NEUROPOWER

Powering Possibilities. Connecting Futures.

Modular Data Center Solution (MDCS)

FlexiAisle Series

FlexiAisle

Introducing FlexiAisle, our cutting-edge modular data center solution designed to revolutionize your data center infrastructure. As the name suggest, FlexiAisle integrates various independent units such as IT cabinets, power distribution units (PDB), closed components, refrigeration units, cabling, and integrated operation and maintenance (O&M) into a single module.

With all components prefabricated in the factory, FlexiAisle offers unmatched flexibility, allowing for easy disassembly, transportation, and quick on-site assembly. FlexiAisle boasts the following key advantages, encapsulated in our 4E approach:

1. Excellent Design: Benefit from our high-standard solution design, meticulous product design, and stringent production control, ensuring top-notch quality at every stage

2. Economic value: Experience the cost saving advantages of our high efficiency design, state-of-the-art equipment and low total cost of ownership (TCO).

3. Efficient deployment: Enjoy the convenience of our standardized solution and system, combined with frame structure factory preinstallation.

4. Easy Maintenance: Rest easy with 24-hour monitoring, multiple devices and platforms, along with intuitive graphical navigation, simplifying maintenance tasks.

CORPORATE

GOVERNMENT

HOSPITAL

FlexiAisle Features

Introducing FlexiAisle Series, the cutting-edge modular data center solution by Neuropower Malaysia, specifically designed to meet the demands of large-scale deployments.

1. Enhanced Aesthetics and Advanced Features

Elevate your data center room's appeal with a distinctive three-dimensional front door design, T-shaped lintel, and vibrant LED ambient lighting. These elements not only highlight the room's quality but also add a touch of sophistication. The full-color atmosphere lamp, linked to the alarm level, provides clear visibility of the operational status. Optional features like the programmable LED, 10-inch HD display screen, and automatic card issuing machine enhance the room's technological prowess, making it a truly advanced and modern space.

2. Enhanced Efficiency: AI+ Adaptive Dehumidification Technology

Incorporating cutting-edge artificial intelligence "adaptive dehumidification" technology, our FlexiAisle modular data center ensures stable operation and effective dehumidification even at low load levels of 10%-20%. Without the need for heating or additional energy consumption, the dehumidification function significantly reduces energy usage in the air conditioning system.
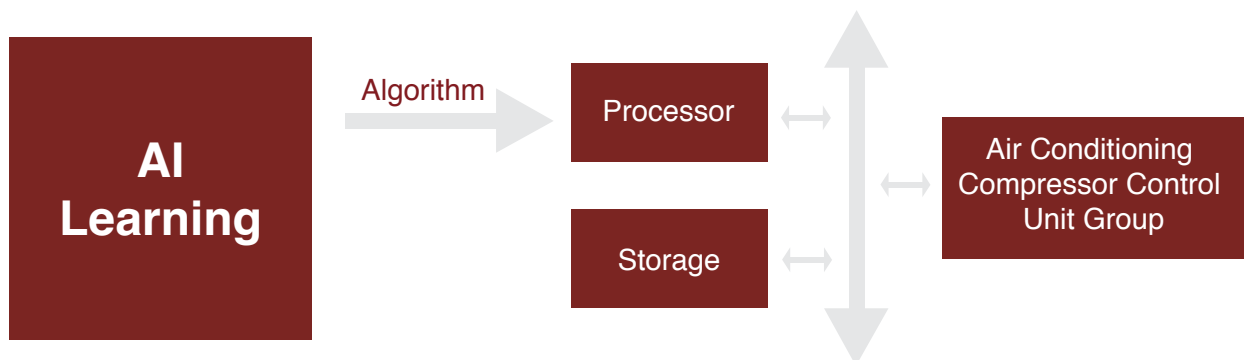
3. Accelerated Delivery by 50%

By adhering to standardized modular design principles, our FlexiAisle MDCS offers simplified deployment, tailored to each customer's IT requirements and architectural space. With a modular construction approach, our solution allows for flexible disassembly, transport, expansion, and rapid on-site assembly. Through streamlined cold channel assembly and optimization of the debugging process, we have successfully reduced delivery time by 50%.

Step 1

Installing cabinets in position

Step 2

Skylight & lighting installation

Step 3

End door installation

Step 4

Bridge installation


Step 5

Type I sealing piece installation

4. Enhanced Skylight Design: Spacious and Secure Cold Aisles

With our skylight narrow frame design, we create an expansive visual space within the cold passage, enhancing lighting and overall permeability. For added safety, our cold aisle skylights are equipped with explosion-proof glass, providing effective protection against potential injuries in emergency situations.

5. Enhanced Visualization for Easy Operation and Maintenance

Our solution offers comprehensive 3D centralized management allowing easy system monitoring and number of cabinet customization in 3D rotation view. With alarm filtering, convergence, and linkage, the data centre's operation and maintenance become simplified, enabling convenient access to the data centre's information. The configuration software interface provides flexible display options, while the multi-dimensional 3D interface showcases cabinet temperature cloud images and realistic cabinet capacity views.Additionally, historical device data storage for up to five years ensures long term efficient operation and maintenance, reducing costs and time while improving data traceability.
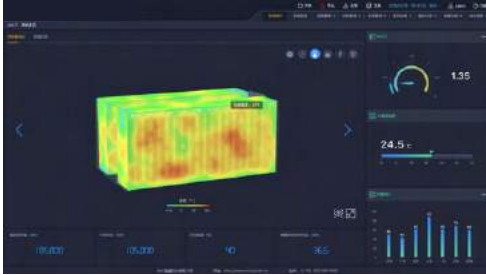
Temperature Nephrogram

U View

Cooling capacity

Power Distribution Capacity

Optional Value Added Solution

Enhanced Solutions: Moving Robot Integration

Our optional moving robot provides advanced automation capabilities, including automatic, fixed, and scheduled inspections. It efficiently records inspection data and performs functions such as infrared scanning, mobile temperature and humidity detection, and real-time monitoring of device temperatures.
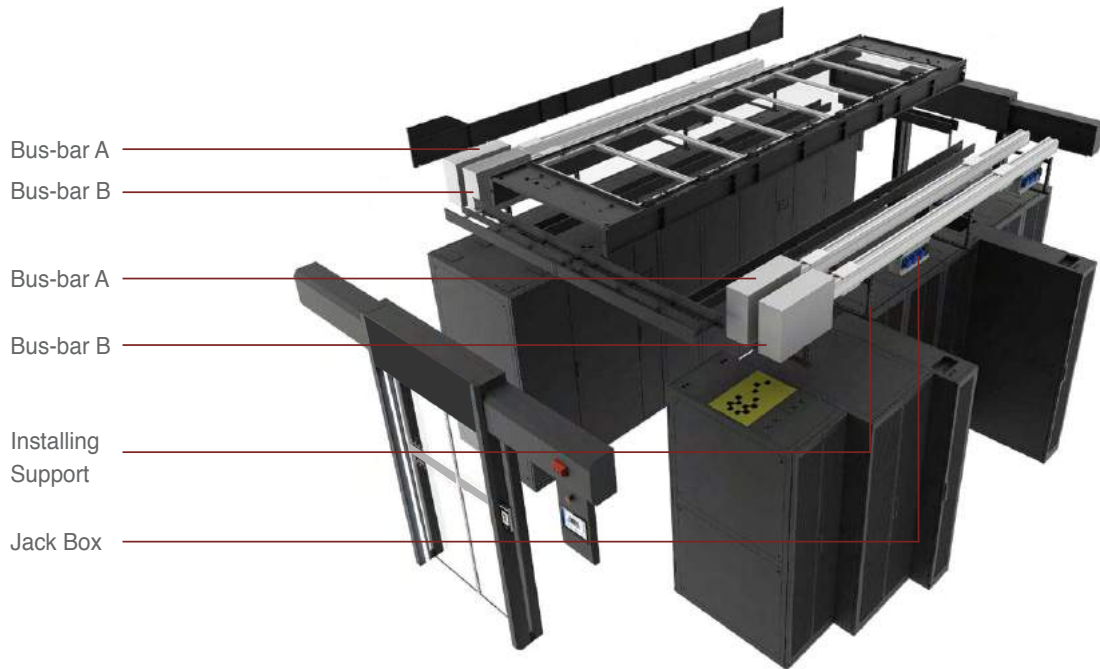
The robot also incorporates image recognition technology to track equipment switch states. With remote sound monitoring in the cold channel and real-time device status viewing via mobile or pad devices, comprehensive monitoring and control are easily achieved.
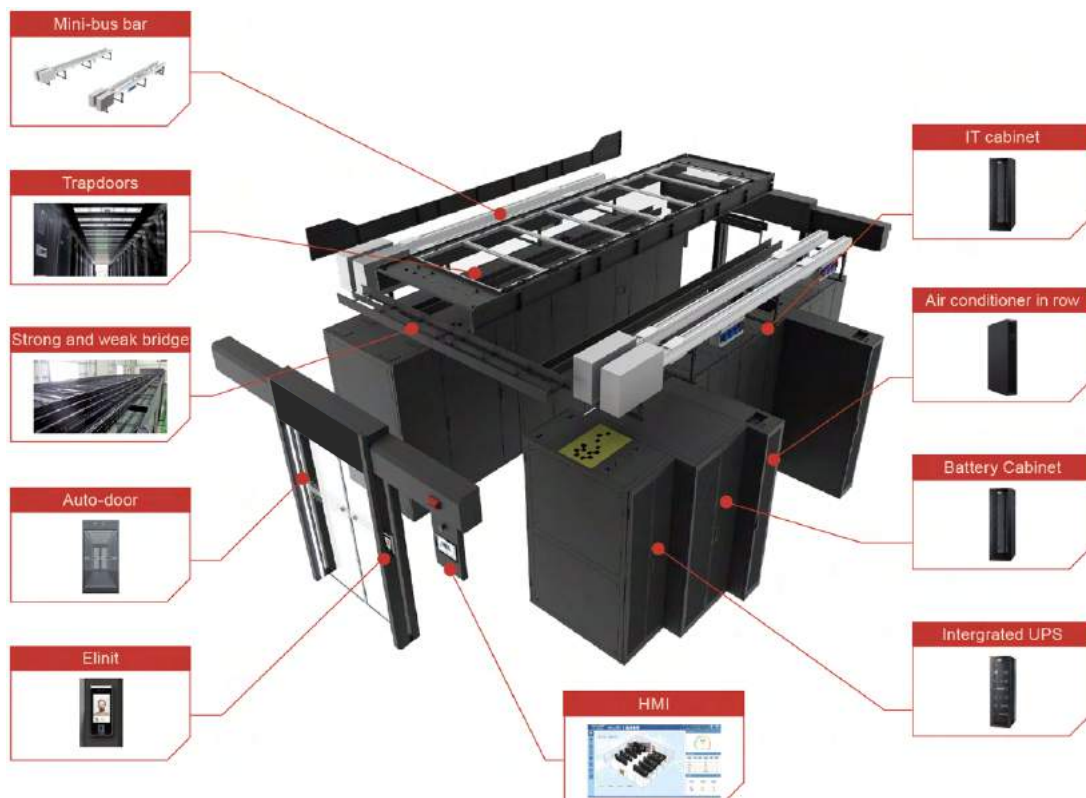
Enhanced Solutions: Small Busbar

Our optional small busbar solution features a standardized design with a modular structure, allowing for easy plug and play installation without the need for maintenance. The flexible plug box system enables convenient capacity expansion and load scalability, resulting in a higher degree of integration.

With its convenient and fast site deployment, the construction process becomes more flexible and aesthetically pleasing. Additionally, the flexible implementation of three-phase load distribution ensures compatibility with current and future on-site requirements.

Bus-bar A
Bus-bar B

Bus-bar A

Bus-bar B

Installing Support

Jack Box

Overall Architecture Breakdown

Mini-bus bar

Trapdoors

Strong and weak bridge

Auto-door

Elinit

HMI

IT cabinet

Air conditioner in row

Battery Cabinet

Intergrated UPS

FlexiAisle Key Advantages (Excellent)

(A) Top notch quality product

1. Power Supply and Distribution System:

- Redundant design of key components, ensuring multiple levels of protection
- Comprehensive power supply and distribution system with reliable safety features
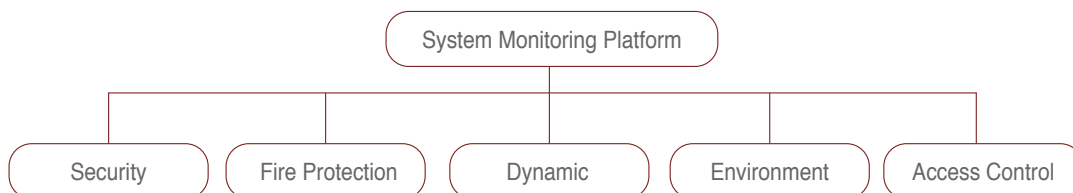- Multiple output power supply modes for enhanced reliability and flexible configuration

2. Cooling System:

- Utilizes CFD thermal simulation technology to optimize airflow and enhance refrigeration reliability
- Equipped with DC inverter scroll compressor for dynamic refrigeration and energy efficiency
- Adapts to changing loads, reducing compressor start-stop cycles and improving system reliability
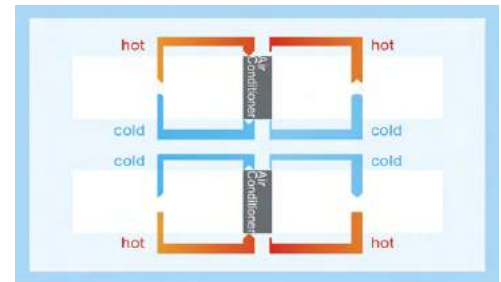
3. Monitoring System:

- Centralized monitoring of power environment, security, and fire protection systems for enhanced safety
- Intelligent detection and two-stage threshold risk warning for improved distribution reliability
- Real-time device status monitoring with automatic inspection and export functionality
- Supports dual power supplies and network ports for secure and efficient system information storage

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                    System Monitoring Platform
        ┌──────────┬──────────┼──────────┬──────────┐
     Security  Fire Protection  Dynamic  Environment  Access Control
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4. Cabinet Cold Aisle System:

- High-strength standard cabinets compliant with national seismic standards
- Fire alarm skylight that opens automatically to meet fire protection requirements
- Skylight glass for improved visibility and lighting in the cold aisle

(B) Reliable Solution

1. Ensuring Stable IT Equipment Operation:

- Support for N+1/2N design to ensure uninterrupted operation of IT equipment
- Adherence to domestic data center construction standards and specifications
- Rigorous testing for manufacturer-level pressure resistance and seismic performance to ensure equipment reliability

(C) Customer Value

1. Ensuring reliability and safety:

- Enhanced reliability to ensure stable operation of the entire data center
- Emphasis on safety measures for both personnel and equipment

FlexiAisle Key Advantages (Efficient)

## (A) Customizable Standard Solution for Rapid Deployment

1. We offer a range of prefabricated, standard configurations that allow users to quickly customize the optimal solution, significantly reducing design time.

## (B) Modular Data Center, Subsystem and Component

1. With modular units as the building blocks, our construction process is standardized, enabling fast replication and on-demand deployment.
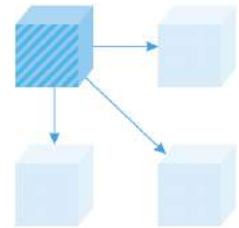
2. Our flexible and quick building block approach allows each subsystem equipment to be constructed efficiently. With the integration of UPS and power distribution in a single cabinet, we can reduce room space and installation time by 20%. Additionally, the frame design of the cold channel system enables preinstallation, effectively shortening the construction period.
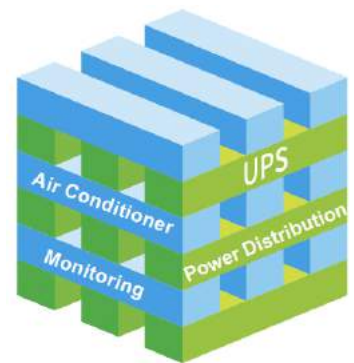
3. Our system supports online hot swap and on-demand capacity expansion for multiple components. This means that components can be easily and quickly replaced when needed, resulting in shorter maintenance times.
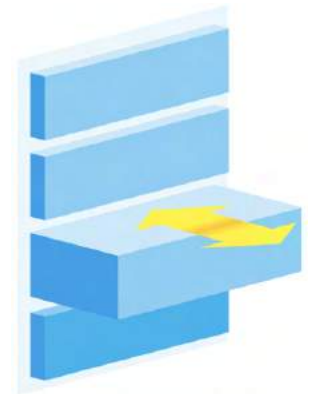
(C) Customer Value

1. Reduced Construction Time:

• We can quickly provide a construction plan based on customer site conditions and construction needs. Our productized project approach enables us to shorten the construction cycle by more than 20%. Additionally, our modular component design improves operation and maintenance efficiency.

FlexiAisle Key Advantages (Easy)

(A) Versatile functionality

1. Centralized monitoring:
- The monitoring platform enables centralized management of each subsystem, supporting both local and remote control for easy operation and maintenance.

2. Graphical navigation:
- The system provides device visualization, allowing users to quickly locate devices in the data center room and access relevant data, simplifying and facilitating information viewing.

3. Asset management:
- The system facilitates the management of physical asset attributes, recording and querying information to assist O&M personnel in effective asset management.

4. Automatic inspection:
- The equipment can be automatically inspected in a predefined sequence and executed on a regular cycle.

(B) 24/7 Availability and Cross-Platform Support

1. Our system operates 24/7 without the need for constant supervision, offering user-friendly management that reduces costs. With support for multiple equipment and platforms, we enable fast fault location and efficient problem handling, significantly shortening response times.

Touch screen   Web Interface   Mobile App

(C) Customer Value

1. Real-time Monitoring for Enhanced Data Center Protection

- Our solution offers real-time monitoring capabilities to bolster the protection capacity of your data center. With intelligent management features, we optimize the operation efficiency of your data center, ensuring smooth and reliable operations. Furthermore, our comprehensive management functions enhance the availability of your data center, enabling uninterrupted service delivery.
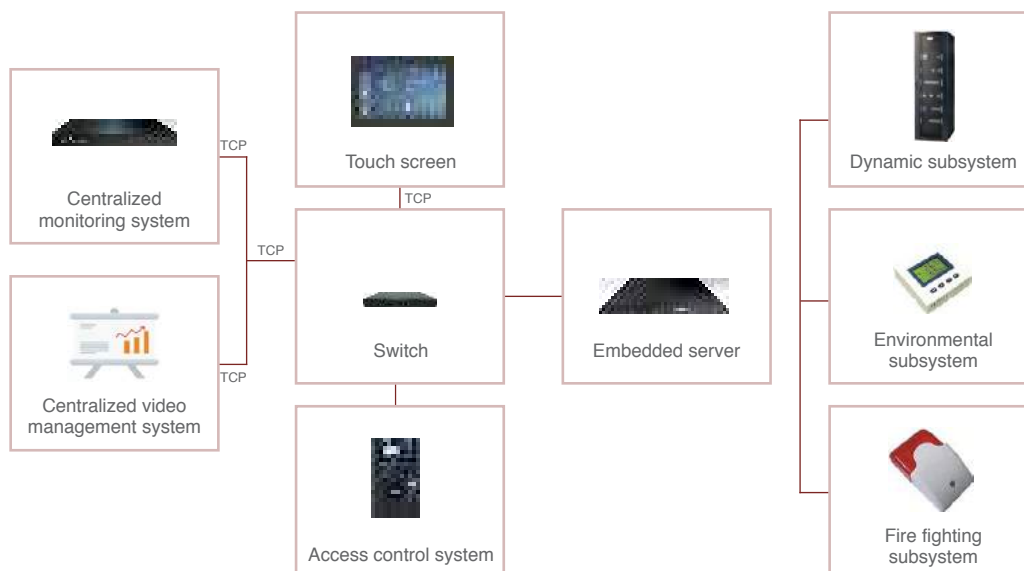
FlexiAisle Key Advantages (Economic)

(A) Maximizing efficiency for energy saving

1. Our solution features a closed cold channel design that significantly reduces energy consumption, leading to exceptional efficiency. As a single module, our Power Usage Effectiveness (PUE) can reach as low as 1.5, ensuring optimal energy utilization. Additionally, our solution supports high power density deployment within a single cabinet, minimizing user space costs while maintaining peak performance.
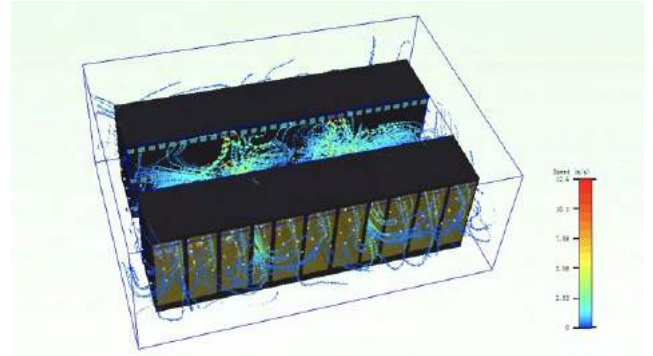
(B) Optimized Efficiency for Energy Savings

1. Our cutting-edge equipment is designed for high efficiency, achieving a system-wide efficiency rating of up to 96%. With optional features such as ECO mode and modular sleeping mode, our solution is geared towards energy conservation, reducing power consumption and promoting sustainable practices.
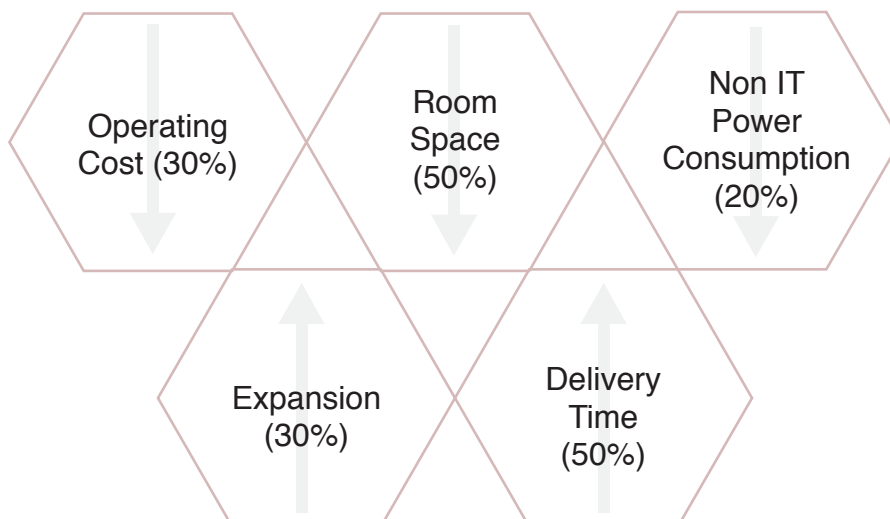
(C) Cost-Effective Solution for Long-Term Value

1. Our flexible solution offers on-demand deployment, catering to the evolving needs and investments of our customers. By reducing the initial investment required, we help minimize the Total Cost of Ownership (TCO) while ensuring scalability and long-term value.

(D) Harnessing Green Energy for Sustainable Data Centers

1. Our innovative approach combines renewable energy sources and solar energy storage systems, enabling the optimal utilization of green energy. By incorporating this solution, we effectively reduce operating costs and establish environmentally-friendly data centers that promote sustainability.

(E) Customer Value

Operating Cost (30%)

Room Space (50%)

Non IT Power Consumption (20%)

Expansion (30%)

Delivery Time (50%)

Technical Specifications (FlexiAisle)

	Model	FlexiAisle
System	Dimension, W x D x H (mm)	3600*D*2400 , D≤15000
	IT cabinet quantity	≤48
	Cabinet power	Typical value 2.2~4.4kW ; Single cabinet power >10kW (optional)
	Installation	Support levelling or electrostatic discharge (ESD) floor installation; Cold aisle independent frame installation (optional)
	Anchor frame	High 250mm, adjustable (optional)
	Power distribution system	N+1 or 2N
	Access control	Automatic sliding glass doors, sliding / rotating sliding glass doors, partition mesh doors, face recognition or fingerprint all in one machine, support face / fingerprint / password / IC card and other models
	Flip skylight	Flip glass skylights and support fire control linkage
	Smart light	LED lamp, PIR sensor
	Smart atmosphere light	Smart atmosphere light, alarm linkage discolouration
Cabinet	Dimension, W x D x H (mm)	1200* 600 or 800 *2000
	Standards	IEC 60297-1 and GB/T 19520.1
UPS	Rated capacity	Integrated UPS: max 150kVA ; Independant UPS: 200kVA
	Frequency range (Hz)	40 ~ 70
	Input voltage range (Vac)	80 ~ 280
	Input voltage	380 / 400 /415 Vac ; 50 / 60 Hz ; 3Ph+N+PE
	Input power factor	≥0.99
	Output power factor	1
	Input THDi	≤3%
Power Distribution	Input distribution	ATS, MCCB
	Output distribution	Integrated IT cabinet: max24*2, supporting air conditioner, the channels can be customized
	Detection	Support the detection of voltage, current, air switch state, apparent power, active power, electrical energy, bus temperature (optional)
	Alarm	Supports overvoltage or undervoltage alarms of the main circuit, overcurrent alarms, frequency abnormal alarms, single power failure alarms and three phase imbalance alarms
Battery Cabinet (in line)	Backup time	15 minutes, 30 minutes optional
	Battery quantity	32*12V single cabinet
	Intelligent temperature control	20~30°C (optional)
	Battery monitoring	Monitors the internal resistance, voltage and temperature of each battery
Air Conditioner (in row)	Dimension of indoor unit, W x D x H (mm)	1200*300*2000 (25kW) 1200*600*2000 (40kW) 1200*600*2000 (50kW)
	Freezing medium	R410A
	Sensible heat factor	≥0.99
	System cooling capacity	25kW / 40kW / 50kW
Monitor	HMI	10 or 21 inches touch screen
	Monitoring system	Temperature, humidity, smoke, camera, audible and visual alarms, SMS alarms and water leakage detection

● *Product specifications are subject to change without further notice*
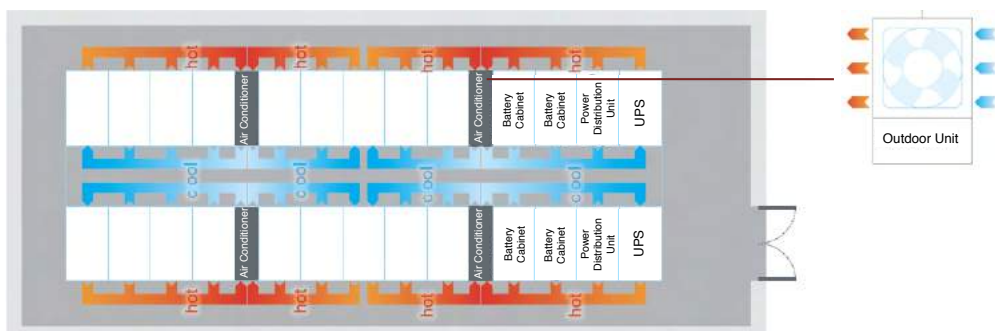
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