

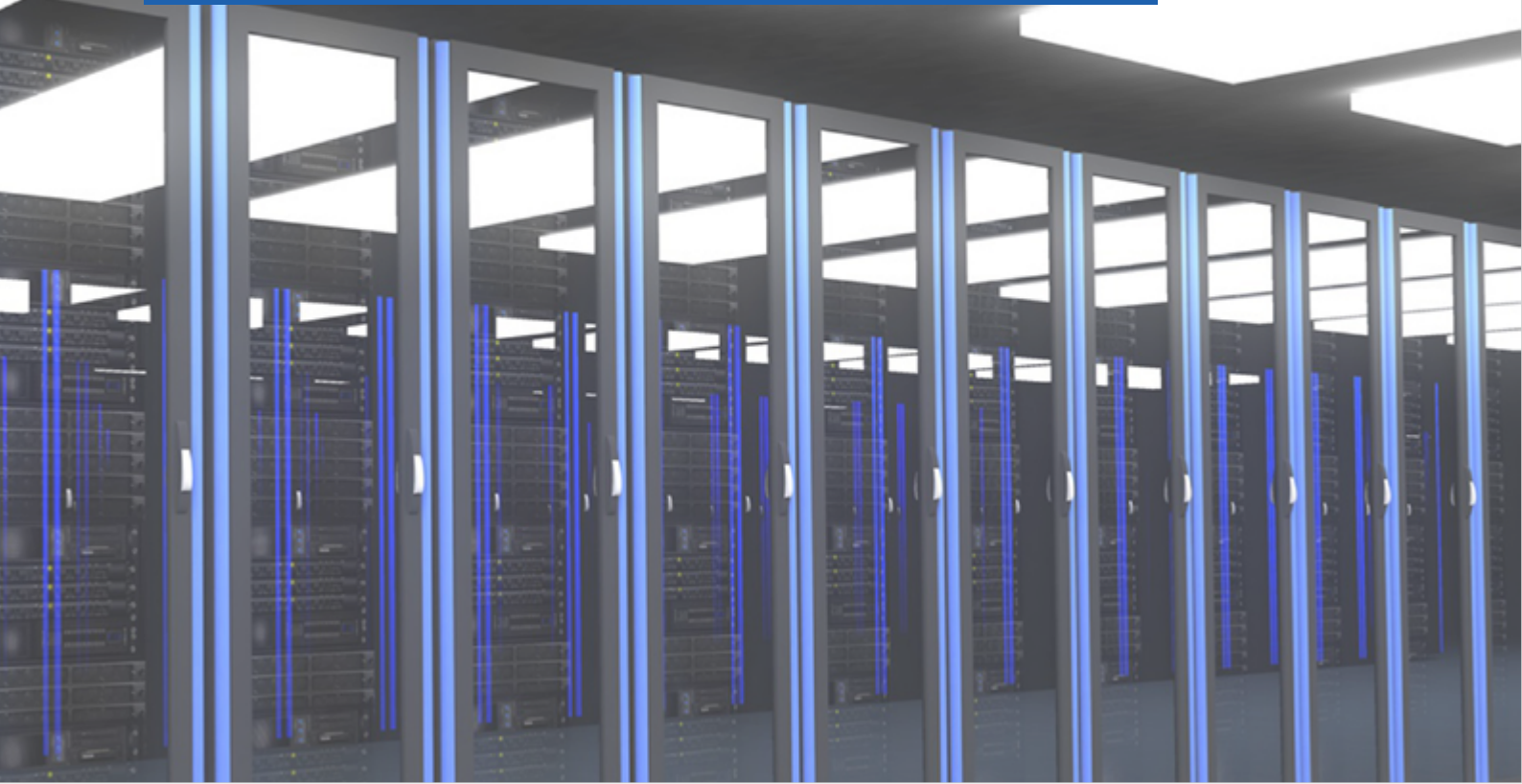
# CHILLROW

Row Based Cooling Precision Air Conditioner

Cooling capacity: 13.2kW~62.5kW



# 1. Product Introduction



The CHILLROW series of precision air conditioners from AIRSYS offers a new and unique method of targeted cooling for data center applications. The units are installed adjacent server cabinets and directly cool the heat-producing equipment via independent refrigeration systems. Areas of localized high-density heat can be effectively targeted by the horizontal supply arrangement of the CHILLROW units, increasing the capacity and efficiency of the overall cooling systems.

## 2. Unit Identification

1	CHILLROW	Product Series: CHILLROW: Abbr. as CRW
2	.	Separator Character “.”
3	F	Air Supply Scheme: FRONT – Horizontal flow with front supply, abbr. as “F”.
4	.	Separator Character “.”
5	DXA	Cooling scheme: DXA—Direct expansion with air cooled condenser
6	24	Nominal Cooling Capacity: kW
7	V1	Compressor type and quantity: V1: one Hermetic DC Inverter compressor
8	C1	Cabinet Size Code: There are 2 standard cabinet sizes: C1 & C3.
9	R410	Refrigerant: R410=R410A
10	.	Separator Character “.”
11	380/3/50	Power Source: Voltage/Phase/Frequency
12	.	Separator Character “.”
13	B	Configuration option; B: humidifier is not available for 24B model
14	.	Separator Character “.”
15	XXX	Code for Custom Design: 3 alphanumeric code

# 3. Operation Range & Control Accuracy

## *CHILLROW.DXA*

### Operation Range

#### Ambient Temperature:

-15°C to +45°C; operational range can be expanded to as low as -40°C when equipped with low-ambient enhancement option

#### Refrigeration pipework horizontal length limits:

The combined gas and liquid pipe length in the horizontal plane must be no more than 30 meters. (Please consult with the factory or dealer if distance is over this limit.)

Refrigeration pipework vertical height limits: Outdoor unit above the indoor unit:  $\leq 20$  meters Outdoor unit below the indoor unit:  $\leq 5$  meters

(Please consult with the factory or dealer if heights are outside these limits.)

### Control Precision

Temperature range: 15°C~45°C; Precision:  $\pm 1^\circ\text{C}$ ; Relative humidity range: 35%~80%; Precision:  $\pm 5\%$ .

## *CHILLROW.CW*

### Operating Range

#### Water pressure specification:

Higher than the system total pressure drop, but lower than 1250kPa

### Control Accuracy

Temperature Range and Accuracy: Range: 15~45°C, Accuracy:  $\pm 1^\circ\text{C}$ ;

#### Humidity Range and Accuracy:

Range: 35%~80%, Accuracy:  $\pm 5\%$ ;

# 4. Applications

Computer Rooms and Data Centers

Telecom Equipment Rooms and Shelters

Other Electronic Equipment Rooms

Healthcare Equipment Rooms

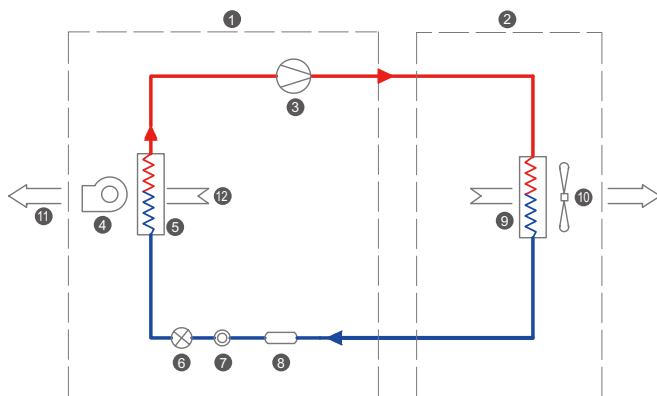
Laboratories with precise environmental requirements

Manufacturing facilities requiring precise environments

Storage facilities requiring precise environments

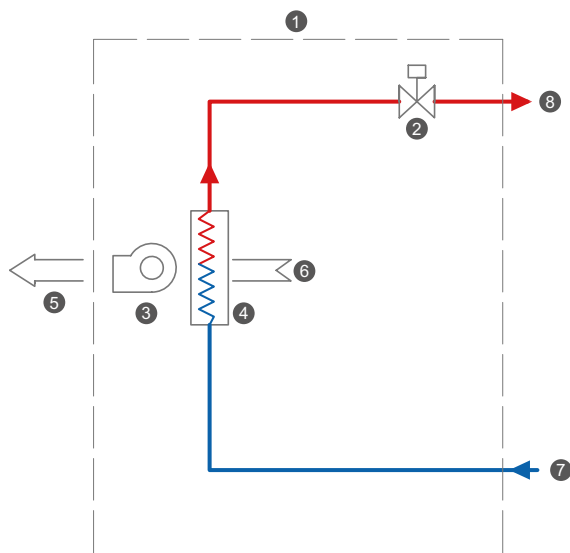
# 5. System Schematic and Operation

## ■ CHILLROW.DXA



- 1 Indoor
- 2 Outdoor
- 3 Compressor
- 4 Indoor Fan
- 5 Evaporator
- 6 Expansion Valve
- 7 Sight Glass
- 8 Filter Dryer
- 9 Condenser
- 10 Outdoor Fan
- 11 Supply Air
- 12 Return Air

## ■ CHILLROW.CW



- 1 Indoor
- 2 Electric Valve
- 3 Supply Fan
- 4 Evaporator
- 5 Supply Air
- 6 Return Air
- 7 Water In
- 8 Water Out

# 6. Advantages

### 1 High Level of Flexibility

The small dimensions and horizontal supply air arrangement allow for a large amount of flexibility in placement of the CHILLROW units.

They are suitable for both new and existing data centers, can be located on a standard or raised floor, and are highly scalable to easily meet demand as cooling demand grows.

### 2 Reduced Running Cost

When CHILLROW units are installed between server cabinets, directly adjacent the heat producing equipment, they can effectively minimize the mixture of hot and cold air, thereby potentially increasing the cooling effectiveness by 30% to 45% when compared with traditional cooling systems.

# 7. Product Features

## 1 Consistent Appearance

CHILLROW units are available in two industry-standard widths (300mm and 600mm), and are designed to match typical server cabinets in both dimensions and color.

## 2 Supply Air Arrangement

The short horizontal air path through the units, with both front supply and lateral supply available and rear return, reduces the required fan power and therefore the overall efficiency.

## 3 Heat Rejection Options

The CHILLROW precision coolers are available in both DXA (refrigerated) and CW (chilled water) heat rejection options. DXA units eliminate the risk of water leakage and can provide some level of redundancy, while CW units are viable where a new or existing chilled water system is available. The heat rejection configuration can be selected to best meet the needs of each particular installation.

## 4 Eco-friendly Refrigerant

R410A is used in DXA units and has an Ozone Depletion Potential (ODP) of 0.

## 5 Double layer water tray

Primary stainless-steel water tray is arranged under the evaporator, and the base of the unit is designed with a secondary water tray to prevent leakage of water.

## 6 Condensate water pump(optional)

When the site requires upward drain, the client can select condensate water pump option, this pump will be arranged at level of the primary water tray, achieve upward drain through water pump and check valves.

## 7 Electrical heater and humidifier (Optional)

Standard unit is not equipped with electric heater and humidifier, these can be selected as options (humidifier is not available for 24B model)

## 8 Convenient Maintenance

Service access is via both the front and rear of the units, allowing routine maintenance to occur in location, without affecting the operation of the surrounding equipment or other operational precision coolers. The CRW.F.CW25R1 unit even has 5 hot-swappable fans which can be independently controlled.

## 9 Convenient Installation

CHILLROW units have four composite castors, for increased maneuverability in tight spaces, and height adjustable fixed legs, for stability and support once in place. As well as this, pipe connections are able to be made to either the top or bottom of the unit, according to the installation requirements.



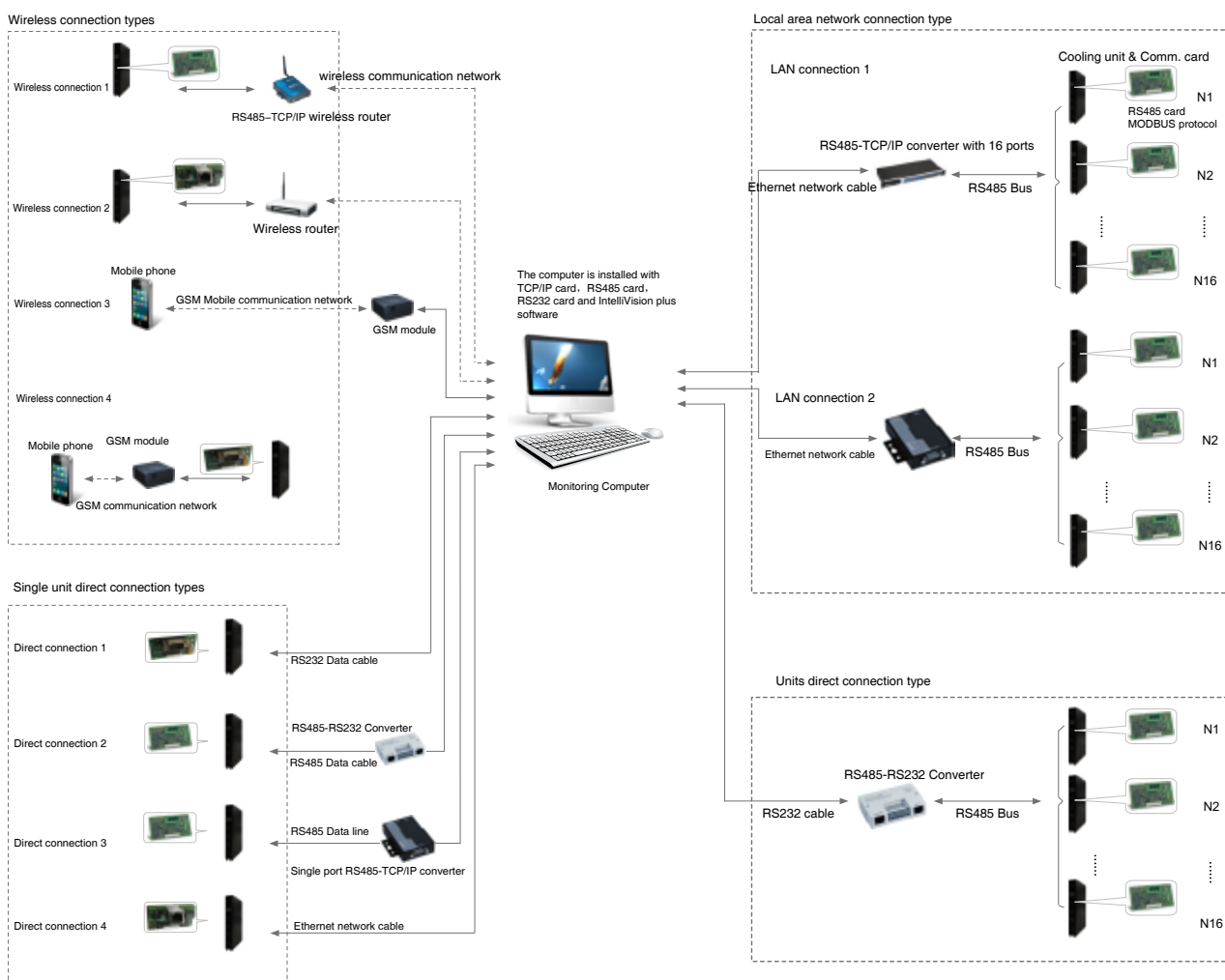
# 8. Remote Control & Monitoring Network

Networking and Monitoring of air conditioning equipment is typically a subsystem of a Building Management System (BMS) and provides centralized monitoring and management of all the air-conditioning equipment.

Thanks to years of experience in the production and application of precision air conditioning equipment, AIRSYS is able to provide a variety of monitoring systems ranging from simple SMS alarm monitoring to the most sophisticated tERA cloud based GPRS wireless centralized monitoring system. There is a solution available to suit all sites and installations.

A given unit can be remote controlled or monitored via several means:

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



# 9. Product Configuration

## Standard Configuration

Standard Configuration	DXA	CW
Powder painted steel frame	●	●
Powder painted steel panel with inside thermal and acoustic insulation	●	●
Front and back caster covering baffle	●	●
AC powered EC centrifugal fan	●	●
Compressor inverter	●	—
Hermetic DC inverter scroll compressor	●	—
Copper tube aluminum fin coil	●	●
Electronic expansion valve	●	—
Sight glass	●	—
Dry filter	●	—
High pressure transducer	●	—
Pressure switch for high/low pressure protection	●	—
Condensing water tray	●	●
Washable G4 air filter	●	●
Motorized 2 - way valve	—	●
Temperature sensor at supply air inlet	●	●
Temperature sensor at return air inlet	●	●
Installation support stand with adjustable legs	●	●
Composite castor	●	●
Colored touch screen graphical user interface	●	●
Microprocessor control	●	●
RS485 Communication	●	●
Clock function	●	●
Phase sequence protection for power supply	●	●
Electrical control panel	●	●
Condenser fan speed controller	●	—
Wooden Package	●	●

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

## Options

Optional Configuration	DXA12V1C1	DXA24V1C1.B	DXA38V1C3	DXA24V1C1	CW25C1	CW50C3	CW65C3
Air pressure switch for clogged filter alarm	○	○	○	○	○	○	○
Floor water leakage alarm kit	○	○	○	○	○	○	○
Humidifier	○	—	○	○	○	○	○
Electric heater	○	○	○	○	○	○	○
Condensate pump	○	○	○	○	○	○	○
Fan hot - plugging	○	○	—	○	○	—	—
RS485-RS232 converter	○	○	○	○	○	○	○
RS485-TCP/IP converter	○	○	○	○	○	○	○
Motorized 3-way valve	—	—	—	—	○	○	○
Automatic transfer switch (ATS)	○	○	○	○	○	○	○

Note: “○” available option, “—” no option available.

# 10. Specification & Parameters

## CHILLROW.DXA

Model		DXA12V1C1	DXA24V1C1.B	DXA38V1C3	DXA24V1C1
Supply air scheme		Front (F)			
<b>Cooling Capacity</b>					
Total (1)	kW	13.2	23.5	36.5	22.6
Sensible (1)	kW	13.2	23.5	36.5	22.6
<b>Compressor</b>					
Type		Inverter Rotor Type		Inverter Scroll Type	
Power input (1)	kW	3.3	6.7	9.5	6.7
Current input (1)	A	8.2	10.8	14.3	10.8
<b>Supply fan</b>					
Type		AC Powered EC Fan			DC Powered EC Fan
Qty. of fan	n.	4	6	2	4
Air volume	m <sup>3</sup> /h	2950	4650	8260	4350
Power	kW	0.5	0.8	1.7	0.7
<b>Air filter</b>					
				G4	
<b>Electric heater (2)</b>					
				PTC	
Electric heater capacity	kW	2.25	2.25	4.5	2.25
Current	A	3.2	3.2	6.5	3.2
<b>Humidifier (3)</b>					
Type		Electrode	N/A	Electrode	
Humidification capacity	kg/h	3	N/A	3	3
Power	kW	2.3	N/A	2.3	2.3
Current	A	3.3	N/A	3.3	3.3
<b>Outdoor Condenser</b>					
Model*Qty. (4)		VMEG25V2*1	VMEG40V2*1	VMEG55V2*1	VMEG40V2*1
Model*Qty. (5)		CMEG8V2*1	CMEG15V2*1	CMEG20V2*1	CMEG15V2*1
<b>Power supply</b>					
Power source		380V/3Ph/50Hz			
Unit max. operating power	kW	9.9	12.7	21.1	12.6
Unit max. operating current	A	21.0	26.4	31.3	26.1
<b>Unit piping connection</b>					
Humidifier water supply Φ	in	1/2"	N/A	1/2"	1/2"
Condensate water drainage Φ	in	3/4"	3/4"	3/4"	3/4"
Refrigerant discharge line Φ	mm	19	19	22	19
Refrigerant liquid line Φ	mm	16	16	19	16
<b>Unit dimensions and weight</b>					
Width	mm	300	300	600	300
Depth	mm	1200	1200	1200	1200
Height	mm	2000	2000	2000	2000
Weight	kg	120	145	350	140

(1) Return air bulb temperature 37°C, RH 24%, outdoor dry bulb temperature 35°C;

(2) Optional;

(3) Optional;

(4) standard condenser configuration, horizontal installation and top air exhaust;

(5) Optional condenser configuration horizontal or vertical installation;

(6) Maximum operating power and current are calculated at the unit in dehumidification mode and electric heater operating at full load.

## CHILLROW.CW

Model		CW25C1	CW50C3	CW65C3
<b>Supply air scheme</b>		Front(F)		
<b>Cooling Capacity</b>				
Total (1)	kW	28.7	52.6	62.5
Sensible (1)	kW	27.6	52.6	62.5
<b>Cooling coil</b>				
Water flow (1)	m <sup>3</sup> /h	5.1	8.7	10.8
Water pressure drop (coil and valve) (1)	kPa	56.4	75.2	63.5
<b>Supply fan</b>				
Type		AC Powered EC Centrifugal Fan		
Air volume	m <sup>3</sup> /h	4650	8260	11500
Qty.	n.	6	2	3
Power input	kW	0.8	1.7	2.3
<b>Air filter</b>				
G4				
<b>Electric heater (2)</b>				
PTC				
Electric heater capacity	kW	2.25	4.5	4.5
Current	A	3.2	6.5	6.5
<b>Humidifier (3)</b>				
Type		Electrode		
Humidification capacity	kg/h	3	3	3
Power	kW	2.3	2.3	2.3
Current	A	3.3	3.3	3.3
<b>Power supply</b>				
Power source				
400V/3Ph/50Hz				
Unit max. operating power (4)	kW	5.3	8.5	9.3
Unit max. operating current (4)	A	12.1	12.8	14.2
<b>Unit piping connection</b>				
Chilled water outlet/inlet Φ	in	1"	1 1/2"	1 1/2"
Humidifier water supply Φ	in	1/2"	1/2"	1/2"
Condensing water Φ	in	3/4"	3/4"	3/4"
<b>Unit dimensions and weight</b>				
Width	mm	300	600	600
Depth	mm	1200	1200	1200
Height	mm	2000	2000	2000
Weight	kg	125	295	310

(1) Return air dry bulb temperature 37°C, RH 24%, inlet/outlet water temperature 10/15°C;

(2) Optional;

(3) Optional;

(4) Maximum operating power and current are calculated at the unit in dehumidification mode and electric heater operating at full load.

## CMEG

Model		CMEG8V2	CMEG15V2	CMEG20V2
Capacity (1)	kW	29.6	47.6	67.4
<b>Fan</b>				
Fan qty.	No.	1	2	2
Air flow rate	m <sup>3</sup> /h	10100	11600	20100
<b>Power supply</b>				
Input power	kW	0.63	0.74	1.26
Input current	A	3.0	3.4	6.0
<b>Connection tube size</b>				
Gas pipe	mm	22	22	28
Liquid pipe	mm	16	19	19
<b>Unit external dimensions and Weight</b>				
Width	mm	1340	1540	2400
Depth	mm	620	620	630
Height	mm	1070	1070	1135
Weight	kg	95	130	155

(1)The capacity is rated at entering air temperature 35°C and condensing temperature 50°C condition.

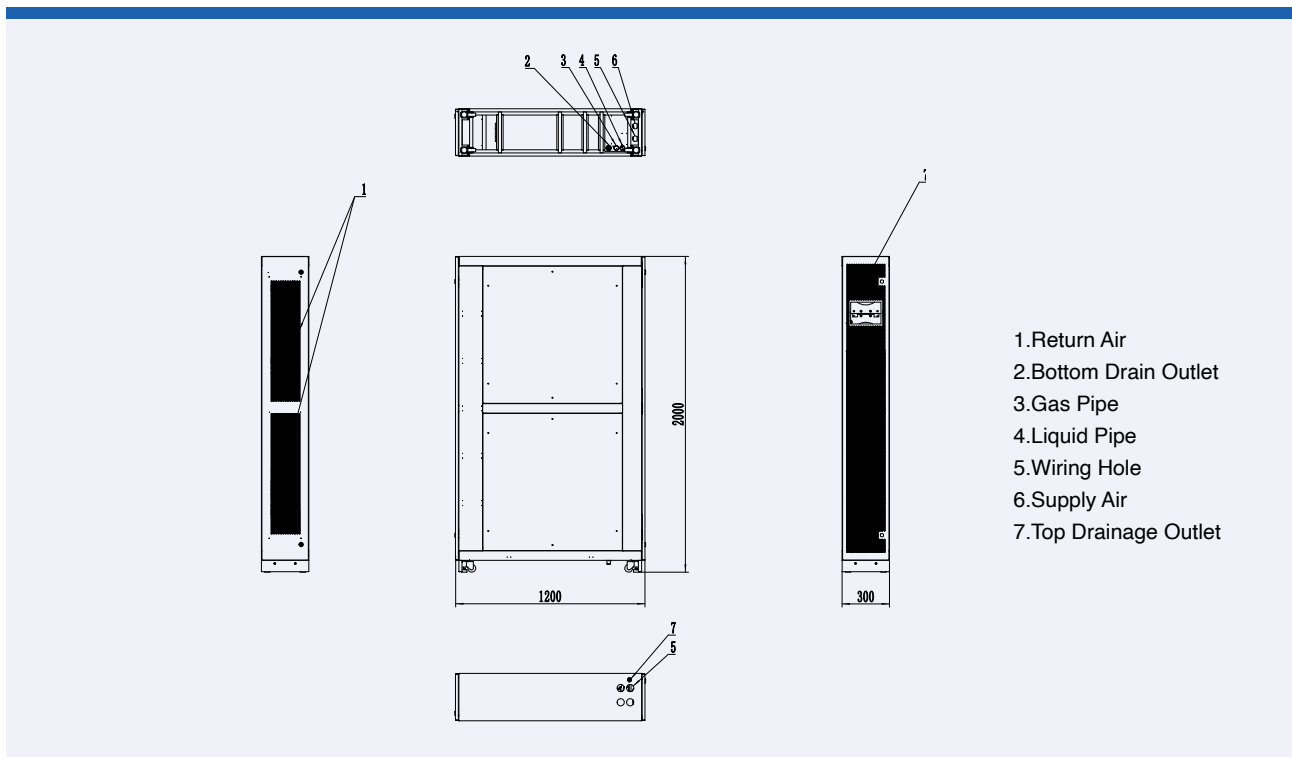
## VMEG

Model		VMEG25V2	VMEG40V2	VMEG55V2
Capacity (1)	kW	25	40	55
<b>Fan</b>				
Fan qty.	No.	1	1	1
Air flow rate	m <sup>3</sup> /h	8500	14000	21000
<b>Power supply</b>				
Max.Input Power	kW	0.63	1.13	1.85
Max.Input Current	A	3.00	2.35	4.00
<b>Connection tube size</b>				
Gas pipe	mm	22	22	22
Liquid pipe	mm	16	16	19
<b>Unit external dimensions and Weight</b>				
Width	mm	1380	1380	1380
Depth	mm	1000	1000	1000
Height	mm	1295	1850	1870
Weight	kg	90	140	180

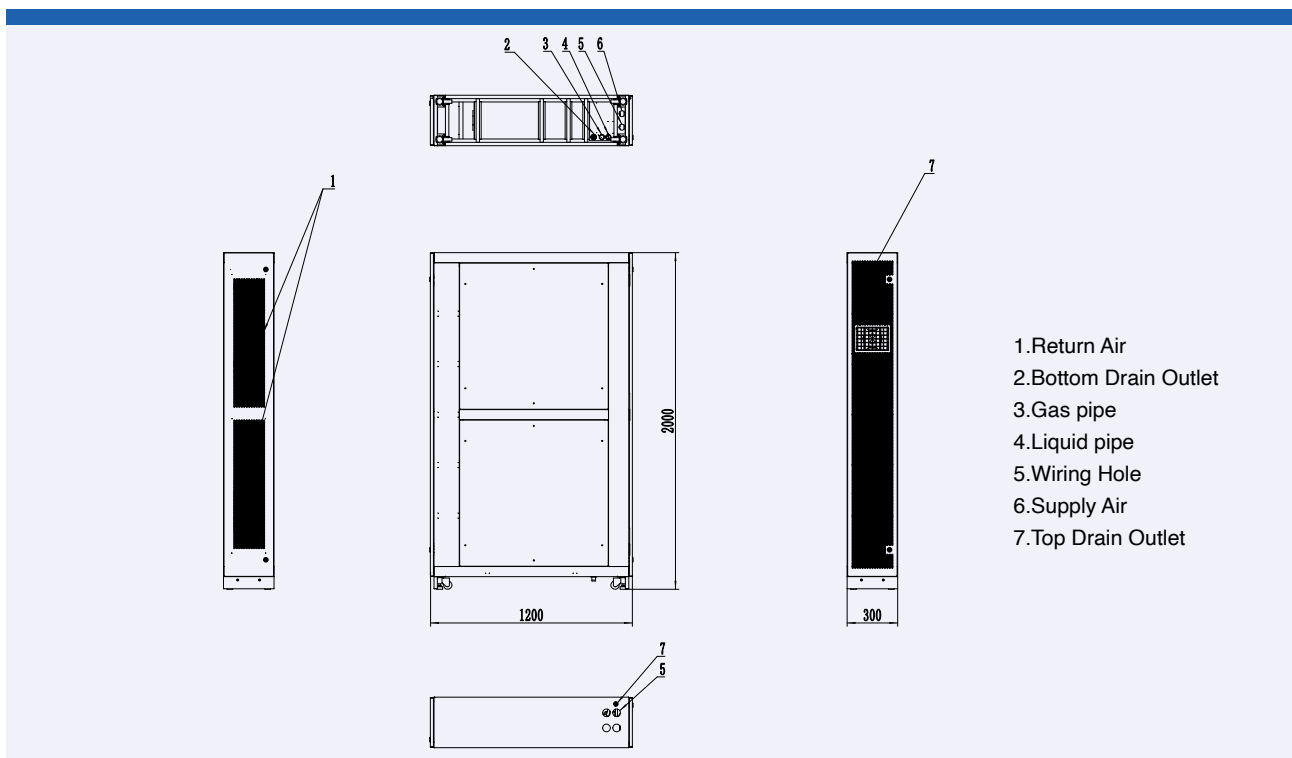
(1)The capacity is rated at entering air temperature 35°C and condensing temperature 50°C condition.

# 11. 机组外形尺寸图

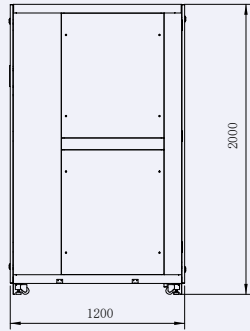
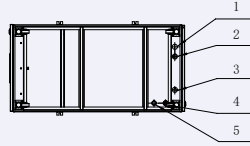
DXA12/24V1C1



DXA24V1C1.B

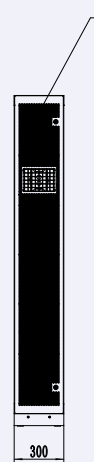
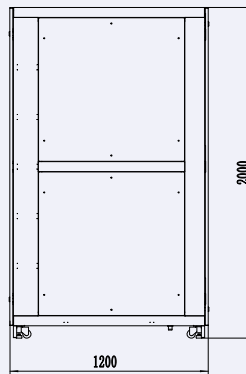
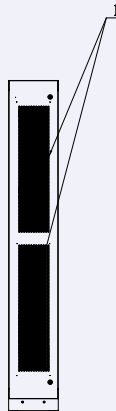
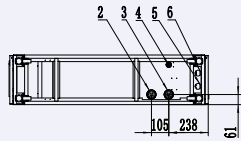


DXA38V1C3



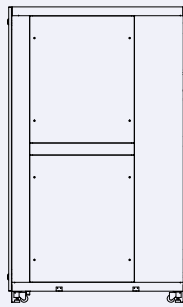
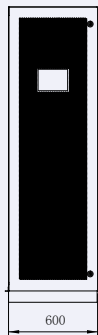
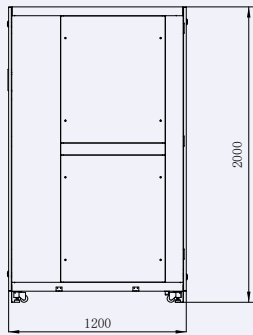
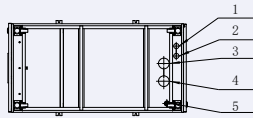
- 1. Wiring Hole
- 2. Gas pipe
- 3. Liquid pipe
- 4. Drain Outlet
- 5. Humidifier Filling Inlet

CW25C1



- 1. Return Air
- 2. Water Inlet
- 3. Water Outlet
- 4. Bottom Drain Outlet
- 5. Wiring Hole
- 6. Humidifier Filling Inlet
- 7. Supply Air
- 8. Top Drain Outlet

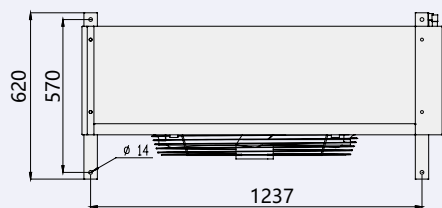
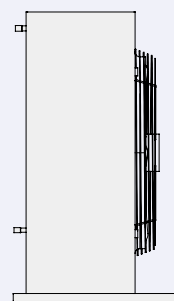
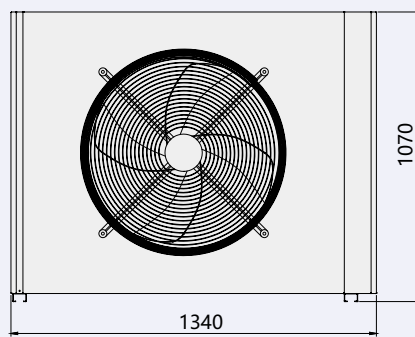
CW50/65C3



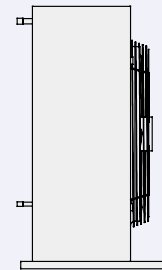
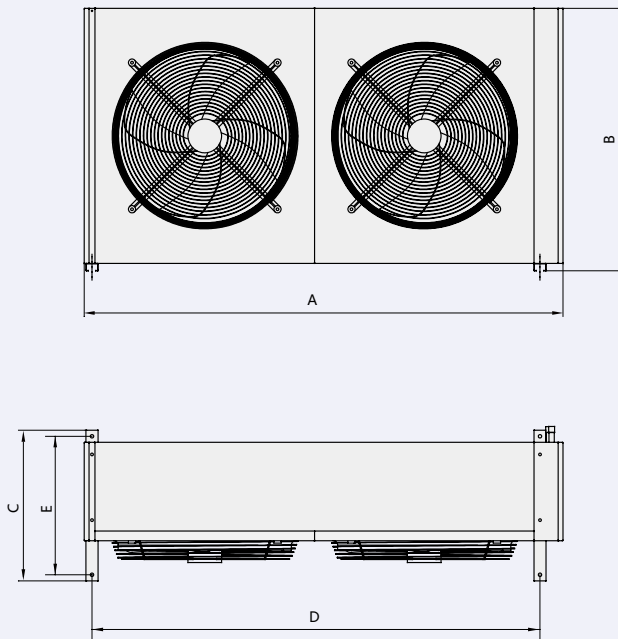
- 1.Wiring Hole
- 2.Humidifier Filling Inlet
- 3.Water Outlet
- 4.Water Inlet
- 5.Drain Outlet



CMEG8V2

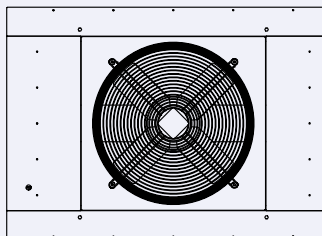
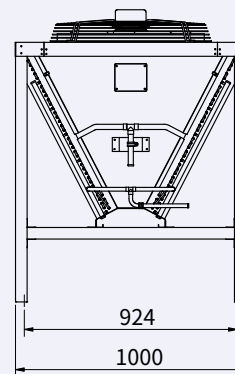
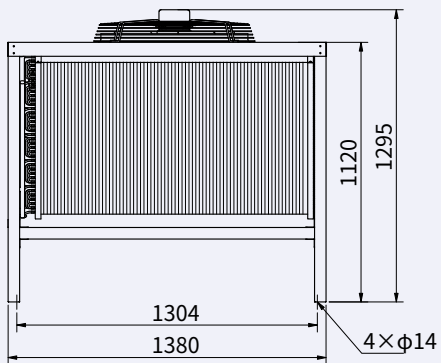


CMEG15/20V2

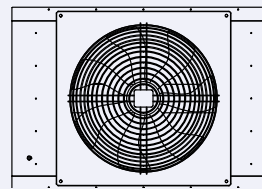
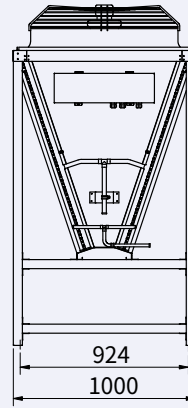
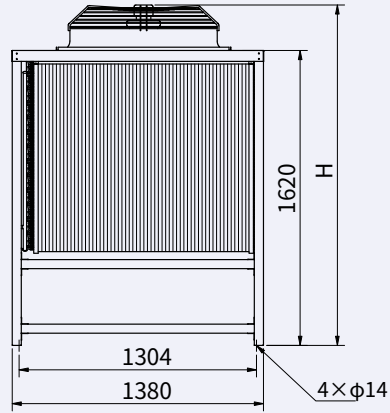


Model	CMEG15V2	CMEG20V2
A	1540	2400
B	1070	1135
C	620	630
D	1437	2160
E	570	580

VMEG25V2



■ VMEG40/55V2



Unit mode	H
VMEG40	1850
VMEG55	1870

**AIRSYS**



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Product design and specification subject to change without prior notice.