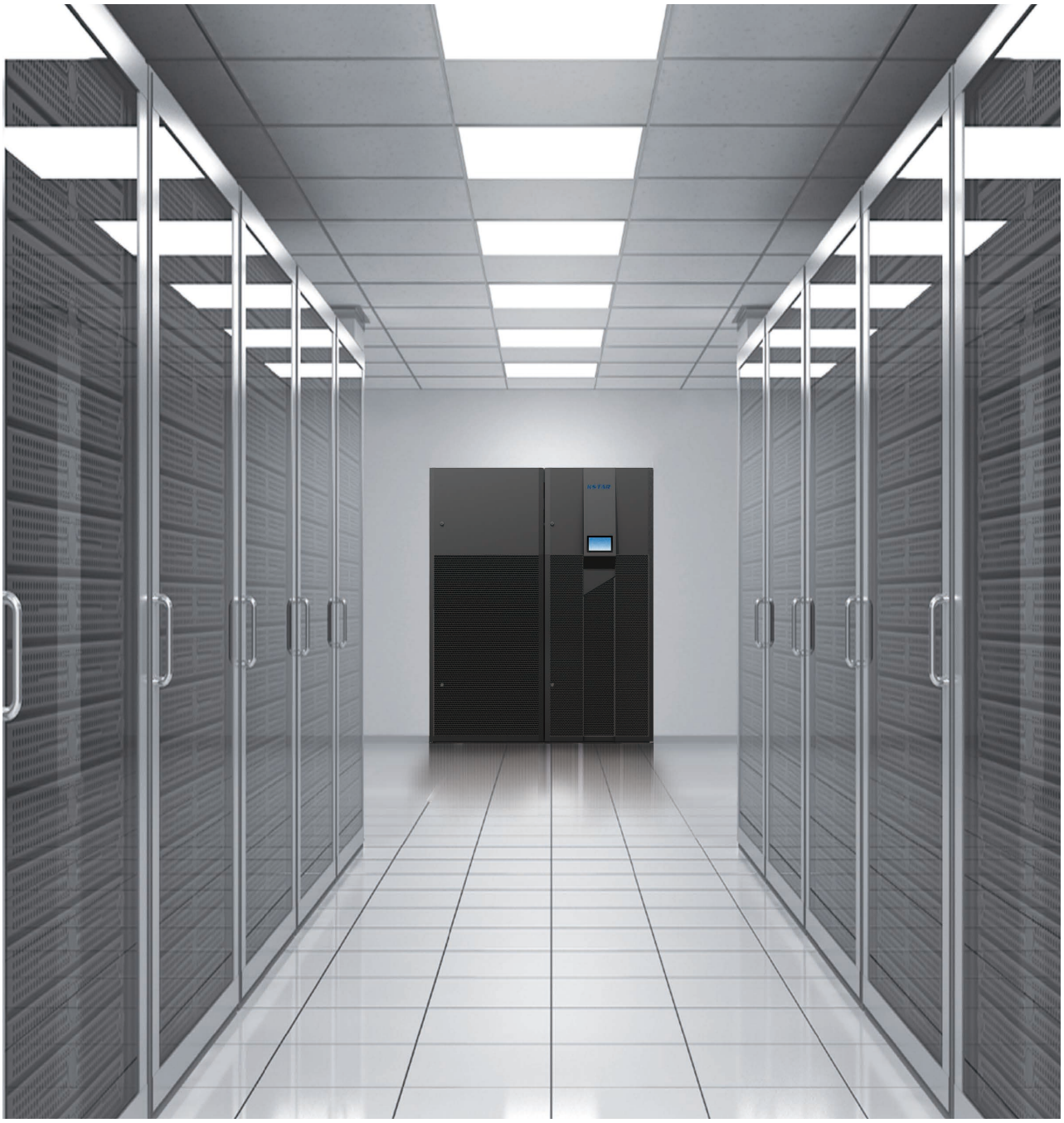
MatrixAir™ Series PreAcision Air Conditioner



How to achieve better precision cooling of data center?

Kstar MatrixAir™ Series Precision Air Conditioner, provides you with perfect solution.

Reliability · High Efficiency · Environmentally Friendly · Flexibility

◎ Highly reliable solution

- Severe test
- Well designed cooling system
- High-quality components
- Advanced and reliable intelligent control system

◎ High-efficient and energy-saving solution

- High-efficient configuration
- Accurate refrigerant flow regualtion
- Intelligent humidification control
- Electronic expansion valve
- EC fan
- Adjustable heating capacity

◎ Flexible solution

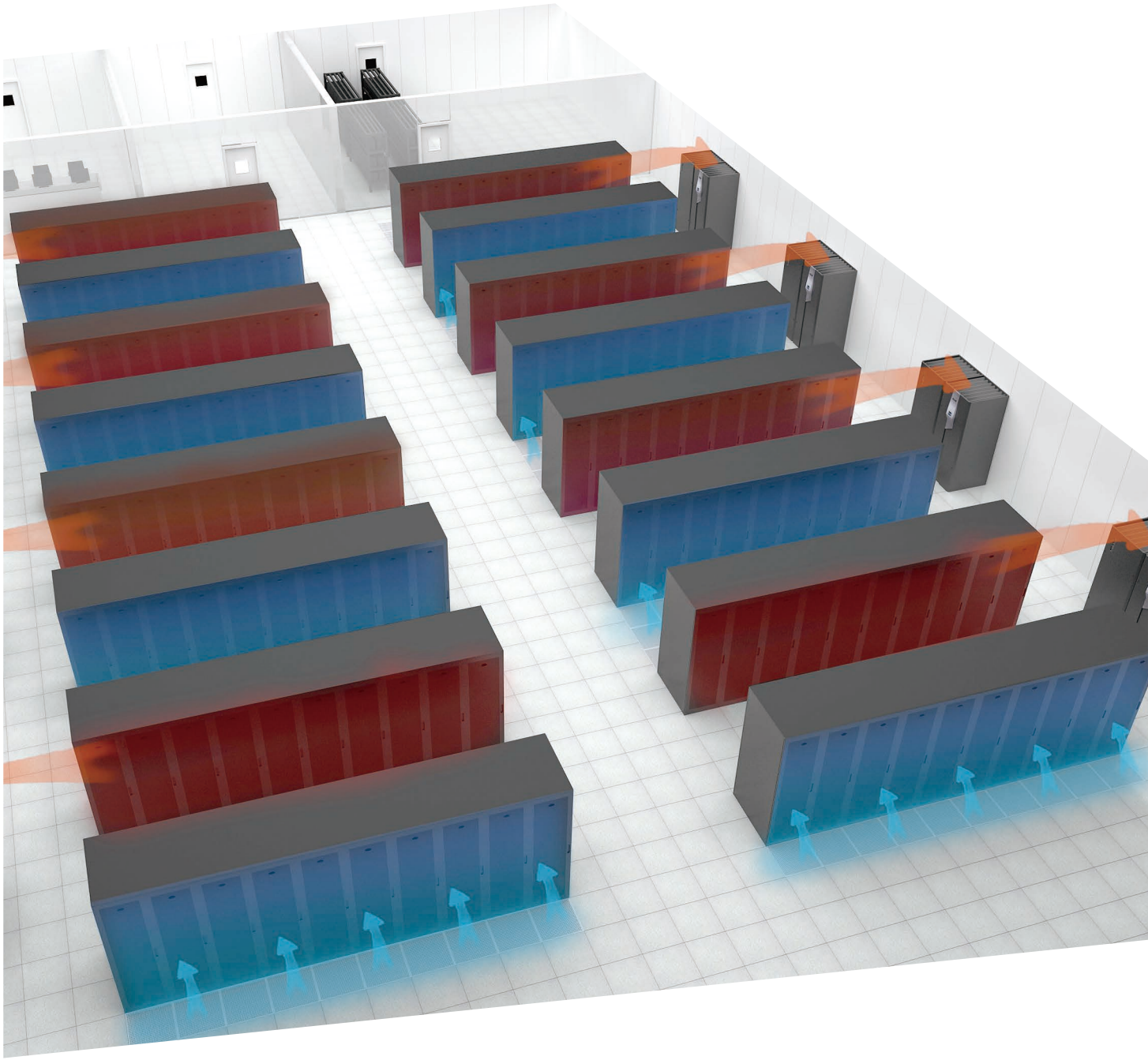
- Personalized and customized design
- Wide range cooling capacity
- Modular structure design
- Seven cooling types

◎ Environmentally friendly solution

- Refrigerant: R410A

High Reliability

Kstar's MatrixAir™ series precision air conditioner integrates advanced energy-saving and environmentally friendly technology in the industry, relies on comprehensive development tools and technical resources and is carefully designed according to high standards. It can ensure the high reliability of unit with high-quality system design. It is a new generation of advanced, reliable, high-efficient, energy-saving, safe and environmentally friendly products in key cooling industry. It can guarantee the continuous, high-efficient and reliable operation of the key IT equipment of the data center 24 hours of 365 days in the whole year.



Severe Test Verification

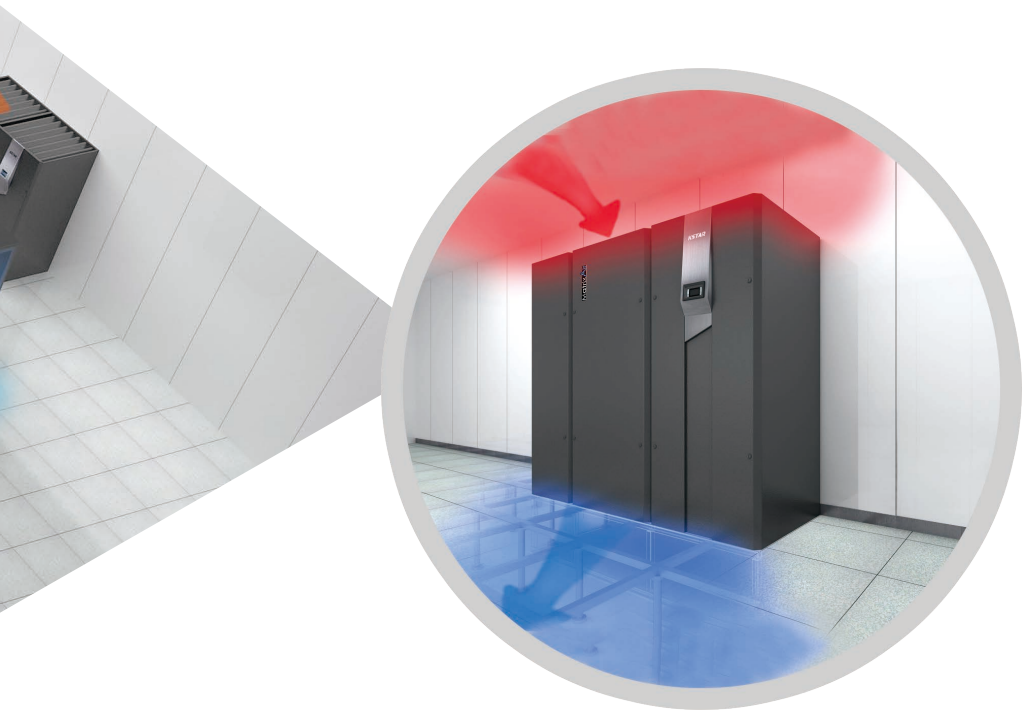
MatrixAir™ series precision air conditioner has undergone the comprehensive and severe test in Kstar's performance test laboratory to ensure that the unit can still run reliably under harsh conditions.

Well designed cooling system

Higher heat exchange efficiency, more stable and reliable flow control, more reliable air distribution and layout, can realize the high energy efficiency and high reliability of MatrixAir™.

High-quality Components

MatrixAir™ adopts high-quality components that have been strictly designed and selected. Compressor, fan, valve, electrical system and heating and humidification system components are recognized brands in the industry. High-quality components can ensure the high reliability and ultra-long life of air conditioner system.



High Reliability

Advanced and Reliable Intelligent Control System

MatrixAir™ adopts powerful professional precision air conditioner intelligent control system to realize high-efficient, energy-saving, stable and reliable control of the unit with superior performance.

- Standard RS485 intelligent communication interface, SNMP card optional
- Graphical state display and temperature & humidity curve display
- Alarm notification and it can record more than 3000 alarm events
- Display and setting of environmental parameters
- Reminding of running time and maintenance of main components
- Multi-level password protection
- Auto restart when mains recovers
- 7 inches color touch screen is standard equipment, friendly interface, simple operation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温度 21.2 ℃
湿度 50.7 %
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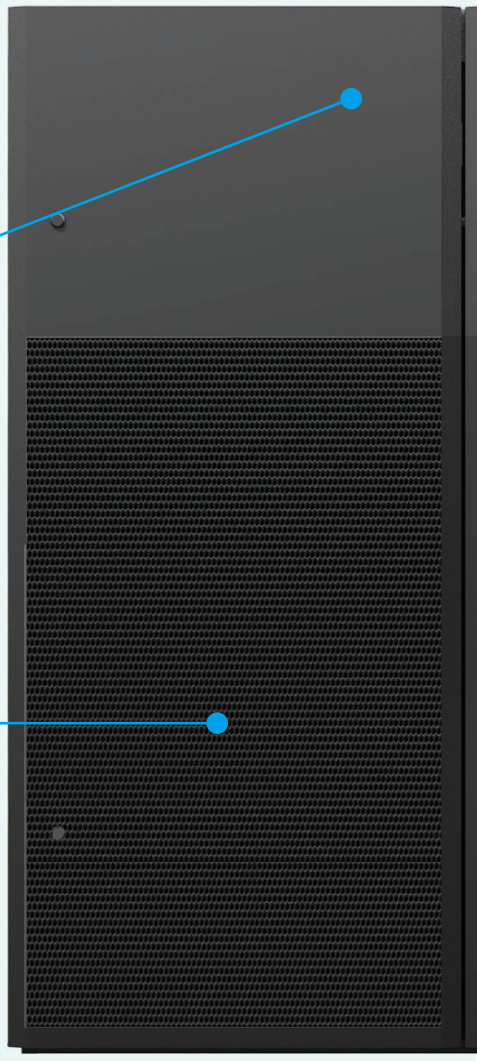
High Efficiency & Energy Saving

Energy saving comes from efficiency, and high which requires intelligent coordination. MatrixAir™ series precision air conditioner system consists of high-efficiency components and intelligent control system that can quickly and accurately adjust the output. It can intelligently coordinate all outputs, achieve better effucuency and realized more energy-saving operation.

◎ High-efficiency Configuration

▼ High-efficiency EC Fan

Compared with belt-driven frontward centrifugal fan, backward centrifugal fan means lower power consumption, less maintenance and better air distribution, which can improve cooling efficiency; EC fan with efficiency up to 90% will provide a wide range of air volume regulation and lower energy consumption.



▼ High-efficiency Scroll Compressor

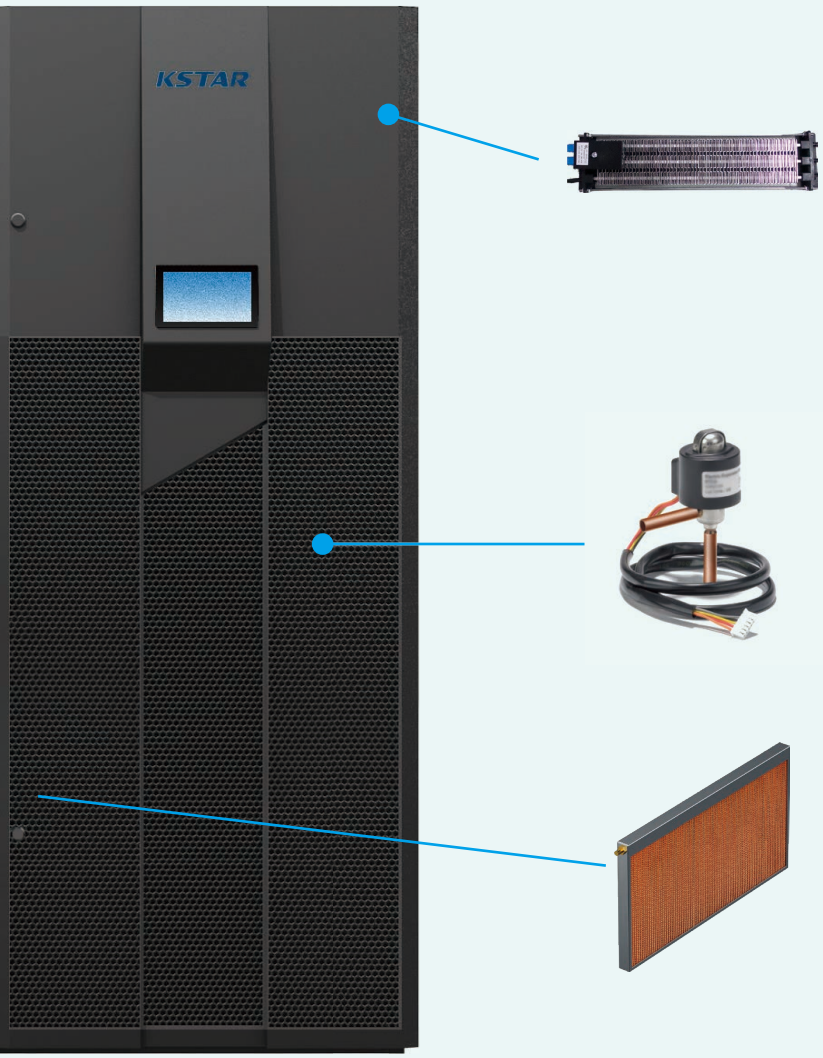
Its excellent quality guarantees the high efficiency, high reliability, low noise and ultra-long life of the unit.

◎ Intelligent Humidification Control

Air conditioner system can respond quickly to output requirements; Humidification capacity is adjustable.

◎ Dynamic Airflow

EC fan can respond quickly to output requirements; EC fan can save up to 30% energy than conventional AC fans.



▼ High-efficiency Heating System

High-efficiency heater has high thermal density, compact structure, fast and stable heating, low surface temperature and long service life; It has different power level for heating and it can select proper heating power according to real-time environment and easily maintain accurate environment.

▼ Electronic Expansion Valve

The electronic expansion valve controlled by micro-computer can accurately contrlo the refrigerant flow in the system and realize the improvement of unit start-up features, fast and stable working condition control and better refrigeration performance; Relying on the wide flow characteristics of electronic expansion valve, the air conditioner system can make full use of the lower external ambient temperature and save energy consumption up to 30%.

▼ High-efficiency Humidification System

Standard with 0 power consumption wet film humidifi-cation, humidification amount can be adjusted, suitable for different water quality. Optional electrode humidification.

◎ Adjustable heating power

Adjustable heating power can make it intelligently choose heating power level according to real-time environment and easily maintain accurate environ-ment.

◎ High-efficiency Flow Control

The valve can accurately and quickly make the output suitable for various states and improve the performance and efficiency of air conditioner system; The electronic expansion valve controlled by microcomputer can save energy consumption up to 30%.

Flexibility

Seven cooling types, Up-flow type and down-flow type, wide cooling range and personalized and customized design are available for Kstar MatrixAirTM series precision air conditioner system, which can flexibly meet different needs of users.

Modular Components with High Adaptability

Kstar MatrixAir™ series precision air conditioner is composed of high-quality modular components that can be flexibly applied and applicable to different needs of data center.

- Fan component
- Humidification component
- Expansion valve component
- Heating component
- Cooling component

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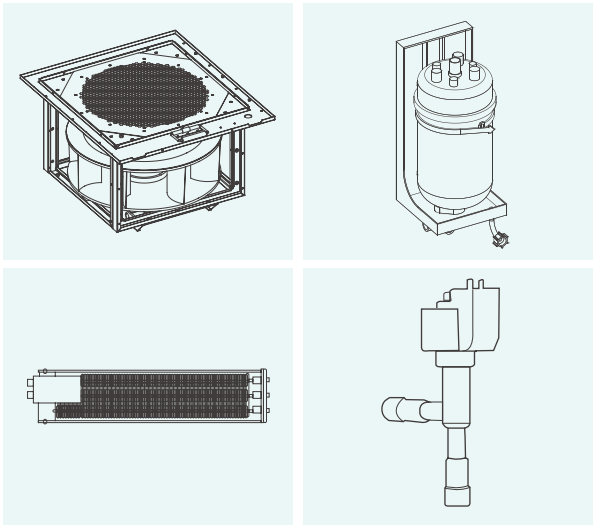
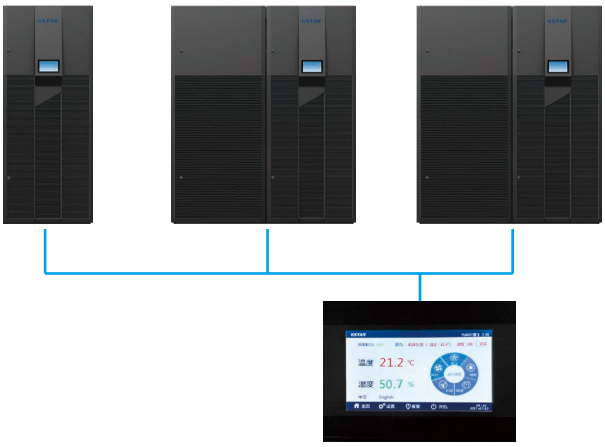


Plenum	Large-power heater	Power Supply Protection
External remote temperature & humidity sensor	Level G4 high-efficiency filter	Low temperature kits
Dual Power Supply	Water leakage detection system	High static pressure

Rich and Flexibly-matched Options

Kstar's professional engineers can flexibly combine a refrigeration solution that accurately matches the project from multiple options according to the needs of users.

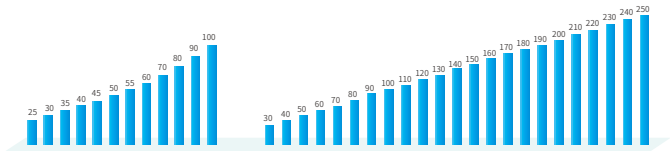


Flexible Expansion Capacity

Kstar MatrixAir™ series precision air conditioner adopts modular structure, and each unit has an independent intelligent control system, which supports network group control of multiple units and can be flexibly arranged in a centralized or decentralized mode so as to meet the expansibility demand of growing data center on cooling capacity.

Wide Cooling Range

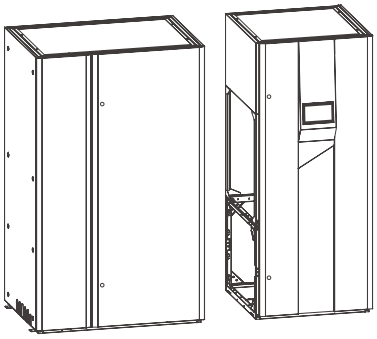
The cooling capacity range provided by Kstar MatrixAir™ series precision air conditioner is 25kW-250kW, which can fully meet the requirements of data center on refriheration level.



DX units CW units

Modular Structure Design

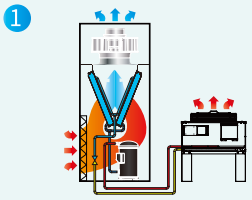
Kstar MatrixAir™ series precision air conditioner adopts modular structure design, with more compact unit structure and smaller footprint; moreover, it supports modular split and solves the difficult problem in the handling and maintenance of compact space. Full frontal maintenance is available, and lateral and rear parts can also be opened for maintenance.



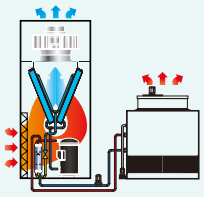
Seven Cooling Types

Seven kinds of cooling systems are optional for Kstar MatrixAirTM series precision air conditioner, including ① Air-cooled type (A), ② Water-cooled type(W), ③ Chilled water type (C), ④ Glycol(water) free cooling (G), ⑤ Air-cooled double cooling source type (D),⑥ Water-cooled double cooling source ⑦ Double chilled water type. They can meet different needs of users.

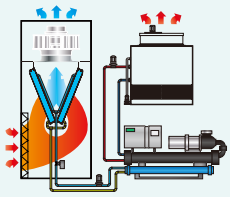
The dual cooling system of Kstar MatrixAirTM series precision air conditioner is designed, with better redundancy and strong ability to cope with faults.



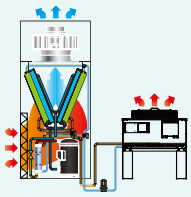
Air-cooled type (A)



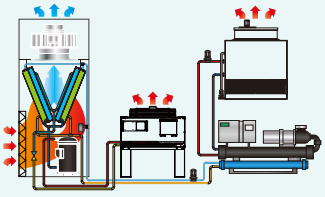
Water-cooled type(W)



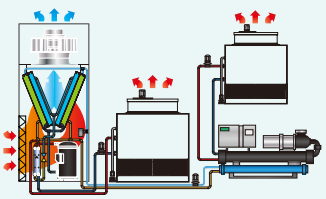
Chilled water type (C)



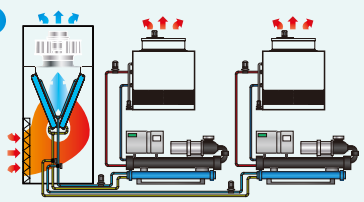
Glycol(water) free cooling (G)



Air-cooled double cooling source type (D)



Water-cooled double cooling source



Double chilled water type

Technical Parameters

▼DX variable frequency Unit

MT****	Unit	025	030	035	040 (Single)	045	050 (Single)	040 (Dual)	050 (Dual)	060	070	080	090	100	120
Total cooling capacity[1)]	kW	27.0	32.0	36.5	42.0	47.5	52.5	44.5	53.0	63.0	73.0	84.0	94.5	105.0	123.0
Sensible capacity[1)]	kW	27.0	32.0	36.5	42.0	47.5	52.5	44.5	53.0	63.0	73.0	84.0	94.5	105.0	123.0
Air volume	m^3/h	8500	10000	11000	12000	13000	13500	12500	13500	18700	19300	21600	24000	26000	26500
Heating capacity	kW	9	9	9	9	9	9	9	9	12	12	12	12	12	12
Number of compressors	PCS	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Humidification capacity (wet film humidification)	kg/h	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	9.0	9.0	9.0	9.0
Number of fan	pcs	1	1	1	1	1	1	1	1	2	2	2	2	2	2
Fan type	/	EC													
Full load current (Cooling only)	A	23	25	32	36	40	42	37	40	50	64	72	80	84	86
Full load current (With heater and humidifier)	A	32.5	36.3	39.2	41.5	46.6	50.4	45.5	54.3	60.1	67.3	71.3	82.5	86.3	100.5
Unit weight	kg	350	370	380	390	400	410	490	510	680	690	700	780	790	800
Unit width	mm	1128	1128	1128	1128	1128	1128	1178	1178	2228	2228	2228	2228	2228	2228
Unit depth	mm	995	995	995	995	995	995	995	995	995	995	995	995	995	995
Unit height	mm	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975
Condenser	KCS	032	042	048	054	064	064	028*2	032*2	042*2	048*2	054*2	064*2	064*2	084*2

▼DX fixed frequency Unit

MT****	Unit	025	030	035	040 (Single)	045	050 (Single)	040 (Dual)	050 (Dual)	060	070	080	090	100
Total cooling capacity[1)]	kW	26.9	32.7	37.2	41.8	45.9	51.7	42.6	52.8	61.7	71.1	81.8	92.1	101.3
Sensible capacity[1)]	kW	25.0	31.4	35.0	39.7	44.1	49.6	40.5	50.7	59.2	66.8	78.5	87.5	96.2
Air volume	m^3/h	7800	8600	9500	12000	13000	13500	12500	13500	18700	19300	21600	24000	26000
Heating capacity	kW	6	6	6	9	9	9	9	9	9	9	12	12	12
Number of compressors	PCS	1	1	1	1	1	1	2	2	2	2	2	2	2
Humidification capacity (wet film humidification)	kg/h	3	3	3	3	3	3	6	6	6	6	6	6	6
Number of fan	pcs	1	1	1	1	1	1	1	1	2	2	2	2	2
Fan type	/	EC												
Full load current	A	28.8	32.7	35.1	40.5	43.8	49.0	43.8	51.5	58.7	63.5	67.0	73.5	83.7
Unit weight	kg	300	350	360	380	400	410	470	490	660	670	680	720	730
Unit width	mm	928	928	928	928	928	928	1378	1378	1828	1828	1828	1828	1828
Unit depth	mm	995	995	995	995	995	995	995	995	995	995	995	995	995
Unit height	mm	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975
Condenser	/	KCS032	KCS036	KCS042	KCS048	KCS054	KCS064	KCS028*2 or KCD048*1	KCS032*2 or KCD064*1	KCS036*2 or KCD072*1	KCS042*2 or KCD084*1	KCS048*2 or KCD096*1	KCS054*2 or KCD106*1	KCS064*2 or KCD128*1

▼CW Unit (Chilled Water Type)

MT****	Unit	030	040	050	060	070	080
Total cooling capacity[2)]	kW	33.7	42.6	50.1	61.6	73.7	86.6
Sensible capacity[2)]	kW	33.7	42.6	50.1	60.6	70.1	81.4
Air volume	m^3/h	9500	10500	12300	13900	14700	17000
Water flow	m^3/h	4.2	5.5	6.5	10.6	12.9	14.9
Water pressure drop	kPa	40	50	60	60	65	70
Rated cooling power consumption	kW	1.6	2.3	2.7	2.8	3.1	3.2
Heating capacity	kW	9	9	9	9	9	12
Humidification capacity (wet film humidification)	kg/h	4.5	4.5	4.5	4.5	4.5	9
Number of fan	pcs	1	1	1	1	1	2
Fan type	/	EC fan					
Full load current (Constant temperature and humidity)	A	18	18	18	18	18	36
Full load current (Cooling only)	A	6	6	6	6	6	12
Inlet and outlet pipe diameter	mm	G1-1/2	G1-1/2	G1-1/2	G1-1/2	G1-1/2	G1-1/2
Unit weight	kg	340	350	360	450	460	535
Unit width	mm	928	928	928	1128	1128	1828
Unit depth	mm	995	995	995	995	995	995
Unit height	mm	1975	1975	1975	1975	1975	1975

▼CW Unit (Chilled Water Type)

MT****	Unit	100	120	150	170	200	250
Total cooling capacity[2)]	kW	104.0	128.0	151.0	170.0	200.0	258.0
Sensible capacity[2)]	kW	100.0	120.0	143.0	165.0	187.0	239.0
Air volume	m^3/h	22000	24800	29400	36900	38400	48000
Water flow	m^3/h	17.9	22.0	26.0	29.2	34.3	44.3
Water pressure drop	kPa	62	72	85	95	110	135
Rated cooling power consumption	kW	4.8	5.6	6.4	7.5	9.3	10.0
Humidification capacity (wet film humidification)	kW	12	12	12	12	12	12
Humidifying capacity	kg/h	9	9	9	9	9	12
Number of fan	pcs	2	2	2	3	3	4
Fan type	/	EC fan					
Full load current (Constant temperature and humidity)	A	36	36	36	42	42	50
Full load current (Cooling only)	A	12	12	12	18	18	24
Inlet and outlet pipe diameter	mm	G2	G2	G2	G2	G2	DN65
Unit weight	kg	560	580	640	730	760	1150
Unit width	mm	1828	1828	2228	2728	2728	3828
Unit depth	mm	995	995	995	995	995	995
Unit height	mm	1975	1975	1975	1975	1975	1975

Notes:

1.Parameter table
1) Air/water cooled unit data is based on indoor return air temperature 24°C and 50%RH, outdoor ambient temperature 35°C;
2) Chilled water unit data is based on indoor return air temperature 24°C and 50%RH, chilled water in/out temperature 7°C/12°C.
2. Shenzhen Kstar Science & Technology Co., Ltd. reserves the right of final interpretation of the data without prior notice if the data in the tableis changed due to technical progress of the product.