAN network connection
- 4 kinds of wireless network connection



Technical Parameters

CHILLROW.DXA

Model		CRW.F.DXA24V1C1	CRW.F.DXA38V1C2
Supply air scheme		F	
Cooling Capacity			
Total(1)	kW	26.5	41.3
Sensible(1)	kW	26.5	41.3
Total(2)	kW	24.2	38.7
Sensible(2)	kW	24.2	38.7
Total(3)	kW	22.3	36.3
Sensible(3)	kW	22.3	36.3
Total(4)	kW	---	25.9
Sensible(4)	kW	---	23.9
Refrigerant		R410A	
Compressor			
Type		Hermetic DC Inverter Scroll Type	
Max. power input	kW	8.1	12.5
Max. current input	kW	17.2	24.8
Supply fan			
Type		DC Powered EC Centrifugal Fan	AC Powered EC Centrifugal Fan
Qty. of fan	n.	5	3
Air volume	m ³ /h	4560	11600
Power input	kW	1.2	3.1
Air filter		Washable nylon net air filter	
Electric heater(5)			
Electric heater capacity	kW	---	9
Working steps	n.	---	2
Humidifier(5)			
Type		Electrode	
Humidification capacity	kg/h	---	3
Power input	kW	---	2.3
Outdoor Condenser			
Model		CRM10	CME15
Qty.	n.	1	1
Power supply			
Power source		380V/3Ph/50Hz	
Unit max. operating power input(6)	kW	9.8	25.3
Unit max. operating current input(6)	A	26.2	46.6
Unit piping connection			
Humidifier water supply Φ	in	---	1/2"
Condensing water drainage Φ	in	3/4"	3/4"
Refrigerant discharge line Φ	mm	19	22
Refrigerant liquid line Φ	mm	16	16
Unit dimensions and weight			
Width	mm	300	600
Depth	mm	1180	1180
Height	mm	2000	2000
Weight	kg	140	370

(1) Return air dry bulb temperature 40°C, RH 20%, outdoor dry bulb temperature 35°C;

(2) Return air dry bulb temperature 37°C, RH 25%, outdoor dry bulb temperature 35°C;

(3) Return air dry bulb temperature 35°C, RH 30%, outdoor dry bulb temperature 35°C;

(4) Return air dry bulb temperature 24°C, RH 50%, outdoor dry bulb temperature 35°C;

(5) "----" means none;

(6) Maximum operating power and current input means: return air dry bulb temperature 40°C, RH 20%, outdoor dry bulb temperature 45°C, dehumidification mode, electric heater operates at full load.

Technical Parameters

CHILLROW.CW

Unit Model		CRW.F.CW25C1	CRW.F.CW65C2
Supply air scheme			F
Cooling capacity			
Total(1)	kW	26.2	68.6
Sensible(1)	kW	26.2	68.6
Total(2)	kW	24.1	63.1
Sensible(2)	kW	24.1	63.1
Cooling coil			
Water flow(1)	m ³ /h	4.4	11.5
Water pressure drop(with coil and valve)(1)	kPa	68.1	62.9
Water flow(2)	m ³ /h	4.0	10.6
Water pressure drop(with coil and valve)(2)	kPa	55.4	55.2
Supply fan			
Type		DC Powered EC Centrifugal Fan	AC Powered EC Centrifugal Fan
Qty.	n.	5	3
Air volume	m ³ /h	4560	11600
Power input	kW	1.1	2.8
Air filter		Washable nylon net air filter	
Power supply		230V/1Ph/50HZ	380V/3Ph/50HZ
Unit piping connection			
Condensing water Φ	in	3/4"	3/4"
Chilled water outlet/inlet Φ	in	1"	1-1/2"
Unit dimensions and weight			
Width	mm	300	600
Depth	mm	1180	1180
Height	mm	1950	1950
Weight	kg	135	330

(1) Return air dry bulb temperature 37°C, RH25%, water inlet/outlet temperature 10°C/15°C;

(2) Return air dry bulb temperature 35°C, RH30%, water inlet/outlet temperature 10°C/15°C.

AIRSYS is a cooling product and solution provider for ICT (Information & Communication Technology) industry.

The products include:

- Air conditioner and Chiller for IT room and large data center

- Intelligent Control system (BAS) for IT room and data center

- Air conditioning equipments for telecom shelters

- Intelligent control system for shelter cooling.

Air conditioner and heat exchanger for telecom cabinets.

The solution include:

- Cooling system design

- System integration

- Installation and Commissioning

- Operation and Maintenance

AIRSYS is also a global leader in providing cooling solution for Medical Imaging System.

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