



产品宣传册  
Cooling Solutions

■ CPSY Precious Air Conditioner ( 2.0 )

# Company Profile

Shangyu (Shenzhen) Technology Co., Ltd. was established in 2011 and is headquartered in Bao an District, Shenzhen. Shangyu is an industry-leading energy-based product equipment manufacturing service provider, integrating R&D, design and manufacturing (including UPS power supply, precision air conditioner, precision power distribution, micro-module data center, battery, photovoltaic inverter, smart charging pile, outdoor mobile Power and other products) as one of the national high-tech enterprises. The company provides services to customers through more than 30 agency points in 32 provinces, autonomous regions and municipalities directly under the central government in China.

## Honor

Shangyu Company is a national high-tech enterprise and one of the incubators of Shenzhen Science and Technology Innovation Commission. At the beginning of its establishment, the company passed the ISO9001 quality management system certification, ISO14001 environmental management system certification, and ISO45001 occupational health and safety management system certification.

Shangyu Company has won the honorary title of "China Quality, Service and Reputation AAA Enterprise", which is the market's reaffirmation of Shangyu Company. In addition, relying on its outstanding performance in product quality and after-sales service, Shangyu Company has also successively won the "National Product and Service Quality Integrity Demonstration Enterprise", "National Electrical Equipment Industry Quality Leading Brand", "National Quality Inspection Stable Qualified Products" and other three honorary certificates.

As a governing unit of China Power Supply Association, Shangyu's products have successively passed multiple product certifications such as Thiel certification, energy saving certification, CCC certification, CE certification, and radio and television network access license. The modular CPY series UPS independently developed and produced by the company and the green, high-efficiency, and energy-saving high-frequency HP series UPS won the "Data Center Excellent Product Award". At present, Shangyu Company has submitted nearly 100 patent applications to the National Patent Office, and the software program independently developed by the software group of the company's R&D center has applied for 27 software copyrights to the National Copyright Administration, and has been unanimously approved.



Since its establishment, Shangyu Company has taken solving customer problems, enhancing customer value, and win-win with customers as the foundation of the company. With the spirit and actions of professional services, it has won the respect and recognition of customers and friends, and has contributed to its own UPS industry. The road has laid a solid foundation.



## Transportation Industry

Guizhou Expressway Group  
 Chengdu Railway Bureau  
 Zunyi Airport  
 Chongqing High Speed Railway Station  
 Zhejiang Hangzhou-Ningbo Expressway  
 Wujiang Railway of Guangzhou Rail Transit Lines 18 and 22  
 Changchun Rail Transit  
 Huainan Transportation Bureau  
 Ningbo Rail Transit Group  
 Hewu Expressway Company  
 Ningbo Beilun Port Co., Ltd.  
 Chengdu Shuangliu Airport  
 Gullin Transportation Bureau  
 Yichun Railway Station  
 .....

## Government industry

Chengdu Jinniu District Taxation Bureau  
 Zhejiang Provincial Public Security Department  
 Jiaying Public Security Bureau  
 Chinese Embassy in France  
 Yixing Administrative Service Center  
 Zhangshu Public Security Bureau  
 Taiyuan Industry and Commerce Bureau  
 Zhoushan Meteorological Bureau  
 Linfen Public Security Bureau  
 Ganzhou Municipal Commission for Discipline Inspection, Jiangxi Province  
 Hebei Quality Supervision Bureau  
 Rooftop Social Security Bureau  
 Nanning Industry and Commerce Bureau  
 Guangzhou Municipal Bureau of Finance  
 Kunming Civil Affairs Bureau  
 .....

## Manufacturing Industry

Rongcheng Paper Group  
 Zhejiang Jintian Copper Industry Group  
 Zhejiang Hisun Pharmaceutical  
 Langjiu Group  
 Dongfeng Nissan Passenger Vehicle Manufacturing Co., Ltd.  
 Lifeng Machine Tool Shanghai Co., Ltd.  
 Wenzhou SAINT ANGELO CLOTHING  
 Luzhou Changjiang Machinery  
 XCMG Group  
 AVIC Chengdu Aircraft Industry Co., Ltd.  
 Zhejiang Juli Elevator  
 BAIC Group  
 Jiangtuo Motor Group  
 Haier Group  
 Weichai Holding Group Co., Ltd.  
 .....

## Medical industry

Grace Medical Center  
 Hangzhou Shulan Hospital  
 Anhui Provincial Children's Hospital  
 Fuyang First People's Hospital  
 Nanchang Medical Affiliated Hospital  
 East Branch of the First Affiliated Hospital of Sun Yat-sen University  
 Beijing Tongji Hospital  
 Peking University Shenzhen Hospital  
 Chengdu Air Force Hospital  
 Zhejiang Cancer Hospital  
 The 254th Hospital of the People's Liberation Army  
 Changchun Aerospace Hospital  
 .....

## Education industry

Tsinghua University  
 Sun Yat-sen University  
 Jinzhong Education Bureau  
 Zhejiang Normal University  
 Zhejiang University  
 Xinhua College  
 Chengdu University of Technology  
 Southwest Jiaotong University  
 Northwest University  
 Jiangxi University of Finance and Economics  
 Wenzhou University  
 Hangzhou University of Electronic Science and Technology  
 .....

## Financial industry

Guizhou Post Bank  
 Taizhou Post  
 Hefei Feidong Rural Commercial Bank Founder Securities  
 Galaxy Securities  
 Straits Bank  
 Yichun Rural Commercial Bank  
 Heyuan Rural Commercial Bank  
 Jiangxi Ganzhou Yinzuo Village Bank Anhui Post Bank  
 Feixi County Rural Commercial Bank Jiujiang Bank  
 .....

# Service Network

Shangyu Company is committed to satisfying the overall needs of customers, and is always committed to improving the connotation and value of services, providing customers with comprehensive, professional and meticulous data center power maintenance solutions. Since its establishment 11 years ago, Shangyu has established a high-quality and standardized customer service system to meet the service needs of domestic customers.

Shangyu Company provides customers with a 7x24 one-stop uninterrupted customer service hotline. Just dial the company's customer service hotline, and the customer service staff will provide you with a closed-loop service response. Start-up application, purchase of service products, technical problems and customer complaints, etc. In the technical support center, there are experts with rich service experience and high professional skills to answer technical questions for customers in a timely manner. At the same time, Shangyu's after-sales team, R&D technical support team and production quality department maintain good communication to quickly solve customer service and application problems. of various issues.

Shangyu has more than 50 experienced service engineers, and Shangyu service outlets all over China, in order to pursue the on-site service demand of "close to customers and respond quickly to customers". We use one-time problem solving, timely arrival at the service site and problem solving time as our service measurement standards, so that customers can experience high-quality services. The customer only needs to contact the call center, and an engineer will be quickly arranged to contact the customer to help the customer solve the problem. Shangyu has 32 professional after-sales maintenance service centers across the country, which can handle product after-sales matters in a timely manner and effectively carry out training for Shangyu products and services.



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AM series high efficiency precision air conditioner

## Product Show

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## Product description

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The AM series precision air conditioner is developed and designed by Shangyu for application environments such as small and medium IT rooms and small and medium communication rooms under the background of the era of big data, where the information industry is booming and intelligence requirements are constantly increasing. After the strict test of the National Precision Air Conditioning Professional Laboratory, it has CCC, CQC energy-saving and other certifications. It has efficient and excellent refrigeration performance, stable and reliable operation ability, and the air conditioner has the function of self-starting when power is received. Moreover, it meets 24\*365 uninterrupted operation, is equipped with an intelligent control operating system, and has standard and fast maintenance and installation features. , electrical control room, operating room, and other small equipment environments.

# Product advantages



## Green refrigeration

Environmentally friendly refrigerant R410A is used to reduce carbon dioxide emissions and be environmentally friendly.



## Precise control

- ① Intelligent and stable constant temperature and humidity function;
- ② Temperature adjustment range: +16 ~ +40, temperature adjustment accuracy:  $\pm 1$ ;
- ③ Humidity adjustment range: 20% ~ 95%RH, humidity adjustment accuracy:  $\pm 5\%$  RH
- ④ Predict trends, self-diagnose, adjust to avoid frequent temperature fluctuations or even shutdown.



## Innovative Airflow Design

- ① Super wide-angle large-area air supply, innovative airflow design, reduce overheating in dead corners of the computer room, and avoid local overheating;
- ② Adopt return air heat exchange technology + large area "U" type evaporator, small heat exchange wind resistance and high efficiency.



## Super energy efficient

- ① The sensible heat ratio of the whole system under standard conditions is higher than 92%, and the energy efficiency of the system is as high as 3.6, leading the industry level;
- ② The design of large air volume and small enthalpy difference is suitable for the heat dissipation characteristics of the main equipment in the computer room, and provides a continuous and stable temperature/humidity environment for the main equipment.



## Smart protection

Ensure that the unit can work effectively for a long time

- ① Motor overload protection
- ② High and low voltage protection
- ③ Compressor low pressure protection
- ④ High/low temperature alarm
- ⑤ power down memory
- ⑥ Compressor high pressure protection
- ⑦ Phase missing and wrong phase protection
- ⑧ Phase sequence fault tolerance



## High stability

- ① Full Chinese 4.3-inch touch screen, with multi-level password protection, fault diagnosis and other functions;
- ② According to the 24h\*365 day continuous operation long life design, high efficiency and stability, less maintenance;
- ③ High intelligence, high energy saving, high efficiency, long life, small vibration, low noise and continuous and uninterrupted work;
- ④ Strong power grid adaptability, ultra-wide input voltage design, three-phase power unit operating voltage fluctuation range of  $380V_{ac} \pm 20\%$ , and phase loss protection function.



## Intelligent control

- ① The air conditioner has its own RS485 communication interface;
- ② The group control network can realize the network operation of 32 machines;
- ③ Flexible switching function of main and standby units, automatic switching and rotation functions can be realized after the units are networked.



## Incoming power self-start automatically

The air conditioner has a power-on function

## ■ High-quality core components



### Famous high-efficiency compressor with outstanding performance

Adopt well-known brand rotor compressor, anti-hydraulic, large air volume, simple and compact structure, light weight, small unit size, small footprint, small starting current, and has the advantages of continuous, stable compression operation, low noise and long life.



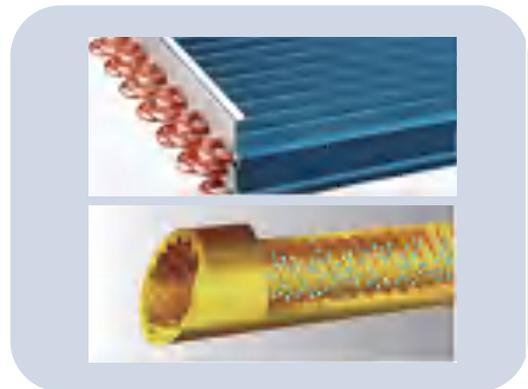
### High-quality electronic expansion valve with precise control

The opening can be adjusted steplessly from 10% to 100%. It cooperates with the compressor to achieve precise cooling. It has the functions of fast response, wide adjustment range, energy saving and quietness. The valve is reversible and can realize automatic flow control in cooling and heating states.



### Password setting, precise operation

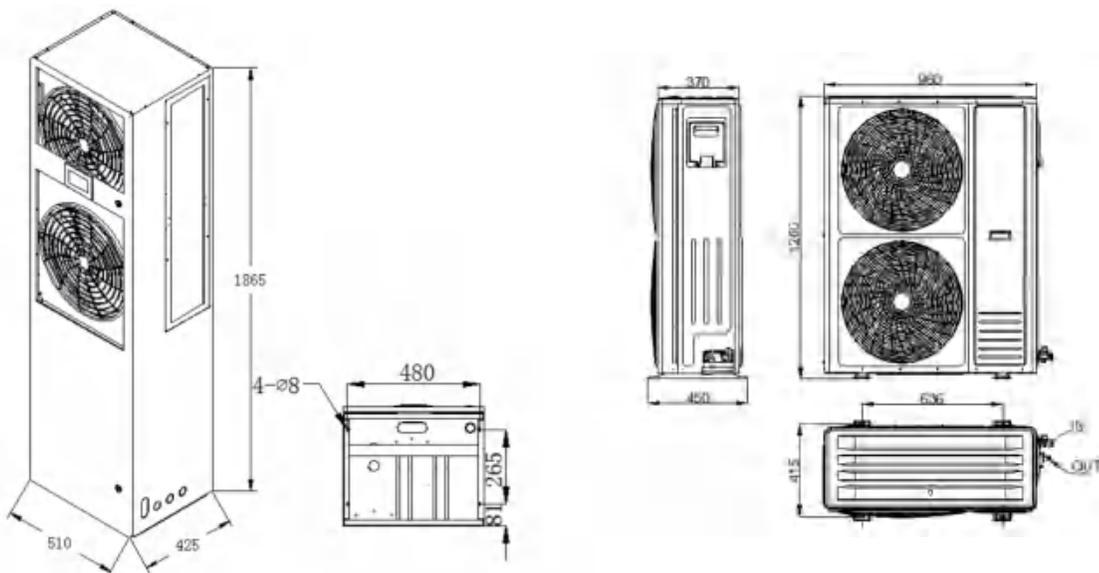
It adopts a large-screen display in Chinese, which integrates multiple functions and an easy-to-operate humanized interface; advanced intelligent control technology, real-time control of ambient temperature, accurate control and more energy-saving; intelligent centralized control technology can effectively prevent misuse.



### High-efficiency copper tube heat exchanger, durable and energy-saving

The high-efficiency copper tube heat exchanger is adopted, the blue hydrophilic film aluminum foil low-pressure loss fins and the internal thread copper tube are perfectly combined, and the innovative CFD-assisted optimization design is used to greatly improve the heat exchange efficiency of the heat exchanger, which is durable and energy-saving. The internal threaded copper tube is adopted, and its inner surface is designed with grooves, so that the contact area with the refrigerant is larger, the heat exchange is more sufficient, and the heat exchange effect is better.

# Product Size



Overall dimensions and installation dimensions of the indoor unit

Nominal cooling capacity	Dimensions(mm)			Mounting hole spacing(mm )
	W(mm)	D(mm)	H(mm)	
8KW Series	510	425	1865	480*265
13KW Series	510	425	1865	480*265

Outdoor unit dimensions and vertical installation dimensions

Product model	Dimensions (mm)			Mounting hole spacing(mm )
	W	D	H	
... AMD12	960	370	810	636*415
... AMD19	960	370	1260	636*415

Note: As the product is constantly updated, the picture is for reference only, please refer to the actual product.

Mate No. of air conditioners, specifications	3HP、Three-phase power		5HP、Three-phase power	
indoor unit model	AM8UC	AM8UH	AM13UC	AM13UH
outdoor unit model	AMD12	AMD12	AMD19	AMD19
Function type	single cooling	Constant temperature and humidity type	single cooling	Constant temperature and humidity type
Power spec.(V-Hz)	380VAC/50Hz	380VAC/50Hz	380VAC/50Hz	380VAC/50Hz
Maxium current (A)	7	11.5	12	15.5
recommend breaker	16/4P	16A/4P	16A/4P	25A/4P
Main technical parameter				
Cooling				
Cooling capacity(KW)	8.0	8.0	13	13
appearance Cooling capacity (kw)	7.36	7.36	12.2	12.2
air volume (m <sup>3</sup> /h)	2800	2800	3500	3500
Heating				
Electric heating power (kw)	—	3.0	—	3.0
Humidification				
Humidification (kg/h)	—	3.0	—	3.0
Humidification type	—	electrode humidification	—	electrode humidification
Size(mm)				
Indoor unit size (W*D*H-mm)	510*425*1865			
Outdoor unit size (W*D*H-mm)	960*370*810		960*370*1260	
Weight (kg)				
Indoor Unit (N.W) (kg)	87	93	102	108
Outdoor unit N.W) (kg)	34	34	53	53



## EM series small and medium-sized computer room precision air conditioner



### Hermetic scroll compressor

It adopts well-known brand scroll high-efficiency compressor, which has the functions of small starting current, smooth rotation, stable operation, high reliability, low vibration and low noise.

The structure of the whole machine adopts the "digital punching + professional mold opening" manufacturing process, and the plates are integrated into one, with good structural strength and strong heat resistance.



### EC centrifugal fan + electronic expansion valve

The key components are all selected from well-known brands, and the whole machine has passed more than 20 commodity inspection indicators, covering performance, reliability, electrical safety and other items. Adhering to the concept of high-efficiency performance, the system adopts the combination of all-metal high-efficiency EC fan + electronic expansion valve, which can realize stepless adjustment at 10~100% speed.



EC 离心风机

电子膨胀阀



### 15 meters air supply distance coverage, high sensible heat ratio design

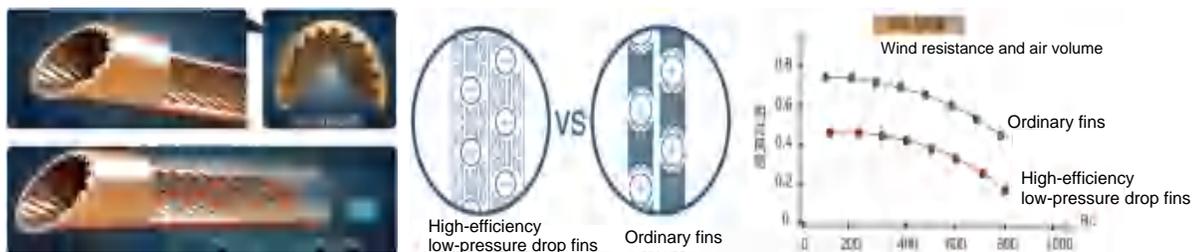
The backward tilting design of the EC fan optimizes the static pressure of the air outlet, and the air supply distance can reach 15m. The sensible heat ratio of the whole system under standard conditions is greater than 92%, which suppresses the dehumidification effect as much as possible, ensures that the humidity is within a reasonable range, and helps the server maintain the best operating state.





## High-quality copper tube + hydrophilic aluminum foil

The heat exchanger is equipped with blue hydrophilic film aluminum foil fins, the gas-liquid flow on the surface is faster, the anti-corrosion performance is enhanced, and the heat exchange efficiency of the whole machine is improved; at the same time, the high-efficiency internal thread copper tube design is adopted, which is similar to the internal thread of a bullet gun chamber. It can increase the inner surface area of the pipe, accelerate the flow speed of the refrigerant, and improve the energy efficiency of the air conditioning product.



## High precision pressure sensor

Using high-precision and high-performance pressure sensors, the system pressure is directly converted into numerical values through electrical signals, and displayed on the control panel, which fully realizes the visualization of system pressure and makes it easier and faster to judge the operating status of the unit. The pressure sensor adopts a high-precision solid-state structure design, equipped with high-quality terminal blocks, has undergone multiple plug-in tests, anti-interference verification, and can adapt to various harsh environments.



## Electrode humidification, ceramic PTC heating

It adopts electrode type humidification, with large and stable humidification capacity, automatic cleaning function, adaptive to bad water quality, and convenient maintenance. It adopts ceramic PTC heating, which has large heating capacity and stable operation. It has automatic temperature protection and multi-level heating function, which can accurately control the ambient temperature.





## Intelligent control

Equipped with advanced microcomputer control system, full Chinese LCD display, integrating multiple functions and easy-to-operate humanized interface, real-time precise control, convenient and flexible, and can effectively avoid misoperation.

According to the long-life design of continuous operation for 24h\*365 days;  
Standard RS485 interface, with multi-level password protection;  
Group control network can realize 32 machine network operation;  
Flexible main and standby machine switching function, automatic switching and automatic switching can be realized after networking rotation.



## Excellent electrical performance, suitable for various application environments

Reliable operation at an outdoor ambient temperature of  $-15^{\circ}\text{C}$  to  $45^{\circ}\text{C}$ . After the low-temperature component solution is selected, reliable operation at  $-35^{\circ}\text{C}$  can be achieved;  
The air switch and contactor of a well-known brand in the industry are used, and the electrical performance stability of the whole machine is further improved;  
It is extremely adaptable to the power grid Capability, the operating range of the three-phase power supply unit can reach  $380\text{Vac}\pm 20\%$ , and it has the function of phase loss protection.



## Multiple security protection

A variety of innovative safety technologies ensure that the unit can still operate in harsh environments, with high efficiency and safety.

1. 500 historical records can be stored
2. System high/low voltage protection
3. Fan failure alarm
4. Power-off memory, self-starting when power is received
5. Electric heating protection
6. Indoor temperature/evaporation temperature alarm
7. Mains over/undervoltage protection
8. Remote/online communication alarm
9. Power failure, phase sequence error protection



## Specifications

EM Series small precision air conditioner				
Model No.	EM17U1C	EM17U1	EM20U1C	EM20U1
<b>Cooling section</b>	7HP		8HP	
<b>Model, function</b>	single cooling	Constant temperature and humidity	single cooling	Constant temperature and humidity
<b>performance parameter</b>				
cooling capacity (kW)	17.5		20.1	
display cooling capacity (kW)	16.1		18.6	
sensible heat ratio (W/W)	0.92		0.92	
Inner air volume (m <sup>3</sup> /h)	5000		5500	
Heating capacity (kW)	—	6.0	—	6.0
Humidification (kg)	—	3.0	—	3.0
<b>Structural parameters</b>				
<b>Indoor unit parameters—W* D * H (mm)</b>				
Dimension	1200*500*1740			
Weight (kg)	245	250	255	260
<b>Outdoor unit parameters—W* D * H (mm)</b>				
Dimension	1200*400*730		1200*400*985	
Weight (kg)	72		88	
<b>Electrical Connection Parameters</b>				
maxium input current (A)	15	23.5	17	26.0
Power Spec. ( V/Hz)	380V±15% /50Hz±2Hz			
Connecting pipe-trachea (mm)	16			
Connecting pipe -liquid pipe (mm)	12.70			
Maximum equivalent length (m)	45.0 (Add extension kit)			
Maximum positive drop (outside unit on top: m)	10.0			
Maximum negative drop (outside unit below: m)	5.0			
Note 1: The above table is only part of the parameters. The specific configuration is subject to the actual nameplate purchased. For more parameter information, please contact Shangyu Company.				
Note 2: Refrigerant type: R410A				



## EM series room-level computer room air conditioner

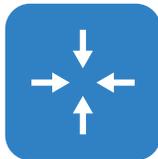
# EM series air-cooled type



## Features



Energy efficient



Refrigeration  
precision



Management  
intelligence



Modular design



Multiple protection

## Product description

EM room-level air-cooled computer room air conditioner, which has high-efficiency cooling capacity,  $\pm 15\%$  wide power supply system, multiple intelligent monitoring protection, and modular quick installation concept, realizes 100% full front maintenance. It is specially designed for various types of IDC computers. The constant temperature and humidity precision air-conditioning products designed for application places such as computer rooms, communication computer rooms, and equipment rooms can fully meet the heat dissipation needs of medium and low heat density data computer rooms.

## Core advantages



### High performance compressor

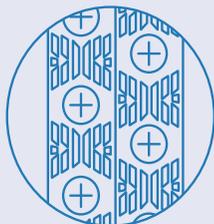
Adopt well-known brand scroll compressor, no high and low pressure valves, anti-liquid shock, small starting current, stable operation, low noise and long service life during the compression process. The structure of the whole machine adopts the "digital punching + professional mold opening" manufacturing process, and the plates are integrated into one, with good structural strength and strong heat resistance.



### Internally threaded copper tube + high-efficiency low-pressure loss fins

The heat exchangers all use a combination of high-efficiency internal threaded copper tubes and blue hydrophilic aluminum film low-pressure loss fins, which can make the refrigerant heat exchange contact area larger, heat exchange more sufficient, efficiency increased by 20%, energy saving and more durable.

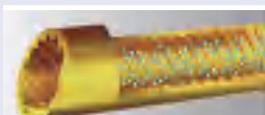
High-efficiency low-pressure drop fins



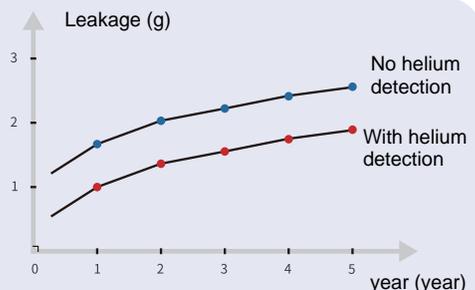
Ordinary fins



VS



The internal threaded copper tube is adopted, and its inner surface is designed with grooves, so that the contact area with the refrigerant is larger, the heat exchange is more sufficient, and the heat exchange effect is better.





## EC centrifugal fan

High-efficiency EC centrifugal fan has the characteristics of large air volume, low noise, high efficiency, small size and reliable performance. It has the function of 0-100% stepless speed regulation, and automatically adjusts the fan speed according to the load of the whole machine, effectively reducing the energy consumption of the fan by 20%.



EC centrifugal fan



## High precision electronic expansion valve

The electronic expansion valve is equipped as standard, and the opening can be adjusted steplessly from 10% to 100%. According to the operating conditions and the refrigerant demand of the evaporator, the opening of the expansion valve can be quickly adjusted. Compared with the thermal expansion valve, the response is faster and the adjustment is more precise.



Electronic expansion valve

# Management intelligenc



## Intelligent control

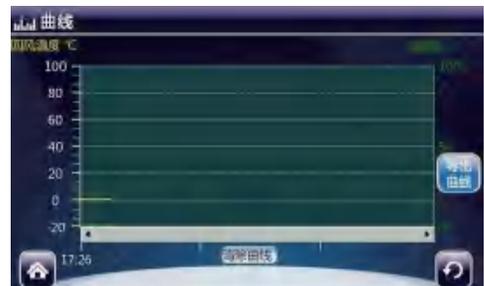
Equipped with advanced microcomputer control system and 7-inch LCD touch screen, the interface is beautiful, convenient and flexible, real-time precise control, integrating multiple functions and easy-to-operate humanized interface.

Standard RS485 interface, with multi-level password protection , effectively avoid misoperation; support group control, can realize 32 machines network operation; flexible main and standby machine switching function, can realize automatic switching and rotation after networking.



## Excellent electrical performance, suitable for various application environments

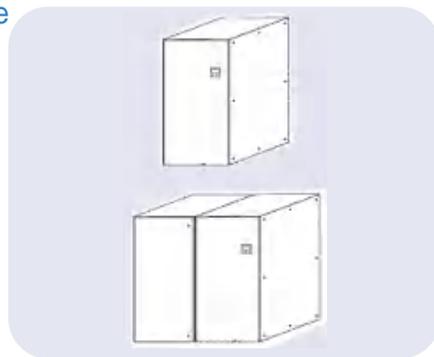
Reliable operation at an outdoor ambient temperature of -15°C to 45°C, and reliable operation at -35°C after the low-temperature component solution is selected; The use of international famous brand circuit breakers and contactors can meet the 380V±15% 3N~50Hz±2Hz wide system power supply.





## Modular design, support full front maintenance

- ① Designed with a modular concept, it can be quickly disassembled and assembled on site. In case of a freight elevator door or a site with narrow passages, it can be transported separately and passed through quickly.
- ② The unit adopts a full front maintenance design, and the side and rear can also be opened for maintenance. After opening the front door of each independent module, all parts can be accessed.



## Multiple security protection

A variety of innovative safety technologies ensure that the unit can still operate in harsh environments, with high efficiency and safety.

- ① Delayed start protection
- ② History alarm query
- ③ Mandatory manual operation
- ④ 4 levels of password protection
- ⑤ Parts working status query
- ⑥ Timer switch setting
- ⑦ Unit network group control
- ⑧ power down memory
- ⑨ Compressor start and stop control
- ⑩ Electric heating alarm protection
- ⑪ Phase loss protection
- ⑫ High/Low Voltage Protection

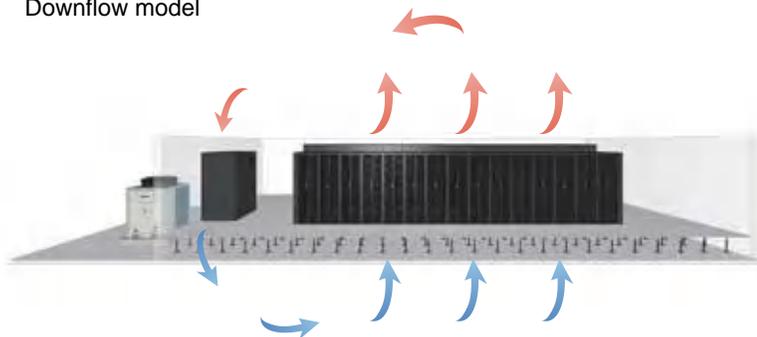
## Refrigeration precision

### up air model(hood air supply)



The hood guides the air to supply air, with less cooling loss, large air supply volume, good heat transfer uniformity, simple and fast construction, and is suitable for occasions with small computer rooms.

### Downflow model



It can support the air supply under the electrostatic floor, the air supply is uniform, the temperature field is stable, the wiring and pipes can be routed under the electrostatic floor, the layout is neat and beautiful, and it is suitable for occasions with high aesthetic requirements and large areas.

# Indoor unit



EM25U1



EM40D2



EM60U2

## Specifications

EM Room-level air-cooled computer room air conditioner indoor unit											
Model No.	EM25U(D)1	EM30U(D)1	EM35U(D)1	EM40U(D)1	EM40U(D)2	EM50U(D)2	EM60U(D)2	EM70U(D)2	EM80U(D)2	EM90U(D)2	EM100U(D)2
System type	Single system, fixed frequency				Dual system, fixed frequency						
<b>Performance parameter</b>											
cooling capacity(kW)	25.4	30.5	35.5	40.2	40.4	50.6	60.4	70.5	80.6	90.8	100.4
Display cooling capacity(kW)	23.3	27.9	32.4	36.9	37.0	46.3	55.1	64.5	73.7	83.1	91.9
Sensible heat ratio (W/W)	0.92	0.90	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92
Rated power (KW)	8.5	10.0	11.9	13.2	15.8	16.5	20.1	23.5	27.1	30.0	33.6
Energy efficiency ratio (W/W)	3.07	3.00	3.05	3.01	3.05	3.03	3.04	3.06	3.03	3.04	3.02
air volume(m³/h)	7000	8500	10000	11500	11500	13500	15000	20000	23000	25000	27000
Reheat(kW)	8	8	8	8	8	8	8	16	16	16	16
Humidification (kg)	6	6	8	8	8	8	8	10	10	10	10
Temperature Control Accuracy	±1°C										
Humidity Control Accuracy	±5%										
Air Filtration Grade	G4										
<b>Structural parameters of indoor unit-W*D*H (mm)</b>											
Dimension (mm)	980*995*1950			1280*995*1950		1430*995*1950		2080*995*1950		2380*995*1950	
Weight (kg)	330	350	360	380	450	520	540	680	700	780	800
In and out wind form	up air (U) /down air (D)										
Remark 1: The above are only some renderings of air conditioners. If you need detailed pictures, please consult the local sales manager or pre-sales engineer											
Remark 2: The above table is only part of the parameters. The specific configuration is subject to the actual purchase nameplate. For more parameter information, please contact Shangyu Company											
Remark 3: Refrigerant type: R410A											

Reheat(kW)

air filter

compressor

Dimension  
(W\*D\*H-mm)

Weight(kg)

humidification form



AME35



AME29



AME58

## Specifications

EM Room-level air-cooled computer room air conditioner outdoor unit												
Indoor unit model	EM25U(D)1	EM30U(D)1	EM35U(D)1	EM40U(D)1	EM40U(D)2	EM50U(D)2	EM60U(D)2	EM70U(D)2	EM80U(D)2	EM90U(D)2	EM100U(D)2	
outdoor unit model	AME35	AME45	AME52	AME58	2*AME29	2*AME35	2*AME45	2*AME52	2*AME58	2*AME66	2*AME74	
Structural parameters of outdoor unit-W*D*H (mm)												
Number	1				2							
Dimension (mm)	1845*400*985			2245*400*1135			2*(1200*400*985)		2*(1845*400*985)		2*(2245*400*1135)	
Weight (kg)	115	128	140	160	88*2	115*2	128*2	140*2	160*2	160*2	175*2	
Electrical connection parameters - take 30 meters as an example												
Power Specifications	220V/50Hz											
Operating temperature range	-35°C~45°C											
Connecting pipe - trachea(mm)	22				2*16		2*22			2*25		
Connecting pipe - liquid pipe (mm)	16				2*12		2*16			2*19		
Maximum horizontal distance (m)	30											
Maximum positive drop(m)	外机在上: 20m											
Maximum negative drop(m)	外机在下: 5m											
Note 1: The above table is only part of the parameters. The specific configuration is subject to the actual purchase nameplate. For more parameter information, please contact Shangyu Company												
Note 2: Where the parameters are not specified, please consult the local sales manager or pre-sales engineer for details												



# SP row-level computer room precision air conditioner

## ■ SP In-row Air-cooled air-conditioning

Shangyu SP air-cooled row-level precision air conditioner is a row-level temperature control product specially designed for medium and high heat density data centers. It is installed close to the heat source, shortens the cold air flow path, and can accurately handle the sensible heat generated by the server. It is an ideal choice for data center computer rooms and various electronic equipment computer rooms.



### Features



Energy efficient



Refrigeration precision



intelligent management



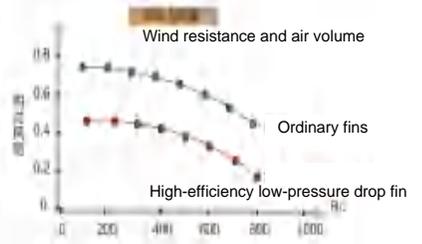
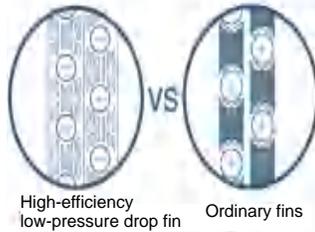
## DC inverter compressor

Adopt high-efficiency and low-energy DC inverter compressors, which can achieve 20-100% variable-capacity cooling capacity output and accurately match load requirements. After being placed in a closed cold/hot aisle scene, the overall operating cost can be saved by 15%; The structure adopts the "digital punching + professional mold opening" process, and the plates are integrally formed, with good structural strength and strong heat resistance.



## Internally threaded copper tube + high-efficiency low-pressure loss fins

Both the indoor and outdoor air side heat exchangers use a combination of high-efficiency internal threaded copper tubes and blue hydrophilic aluminum film low-pressure loss fins, which can make the refrigerant heat exchange contact area larger, heat exchange more fully, and improve efficiency by 20% , energy saving and more durable.



## EC centrifugal fan, redundant design

High-efficiency EC centrifugal fan has the characteristics of large air volume, low noise, high efficiency, small size and reliable performance. It has 0~110% capacity redundancy, and automatically adjusts the speed of the fan steplessly according to the load of the whole machine, effectively reducing the energy consumption of the fan by 20%.



EC centrifugal fan



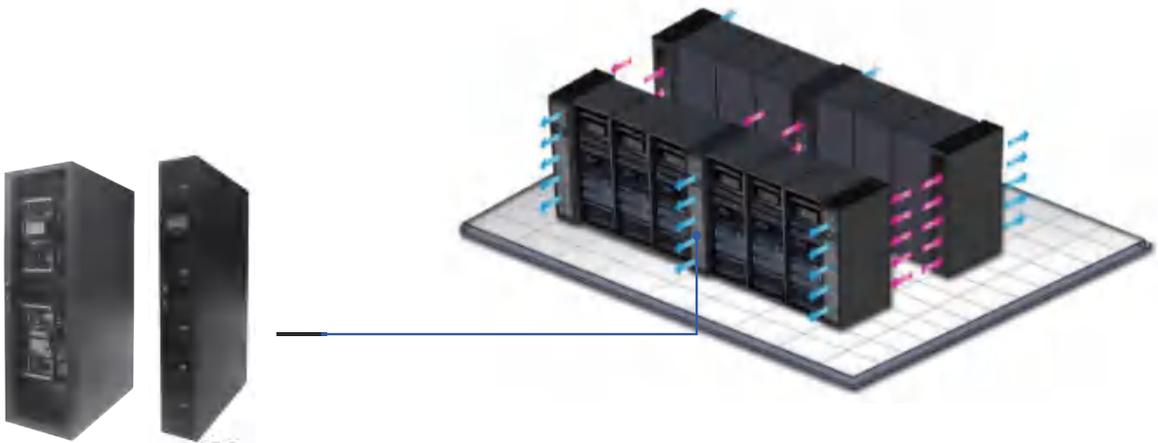
## High precision electronic expansion valve

The electronic expansion valve is equipped as standard, and the opening can be adjusted steplessly from 10% to 100%. According to the operating conditions and the refrigerant demand of the evaporator, the opening of the expansion valve can be quickly adjusted. Compared with the thermal expansion valve, the response is faster and the adjustment is more precise. .



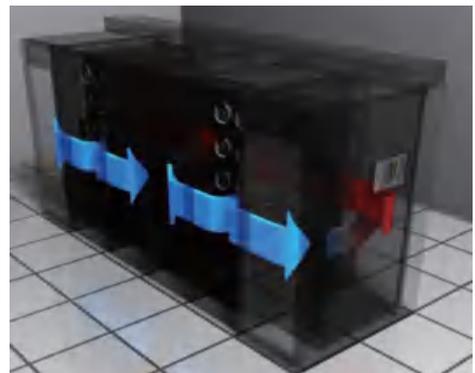
Electronic expansion valve

Installed at both ends or in the middle of a row of cabinets, placed in closed cold/hot aisles



## Placed in a single row of cabinets to form a sealed channel

The inter-row air conditioner with air supply on both sides can be customized and installed in the middle or on both sides of the single-row cabinet. By changing the air supply mode and the cabinet channel components, a cold and hot single-enclosed/or double-enclosed sealed channel can be formed to accurately solve the problem of hot spots in the data center.



## Placed in two rows of cabinets, access to sealed aisles

It is installed in the middle or both sides of each row of cabinets, and at the same time seals the cold/hot air passage between the two rows of cabinets, which can greatly improve the cooling capacity utilization rate of the air conditioner, and the cooling system of the computer room can save energy by about 15%.

1. Isolate cold/hot airflow and optimize airflow organization;
2. High air supply and return air temperature design to reduce the cooling capacity consumption of the air conditioner;
3. Close to the heat source for cooling, shorten the path of cold air, and improve cooling energy efficiency.



# Management intelligence



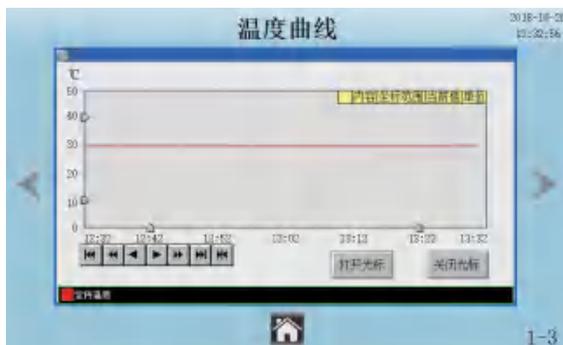
## Large screen touch, support intelligent control

1. Equipped with advanced microcomputer control system and 7-inch touch screen, the interface is beautiful, convenient and flexible, real-time precise control, integrating multiple functions and easy-to-operate humanized interface.
2. Standard RS485 interface, multi-level password protection, effectively avoid wrong operation;
3. Support group control, can realize 32 machine networking linkage operation;
4. The main and standby machines can be switched flexibly, and automatic switching and rotation can be realized after networking.



## Excellent electrical performance, suitable for various environments

1. Reliable operation at an outdoor ambient temperature of -15°C to 45°C, and reliable operation at -35°C after the low-temperature component solution is selected.
2. The circuit breaker and contactor of international famous brand can meet the wide standard power supply of 380V±15% 3N ~ 50Hz±2Hz.



## Fault self-diagnosis, support full front/rear maintenance

1. After a fault occurs, the unit can self-diagnose intelligently, eliminate irrelevant fault causes, and guide maintenance engineers to perform maintenance work quickly and accurately;
2. The unit adopts a full front or rear maintenance design, and all parts can be accessed after opening the door, allowing quick and convenient maintenance or replacement of parts.

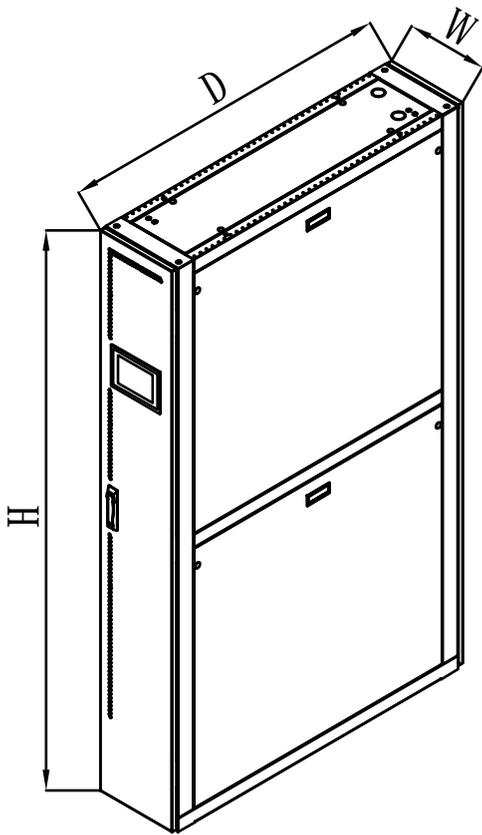


## Multiple protection

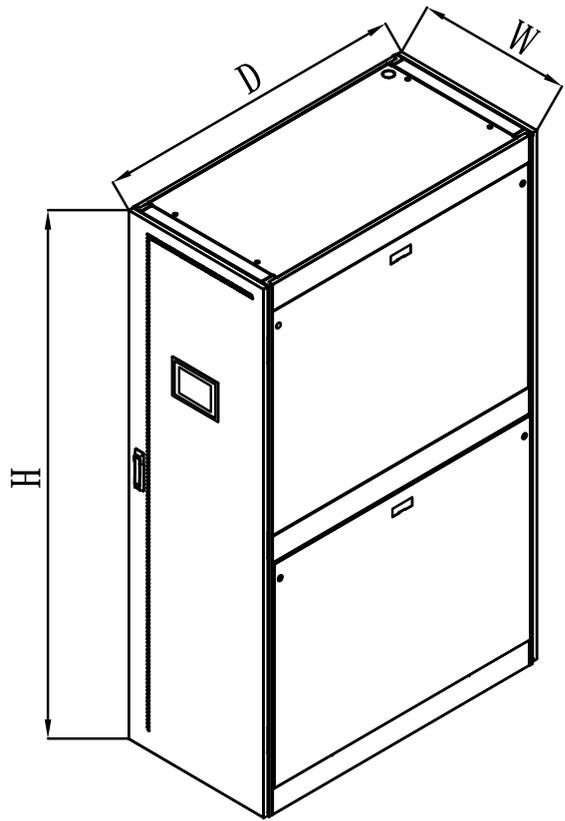
A variety of innovative safety technologies ensure that the unit can still operate in harsh environments, with high efficiency and safety.

1. Delayed start protection
2. Historical alarm query
3. Mandatory manual operation
4. Power off memory
5. Parts working status query
6. Timer switch setting
7. Unit network group control
8. Phase loss protection
9. Compressor start and stop control
10. Compressor alarm protection

SP inter-row air-cooled machine room air conditioner-indoor unit size chart



half cabinet ( 300mm Width )



full cabinet ( 600mm Width )

# Indoor unit



## Horizontal air supply model



12.5KW



25KW



40KW

## Specifications

SP inter-row air-cooled machine room air conditioner					
Model	SP13A1C	SP13A1	SP25A1C	SP25A1	SP40B1
Width series	half cabinet (300mm)			full cabinet (600mm)	
performance parameter					
cooling capacity(kW)	12.5		25		40
Display cooling capacity(kW)	12.5		25		40
Inner air volume(m <sup>3</sup> /h)	3000		5000		9000
Reheat(kW)	-	3	-	3	6
Humidification capacity (kg/h)	3		3		3
Structural parameters					
Dimension (W*D*H-mm)	300*1200*2000			600*1200*2000	
Weight(kg)	160		190		260
function item					
compressor	DC inverter compressor				
indoor fan	EC centrifugal fan				
expansion valve	Electronic expansion valve				
heating form	PTC heater				
humidification form	Electrode humidification				
air filter	G4				
Refrigerant	R410A				
Remark 1: The above are only some renderings of air conditioners. If you need detailed pictures, please consult the local sales manager or pre-sales engineer Remark 2: The above table is only part of the parameters. The specific configuration is subject to the actual purchase nameplate. For more parameter information, please contact Shangyu Company					



SP13C



SP25C



SP40C

## Specifications

Outdoor unit					
Indoor unit model	SP13A1C	SP13A1	SP25A1C	SP25A1	SP40B1
Outdoor unit model	SP13C		SP25C		SP40C
Structural parameters of outdoor unit					
number	1		1		1
Diemnsion (W*D*H -mm)	1200*400*730		1845*400*985		2245*400*1135
Weight(kg)	66		115		160
Electrical connection parameters - take 30 meters as an example					
Power Specifications	220V/50Hz				
Maximum operating temperature range	-35°C ~ +45°C				
Connecting pipe - trachea(mm)	16	16			22
Connecting pipe - liquid pipe (mm)	9.52	12.7			16
Maximum horizontal distance (m)	60 ( Add extension kit )				
Maximum positive drop (m)	20				
Maximum negative drop(m)	5				
Note 1: The above table is only part of the parameters. The specific configuration is subject to the actual purchase nameplate. For more parameter information, please contact Shangyu Company					

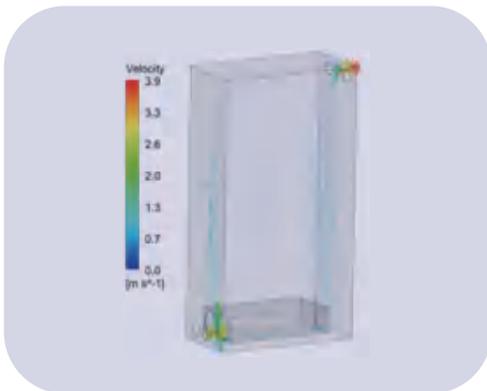


# SP.R Rack Mount Air Conditioner

## Product description

For small and micro or distributed IT cabinets, computer rooms, data centers and other edge computing deployment scenarios, Shangyu developed the SP.R rack-type precision air conditioner on the basis of the series of small precision air conditioners. This product has high energy efficiency, low power consumption, small size, and is easy to install and use. It is placed close to the heat source on the rack inside the cabinet. It can accurately handle the high sensible heat generated by the servers in the cabinet and effectively prevent local hot spots. It is especially suitable for single cabinets in the 5G era, multi-cabinet and other high heat density application environments.

## Core components



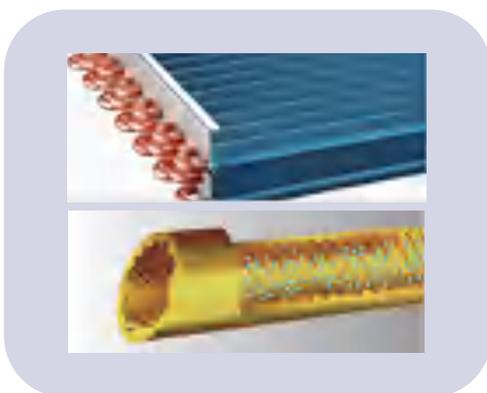
### High-performance components to eliminate the risk of "hot spots"

Three-sided air supply design can effectively prevent "local hot spots" from occurring. After the unit is installed, it can realize three-sided air supply on the left, right, and top, and local hot spots can be eliminated in the embryonic stage.



### Backward inclined EC centrifugal fan

The backward inclined EC centrifugal fan is adopted, and the new manufacturing process and new materials are perfectly applied to the core components. The aerodynamic performance is greatly enhanced, and it has the characteristics of high intelligence, long life, small vibration and low noise.



### High-efficiency copper tube heat exchanger, durable and energy-saving

High-efficiency refrigeration coil design, perfect combination of hydrophilic film aluminum foil low-pressure loss fins and internal threaded copper tubes, and innovative use of CFD-assisted optimization design, greatly improves the heat transfer efficiency of the heat exchanger, is durable and more energy-saving.



### High-quality electronic expansion valve with precise control

PID ultra-precise control technology perfectly matches the frequency conversion compressor and EC fan, precisely adjusts the refrigerant circulation flow, makes the equipment run more smoothly in the whole life cycle, and comprehensively saves energy by 1%.

# Features

- ① Full frequency conversion design, the energy efficiency ratio can reach 3.5;
- ② Extreme space utilization efficiency, more users can use U space;
- ③ Strong drainage pump components to eliminate "water risk" in the cabinet;
- ④ Microcomputer intelligent control system, real-time monitoring;
- ⑤ Intelligent control can realize early warning;
- ⑥ Both indoor and outdoor units are pre-installed with quick connectors, pre-charged with refrigerant at the factory, and can be installed without welding on site.



760mm depth rack air conditioner



Stable and reliable



Energy saving and environmental protection



early warning



minimal installation



Perfect fit



Long life

# Specifications

Model	1.5mate (3.5kw)	3mate (7.5kw)	5mate (12.5kw)
indoor unit model	SP04R1H	SP08R1H	SP12R1HB
outdoor unit model	SP04W1	SP08W1	SP12W1
Function	恒温恒湿		
760 depth version(W*D*H ) (mm)	443*715*218	443*715*351	443*715*440
Rated cooling capacity(kW)	3.5	7.5	12.5
Maximum operating current (whole machine)(A)	11.5	17.9	35
POWER Spec.	220V/50Hz		
heating element(kW)	1	2	2
Humidification components(kg/h)	1	1.5	3
Strong drainage components	Standard		
Low Temperature Startup Components	optional		
<p>Note 1: The standard working condition is that the indoor environment is 35°C, the wet bulb temperature is 20°C, and the outdoor environment temperature is 35°C.</p> <p>Note 2: The 760-depth rack-mounted air conditioner is suitable for cabinets with a depth of 1000mm-1400mm.</p> <p>Note 3: The above table is only part of the parameters. The specific configuration is subject to the actual nameplate purchased. For more product information, please contact Shangyu (Shenzhen) Technology Co., Ltd.</p> <p>Note 4: Refrigerant type: R410A</p>			



Quality-oriented, customer-centric



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