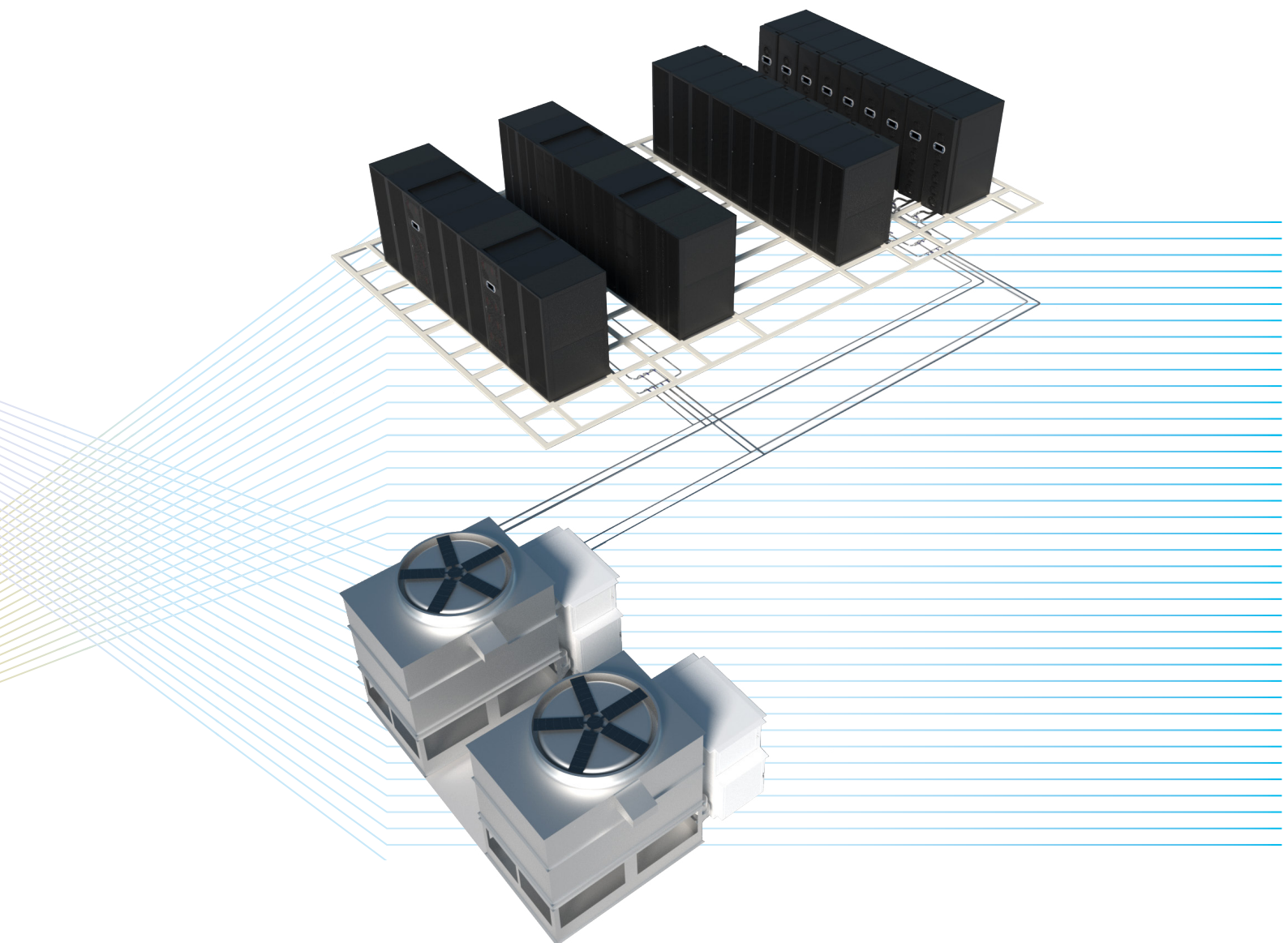


# **X**Mint Series

## High-Efficiency Evaporative Cooling Multi-VRF System



RECYCLABLE

Save paper for the protection of forest resources



## Product Introduction

The Envicool XMint High-Efficiency Evaporative Cooling Multi-VRF System is a cooling solution designed for data centers with high energy efficiency requirements. The system integrates multiple advanced refrigeration technologies, such as variable frequency compressor technology, refrigerant pump free cooling technology, evaporative cooling technology, and multi-split adaptive refrigeration technology. It features a refrigerant pump free cooling mode, a hybrid gas-refrigerant pump operation cooling mode, and a high-efficiency compressor mode, which can effectively improve the annual energy efficiency ratio (AEER) of the air conditioning system.

## Features

- High-efficiency variable frequency centrifugal compressor technology can effectively reduce the power consumption of the air conditioning system. The highest EER of the air-cooled system exceeds 4.0, while that of the evaporative cooling system exceeds 5.5.
- Automatic switching among multiple operating modes can minimize annual energy consumption, achieving an AEER of more than 15.
- A variety of outdoor units and indoor terminal units are available to meet the needs of different application scenarios.



# Nomenclature

## XMint Series

| No. | Item                  | Code | Description                                                                  |
|-----|-----------------------|------|------------------------------------------------------------------------------|
| 1   | Series Code           | XM   | XMint High-Efficiency Evaporative Cooling Multi-VRF System (outdoor unit)    |
| 2   | Cooling Capacity Code | 450  | For example: 350 represents 350 kW, 450 represents 450 kW                    |
| 3   | Cooling Mode          | C    | Parallel-flow evaporative cooling (parallel-flow evaporative condenser)      |
|     |                       | E    | Counter-flow evaporative cooling (counter-flow evaporative condenser)        |
|     |                       | W    | Water cooled (shell and tube heat exchanger)                                 |
|     |                       | A    | Air cooled-dry (copper tube aluminum fin heat exchanger)                     |
|     |                       | F    | Air cooled-evaporative cooling pad (copper tube aluminum fin heat exchanger) |
|     |                       | S    | Air cooled-spray system (copper tube aluminum fin heat exchanger)            |
| 4   | Power Supply          | 1    | 380 V / 3P / 50Hz                                                            |
|     |                       | 5    | Customized                                                                   |
| 5   | Compressor Type       | M    | Magnetic bearing compressor                                                  |
|     |                       | P    | Air bearing compressor                                                       |

## Heat Pipe Room-Based CRAC Terminal Unit

| No. | Item                  | Code      | Description                                              |
|-----|-----------------------|-----------|----------------------------------------------------------|
| 1   | Series Code           | CyberMate | CyberMate series room-based CRAC                         |
| 2   | Cooling Capacity Code | 120       | For example: 120 represents 120 kW, 050 represents 50 kW |
| 3   | Function              | B         | Cooling                                                  |
| 4   | Fan Type              | E         | EC fan                                                   |
| 5   | Air Outlet Mode       | S         | Downflow, with fans under floor                          |
|     |                       | U         | Upflow, with plenum                                      |
|     |                       | D         | Upflow, with duct                                        |
| 6   | Power Supply          | 1         | 380V / 3P / 50Hz                                         |
|     |                       | 2         | 220V / 1P / 50Hz                                         |
|     |                       | 5         | Customized                                               |
| 7   | Cooling Mode          | R         | Heat pipe air conditioning system                        |

## Heat Pipe In-Row AC/RDHx/FWU Terminal Unit

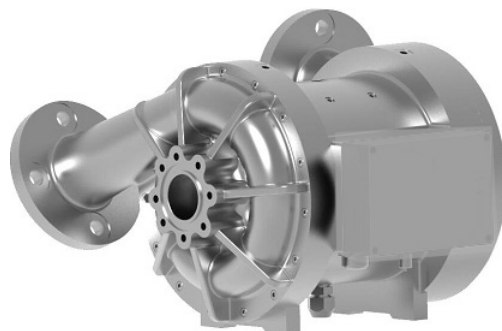
| No. | Item                  | Code | Description                                                    |
|-----|-----------------------|------|----------------------------------------------------------------|
| 1   | Series Code           | EFW  | EFW series fan wall unit (FWU)                                 |
|     |                       | XR   | XRow series in-row AC ( & RDHx Unit)                           |
| 2   | Cooling Capacity Code | 150  | For example: 150 represents 150 kW, 050 represents 50 kW       |
| 3   | Cooling Mode          | R    | Heat pipe air conditioning system                              |
| 4   | Function              | B    | Cooling                                                        |
| 5   | Power Supply          | 1    | 380V / 3P / 50Hz                                               |
|     |                       | 2    | 220V / 1P / 50Hz                                               |
|     |                       | 5    | Customized                                                     |
| 6   | Notes for Fan Wall    | S    | The fan and the display screen are located on the same side.   |
|     |                       | D    | The fan and the display screen are located on different sides. |



## Features of the XMint Series

### Variable Speed Centrifugal Compressor Technology

- Variable frequency regulation and low starting current, with significant energy-saving effects under partial loads
- Optional oil-free magnetic/gas bearing compressor system, compatible with longer pipelines without considering oil return problem
- Levitation compressor technology to eliminate friction resistance during operation and reduce system energy consumption
- Low pressure ratio design, with the minimum pressure ratio lower to 1.1, ensure a wider range of energy-efficient operation



### Refrigerant Pump Energy-Saving Technology

- Refrigerant pump mode to make full use of natural cold sources
- Automatic detecting the outdoor temperature for automatic operating mode switching
- Variable Frequency design to adjust the system flow based on the cooling capacity

### Various Cooling Methods

- Evaporative cooling to leverage outdoor wet-bulb temperature for heat exchange, reducing PUE
- Copper tube aluminum fin heat exchanger with optional spray function, fully utilizing natural cold sources while ensuring dry operation in winter without freezing risks
- Water-cooled shell and tube heat exchanger to reduce outdoor footprint while compatible with the liquid cooling system
- Various options for indoor cooling, such as heat pipe in-row AC, heat-pipe rear-door unit, fan wall unit, and heat pipe CRAC units



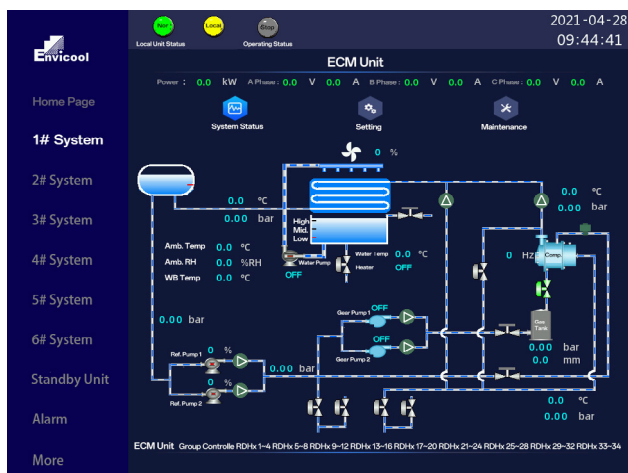
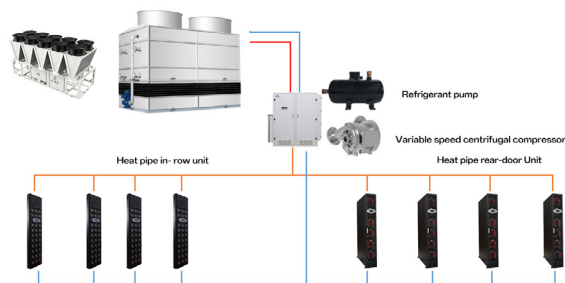


## Simple, Flexible & Reliable System Architecture

- Two-stage heat exchange for higher heat exchange efficiency
- Environmentally friendly refrigerant
- Redundant piping system to avoid single points of failure
- EC fans, variable frequency refrigerant pumps, and variable frequency compressors adapt to different climates and working conditions

## EVO Intelligent Control System

- 7-inch color touch screen
- EVO control system to ensure the optimum efficiency of the refrigeration system
- Standard RS485 interface and optional Ethernet interface
- Standard Modbus protocol, supporting TCP/IP and SNMP protocols
- Group control function to achieve multi-module combined operation, supporting quantity configuration of active and standby units
- Power-off memory and auto-start after power recovery
- Multi-level password protection
- Expert fault diagnosis system



## Multiple Protection Design

- 1+1 redundant configuration of liquid pumps, supporting online maintenance and replacement
- Both outdoor XMint units and indoor terminal units support the configuration of backup units
- Standard antifreeze protection equipment
- Standard alarms including high/low temperature, high/low humidity, indoor fan failure, outdoor fan failure, pump failure, low liquid level, filter blockage, inverter failure, communication failure, and floor water overflow
- Optional refrigerant leak detection equipment



## XMint (Evaporative Cooling) Series Specification

|                       |                                                 |                   |              |                   |              |                   |              |
|-----------------------|-------------------------------------------------|-------------------|--------------|-------------------|--------------|-------------------|--------------|
| Overall Parameters    | Model                                           | XM300C(E)         |              | XM450C(E)         |              | XM600C(E)         |              |
|                       | Power Supply *                                  | 380V / 3Ph / 50Hz |              | 380V / 3Ph / 50Hz |              | 380V / 3Ph / 50Hz |              |
|                       | Total Cooling Capacity-kW                       | 300               |              | 450               |              | 570               |              |
|                       | Refrigerant                                     | R134a             |              | R134a             |              | R134a             |              |
|                       | Max Power-kW                                    | 60.8              |              | 85.9              |              | 123.8             |              |
|                       | Full Load Amps - A                              | 108.4             |              | 148.0             |              | 220.7             |              |
|                       | Main Circuit Breaker recommended-A              | 125               |              | 160               |              | 250               |              |
| Driving Module        | Compressor Quantity                             | 1                 |              | 1                 |              | 1                 |              |
|                       | Refrigerant Pump Quantity                       | 1+1 redundancy    |              | 1+1 redundancy    |              | 1+1 redundancy    |              |
|                       | Terminal Units Gas/Liquid Pipe Port Diameter-mm | 89 / 42           |              | 108 / 42          |              | 133 / 54          |              |
|                       | Length-mm                                       | 2,160             |              | 2,160             |              | 2,160             |              |
|                       | Depth-mm                                        | 1,450             |              | 1,450             |              | 1,450             |              |
|                       | Height-mm                                       | 2,200             |              | 2,200             |              | 2,200             |              |
|                       | Weight-kg                                       | 1,400             |              | 1,450             |              | 1,500             |              |
| Evaporative Condenser | Type                                            | Parallel-flow     | Counter-flow | Parallel-flow     | Counter-flow | Parallel-flow     | Counter-flow |
|                       | Fan Quantity-PC                                 | 3                 | 2            | 3                 | 1            | 3                 | 2            |
|                       | Water Pump Quantity-PC                          | 1                 | 1            | 1                 | 1            | 1                 | 1            |
|                       | Water Supply Pipe Port Diameter-inch            | G1 1/4            | G1 1/4       | G1 1/2            | G1 1/2       | G1 1/2            | G1 1/2       |
|                       | Overflow Pipe Port Diameter-inch                | G1 1/2            | G1 1/2       | G2                | G2           | G2                | G2           |
|                       | Drain Pipe Port Diameter-inch                   | G1 1/2            | G1 1/2       | G2                | G2           | G2                | G2           |
|                       | Length (Without Pump)-mm                        | 4,766             | 4,100        | 4,766             | 3,544        | 5,800             | 5,900        |
|                       | Depth-mm                                        | 2,200             | 2,200        | 3,300             | 3,200        | 3,200             | 2,800        |
|                       | Height-mm                                       | 3,700             | 4,800        | 4,700             | 5,200        | 5,200             | 5,200        |
|                       | Weight-kg                                       | 4,600             | 6,900        | 6,600             | 8,300        | 9,000             | 11,200       |
|                       | Operation Weight-kg                             | 7,200             | 9,200        | 11,500            | 11,000       | 14,500            | 13,900       |

### Notes:

- \* The Power supply can be customized by following customer's requirement.
- The working condition for the above data: indoor terminal evaporating temperature @ 18°C , outdoor wet bulb temperature @ 31°C . For other working condition requirements, like T3 condition, please contact with Envicool.

## XMint (Water-cooled) Series Specification

| Model                                   | XM300W            | XM450W            | XM600W            |
|-----------------------------------------|-------------------|-------------------|-------------------|
| Power Supply *                          | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz |
| Total Cooling Capacity-kW               | 300               | 450               | 600               |
| Refrigerant                             | R134a             | R134a             | R134a             |
| Max Power-kW                            | 57.3              | 86.2              | 114.5             |
| Full Load Amps - A                      | 102.1             | 148.0             | 204.2             |
| Main Circuit Breaker recommended-A      | 125               | 160               | 250               |
| Cooling Water Inlet/Outlet Temp.-°C     | 35/40             | 35/40             | 35/40             |
| Compressor Quantity                     | 1                 | 1                 | 1                 |
| Refrigerant Pump Quantity               | 1+1 redundancy    | 1+1 redundancy    | 1+1 redundancy    |
| Gas/Liquid Pipe Connection Diameter -mm | 89/42             | 108/42            | 133/54            |
| Cooling Water Connection Diameter-mm    | DN150             | DN150             | DN150             |
| Length-mm                               | 3,000             | 3,000             | 3,000             |
| Depth-mm                                | 1,400             | 1,400             | 1,400             |
| Height-mm                               | 2,500             | 2,500             | 2,500             |
| Weight-kg                               | 2,322             | 2,422             | 2,594             |

### Notes:

1. \* The Power supply can be customized by following customer's requirement
2. The working condition for the above data: indoor terminal evaporating temperature @18°C For other working condition requirements, like T3 condition, please contact with Envicool.

## XMint (Air-cooled) Series Specification

| Model                                             | XM300A            | XM350A            | XM400A            | XM450A            | XM500A            | XM550A            | XM600A            |
|---------------------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Power Supply*                                     | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz |
| Total Cooling Capacity-kW                         | 300               | 350               | 400               | 450               | 500               | 550               | 580               |
| Refrigerant                                       | R134a             | R134a             | R134a             | R134a             | R134a             | R134a             | R134a             |
| Max Power-kW                                      | 87.1              | 102.9             | 116.2             | 130.1             | 142.8             | 147.2             | 155.3             |
| Full Load Amps - A                                | 147.1             | 173.8             | 196.2             | 219.5             | 241.0             | 248.5             | 262.2             |
| Main Circuit Breaker recommended-A                | 160               | 200               | 250               | 250               | 320               | 320               | 320               |
| Compressor Quantity                               | 1                 | 1                 | 1                 | 1                 | 1                 | 1                 | 1                 |
| Refrigerant Pump Quantity                         | 1+1 redundancy    | 1+1 redundancy    | 1+1 redundancy    | 1+1 redundancy    | 1+1 redundancy    | 1+1 redundancy    | 1+1 redundancy    |
| Gas/Liquid Line Port Diameter-mm                  | 89 / 42           | 89 / 42           | 108 / 54          | 108 / 54          | 133 / 54          | 133 / 54          | 133 / 54          |
| Water Supply Pipe Port Diameter (external thread) | R1                | R1                | R1                | R1                | R1                | R1                | R1                |
| Drain Pipe Port Diameter (external thread)        | R1                | R1                | R1                | R1                | R1                | R1                | R1                |
| Length-mm                                         | 3,950             | 3,950             | 4,800             | 4,800             | 6,000             | 6,000             | 6,000             |
| Depth-mm                                          | 2,400             | 2,400             | 2,400             | 2,400             | 2,400             | 2,400             | 2,400             |
| Height-mm                                         | 3,200             | 3,200             | 3,200             | 3,200             | 3,200             | 3,200             | 3,200             |
| Weight-kg                                         | 3,500             | 4,000             | 4,500             | 5,000             | 6,000             | 6,500             | 6,500             |

### Notes:

1. \* The Power supply can be customized by following customer's requirement;
2. The working condition for the above data: indoor terminal evaporating temperature @ 18 °C , outdoor temperature @ 38 °C , RH50% (without water spray system). For other working condition requirements, like T3 condition, please contact with Envicool.



# XMint Terminal Units Specification

| Indoor Unit Type  | Heat Pipe CRAC    | Heat Pipe CRAC    | Heat Pipe CRAC    | Heat Pipe Thin FWU | Heat Pipe Thin FWU | Heat Pipe Thin FWU | Heat Pipe FWU     | Heat Pipe FWU     |
|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|-------------------|-------------------|
| Indoor Unit Model | CyberMate045R     | CyberMate090R     | CyberMate135R     | EFW055R            | EFW075R            | EFW100R            | EFW150R           | EFW200R           |
| Refrigerant       | R134a             | R134a             | R134a             | R134a              | R134a              | R134a              | R134a             | R134a             |
| Power Supply*     | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz | 220V / 1Ph / 50Hz  | 220V / 1Ph / 50Hz  | 380V / 3Ph / 50Hz  | 380V / 3Ph / 50Hz | 380V / 3Ph / 50Hz |

## Return Air Condition\*\*: 37° C DB/24% RH

|                              |    |    |     |    |    |     |     |     |
|------------------------------|----|----|-----|----|----|-----|-----|-----|
| Cooling Capacity-kW          | 45 | 90 | 135 | 55 | 75 | 100 | 160 | 200 |
| Sensible Cooling Capacity-kW | 45 | 90 | 135 | 55 | 75 | 100 | 160 | 200 |

## Return Air Condition\*\*: 35° C DB/26% RH

|                              |    |    |     |    |    |    |     |     |
|------------------------------|----|----|-----|----|----|----|-----|-----|
| Cooling Capacity-kW          | 40 | 80 | 120 | 50 | 68 | 90 | 144 | 180 |
| Sensible Cooling Capacity-kW | 40 | 80 | 120 | 50 | 68 | 90 | 144 | 180 |

## Indoor Fan Technical Data

|                |        |        |        |        |        |        |        |        |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Air Volume-CMH | 12,000 | 24,000 | 36,000 | 14,000 | 18,960 | 23,000 | 35,000 | 47,484 |
| Fan Quantity   | 1      | 2      | 3      | 17     | 23     | 2      | 4      | 4      |

## Connection Size

|                  |    |    |    |    |    |    |    |    |
|------------------|----|----|----|----|----|----|----|----|
| Liquid-mm        | 22 | 28 | 28 | 22 | 22 | 35 | 35 | 35 |
| Gas-mm           | 42 | 54 | 76 | 42 | 42 | 67 | 67 | 76 |
| Drain Pipe ID-mm | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |

## Dimensions & Weight

|           |       |       |       |       |       |       |       |       |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
| Width-mm  | 1,100 | 2,200 | 2,550 | 1,200 | 1,200 | 1,200 | 2,000 | 2,400 |
| Depth-mm  | 995   | 995   | 995   | 350   | 350   | 1,200 | 1,200 | 1,200 |
| Height-mm | 1,975 | 1,975 | 1,975 | 2,500 | 2,500 | 2,500 | 2,600 | 2,600 |
| Weight-kg | 220   | 350   | 820   | 450   | 450   | 900   | 900   | 1,050 |

## Power Distribution & Recommended Current of Circuit Breaker

|                                                                 |     |      |      |      |      |      |      |      |
|-----------------------------------------------------------------|-----|------|------|------|------|------|------|------|
| Max Power (Cooling-Only Unit)-kW                                | 3.5 | 7.0  | 10.5 | 3.7  | 5    | 7.0  | 14.0 | 16.0 |
| Full Load Amps (Cooling-Only Unit) - A                          | 6.2 | 12.4 | 18.7 | 19.7 | 26.6 | 12.4 | 24.9 | 28.4 |
| Recommended Circuit Breaker Specification (Cooling-Only Unit)-A | 10  | 20   | 20   | 20   | 32   | 20   | 32   | 32   |

## Notes:

- 1.\* The Power supply can be customized by following customer's requirement.
- 2.\*\*The above data is based on the evaporating temperature of 18° C condition.

# XMint Terminal Units Specification

| Indoor Unit Type  | Heat Pipe Rear-Door Unit | Heat Pipe Rear-Door Unit | Heat Pipe In-Row AC | Heat Pipe In-Row AC |
|-------------------|--------------------------|--------------------------|---------------------|---------------------|
| Indoor Unit Model | XR010R                   | XR015R                   | XR025R              | XR050R              |
| Refrigerant       | R134a                    | R134a                    | R134a               | R134a               |
| Power Supply*     | 220V / 1Ph / 50Hz        | 220V / 1Ph / 50Hz        | 220V / 1Ph / 50Hz   | 220V / 1Ph / 50Hz   |

## Return Air Condition \*\*: 37° C

|                              |      |      |    |    |
|------------------------------|------|------|----|----|
| Cooling Capacity-kW          | 10.7 | 15.5 | 22 | 45 |
| Sensible Cooling Capacity-kW | 10.7 | 15.5 | 22 | 45 |

## Return Air Condition \*\*: 35° C

|                              |     |      |      |    |
|------------------------------|-----|------|------|----|
| Cooling Capacity-kW          | 9.7 | 14.0 | 19.5 | 40 |
| Sensible Cooling Capacity-kW | 9.7 | 14.0 | 19.5 | 40 |

## Indoor Fan Technical Data

|                |       |       |       |        |
|----------------|-------|-------|-------|--------|
| Air Volume-CMH | 2,800 | 4,000 | 5,200 | 12,000 |
| Fan Quantity   | 6     | 6     | 7     | 14     |

## Connection Size

|                  |      |      |      |      |
|------------------|------|------|------|------|
| Liquid-mm        | 12.7 | 12.7 | 16.0 | 22.0 |
| Gas-mm           | 22.0 | 28.0 | 35.0 | 42.0 |
| Drain Pipe ID-mm | 10.0 | 10.0 | 19.0 | 19.0 |

## Dimensions & Weight

|           |      |      |      |      |
|-----------|------|------|------|------|
| Width-mm  | 450  | 450  | 300  | 600  |
| Depth-mm  | 157  | 157  | 1200 | 1200 |
| Height-mm | 2050 | 2050 | 2200 | 2200 |
| Weight-kg | 82   | 82   | 190  | 270  |

## Power Distribution & Recommended Current of Circuit Breaker

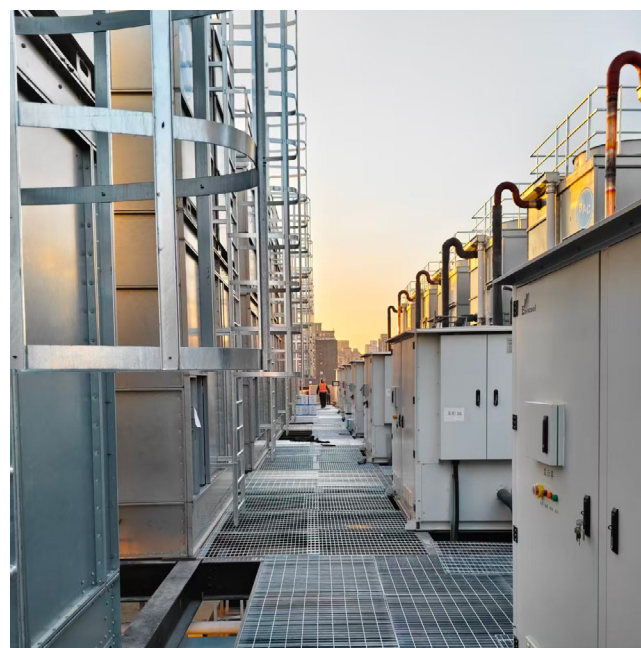
|                                                                 |     |     |     |      |
|-----------------------------------------------------------------|-----|-----|-----|------|
| Max Power (Cooling-Only Unit)-kW                                | 0.3 | 0.3 | 1.0 | 2.2  |
| Max Operating Current (FLA) (Cooling-Only Unit)-A               | 1.6 | 1.6 | 5.3 | 11.7 |
| Recommended Circuit Breaker Specification (Cooling-Only Unit)-A | 10  | 10  | 10  | 20   |

## Notes:

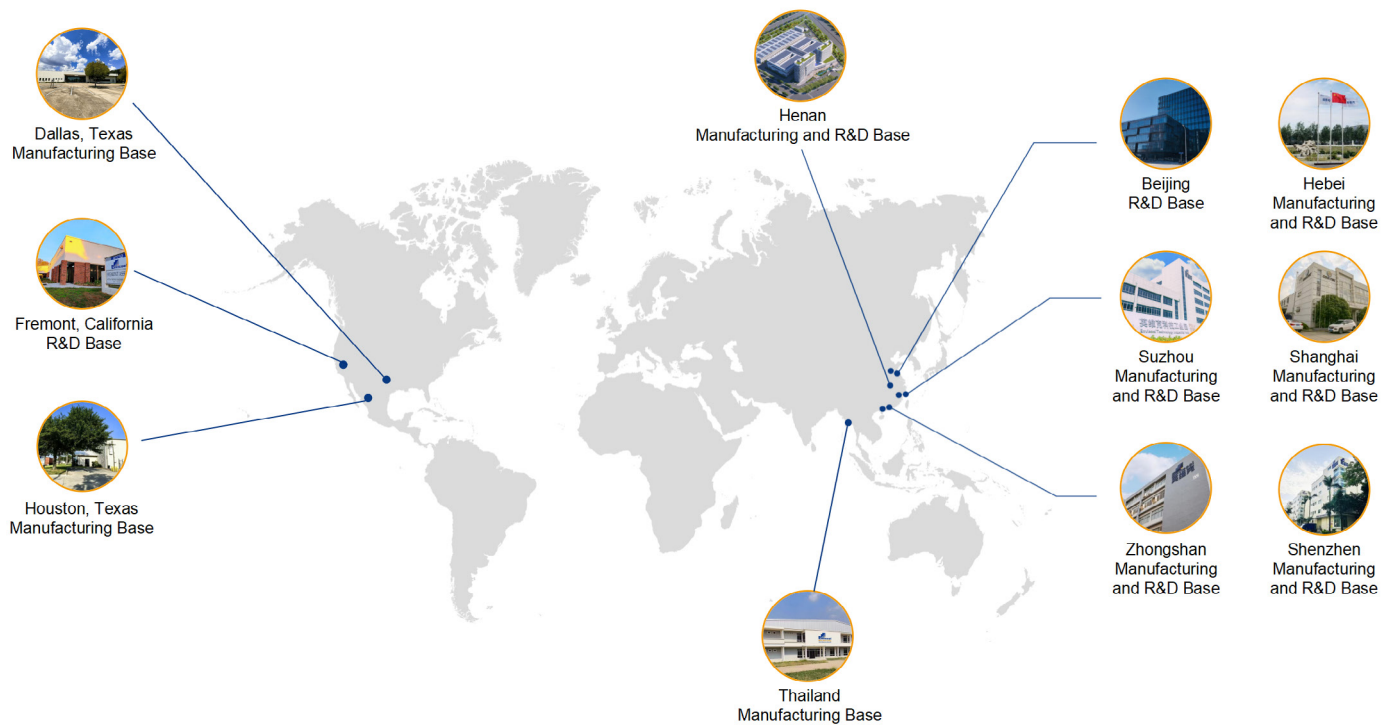
- 1.\* The Power supply can be customized by following customer's requirement.
- 2.\*\*The above data is based on an evaporating temperature of 18° C.
3. The Rear-Door Unit is designed for a rack height of 2200 mm, and its dimensions can be customized when the rack size changed.



## Application Cases of XMint Series



## Being the customers' long-term trustworthy partner



45 customer service centers and spare part centers in China



Overseas service available in multiple countries



# **More Than Cooling**

## Data Center Cooling

CyberMate DX series CRAC (6 kW-20 kW)  
CyberMate V+ series inverter CRAC  
CyberMate CW series air conditioner for chilled water computer room  
HumidMate series data center constant humidity solution  
XRow series row-based cooling unit  
XFlex series IEC solution  
XMint efficient evaporative cooling composite multi-system  
XFreecooling efficient inverter turbopowering heat pipe air conditioner  
XStorm series fan wall solution

## Data Center Integration

Intelligent modular data center solution  
UPS solution

## Energy Storage Cooling

Air-cooled cooling solution for the power energy storage industry  
BattCool energy storage full chain liquid cooling solution

## Information Division

T/H transmitter EVOS series  
4G internet of things gateway series

## Liquid Cooling & Electronics Cooling

- Coolinside full chain liquid cooling solution
- Coolinside CDU
- Liquid cooling quick disconnect
- SoluKing long-lasting coolant
- Coolinside liquid cooling clean detection line
- Coolinside liquid cooling prefabricated piping

## High Precision Cooling

- CyberMate series for laboratory
- CyberMate series for museum
- CyberMate series for archives
- CyberMate series for wine cellar

## Cabinet Cooling

- Charging pile cooling solution
- Industrial cooling products
- Outdoor cabinet cooling products
- Machine tool industry cooling products
- Micro medical chiller



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