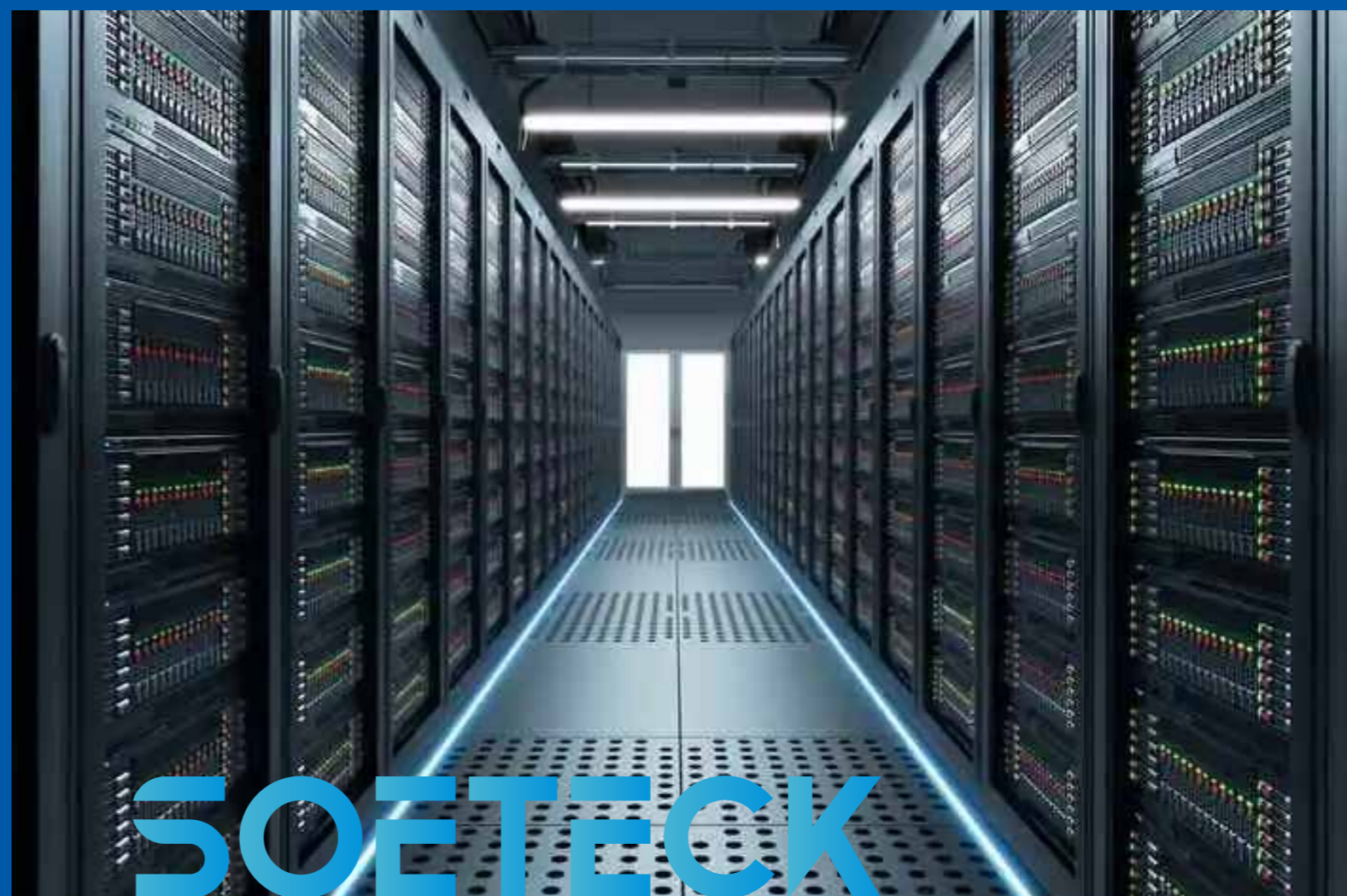




Row Modular Data Center Overall Solution

Professional Data Center Soution Provider



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Micro Data Center Solution



● Product Description

Cabinet Data Center is an integrated cabinet which contains cooling system, power system, monitoring system and rack system, etc.. There are more and more micro data centers, and it has been facing the dilemma that it is difficult to unify the planning, construction and operation management. The integrated cabinet deeply integrates data center infrastructure products, including multiple subsystems such as UPS, power distribution, refrigeration, cabinets, and fire protection, and implements overall management of the entire system through the monitoring system.

● Product Features

Safe and Reliable

- All components follow domestic and international standardized production standards to ensure product quality.
- Pre-installation, pre-commissioning and other process are controlled at various levels to ensure product installation and operation safe and reliable.
- A single cabinet is a complete system, suitable for various complex scenes (dust, narrow space, no insulation measures, etc.).
- Integrated design, overall delivery, avoid system design problems.
- The door pop-up system can delay the aisle overheating and reserve time for data backup.
- The cabinet integrates an intelligent monitoring system to ensure safe and reliable operation of the computer room.

Easy Installation and Rapid Deployment

- Modular design of power distribution, easy installation and maintenance.
- Rack-mounted air conditioner indoor unit, pipe thread connection, easy maintenance.
- The computer room does not need special decoration treatment, and the equipment is ready to use. Installation and commissioning cycle only need 3 hours.
- A single cabinet is a complete system, plug and play.

Efficiency and Energy Saving

- Proximal refrigeration, high-efficiency power supply, and the overall annual average PUE of single cabinet ≈ 1.30 .
- The power distribution, UPS, monitoring, and refrigeration cabinets are integrated to save space.
- Engineering free design, free decoration and wiring, remoteoperation and maintenance are not on duty, saving TCO.

Intelligent Management

- The monitoring system is extensible and compatible with third-party monitoring systems; friendly HMI.
- Support local and remote WEB interface access, SMS alarm function.

● One-stop integration to simplify design and deployment



● Applicable Scene

- Computer rooms of medium and small enterprises, large enterprises, government branch offices.
- Financial business offices, communication business halls and base stations.
- Commercial retail institutions, tourist attractions.
- Gas stations, toll stations, smart buildings.
- Grassroots public security agency, government agency.

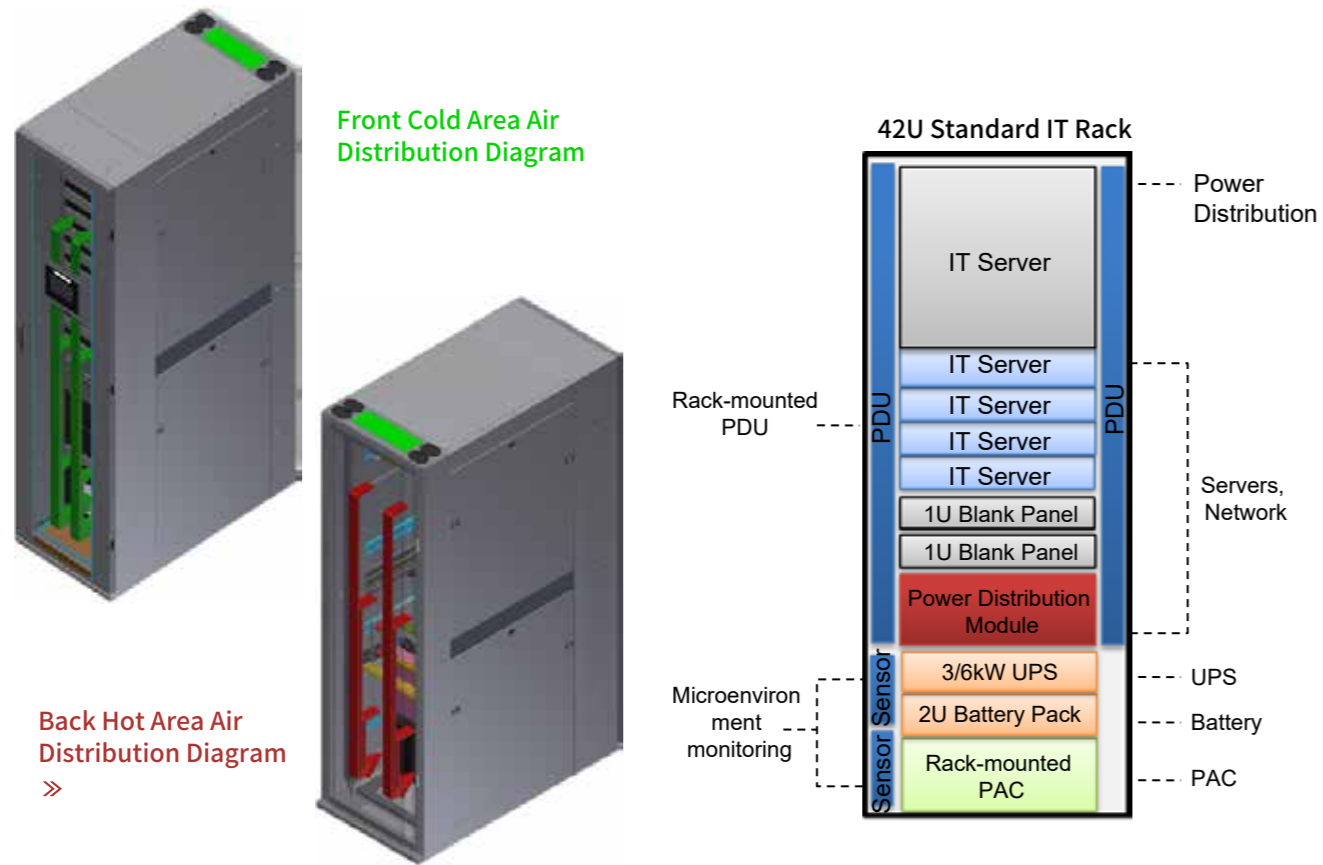
● Floor area

The overall area of a single cabinet is $0.72m^2$, which is suitable for computer rooms within $10-20m^2$, such as small archives.

● System Capacity

Capacity of single cabinet $\approx 3-5kVA$

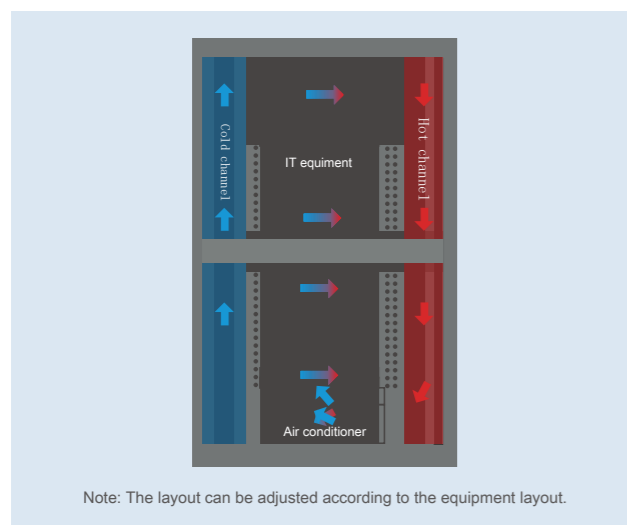
● Product Layout Diagram



● Product Parameters

Project	Description	42U		
Overall Parameters	Power Supply System	220Vac, 50Hz, 1Ph+N+PE		
	Operating Temperature	0~40°C		
	Humidity Range	5~95%		
	Altitude	0-4000m(derating required above 1000m)		
Certifications	Certificates	3C, Taier		
Cabinet System	Cabinet Dimensions:WxDxH(mm)	600×1200×2000		
	Cabinet Composition	Single Control Cabinet		
	Cold and Hot Aisles	Dual-closed Cold and Hot Aisles		
Available Equipment Space	Available Space	30U(Single Battery Pack)		
Power Distribution System	System Input	Input Main Switch	32A	
	System Output	Output Circuits	AC Mains Output: 4×16A/1P,	AC Mains Output: 4×16A/1P, UPS Output: 3×16A/1P; 2×10A/1P; DC: 12V×2
			UPS Output: 3×16A/1P; 2×10A/1P;	
			DC: 12V×2	
	UPS	Capacity	3KVA	
		Configuration	Single UPS	
		Power Factor	0.8	
	PDU	Efficiency	90%	
		Installation Method	Vertical Installation	
		Type	GB Standard	
	Battery Pack	Configuration	GB:12×10A	
		Capacity	9AH	
Standby Power	Quantity	0~4		
	Standby Power Method	Battery Pack / Battery Rack / Battery Cabinet		
Battery Cabinet	Standby Power Time	15min ~4 hours		
Monitoring System	Integrated Monitoring Unit	10-inch Touch Screen		
	SMS Alarm	Optional		
	Dazzling Lights	Standard		
	Water Leak Sensor	Standard		
	Temperature and Humidity Sensor	Standard		
	Door Magnetic Sensor	Standard		
	Smoke Sensor	Standard		
Cooling System	Air Conditioner	Cooling Capacity	3.5KW	
		Category	Rack-mounted Inverter	
	Emergency Ventilation	Operating Voltage	220V	
		Heat Dissipation Capacity	3KW	
Dimensions / Weight	Packaging Dimensions:WXDXH(mm)	Operating Voltage	220V	
		Net Weight	142Kg (excluding battery pack)	
		Battery Pack Weight	27Kg	

● Airflow Reference Chart



● Application Scenario



Row 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 follow domestic and international standardized production standard to ensure product quality.
- Pre-installation, pre-commissioning and other process are controlled at various levels to ensure product installation and operation safe and reliable.
- Integrated design, improving overall system reliability.
- Intelligent pop-up door system ensure the continuous operation of the system effectively.
- Redundant design, integrated intelligent monitoring system, ensure the safe and reliable operation of the computer room.

Easy Installation

- Engineering free design, suitable for various scenes, install rapidly.
- Modular design of power distribution, hot-swappable, easy installation and maintenance.
- The system does not need special decoration treatment, the equipment is ready to use. Installation and commissioning cycle only need 4-6 hours.
- A single cabinet is a complete system, which can be easily and quickly expanded to 16 cabinets side by side.

Efficiency and Energy Saving

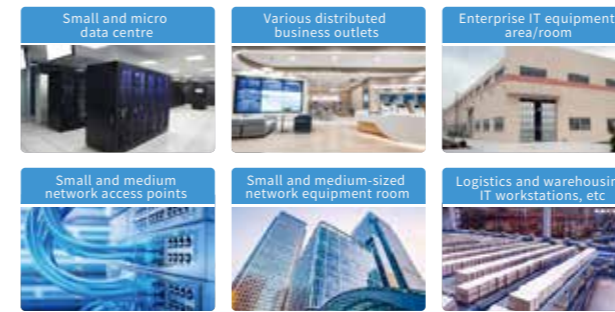
- Array/rack mount refrigeration, precise cooling, greatly improve cooling efficiency, compared with traditional energy saving 25%. computer room
- The system adapts N+X online high-efficiency modular UPS, equipped with intelligent sleep function making system save more energy.
- Remote operation and maintenance, human-free design, saving TCO.
- Closed hot and cold aisles, and effective cooling, realize air inner circulation to reduce operating costs.

Intelligent Management

- Intelligently monitor power supply and environment status.
- Instant and real-time alarm through various ways(SMS, Friendly HMI).
- The monitoring system is compatible with many parts(screen, remote APP, local LCD, remote WEB);
- Provide kinds of interface(ModbusTCP, MQTT, SNMP), easy to system integration.

● Applicable Scene

Computer rooms of medium and small enterprises, government branch offices, commercial, medical, education, power, communication and other scenes.



● Floor area

The overall area of a single cabinet is 0.9m², which is suitable for computer rooms within 20-60m²

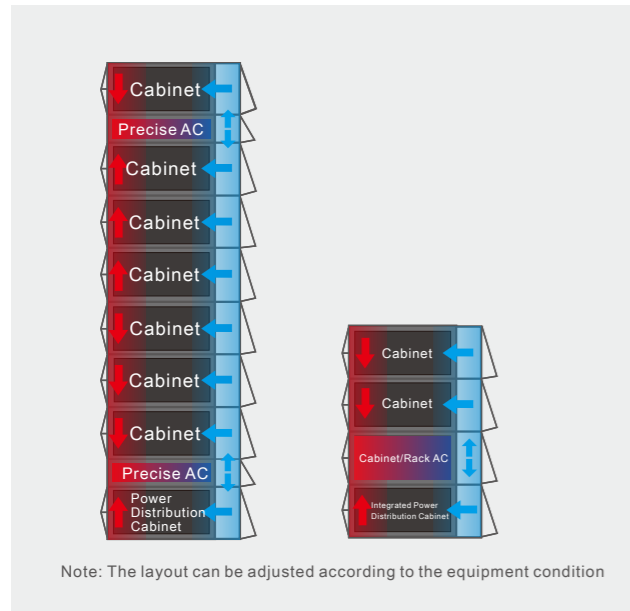
● System Capacity

Capacity of single cabinet ≈ 3~7kVA

● Structure and Composition



● Airflow Reference Chart



● Application Scenario



● Product Parameters

Project		Description	42U (N, N=3-9 cabinets)
Overall Parameters	Power Supply System		380Vac, 50Hz, 1Ph+N+PE
	Operating Temperature		0~40°C
	Humidity Range		5~95%
	Altitude		0-4000m(derating required above 1000m)
Certifications	Certificates		3C、Taier
Cabinet System	Cabinet Dimensions:WxDxH(mm)		600×1200×2000 (Single)
	Cabinet Composition		Control Cabinet + IT Cabinet + Battery Cabinet (Optional)
	Cold and Hot Aisles		Dual-closed Cold and Hot Aisles
Available Equipment Space	Available Space		42UX(N-1), specific available space depends on configuration
Power Distribution System	System Input	Input Main Switch	63~125A
		System Output	Output Circuits
	UPS		Capacity
		Configuration	6-10KVA:single UPS;20-30KV:double UPS
		Power Factor	6-10KVA:0.8;20-30KVA:1
		Efficiency	92%-94.5%
	PDU	Installation Method	Vertical Installation
		Type	GB Standard
		Configuration	GB:16X10A+4X16A
	Battery Pack	Capacity	9AH
	Standby Power	Quantity	0~4
		Standby Power Method	
Battery Cabinet	Standby Power Time		15min ~4 hours
Monitoring System	Integrated Monitoring Unit		10-inch Touch Screen
	SMS Alarm		Optional
	Dazzling Lights		Standard
	Water Leak Sensor		Standard
	Temperature and Humidity Sensor		Standard
	Door Magnetic Sensor		Standard
	Smoke Sensor		Standard
Cooling System	Air Conditioner	Cooling Capacity	12.5KW
		Category	Rack-mounted Inverte or in-row
	Emergency Ventilation	Operating Voltage	380V
		Heat Dissipation Capacity	3KW
Dimensions / Weight	Packaging Dimensions:WXDXH(mm)		734X1360×2200(Single)
	Net Weight		142Kg(control cabinet);100Kg(IT cabinet)
	Battery Pack Weight		48Kg

● The Difference With Traditional Solution

	Single Row Data Center	Traditional Data Center
Design	Pre-commissioning in dustry, put into use directly	Different supplier coordinate
Power Distribution	Rack mount, modular, including thunder protection	Isolated design, installation without thunder protection
Installation	Distributed wiring, integrated in dustry, modular	Long construction period, design on site, lack of reliability
Scalability	All components are modular, module number can be adjusted	Lack of expandability
Construction Time	4-6 hours	40 days(including decoration)
Appearance	Unified and harmonious appearance	Hard to unified size/color
Dustproof	Totally enclosed system, IP5X,targeted protection of core equipment	Not avaiable(high cost of dustproof)
Cooling Efficiency	Enclosed hot and cold air channel, cooling by the nearest AC, improve cooling efficiency	No isolation of hot and cold air channel, low utilization
Noise	<45dB(A)	>65dB, not suitable for human long-term work
Monitoring System	Local and remote monitoring, human-free	Isolated monitoring equipment, different interface,incompetible
Client Interface	Embeded Linux system, long-term operation safe and steady, graphical interface, easy management	Industrial PC, easy to crashing, monitor interface incompetible
Emergency solution	Emergency pop-up door, make good use of room to dissipate heat, maximize the time of emergency operation	Not avaiable
Service	Unified brand and service, full service during the life of product	Different guarantee period service interface and phone number

● System Components



Cabinet System

- 19-inch standard cabinet. The cabinet has passed the 9-level earthquake resistance test and can bear a load of 1500 kg.
- The cold and hot channels are enclosed. It comes with built-in rollers and leveling feet.
- The front door is made of double-layer glass, and the width of the cold channel is not less than 150 mm.
- The rear door is enclosed with metal, and the width of the hot channel is not less than 150 mm.
- There are various cable management accessories inside the cabinet, which makes cable routing convenient.
- There are fans inside the cabinet for emergency ventilation, and they can be expanded according to the cabinet position.



Power Distribution System

- High-performance rack-mounted UPS, 3U in height, with a color touch screen.
- Rack-mounted battery packs for backup power supply.
- Rack-mounted power distribution box, integrating power distribution for UPS input and output, air conditioning, lighting, monitoring, etc.
- Single-channel input.
- Basic/Smart PDU



Cooling System

- 12.5-60kW Inrow Cooling system
- Rack-mounted battery packs for backup power supply.
- Rack-mounted power distribution box, integrating power distribution for UPS input and output, air conditioning, lighting, monitoring, etc.
- Single-channel input.
- Support for single-phase PDU.



Monitoring System

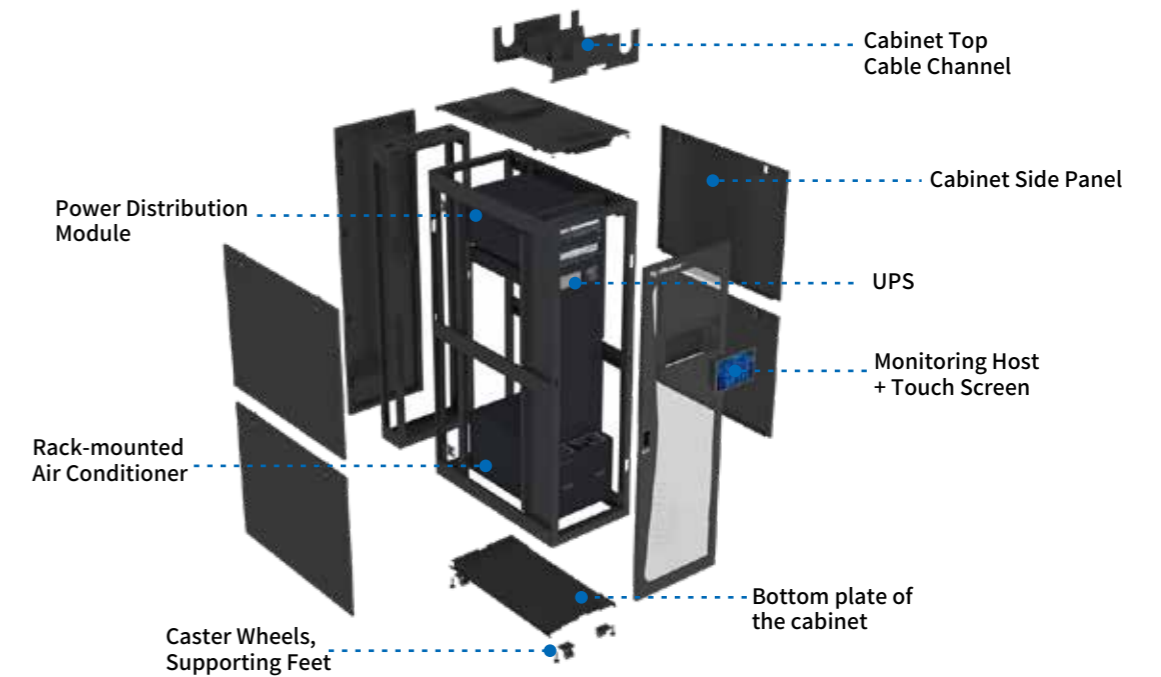
- 10-inch color touch screen.
- Monitoring of UPS, air conditioners, the environment, and fire protection.
- Linked control of emergency fans.
- Web-based monitoring.

● Cabinet System

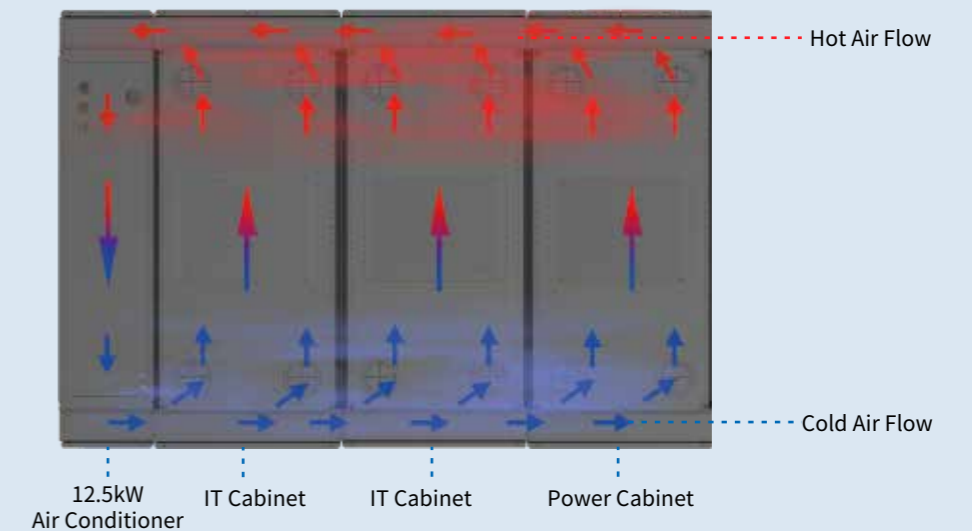
IP55 rated fully closed rack system provides safe space for IT equipments, which is noise cancelling, thermal insulated, and dust proof.

Special double layer transparent front door design prevents condensate and offers status indication of IT equipments.

● System Architecture

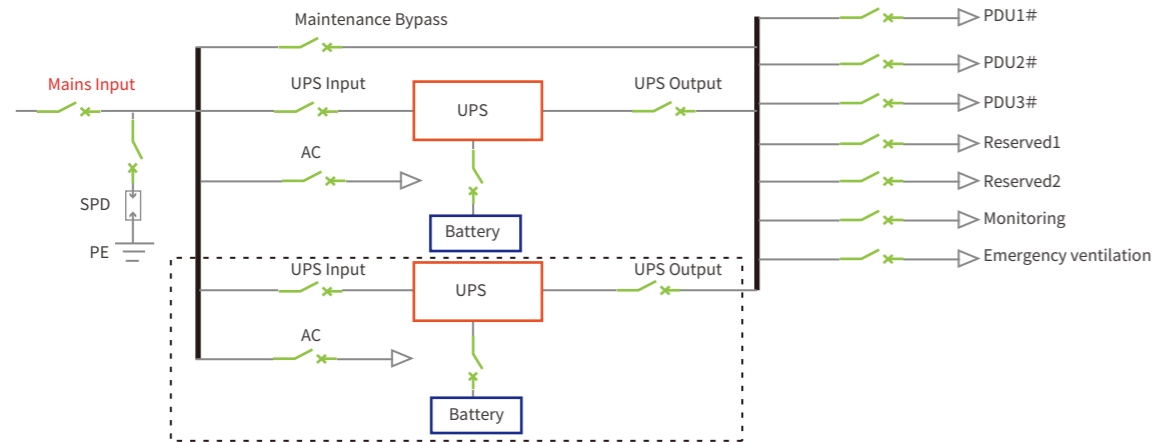


3 Cabinet Air Flow Diagram



● Power Distribution System

The power supply and distribution system of the smart cabinet is mainly composed of UPS, battery, power distribution unit and PDU, etc. All products are integrated and installed inside the cabinet, the overall style is consistent, neat and beautiful.



- Standard design rack mount type UPS/48VDC rectifier saving space.
- VRLA and Lithium battery by configuration.
- Smart PDU per configurations.
- Built in power distribution panels configurable to T1~T4 uptime level.

The UPS products with rack-mounted design can be directly installed on a 19-inch standard rack, and the appearance style is consistent with the cabinet. Wide range of input voltage and frequency, able to adapt to various complex power usage environments Compatible generator access.



● Cooling System

A wide range of IP55 rated cooling solutions can be mounted in cabinet columns, on top of cabinets, or integrated into information technology (IT) cabinets, removing heat and creating the right operating temperature and humidity environment for critical IT equipment. At the same time, these solutions consume less energy thanks to the fully enclosed cabinet enclosure and the hot and cold air management design.

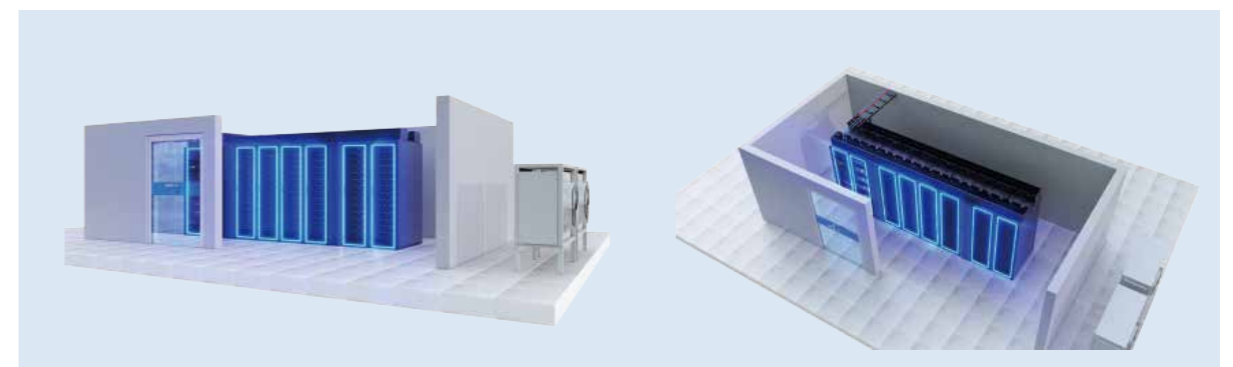
In the event of a cooling system failure, an emergency ventilation system is activated.



Rack Mounting AC

In-row Air Conditioners

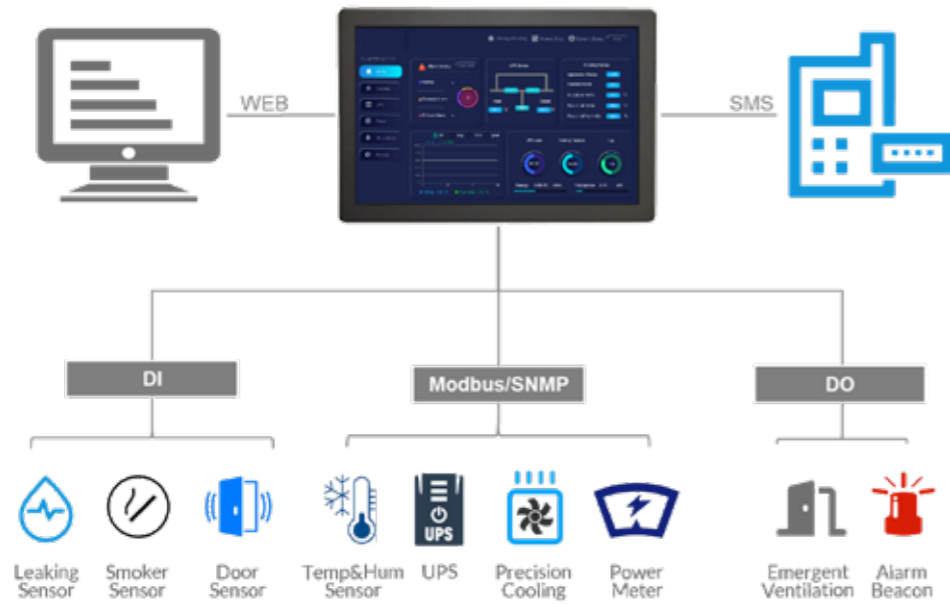
Safety	<ul style="list-style-type: none"> • Sealed micro environment, dust-proof, noise-proof, little affected by the environment, lifetime lengthens 1 to 2 times. • Key subsystem can be configured as N+1/N design and enhance the stabilization of the system
High Efficiency	<ul style="list-style-type: none"> • Flexible configuration by high-efficiency power modules • Short distance of cooling path, sealed aisle, cold air and hot air separation, avoid hot spot, total PUE is less than 1.4
Ease of Use	<ul style="list-style-type: none"> • Modularization component, standardization interface, quick installation on site • Prefabricate assembly, plug and play, simple setting • Centralized monitor, intelligent management, remote monitor



● Monitoring System

Smart monitoring system fully communicate with UPS, cooling, power, and all types of sensor, integration with access control system, provided real-time data at all times.

Supports remote web access, email alert, SMS alert, and modbus-TCP integration.



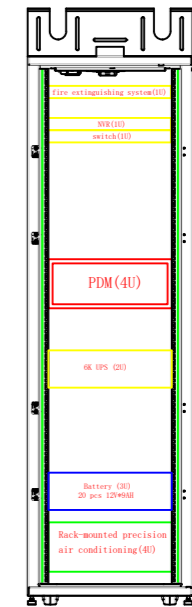
● The Integrated Systems

<p>Battery Cabinet</p>	<p>Lead Acid Battery</p>	<p>Precision Distribution Cabinet</p> <p>The intelligent power distribution cabinet that comprehensively collects all energy data for the energy end of the data center computer room.</p>
<p>IT Cabinet</p>	<p>PDU</p>	<p>Power Distribution Box</p>
<p>Video Monitoring</p>	<p>Fire Extinguisher</p>	<p>SMS</p>

● Typical Configuration

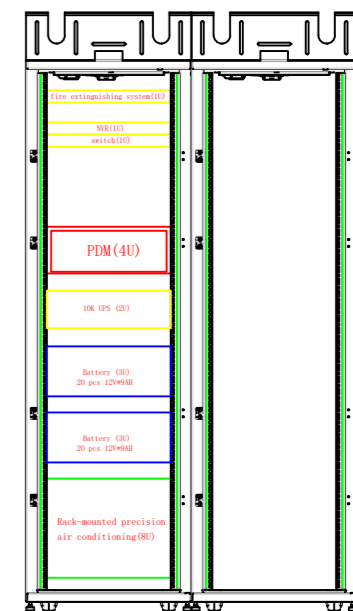
Plan 1

Number of IT cabinets	1
UPS Capacity	6K(2U)
Power Factor	1
Total Power Input	380V/40A
Available Space	26U
Number Of PDUs In A Single Rack	2*8bit10A+4*16A
Refrigeration Type	Rack Mount (4U)
Cooling Capacity	3.5KW
Monitoring Display	10-inch Touch Screen
Fire Height	1U
Standard Number of Batteries	20
Environment Temperature	0~45°C
Dimensions (W*D*H)	600*1200*2000mm



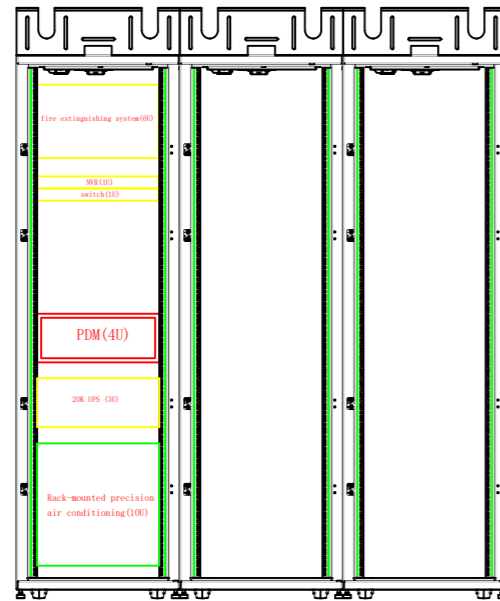
Plan 2

Number of IT cabinets	2
UPS Capacity	10K(2U)
Power Factor	1
Total Power Input	380V/40A
Available Space	19+42U
Number Of PDUs In A Single Rack	4*8bit10A+4*16A
Refrigeration Type	Rack Mount (8U)
Cooling Capacity	7.5KW
Monitoring Display	10-inch Touch Screen
Fire Height	1U
Standard Number of Batteries	20
Environment Temperature	0~45°C
Dimensions (W*D*H)	1200*1200*2000mm



● Typical Configuration

Plan 3



● Typical Configuration

Plan 4

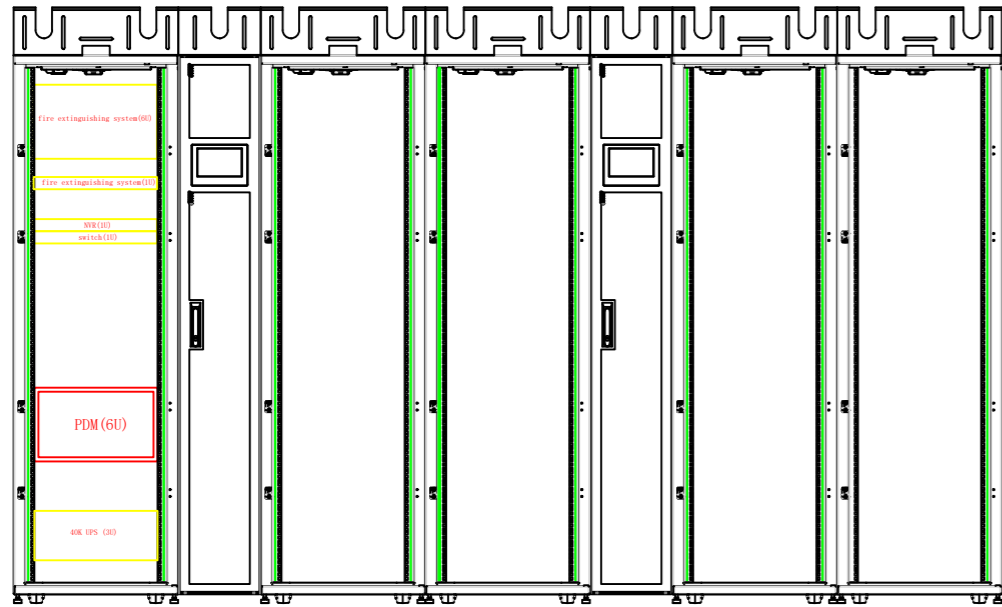


Number of IT Cabinets	3
UPS Capacity	20K(3U)
Power Factor	1
Total Power Input	380V/63A
Available Space	17+2*42U
Number Of PDUs In A Single Rack	6*12bit10A+4*16A
Refrigeration Type	Rack Mount (10U)
Cooling Capacity	12.5KW
Monitoring Display	10-inch Touch Screen
Fire Height	6U
Standard Number of Batteries	32~40
Environment Temperature	0~45°C
Dimensions (W*D*H)	1800*1200*2000mm

Number of IT Cabinets	4
UPS Capacity	30K(3U)
Power Factor	1
Total Power Input	380V/100A
Available Space	25+3*42U
Number Of PDUs In A Single Rack	8*12bit10A+4*16A
Refrigeration Type	In Row
Cooling Capacity	2*12.5KW
Monitoring Display	10-inch Touch Screen
Fire Height	6U
Standard Number of Batteries	32~40
Environment Temperature	0~45°C
Dimensions (W*D*H)	3000*1200*2000mm

● Typical Configuration

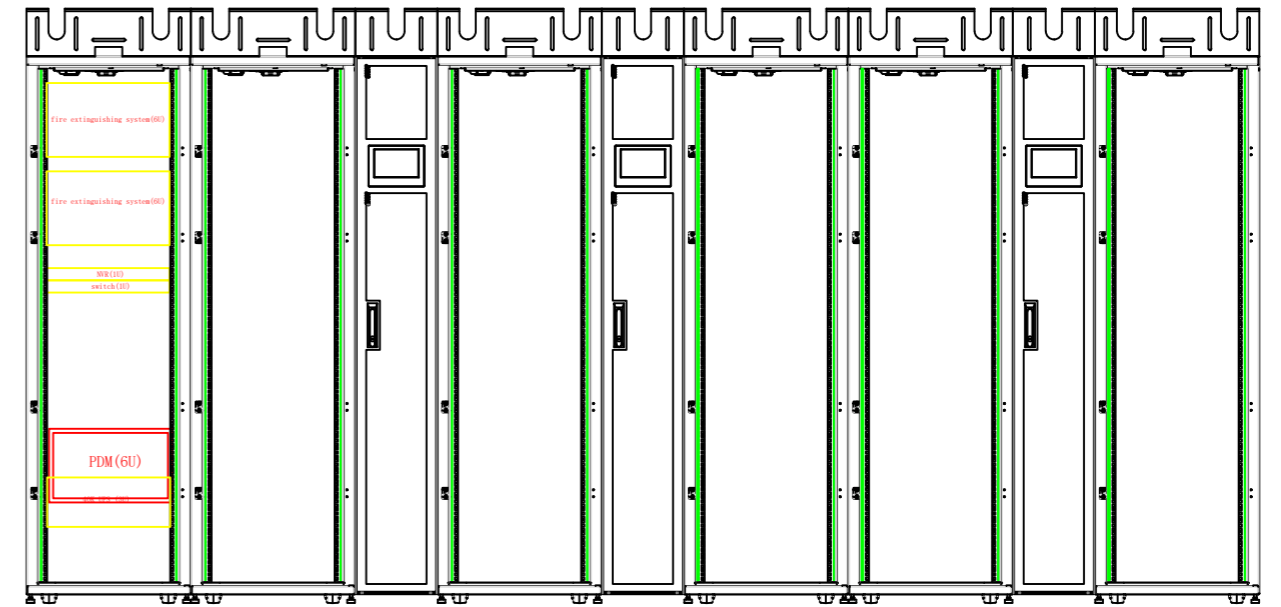
Plan 5



Number of IT Cabinets	5
UPS Capacity	40K(3U)
Power Factor	1
Total Power Input	380V/125A
Available Space	24+4*42U
Number Of PDUs In A Single Rack	10*20bit10A+4*16A
Refrigeration Type	In Row
Cooling Capacity	2*20KW
Monitoring Display	10-inch Touch Screen
Fire Height	1+6U
Standard Number of Batteries	32~40
Environment Temperature	0~45°C
Dimensions (W*D*H)	3600*1200*2000mm

● Typical Configuration

Plan 6



Number of IT Cabinets	6
UPS Capacity	40K(3U)
Power Factor	1
Total Power Input	380V/125A
Available Space	19+5*42U
Number Of PDUs In A Single Rack	12*20bit10A+4*16A
Refrigeration Type	In Row
Cooling Capacity	3*17KW
Monitoring Display	10-inch Touch Screen
Fire Height	6+6U
Standard Number of Batteries	32~40
Environment Temperature	0~45°C
Dimensions (W*D*H)	4500*1200*2000mm