

CyberCool-MOD

Precision Air Conditioners for Critical Applications

Cooling capacity: 25kW~100kW



Product Introduction

The CyberCool-MOD product family from AIRSYS is designed specifically for medium to large data center installations. CyberCool-MOD units combine precise temperature and humidity control with outstanding reliability and energy efficiency, throughout 24*7 operation.

The CYBERCOOL -MOD series is a versatile product which combines the advantages of traditional precision air conditioning with modular design technology, simplifying system expansion. New units can be integrated into an existing CYBERCOOL -MOD arrangement simply through a standard network cable connection.



Unit Identification

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---------------|----|-----|----|--------|----|-----|------------------|----------------------|-------------------|------|----|----------|-------------------|----|-----|
| CYBERCOOL-MOD | - | RPU | . | O U | . | DXA | 25 ... 100 | E1 E2 V1 V2 | X1A ... X2A | R410 | . | 380/3/50 | FEA FEC FEV | . | XXX |

| | | |
|----|----------------------|--|
| 01 | CYBERCOOL-MOD | CYBERCOOL-MOD: CyberCool-MOD precision air conditioner, abbr. as CYBER-MOD |
| 02 | - | Separator Character “.” |
| 03 | RPU | RPU: Refrigerant Pump Unit Blank: Standard unit |
| 04 | - | Separator Character “.” |
| 05 | O U | Air Supply Scheme: O – Up flow U – Down flow |
| 06 | . | Separator Character “.” |
| 07 | DXA | Heat Rejection: DXA—Direct expansion with air cooled condenser |
| 08 | 25 ... 100 | Nominal Cooling Capacity: kW |
| 09 | E1 E2 V1 V2 | Compressor Type and Number: E1- Fix speed, 1 compressor E2- Fix speed, 2 compressors V1- Inverter, 1 compressor V2- Inverter, 2 compressors |
| 10 | X1A ... X2A | Cabinet Size Code: CyberCool-MOD adopt “X” cabinet with 2 sizes X1A,X2A |
| 11 | R410 | Refrigerant: R410=R410A |
| 12 | . | Separator Character “.” |
| 13 | 380/3/50 | Power source: Voltage/Phase/Frequency |
| 14 | FEA FEC FEV | Fan Type (Only for DXA): FEA-EC supply fan, AMAE series outdoor unit FEC-EC supply fan, CMEG series outdoor unit |
| 15 | . | Separator Character “.” |
| 16 | XXX | Code for Custom Design: 3-digit alphanumeric code |

Cooling Schemes

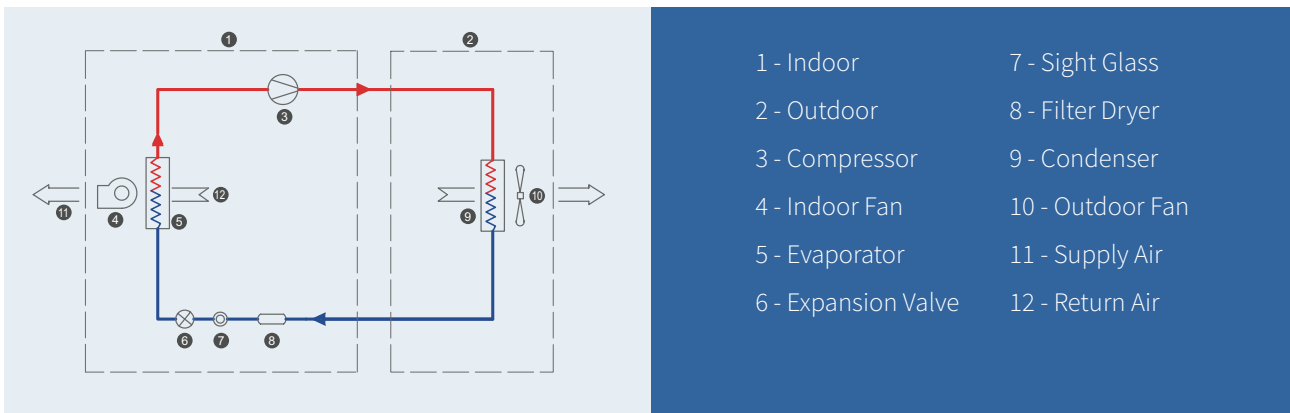
Air cooled direct expansion system(DXA)

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

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.

Indoor unit: CyberCool-MOD.DXA

Outdoor unit: CMEG series air-cooled condenser, AMAE series air-cooled condenser.



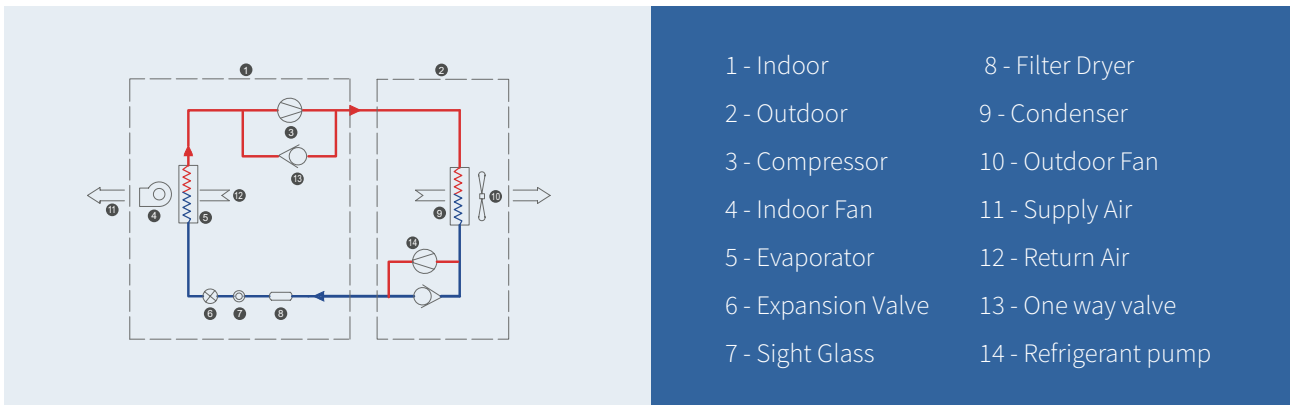
Refrigerant Pump Unit (RPU)

The RPU cooling system consists of a standard DXA unit, a refrigerant pump box and additional pipelines. The refrigerant pump box can also be integrated with the outdoor unit.

The pump set box replaces the compressor to allow the refrigerant to flow between the evaporator and condenser.

Indoor unit: CyberCool-MOD-RPU

Outdoor units: CMEG, AMAE, VMEG and RPU



Operating Range and Control Accuracy

DXA

Operating Range

Outdoor Temperature: -40°C~+55°C (special options are available for extreme temperature conditions)

Piping Length: Total length of 30 meters of gas and liquid refrigeration piping loop (consult AIRSYS sales representative for specific installation arrangement)

Piping Vertical Distance:

Condenser above indoor unit: max. 20m

Condenser below indoor unit: max. 5m

(consult AIRSYS sales representative for specific installation arrangement)

Control Accuracy

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

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

Applications

- Computer Rooms and Data Centers
- Telecom Equipment Rooms and Shelters
- Other Electronic Equipment Rooms
- Healthcare Equipment Rooms
- Manufacturing facilities requiring precise environments



Highlights

1 Compact Structure, High Cold Density and Large in Volume

CyberCool-MOD units have compact structure and high cold density. Under the same cooling capacity, the units can save more space for user. The maximum amount of cold density can reach 75kW/m².

2 Flexible Arrangement

Unit modules are easily added and integrated, allowing the cooling system to respond quickly to expanding cooling needs of a data center.

3 Small Size and Quick Installation

CyberCool-MOD units are smaller than more traditional room air conditioning units, making them significantly easier to transport in freight elevators and with standard equipment. Once at the installation site, a unit can be quickly unpacked and connected, optimizing the entire installation process and reduce installation costs.

4 Easy Maintenance

The technical compartment housing the compressor, humidifier, control and safety devices is separates from the air flow, enabling ordinary service and preventive maintenance to occur during operation.

5 Environmental-friendly

CyberCool-MOD units have fewer solder joints than traditional units, which greatly reduces refrigerant leakage and emissions. The framework has great decay resistance performance with galvanized steel, which makes the unit more environmentally friendly.

6 Quick Response

Different modules can be concurrently produced and parts are both interchangeable and have short production cycles, ensuring a quick response in all situations.

7 High Efficiency

The CyberCool-MOD product family incorporates numerous energy saving technologies; the average EER of module units is above 3.0.

8 Precise Control

The control accuracy for temperature is $\pm 1^{\circ}\text{C}$ and for Relative humidity is $\pm 5\%$.

9 Scroll Compressor

Units are equipped with scroll compressors, which produce less vibration, lower noise and greater efficiencies.

10 Air Filter

An easy maintainable and durable G4 class air filter is a standard configuration for the CyberCool-MOD. With optional air pressure switch, a clogged filter alarm can be triggered when the filter is dirty.

11 Forced Dehumidification System

Dopt the way of reducing the air output to dehumidification. These features enable faster dehumidification, increased energy savings and more precise humidity control.

12 Electronic Expansion Valve (Option)

Electronic expansion valves operate more swiftly and precisely than thermal expansion valves, resulting in better control of the system and increased energy efficiency.

Highlights

13 Continuous Control System for Condensing Pressure(DXA)

The units collect the high pressure signal of the system in real time, control the speed of the outdoor fan according to the pressure signal, therefore maintaining refrigeration system pressure within a suitable range and ensuring the stable operation of the system.

When compared to On/Off condensing control, the system increases the energy saving significantly and extends the working life of the compressor. It also enables the unit to startup and work at low ambient temperatures (up to -40°C or lower).

14 Environmentally Friendly Refrigerant

R410a is used in CyberCool-MOD units, which meets the requirements of environmental protection refrigerants.

15 Electrode Humidifier

An electrode humidifier, controlled by a microprocessor, monitors and adjusts the humidifying capacity precisely, while the water quality monitoring and wash extends the maintenance interval, prolonging the working life of the unit.

16 Electric Heater

The construction of the electric heater element (stainless steel pipe with wrapped fins) allows for a reduced operating temperature, therefore eliminating ionization, and avoiding unpleasant odors.

17 Various Supply Air Arrangements Available

Supply air arrangements include top discharge (up flow) bottom discharge (down flow). Customizable arrangements ensure all ICT installation requirements can be met.

18 Self-diagnosis

All the microprocessor-connected components are continuously monitored and controlled and, in case of malfunction, the unit is shut down and the fault is shown on the display.

19 EC Fan

The EC motor with external rotor is highly efficient, reliable and compact. Through taking advantage of its variable speed ability, the unit can achieve energy savings through reducing the fan speed when possible and automatically adjusting the external static pressure and air volume in line with changing room conditions. The fan is housed within the unit for transportation, but can be lowered where a raised floor installation is required.



Energy Saving Technology

Optional Energy Saving Running Modes

There are two running modes which may be chosen from the controller display:

Standard Running Mode:

In this mode, the temperature and humidity are controlled within narrower ranges;

Energy Saving Mode:

In this mode, good energy saving can be achieved through allowing the temperature and humidity to be controlled within wider ranges.

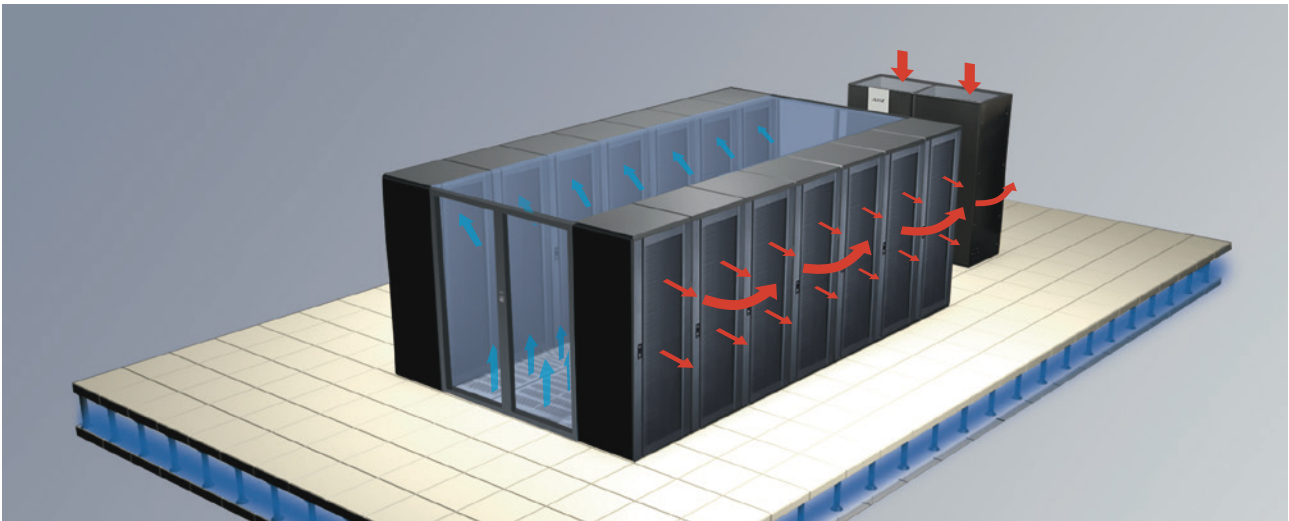


Supply Air Temperature and Pressure Control

Supply air temperature control is typically applied to cold aisle cooling systems. As the cold aisle temperature profile is uniform (i.e. there is no short-circuiting of air), accurate reading of the supply air temperature is simple to obtain from the unit supply air discharge location.

Because the supply air and cold aisle air temperatures are equal, the cold air is supplied directly to the equipment requiring cooling and no energy is wasted cooling the rest of the room. Compared to return air temperature control systems, supply air control systems can operate at a higher supply air temperature under the same cooling demand conditions. As well as this, evaporating temperatures will typically be higher and therefore more energy efficient.

For down flow units utilizing supply air temperature control, the differential air pressure can be monitored to ensure the cool air has been evenly distributed to all the servers.



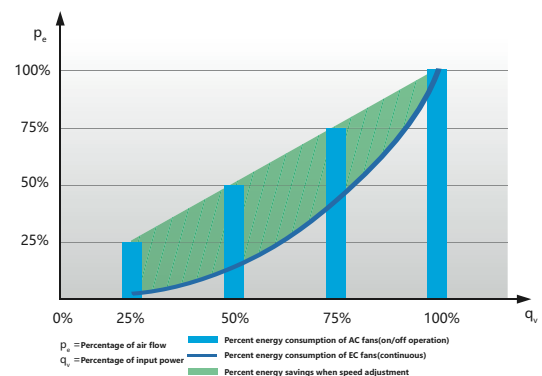
EC Fan

An EC fan refers to a centrifugal fan that utilizes an Electronically Commutated motor (or brushless DC motor). EC fans have numerous benefits including:

Energy Efficiency

EC fans have brushless DC motors and integrated control modules. Motor efficiencies of 85-90% are achievable; 30% to 50% higher than traditional AC fans.

The difference in energy efficiency between variable speed EC fan control and traditional on/off fixed speed AC fans can be seen in the graph; the bars show the power consumption of fans which are switched in gradually as required while the blue curve shows the power consumption with infinitely variable speed control.



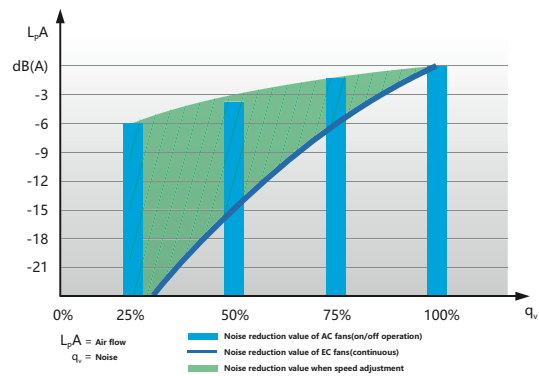


Lower Noise

In a given installation, switching off half the fans (and halving the air flow) will typically only reduce the generated noise by approximately 3 dB. Compare this to EC fans, where reducing fan speed to provide half the air flow typically yields a reduction of approximately 15 dB. This is possible as EC fans are able to operate across an infinitely controllable speed range, which in turn effectively avoids electromagnetic and rectifier noise (generated by other traditional motor and speed control devices), thus reducing the overall noise level.

In the graph, the bars indicate the sound pressure level of fans which are switched in gradually as required and the blue curve shows the sound pressure level with infinitely variable speed control.

As can be seen from the picture EC fan sound pressure level is 12dB lower compared to the traditional AC fan.



Compact, Integrated Electronic Control System

All EC fans have dedicated speed control modules and filters built into the motor assembly, making for a compact and self-contained solution. All that is required is to connect the main power supply and the sensor signals to the controller for complete speed control of between 10% and 100%. EC fans provide a simple, convenient solution and can also support group control and remote monitoring.



Wide Working Voltage

Wide AC input voltage range: 1~200-277VAC or 3~380-480VAC 50&60Hz

Wide DC input voltage range: 16-28VDC or 36-57VDC

Refrigerant Pump Unit (RPU) Cooling Technology

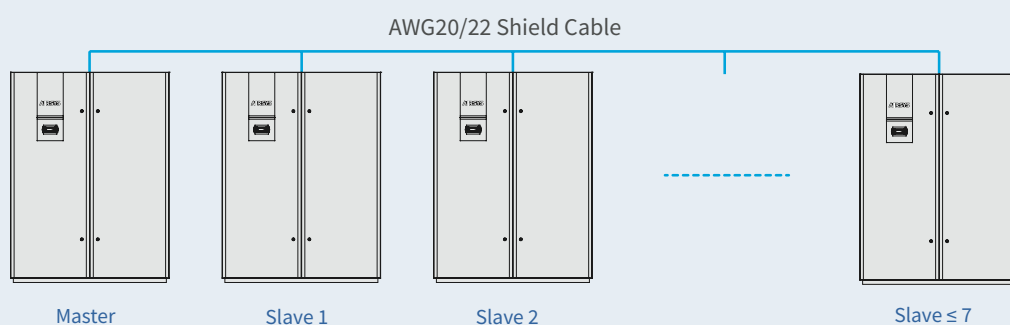
The refrigerant pump free cooling air-conditioning unit is to add a refrigerant pump unit and additional pipelines to the conventional air-cooled air-conditioning unit. When a certain temperature difference is reached between indoor and outdoor, the compressor is turned off, and the cold liquid refrigerant in the outdoor condenser runs through the pump to realize the flow of refrigerant in the indoor evaporator and outdoor condenser. The refrigerant evaporates in the evaporator and condenses in the condenser, making full use of the temperature difference between the outdoor and indoor environments to achieve natural cooling. The power of the pump is much lower than the power of the compressor, leading the energy efficiency ratio above 14.0, and achieving great energy saving by bearing all the indoor cooling load.

In the transition season when the refrigerant pump is not enough to bear the full load, the compressor and the refrigerant pump are turned on at the same time, the operation of the pump increases the front pressure of the electronic expansion valve, and the condensing fan can run at a higher speed to reduce the exhaust pressure of the compressor. The condensing pressure is reduced, and the cooling capacity and the cooling energy efficiency ratio are improved.

The RPU adopts a highly integrated design, and there is no need to add additional evaporators and condensers for the refrigerant pump cycle, saving the initial investment and minimizing the TCO of the entire system. With RPU equipped, the winter energy efficiency EER can be increased from 4.0 to more than 14.0, while the energy efficiency ratio is significantly improved in spring and autumn.

Group Control

Continuous and reliable operation of the air conditioning systems is critical for the successful operation of data center equipment. As a result of the high proportion of power consumed by such air conditioning systems, energy consumption has been a challenge faced by modern data centers. AIRSYS precision air conditioners aim to address this challenge, in part, through effective group control and rotation functions. Such control philosophies ensure consistent room temperature and humidity, together with continuous reliable operation (generally, by the addition of a spare unit for redundancy) whilst minimizing the total power required for the air conditioning. Group control and rotation functions will also typically extend unit life and effectively save energy by improving the overall management of the system.

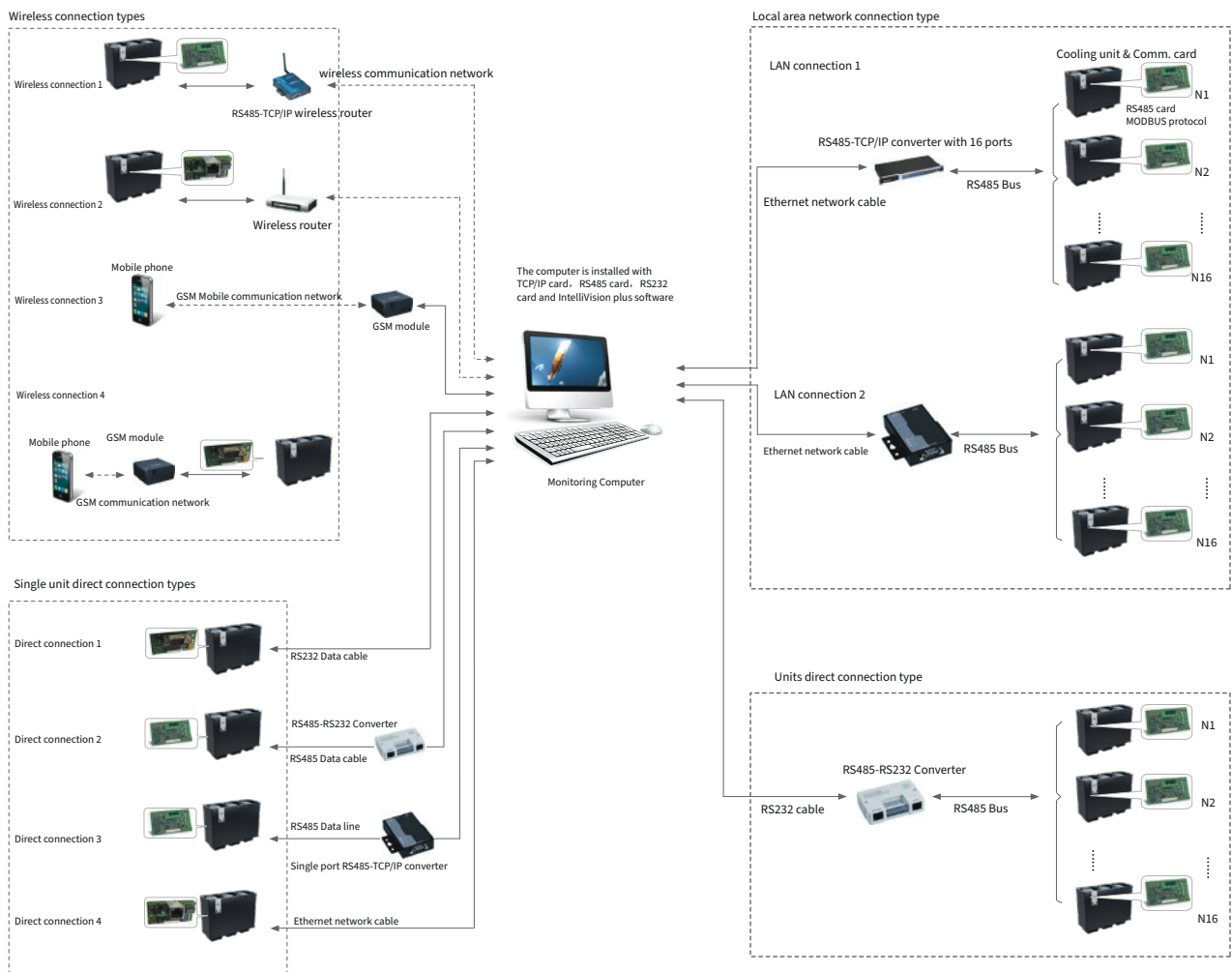


Remote Monitoring and Networking

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



Unit Configuration

CyberCool-MOD Standard Configuration

| Standard Configuration | CYBERCOOL-MOD | CYBERCOOL-MOD-RPU |
|---|---------------|-------------------|
| | DXA | DXA |
| Galvanized steelframe | ● | ● |
| Galvanized steel panel with internal thermal and acoustic insulation | ● | ● |
| Copper tube aluminum fin coil | ● | ● |
| Condensate water tray | ● | ● |
| G4 class air filter | ● | ● |
| Temperature and RH sensor at return air inlet | ● | ● |
| Microprocessor control | ● | ● |
| Electrical control panel | ● | ● |
| Stainless steel electric heater, various capacities available | ● | ● |
| Stainless steel electric heater | ● | ● |
| Phase sequence protection | ● | ● |
| Carel touch screen | ● | ● |
| Integrated RS485 communication and clock function | ● | ● |
| Electrical controls and refrigeration systems contained within independent module units | ● | ● |
| Hermetic fixed frequency scroll compressor | ● | ● |
| Rubber vibration absorber for compressor | ● | ● |
| External equalizer thermostatic expansion valve | ● | ● |
| Sight glass | ● | ● |
| Dry filter | ● | ● |
| High pressure transducer | ● | ● |
| Pressure switch for high/low pressure protection | ● | ● |
| Continuous control system for condensing pressure | ● | ● |
| EC centrifugal fan | ● | ● |
| Motorized 2-way valve | — | — |

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

CyberCool-MOD Options

| Option | CYBERCOOL-MOD.DXA | CYBERCOOL-MOD-RPU.DXA |
|---|-------------------|-----------------------|
| Air pressure switch for dirty filter alarm | ○ | ○ |
| Motorized non-return damper for up flow unit | ○ | ○ |
| Supply air plenum for up flow unit | ○ | ○ |
| Supply air plenum for down flow unit | ○ | ○ |
| Installation support stand with adjustable legs | ○ | ○ |
| Supply air temperature sensor | ○ | ○ |
| Supply air static pressure sensor | ○ | ○ |
| PTC electric heater | ○ | ○ |
| Infrared humidifier | ○ | ○ |
| Communication protocol converter | ○ | ○ |
| Electronic expansion valve | ○ | ● |
| Floor water leakage alarm kit | ○ | ○ |
| Low temperature operation kit for outdoor temperature below -20°C | ○ | ○ |

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

CyberCool-MOD Electric Heater/Humidifier Selection Sheet

CYBERCOOL-MOD.DXA

| Cabinet size | | X1A | X2A |
|--------------------------------|----|-----|-----|
| Heat capacity (kW) | 6 | ● | — |
| | 12 | — | ● |
| Humidification capacity (kg/h) | 3 | ○ | ○ |
| | 5 | ● | ○ |
| | 8 | ● | ● |
| | 10 | ○ | ○ |
| | 15 | ○ | ○ |

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

Supply Air Plenum (Optional) Dimensions and Weight

CYBERCOOL-MOD.DXA

| Cabinet size | | X1A | X2A |
|--------------|----|-----|------|
| Width | mm | 965 | 1880 |
| Depth | mm | 990 | 990 |
| Height | mm | 470 | 470 |
| Weight | kg | 55 | 87 |



CyberCool -MOD.DXA

CYBERCOOL -MOD(-RPU).DXA

| Unit Mode | | 25E1X1A | 30E1X1A | 35E1X1A | 40E1X1A | 50E1X1A |
|---|-------------------|--------------------------------------|----------|----------|----------|----------|
| Supply air scheme(1) | | O/U | | | | |
| Capacity | | | | | | |
| Total(2) | kW | 25.1 | 30.4 | 35.3 | 40.6 | 50.1 |
| Sensible(2) | kW | 23.3 | 28.0 | 32.1 | 38.2 | 45.6 |
| Total(3) | kW | 26.5 | 32.1 | 37.2 | 42.8 | 52.6 |
| Sensible(3) | kW | 25.4 | 30.8 | 35.8 | 41.1 | 50.5 |
| Compressor | | | | | | |
| Type | | Hermetic scroll | | | | |
| Compressor No. | | 1 | 1 | 1 | 1 | 1 |
| Supply fan | | | | | | |
| Type | | Caseless backward EC centrifugal fan | | | | |
| Qty. of fan | n. | 1 | 1 | 1 | 1 | 1 |
| Air volume | m ³ /h | 7300 | 9000 | 9350 | 10500 | 12500 |
| Air filter | | G4 plate | | | | |
| Electric heater(4) | | | | | | |
| Type | | Stainless steel electric heater | | | | |
| Heating capacity | kW | 6 | 6 | 6 | 6 | 6 |
| Humidifier(4) | | | | | | |
| Type | | Electrode | | | | |
| Capacity | kg/h | 5 | 5 | 5 | 8 | 8 |
| Outdoor unit | | | | | | |
| Model × Qty (5) | | CMEG10*1 | CMEG10*1 | CMEG15*1 | CMEG20*1 | CMEG20*1 |
| Model × Qty (6) | | CMEG15*1 | CMEG15*1 | CMEG20*1 | CMEG25*1 | CMEG25*1 |
| Model × Qty (7) | | AMAE8*1 | AMAE10*1 | AMAE12*1 | AMAE15*1 | AMAE20*1 |
| Model × Qty (8) | | VMEG30*1 | VMEG40*1 | VMEG50*1 | VMEG55*1 | VMEG65*1 |
| Power supply | | | | | | |
| Power source | | 380V/3Ph/50Hz | | | | |
| Unit max. operating power input | kW | 16.0 | 18.2 | 20.7 | 24.5 | 27.8 |
| Unit max. operating current | A | 27.9 | 31.7 | 38.1 | 44.7 | 52.3 |
| Unit piping connction | | | | | | |
| Humidifier water supply Φ | in | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" |
| Condensing water drainage Φ | in | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" |
| Refrigerant gas Φ | mm | 22 | 22 | 22 | 25.4 | 25.4 |
| Refrigerant liquid Φ | mm | 16 | 16 | 16 | 16 | 19 |
| RPU | | | | | | |
| Model × Qty | | RPU12*1 | RPU12*1 | RPU12*1 | RPU12*1 | RPU12*1 |
| Unit external dimensions and Weight | | | | | | |
| Width | mm | 965 | 965 | 965 | 965 | 965 |
| Depth | mm | 990 | 990 | 990 | 990 | 990 |
| Height | mm | 1975 | 1975 | 1975 | 1975 | 1975 |
| Weight | kg | 300 | 330 | 340 | 365 | 420 |
| Wooden package dimensions and Weight | | | | | | |
| Width | mm | 1065 | 1065 | 1065 | 1065 | 1065 |
| Depth | mm | 1090 | 1090 | 1090 | 1090 | 1090 |
| Height | mm | 2150 | 2150 | 2150 | 2150 | 2150 |
| Weight | kg | 325 | 355 | 365 | 390 | 445 |

(1) O:Up flow; U:Down flow;

(2) Return air dry bulb temperature 24°C, RH50%,outdoor ambient dry bulb temperature 35 °C;

(3) Return air dry bulb temperature 28°C, RH50%, outdoor ambient dry bulb temperature 35 °C;

(4) The default capacity, please refer to “electric heater/ humidifier selection sheet” for other capacity;

(5) CMEG adopts AC fan, AMAE adopts EC fan, choose according to demand;

(6) If ambient temperature is lower than 43°C, please refer to CMEG series of air-cooled condensers for condenser model;

(7) If ambient temperature is over 43°C and under 52°C, please refer to CMEG series of air-cooled condensers for condenser model;

(8) If ambient temperature is under 52°C, please refer to AMAE series of air-cooled condensers for condenser model;

CYBERCOOL -MOD(-RPU).DXA

| Unit Mode | | 60E2X2A | 70E2X2A | 80E2X2A | 90E2X2A | 100E2X2A |
|---|--------------------------------------|----------|----------|----------|----------|----------|
| Supply air scheme(1) | | O/U | | | | |
| Capacity | | | | | | |
| Total(2) | kW | 60.5 | 70.0 | 82.0 | 90.1 | 100.1 |
| Sensible(2) | kW | 56.9 | 65.1 | 75.4 | 82.9 | 91.1 |
| Total(3) | kW | 63.8 | 73.5 | 86.5 | 94.6 | 105.1 |
| Sensible(3) | kW | 61.3 | 70.6 | 83.0 | 90.8 | 100.9 |
| Compressor | | | | | | |
| Type | Hermetic scroll | | | | | |
| Compressor No. | | 2 | 2 | 2 | 2 | 2 |
| Supply fan | | | | | | |
| Type | Caseless backward EC centrifugal fan | | | | | |
| Qty. of fan | n. | 2 | 2 | 2 | 2 | 2 |
| Air volume | m ³ /h | 18000 | 18700 | 21000 | 24000 | 25000 |
| Air filter | | | | | | |
| G4 plate | | | | | | |
| Electric heater(4) | | | | | | |
| Type | Stainless steel electric heater | | | | | |
| Heating capacity | kW | 12 | 12 | 12 | 12 | 12 |
| Humidifier(4) | | | | | | |
| Type | Electrode | | | | | |
| Capacity | kg/h | 8 | 8 | 8 | 8 | 8 |
| Outdoor unit | | | | | | |
| Model × Qty (5) | | CMEG10*2 | CMEG15*2 | CMEG20*2 | CMEG20*2 | CMEG20*2 |
| Model × Qty (6) | | CMEG15*2 | CMEG20*2 | CMEG25*2 | CMEG25*2 | CMEG25*2 |
| Model × Qty (7) | | AMAE10*2 | AMAE12*2 | AMAE15*2 | AMAE18*2 | AMAE20*2 |
| Model × Qty (8) | | VMEG40*2 | VMEG50*2 | VMEG55*2 | VMEG55*2 | VMEG65*2 |
| Power supply | | | | | | |
| Power source | 380V/3Ph/50Hz | | | | | |
| Unit max. operating power input | kW | 34.1 | 38.7 | 43.3 | 44.9 | 49.7 |
| Unit max. operating current | A | 60.2 | 72.2 | 80.7 | 83.3 | 95.5 |
| Unit piping connction | | | | | | |
| Humidifier water supply Φ | mm | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" |
| Condensing water drainage Φ | mm | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" |
| Refrigerant gas Φ | mm | 2×22 | 2×25.4 | 2×25.4 | 2×25.4 | 2×25.4 |
| Refrigerant liquid Φ | mm | 2×16 | 2×16 | 2×16 | 2×19 | 2×19 |
| RPU | | | | | | |
| Model × Qty | | RPU22*1 | RPU22*1 | RPU22*1 | RPU22*1 | RPU22*1 |
| Unit external dimensions and Weight | | | | | | |
| Width | mm | 1880 | 1880 | 1880 | 1880 | 1880 |
| Depth | mm | 990 | 990 | 990 | 990 | 990 |
| Height | mm | 1975 | 1975 | 1975 | 1975 | 1975 |
| Weight | kg | 620 | 630 | 650 | 800 | 800 |
| Wooden package dimensions and Weight | | | | | | |
| Width | mm | 1980 | 1980 | 1980 | 1980 | 1980 |
| Depth | mm | 1090 | 1090 | 1090 | 1090 | 1090 |
| Height | mm | 2150 | 2150 | 2150 | 2150 | 2150 |
| Weight | kg | 660 | 670 | 690 | 840 | 840 |

(1) O:Up flow; U:Down flow;

(2) Return air dry bulb temperature 24°C, RH50%,outdoor ambient dry bulb temperature 35 °C;

(3) Return air dry bulb temperature 28°C, RH50%, outdoor ambient dry bulb temperature 35 °C;

(4) The default capacity, please refer to “electric heater/ humidifier selection sheet” for other capacity;

(5) CMEG adopts AC fan, AMAE adopts EC fan, choose according to demand;

(6) If ambient temperature is lower than 43°C, please refer to CMEG series of air-cooled condensers for condenser model;

(7) If ambient temperature is over 43°C and under 52°C, please refer to CMEG series of air-cooled condensers for condenser model;

(8) If ambient temperature is under 52°C, please refer to AMAE series of air-cooled condensers for condenser model;

CYBERCOOL -MOD(-RPU).DXA - Inverter

| Unit Mode | | 25V1X1A | 30V1XA | 35V1XA | 40V1X1A | 50V1X1A | 60V2X2A | 70V2X2A | 80V2X2A |
|---|-------------------|--------------------------------------|----------|----------|----------|----------|----------|----------|----------|
| Supply air scheme(1) | | O/U | | | | | | | |
| Capacity | | | | | | | | | |
| Total(2) | kW | 25.1 | 30.4 | 35.3 | 40.6 | 50.2 | 60.5 | 70.0 | 82.0 |
| Sensible(2) | kW | 23.3 | 28.0 | 32.1 | 38.2 | 45.7 | 56.9 | 65.1 | 75.4 |
| Total(3) | kW | 25.1 | 30.4 | 35.3 | 40.6 | 50.2 | 60.5 | 70.0 | 82.0 |
| Sensible(3) | kW | 24.1 | 29.2 | 33.9 | 39.0 | 48.2 | 58.1 | 67.2 | 78.7 |
| Compressor | | | | | | | | | |
| Type | | Hermetic scroll | | | | | | | |
| Compressor No. | | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| Supply fan | | | | | | | | | |
| Type | | Caseless backward EC centrifugal fan | | | | | | | |
| Qty. of fan | n. | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| Air volume | m ³ /h | 7300 | 8500 | 9350 | 10500 | 12500 | 17000 | 18700 | 21000 |
| Air filter | | G4 plate | | | | | | | |
| Electric heater(4) | | | | | | | | | |
| Type | | Stainless steel electric heater | | | | | | | |
| Heating capacity | kW | 6 | 6 | 6 | 6 | 6 | 12 | 12 | 12 |
| Humidifier(4) | | | | | | | | | |
| Type | | Electrode | | | | | | | |
| Capacity | kg/h | 5 | 5 | 5 | 8 | 8 | 8 | 8 | 8 |
| Outdoor unit | | | | | | | | | |
| Model × Qty (5) | | CMEG10*1 | CMEG10*1 | CMEG15*1 | CMEG20*1 | CMEG20*1 | CMEG10*2 | CMEG15*2 | CMEG20*2 |
| Model × Qty (6) | | CMEG15*1 | CMEG15*1 | CMEG20*1 | CMEG25*1 | CMEG25*1 | CMEG15*2 | CMEG20*2 | CMEG25*2 |
| Model × Qty (7) | | AMAE8*1 | AMAE10*1 | AMAE12*1 | AMAE15*1 | AMAE20*1 | AMAE10*2 | AMAE12*2 | AMAE15*2 |
| Model × Qty (8) | | VMEG30*1 | VMEG40*1 | VMEG50*1 | VMEG55*1 | VMEG65*1 | VMEG40*2 | VMEG50*2 | VMEG55*2 |
| Power supply | | | | | | | | | |
| Power source | | 380V/3Ph/50Hz | | | | | | | |
| Unit max. operating power input | kW | 18.9 | 21.2 | 24.3 | 27.7 | 32.7 | 29.2 | 32.0 | 50.2 |
| Unit max. operating current | A | 37.1 | 35.9 | 43.0 | 47.5 | 53.6 | 48.7 | 77.2 | 81.2 |
| Unit piping connetion | | | | | | | | | |
| Humidifier water supply Φ | in | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" |
| Condensing water drainage Φ | in | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" |
| Refrigerant gas Φ | mm | 22 | 22 | 22 | 25.4 | 25.4 | 2×22 | 2×25.4 | 2×25.4 |
| Refrigerant liquid Φ | mm | 16 | 16 | 16 | 16 | 19 | 2×16 | 2×16 | 2×16 |
| RPU | | | | | | | | | |
| Model × Qty | | RPU12*1 | RPU12*1 | RPU12*1 | RPU12*1 | RPU12*1 | RPU22*1 | RPU22*1 | RPU22*1 |
| Unit external dimensions and Weight | | | | | | | | | |
| Width | mm | 965 | 965 | 965 | 965 | 965 | 1880 | 1880 | 1880 |
| Depth | mm | 990 | 990 | 990 | 990 | 990 | 990 | 990 | 990 |
| Height | mm | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 |
| Weight | kg | 300 | 330 | 350 | 365 | 480 | 630 | 660 | 700 |
| Wooden package dimensions and Weight | | | | | | | | | |
| Width | mm | 1065 | 1065 | 1065 | 1065 | 1065 | 1980 | 1980 | 1980 |
| Depth | mm | 1090 | 1090 | 1090 | 1090 | 1090 | 1090 | 1090 | 1090 |
| Height | mm | 2150 | 2150 | 2150 | 2150 | 2150 | 2150 | 2150 | 2150 |
| Weight | kg | 325 | 355 | 375 | 390 | 505 | 670 | 700 | 740 |

(1) O:Up flow; U:Down flow;

(2) Return air dry bulb temperature 24°C, RH50%,outdoor ambient dry bulb temperature 35 °C;

(3) Return air dry bulb temperature 28°C, RH50%, outdoor ambient dry bulb temperature 35 °C;

(4) The default capacity, please refer to “electric heater/ humidifier selection sheet” for other capacity;

(5) CMEG adopts AC fan, AMAE adopts EC fan, choose according to demand;

(6) If ambient temperature is lower than 43°C, please refer to CMEG series of air-cooled condensers for condenser model;

(7) If ambient temperature is over 43°C and under 52°C, please refer to CMEG series of air-cooled condensers for condenser model;

(8) If ambient temperature is under 52°C, please refer to AMAE series of air-cooled condensers for condenser model;

CMEG

| Unit Model | | CMEG8 | CMEG10 | CMEG15 | CMEG20 | CMEG25 |
|---|-------------------|-------|--------|--------|--------|--------|
| Capacity (1) | kW | 29.6 | 35.4 | 47.6 | 67.4 | 73.1 |
| Fan qty. | No. | 1 | 1 | 2 | 2 | 2 |
| Air flow rate | m ³ /h | 10100 | 9700 | 11600 | 20100 | 19100 |
| Input power | kW | 0.63 | 0.63 | 0.74 | 1.26 | 1.26 |
| Input current | A | 3.0 | 3.0 | 3.4 | 6.0 | 6.0 |
| Connection tube size | | | | | | |
| Gas pipe | mm | 22 | 22 | 22 | 28 | 35 |
| Liquid pipe | mm | 16 | 16 | 19 | 19 | 22 |
| Unit external dimensions and Weight | | | | | | |
| Width | mm | 1340 | 1340 | 1540 | 2400 | 2400 |
| Depth | mm | 620 | 620 | 620 | 630 | 630 |
| Height | mm | 1070 | 1070 | 1070 | 1135 | 1135 |
| Weight | kg | 95 | 110 | 130 | 155 | 185 |
| Wooden Package dimensions and Weight | | | | | | |
| Width | mm | 1455 | 1455 | 1655 | 2515 | 2515 |
| Depth | mm | 675 | 675 | 675 | 765 | 765 |
| Height | mm | 1250 | 1250 | 1250 | 1290 | 1290 |
| Weight | kg | 120 | 135 | 160 | 205 | 235 |

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

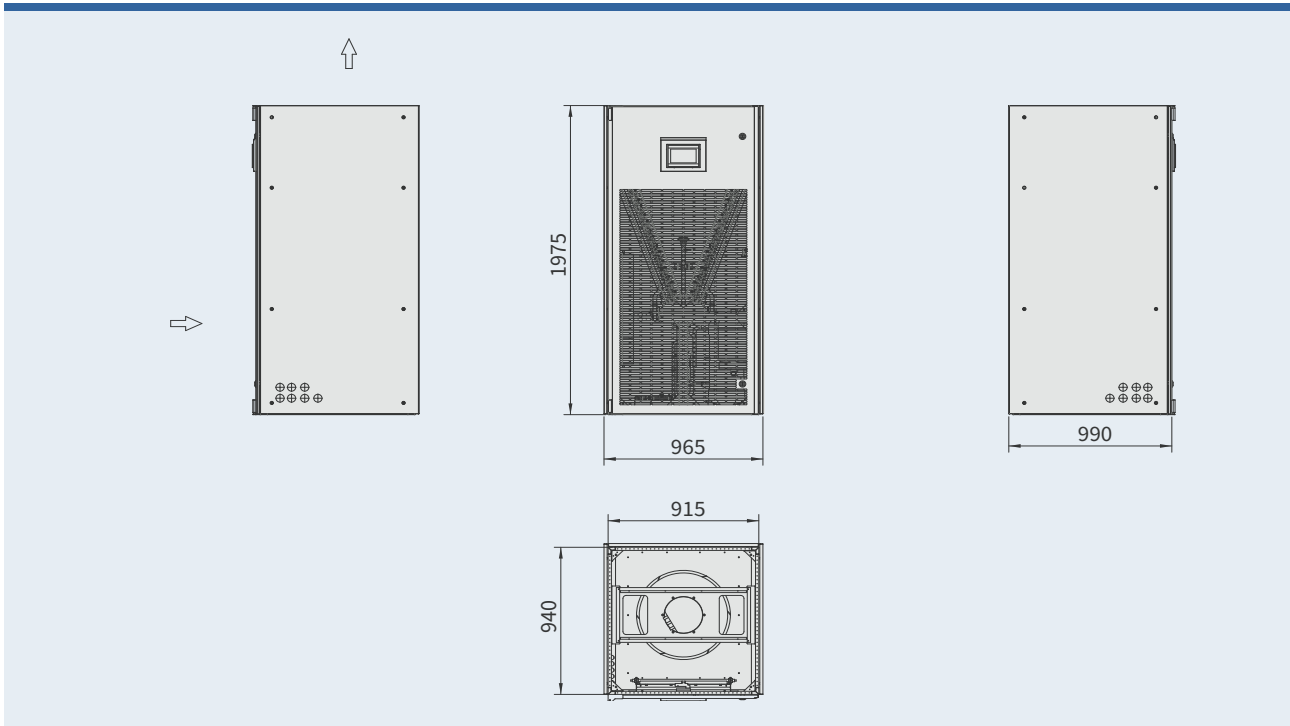
AMAE

| Unit Model | | AMAE6 | AMAE8 | AMAE10 | AMAE12 | AMAE15 | AMAE18 | AMAE20 |
|---|-------------------|-------|-------|--------|--------|--------|--------|--------|
| Capacity (1) | kW | 29.7 | 36.2 | 41.3 | 50.7 | 57.2 | 62.4 | 74.3 |
| Fan qty. | No. | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| Air flow rate | m ³ /h | 10000 | 12000 | 12000 | 17500 | 20000 | 21500 | 24000 |
| Input power | kW | 0.5 | 0.6 | 0.7 | 0.85 | 1 | 1.1 | 1.4 |
| Input current | A | 2.3 | 2.7 | 3.1 | 4.1 | 4.6 | 5.2 | 6.2 |
| Connection tube size | | | | | | | | |
| Gas pipe | in. | 3/4" | 3/4" | 7/8" | 7/8" | 7/8" | 7/8" | 7/8" |
| Liquid pipe | in. | 5/8" | 5/8" | 5/8" | 5/8" | 5/8" | 5/8" | 3/4" |
| Unit external dimensions and Weight | | | | | | | | |
| Width | mm | 1365 | 1665 | 1665 | 1985 | 1985 | 2785 | 2785 |
| Depth | mm | 620 | 620 | 620 | 620 | 620 | 620 | 620 |
| Height | mm | 1080 | 1080 | 1080 | 1080 | 1080 | 1080 | 1080 |
| Weight | kg | 73 | 92 | 109 | 130 | 139 | 163 | 177 |
| Wooden packaging dimensions and Weight | | | | | | | | |
| Width | mm | 1480 | 1780 | 1780 | 2100 | 2100 | 2900 | 2900 |
| Depth | mm | 755 | 755 | 755 | 755 | 755 | 755 | 755 |
| Height | mm | 1235 | 1235 | 1235 | 1235 | 1235 | 1235 | 1235 |
| Weight | kg | 131 | 150 | 167 | 188 | 197 | 231 | 245 |

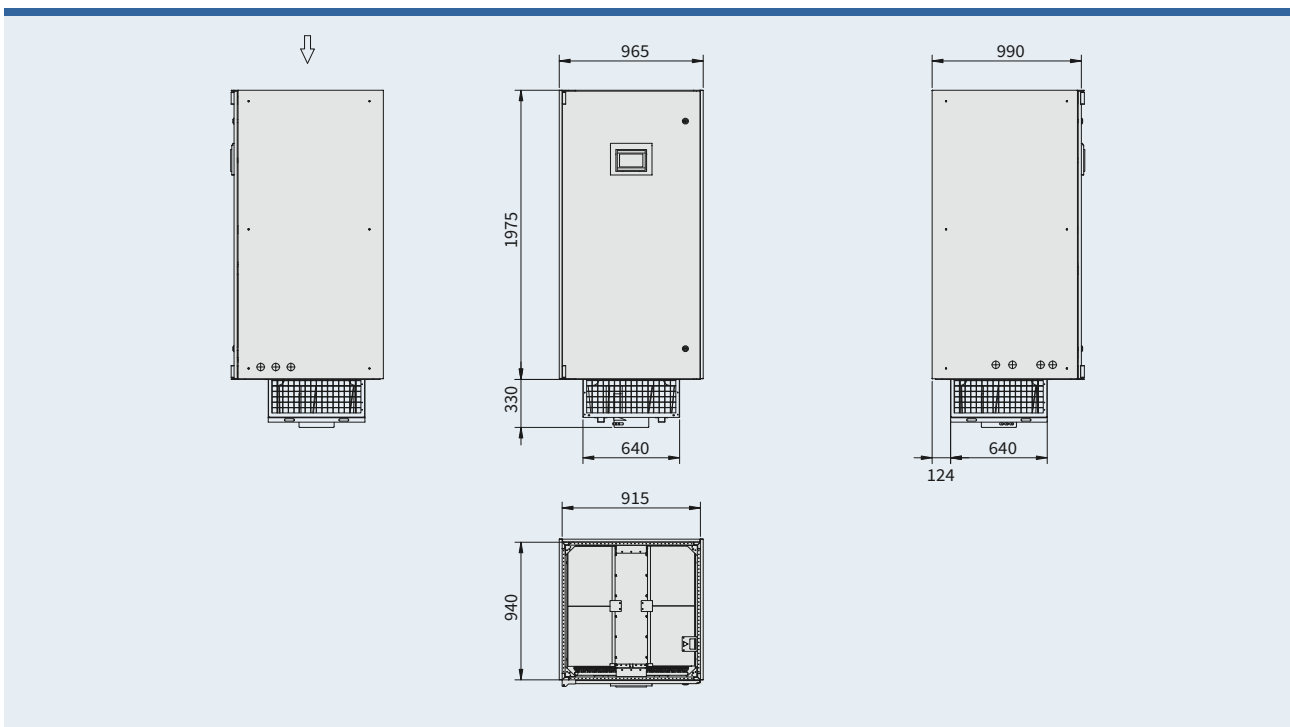
(1)The capacity is rated at entering air temperature 35°C and condensing temperature 50°C condition.

DXA Unit Dimension Drawing

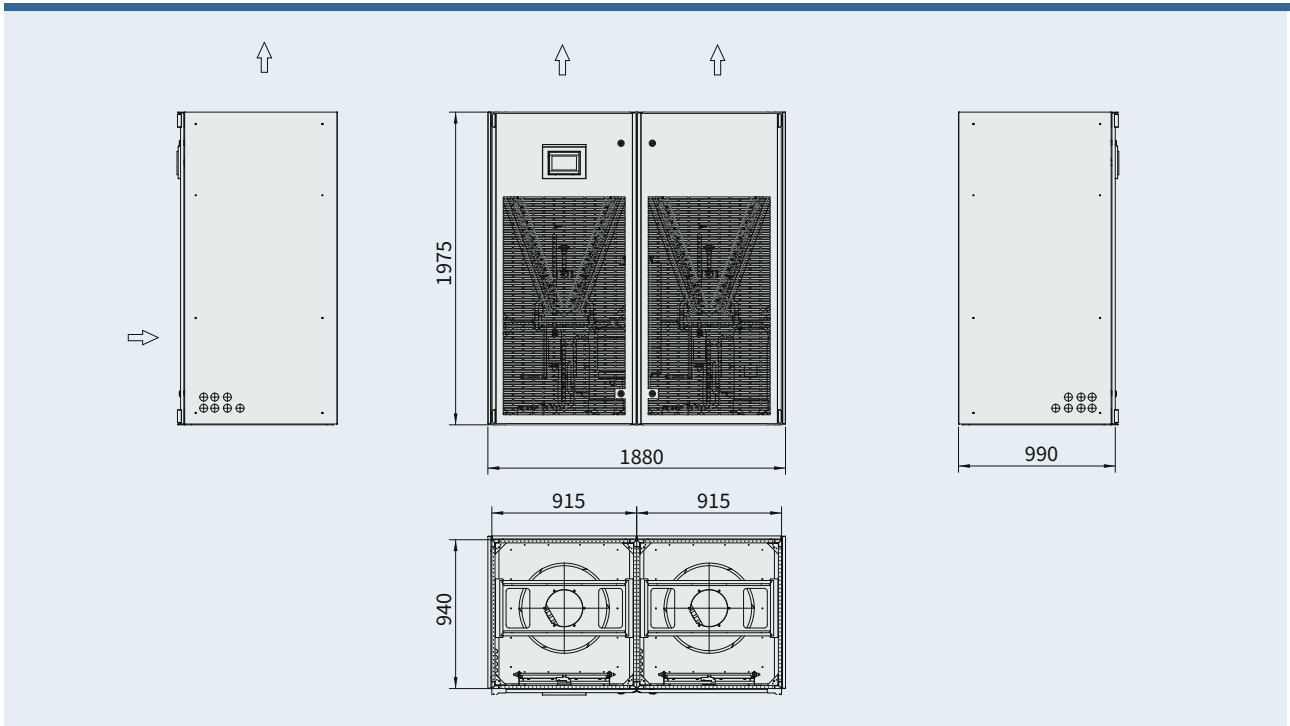
X1A Unit Cabinet Dimension Drawing for Up Flow Unit



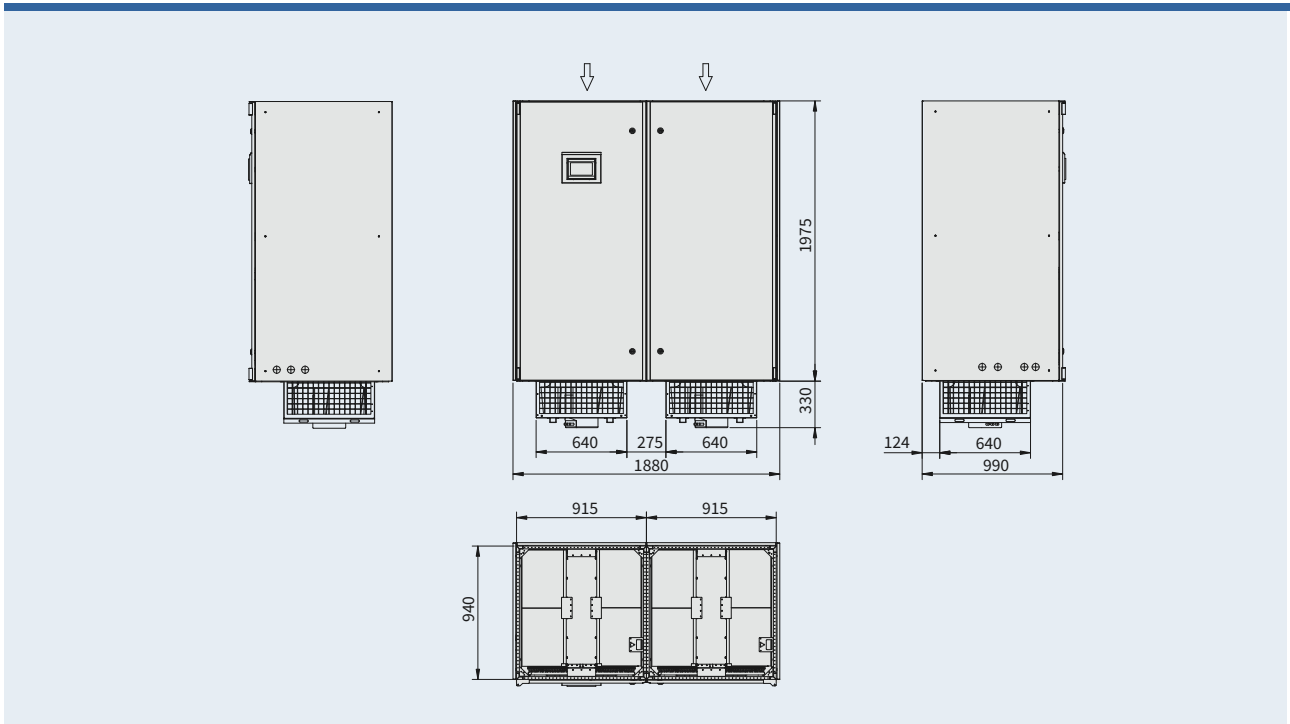
X1A Unit Cabinet Dimension Drawing for Under Flow Unit



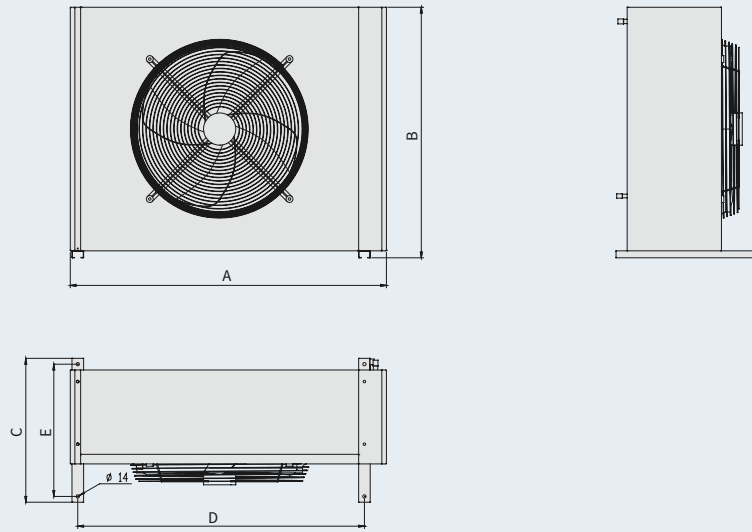
X2A Unit Cabinet Dimension Drawing for Up Flow Unit



X2A Unit Cabinet Dimension Drawing for Under Flow Unit

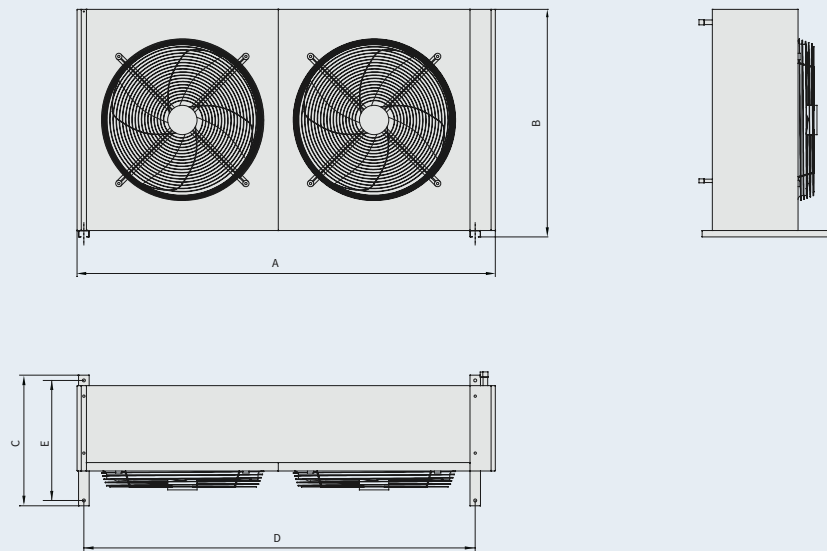


CMEG&AMAE Dimension Drawing



| | CMEG8 | CMEG10 | AMAE6 | AMAE8 | AMAE10 |
|---|-------|--------|-------|-------|--------|
| A | 1340 | 1340 | 1365 | 1665 | 1665 |
| B | 1070 | 1070 | 1080 | 1080 | 1080 |
| C | 620 | 620 | 620 | 620 | 620 |
| D | 1237 | 1237 | 1237 | 1537 | 1537 |
| E | 570 | 570 | 570 | 570 | 570 |

Remark: Vertical installation type is default, please indicate in the contract if horizontal installation type is required.



| | CMEG15 | CMEG20 | CMEG25 | AMAE12 | AMAE15 | AMAE18 | AMAE20 |
|---|--------|--------|--------|--------|--------|--------|--------|
| A | 1540 | 2400 | 2400 | 1985 | 1985 | 2785 | 2785 |
| B | 1070 | 1135 | 1135 | 1080 | 1080 | 1080 | 1080 |
| C | 620 | 630 | 630 | 620 | 620 | 620 | 620 |
| D | 1437 | 2160 | 2160 | 1857 | 1857 | 2657 | 2657 |
| E | 570 | 580 | 580 | 570 | 570 | 570 | 570 |

Remark: Vertical installation type is default, please indicate in the contract if horizontal installation type is required.



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Product design and specification subject to change without prior notice.