



## CHILLROW

Row Based Precision Cooling Unit

Cooling Capacity: 13.2kW-62.5kW



The CHILLROW series of precision cooling units from Airsys provide precise, targeted cooling for data centre applications. The units are installed between the server cabinets and discharge cold air directly into the cold aisle. Used stand-alone or as part of a larger CRAC unit installation, areas of localised 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 solution.

# Unit Identification

| 01       | 02 | 03 | 04 | 05  | 06 | 07 | 08 | 09   | 10 | 11       | 12 | 13 | 15 | 16  |
|----------|----|----|----|-----|----|----|----|------|----|----------|----|----|----|-----|
| CHILLROW | .  | F  | .  | DXA | 24 | V1 | C1 | R410 | .  | 380/3/50 | .  | B  | .  | XXX |

|    |          |   |
|----|----------|---|
| 01 | CHILLROW | Product series name: CHILLROW   |
| 02 | .        | Separator Character ""  |
| 03 | F        | Air Supply Scheme: FRONT - Horizontal flow with front supply, abbr. as "F". |
| 04 | .        | Separator Character ""  |
| 05 | DXA      | Cooling scheme: DXA - Direct expansion with air cooled condenser            |
| 06 | 24       | Nominal cooling capacity: kW  |
| 07 | V1       | Compressor type and quantity: V1: one Hermetic DC inverter compressor       |
| 08 | C1       | Cabinet size code: There are 2 standard cabinet sizes C1 & C2               |
| 09 | 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  |

# Engineered 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 colour.

## 2 Supply air arrangements

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 increases 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 gravity drainage is not feasible then the client can select a condensate water pump option. This pump will be arranged at the same level as the primary water tray, and is fitted with a check valve, to achieve safe condensate removal.

## 7 Electrical heater and humidifier (optional)

Standard unit is not equipped with an electric heater or humidifier, but 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 situ, without affecting the operation of the surrounding equipment or any other installed precision coolers.

## 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 can be either via the top or bottom of the unit, according to the installation requirements.

## 10 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 centres, can be located on a standard or raised floor, and are highly scalable to easily meet demand as cooling demand grows.

## 11 Reduced running costs

When CHILLROW units are installed between server cabinets, directly adjacent to 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.

# Working Flow Schematic Diagram

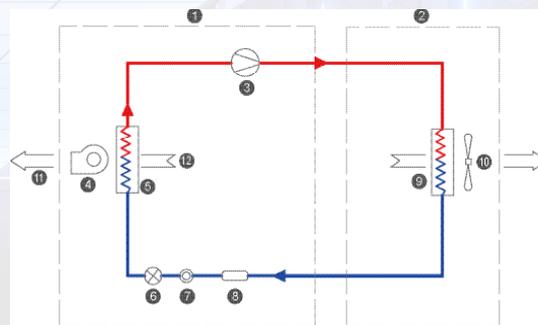
## Chillrow.DXA

Heat from the indoor air is transferred to the refrigerant at the evaporator coil and rejected to the outside air via the air-cooled condenser.

Air cooled direct expansion (DXA) includes throttle, evaporator coil, scroll compressor and refrigeration piping configuration.

Indoor unit: CHILLROW.DXA

Outdoor unit: CMEG air cooled condenser



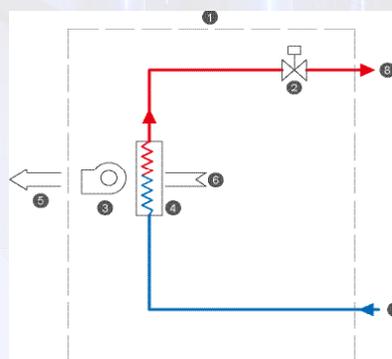
- 1 Indoor
- 2 Outdoor
- 3 Compressor
- 4 Indoor Fan
- 5 Evaporator
- 6 Expansion Valve
- 7 Sight Glass
- 8 Filter Dryer

## Chillrow.CW

The CW unit is fitted with a chilled water cooling coil and either a 2-port or 3-port control valve and actuator, and is connected to an external chilled water source. The valve will modulate with cooling demand to ensure optimized efficiency. Server heat is absorbed by the chilled water and rejected to ambient by the chiller.

Indoor unit: CHILLROW.CW

Outdoor unit: Chiller



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

# Technical Parameters

## CHILLROW.DXA

| Unit model                       |                   | DXA12V1C1           | DXA24V1C1.B | DXA38V1C3            | DXA24V1C1  |
|----------------------------------|-------------------|---------------------|-------------|----------------------|------------|
| Supply air scheme(1)             |                   | 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>Outdoor condenser</b>         |                   |                     |             |                      |            |
| Model*QTY. (4)                   |                   | VMEG25V2*1          | VMEG40V2*1  | VMEG55V2*1           | VMEG40V2*1 |
| Model*QTY. (5)                   |                   | CMEG8V2*1           | CMEG15V2*1  | CMEG20V2*1           | CMEH15V2*1 |
| <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>Power supply</b>              |                   |                     |             |                      |            |
| Power supply                     |                   | 380V/3Ph/50Hz       |             |                      |            |
| Unit maximum operation power     | kW                | 9.9                 | 12.7        | 21.1                 | 12.6       |
| Unit maximum operation current   | A                 | 21.0                | 26.4        | 31.3                 | 26.1       |
| <b>Air filter</b>                |                   |                     |             |                      |            |
|                                  |                   | G4                  |             |                      |            |
| <b>Unit piping connection</b>    |                   |                     |             |                      |            |
| Humidifier water supply Φ        | in                | 1/2"                | NA          | 1/2"                 | 1/2"       |
| Condensate water drainage Φ      | in                | 3/4                 |             |                      |            |
| Refrigerant discharge line Φ     | mm                | 19                  | 19          | 22                   | 19         |
| Refrigerant liquid line Φ        | mm                | 16                  | 16          | 19                   | 16         |
| <b>Unit dimension 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) (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.

# Technical Parameters

## CHILLROW.CW

| Unit model                               |                   | CW25C1            | CW50C3 | CW65C3 |
|--|-------------------|-------------------|--------|--------|
| Supply air scheme(1)                     |                   | 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 Fan |        |        |
| Qty. of fan                              | n.                | 6                 | 2      | 3      |
| Air volume                               | m <sup>3</sup> /h | 4650              | 8260   | 11500  |
| Power                                    | kW                | 0.8               | 1.7    | 2.3    |
| <b>Electric heater (2)</b>               |                   |                   |        |        |
| 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 maximum operation power (4)         | kW                | 5.3               | 8.5    | 9.3    |
| Unit maximum operation current (4)       | A                 | 12.1              | 12.8   | 14.2   |
| <b>Air filter</b>                        |                   |                   |        |        |
|  |                   | G4                |        |        |
| <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 dimension 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.

# Technical Parameters

## ■ CMEG

| Unit model                                 |                   | CMEG8V2 | CMEG15V2 | CMEG20V2 |
|--|-------------------|---------|----------|----------|
| Capacity (1)                               | kW                | 29.6    | 47.6     | 67.4     |
| <b>Fan</b>                                 |                   |         |          |          |
| Qty. of fan                                | n.                | 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.

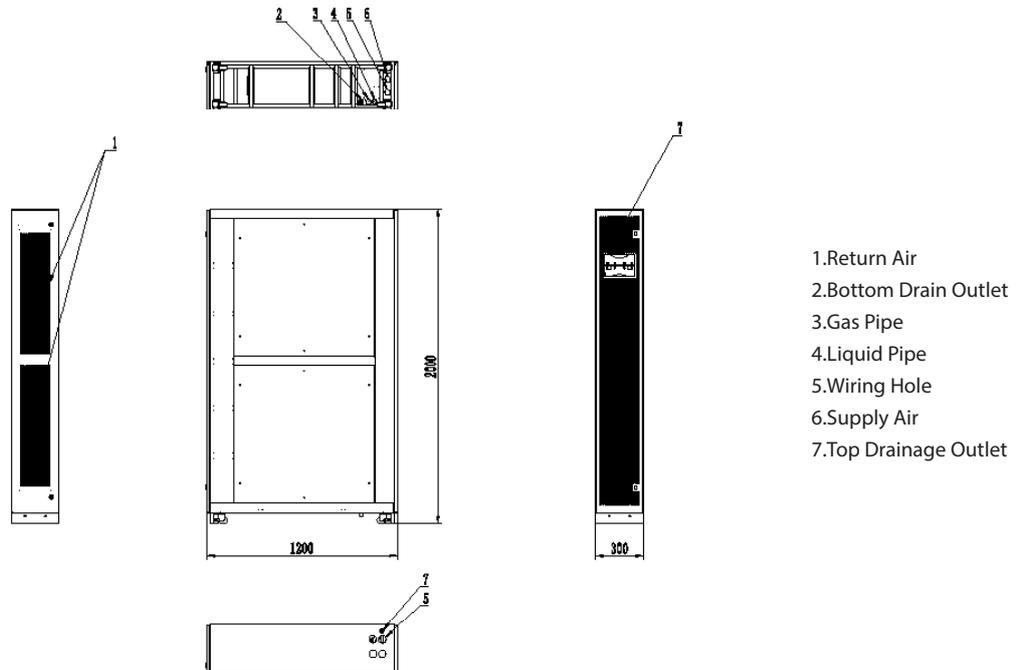
## ■ VMEG

| Unit model                                 |                   | VMEG25V2 | VMEG40V2 | VMEG55V2 |
|--|-------------------|----------|----------|----------|
| Capacity (1)                               | kW                | 25       | 40       | 55       |
| <b>Fan</b>                                 |                   |          |          |          |
| Qty. of fan                                | n.                | 1        | 1        | 1        |
| Air flow rate                              | m <sup>3</sup> /h | 8500     | 14000    | 21000    |
| <b>Power supply</b>                        |                   |          |          |          |
| Maximum input power                        | kW                | 0.63     | 1.13     | 1.85     |
| Maximum input current                      | A                 | 3.00     | 2.35     | 4.00     |
| <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                | 1380     | 1380     | 1380     |
| Depth                                      | mm                | 1000     | 1000     | 1000     |
| Height                                     | mm                | 1295     | 1550     | 1570     |
| Weight                                     | kg                | 90       | 140      | 180      |

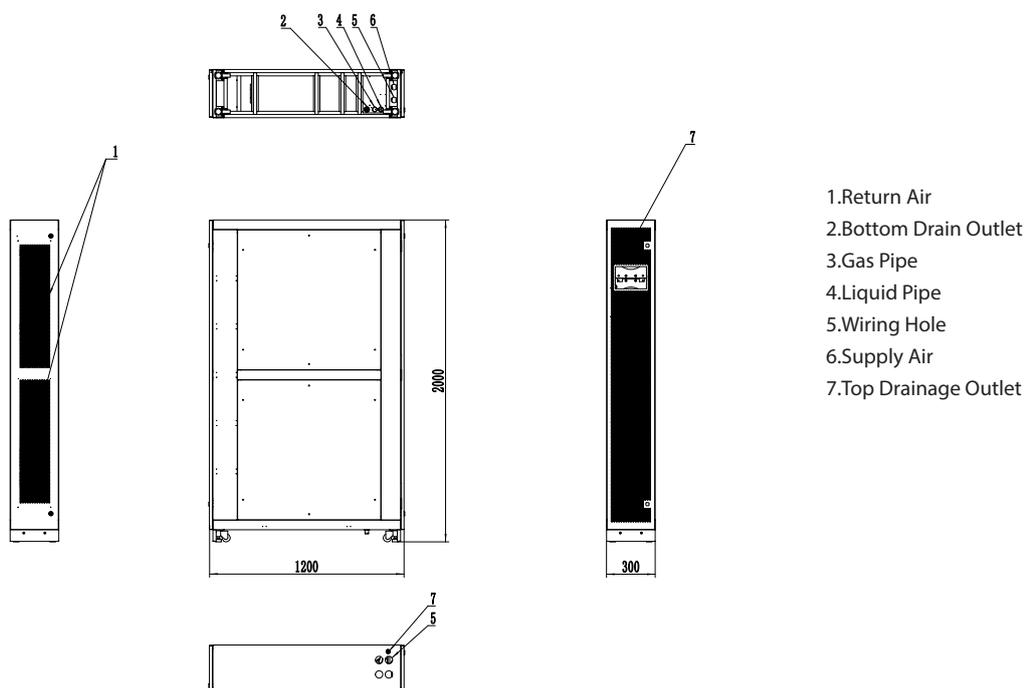
(1)The capacity is rated at entering air temperature 35°C and condensing temperature 50°C condition.

# Unit Dimension Drawing

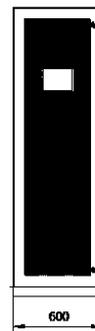
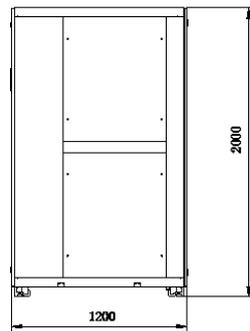
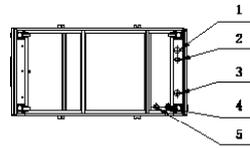
## DXA12/24V1C1



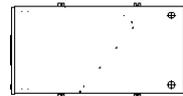
## DXA24V1C1.B



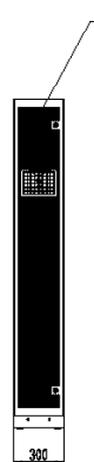
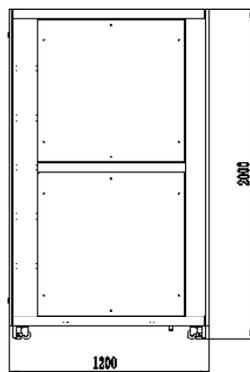
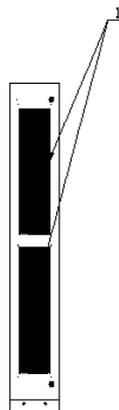
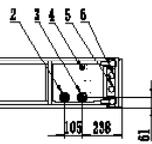
DXA38V1C3



- 1.Return Air
- 2.Bottom Drain Outlet
- 3.Gas Pipe
- 4.Liquid Pipe
- 5.Wiring Hole
- 6.Supply Air
- 7.Top Drainage Outlet



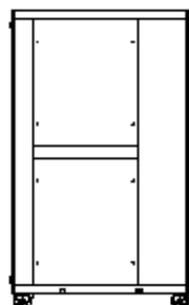
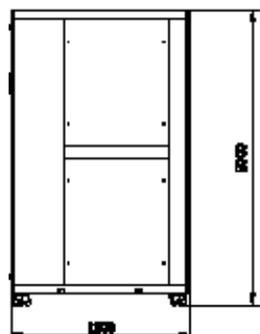
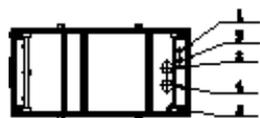
CW25C1



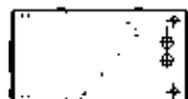
- 1.Return Air
- 2.Water Inlet
- 3.Water Outlet
- 4.Bottom Drain Outlet
- 5.Wiring Hole
- 6.Humidifier Filling Inlet
- 7.Supply Air
- 8.Top Drain Outlet



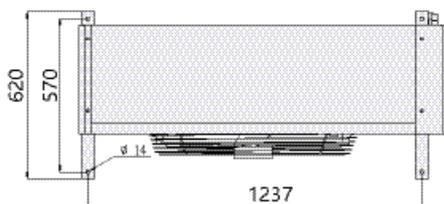
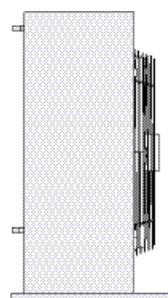
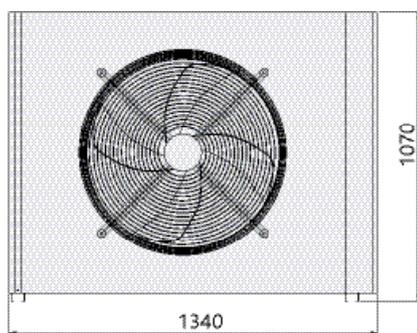
■ CW50/65C3



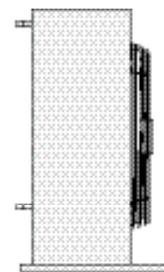
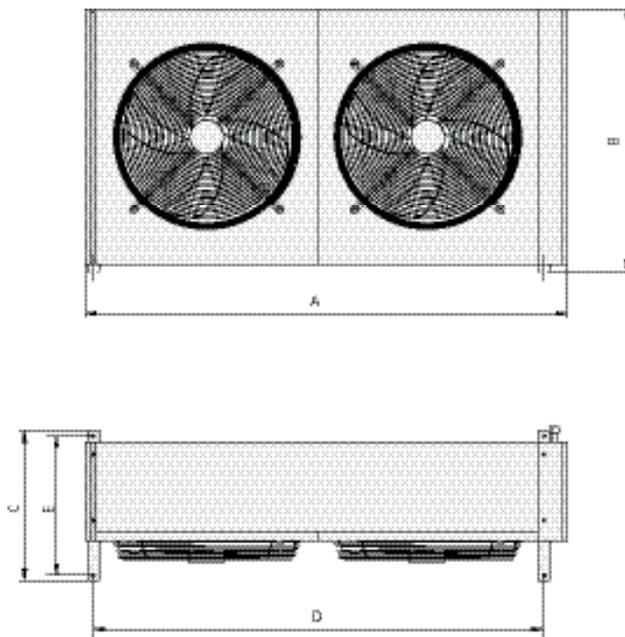
- 1.Wiring Hole
- 2.Humidifier Filling Inlet
- 3.Water Outlet
- 4.Water Inlet
- 5.Drain Outlet



■ CMEG8V2

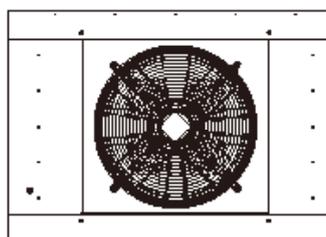
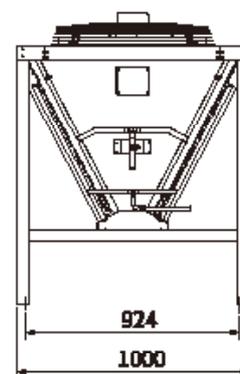
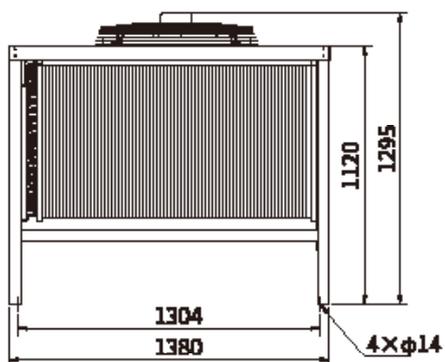


■ CMEG15/20V2

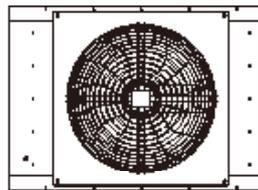
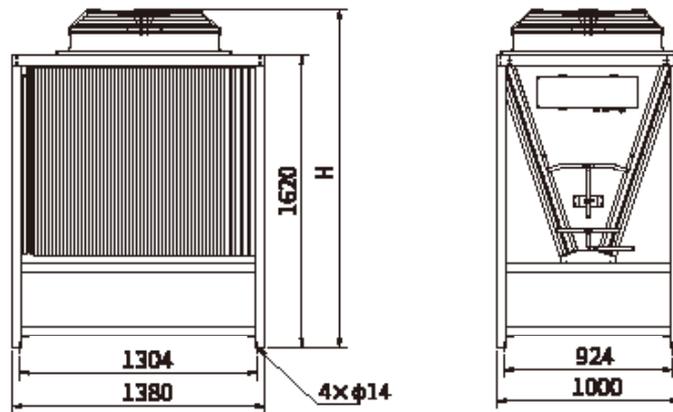


| Model | CMEG15V2 | CMEG20V2 |
|-------|----------|----------|
| A     | 1540     | 2400     |
| B     | 1070     | 1135     |
| C     | 620      | 630      |
| D     | 1437     | 2160     |
| E     | 570      | 580      |

■ VMEG25V2



## VMEG40/55V2



| Unit mode | H    |
|-----------|------|
| VMEG40    | 1540 |
| VMEG55    | 1070 |



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Product design and specification subject to change without prior notice.