SOETECK

ROW MODULAR DATA CENTER OVERALL SOLUTION

Professional Data Center Solution Supplier

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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.

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.

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.

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 0.72㎡ , which is suitable for computer rooms within 10-20㎡, such as small archives.

System Capacity

Capacity of single cabinet≈3~5kVA

Product Layout Diagram

Front Cold Area Air Distribution Diagram
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Back Hot Area Air Distribution Diagram
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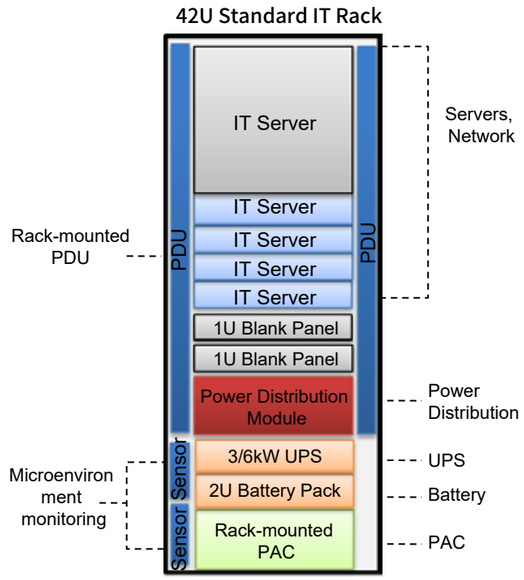
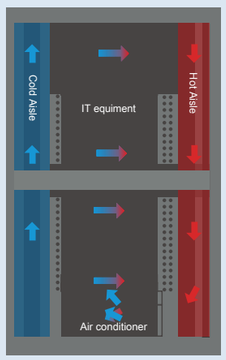


Airflow Reference Chart



Note: The layout can be adjusted according to the equipment layout.

Application Scenario

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， UPS Output: 3×16A/1P; 2×10A/1P; DC: 12V×2
	UPS	Capacity	3KVA
		Configuration	Single UPS
		Power Factor	0.8
		Efficiency	90%
	PDU	Installation Method	Vertical Installation
		Type	GB Standard
		Configuration	GB:12×10A
	Battery Pack	Capacity	9AH
		Quantity	1~4
	Standby Power	Standby Power Method	Battery Pack / Battery Rack / Battery Cabinet
	Battery Cabinet	Configure On demand	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
		Operating Voltage	220V
	Emergency Ventilation	Heat Dissipation Capacity	3KW
		Operating Voltage	220V
Dimensions / Weight		Packaging Dimensions:WXDXH(mm)	734×1360×2200
		Net Weight	142Kg (excluding battery pack)
		Battery Pack Weight	15Kg

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.

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.

Easy Installation

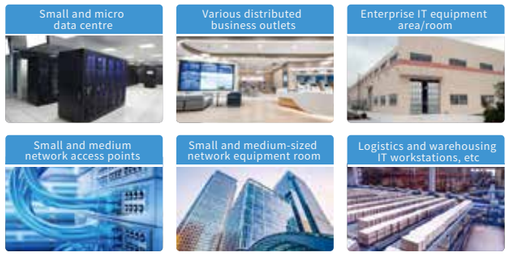
- Engineering free design, suitable for various scenes, install rapidly.
- Modular design of power distribution, hot-swappable ,easy installation and maintenance.
- The system does not need special decoration treatment, the equipment is ready to use. Installation and commissioning cycle only need 4-6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

Intelligent Management

- Intelligently monitor power supply and environment status.
- Instant and real-time alarm through various ways(SMS, sound and light, e-mail,phone).
- The monitoring system is compatible with many parts(screen, remote APP, local LCD, remote WEB); Friendly HMI.
- 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

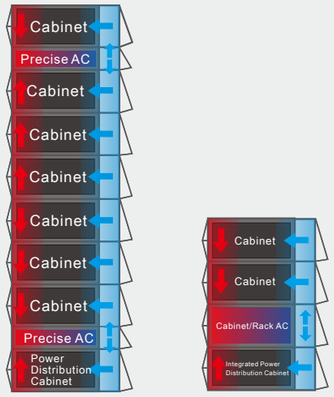
The overall area of a single cabinet is 0.9㎡, which is suitable for computer rooms within 20-60㎡

System Capacity

Capacity of single cabinet≈3~7kVA

Structure and Composition

Airflow Reference Chart



Note: The layout can be adjusted according to the equipment condition

Application Scenario

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 avaliable(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 avaliable
Service	Unified brand and service, full service during the life of product	Different guarantee period service interface and phone number

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	Configured according to user requirements
	UPS	Capacity	1-60KVA
		Configuration	3-10KVASingle phase with ground, 10-60KVAThree in, three out
		Power Factor	0.8-1
		Efficiency	88%-95.5%
	PDU	Installation Method	Vertical Installation
		Type	GB Standard
		Configuration	GB:16X10A+4X16A
	Battery Pack	Capacity	9AH
		Quantity	1~4
	Standby Power	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	3.5~60.5KW
		Category	Rack-mounted Inverte or in-row
		Operating Voltage	208-240V，380-415V
	Emergency Ventilation	Heat Dissipation Capacity	3KW
		Operating Voltage	220V
Dimensions / Weight		Packaging Dimensions:WXDXH(mm)	734X1360×2200(Single)
		Net Weight	142Kg(control cabinet);100Kg(IT cabinet)
		Battery Pack Weight	51Kg

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.
- Basic/Smart PDU

Cooling System

- 7.5-60.5KWkW 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.

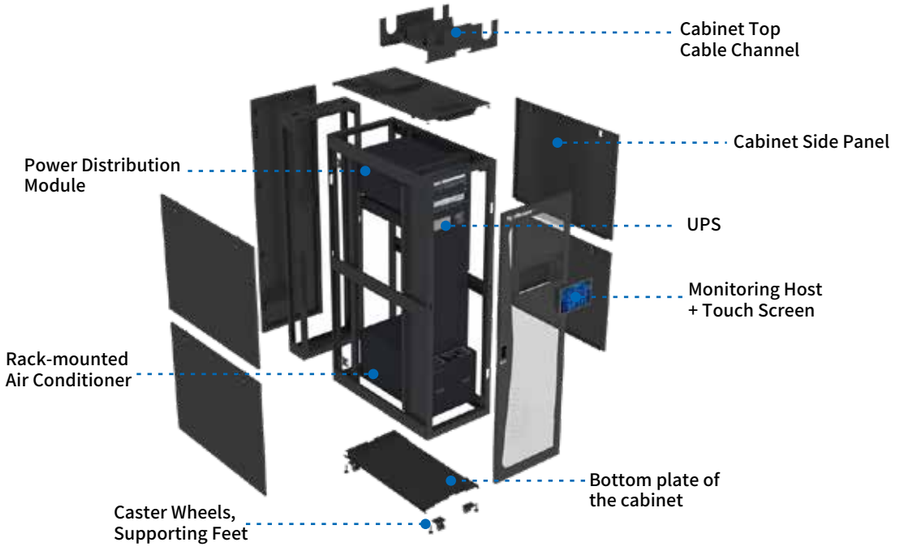
Monitoring System

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

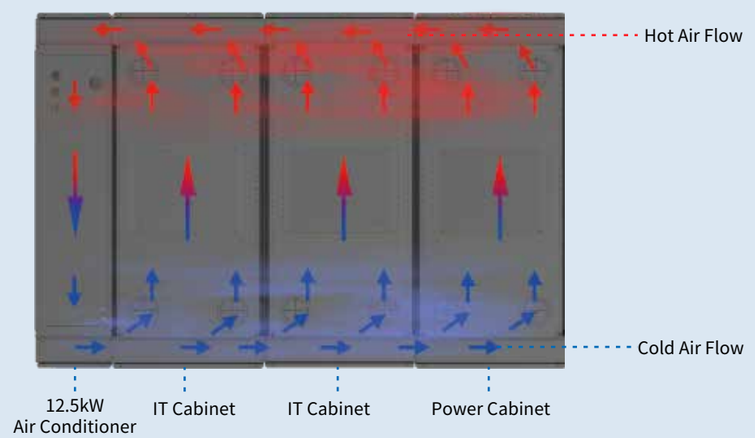
Cabinet System

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

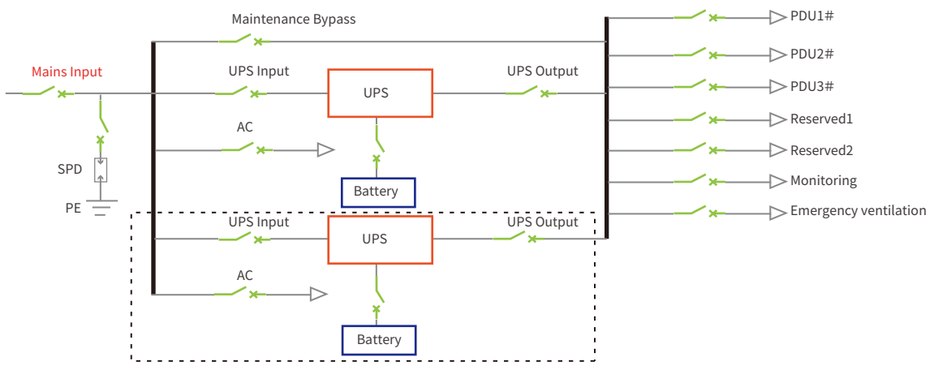


3 Cabinet Air Flow Diagram



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.

3-6KVA

10KVA

20KVA

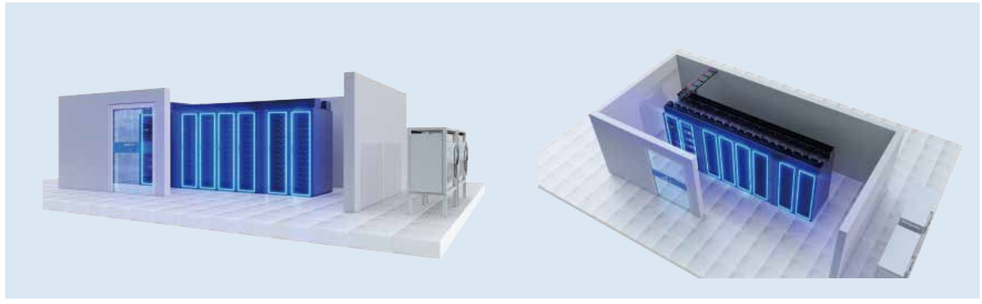
Cooling System

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

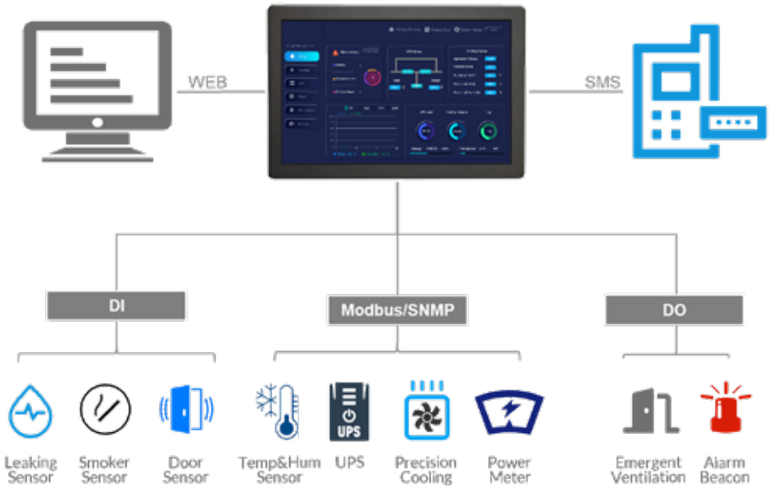
In-row Air Conditioners

Safety	• 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	• 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	• Modularization component,standardization interface,quick installation on site • Prefabricate assembly, plug and play, simplesetting • 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

Battery Cabinet

Lead Acid Battery

PDU

Precision Distribution Cabinet

The intelligent power distribution cabinet that comprehensively collects all energy data for the energy end of the data center computer room.

IT Cabinet

Video Monitoring

Power Distribution Box

Fire Extinguisher

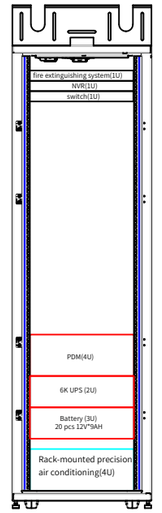
SMS

Typical Configuration

Plan 1

ICS01

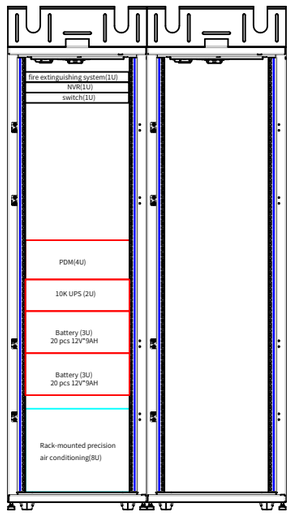
Total Number of Cabinets	1
Available Space for IT Equipment	26U
Power System	380Vac,50Hz /60Hz
UPS Capacity	6KVA
Number of UPS	1
Support Maximum IT Load Power Consumption Battery	3KW
Deployment Mode	Built-in Battery
Backup Time	15 Minutes
Air Conditioning Cooling Capacity	7.5
Number of Air Conditioners	1
Air Conditioner Installation Method	Rack-Mounted
Conditioning Air Supply Method	Front Air Supply, Rear Air Return
Dimensions (W*D*H)	600*1200*2000mm



Plan 2

ICS02

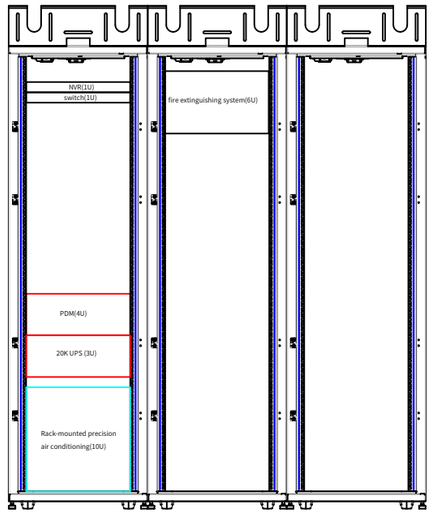
Total Number of Cabinets	2
Available Space for IT Equipment	61U
Power System	380Vac,50Hz /60Hz
UPS Capacity	10KVA
Number of UPS	1
Support Maximum IT Load Power Consumption Battery	6KW
Deployment Mode	Built-in Battery
Backup Time	15 Minutes
Air Conditioning Cooling Capacity	7.5
Number of Air Conditioners	1
Air Conditioner Installation Method	Rack-Mounted
Conditioning Air Supply Method	Front Air Supply, Rear Air Return
Dimensions (W*D*H)	600*1200*2000mm



Typical Configuration

Plan 3

ICS03

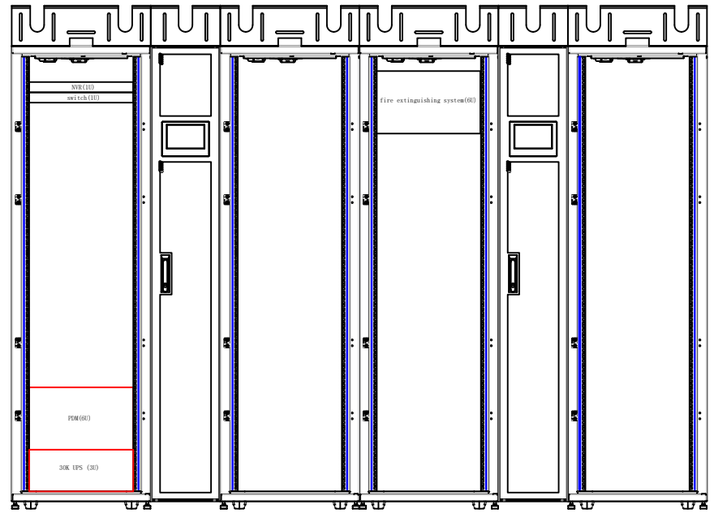


Total Number of Cabinets	3
Available Space for IT Equipment	101U
Power System	380Vac,50Hz /60Hz
UPS Capacity	20KVA
Number of UPS	1
Support Maximum IT Load Power Consumption Battery	15KW
Deployment Mode	External Battery
Backup Time	15 Minutes
Air Conditioning Cooling Capacity	12.5
Number of Air Conditioners	1
Air Conditioner Installation Method	Rack-Mounted
Conditioning Air Supply Method	Front Air Supply, Rear Air Return
Dimensions (W*D*H)	1800*1200*2000mm

Typical Configuration

Plan 4

ICS04

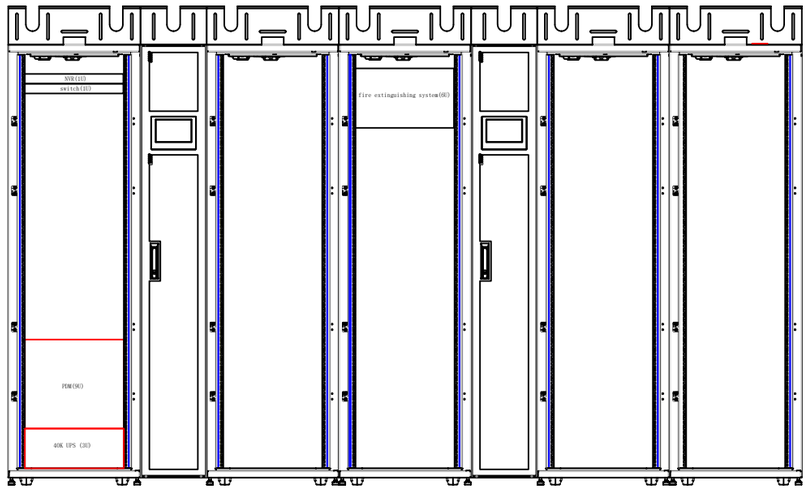


Total Number of Cabinets	4
Available Space for IT Equipment	151U
Power System	380Vac,50Hz /60Hz
UPS Capacity	30KVA
Number of UPS	1
Support Maximum IT Load Power Consumption Battery	24KW
Deployment Mode	External Battery
Backup Time	15 Minutes
Air Conditioning Cooling Capacity	12.6
Number of Air Conditioners	2
Air Conditioner Installation Method	In-Row Level
Conditioning Air Supply Method	Front Air Supply, Rear Air Return
Dimensions (W*D*H)	3000*1200*2000mm

Typical Configuration

Plan 5

ICS05

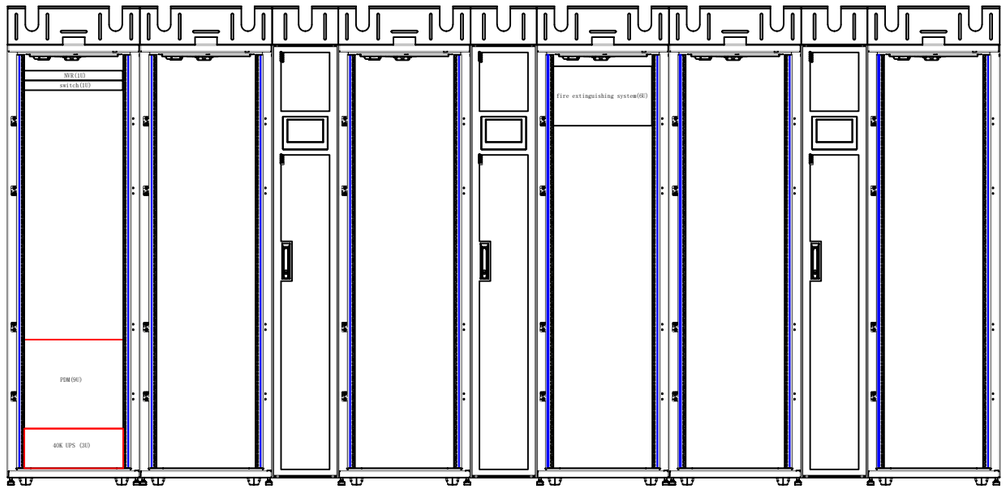


Total Number of Cabinets	5
Available Space for IT Equipment	190U
Power System	380Vac,50Hz /60Hz
UPS Capacity	40KVA
Number of UPS	1
Support Maximum IT Load Power Consumption Battery	30KW
Deployment Mode	External Battery
Backup Time	15 Minutes
Air Conditioning Cooling Capacity	21.5
Number of Air Conditioners	2
Air Conditioner Installation Method	In-Row Level
Conditioning Air Supply Method	Front Air Supply, Rear Air Return
Dimensions (W*D*H)	3600*1200*2000mm

Typical Configuration

Plan 6

ICS06



Total Number of Cabinets	6
Available Space for IT Equipment	232U
Power System	380Vac,50Hz /60Hz
UPS Capacity	40KVA
Number of UPS	1
Support Maximum IT Load Power Consumption Battery	36KW
Deployment Mode	External Battery
Backup Time	15 Minutes
Air Conditioning Cooling Capacity	17.8
Number of Air Conditioners	3
Air Conditioner Installation Method	In-Row Level
Conditioning Air Supply Method	Front Air Supply, Rear Air Return
Dimensions (W*D*H)	4500*1200*2000mm