

# SMART IN ONE

## Service Content

Consultation service: Midea HQ and all marketing centers have set up service hotlines for receiving customer consultations.  
Maintenance service: In the event of a product malfunction, users can call Midea HQ service hotline or a local authorized repair outlet. Our maintenance personnel will handle the case within 24 hours of receipt of the service request.  
Return visit and follow-up service: Midea provides return visits and follow-ups for all products sold and customer support.  
Training and technical support: Midea offers free training and technical support that covers product use and management.  
Customer profiles: Midea maintains detailed computer-based customer profiles for each user to ensure effective customer management and provide all-around customer services.

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Version of March 2022



## Full Inverter Air-Cooled Chiller (Heat Pump)

Integrated Heating and Cooling Solution



# PRESENT SITUATION

## Haze is getting worse

Are you still using conventional heating methods?

Hazy weather in winter has enveloped many regions in China in recent years and is posing serious threats to our daily life and health. Accurate analysis indicates that main sources contributions of PM 2.5 sources were dust from coal combustion. To improve comfort and reduce air pollution, it is imperative to replace coal-fired heating with clean, low-carbon, environmental-friendly heating.

PM 2.5 pollution and environmental degradation

High costs

Safety risks

Disadvantages of conventional heating methods

## Clean heating New trends: healthy and environmentally friendly

Midea air source heat pump with central air conditioning and underfloor heating functions utilizes DC inverter technology for healthy, efficient and safe heating.

With cutting-edge technologies and reliable quality, Midea has won the support and trust of customers around the world and is bringing them a healthy and environmentally friendly way of heating.

### Midea's green heating solution

Worrying about air pollution caused by conventional heating? You should use Midea air source heat pumps. Based on clean and renewable energy, strong research capabilities and advanced design concepts at home and abroad, this product can provide you with clean, environmental-friendly, comfortable and healthy heating.





Heating and air conditioning combined

Air source heat pump technology

## Make your home comfortable

Midea full inverter air-cooled chiller (heat pump) adopts the full DC inverter compressor technology and the air source heat pump technology for heating and air conditioning. This energy efficient product supports cooling in the summer and heating in the winter, making your home comfortable year round.

### Application example



#### Integrated design attends to all your family members

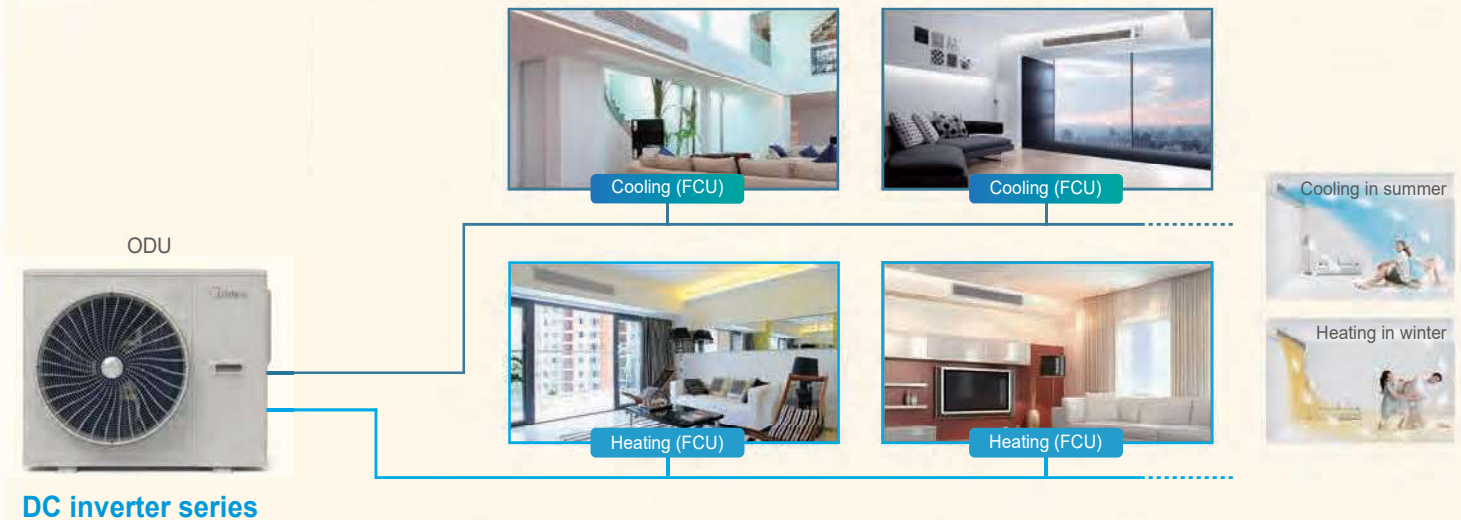
Heating and air conditioning functions combined, this solution allows for customized configuration to meet your diversified needs for comfort, safety, and efficiency.



Air source heat pump

## Varied combinations provide greater comfort

### I. FCU (heating in winter and cooling in summer)



DC inverter series

### II. Floor heating (heating in winter) + FCU (cooling in summer)



DC inverter series

#### Product features

- ★ Full DC inverter compressor, IPLV (C) level 1 energy efficiency, energy saving and durable
- ★ Heating at a temperature as low as -20°C
- ★ No burning or emission of waste gas; environment-friendly operation with R32 refrigerant
- ★ Designed to integrate water-side components for easier installation
- ★ Multiple safety protection measures covering anti-freezing, test run and water system
- ★ Compatible with the MideaHome app for remote control



Heating and air conditioning combined

Air source heat pump technology

## Make your home comfortable

Midea is an HVAC pioneer. The full inverter air-cooled chiller (heat pump) adopts Midea's advanced air source heat pump technology. For every share of electricity consumed by the air source heat pump, two or more shares of outdoor air sources are acquired, and more than three shares of heat are generated. The unit is efficient and environment friendly, saving 75% of the electricity charge in comparison with electric heating and provides comfort.

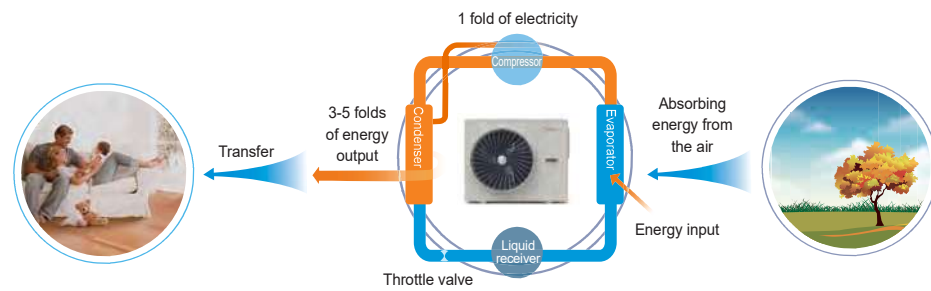
\*Data source: Global Air Conditioning Systems Market Report 2021



## Live comfortably and safely

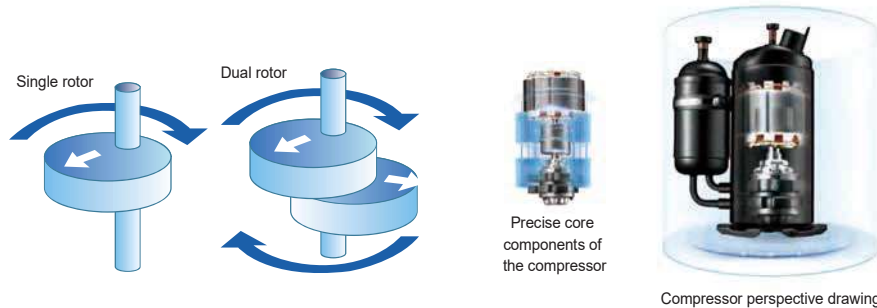
### Air source heat pump technology guarantees comfort

The air source heat pump technology uses the free air energy, so it can drive the compressor with a small amount of electricity, significantly reducing the electricity cost. Even in cold seasons, a comfortable indoor temperature can be guaranteed with less electricity consumption. The heat pump can transfer heat outdoors for cooling, and can absorb the low-temperature heat outdoors for floor heating.



### Full DC inverter compressor, energy efficient and durable

A dual-rotor inverter compressor features powerful and efficient performance with low noise generated and also a long life span, providing users with an excellent energy efficiency experience that is far beyond expectation.



## Top four advantages of dual-rotor DC inverter compressor



### Low noise

Steady operation with little vibration and low noise



### Long life

Exquisite design of components ensuring stable performance and prolonged service life



### High efficiency

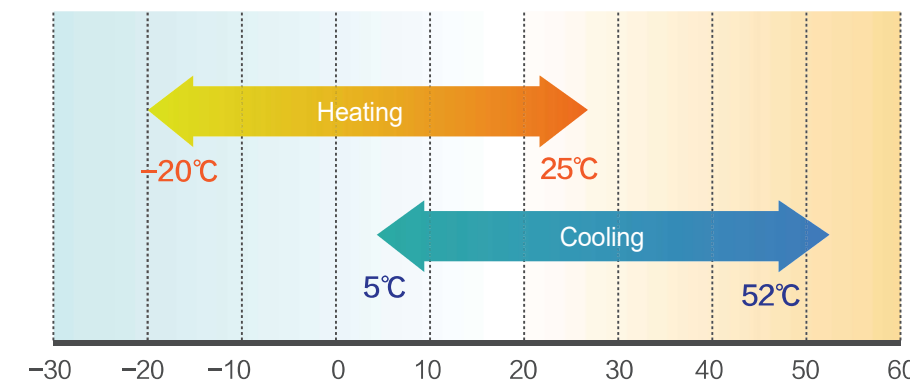
DC inverter double rotor compressor for higher efficiency



### Ultra-wide frequency

Compressor operating frequency 12-120Hz

## Enjoy a warm and comfortable winter



**-20°C to +52°C wide range operation, comfortable and more energy efficient**

In summer, 5-25°C chilled water is supplied for cooling. In winter, 25-60°C hot water is supplied for heating. Heating is realized through floor radiation while cooling and heating are realized through the FCU.



## Heating and air conditioning combined

..... Air source heat pump technology .....

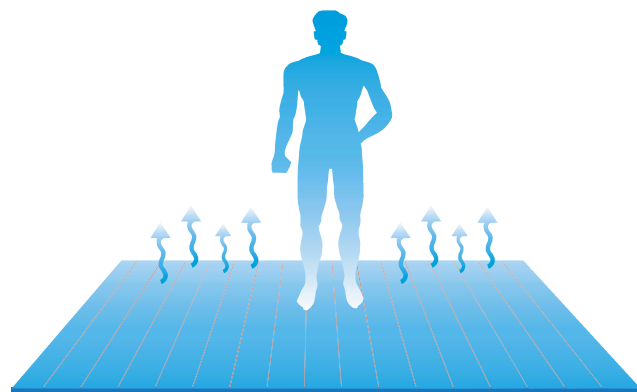
### Make your home healthy

Midea full inverter air-cooled chiller (heat pump) adopts radiant floor heating to keep the body's metabolic rate constant while adjusting the indoor temperature and humidity conditions. Making your feet warm and head cool, the unit is conducive to human comfort, health, and well-being.

### Live comfortably and safely

#### Heating through floor radiation to make your feet warm and head cool

Radiant floor heating is a more comfortable way, as the heat radiates up and warms the room evenly from the ground up. Your head can be bathed in warmth while your feet lie in the frozen zone. The heat can also depress the production of parasites such as mite and sterilize the floor. Therefore, the unit is both healthy and comfortable.



#### Cleanliness

The air source floor heating system emits no pollutants or combustion emissions. The installation of floor heating pipes indoors saves space in a more efficient way, and features ease of decoration and furnishing with less hygienic risks.

#### Constant temperature

A huge amount of heat is stored in the surface layer and concrete layer in floor heating. Therefore, there is no abrupt indoor temperature change during discontinuous heating.

### Enjoy a life of quality with intelligent control

#### Intelligent control of water temperature

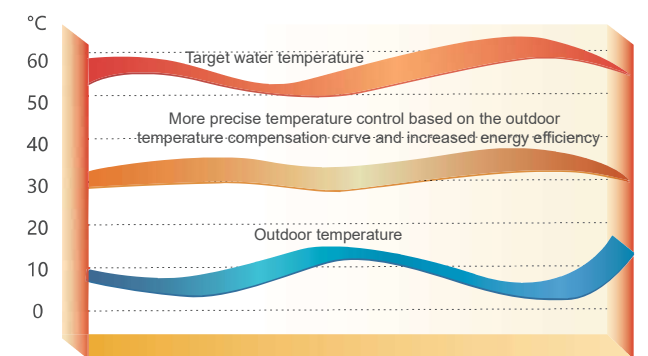
The advanced microcomputer control of Midea's air source heat pump unit eliminates water temperature fluctuations, ensuring a smooth and reliable heating system under adverse conditions.

#### Precise adjustment of ambient temperature

Based on a user-friendly design, the unit supports power settings by week temperature control easier.

#### Quiet operation

The quiet heating system ensures a pleasant living and sleeping environment.



### Premium-quality functions of central air conditioning

#### Uniform air flows to every corner

Midea central air conditioners offer great comfort, provide full air circulation to maintain uniform indoor temperatures, supply air over a considerable distance and to every corner in rooms, and maintain a constant temperature indoors for enhanced comfort.



#### Precise control of constant temperature for comfort and health



#### Exquisite design and seamless integration with various styles of decoration

A pleasant appearance is one of the most prominent attractions of a central air conditioner. Ceiling concealed solution can save the indoor space and provide adequate temperature control without affecting interior aesthetics.



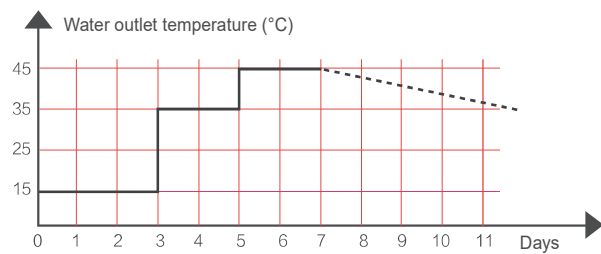
## Make your home safe

The safety of your home is a top priority for Midea. The full inverter air-cooled chillers (heat pump) adopt heat pump heating, with water and electricity completely separated and without gas or natural gas used. Multiple safety guarantees are also provided, including freezing protection, test run protection and water system protection.

## Smart, safe, stable and reliable

### ① Test run of floor heating

The unit has a built-in program designed for households who install the floor heating system for the first time. The program ensures a steady temperature rise upon the initial operation of the floor heating system and releases the stress of the floor due to the temperature rise. This can prevent floor scorching or cracking due to the thermal expansion as a result of quick temperature rise of the floor.



### ③ Reliable water system

The enclosed water system has the automatic anti-adhesion control function, which can effectively prevent scale due to the fine impurity in water and after long-time operation. This ensures that the water pump, 3-way valve, and other water pipe components operate normally after long-term shutdown for system reliability.

### ② Safe water system

The many built-in protection functions can diagnose and eliminate abnormalities possibly occurring to the water system in a timely manner, such as abnormal water flow, abnormal water temperature, abnormal temperature difference between inlet/outlet water, and abnormal range of temperature difference (too large or too small).



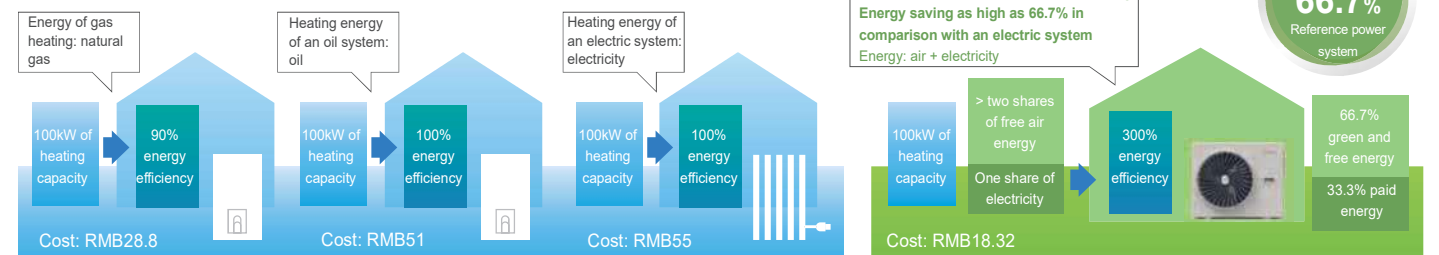
### ④ Anti-freezing protection

A special built-in program can intelligently detect a unit that is in standby status for a long time in a cold environment, and trigger the corresponding protection mechanism to prevent frost crack of the unit due to water freezing inside.

## Air source heat pump technology Eco-friendly and cost-effective

Different from the conventional heating methods, the inverter series floor heating central air conditioners adopt the air source heat pump technology, with the energy efficiency is tripled, making it a first choice for comfortable heating.

1 share of electricity + 2 shares of free air energy = 3 shares of heat capacity



Note: The costs above are generated for every 100kW heating capacity, which refers to the energy price of the same city. The electricity price may be further lowered with the implementation of the peak-valley tariff, and costs must be calculated depending on the actual use and energy price.

- The Warm House series floor heating adopts the air source heat pump technology, which absorbs heat from outside the house. For each share of electricity consumed, multiple shares of heat are generated. In this way, the utilization of energy is improved.
- Regarding the household cost, the Warm House series floor heating saves **36.4%** from gas heating and **66.7%** from electric heater floor heating.

## Heat pump floor heating VS heating with other heat sources

Floor heating pipes are laid down underfloor, having almost the same life span as the building. Compared with conventional heating methods, there is no combustion or emission of hazardous gas.



Concentrated heating

- Advantages:
  - Steady and reliable operation; good heating effect; high reliability
- Disadvantages:
  - Huge investment, large volume of work, and long construction period, requiring government funds and planning and not likely for near-term access
  - No flexible adjustment of heating time, temperature, and comfortability
  - No linkage with air conditioners



Midea air source heat pump for heating

- Advantages:
  - Convenient installation and use; steady and reliable operation
  - Greater safety with electricity use
  - Flexible setting or adjustment of heating time and temperature
  - Reduced initial investment due to integration of cooling and heating in one unit
- Disadvantages:
  - Dependence on electricity, not applicable to regions lacking electricity
  - ODU installation in a proper position outdoors



Coal, gas, and oil boilers

- Advantages:
  - Convenient transportation and installation and favorable operation
- Disadvantages:
  - No linkage with air conditioners and requiring a separate air conditioner for cooling in summer, resulting in high initial investment
  - Low efficiency and severe pollution due to coal and gas combustion
  - Safety risks: explosion/gas leak
  - High equipment cost and heavy manual workload

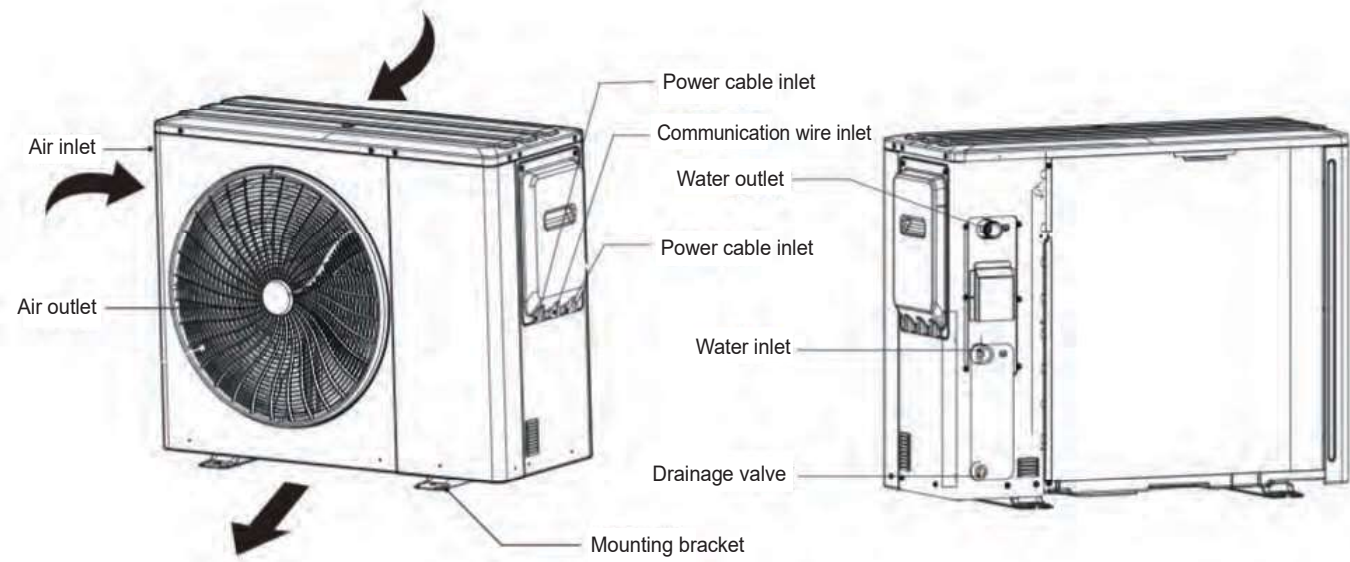
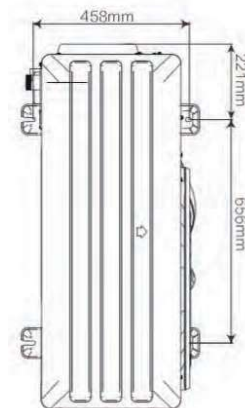
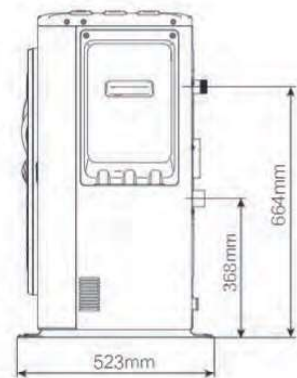
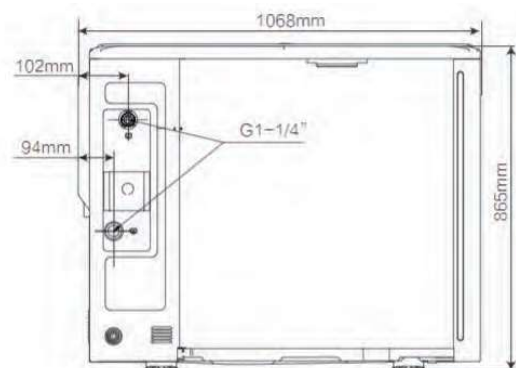


## Wide product line and full quality assurance



### Chiller

- ▣ DNL-V120/N8-5R0
- ▣ DNL-V140/N8-5R0
- ▣ DNL-V160/N8-5R0
- ▣ DNL-V180/N8-5R0



## Specifications

ODU model			DNL-V120/N8-5R0	DNL-V140/N8-5R0	DNL-V160/N8-5R0	DNL-V180/N8-5R0
Cooling	Rated cooling capacity <sup>1</sup>	kW	12.00	14.00	16.00	17.30
	Rated cooling power <sup>1</sup>	kW	3.69	4.52	5.61	6.65
	Rated cooling performance coefficient <sup>1</sup>	W/W	3.25	3.10	2.85	2.60
Heating	Rated heating capacity <sup>2</sup>	kW	14.00	16.00	18.00	19.50
	Rated heating power <sup>2</sup>	kW	4.12	4.85	5.63	6.19
	Rated heating performance coefficient <sup>2</sup>	W/W	3.40	3.30	3.20	3.15
IPLV(C)			4.40	4.30	4.25	4.20
Max power input		kW	6.10	6.60	7.20	7.70
Max. input current		A	28.0	29.0	31.0	32.0
Power form			220V/50Hz/single phase	220V/50Hz/single phase	220V/50Hz/single phase	220V/50Hz/single phase
Compressor	Type		DC inverter rotor compressor	DC inverter rotor compressor	DC inverter rotor compressor	DC inverter rotor compressor
	Quantity	Set	1	1	1	1
Refrigerant	Type		R32	R32	R32	R32
	Charge amount	kg	1.90	1.90	1.90	1.90
Air system	Motor type		Brushless DC motor	Brushless DC motor	Brushless DC motor	Brushless DC motor
	Rated power of motor	W	170	170	170	170
	Quantity	Set	1	1	1	1
	Type of air-side heat exchanger		Copper pipe with aluminium fins	Copper pipe with aluminium fins	Copper pipe with aluminium fins	Copper pipe with aluminium fins
Fan direction			Side discharge	Side discharge	Side discharge	Side discharge
Water System	Type of water-side heat exchanger		Plate heat exchanger	Plate heat exchanger	Plate heat exchanger	Plate heat exchanger
	Water-side resistance	kPa	26	35	45	52
	Maximum lift of water pump	m	15	15	15	15
Ambient temperature range	Cooling	°C	5~52	5~52	5~52	5~52
	Heating	°C	-20~25	-20~25	-20~25	-20~25
Water outlet temperature range	Heating	°C	25~60	25~60	25~60	25~60
	Cooling	°C	5~25	5~25	5~25	5~25
Noise		dB(A)	55	57	58	59
Dimensions (width x height x depth)		mm	1068*865*523	1068*865*523	1068*865*523	1068*865*523
Gross/net weight		kg	111/126	111/126	111/126	111/126
Waterproof grade			IPX4	IPX4	IPX4	IPX4
National standard No.			GB/T 18430.2-2016;			
Test conditions			1. Rated cooling: air-side dry-bulb temperature: 35°C; Use side water outlet temperature: 7°C. 2. Rated heating: air-side dry-bulb temperature: 7°C; Use side water outlet temperature: 45°C. 3. Water flow under use side nominal cooling capacity: 0.172m <sup>3</sup> /(h·kW).			