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Data Center Infrastructure

Solution

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iClimate Thermal Management Solution

CoolMaster Series Air Conditioner for Medium and Large Data Centers

Features

Environmental Protection

- Adopts recyclable and environmentally friendly materials
- R410A eco-friendly refrigerant

Efficient Scroll Compressor

- Staandard/Inverter hermetic scroll compressor, an internationally renowned brand, safety and reliability

High-Efficiency EC Fan

- EC driver with the electric-commutated DC motor, energy-saving of more than 20%

Air Filter

- Default equipped with a G4-grade filter, which is placed close and covers the evaporator

High-Efficiency Heat Exchanger

- V-shaped large-area evaporator, equipped on air conditioner 35 kW to 120 kW, features large heat exchange surface, even airflow distribution, and high heat exchange efficiency

Air-Cooled Condenser

- Variable-frequency speed-regulated condenser fan adjusts its speed steplessly based on outdoor temperature to maintain the optimal condensing pressure in the system, which reduces fan power consumption, lowers fan noise, and extends the fan's lifespan
- Optional low-temperature components, suitable for outdoor environments with extreme low temperature -40°C
- Optional ultra-silent kit for condenser

Front-Side Maintenance

- Indoor unit front-side maintenance, no maintenance space required from indoor unit

25 kW to 120 kW

EC fan

Heater

Humidifier

Evaporator

Air-cooled condenser

Controller

Electric expansion valve

Compressor

Specifications

CM***U/DA; CM***U/DW		025	030	035	040	045	050	042	052	060	070	080	090	100	110	120
Indoor air inlet 24°C, DB 50% RH; Outdoor T 35°C; EC fan; R410A; Standard / Inverter scroll compressor																
Total cooling capacity	kW	30.1	30.1	35.6	40.2	45.8	50.1	40.5	50.3	61.1	70.2	80.1	90.8	100.2	110.9	120.5
Total cooling capacity	kBTU/h	102.7	102.7	121.5	137.2	156.3	171.0	138.2	171.7	208.5	239.6	273.4	309.9	342.0	378.5	411.3
Refrigerant ciucit	/	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2
Dimension (W*D*H)	mm	855*870*1975		930*998*1975				1380*998*1975		1830*998*1975					2280*998*1975	
Weight	kg	290	290	297	305	395	415	424	490	610	730	740	780	780	975	1040

CM***U/DC		031	041	051	061	071	081	091	101	110	120	130	140	150	160	170	180	190	200
Chilled water inlet 7°C, outlet 12°C; Indoor air inlet 24°C, DB 50% RH; EC fan; Two-way water valve																			
Total cooling capacity	kW	31.6	41.5	51.4	61.5	71.8	81.3	91.9	101.3	111.7	122.1	131.5	140.8	152.8	162.1	172.3	182.4	191.8	202.1
Total cooling capacity	kBTU/h	107.9	141.6	175.4	209.9	245.1	277.5	313.7	345.7	381.2	416.7	448.8	480.6	521.5	553.2	588.1	622.5	654.6	689.8
CW inlet 12°C, outlet 18°C; Indoor air inlet 30°C, DB 35% RH; EC fan; Two-way water valve																			
Total cooling capacity	kW	28.6	37.6	46.3	53.5	69.0	78.2	85.0	93.7	100.5	109.3	116.2	122.9	138.1	145.8	153.2	162.7	170.4	178.1
Total cooling capacity	kBTU/h	97.6	128.3	158.0	182.6	235.5	266.9	290.1	319.8	343.0	373.0	396.6	419.5	471.3	497.6	522.9	555.3	581.6	607.9
Dimension (W*D*H)	mm	930*998*1975				1830*998*1975								2730*998*1975					
Weight	kg	282	324	385	406	523	566	597	615	630	656	680	697	788	810	835	866	897	923

CoolRow Series In-Row Air Conditioner for Data Center

Features

Large Touchscreen Display

- Standard configuration with a 7-inch touchscreen HD display

Efficient Fan System

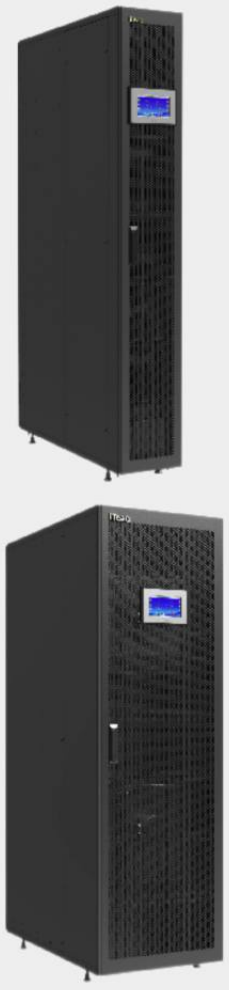
- Fans adopt a hot-swappable design, convenient maintenance
- Equipped with EC fans, air supply volume can be continuously adjusted according to the actual load on site.

Design of Operating at Optimal Efficiency

- Standard configuration with inverter compressors and EC fans, designed policy of prioritizing operation control in high-efficiency range, features high efficiency and energy-saving

Adaptability for Modular Data Center Solution

- Multiple dimension options are available to keep same as cabinets for convenient installation and unified appearance.
- Evaporator adopts two-stage design, features a two-stage condensate water collection system to avoid "water blowing".



12 kW to 60 kW

Specifications

CR***EA; CR***EW		012	025	035**-B	035	045	060
Indoor air inlet 37℃, DB 24% RH; Outdoor T 35℃; EC fan; R410A; Inverter scroll compressor							
Total cooling capacity	kW	12.5	25.0	35.0	40.0	48.0	60.0
Total cooling capacity	kBTU/h	42.7	85.3	119.5	136.5	163.8	204.8
Refrigerant ciucit	/	1	1	1	1	1	1
Dimension (W*D*H)	mm	300*1100*2000 / 300*1200*2000			600*1100*2000 / 600*1200*2000		
Weight	kg	190	195	235	290	290	300

CR***EC			025				040				060			
Test condition	Chilled water inlet T		7℃	10℃	12℃	15℃	7℃	10℃	12℃	15℃	7℃	10℃	12℃	15℃
	Chilled water outlet T		12℃	15℃	18℃	21℃	12℃	15℃	18℃	21℃	12℃	15℃	18℃	21℃
Air inlet 40℃ DB 24% RH	Total cooling capacity	kW	50.6	42.0	36.0	31.0	69.8	58.0	49.6	43.0	110.0	91.0	78.2	67.6
		kBTU/h	172.7	143.3	122.9	105.8	238.2	198.0	169.3	146.8	375.4	310.6	266.9	230.7
Air inlet 37℃ DB 24% RH	Total cooling capacity	kW	42.4	35.2	31.2	26.8	65.4	54.4	48.6	41.8	91.6	76.6	67.8	58.6
		kBTU/h	144.7	120.1	106.5	91.5	223.2	185.7	165.9	142.7	312.6	261.4	231.4	200.0
Air inlet 35℃ DB 26% RH	Total cooling capacity	kW	39.0	32.0	28.4	24.0	60.0	50.0	44.0	37.4	84.6	69.6	61.8	52.4
		kBTU/h	133.1	109.2	96.9	81.9	204.8	170.7	150.2	127.6	288.7	237.5	210.9	178.8
Air inlet 33℃ DB 30% RH	Total cooling capacity	kW	37.0	29.8	25.6	21.2	56.6	46.0	39.6	32.8	80.2	64.6	55.6	46.4
		kBTU/h	126.3	101.7	87.4	72.4	193.2	157.0	135.2	111.9	273.7	220.5	189.8	158.4
Dimension (W*D*H)		mm	300*1100*2000 / 300*1200*2000				600*1100*2000 / 600*1200*2000							
Weight		kg	150				240				270			

Application

- High-density data center, computer room
- Equipment room with heat load of single cabinet exceeds 5 kW
- Data center without raised floor and requires horizontal air supply

CoolSmart Series Air Conditioner for Small and Medium Data Centers

Features

- Adopts a design with high air volume, low enthalpy difference, and high sensible heat ratio. Compared with residential air conditioners, it has a higher energy efficiency and better cooling effects.
- Equipped with large-area evaporators and condensers, return air inlet area is increased by 15%, features high refrigeration efficiency and excellent energy efficiency
- Equipped with indoor EC fans, electronic expansion valves, and high-performance inverter compressors for precise adjustment, achieves more efficient and energy-saving under low heat load
- Adopts environmentally friendly refrigerant R410A, achieves efficient environmental protection
- Annual energy efficiency ratio (AEER) is 4.0 or higher
- Designed for whole year uninterrupted operation according to industrial-grade standards
- Strong environmental adaptability: operates normally in outdoor temperature from -15°C to +45°C. In cold regions, an optional low-temperature kit can be configured to achieve operation at low temperature to -40°C.
- Front maintenance design, small occupation equipped with quick connectors for fast indoor-outdoor unit connection and rapid deployment
- Equipped with a 7-inch touchscreen HD display, all operation information, settings, and fault messages are presented on the display. Easy maintenance and management

Cooling Capacity 5.5 kW to 22.5 kW

Application

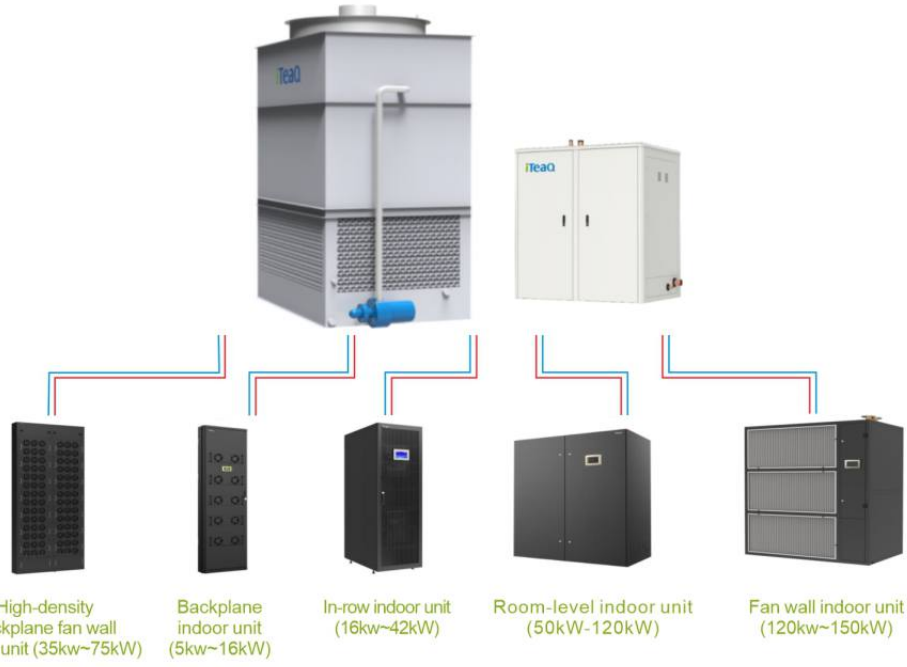
- Small and medium computer rooms
- Base stations
- Railway signal station
- Equipment room
- Battery room
- Power room
- Substations and other facilities with energy-saving and carbon reduction requirements
- Application scenarios with significant variations in heat load

Specifications

CS***TAC		005	008	013	017	022
Indoor air inlet 24℃, DB 50% RH; Outdoor T 35℃; EC fan; R410A; Inverter rotary compressor						
Total cooling capacity	kW	5.5	8.5	13.5	17.5	22.5
Total cooling capacity	kBTU/h	18.8	29.0	46.1	59.7	76.8
Main power input	/	220V / 50Hz ~	380V / 50Hz 3N~			
Dimension (W*D*H)	mm	600*520*1850			700*700*1900	
Weight	kg	110	110	125	145	145

iNew Innovative Energy-Saving Solution

TM Evaporative-cooled Maglev VRV Solution



Overview

TM evaporative-cooled maglev VRV solution is an innovative, efficient, and energy-saving precision air conditioner system, which is suitable for medium to large data centers, COLO data centers, and Internet companies with innovative energy-saving requirements and renovated data centers.

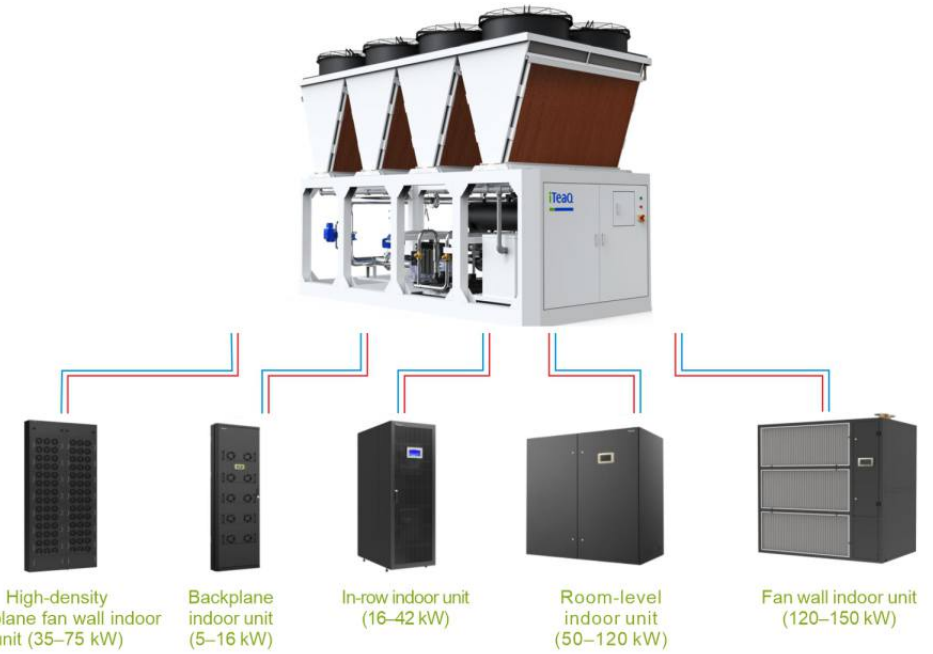
Features

- Outdoor unit adopts an evaporative condenser, with high heat dissipation efficiency
- Oil-free maglev compressor achieves ultra-high energy efficiency
- Compressor, refrigerant pump, fan, and other components are designed with variable frequency, enabling stepless speed regulation and comprehensive energy saving
- Equipped with intelligent control programs, system operates automatically with intelligent adjustments
- System offers a selection of cooling capacities from 240 kW to 500 kW and adopts full variable-frequency regulation technology. Cooling capacity can be flexibly adjusted to meet requirements of various application scenarios.
- Deployment as requirement, saving space
- Featuring a modular design with a reasonable granularity for the HVAC system, allowing flexible deployment
- Even in hot regions, excellent energy-saving performance is still achieved. For example, in the southern Chinese city of Shenzhen, Guangdong Province, multiple projects have measured that the Power Usage Efficiency (PUE) is no more than 1.25.
- Various indoor unit solution for different requirement, such as high-density fan wall, backplane in-row, room level and fan wall, etc.
- Application scenarios include super-long pipes with a total length of 120 m and 40 m elevation difference.
- Adopts environmentally friendly refrigerant R134a

Specifications

TM***FM			240	360	400	450	500
Indoor air inlet 37℃, air outlet 25℃; Outdoor WB T 31℃; EC fan; R134A; Inverter maglev compressor							
Total cooling capacity		kW	240.0	360.0	400.0	450.0	500.0
Total cooling capacity		kBTU/h	819.1	1228.7	1365.2	1535.9	1706.5
Indoor air inlet 35℃, air outlet 23℃; Outdoor WB T 31℃; EC fan; R134A; Inverter maglev compressor							
Total cooling capacity		kW	215.0	340.0	390.0	440.0	490.0
Total cooling capacity		kBTU/h	733.8	1160.4	1331.1	1501.7	1672.4
Indoor air inlet 32℃, air outlet 21℃; Outdoor WB T 31℃; EC fan; R134A; Inverter maglev compressor							
Total cooling capacity		kW	200.0	330.0	380.0	430.0	480.0
Total cooling capacity		kBTU/h	682.6	1126.3	1296.9	1467.6	1638.2
Compresser cabinet	Dimension (W*D*H)	mm	1700*1100*1750	1830*1400*2000			
	Weight	kg	900	1500	1600	1700	1700
Compresser cabinet	Dimension (W*D*H)	mm	3000*1900*4150	3000*2300*4450	3650*2300*4450	3800*2600*4450	
	Weight	t	2.8	5.6	5.7	6.7	6.7

TM Air-Cooled Maglev VRV Solution



Overview

TM air-cooled Maglev VRV solution is a kind of medium and large refrigerant pump VRV precision air conditioner system. It is applicable for medium and large data centers, Colo data centers, and data centers of Internet companies with innovative energy-saving requirements. By using high-efficiency oil-free inverter maglev compressors, variable-frequency refrigerant pumps for free-cooling, efficient heat exchangers, and high-performance fans, system makes full use of free-cooling, reduces energy consumption of data centers. It features high efficiency, energy saving, security, reliability, and strong adaptability.

Application

- Innovative data center
- Computer rooms and modular data centers
- Data centers for energy-saving renovation

Features

- Industry-leading oil-free inverter maglev compressors to achieve ultra-high energy efficiency
- Integrated inverter compressors, variable-frequency refrigerant pumps, EC fans, and other intelligent components
- Efficient air-cooled condenser for heat dissipation, with zero water consumption
- Integrated outdoor unit, covers dedicated cooling capacity segments, and provides flexible configuration
- High return air temperature design, free-cooling with large temperature difference between indoor and outdoor condition
- Multiple indoor units for different applications
- PUE in China northern region ≤1.2, PUE in China southern region ≤1.25 (wet film pre-cooling)
- Safe, energy-efficient, clean, space-saving, waterless/less water
- Dual power supply inputs, provides redundancy operating

Specifications

TM***FM			300	360	400	450	500
Indoor air inlet 39℃, air outlet 27℃; Outdoor WB T 31℃; EC fan; R134A; Inverter maglev compressor							
Total cooling capacity		kW	320.0	380.0	420.0	470.0	520.0
Total cooling capacity		kBTU/h	1092.2	1296.9	1433.5	1604.1	1774.8
Indoor air inlet 37℃, air outlet 25℃; Outdoor WB T 31℃; EC fan; R134A; Inverter maglev compressor							
Total cooling capacity		kW	300.0	360.0	400.0	450.0	500.0
Total cooling capacity		kBTU/h	1023.9	1228.7	1365.2	1535.9	1706.5
Indoor air inlet 35℃, air outlet 23℃; Outdoor WB T 31℃; EC fan; R134A; Inverter maglev compressor							
Total cooling capacity		kW	280.0	340.0	380.0	430.0	480.0
Total cooling capacity		kBTU/h	955.6	1160.4	1296.9	1467.6	1638.2
Indoor air inlet 32℃, air outlet 21℃; Outdoor WB T 31℃; EC fan; R134A; Inverter maglev compressor							
Total cooling capacity		kW	260.0	320.0	360.0	410.0	460.0
Total cooling capacity		kBTU/h	887.4	1092.2	1228.7	1399.3	1570.0
Condenser cabinet	Dimension (W*D*H)	mm	3800*2200*3000	4500*2200*3000		5850*2200*3000	
	Weight	t	3.5	4.6	5.2	5.7	6.8

CoolXtreme Series Backplane Air Conditioning Solution

Overview

CoolXtreme backplane air conditioner includes frame, evaporator, inlet and outlet air temperature and humidity sensors, and control system.

With high efficiency evaporator and fans, CoolXtreme backplane air conditioner features high efficiency, reliability, helps data centers to drop power consumption.

Application

- Innovative data center
- Computer rooms and modular data centers
- Data centers for energy-saving renovation

Features

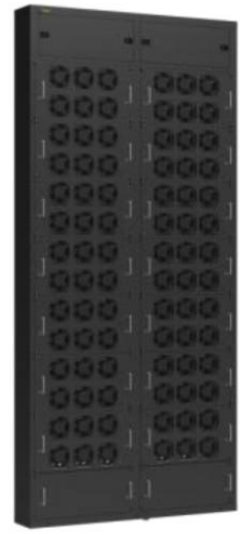
- Fan matrix design, achieves high efficiency, small volume, low failure rate, and enhanced fan reliability
- Horizontal air flow, cabinet can be installed without raised floor.
- Installed close to IT server to reduce heat exchange distance.
- Hot-plug maintenance of fan modules.
- Capable of performing energy-saving renovations for existing cabinets and matches all types of cabinets for compatible installation

Specifications

CX***		005	007	010	016
Indoor air inlet 39℃, air outlet 27℃					
Total cooling capacity	kW	5.1	7.0	10.2	16.1
Total cooling capacity	kBTU/h	17.4	23.9	34.8	54.9
Dimension (W*D*H)	mm	600*160*(2000/2200/2500)		600*160*(2200/2500)	
Weight	kg	68	68	68	88

CX***F		005	007	010	016
Chilled water inlet 15℃, outlet 21℃; Indoor air inlet 35℃					
Total cooling capacity	kW	5.7	7.8	10.6	15.0
Total cooling capacity	kBTU/h	19.5	26.6	36.2	51.2
Dimension (W*D*H)	mm	600*200*2200			
Weight	kg	16	16	19	19

CoolXtreme Series High-Density Backplane Fan Wall Air Conditioner Solution



Overview

CoolXtreme high-density backplane fan wall air conditioner adopts integrated (all-in-one) and modular design, which integrates fan module, heat exchange coil, electric control box, and water pipe box.

According to the specific customer needs, backplane fan wall can be combined with other equipment. It has a compact structure, flexible design, and aesthetic installation, and features prefabrication, high heat density, high energy efficiency, and easy maintenance.

Application

- Innovative data center
- Computer rooms and modular data centers
- Data centers for energy-saving renovation

Features

- Flexible power distribution and heat dissipation for 10 to 30 kW per cabinet in data center
- Intelligent fan speed regulation to meet local hot-spot demands
- Hot-plug maintenance of fan modules
- One-to-one accurate control between air conditioners and cabinets resolves local hot-spot issues.
- The airflow is redundant for whole aisle cabinets. Pipeline 1+1 redundancy.
- Centralized monitoring and control of multiple air conditioner units. Local air conditioner achieves PID automatic control when main control unit fails.
- Teamwork mode for multiple air conditioners in on aisle. Automatic shift online-standby status. Standby unit starts automatically when online unit fails.

Specifications

CX***		040	060	090
Indoor air inlet 37℃, air outlet 25℃; EC fan; R134A				
Total cooling capacity	kW	42.0	60.0	85.0
Total cooling capacity	kBTU/h	143.3	204.8	290.1
Dimension (W*D*H)	mm	600*450*2500	1200*450*2500	1200*450*2500
Weight	kg	160	200	240

CBF Integrated Refrigerant Pump Free-Cooling Air Conditioner

Overview

CBF integrated refrigerant pump free-cooling air conditioner adopts modular integrated design, is suitable for COLO data centers and medium and large data centers of Internet companies with innovative energy-saving and water-saving requirements, fully utilizes outdoor natural cold sources, adopts efficient refrigerant pump-powered heat pipe indirect natural cooling combined with the auxiliary refrigeration technology of inverter compressor. CBF achieves low PUE and zero WUE value, energy saving, no water consumption, small occupation, and cleanliness, which provides more options for medium and large data centers.

Features

- Fully prefabricated integrated design
- No 'air-to-air' heat exchanger, low air resistance, and high energy efficiency
- No chiller plant, no cooling tower, and no long-distance pipelines
- No complex long-distance pipe construction, quick maintenance
- Suitable for various applications, including side installation and rooftop installation
- Built-in integrated refrigerant pump and parallel compressor to serve as dual cooling sources
- Water-free operation, free cooling
- Intelligent mode switch with "dual engines and three modes" according to environment condition
- Eco-friendly refrigerant R410A
- Integrated variable frequency conversion technology, strong power adaptability

Specifications

CBF***		200	260
Indoor air inlet 36℃, air outlet 23℃; Outdoor T 35℃; EC fan; R410A; Inverter scroll compressor			
Total cooling capacity	kW	200.0	260.0
Total cooling capacity	kBTU/h	682.6	887.4
Dimension (W*D*H)	mm	6500*3000*4000	
Weight	t	6.0	7.0

CBD Indirect Evaporative Free-Cooling Solution

Overview

CBD indirect evaporative free-cooling solution is an integrated air conditioner with compressor. CBD is a indirect evaporative precise air conditioner energy-saving system in data centers, which is suitable for rapidly deployed innovative energy-saving data centers and modular data center clusters.

CBD integrates evaporator and condenser, eliminates cooling water station, cooling tower, and complex refrigeration or cooling water circulation pipeline. CBD has high level of integration, makes it easy for maintenance and management. In addition, CBD adopts optimized system matching and intelligent monitoring system, enables excellent human-machine information interaction to provide more intelligent, clean, and energy-efficient manner, and promotes environmental protection.

Features

- Integrated evaporator and condenser, delivered as a whole system with no more pipeline construction
- No need to install indoor units to save indoor space
- No cooling towers, water chillers, complex pipeline networks, and other auxiliary facilities are required, smaller footprint
- Industrial and widely applied high-efficiency heat exchanger, maximizes use of natural cold sources and dry air energy
- Equipped with a high-quality seamless purple copper tube condenser with aluminum fin, prevents blockage and ensures high heat exchange efficiency
- Famous brand inverter compressors and fans provide comprehensive energy saving
- Installation on ground or roof-top. Air supply from side or from top.
- Features modular design with a reasonable modular capacity, allows flexible deployment
- Staged deployment for more cost-effective
- Compared to traditional chilled water systems, CBD has simpler piping layout and occupies smaller footprint
- Full return air treatment to avoid the mixture of outdoor air

Specifications

Side installation :CBD***		200	260	300
Indoor air inlet 38℃, air outlet 25℃; EC fan; R410A; Inverter scroll compressor				
Total cooling capacity	kW	200.0	260.0	300.0
Total cooling capacity	kBTU/h	682.6	887.4	1023.9
Dimension (W*D*H)	mm	6500*3000*3760	6700*3500*3760	
Weight	t	9.5	10.5	10.5

Roof installation :CBD***		200	240	260
Indoor air inlet 38℃, air outlet 25℃; EC fan; R410A; Inverter scroll compressor				
Total cooling capacity	kW	200.00	240.0	260.0
Total cooling capacity	kBTU/h	682.6	819.1	887.4
Dimension (W*D*H)	mm	5000*3000*4824		5200*3500*4824
Weight	t	8.5	8.5	9.5

VFV Air-Cooled Refrigerant Pump Air Conditioner Solution

Overview

VFV air-cooled refrigerant pump air conditioner adopts a distributed multi-coupled system design, which is mainly suitable for innovative and energy-efficient small to medium-sized computer rooms, high-density data centers, energy-saving renovated computer rooms, and scenarios where the water resource is scarce with water-saving requirements.

VFV is composed of air-cooled condensers, hermetic scroll compressors, refrigerant pumps. Various indoor unit terminals such as backplane air conditioners, in-row air conditioners, and room air conditioners can be selected according to different applications. VFV makes full use of natural cooling sources to ensure safety, energy efficiency, water-free, space saving, and cleanliness.

Features

- Configuration with backplane, in-row air conditioner, room-level air conditioner, and various other indoor units
- Flexible control on indoor units to improve efficiency
- Indoor unit close to heat load, provides direct cooling
- 1+1 pipelines redundancy
- Oil-free in indoor unit
- Flexible pipeline layout for engineering design
- Reserved interface for connection
- Adopts a pure air-cooled heat exchange design with no water consumption
- Reserved interface for connection
- Provides the best configuration solution based on application scenarios, optimizes energy consumption
- Precise air supply from indoor unit reduces refrigeration loss and fan power consumption
- High return air temperature design in indoor unit, free-cooling with a large temperature difference between indoor and outdoor environment condition to enhance energy efficiency
- Modular design with a reasonable granularity for the HVAC system. Flexible deployment and more reasonable investment
- Compared to chiller systems, smaller occupation and supports a higher space utilization
- Application scenarios include super-long interconnected pipes with total pipeline length of 120 m and elevation difference between +40 m and –25 m
- Environmentally friendly refrigerant R410A

Specifications

VFV***DA		050	100	140	200
Indoor air inlet 32℃, air outlet 24℃; Outdoor T 35℃; EC fan; R410A; Inverter scroll compressor					
Total cooling capacity	kW	52.0	102.0	140.0	204.0
Total cooling capacity	kBTU/h	177.5	348.1	477.8	696.3
Dimension (W*D*H)	mm	1800*1300*2650	2550*1300*2650	2550*2600*2650	
Weight	t	650	1150	2000	2150

CoolMaster Variable-Frequency Refrigerant Pump Free-Cooling Solution



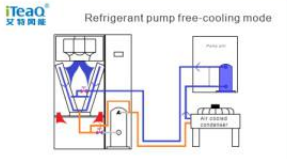
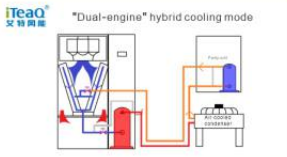
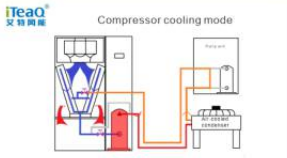

Overview

CoolMaster variable-frequency refrigerant pump free-cooling solution adopts "dual-engine triple-mode" intelligent technology, makes full use of outdoor natural cooling sources to extend free-cooling time. Overall energy efficiency ratio of data center is significantly improved. Full variable-frequency technology supports stepless adjustment of cooling capacity, achieves more precise and energy-efficient temperature control, suitable for medium to large data centers, computer rooms, industrial control rooms, power distribution rooms, and battery rooms, etc.

Features

- New energy-saving design, offers client higher annual energy efficiency ratio
- Inverter compressor + refrigerant pump free-cooling, adjusting cooling capacity output smoothly
- Optional evaporative-cooled kit, multiple energy-saving features, achieving ultra-high energy efficiency ratio

Modular multi-unit assembly, multiple configuration, and more energy-efficient solution design

	Refrigerant pump free-cooling mode (Compressor off, pump on) During outdoor low-temperature season, air conditioner intelligently switches to the refrigerant pump free-cooling mode based on the outdoor ambient temperature and indoor load requirements. In this mode, low-power refrigerant pump replaces compressor, makes full use of the outdoor cooling source and improves energy efficiency ratio greatly.
	"Dual-engine" hybrid mode by compressor and pump (Compressor on, pump on) During transitional seasons, air conditioner operates in a "dual-engine" hybrid cooling mode. With assistance of pump for compressor system, condensation temperature is reduced, saves compressor power consumption, and enhances overall energy efficiency ratio of entire air conditioner.
	Compressor mode (Compressor on, pump off) During high-temperature season outdoors, air conditioner operates in the compressor mode, provides cooling capacity for the indoor heat load.

Specifications

CM***U/DF			025	030	035	040	045	050	042	052	060	070	080	090	100	110	120
Indoor air inlet 24℃, DB 50% RH; Outdoor T 35℃; EC fan; R410A; Standard / Inverter srcoll compressor																	
Total cooling capacity		kW	25.1	30.1	35.6	40.2	45.8	50.1	40.5	50.3	61.1	70.2	80.1	90.8	100.2	110.9	120.5
Total cooling capacity		kBTU/h	85.7	102.7	121.5	137.2	156.3	171.0	138.2	171.7	208.5	239.6	273.4	309.9	342.0	378.5	411.3
Refrigerant ciucit		/	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2
Indoor unit	Dimension (W*D*H)	mm	855*870*1975		930*998*1975				1380*998*1975		1830*998*1975					2280*998*1975	
	Weight	kg	290	290	297	305	395	415	424	490	610	730	740	780	780	975	1040
"Single Pump unit"	Dimension (W*D*H)	mm	530*280*950														
	Weight	kg	65														

CoolRow Variable-Frequency Refrigerant Pump Free-Cooling Solution

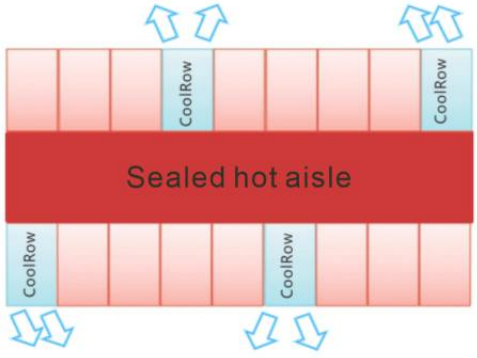
Overview

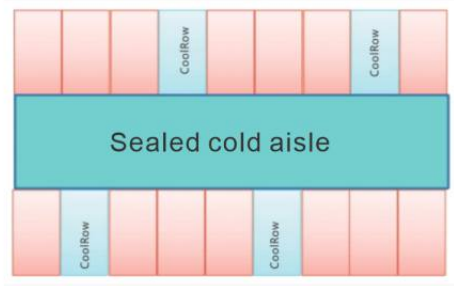
CoolRow variable-frequency refrigerant pump free-cooling in-row air conditioner solution is specifically designed for high return air temperatures, making it more suitable for next-generation servers and small to medium-sized data centers with high heat density sealing space. CoolRow features inverter hermetic scroll compressor, equipped with an intelligent control system for smooth adjustment of output cooling capacity, provides more precise and stable temperature control. CoolRow ensures more comfortable, secure, and energy-efficient environment for IT equipment.

Features

- Compressor, indoor and outdoor unit fans, and refrigerant pump adopt variable-frequency design
- Cooling capacity adjustment range: 20% to 100%
- Powerful low-load dehumidification function
- Low-noise mode
- Multiple dimensions are available with standardized delivery for all scenarios
- Equipped with a full range of 12 kW to 60 kW variable-frequency refrigerant pumps
- High cooling capacity density: cooling capacity reaches 35 kW at half-rack width (300 mm), and 60 kW at full-rack width (600 mm).

Application





Specifications

CR***EF			012	025	035**-B	035	045	060
Indoor air inlet 37℃, DB 24% RH; Outdoor T 35℃; EC fan; R410A; Inverter scroll compressor								
Total cooling capacity		kW	12.5	25.0	35.0	40.0	48.0	60.0
Total cooling capacity		kBTU/h	42.7	85.3	119.5	136.5	163.8	204.8
Refrigerant ciucit		/	1	1	1	1	1	1
Indoor unit	Dimension (W*D*H)	mm	300*1100*2000 / 300*1200*2000			600*1100*2000 / 600*1200*2000		
	Weight	kg	190	195	235	290	290	300
"Single Pump unit"	Dimension (W*D*H)	mm	530*280*950					
	Weight	kg	65					

CoolSmart Variable-Frequency Refrigerant Pump Free-Cooling Air Conditioner

Application

Places with energy-saving and carbon reduction requirements, heat load variations, and the need for low-temperature components in specifific regions, such as small and medium-sized computer rooms, outdoor communication base stations, railway signal stations, equipment rooms, battery rooms, power rooms, substations.

Features

Efficient Energy Saving

- "Dual-Engine Triple-Mode": compressor mode/hybrid mode/pump free-cooling mode, intelligently and dynamically switches based on outdoor climate conditions and indoor heat load requirements
- Environmentally friendly refrigerant R410A

Intelligent Management

- 7-inch color large screen, equipped with intelligent display of the operational status and smart fault diagnosis functions, such as low refrigerant warning
- Intelligent display of refrigeration factors, carbon emissions, provides information of equipment operational energy consumption and carbon reduction data, facilitates the realization of green data centers and reduces carbon emission

High Integration

- Air-cooled condenser and refrigerant pump free-cooling kit are perfectly integrated in a highly compact design to simplify installation
- Accessory of pipeline connectors for rapid connection and deployment of indoor and outdoor units

High Adaptability

- Voltage adaptation range is wide range of 380 V – 15% to 380 V + 10%. 220 V – 15% to 220 V + 10%.
- Adaptable to outdoor temperature range from –40°C to 45°C without additional configuration of low-temperature kit and long distance kit.

High Reliability

- Designed for a 10-year lifespan, main components are from leading brands in the industry

Specifications

CS***TFF		005	008	013	017	022
Indoor air inlet 24℃, DB 50% RH; Outdoor T 35℃; EC fan; R410A; Inverter rotary compressor						
Total cooling capacity	kW	5.5	8.5	13.5	17.5	22.5
Total cooling capacity	kBTU/h	18.8	29.0	46.1	59.7	76.8
Main power input	/	220V / 50Hz ~	380V / 50Hz 3N~			
Dimension (W*D*H)	mm	600*520*1850			700*700*1900	
Weight	kg	110	110	125	145	145

Modular Array Condenser

Modular array condenser features energy-saving and space-saving, which can effectively solve issue that ordinary outdoor units of the precision air conditioner require large installation space.

Features

- Integrated refrigerant pump and integrated wet film for enhanced heat dissipation
- Extends free-cooling time to improve energy efficiency
- Solves the issue of the heat island effect in centralized condenser clusters
- Modular design, flexible combination, easy installation and application
- Water circulation for reuse, saves water resources
- Modular array condenser reduces the occupation of ordinary outdoor condenser unit by more than 50%.
- Condenser fan adopts stepless variable-frequency speed regulation, which can adjust the outdoor fan speed in real time according to the indoor heat load, reduces power consumption on the condenser side and achieves efficient energy savings

Specifications

ACS**-MA, ACS**-MACF		42	50	62	79	86	96	125
Fan quantity	/	1	1	1	1	1	1	2
Dimension (W*D*H)	mm	1080*1080*1800				1080*1080*1900		1080*2160*1800
Weight (ACS**-MA)	kg	140	145	155	170	185	190	310
Weight (ACS**-MACF)	kg	210	215	225	240	255	260	450

CoolMaster Chilled Water Fan Wall

Overview

CoolMaster Chilled Water Fan Wall is an intelligent cooling solution for large and medium computer rooms, Colocations and other IDCs. It is part of the chilled-water cooling system working with chillers, water pumps, pipes, etc.

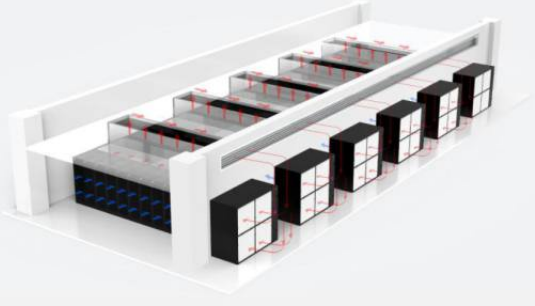
Features

Efficient and reliable

- Built-in ATS, With N+1 redundant power supply.
- EPO button optional.
- Horizontal air flow without raised floor.
- World-class EC fans high efficiency and low noise.
- Continuously variable regulation and even distribution of EC fans, hot-plug maintenance.

lIntelligent control

- 7-inch colorful touch display, massive status information
- Multiple protection measures, such as power self-recovery after power restoration, power failure, phase malfunction, over voltage, etc.
- Real-time dynamic information includes operation status, dates supply&return airflow temperature alarms inlet and outlet water temperatures, etc.
- Modbus RTU / IP communication interface.



Application

- Innovative data centers.
- A Computer room or a modular data center.
- Green and energy-saving Data center.

Specification

CM***W		CM260W
Chilled water inlet 15℃, outlet 21℃; Indoor air inlet 33℃		
Total cooling capacity	kW	260.0
Total cooling capacity	kBTU/h	887.4
Dimension (W*D*H)	mm	2300*1600*4000
Weight	kg	1550

iPower Energy Management Solution

UR High-Frequency Rack-mounted UPS

3–40 kVA

Overview

UR high-frequency rack-mounted UPS adopts online double conversion technology. It is the ideal power supply solution in the small capacity scenarios. It can resolve issues of all types of grids. UR UPS covers a capacity range of 3–40 kVA, with rack/tower compatible installation, making it suitable for a wide range of small to medium-sized data centers.

Application

- Small data centers and equipment rooms for small- and medium-sized enterprises, branches of enterprises, and bank branches
- AC power supply for equipment related to network and communication systems
- AC power supply for automatic control systems, precision instruments, and other devices

Features

Intelligent Management

- Advanced intelligent battery management and automatic battery maintenance capability ensure high service life of the battery
- LCD display, real-time monitoring
- Optional communication modes such as SNMP and Modbus

High Reliability

- Full digital DSP control, significantly enhances system reliability
- Ultra-wide input voltage range of 110–300 V for 3–20 kVA UPS; the range extends to 207–476 V for 30–40 kVA UPS, which effectively reduces the frequency of battery discharge, prolongs battery life.

Convenience and Flexibility

- Supports different installation methods, such as rack/tower-mounted compatible installation with rotatable display
- ECO mode to achieve high efficiency and energy saving
- 10-20 kVA UPS: compatibility of three phase input & single phase output mode and three phase input & three phase output mode

Specifications

Model	Capacity (kVA)	Input / Output (Phases)	Dimension (W*D*H) (mm)	Weight (kg)
UR-0030SCL	3	1P / 1P	438*410*88 (2U)	14
UR-0060SCL	6	1P / 1P	438*600*88 (2U)	17
UR-0100SCL	10	1P / 1P	438*600*88 (2U)	20
UR-0100NCL	10	3P / 1P	438*668*133 (3U)	22
UR-0100DDL	10	3P / 3P	438*680*133 (3U)	34
UR-0200DDL	20	3P / 3P	438*680*133 (3U)	35
UR-0300TFL	30	3P / 3P	484*757*130 (3U)	45
UR-0400TFL	40	3P / 3P	484*757*130 (3U)	52

UE High-Frequency Tower-mounted UPS

1–20 kVA

Overview

UE 1–20 kVA UPS is based on online dual-conversion technology, integrates functions to prevent IT server from main power impact, such as AC voltage regulation, backup power supply, and absorption of peak surges, etc.

Application

- Small equipment rooms for enterprises, branches of enterprises, such as bank branches
- Network and communication systems
- Automatic control systems, precision instruments, and other devices
- Large supermarkets, homes, offices, etc.

Features

High Reliability

- Ultra-wide voltage input range effectively reduces times of battery discharge, which extends the battery life
- Online dual-conversion technology provides stable and reliable power supply

Intelligent Management

- Optional SNMP, Modbus, dry contact, USB communication mode
- Supports delayed shutdown, provides safe shutdown of computer applications and its operating system

Convenience

- LCD display, real-time monitoring

Specifications

Model	Capacity (kVA)	Input / Output (Phases)	Dimension (W*D*H) (mm)	Weight (kg)
UE-0010SCL	1	1P / 1P	282*145*220	4.1
UE-0020SCL	2	1P / 1P	397*145*220	6.8
UE-0030SCL	3	1P / 1P	397*145*220	7.4
UE-0060SCL	6	1P / 1P	369*190*318	12.0
UE-0100SCL	10	1P / 1P	442*190*318	16.0
UE-0100NCL	10	3P / 1P	442*190*318	15.0
UE-0150NCL	15	3P / 1P	442*190*318	16.0
UE-0200NCL	20	3P / 1P	575*190*318	22.0

UE High-Frequency Tower-mounted UPS

20–160 kVA

Overview

UE series (20–160 kVA), based on the online double-conversion technology, eliminates various power grid issues, provides customers with stable and pure power protection. Innovative design enables this series of UPS to maintain high performance while ensuring high reliability. High input power factor and low input current harmonics guarantee the product's environmental friendliness, while high overall efficiency ensures energy efficiency.

Application

- Enterprises' small- and medium-sized data centers
- Telecommunications and network switching equipment rooms
- Financial branches, traffic dispatching centers, security systems, etc.

Features

Green and Efficient

- Input power factor is up to 0.99. Input harmonic current less than 3%. Overall efficiency is up to 96%. Products are environmentally friendly, efficient, and energy-saving.

High Reliability

- Wide input voltage and frequency range, adaptable to unstable power grid environments, and suitable for connection to various diesel generators, fully digital DSP control. All fans in the system are designed with redundancy, which significantly enhances system reliability

High Availability

- Intelligent system self-diagnostic solution, massive fault records, and large-capacity historical record storage
- Equipped with LCD display and control keyboard for convenient operation
- Intelligent battery management solution to extend battery lifespan

Specifications

Model	Capacity (kVA)	Input / Output (Phases)	Dimension (W*D*H) (mm)	Weight (kg)
UE-0200TAL-1	20	3P / 3P	250*705*533	42
UE-0300TAL-1	30	3P / 3P	250*705*533	45
UE-0400TAL-1	40	3P / 3P	250*868*865	66
UE-0600TAL-1	60	3P / 3P	250*868*865	76
UE-0800TAL-1	80	3P / 3P	439*866*1206	166
UE-1000TAL-1	100	3P / 3P	439*866*1206	178
UE-1200TAL-1	120	3P / 3P	439*866*1206	186
UE-1600TAL-1	160	3P / 3P	439*866*1206	198

UE High-Frequency Tower-mounted UPS

200–800 kVA

Overview

UE series (200–800 kVA) UPS adopts the online dual-conversion technology to provide AC power protection with rated voltage of 380/400/415 VAC.UE series UPS features high efficiency, high power density, and other advantages. UE UPS utilizes fully digital control to ensure excellent output quality under various operating conditions, provides reliable power protection for important loads in medium- to large-sized data centers.

Application

- Large data center
- Disaster recovery backup center
- Enterprise HQ data center
- IDC/ EDC data center

Features

High Reliability

- 138–485 VAC ultra-wide input voltage range, 40–70 Hz ultra-wide input frequency range, ensures stable power supply in rough power grid environments

High Efficiency

- Efficiency reaches 96%, effectively reduces customer operating costs.

High Availability

- Single cabinet capacity reaches 300 kVA, saves more than 50% of space compared to traditional UPS.
- Output power factor is 1. No derating for capacitive and inductive loads with power factor greater than 0.5.
- Quantity of battery cells is adjustable, allows for precise configuration of batteries, avoids to replace entire set of batteries in case of a single-cell battery failure, and saves customer maintenance costs.

Specifications

Model	Capacity (kVA)	Input / Output (Phases)	Dimension (W*D*H) (mm)	Weight (kg)
UE-2000TAL-1	200	3P / 3P	600*850*2000	360
UE-3000TAL-1	300	3P / 3P	600*850*2000	450
UE-4000TAL-1	400	3P / 3P	1200*850*2000	860
UE-5000TAL-1	500	3P / 3P	1200*850*2000	970
UE-6000TAL-1	600	3P / 3P	1200*850*2000	1040
UE-8000TAL-1	800	3P / 3P	2400*850*2000	1570

UM High-Frequency Modular UPS

15/20/25/30/50/100 kVA

Overview

UM modular UPS is a new type of modular UPS based on the online dual-conversion technology, with fully modular design. UM can be smoothly expanded to maximum capacity of 800 kVA and characterized with simple and easy maintenance, significantly improves the low availability issue of traditional UPS systems. UM UPS's outstanding availability, efficiency, and intelligent design perfectly match customers' requirements for efficient operation and high flexibility of modern data centers.

Application

- Internet data center
- Large cloud data center
- HQ data centers of enterprises and institutions related to finance, communication, transportation, energy, power, and government
- Disaster recovery backup center

Features

Modular Design

- With full modular design, the power module, bypass module, and control module are all hot swappable, support on-demand capacity expansion, and easy maintenance.

High Reliability

- Redundant design of control units and auxiliary power, with no single point of failure. 138–485 VAC ultra-wide input voltage range, with no derating from 305–485VAC, linear derating to 40% from 138–305VAC, effectively reduces battery discharge cycles and extends battery life while ensuring uninterrupted power supply to servers.

High Efficiency

- Efficient operation under low load: In online mode, efficiency reaches 96% at 30% load ratio and 95% at 20% load ratio.
- With high efficiency at low loads, power modules intelligently switches online and sleep mode under extremely low load conditions, ensures redundancy while further enhances the UPS efficiency.

High Availability

- High power density, with a single container capacity of up to 300 kVA for a 50 kVA module and 600 kVA for a 100 kVA module.
- Output power factor is 1. No derating for capacitive and inductive loads with input power factor more than 0.5.
- Quantity of battery cells is adjustable, allows for flexible configurations, avoids to replace the entire set of batteries in case of a single-cell battery failure, and saves customer maintenance costs.
- Supports on-demand and smooth expansion, where a 50 kVA module can be expanded to 800 kVA on a single UPS cabinet, effectively reduces initial investment costs.

Specifications

Model	Capacity (kVA)	Module quantity	Dimension (W*D*H) (mm)	Weight (kg)
UM-0900TEL-FS/15	15	1 (minimun)	485*751*1033 (22U)	100
	90	6 (maximun)		175

Model	Capacity (kVA)	Module quantity	Dimension (W*D*H) (mm)	Weight (kg)
UM-1200TFL-FF/2	20	1 (minimun)	600*850*1350	176
	120	6 (maximun)		281

Model	Capacity (kVA)	Module quantity	Dimension (W*D*H) (mm)	Weight (kg)
UM-1250TFL-FF	25	1 (minimun)	600*850*2000	211
	150	6 (maximun)		316

Model	Capacity (kVA)	Module quantity	Dimension (W*D*H) (mm)	Weight (kg)
UM-1800TFL-FS/3	30	1 (minimun)	600*850*1550	191
	180	6 (maximun)		296

Model	Capacity (kVA)	Module quantity	Dimension (W*D*H) (mm)	Weight (kg)
UM-2000TAL-FS/5-1	50	1 (minimun)	600*850*2000	262
	200	4 (maximun)		358
UM-3000TAL-FS/5-1	50	1 (minimun)		292
	300	6 (maximun)		452
UM-4000TAL-FF/5-1	50	1 (minimun)	1200*850*2000	632
	400	8 (maximun)		856
UM-5000TAL-FF/5-1	50	1 (minimun)		682
	500	10 (maximun)		970
UM-6000TAL-FF/5-1	50	1 (minimun)		752
	600	12 (maximun)		1104
UM-8000TAL-FF/5-1	50	1 (minimun)	2400*850*2000	1092
	800	16 (maximun)		1572

Model	Capacity (kVA)	Module quantity	Dimension (W*D*H) (mm)	Weight (kg)
UM-6000TFL-FF/100	100	1 (minimun)	800*1000*2000	390
	600	6 (maximun)		640

ES Power Block – ESS

Overview

ES power block ESS is a solution which is based on online dual-conversion technology of modular UPS and integrates precision power distribution systems of data center. While ensuring high-quality uninterrupted power supply to terminal loads of data center, ESS also provides power distribution and management. With fully modular design, ESS supports smooth expansion from 30–120 kVA or 25–125 kVA, allows customers to choose from various configuration options and architectures as required. ESS features high reliability, high efficiency, super intelligence, and high flexibility, provides ideal power protection to various types of power supply scenarios for data centers.

Application

- Enterprise data centers
- Data centers of telecommunication operators
- Small to medium-sized data centers, such as data centers for financial branch offices and traffic control centers

Features

High Integration

- Integration of the UPS input and output, UPS system, IT PDU, and air conditioner PDU into a single unit to save space

High Reliability

- Ultra-wide voltage input range (138 to 485 V) and input frequency range (40 to 70 Hz) to adapt to rough power grid environment

Modular Design

- Hot-swappable power modules, allows for on-demand expansion and easy maintenance

High Availability

- Flexible and easy-to-use configuration with a 7-inch color touchscreen display for convenient operation, and adjustable quantity of battery cells

Specifications

Model	Main input (A	Capacity (kVA)	Module quantity	Dimension (W*D*H) (mm)	Weight (kg)
UM-0900TFL-S UM-0900TFL-D	250	30	2	600*1100*2000 600*1200*2000	431
		60	4		452
		90	6		473
UM-1200TFL-S UM-1200TFL-D	400	30	1		441
		60	2		462
		90	3		483
		120	4		504
UM-1250TFL-S UM-1250TFL-D	400	25	1		451
		50	2		472
		75	3		493
		100	4		514
		125	5		535

ES Power Block – ESM

Overview

ES power block ESM is a secure, reliable, and high-density integrated power supply and distribution solution for data centers. It is also eco-friendly and highly intelligent. Withmodular design, ESM saves the floor space and reduces the deployment time. With intelligent monitoring, ESM deeply processes critical data, provides warning diagnostics, eliminates safety risks, and reduces energy consumption and PUE.

Application

- Internet data center
- Large cloud data center
- HQ data centers of enterprises and institutions related to finance, communication, transportation, energy, power, and government
- Disaster recovery backup center

Features

- Efficient: System efficiency is improved through internal all-copper busbar connections, minimized cable connections, and utilization of the 50 kVA modular UPS
- Easy: Easy installation with uniform design style. No cable connections
- Standard: Standardized design ensures high compatibility, quality control, and reliability
- Smart: Monitoring of the entire power supply and distribution system provides clear system parameters and status
- Integration of UPS and PDU reduces installation time by 50%
- Space-saving design effectively reduces the occupation of power distribution room
- Centralized intelligent monitoring of power distribution branch circuits to enhance information intelligence

IPD Low-Voltage Power Distribution Cabinet

Overview

IPD series low-voltage PDC provides maximum 6300 A low-voltage power distribution solutions for data center. IPD can be used for feeders, busbars, lighting, and power load control. In addition, IPD offers flexible options such as fixed, drawer-type, and fixed compartmentalized solutions based on customer requirements. Based on a deep understanding of customer needs in power distribution applications, IPD stands out with its innovative technological features, standardized and modular functional unit design, and digitized, networked communication and monitoring capabilities. IPD provides customized power distribution solutions and reliable power assurance for critical applications, makes it suitable for a wide range of industries and critical power supply and distribution locations.

Application

- Low-voltage power distribution rooms for various types of data centers
- Low-voltage power distribution for large buildings
- Low-voltage equipment power distribution for enterprises
- Power distribution for equipment such as UPS and air conditioners

Features

Security

- Provides reliable isolation to offer maintenance personnel more safety assurance

Reliability

- System-level reliability design of power supply and distribution system, offers customized continuous power supply and online expansion solutions to ensure the continuous operation of critical loads

Compactness

- Customized reasonable layout plans based on on-site conditions to save space and achieve higher power density

Flexibility

- Adopts modularized structure and standardized design, configuration of flexible busbar, cabinet combination, and cable inlet and outlet schemes to offer customer customizable solutions

Digitization

- Provides intelligent monitoring and achieves comprehensive power distribution system management through smart communication network.

IPDM Intelligent Precision Cabinet

Overview

Next generation of data centers has increasingly stringent requirements for reliability and manageability of power supply. IT users need to implement more reliable, flexible, and precise power distribution management for power supply and distribution system of information equipment, as well as more accurate cost calculations. IPDM intelligent precision cabinet perfectly meets the requirements of customers through thoughtful design, meticulous layout, and flexible configuration options.

Application

- Equipment rooms of IDC and EDC data centers
- Equipment room of the power system
- Data center equipment rooms of telecom operators
- Equipment rooms for institutions such as transportation, energy, finance, and government
- Equipment rooms for various types of enterprise data centers

Features

Flexible Power Distribution System

- IPDM intelligent precision cabinet is composed of the power distribution system, lightning arrester, computer-grade grounding compartment, and power monitoring system. IPDM provides reliable power distribution control and management for IT loads and, based on customer requirements, provides flexible power distribution through online hot-swappable switches.

Security Management

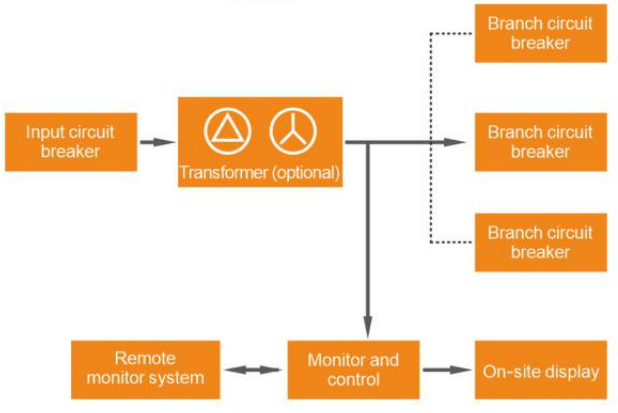
- Advanced power management features integration of power distribution system with the equipment room monitoring system, provides monitoring of all loops, including voltage, current, switch status, and operational load rate of each output branch circuit breaker. IPDM allows users to have real-time operational status of the power distribution system in the equipment room, enabling them to promptly and effectively prevent or detect potential safety hazards.

OPEX Management

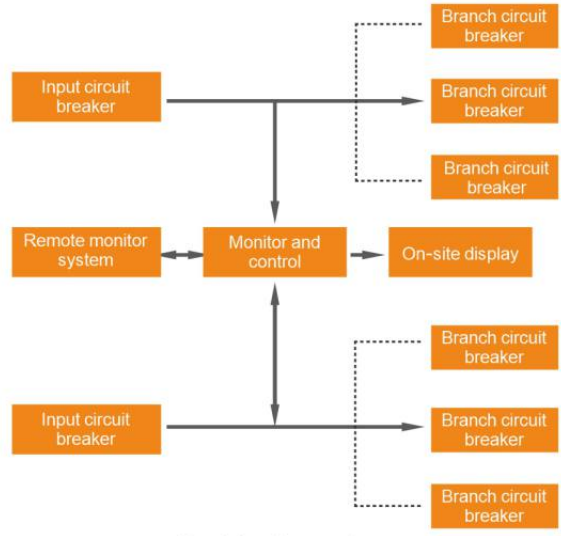
- Nowadays, IT operators are increasingly focusing on the OPEX management of data centers. IPDM intelligent precision cabinets monitor the operational costs of each server rack in real time, measure and calculate the power consumption of each server rack and circuit breaker.

Specifications

Power: 10–250 kVA
Input: 380 V/50 Hz
Output: 380 V/50 Hz
Grounding: Isolated grounding
Output power distribution: Configure as needed for 20-120 loops, with flexible configuration for single busbar or double busbars



Single-busbar system



Dual-busbar system

iPower-line Intelligent Busbar

Overview

iPower-line intelligent busbar is a kind of innovated terminal power supply system for data centers. iPower-line utilizes flexible and easily movable modules for fast expansion or modification of power distribution without power cutoff, ensures continuous operation and effectively safeguarding business continuity.

iPower-line offers various plug-in distribution boxes that can be inserted, rotated, and locked by using simple and convenient "plug-and-play" connection method at any position on the busbar, significantly reduces maintenance and expansion costs.

Application

- Equipment rooms of IDC and EDC data centers
- Equipment room of the power system
- Data center equipment rooms of telecom operators
- Equipment rooms for institutions such as transportation, energy, finance, and government
- Equipment rooms for various types of enterprise data centers

Features

Fast Installation

- Directly assembled, without cabling on site.

Flexible Expansion Capability

- Full-position installation, with the junction box can be installed at any position on busbar (except connection point); maintenance-free, saving operational costs; allows for easy conversion between single-phase and three-phase as well as expansion at any time.

Security and Reliability

- Busbar conductor adopts high-quality TU1 copper busbar with a tin-plated surface, enhances the safety and reliability of connection points.

Space Saving

- Installed on the top, on space occupation on server rack, increases the effective space utilization within data center.

Intelligent Monitoring

- Intelligent monitoring system collects data on voltage, current, harmonics, power consumption, switch quantity, and other parameters for each loop at the terminal of the data center so that it can provide real-time warnings.

iBlock Modular Data Center Solution

BR Cabinet Modular Data Center Solution

Overview

BR cabinet modular data center incorporates concept of overall data center construction at the cabinet level. BR integrates all components into a modular unit, allows for factory pre-installation. BR provides customers' IT equipment with reliable and secure operating environment. In the construction of small data centers, BR is characterized with integration, rapid deployment, minimal engineering work, intelligent maintenance, and cost saving. Various overall BR solutions, including BR power cabinet, BR-IT cabinet, BR all-in-on cabinet, designed to meet requirements in different application scenarios.

BR Cabinet Modular Data Center Solution Collection

BR Power Cabinet Modular Data Center Solution

BR All-in-One Cabinet Modular Data Center Solution

BR Power Cabinet Modular Data Center Solution

Application

Mini Data Centers | Edge Data Centers | Bank Branches | Radio and Television | Safe Cities | Intelligent Transportation, Government Agencies, Border Defense | Tobacco | Supermarkets | Chain Hotels Catering | Hospitals | Schools & Gas Stations | Office Buildings | Business Outlets | Branch Offices

Features

All in One

- Integrates subsystems such as support, UPS, power distribution management, monitoring management, and lighting so that it can serve as a mini data center with complete functions.

Easy Construction

- Features one-stop delivery and plug-and-play, all subsystems are pre-installed in cabinet at factory, and installation can be completed on site within 1 hour

Easy Capacity Expansion

- All components are standardized and modular, allows flexible adjustment of subsystem capacity and cabinet quantity based on the current and future business development requirements. Provides solutions for half cabinets (24U) and full cabinets (42U) to meet various requirements in different application scenarios.

Intelligent Management

- Intelligent monitoring management system, capable of local and remote management; SMS alarm module for real-time monitoring, provides convenient maintenance management

Space Saving

- Smallest single cabinet occupies only 0.5 m^2, without the need for a dedicated equipment room. Overall design of the cabinet is simple and aesthetically neat.

Large-Screen Touch Display

7-inch touchscreen, local storage of massive information for convenient management

Emergency Ventilation

Erases temperature rise issues in emergency situations

Cabinet and Airflow Management

Cabinet through-hole rate of more than 75%

Rack-mounted UPS and Battery Pack

2U rack-mounted UPS, with a capacity of 3 kVA and optional 72 V/9 AH battery pack

Power Distribution, PDU

1U rack-mounted PDU, with 8 universal sockets

Monitoring Management System

Real-time monitoring of the operating status inside the equipment cabinet, including temperature, UPS, and door access status, and supports for remote communication access Various optional management features include SMS alarming and leakage detection

Power Distribution, PDU

3U rack-mounted distribution unit, with 24 output sockets

BR IT Cabinet Modular Data Center Solution

Application

Edge Data Centers | Distributed Branch Equipment Rooms | Information Node Equipment Rooms, Network Access Equipment Rooms | Small to Medium-sized Enterprise Equipment Rooms | Government Small Equipment Rooms | Equipment Rooms for Outdoor Unit Installation with Space Limitation

Features

All in One

- Integrates seven subsystems: support and channel enclosure, UPS, power distribution management, environmental management, safety management, monitoring management, lighting and visualization, serves as a data center with complete functions.

Fast Construction

- Features one-stop delivery and plug-and-play, all subsystems are pre-installed in cabinet at factory. Installation can be completed on site within 1 hour.
- Cabinet adopts a fully enclosed dust-proof design, suitable for rough environments.
- Air conditioner features an integrated indoor and outdoor unit design. No configuration with separate outdoor unit.

Flexible Expansion

- All components are modular and standardized, allows for easy expansion by simply installing additional BR-IT units when needed to meet the current and future business development requirements.

Intelligent Management

- Large touchscreen monitoring platform, user-friendly interface, massive information of cabinet status, capable of local and remote management; SMS alarm module for real-time monitoring, provides convenient maintenance management

Security and Reliability

- Emergency ventilation devices, intelligent warning color light strips, audio-visual alarms, and optional fire-fighting units are deployed to ensure the safe, reliable, and stable operation of the cabinet.

Energy Saving and Environmental Protection

- Integrated air conditioner design, eco-friendly refrigerant
- High-efficiency rack-mounted UPS
- Fully enclosed design, no need to address large environmental heat loads, low PUE

Space Saving

- Single cabinet occupies only 0.7 m^2 and serves as both the cabinet and the data center, without need for a dedicated equipment room. Overall design of the cabinet is simple and aesthetically neat.
- Air conditioner adopts an integrated indoor and outdoor unit design, which does not occupy client space in the cabinet for installation. Provides more cabinet space, and eliminates the need for a separate outdoor unit installation, making it suitable for spaces with limited outdoor unit installation space.

Cabinet and Airflow Management

Fully enclosed design, equipment inside the cabinet forms a system and is isolated from the outside, with low requirements for the equipment room
Complete cabinet power distribution: L-shaped guide rail, cable management ring, LED lighting, cabinet door status sensor, warning ambient light, audio and visual smoke sensor, etc.

Rack-mounted UPS, Battery Pack

2U rack-mounted UPS with a capacity of 3/6 kVA, input/output mode: single input and single output; optional battery packs (up to 4 battery packs), meeting standby time requirements To meet the requirement for a longer standby time, external battery pack can be selected

Rack-mounted Lithium UPS, Lithium Battery

Supports rack-mounted lithium UPS with a capacity of 3 kVA and a height of 3U
Optional 3U lithium battery pack is available, saving more space to meet the requirements of scenarios with longer standby time

Power Distribution, PDU

3U rack-mounted PDU, provides UPS input and output power distribution, air conditioner, lighting and monitoring equipment. Class C lightning protection
Provides standard PDUs, measurement PDUs and intelligent PDU

Monitoring Management System

A 7-inch industrial-grade true-color touch screen displays internal temperature and the operating status of various components, such as UPS and air conditioner. It supports remote communication with direct browser access and control. Optional configurations include various advanced features, such as SMS alarming and password lock.

Cooling and Emergency Ventilation

Integrated indoor and outdoor air conditioner units are installed in the rear space, no space occupation of client. Optional airflow components are deployed to optimize airflow organization. Emergency ventilation unit erases temperature rise inside the cabinet after main power down and air conditioner off.

BR Cabinet Modular Data Center Solution

Application

Small and Micro Data Centers | Edge Data Centers | Distributed Branch Equipment Rooms | Information Node Equipment Rooms | Small and Medium-sized Enterprise Equipment Rooms | Network Access Equipment Rooms | Warehouses Sites without dedicated equipment rooms, such as office halls | Other indoor environments requiring the rapid construction of small equipment rooms

Features

Complete Functions

- Integrates the support and sealed aisle system, UPS, power distribution system, environment management system, security management system, monitoring management system, and lighting and visualization system. In this case, BR serves as a data center and adheres to concepts of standardization, modularization, and prefabrication to meet future development needs of data centers.

Easy Construction

- BR adopts a front glass door and a rear sheet metal door with a fully enclosed design, features high protection level. Therefore, a special equipment room is not required, and entire procurement, installation, and construction can be completed within a few days. BR changes traditional approach to data center construction that involves designing, decorating, equipment configuration, coordinating deliveries, and installation.
  With the cabinet modular data center, a new type of small to medium-sized data center can be built in a fast and cost-efficient manner.

Easy Capacity Expansion

- Various options are available, including multiple UPS capacities, cooling, and a combination of multiple cabinets (1 to 3 cabinets), allows customers to perform configuration according to the current and future business development needs. When business expansion is required, BR can be flexibly expanded to form a data center composed of multiple sets or cabinets. No need for redundant design.

Energy Saving and Environmental Protection

- BR features a fully sealed design with separation of cold aisles from hot aisles, eliminates the need for environmental cooling. Close cooling saves fan energy consumption. BR utilizes eco-friendly refrigerant (R410A) in inverter air conditioners to provide flflexible and efficient cooling near heat load. High-efficiency UPS achieves up to 95% efficiency. In comparison to traditional data centers, BR effectively reduces operating costs for customers and minimizes carbon emissions throughout the entire lifecycle.

Strong Protection

- Adopts a fully sealed cabinet design, overall protection level of BR reaches IP5X, makes it suitable for use in relatively rough environments and non-professional equipment room scenarios, such as simple power distribution rooms in buildings, warehouses, and general factories.

Cabinet and Airflow Management

With a fully sealed design, equipment inside cabinet forms a system and is isolated from the outside, with low requirements for the equipment room
Complete cabinet power distribution: L-shaped guide rail, vertical cable management arm, blind plate, brush, LED lighting, cabinet door access sensor, warning ambient light, audio and visual smoke sensor, etc.

Rack-mounted UPS and Battery Pack

2U rack-mounted UPS with a capacity of 3, 6, or 10 kVA, input/output mode: single input and single output; optional battery packs (up to 4 battery packs), meeting standby time requirements To meet the requirement for a longer standby time, an external battery pack can be selected

Rack-mounted Lithium UPS, Lithium Battery

Supporting rack-mounted lithium UPS with a capacity of 6 kVA and a height of 3U
Optional 3U lithium battery pack is available, saving more space to meet the requirements of scenarios with longer standby time

Monitoring Management System

10-inch industrial-grade full-color touch screen
Display of component operating status, such as temperature, humidity, UPS, and cooling
Support for remote access and control through a browser
Optional configuration of advanced features such as SMS alarming and password lock

Power Distribution, PDU

3U rack-mounted PDU, provides UPS input/output power distribution, air conditioner, power supply for lighting and monitoring equipment. Equipped with Class C lightning protection. Provides 24-outlet PDU, with measurement PDUs and intelligent PDUs as optional

Cooling and Emergency Ventilation

With a capacity of 3.5 kW/6 kW, 5U rack-mounted air conditioner is optional and can be directly installed in a standard 19-inch server rack, eliminates the need for a dedicated air conditioner installation space.
6 kW air conditioner unit features a light load dehumidification function to prevent condensation phenomena that may occur during low load.
Emergency ventilation unit erases temperature rise inside the cabinet after main power down and air conditioner off.

BR Outdoor Cabinet Modular Data Center Solution

Overview

BR outdoor cabinet modular data center innovatively integrates power distribution, UPS, batteries, rack-mounted air conditioner, emergency ventilation, cabinets, airflow management, cabling, monitoring and management systems, and other data center infrastructure equipment into one or two enclosed cabinets, makes the cabinet itself as data center.

BR represents the productization of small and micro-sized data centers and significantly accelerates the construction speed of micro data centers, achieves plug-and-play, and features such as high energy efficiency, ultra-quiet operation, high applicability, and high intelligence.

Application

- Highway gantry
- Petrol station
- Logistics warehouse

Features

Fast

- Factory prefabrication, rapid on-site installation

Saving

- Space-saving, precision air conditioner without occupying cabinet space

Multiple

- Multiple scenarios, integrated air conditioner without outdoor units

Intelligent

- Intelligent management, real-time monitoring and management through a mobile app and web page

Rack-mounted Lithium UPS, Lithium Battery

Rack-mounted lithium UPS, 3U rack-mounted lithium UPS, with a capacity of 3 kVA and 6 kVA (optional); Input/output mode: single input and single output system with a standard 4-hour backup; Lithium battery backup, capable of RS485 communication with the UPS for active control of UPS charging and discharging, achieves multiple layers of protection

Cooling and Emergency Ventilation

Air conditioner with indoor and outdoor units integrated, without occupying cabinet space. Emergency ventilation unit erases temperature rise inside the cabinet after main power down and air conditioner off.

Intelligent PDU

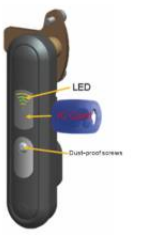
3U rack-mounted PDU, provides UPS input and output power distribution, air conditioner, power supply for lighting and monitoring equipment.

Class C lightning protection. Standard configuration includes a 1U 10-outlet intelligent PDU, which can remotely control the power on/off function for each outlet.

Monitoring Management System

Supports for uploading integrated cabinet information to a remote network management system through an intelligent collection monitoring gateway, real-time monitoring of temperature and humidity, smoke, water leakage, access control, power consumption and status of power distribution system inside cabinet, real-time monitoring of the operating status of UPS and air conditioner. It can be linked with electronic lock sensors for alarm-triggered capture, which supports intelligent camera snapshot. It supports the display on GIS electronic maps, enables quick location of faulty sites with latitude and longitude position of integrated cabinets.

Real-time monitoring and management can be achieved through a mobile app and web page.



BL Modular Data Center Solution

Application

- Small and medium-sized data centers
- High-Performance Computing (HPC) scenarios (high-density solution)
- Equipment rooms for distributed offices with high business
- Equipment rooms for branch offices of large corporations
- Equipment rooms for small to medium-sized network devices
- Data centers for small and medium-sized enterprises

Features

Fast Construction

- BL adopts a prefabricated sub-module factory installation method, which has low requirements for equipment room and allows for on-site assembly. Installation can be completed within 1 to 3 days after equipment arrives.

High Energy Efficiency

- BL is equipped with three types of aisles: sealed cold aisle, sealed hot aisle, and full-sealed aisle. Sealed cold aisle signifificantly improves efficiency of cooling utilization, while sealed hot aisle enhances cooling efficiency of air conditioner. Full-sealed aisle not only increases cooling utilization, but improves overall cooling efficiency of air conditioner. Compared to traditional small to medium-sized data centers, BL achieves energy saving by 20% to 40%, results in a lower PUE.

Plenty Configuration

- BL offers more choices on cooling capacity and functions within the internal data center air conditioner. Cooling capacity of single air conditioner can be 12.5 kW, 25 kW, or 35 kW with inverter compressors.
- In terms of solution configuration, BL also features various combinations of UPS capacities, such as 1-to-3 (one air conditioner for three cabinets), 1-to-4, 2-to-6, and 2-to-8. UPS capacity options are 10 kVA, 20 kVA, 30 kVA, 40 kVA, and 90kVA, which can meet requirement of different load densities.

Easy Maintenance

- BL adopts modular component transport, on-site rapid assembly, overall delivery, and a unified monitoring and management platform. Only one monitoring and management system is required, eliminates need to deal with multiple interfaces.
- Operation and maintenance of the equipment room air conditioner, UPS, and management platform requires communication with only one manufacturer.

Proprietary Technology

- All devices and subsystems within BL are independently developed and manufactured, ensures good consistency in quality and strong compatibility.

Product Subsystems

Cabinet and Airflow Management System

Unique sealed aisle and integrated design with equipment cabinet, reliable structure, tightly enclosed aisles, convenient transportation and installation, stylish and aesthetic appearance, complete cabinet accessories: tray, L-shaped guide rail, top cable trough for vertical cable management arm, blind plate, brush, cabinet door access sensor, etc.

Power Distribution and PDU System

Equipped with a power distribution unit, provides class C lightning protection, UPS input/output power distribution, air conditioner, PDU branches, power supply for lighting and monitoring devices. Standard, measurable and intelligent PDU are optional.

UPS and Backup Battery System

UPS capacity options include power module of 10/20/30/40/90 kVA, and external or internal installation is optional, supports parallel operation and expandability.

Options for rack-mounted battery packs and external battery banks are available, allows flexible configuration based on specific requirements.

Monitoring System

With a 10-inch industrial-grade true-color touchscreen, achieves real-time monitoring of the dynamic environment status within the module. Serves as a platform to manage various devices within BL.

Optional Accessories

Smoke sensor, SMS alarming module, video, etc.

Cooling and Emergency Ventilation System

Air conditioner with front air supply and rear air return, with evenly distributed fans; multiple cooling capacity are available for configuration.

A combination of air conditioner with sealed frames allows for the configuration of sealed cold aisle, sealed hot aisle, full-sealed aisle for air flow management.

Based on on-site application requirements, multiple air conditioners can be configured and controlled as a group.

BM Modular Data Center Solution

Application

- Medium to large data centers
- Information centers of national government and public institutions
- Telecom data centers and information equipment rooms
- Data centers of higher education institutions
- Data centers of financial institutions

Features

Rapid Deployment

- Each subsystem is prefabricated in the factory and assembled on site, deployment is as short as 6 to 12 weeks, reduces construction period by more than 50%. BM has minimal site restrictions, and supports installation on cement and raised floor surfaces, with a minimum room net height requirement of 2.5 m.

Flexible Capacity Expansion

- With modular components and standardized interfaces, BM can be expanded on demand in units of rack-mounted modules, saves investment with on-demand design. BM supports a smooth upgrade of rated power density from 1 kW to 15 kW per rack. Through customized solutions, BM can achieve a maximum rated power of 30 kW per rack.

Intelligent Management

- iMonitor management system of BM is capable on monitoring of power, environment, video, equipment, and access control in data center infrastructure.
- iMonitor integrates functions such as alarm management, report management, work order management, and energy efficiency management to implement comprehensive intelligent management.
- iMonitor utilizes industry-standard protocols such as SNMP or Modbus and allows managing monitoring information through a web browser.
- iMonitor supports automatic alarming over email and can be expanded to include features such as SMS alarming and phone alarming.

Energy Saving

- Adopts sealed cold/hot aisle technology to prevent the mixing of cold and hot airflow, significantly reduces energy consumption.
- High return air temperature design of air conditioner in the data center increases energy efficiency.
- For high heat density scenarios, precision in-row air conditioner in data center significantly improves cooling efficiency.
- In-row air conditioner can be equipped with free-cooling kit, suitable for the majority of cold regions in China, provides energy-saving operation throughout the year.
- In data center with fluctuating heat loads, BM utilizes variable-capacity air conditioner products to achieve real-time cooling capacity adjustment for efficient energy saving;
- Compared to traditional data centers, BM achieves energy saving by 30% to 50%, with PUE as low as 1.25.

Proprietary Technology

- All devices and subsystems within BMare independently developed and manufactured, ensures good consistency in quality and strong compatibility.

Product Subsystems

Cabinet and Airflow Management System

- Cabinet: Available in various dimensions, cabinet features powerful performance and strong load-bearing capacity. Plenty of optional cabinet accessories for different types of equipment.
- Airflow management: dedicated installation interfaces reserved for aisles and cabinets for quick and well-sealed installations. Transparent material of the skylight, equipped with a flip function, enables firefighting linkage.
- Aisle end doors: Optional outward-opening doors (with automatic closure) or sliding horizontal doors (optional for automatic sliding)
- Cabling: Cabinet offers various internal cable managers and provides optional cable troughs and trays on the top of the cabinet for cable management.
- Blind plate: Various specifications of blind plates, including 1U, 2U, and 4U, are available for configuration.

Power Distribution System

- Precision power distribution cabinets are customized based on actual requirements, and equipped with functions such as power volume measurement, power quality check, and intelligent communication
- Optional hot-swappable branch switches with phase-adjustment capability, facilitating on-site phase adjustment to achieve three-phase load balance
- Optional intelligent PDU for more precise power and capacity management
  Optional PDU with lightning protection and digital meter
- Optional deployment of the next-generation intelligent busbar for the terminal power distribution solution: Top-mounted installation, space-saving, flexible expansion, and easy maintenance

UPS

- Tower-mounted UPS or modular UPS are optional, where single power module of the modular UPS offers a capacity of 15, 20, 25, 30, 50, and 100 kVA for configuration
- Power density of single UPS cabinet can reach up to 300 kVA, saves floor space
- Integrated UPS is optional with a capacity of 90 kVA or 125 kVA, which contains power distribution system and UPS system
- Battery monitoring: monitors single cell status in battery bank

iMonitor Monitoring and Management System

- Provides access authority for person/equipment, and outputs potential overload risks in advance
- Real-time monitoring and warning for temperature/humidity in aisles
- Operation information and alarms for related equipment such as UPS, air conditioner, smoke sensor, fire sensor, and water water leakage, etc.
- Optional integration with video, access control systems, and other expansion functions.
- Optional embedded intelligent control terminal for visualized local operation and maintenance

Optional Accessories

- Water leakage alarm, smoke sensor, and fire sensor
- Access control, access control management
- Monitoring screen
- Video monitoring
- Fifirefifighting components

Environment Control System

- Adopts variable capacity design, and load following technology
- Each air conditioner is available to manage up to 16 external temperature sensors.
- Capable of application with varialbe frequency air-cooled in-row air conditioner, refrigerant pump free-cooling in-row air conditioner, TM indoor unit, modular UPS, and other energy-saving products to achieve ultra-low PUE
- Equipped with teamwork group control function, so that all air conditioners in data center could coordinate operation.

BC Container Data Center Solution

Application

- Data centers required rapid construction
- Outdoor data centers
- Data centers required relocation
- Military projects
- Data centers for energy, mining, etc.
- Outdoor temporary data centers for large-scale events

Features

Rapid Deployment

- Modular data center, integrating IT cabinet, UPS, battery, power distribution, monitoring, and precision air conditioner
- Standard container type, suitable for water, land, and air transportation, and features low transportation cost and global accessibility
- Installation on the cement floor of buildings or outdoors without professional equipment rooms, reduces external construction

Efficient Energy Saving

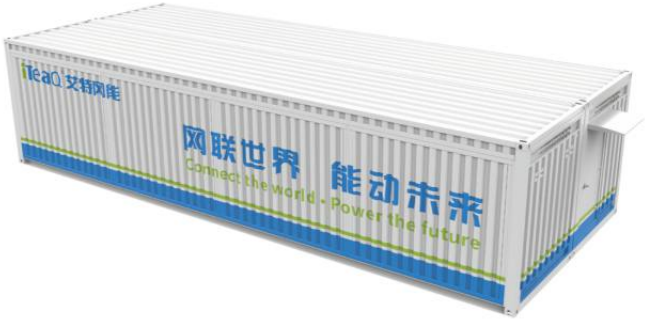
- Overall design features a fully enclosed structure with sealed cold and hot aisles, results in a signifificant reduction in energy consumption for temperature control
- Efficient modular UPS used for flexible configuration
- In-row air conditioner is installed close to heat load, so that cold air flows to heat load more accurately

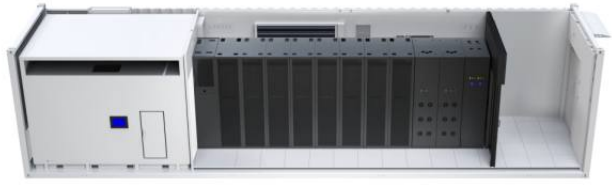
Intelligent Management

- Centralized monitoring platform monitors operating status, mains power status, and environmental temperature or humidity
- Powerful report function, helps to precise management of equipment room
- 24/7 unattended operation throughout 365 days, with remote monitoring and intelligent management, reduces IT deployment and O&M costs

Security and Reliability

- Totally enclosed design with little dependence on environment nearby. Dustproof design significantly reduces failure rate of IT equipment and prolongs life cycle
- Supports N+X or 2N design, and battery continues to supply power in case of a power failure to ensure the stable operation of IT equipment
- Automatic fire alarm system and fire extinguishing device are built in to prevent losses caused by fire





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