



## **COLD/HOT AISLE MODULAR DATA CENTER SOLUTION**

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**Professional Data Center Solution Supplier**

# Cold/Hot Aisle Modular Data Center



## ● Product Description

The single row cabinet data center integrates all needed equipment into cabinet with closed hot and cold aisle, kinds of sensors monitored and managed by power and environment system, which standardize the whole data center to smaller space, comes with remote intelligent controlling, provides safe and reliable operation environment. No need for professional engineer maintenance which simplify construction, operating and maintenance.

## ● Product Features

### Safe and Reliable

- All components are manufactured according to international and domestic standards to ensure product quality;
- Data center productization, productization reliability up to 99.999%. Adopt integrated design to enhance the overall reliability of the system;
- Redundant design of key components to improve system reliability;
- The data center power distribution and cooling system is designed according to the international class A server room (international standard Tier IV level);
- Integrated intelligent monitoring system, early warning of key data to ensure the safety of server room operations reliable.

### Easy Installation

- Standardized components, modular architecture, and rapid on-demand deployment to match your business;
- No need for professional machine room, it can be installed directly on the concrete floor of the building, reducing the supporting engineering;
- The products are standardized, modular, plug-and-play, and easily installed, greatly reducing the installation cycle.

### Efficiency and Energy Saving

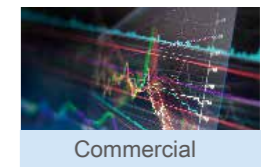
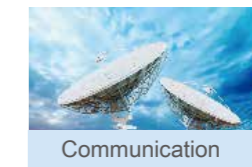
- The average annual PUE can be reduced to 1.30;
- The use of in-row air conditioner cooling, and closed cooling space to achieve precise cooling near the server side, greatly improves the efficiency of cooling, compared with the traditional server room can save energy by more than 35%;
- N+X high-efficiency online modular UPS with intelligent sleep function to save more energy;
- High density deployment, single cabinet up to 10kW;
- Integrated power supply and distribution, space saving, 1-2 more equipment cabinets can be deployed;
- Remote O&M is unattended, saving TCO.

### Intelligent Management

- Intelligent monitoring of the working status of power and environmental systems;
- Intelligent lintel, visual display of key information, easy operation and maintenance;
- Real-time alerts can be made in time by SMS, telephone, email, sound and light, etc;
- Provide a variety of human-machine interaction methods such as operation and maintenance of large screen, remote APP, local LCD, and remote WEB;
- Provide a variety of northbound interfaces such as ModbusTCP, MQTT, etc. for easy system integration.

## ● Applicable Scene

Large-scale data center, campus data center and other core business server room, suitable for Government, medical, education, finance, telecom and other leasing and self-use businesses.



## ● Applicable Power

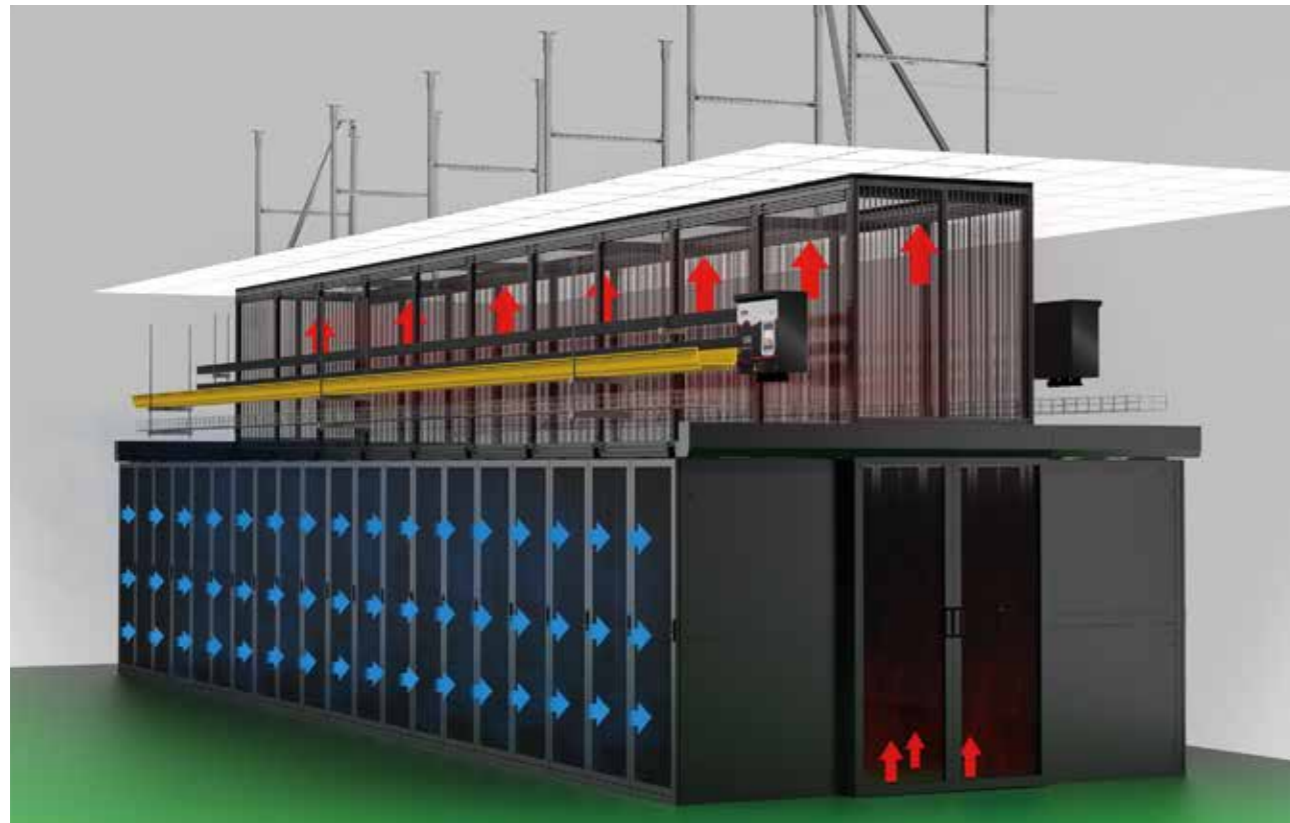
The maximum supported power of a single cabinet is 10kW per cabinet. And it supports up to 50 cabinets which includes air conditioner and power distribution cabinet.

## ● Structure and Composition

The modular data centre consists of five major systems, namely, the cabinet system, the power distribution system, the air-conditioning system, the monitoring system and the cabling system, as illustrated below:

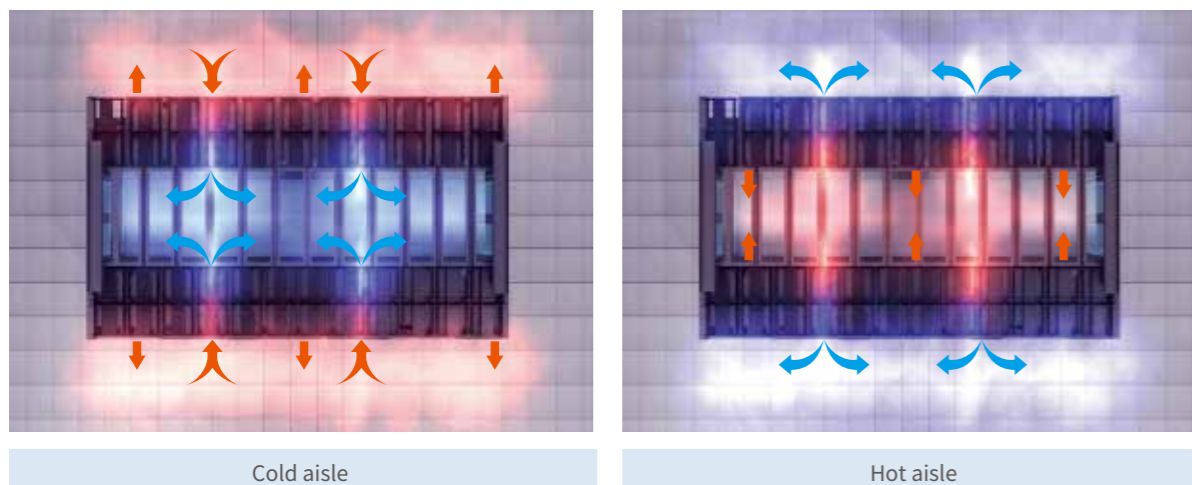


● Micro-module Enclosed Hot Aisle



The micro-module data center consists of the cabinet system, lighting system, power supply and distribution system, monitoring system, and integrated wiring system. Each system operates independently yet is managed in a unified manner, featuring high efficiency and energy conservation, as well as being easy to expand and upgrade. The monitoring system can achieve remote management functions. The enclosed aisle adopts a ceiling return air design, effectively separating the replacement of cold and hot airflows, which has a remarkable energy-saving effect. With an integrated product design and factory prefabricated installation, it greatly shortens the project duration. It is suitable for large-scale IDC data centers.

● Cold/hot Aisle Enclosed System



Cold aisle

Hot aisle

● Sealed Aisle Door

Electric Sliding Door System

- Optional access control readers support multiple authentication methods including facial recognition, fingerprint, password, and IC card, with fire alarm linkage to ensure the security of equipment within the aisle.
- The electric sliding door features 12mm frameless panoramic laminated tempered glass with over 98% coverage area, complemented by sheet metal door enclosures for end-door protection and safe operation.
- Equipped with backup battery system for automatic door opening during power outages, ensuring safe evacuation while maintaining elegant aesthetics.



Swing-Sliding Door

- The door body is constructed from high-quality cold-rolled steel plate, embedded with 5mm laminated tempered glass for direct interior visibility. All component joints are sealed with weatherstripping to ensure airtight performance, presenting a stable and elegant overall appearance.



● Skylight Assembly

- Installation: Mounted at the top of the sealed aisle.
- Normal operation: The movable skylight remains closed when the micro-module is in operation.
- Airflow containment: A magnetic lock secures the movable skylight to prevent airflow exchange at the aisle top.
- Fire suppression integration: Upon receiving a fire linkage signal, the gravity-actuated movable skylight automatically drops, allowing fire suppression gas to enter the micro-module for machine room fire protection.



Single-Leaf Panoramic Skylight



Double-Leaf Panoramic Skylight



Intelligent Controlled Skylight

Type	Specification
Single-Leaf Panoramic Skylight	Single-sided rotating, extremely narrow aluminium profile frame with 6mm toughened glass, up to 90% light transmission.
Double-Leaf Panoramic Skylight	Double-sided rotating, very narrow edge aluminium profile frame and 6mm toughened glass, transmittance glass can be as high as 85%.
Intelligent Controlled Skylight	Top fixed, all-metal material, can be installed with temperature and humidity sensors, smoke sensors, cameras and other dynamic loop devices.

# Cabinet System

## ● Product Description

The modular data center uses the H-series data center special cabinet, which conforms to the national standard, the communication industry standard and the relevant standard of IEC. Unique geometric structure design and advanced cable management solutions can install equipment in the cabinet and provide it with a high-quality safe and stable operating environment. A full range of matching cabinet accessories and cable management parts can be selected.



# Power Distribution Cabinet

## ● Product Features

Power distribution cabinet comprehensively collects all energy data for the energy end of the data center room. Through the display unit, high-precision measurement data can be provided for the terminal energy monitoring system and the power quality data can be reflected in real time and uploaded to the environmental control system through digital communication, so as to achieve real-time monitoring of the entire power distribution system and effective management of operating quality, helping users optimize network data centers, strengthen energy consumption management, improve server operation efficiency, and provide reliable guarantees for all-round green data centers.



## Power System

- 1-60KVA Rack UPS
- 5-200KVA Rack Type Modular UPS
- 10-1600KVA Modular UPS
- Basic/Smart PDU



## Cooling System

- 7.5-90.5KW InRow Cooling system
- 7.5-122.9KW Date Room Cooling system
- Refrigerant Type Free Cooling Available Upon Configuration.



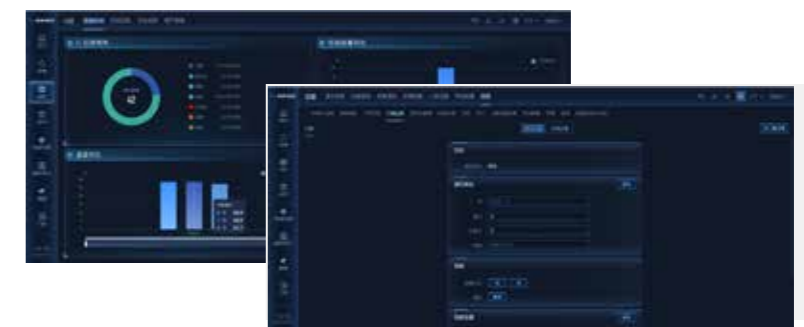
## Security System

- 3 in 1 Access Control For Each Door.
- Centralized Software Management.
- Video Surveillance.



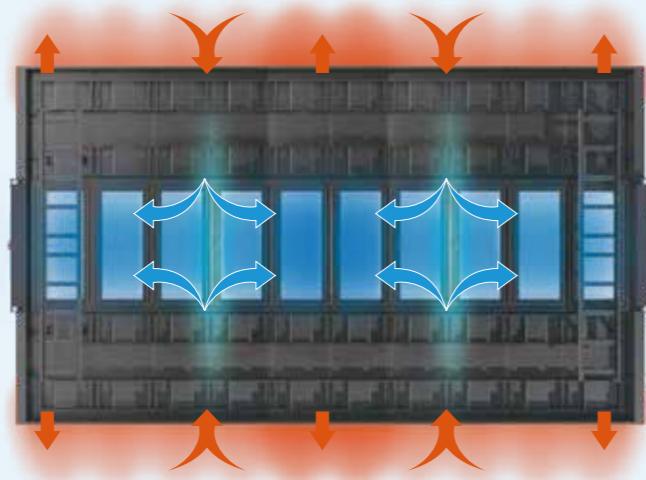
## DCIM System

- Local & Remote Monitoring And Alert.
- Full Sensors
- Full Integration Of 3<sup>rd</sup> Party Equipment.

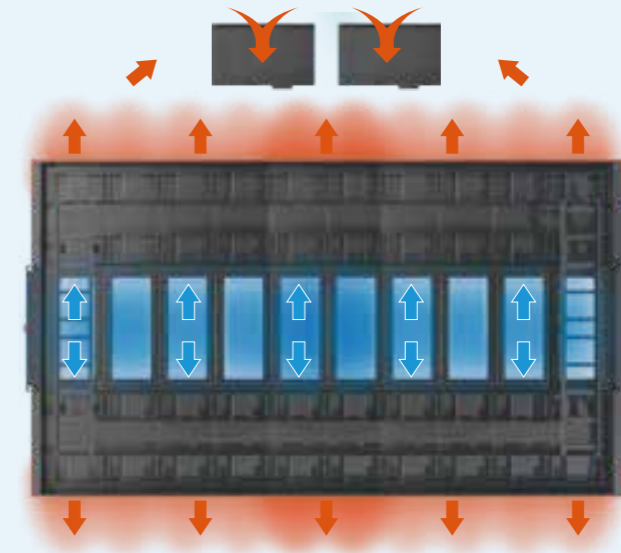


● Cooling

Adopt high-efficiency cooling, modular closed channel components, and hot and cold air flow isolation



In Row Cooling Airflow



Room-level Cooling Airflow

● Diversified Application Scenarios



● Built-in channel lighting system, light illumination  $\geq 300\text{Lu}$

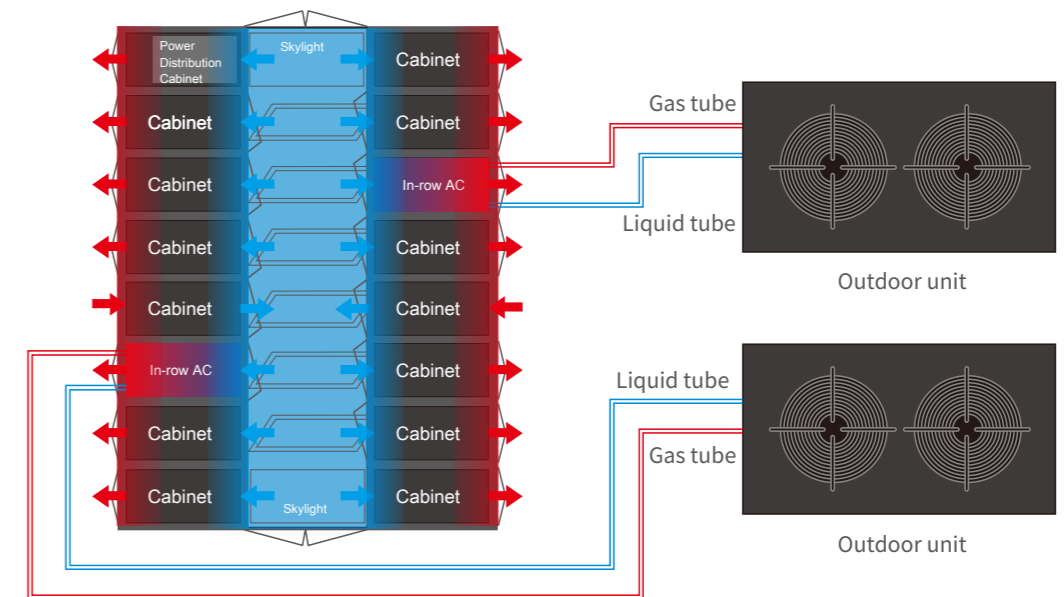


● Three-Color light strip alarm system

Three-color level alarms, Display the operating status of the module in real time

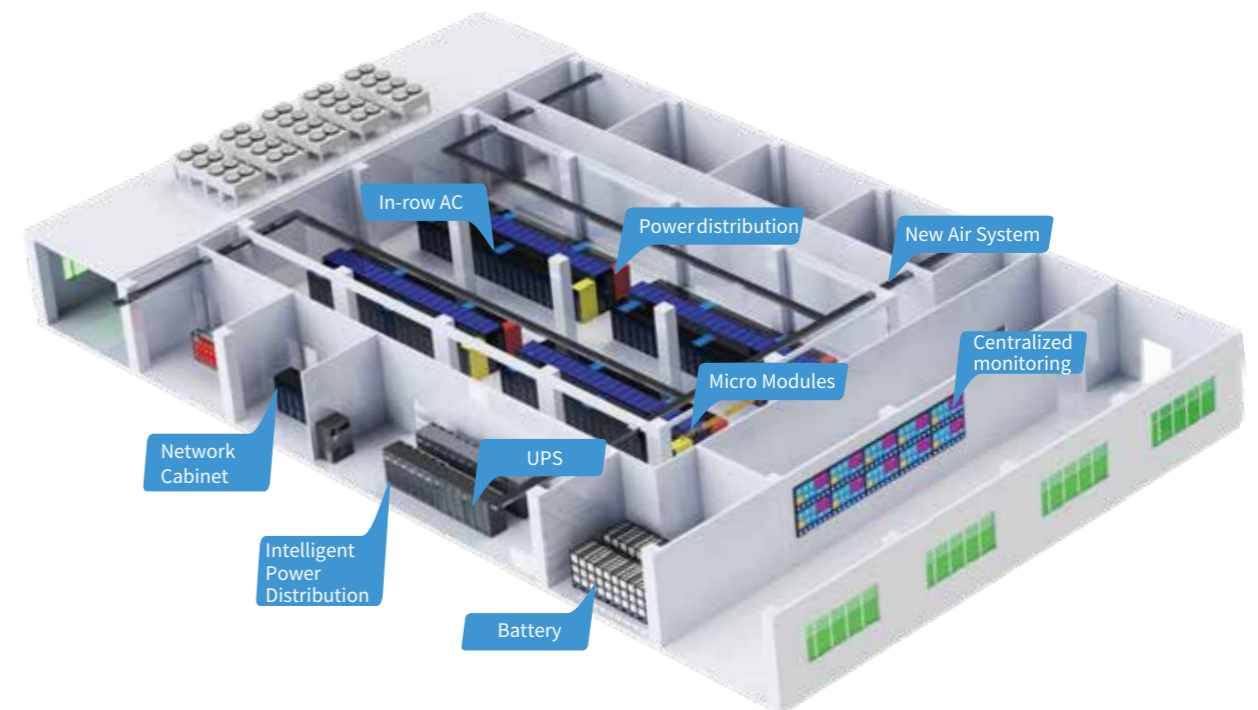


● Air Flow Organization Reference Chart



When the outdoor unit is higher than the indoor unit: the vertical height difference between indoor and outdoor units should not exceed 20m; when the indoor unit is higher than the outdoor unit: the vertical height difference between indoor and outdoor units should not exceed 5m. The equivalent length of one way pipeline should not exceed 30m, please contact with professional engineers for more information!

● Integrated Data Center Application Scenario Diagram



## ● Intelligent Management

Real-time visibility into the status of the data center, intelligent monitoring, centralized management, and simplified maintenance

The system supports multiple monitoring and management scenarios, such as IDC data center, power distribution room, cooling room, distributed outlets, etc.

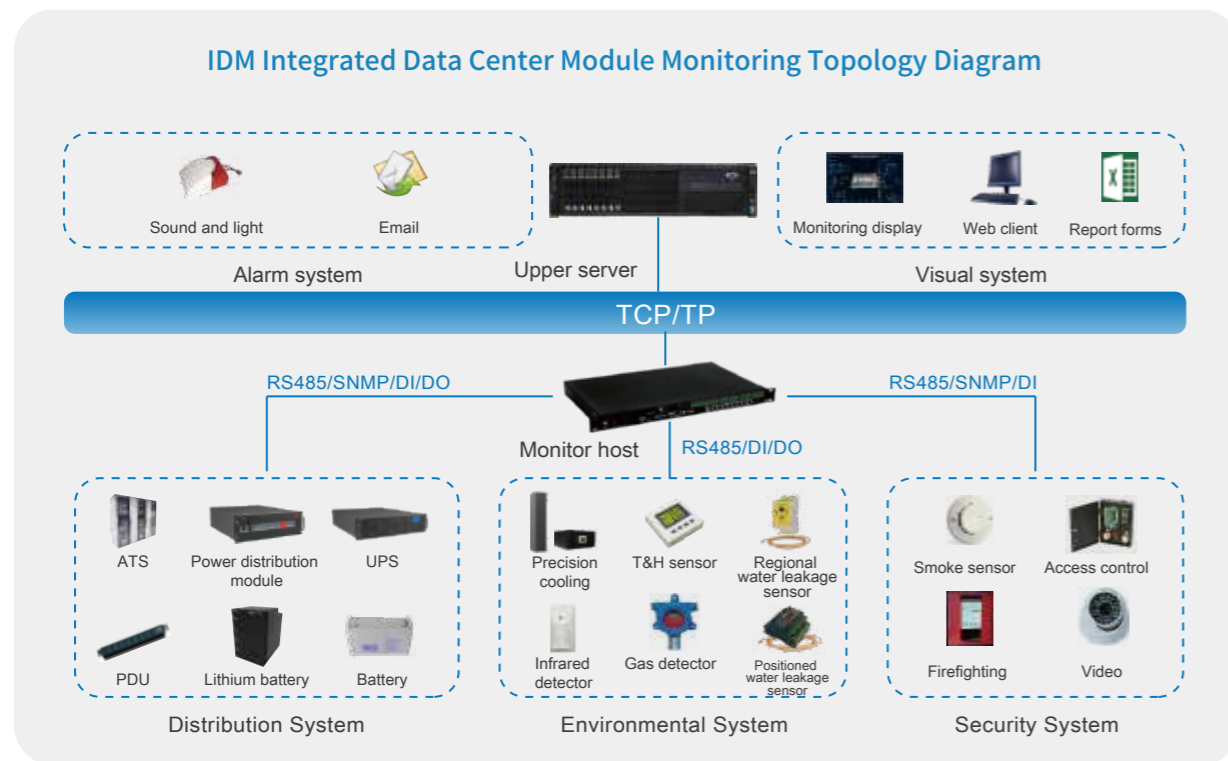
Northbound interface available, integrate existing management system

Support configuration architecture design, convenient and flexible function expansion

Based on TCP/IP networking architecture, flexible expansion, safe and reliable

2D/3D visual HMI, real-time display of operational views, integrating

Three-in-one password, fingerprint, card swiping or face recognition smart access control system, simple and convenient



## ● Other Accessories



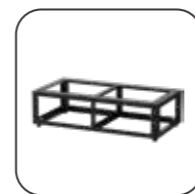
Cabinet Shelf



Cabinet Rails



Cross-row Cable Tray



Cabinet Base



Blind Plate

## ● Product Parameters

		Parameters	
System	Dimensions(W*D*H)	3600*L*2600mm (L≤15000mm)	
	IT rated power/cabinet	3~10 KW	
	Door Specifications	Automatic sliding doors/manual sliding doors/pull-out doors	
	Intelligent Lighting	LED white light, intelligent color ambient light, linkage with monitoring system.	
	Access Control System	Support face/fingerprint/password/IC and other methods can be selected	
	Ambient temperature	0-45°C	
	Ambient Humidity	10-95%, Relative Humidity	
	Protection class	IP20	
	Altitude	1000 m, more than 1000 m need to be derated.	
	Installation method	Direct concrete floor installation / Raised floor installation	
Cabinet	Dimensions(W*D*H)	600/800*1100/1200*2000/2000 mm	
	Available Space	42U	
	Inlet method	Support up/down wire feed	
Power Distribution System	Power Distribution Cabinet	Input method	Single circuit MCCB/Dual circuit ATS
		Grid system	380/400/415Vac, 50/60Hz
		Specification	63~400A
		SPD	B/C class optional
	UPS	Type	Integrated UPS distribution cabinet/precision distribution cabinet/intelligent busbar
		Capacity	Built-in maximum 200kVA, external 200kVA or more
		Input Freq.	40-70Hz
	PDU	Output PF	1
		Battery	Built-in cabinet type battery cabinet or external battery cabinet
		Smart Type	24-port intelligent PDU (optional)
Cooling System	Air Conditioner Capacity	7.5-90.5KW In-Row	
	Cooling method	Air-cooled (Optional)	
	Refrigerant	R410A	
Monitoring System	HMI	21.5 inch touch screen	
	System Functions	RemeWEB/Centralized monitoring of power, environment, video, access control system/Northbound interface	
	Monitoring accessories	Smoke sensor/T&H sensor/water flood sensor/infrared sensor/webcam/access control/fire linkage	
	Alarm method	E-mail / SMS, Audible and visual alarm, Telephone Voice, APP(optional)	

● Typical Configuration



Plan 1

Number of IT Cabinets	12
Single Cabinet Power	5KW
Total Power Input	380V/A
UPS Capacity	Rack-Mounted Modular UPS 90K Host
UPS Modules Capacity	15KVA*5(4+1)
Distribution Cabinets	Integrated UPS Cabinet
Refrigeration Type	In-Row AC
Cooling Capacity	4*25.5KW, 3+1 Redundancy
Monitor	1 Set
Battery Configuration	1 bank of 32-series 12V 100AH lead-acid batteries, rack-mounted, with 10-minute backup time
Dimensions (W*D*H)	4800*3600*2000mm

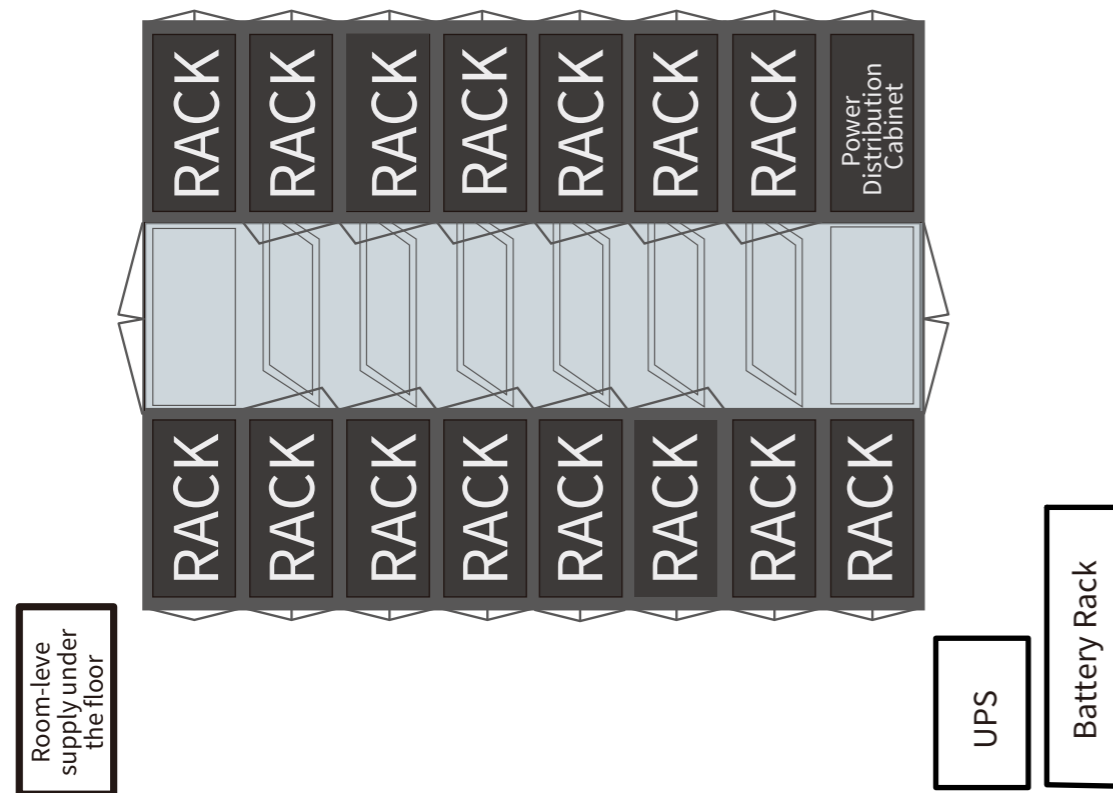
● Typical Configuration



Plan 2

Number of IT Cabinets	12
Single Cabinet Power	5KW
Total Power Input	380V/320A
UPS Capacity	Tower-Type Modular UPS 120K Host
UPS Modules Capacity	30KVA*4(3+1)
Distribution Cabinets	Precision Power Distribution Unit (PDU)
Refrigeration Type	In-Row AC
Cooling Capacity	2*65.5KW, 1+1 Redundancy
Monitor	1 Set
Battery Configuration	1 bank of 40-series 12V 100AH lead-acid batteries, with 10-minute backup time
Dimensions (W*D*H)	4800*3600*2000mm

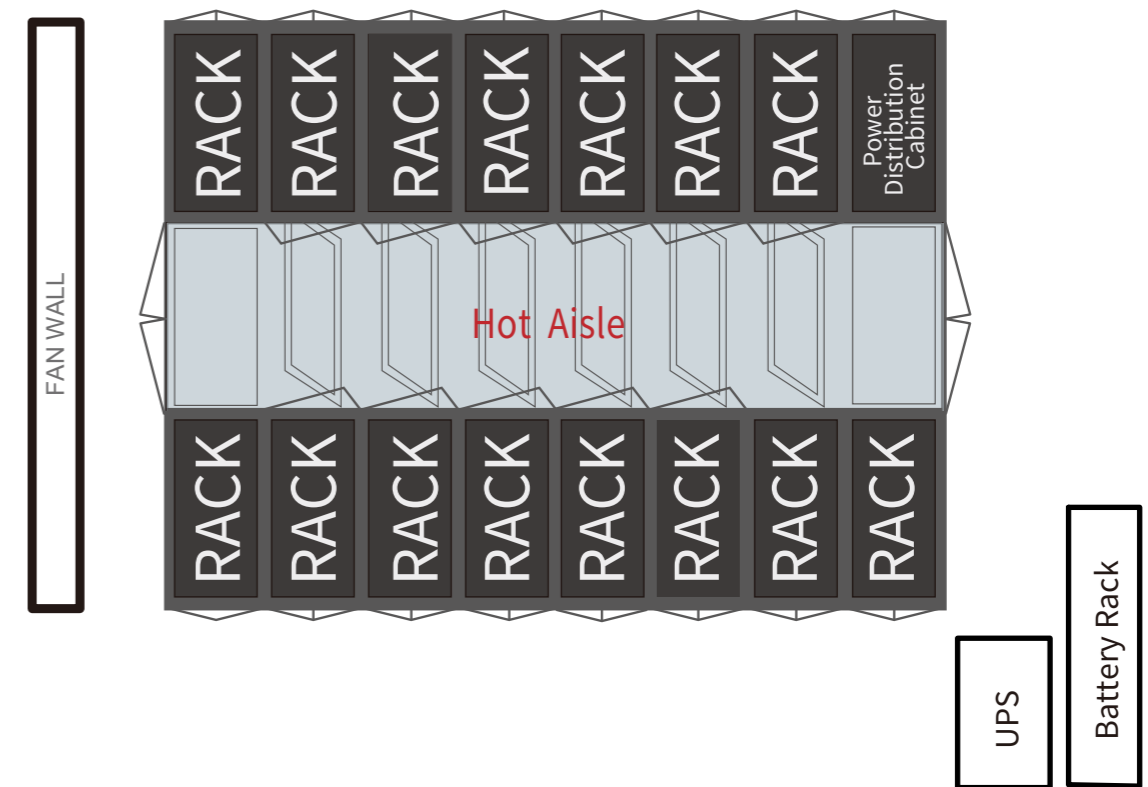
● Typical Configuration



Plan 3

Number of IT Cabinets	14
Single Cabinet Power	5KW
Total Power Input	380V/250A
UPS Capacity	Tower-Type Modular UPS 120K Host
UPS Modules Capacity	30KVA*4(3+1)
Distribution Cabinets	Precision Power Distribution Unit (PDU)
Refrigration Type	Room-level AC
Cooling Capacity	1*71.1KW, N
Monitor	1 Set
Battery Configuration	1 bank of 40-series 12V 120AH lead-acid batteries, with 10-minute backup time
Dimensions (W*D*H)	4800*3600*2000mm

● Typical Configuration



Plan 4

Number of IT Cabinets	14
Single Cabinet Power	5KW
UPS Capacity	Tower-Type Modular UPS 120K Host
UPS Modules Capacity	30KVA*4(3+1)
Distribution Cabinets	Precision Power Distribution Unit (PDU)
Refrigration Type	FAN WALL
Cooling Capacity	Customization
Monitor	1 Set
Battery Configuration	1 bank of 40-series 12V 120AH lead-acid batteries, with 10-minute backup time
Dimensions (W*D*H)	4800*3600*2000mm