smart key energy



全新 IDM II Modular Data Center

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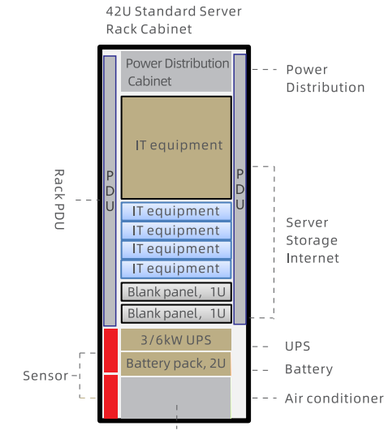
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Modular Data Center

IDM Single-Cabinet Modular Room

Integrated Cabinet - Design Features of the Single-Cabinet Model





Product Features

·No dedicated computer room required, strong adaptability to various sites.
·Ready for use upon power-on, rapid deployment within 3 hours.
·Integrated intelligent design combining cooling, cabinet, power distribution and monitoring systems.
·Supports 24/7 unattended operation throughout the year.
·Reduces operating costs and cuts energy consumption by more than 30%.
·Equipped with at least 25U space for IT equipment installation.
·Suitable for scenarios without dedicated equipment rooms and IT loads of 10 kW or less,meeting the data center requirements of enterprise and financial industry branches."

Overview

An integrated cabinet, also known as a smart cabinet or integrated smart enclosure, is a highly integrated smart enclosure designed for IT equipment and suitable for a wide range of applications. It integrates power supply, intelligent control, and monitoring systems to ensure constant temperature and humidity within the cabinet across various environments. Additionally, it features access control and cabinet door status monitoring systems, as well as remote centralized management capabilities.

Advantages

·Installation： True plug-and-play implementation for rapid deployment.
·Cooling Efficiency:： Equipped with rack-mounted air conditioning, isolated from external environmental interference.
·Appearance： Air conditioner, UPS, power distribution and other components are fully integrated internally. The cabinet door is made of transparent glass with built-in ambient lighting for easy equipment status monitoring.

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System	Name	Unit	Quantity	Key Specifications
Refrigeration System	Air conditioner	Unit	1	Rack-mounted precision air conditioners, split-type air-cooled DC inverter air conditioners,available in cooling capacities of 3.5/5 kW (5U), 7.5 kW (8U), and 12.5 kW (10U).
	Air Conditioning Installation Accessory	set	1	Air Conditioning Installation Accessories
	Emergency ventilation system	set	1	Emergency ventilation fan (with automatic activation at high temperatures)
Cabinet System	Cabinet	Unit	1	Cabinet dimensions: 600 mm (W) × 1200 mm (D) × 2000 mm (H) Fully enclosed (cold aisle) design with tempered glass door at the front and sheet metal door at the rear
	Blank Panel Kit	1 pair	1	1U with brushes +1U×2+2U×3+5U×3
	Attachment	Pair	1	Shelves and L-shaped rails compatible with 19-inch racks
Power Supply and Distribution System	Rack-mounted UPS	Unit	1	3 kVA-10 kVA Rack-Mounted High-Frequency Online UPS
	UPS Monitoring Card	Pcs	1	Communication interfaces: RS485/RS232; compatible with 3-10 kVA UPS systems
	Backup battery	set	1	Rack-mounted battery pack or external battery pack connection
	Rack-mounted Power Distribution Unit	Unit	1	UPS input and output power distribution, 3U heightFeatures a maintenance bypass and expansion output interfaces
	Rack-mounted PDU	set	1	Each cabinet is equipped with two units, mounted side-by-side, featuring industrial connectors; the output sockets can be freely selected from GB 10A, 16A, C13, or C19.
	Accessory Cables	set	1	Cable included as standard
	Temperature and Humidity Monitoring	set	1	Remote Temperature and Humidity Sensor
Surveillance System	Smoke Detection	set	1	Remote smoke detector
	Door Magnet Monitoring	set	1	There is one door at each end of the passageway; the door's open/closed status can be detected, and an electronic lock is available as an option.
	Leak Detection	set	1	Leak detection system (with or without location tracking), self-powered
	Air Conditioning Monitoring	set	1	Monitor the operational status parameters of rack-mounted air conditioners
	Power Distribution Monitoring	set	1	Monitor the power supply parameters of the subunits within the monitoring cabinet
	UPS Monitoring	set	1	Monitor UPS operating parameters

Modular Data Center

IDM Single-Row Micro-Module Data Center



Product Features

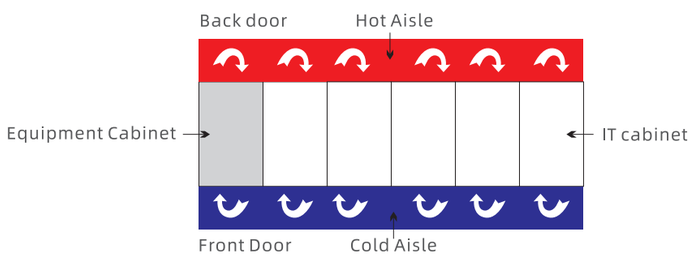
·Highly integrated design that combines all subsystems, including cooling, power distribution, racks, and monitoring;
·Standardized components and a modular architecture to support rapid, on-demand deployment;
·Supports flexible deployment with enclosed cold/hot aisles to isolate hot and cold airflows and eliminate local hotspots;
·Localized cooling and efficient power supply, with a module-level PUE below 1.5;
·Exceptional environmental adaptability, with stable operation across a wide voltage range, flexible adjustment of supply and return air temperatures, and under varying load conditions;
·Configurable with 2 to 10 cabinets, offering flexible selection options.

Application Scenarios

It is primarily designed for small data centers with a power load ranging from 10 kW to 60 kW and an area of less than 50 square meters. It meets the data center needs of small and medium-sized enterprises as well as branch offices of large enterprises, and multiple modules can be combined to build large-scale data centers. It also supports the deployment of large-scale data centers in sectors such as government, education, healthcare, finance, and telecommunications.

Solution for Contained Hot and Cold Aisles

By fully enclosing both the cold aisle and the hot aisle, this solution combines the high cooling efficiency of a closed cold aisle with the improved cooling efficiency of a closed hot aisle, resulting in the best energy-saving performance. The IDM single-row modular data center utilizes variable-capacity data center air conditioning systems equipped with load-following technology, which adjusts cooling capacity and airflow output based on actual heat generation, further enhancing energy efficiency. IDM single-row modular data centers function as self-contained micro-modules, requiring minimal environmental conditions outside the modules and offering greater adaptability. Fully enclosed IDM single-row modular data centers are suitable for the vast majority of applications.

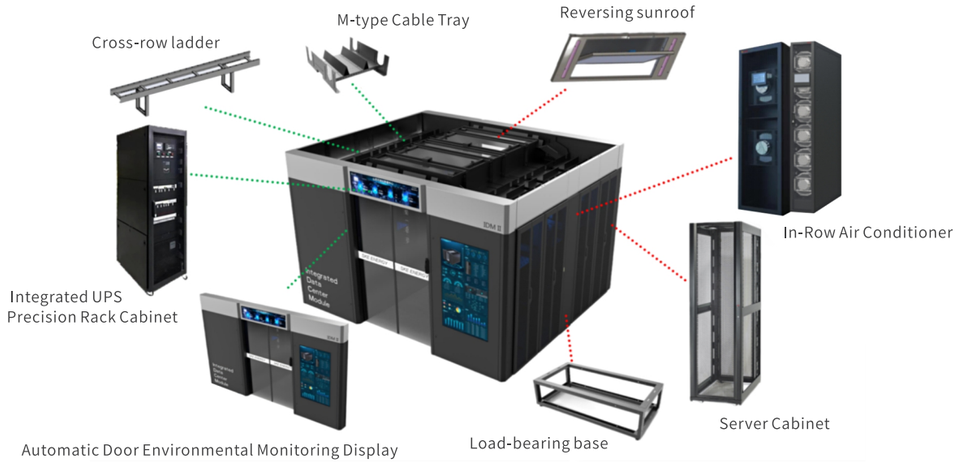


System	Name	Unit	Quantity	Key Specifications
Refrigeration System	Air conditioning	Unit	1	The cooling capacity is based on 12.5 kW. You may freely select an indoor unit with dimensions of 300 mm (W) × 1200 mm (D) × 2000 mm (H). The unit should be placed directly against the rack, with rear air intake and front air discharge.
	Rack-mounted air conditioner	Unit	1	Cooling capacities are available in 3.5 kW, 5 kW, 7.5 kW, and 12.5 kW, with heights ranging from 5U to 10U. Redundant cooling capacity can be configured across multiple units.
	Air ConditioningInstallation Accessory	Set	1	Air conditioning installation accessories; available in 3.5 kW, 5 kW, 7.5 kW, and 12.5 kW models
	Emergency ventilation system	Set	1	Emergency ventilation fan with automatic activation at high temperatures
Cabinet System	Glass-door cabinet	Unit	2-10	Cabinet dimensions: 600 mm (W) × 1200/1400 mm (D) × 2000 mm (H). Fully enclosed (both cold and hot aisles enclosed) with tempered glass doors at the front and rear; semi-enclosed (cold aisle) with a tempered glass door at the front and a mesh door at the rear.
	Blind Flange Kit	Set	1	1U with brush+1U×2 +2U×3+5U×3
	Air-tight assembly	Set	1	Side, top, and bottom panels of the cabinet; hot/cold aisle containment components
	Attachment	Pair	1	Shelves and L-shaped rails compatible with 19-inch racks
Power Supply and Distribution System	Modular UPS	Set	1	Available in 20 kVA to 150 kVA
	Rack-mounted UPS	Set	1	5 kVA to 20 kVA Rack-Mount UPS
	UPS Monitoring Card	Pcs	1	Communication interfaces support RS232, RS485, and SNMP cards
	Battery	Set	1	Choose between a rack-mounted all-in-one battery pack and an external battery
	Rack-mounted Power Distribution Unit	Set	1	It utilizes high-quality switching components from ABB, Schneider Electric, and other leading manufacturers, and can be configured with an intelligent monitoring unit to track electrical parameters on the main circuit and all branch circuits. This data is collected by the environmental monitoring system for centralized monitoring and display, and the unit is installed in the same cabinet as the UPS.
	Rack-mounted PDU	Set	1	Each cabinet is equipped with two units, mounted side-by-side, featuring industrial connectors; the output sockets can be freely selected from GB 10A, 16A, C13, or C19.
	Accessory Cables	Set	1	Standard power supply cable
Surveillance System	Temperature and Humidity Monitoring	Set	1	Remote Temperature and Humidity Sensor
	Smoke Detection	Set	1	Remote smoke detector
	Leak Detection	Set	1	Leak detection system (with or without location tracking), self-powered
	UPS and Battery Monitoring	Set	1	It can monitor the UPS's internal operating parameters, as well as battery voltage, current, and internal resistance.
	Power Distribution Monitoring	Set	1	Monitor power consumption parameters and power supply parameters within the distribution cabinet
	Air Conditioning Monitoring	Set	1	Operational status parameters of the air conditioning system within the monitoring module
Fire protection system	Fire Detector Pipe Fire Suppression System	Set	1	FM-200 (heptafluoropropane) + fire detection tubes, suitable for fully enclosed row-based modules in hot and cold aisles

Modular Data Center

IDM2 Dual-Row Micro-Modular Data Center

IDM2 Micro-Module - Design Features



IDM2 Dual-Row Micro-Modular Data Center

Product Features

· Integrated intelligent design that combines rack, cooling, power distribution, monitoring, and security systems;
· Modular deployment with high scalability and a short construction cycle;
· Improves data center utilization and reduces construction costs;
· Differentiated solutions at the rack pool level for optimal cooling performance;
· Aisle containment and automatic ceiling panel protection for enhanced safety and reliability;
· Suitable for building multiple modules in large data centers.

Technical Features

· Flexibility: Modular design (comprising modules such as fixed skylights, end doors, and support frames) facilitates future expansion and maintenance;
· Intelligence: The movable skylight integrates with fire safety systems; the power and environmental monitoring system enables real-time and remote intelligent monitoring of all microenvironments within the aisle;
· Safety: Aisle doors and windows are constructed from transparent tempered glass; the cold aisle and its ancillary materials are made of flame-retardant or non-combustible materials;
· Convenience: Options for sliding or swing doors, with settings for fully automatic or manual operation, facilitating equipment handling;
· Energy Efficiency: Effective isolation of hot and cold airflows significantly improves the utilization of cooled air;
· Customization: Provides personalized solutions tailored to various complex on-site conditions.

System	Name	Unit	Quantity	Key Specifications
RefrigerationSystem	In-Row Air Conditioner	Set	1	Cooling capacity ranges from 12.5 kW to 60 kW (air-cooled); supports chilled water systems up to 60 kW; features a design identical to standard server racks,with widths of 300 mm or 600 mm.
	Air Conditioning Installation Accessory	Unit	1	Air Conditioning Installation Accessories
		Set	1	Air conditioning installation accessories; available in 3.5 kW, 5 kW, 7.5 kW, and 12.5 kW models
Cabinet System	Cabinet	Set	6-N	Cabinet dimensions: 600 mm (W) × 1200 mm (D) × 2000 mm (H); single-leaf perforated door at the front, double-leaf perforated doors at the rear
	Blind Flange Kit	Set	1	1U with brush+1U×2+2U×3+5U× 3
	Attachment	Pair	1	Shelves and L-shaped rails compatible with 19-inch racks
UPS system	UPS Modular UPS	Unit	1	Server cabinets, available in capacities ranging from 20 kVA to 600 kVA; modules available in capacities ranging from 20 kVA to 60 kVA
	UPS Monitoring Card	Pcs	1	Communication interfaces: RS485/RS232; compatible with SKMK series modular UPS
	Battery	Set	1	12V-65-200Ah, 2V-100-3000Ah (optional), with matchingbattery cabinets and battery racks
Power Distribution Cabinet	Standard distribution cabinet	Set	1	Install three-phase power meters and ABB and Schneider Electric circuit breakers to monitor main circuit power parameters
	Precision Power Distribution Cabinet	Set	1	Integrated with ABB/Schneider breakers and smart modules for full-circuit monitoring and centralized EMS data integration.
	PDU Rack-mounted PDU	Set	1	Each cabinet is equipped with two units, mounted side-by-side, featuring industrial connectors. The output ports can be configured with either 10A or 16A Chinese standard plugs, or C13 and C19 plugs.
Surveillance System	Temperature and Humidity Monitoring	Set	1	Remote Temperature and Humidity Sensor
	Smoke Detection	Set	1	Remote smoke detector
	Access Control Monitoring	Set	1	One door at each end of the passageway
	Leak Detection	Set	1	Leak detection system (with or without location tracking), self-powered
	Fire Monitoring	Set	1	Monitor the alarm status of the gas fire suppression system in the equipment room
	Video Surveillance	Set	1	Video images from inside and outside the monitoring module's channels
	Air Conditioning Monitoring	Set	1	Operational status parameters of the air conditioning system within the monitoring module
	Power Distribution Monitoring	Set	1	Monitor power consumption parameters and power supply parameters within the distribution cabinet
	Audible and visual alarms	Set	1	Local audible and visual alarm
	UPS and Battery Monitoring	Set	1	It can monitor the UPS's internal operating parameters, as well as battery voltage, current, and internal resistance.
Cold aisle containment system	Sliding door	Set	1	Available in manual or electric sliding or push-pull styles for transparent tempered glass doors or steel doors
	Sunroof	Set	1	Constructed using aluminum alloy profiles and laminated tempered glass
	Sunroof Electronic Control Module	Set	1	Fire alarm system activates automatically
	Air-tight assembly	Set	1	Front, side, top, and bottom panels of the cabinet; hot/cold aisle containment components
	M-type cable tray	Set	1	Cable trays for power and data cabling, along with accessories, installed on top of the cabinet
	LED scrolling display	Set	1	You can freely customize the scrolling text via the app
	Motion-activated lighting	Set	1	Motion-sensing LED tubes, one set installed on each of the front and rear doors