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Mercury Presentation

INTEGRATED DATA CENTER SOLUTIONS

IDU-Micro Data Center Solutions



IDU (Integrated Data Center Unit)

IDM-Medium Data Center Solutions



IDU (Integrated Data Center Module)

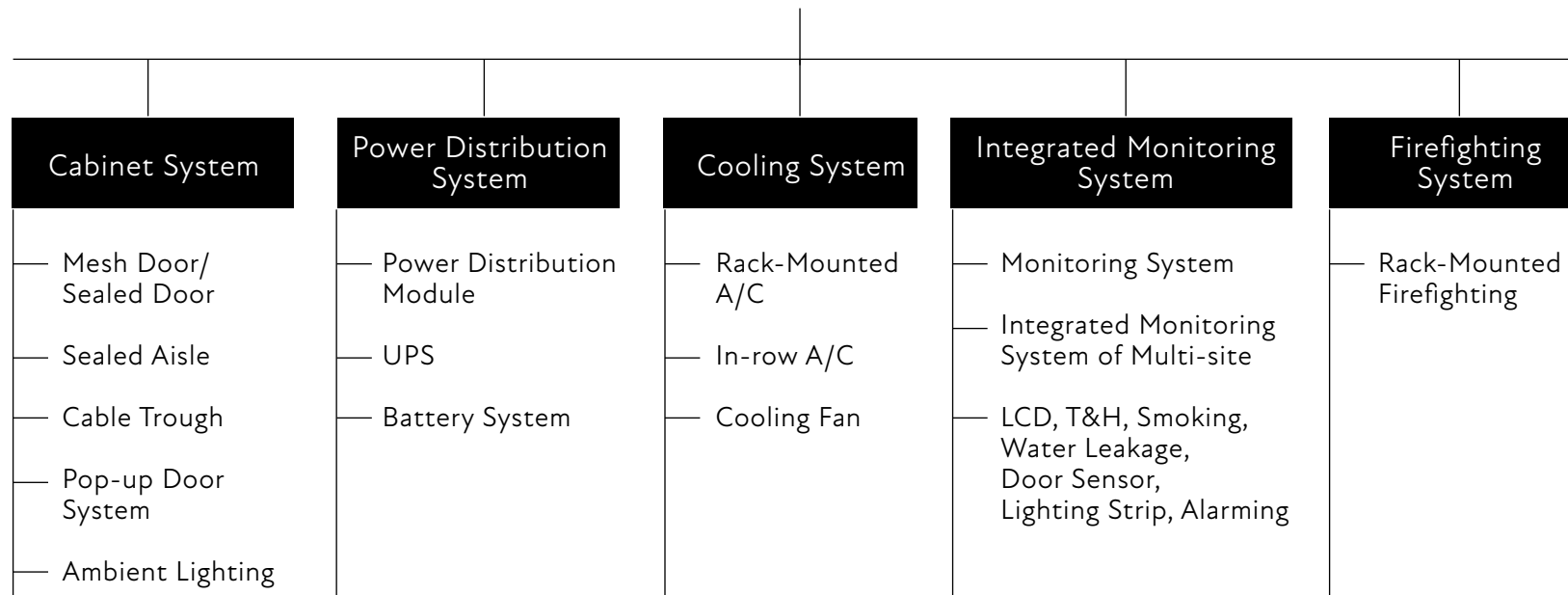
Based on the full range of data, Mercury integrates its all-in-one IT Cube solutions : IDU/IDM. With the modular designs, IT Cube provides the benefits to customers through Quick Deployment, One-Stop Services, Energy and Cost Efficiency.

CONTENTS

1 IDU-Micro Data Center Solutions

2 IDM-Medium Data Center Solutions

IDU-Micro Data Center Solutions



The solution is productized and deployed efficiently through an integration of server cabinet, monitoring system, power distribution, battery, and in-row air conditioner, eliminating the need of site engineering survey.

Single Rack



Dual Racks



Multi-Racks (3-9)



Dimension 600 (W) *1200 (D) *42U (H), 600 (W) *1400 (D) *42U (H)
800 (W) *1200 (D) *42U (H), 800 (W) *1400 (D) *42U (H)

Rack Door Mesh Door (Apply to IT rooms with existing cooling systems)
/Sealed Door with separated Cold/Hot aisle

Cabinet Accessory



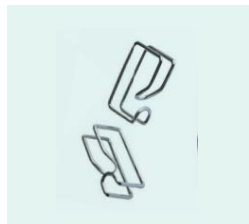
Cable Tray
(For installing devices)



Cable Trough
(For power line & fiber)



Cable Manager
(Horizontally & Vertically)



Cable Ring (For cable
managing vertically)



Guide Rail
(For installing devices)



U-Blank Plate
(For sealing)

Power System



Integrated PDU (integrating mains power, IT/Cooling power, lighting, surge protection) with 1-10kva UPS



Mains power distribution module (suitable to 120kva UPS)



UPS distribution module



Expanding power module

Quick Deployment

Standard, Modular,
Pre-fabricated

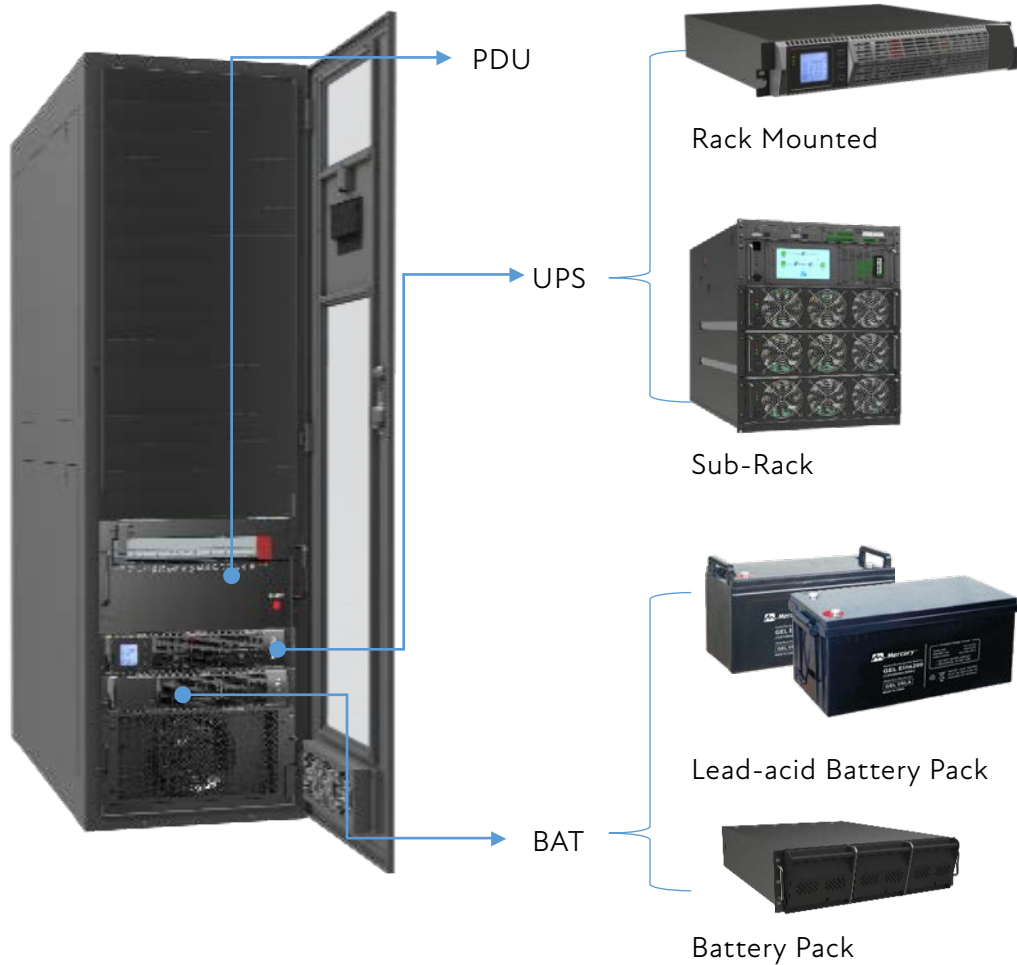
Safe & Reliable

Redundancy designing
with high quality breakers

Intelligent & Flexible

Real-time Monitoring,
Intelligent electricity meter,
Flexible match

Power System



UPS	Capacity
MPM-W RT series	1kVA~10kVA
MP RT PRO series	6kVA~10kVA
MPM3300-RT series	10kVA~20kVA
MPM3300E-RT series	10kVA~50kVA
MPM3300E-RM series	10~150kVA

Providing widest selection of capacity, applicable to various scenarios, such as Edge datacenter, ICT mixed datacenter, etc.

Efficient power module, max to 96%, modular designing, easy installation.

Supporting Lithium battery, saving spaces, prolong using life

Power System - UPS

MPM-W RT UPS 1-3kVA
(Built-in battery & EBP)



Series	Type	Capacity	Height	Built-in Battery
MPM-RT (Built-in Lead-Acid battery)	Rack-mounted	1kVA/0.9kW	2U	24VDC, 2Pcs 12V/9AH
	Rack-mounted	2kVA/1.8kW	2U	48VDC, 4Pcs 12V/9AH
	Rack-mounted	3kVA/2.7kW	2U	72VDC, 6Pcs 12V/9AH
MP-RT-Li (Built-in Lithium battery)	Rack-mounted	1kVA/0.9kW	2U	25.6VDC, 3AH/3.2V 8S3P
	Rack-mounted	2kVA/1.8kW	2U	76.8VDC, 3AH/3.2V 24S2P
	Rack-mounted	3kVA/2.7kW	2U	76.8VDC, 3AH/3.2V 24S3P

Power System - UPS

MP PRO RT UPS 6-10K (with EBP)



Series	Type	Capacity	Height
MP Pro 6k/10k RT UPS	Rack-mounted	6kVA/6kW	2U
	Rack-mounted	10kVA/10kW	2U
MP Pro 6k/10k RT EBP	Rack-mounted	20*7 /8.2/9AH (12V)	3U
	Rack-mounted	20*7 /8.2/9AH (12V)	3U

Power System - UPS

MPM3300 - RT
3/3 Rack Mount UPS

Series	Capacity	Height
MPM3300-RT Series	10kVA/10kW	3U
	15kVA/15kW	3U
	20kVA/20kW	3U
	25kVA/25kW	3U
	30kVA/30kW	3U
	40kVA/40kW	4U
	50kVA/50kW	4U



Power System - UPS

MPM3300 Sub-rack UPS
System with power module

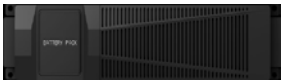
Series	Capacity	System Capacity (Max.)	Height
MPM3300E Sub-rack System with power module	10kVA (2U)	20kVA / 20kW	8U
		40kVA / 40kW	13U
		60kVA / 60kW	17U
	15kVA (2U)	30kVA / 30kW	8U
		60kVA / 60kW	13U
		90kVA / 90kW	17U
	20kVA (2U)	40kVA / 40kW	8U
		80kVA / 80kW	13U
		120kVA / 120kW	17U
25kVA (2U)	50kVA / 50kW	8U	
	100kVA / 100kW	13U	
	150kVA / 150kW	17U	
30kVA (2U)	60kVA / 60kW	8U	
	120kVA / 120kW	13U	
	150kVA / 150kW (5+1)	17U	
40kVA (3U)	80kVA / 80kW (2+1)	14U	
	120kVA / 120kW	14U	
50kVA (3U)	100kVA / 100kW	14U	
	150kVA	14U	



Power System - Battery

MPM3300 Sub-rack UPS
System with power module

Battery Pack



*3kVA EBP:
Built-in 12 pcs
12V/9AH, 72VDC, 2U



*6kVA EBP:
Built-in 20 pcs
12V/9AH, 3U



*20-50kVA EBP:
Built-in 40 pcs
12V/9AH, 4U

Battery & Battery Cabinet



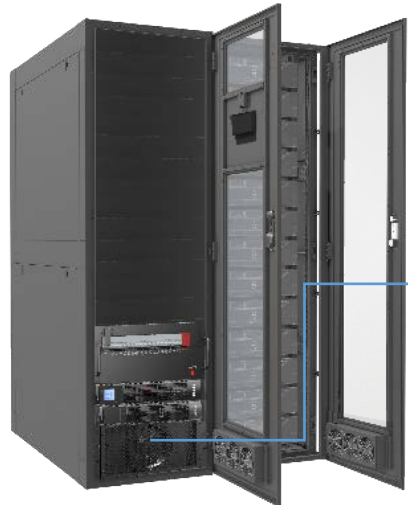
*FM Series
Capacity: 33AH~250AH
*Float charging
design life: 12years



*Mesh Door
600mm x 1200mm x 2000mm

*Sealed Door
600mm x 1200mm x 2000mm
36pcs 100AH/120AH

Cooling System



Power Cabinet IT Cabinet

Rack-mounted
CRAC



InsertAir Series
Rack-mounted CRAC



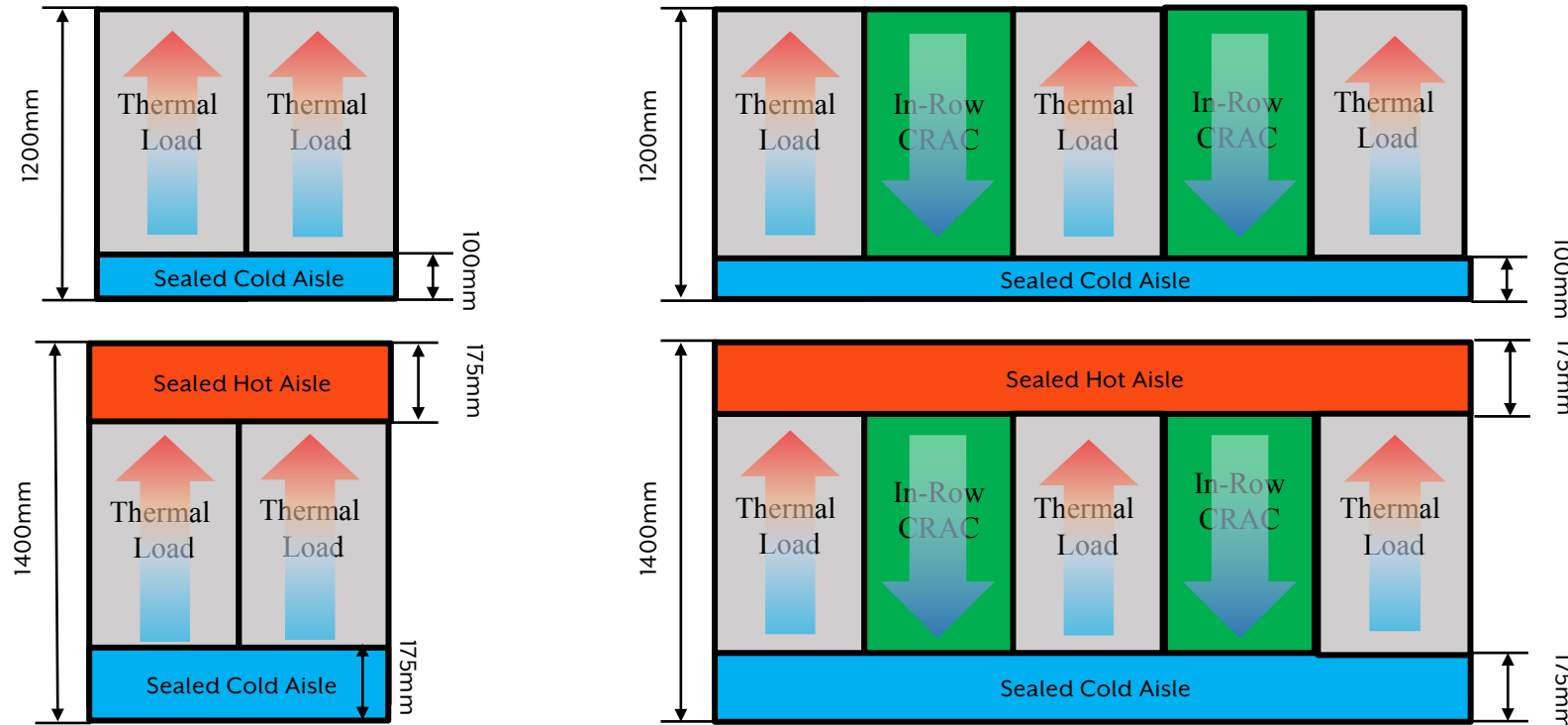
FocusAir Series
In-row CRAC



Power CRAC IT IT CRAC IT

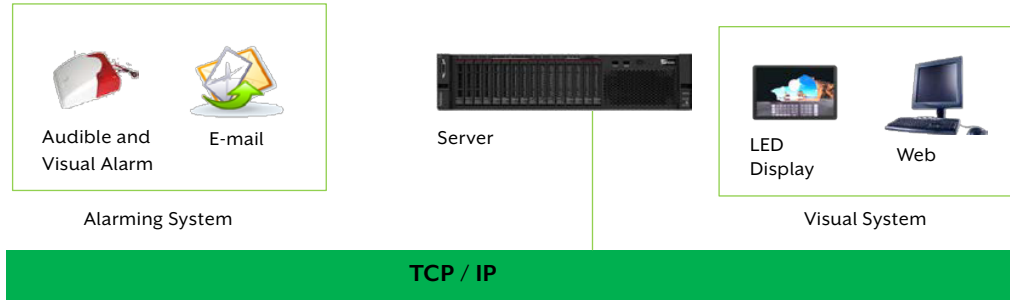
Series	CoolingCapacity	Dimension
InsertAir	3.5kW/7kw/12.5kW	Height: 5U/8U/10U
FocusAir	5.5kW/7.5kw/12.5kw/25kW	Width: 300mm/600mm

Cooling System Sealed Hot/Cold Aisle



- Sealed hot/cold aisle, separates hot/cold air, decrease cooling loss, improve the efficiency of CRAC
- Rack-Mounted/In-row CRAC, applicable to various scenarios.

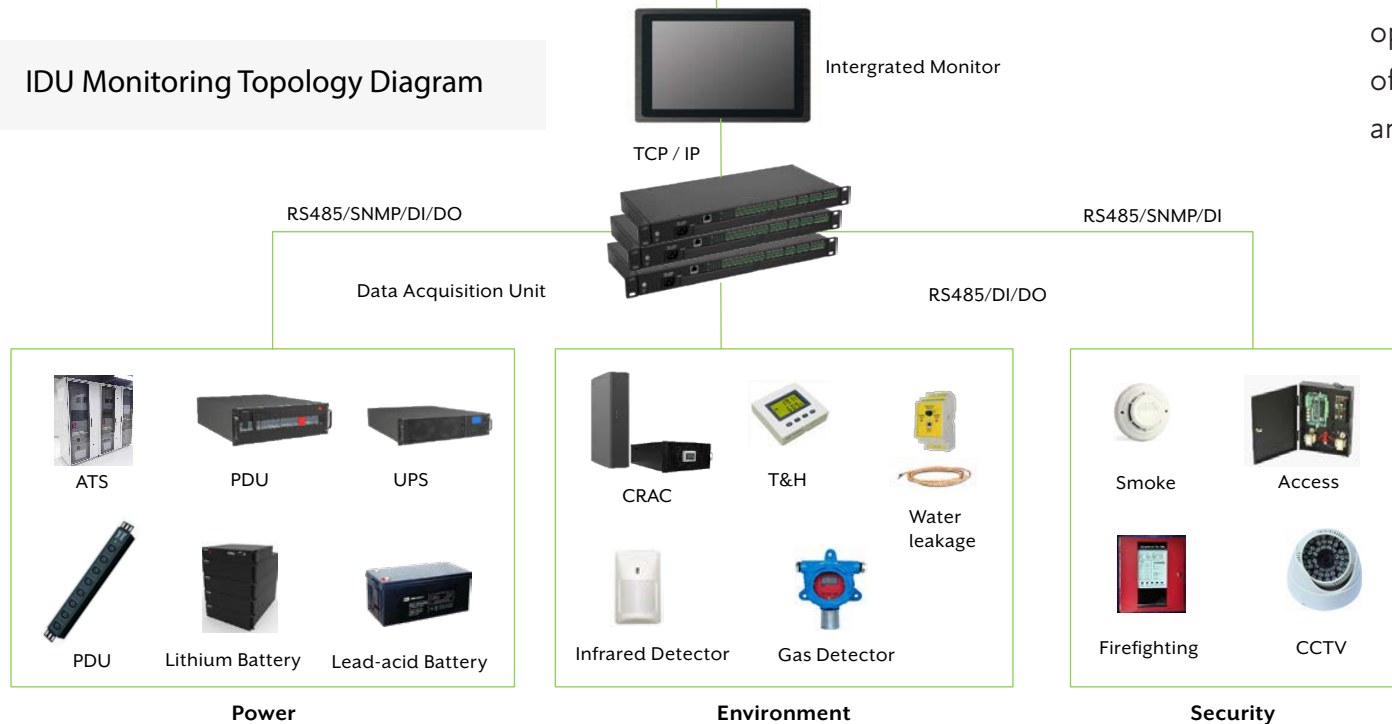
Monitoring System



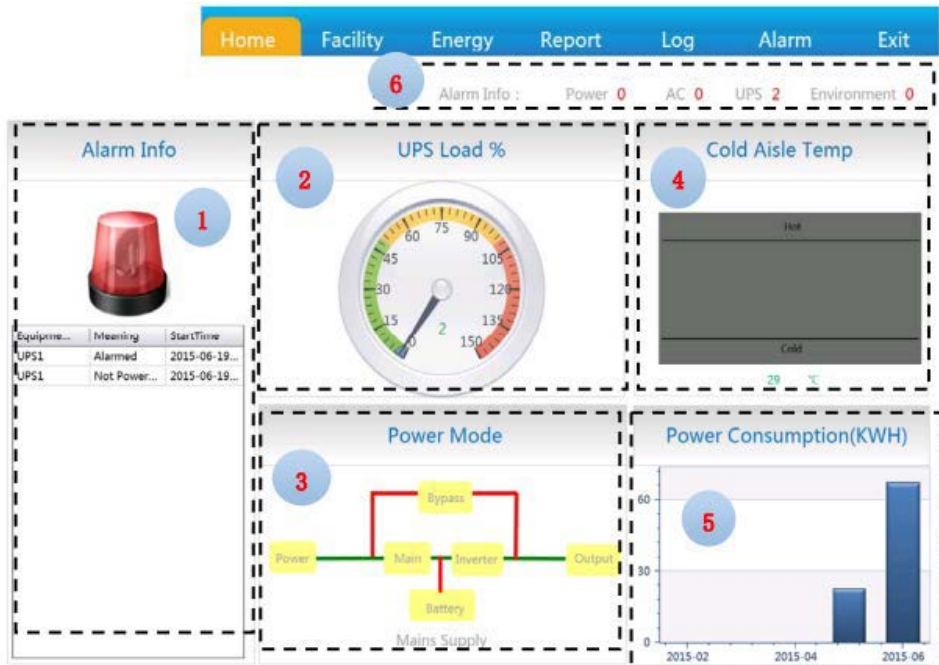
Host integrated monitoring system of power distribution unit, UPS, batteries, cooling unit, environment, fireprotection, entranceguard, etc.

Supports the acousto-optic and email alarming system, with all of the equipment's operating conditions carrying multiple ways of presentation, such as local display and remote website at the same time.

IDU Monitoring Topology Diagram



Monitoring Homepage Interface



Warning information area: Dotted box 1 showing the recent Warnings.

Integrated management information area: dotted box 2, accessing the operating condition of IDU comprehensively including PUE value, power load and cooling capacity load etc.

Power supply mode area: Dotted box 3, the operating power supply mode of UPS. Cold and hot channel area: dotted box 4, sealing temperature of hot channel. Monthly power consumption

Cold and hot channel area: Dotted box 4, sealing temperature of hot channel. Monthly power consumption

Table area: Dotted box 5, showing the months of comprehensive power consumption.

Warning classified statistic area: Dotted box 6, classified statistical warnings according to IDU.

Monitoring Facility Interface-UPS



Integrated with UPS, power supply, AC and micro-environment of cabinet. Facility management can manage the basic infrastructure of IDU efficiently.


Facility management navigation: Rectangle box 1.

UPS Load rate: Rectangle box 2, showing UPS load.

Real-time data: Rectangle box 3, showing voltage and current of UPS Input and output.

Info setting: Rectangle box 4, Input frequency and UPS running status.

Monitoring Facility Interface-PDU



The screenshot shows the Mercury Facility Monitoring Interface. At the top, there is a navigation bar with tabs: Home, Facility (selected), Energy, Report, Log, Alarm, and Exit. Below the navigation bar, there is an 'Alarm Info' section showing: Power 0, AC 1, UPS 2, and Environment 0.

On the left side, there is a vertical navigation menu with the following items: Facility (selected), UPS, Power (highlighted in blue), AC, and Environment. A dashed rectangle labeled '1' encloses the entire navigation menu.

The main content area is divided into two sections: 'Main' and 'Branch1'. A dashed rectangle labeled '2' encloses both sections.

Main Table:

	Voltage(V)	Current(A)	Power	
A	232.5	4.1	0.3	KW
B	-	-		
C	-	-		

Branch1 Table:

		Voltage(V)	Current(A)
AC1	A	232.9	0.3
	B	-	-
	C	-	-
AC2	A	-	-
	B	-	-
	C	-	-

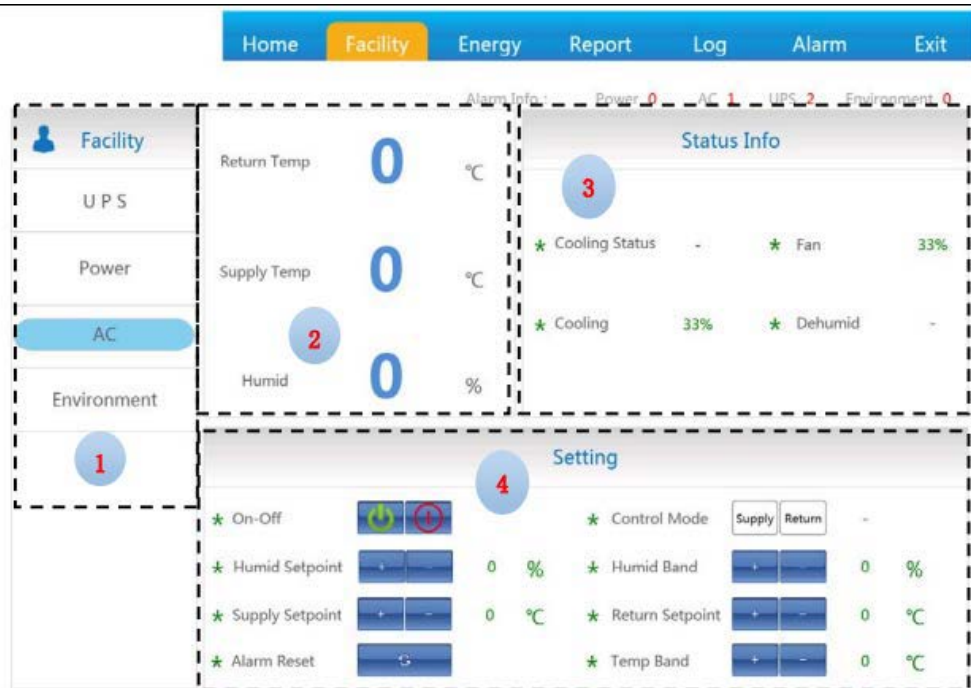
It can manage the power supply system of IDU efficiently. Mainly collect and monitor the electricity parameters of main path.

Facility management navigation: Rectangle box 1.

UPS Load rate: Rectangle box 2, showing UPS load.

Total input of power supply and status of branch power shown: Rectangle box 2

Monitoring Facility Interface—Cooling Unit



The screenshot shows the Mercury Monitoring Facility Interface for a Cooling Unit. The interface is divided into several sections:

- Navigation Menu (1):** Located on the left, it includes options for Facility, UPS, Power, AC (selected), and Environment.
- Temperature and Humidity Testing Point (2):** Located in the top right of the main display, it shows Return Temp, Supply Temp, and Humid, all with a value of 0.
- Status Info (3):** Located in the middle right, it shows the operating status of the AC, including Cooling Status, Fan, Cooling, and Dehumid.
- Setting (4):** Located in the bottom right, it allows for setting the AC device, including On-Off, Humid Setpoint, Supply Setpoint, Alarm Reset, Control Mode, Humid Band, Return Setpoint, and Temp Band.

It can manage the A/C of IDU efficiently. Mainly collecting and monitoring: air temperature, air humidity, AC status, temperature and humidity setting, deviation setting, master setting and switch on/off. These are four pieces:

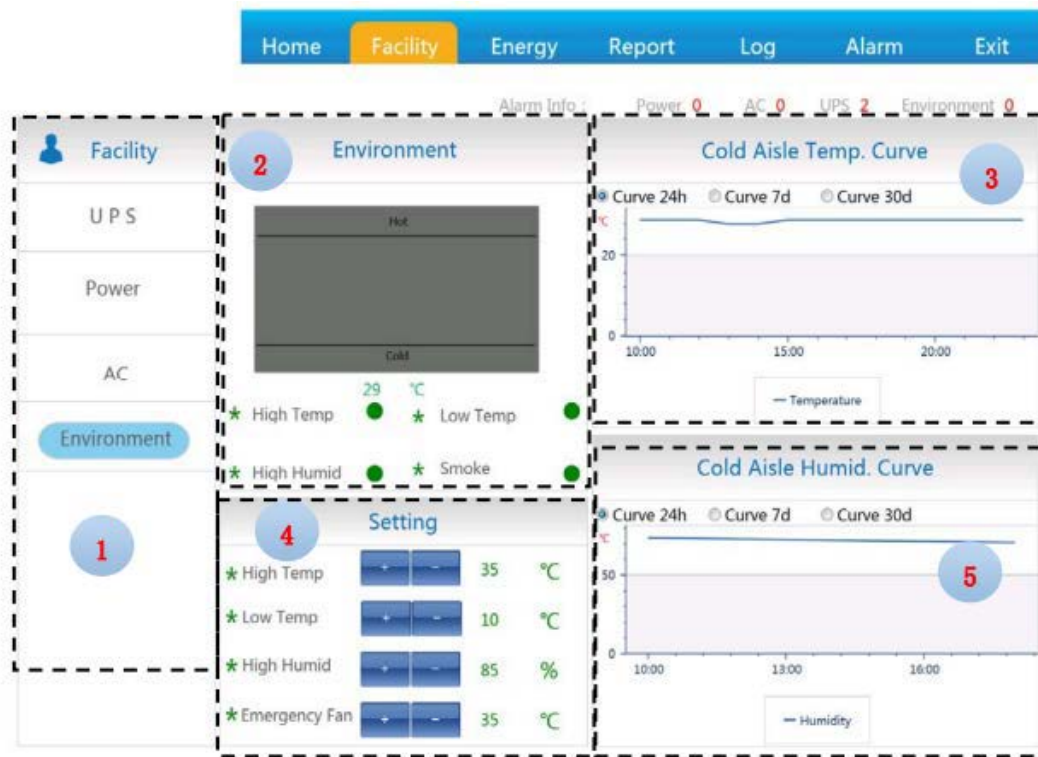
Facility management navigation: Rectangle box 1;

AC temperature and humidity testing point: Rectangle box 2, showing the testing point of temperature and humidity.

Status info: Rectangle box 3, showing the operating status of AC.

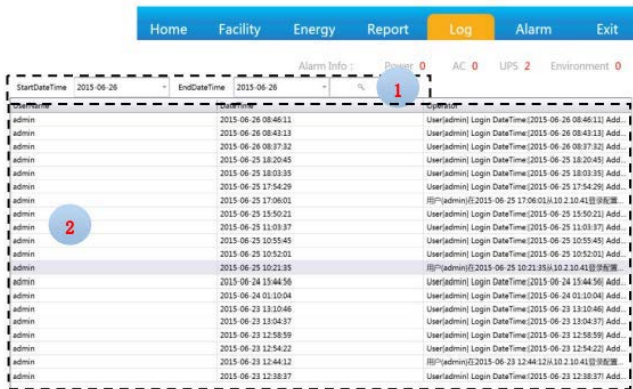
Info setting: Rectangle box 4, setting the AC device.

Monitoring Facility Interface—Environment



It is sealing the cool channel for IDU. Smoke detector and water-logging management, mainly collection and monitoring: humidity of cold channel, smoke detector warning status, water detector warning status, emergency ventilation status, setting the warning for high and low temperature and high humidity of micro-environment. In this module, it can manage the cold channel efficiently and show the temperature and humidity views of the cold channel (24hours, 7days, 30days) .

Monitoring Other Interfaces—Energy . Report . Log . Alarm

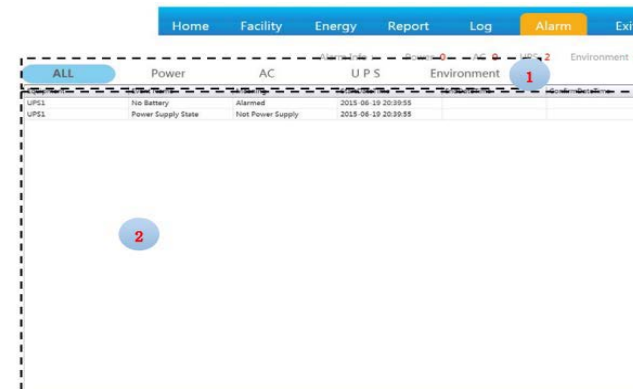
Home Facility Energy Report Log Alarm Exit

Alarm Info : Power 0 AC 0 UPS 2 Environment 0

1

UserName	StartDateTime	EndDateTime	OperateTime
admin	2015-06-26 08:46:11		User(admin) Login DateTime(2015-06-26 08:46:11) Add.
admin	2015-06-26 08:43:13		User(admin) Login DateTime(2015-06-26 08:43:13) Add.
admin	2015-06-26 08:37:32		User(admin) Login DateTime(2015-06-26 08:37:32) Add.
admin	2015-06-25 18:20:45		User(admin) Login DateTime(2015-06-25 18:20:45) Add.
admin	2015-06-25 18:03:35		User(admin) Login DateTime(2015-06-25 18:03:35) Add.
admin	2015-06-25 17:54:29		User(admin) Login DateTime(2015-06-25 17:54:29) Add.
admin	2015-06-25 17:06:01		RP(admin)(2015-06-25 17:06:01)(10.2.10.41)登录配置.
admin	2015-06-23 13:50:21		User(admin) Login DateTime(2015-06-23 13:50:21) Add.
admin	2015-06-23 13:03:37		User(admin) Login DateTime(2015-06-23 13:03:37) Add.
admin	2015-06-23 10:55:45		User(admin) Login DateTime(2015-06-23 10:55:45) Add.
admin	2015-06-23 10:52:01		User(admin) Login DateTime(2015-06-23 10:52:01) Add.
admin	2015-06-25 10:21:35		RP(admin)(2015-06-25 10:21:35)(10.2.10.41)登录配置.
admin	2015-06-24 13:44:56		User(admin) Login DateTime(2015-06-24 13:44:56) Add.
admin	2015-06-24 01:10:04		User(admin) Login DateTime(2015-06-24 01:10:04) Add.
admin	2015-06-23 13:10:46		User(admin) Login DateTime(2015-06-23 13:10:46) Add.
admin	2015-06-23 12:54:37		User(admin) Login DateTime(2015-06-23 12:54:37) Add.
admin	2015-06-23 12:58:59		User(admin) Login DateTime(2015-06-23 12:58:59) Add.
admin	2015-06-23 12:54:22		User(admin) Login DateTime(2015-06-23 12:54:22) Add.
admin	2015-06-23 12:44:12		RP(admin)(2015-06-23 12:44:12)(10.2.10.41)登录配置.
admin	2015-06-23 12:38:37		User(admin) Login DateTime(2015-06-23 12:38:37) Add.

2



Home Facility Energy Report Log Alarm Exit

Alarm Info : Power 0 AC 0 UPS 2 Environment 0

ALL Power AC UPS Environment 1

AlarmID	AlarmName	AlarmType	AlarmTime
UPS1	No Battery	Alarmed	2015-06-19 20:39:55
UPS1	Power Supply State	Host Power Supply	2015-06-19 20:39:55

2

Firefighting System



Rack mounted firefighting module(2U)



Emergency Fan

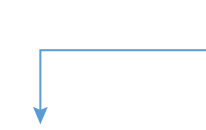
Over temperature in rack



The firefighting module acting



Extinguish and spraying

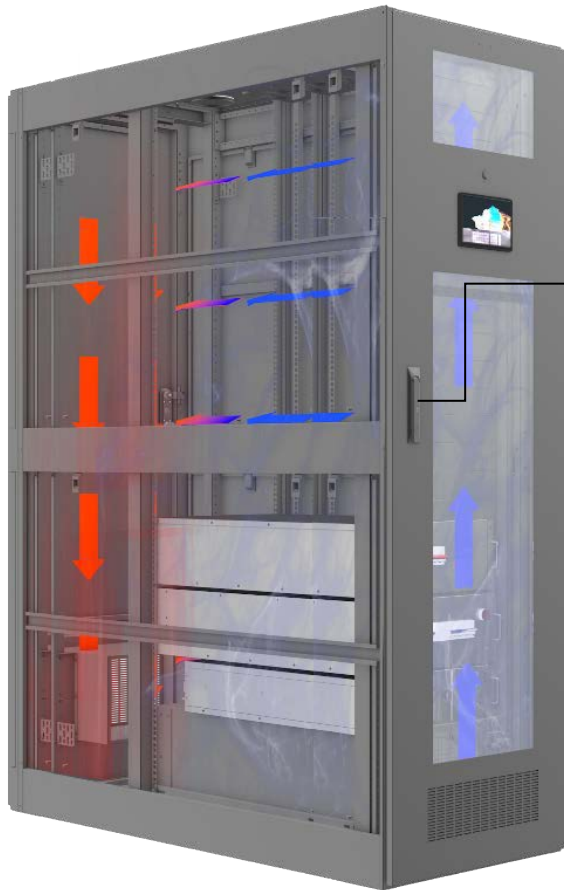


Fire extinction

Output firefighting signal

- Integrated Fire detection and extinguishing system
- Temperature & smoke detection system (temperature threshold for the alarm can be set manually)
- Instant extinguishing spray that cools fire within 10s
- The firefighting signal will be transmitted to the monitoring system on time

Pop-Up door system (Optional)

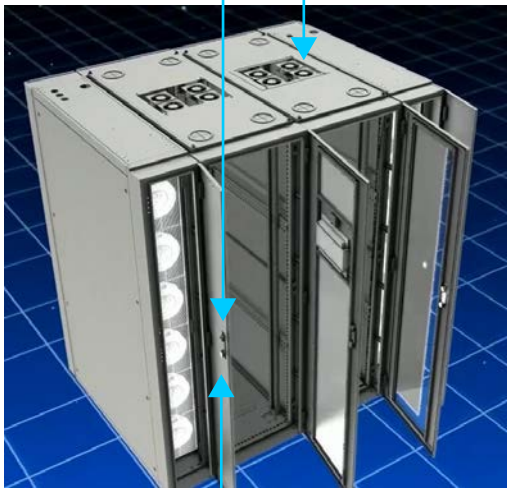


Pop-Up door system interwork with the monitoring system, while the T&H sensor detect high temperature over settled threshold before, the monitoring system will send the signal to the Pop-Up door system, controlling the states of sealed door.

Firefighting System

Pop-up door patent

- Emergency pop-up door
- Fire, smoke are linked
- Temperature sensing alarm linkage



Cabinet-level access control system

- Support face, fingerprint, password, IC card and key to open the door
- Support the integration of access control into the monitoring system

Air inlet fans

- Normal: the grille is closed
- Emergency fan start-->The grille automatically turns on, the fan starts, and the fresh air is inhaled



Emergency fans

- Fire, smoke, temperature alarm, automatic emergency start
- Independent UPS output distribution
- Design of unobstructed air inlet duct under the front of the cabinet



Remote operation and maintenance

- Phone/PC
- Audible and visual /APP/Mail/Web
- Cabinet atmosphere light linkage presentation

Accessories (Optional)



Low-temp kit
Used for $\geq -40^{\circ}$ Outdoor
temperature



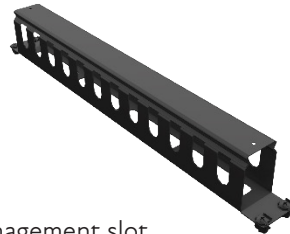
Pop-Up door unit



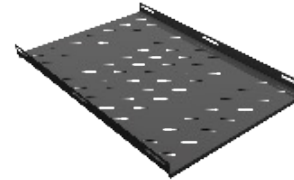
Thermal glass front door



Face recognition
access controller



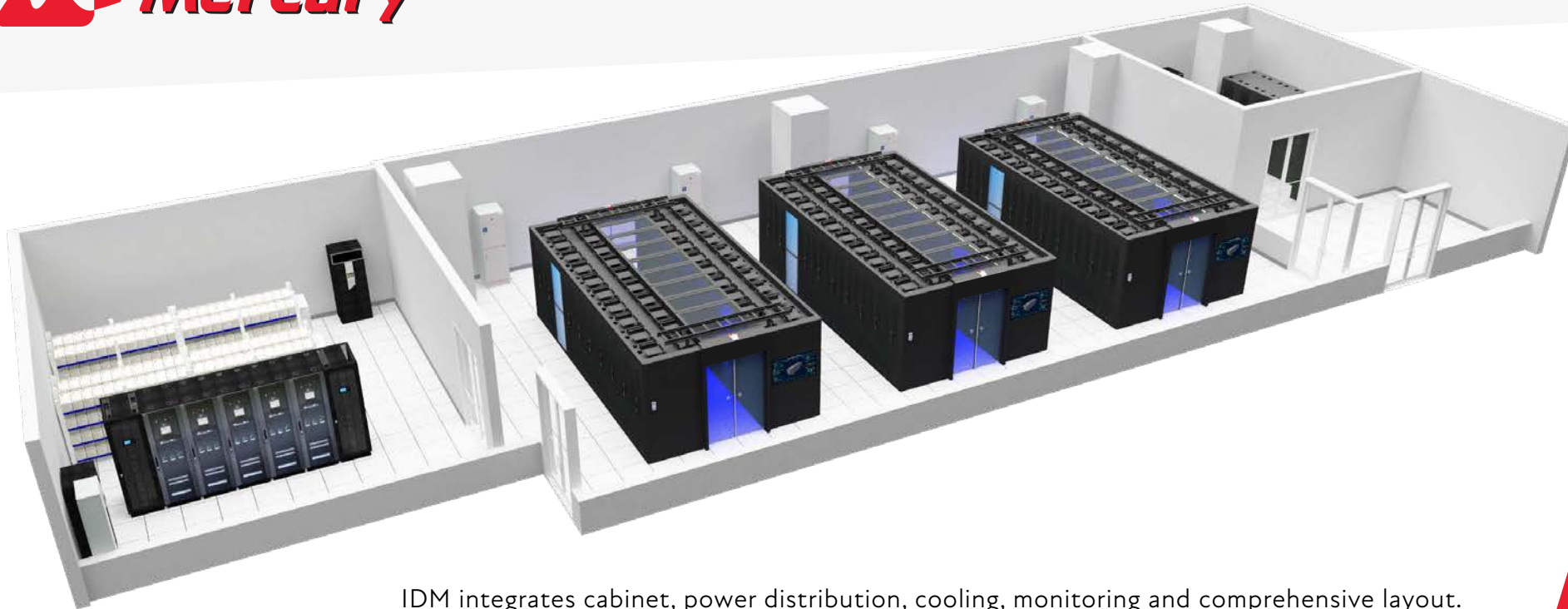
Cable management slot



Tray



Camera



IDM integrates cabinet, power distribution, cooling, monitoring and comprehensive layout. It is a high density modular and a new-generation integrated medium data center solution featuring high reliability and safety, quick and flexible deployment, simple and low consumption, and complete monitoring system.



UPS & Battery



Air Conditioner



Racks & PDU

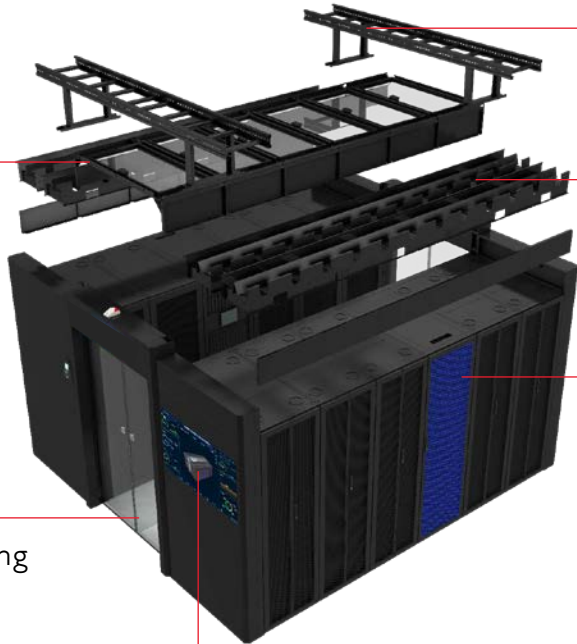


Monitoring System

IDM Exploded View

Skylight

- Linked control with firefighting system



Cable Tray

Cable Trough

- Power electric line & network line separated

Racks

- IT Rack
- Network Rack
- In-row Air Conditioner
- Integrated PDF
- Precision PDF
- Battery Cabinet
- Adaptive Frame

Access System

- Sliding Door/Revolving Door
- Fingerprint and Card Reader with a Keypad
- Biometric Identification (Optional)

Smart Touch Screen



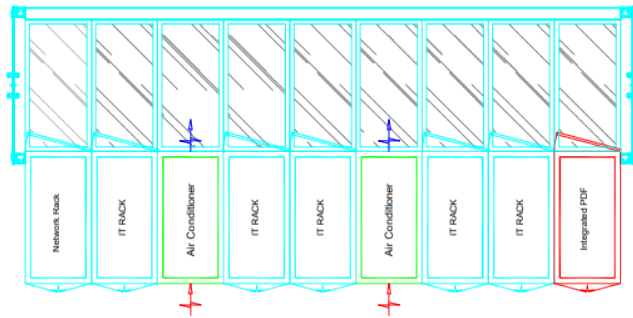
IDM Configuration



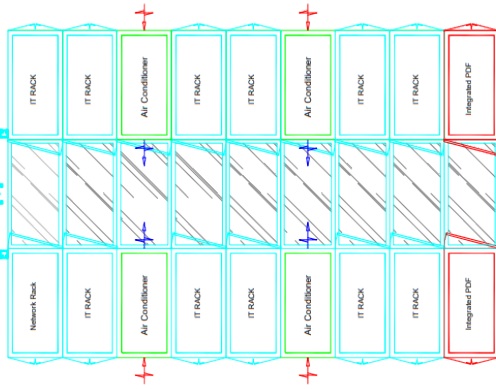
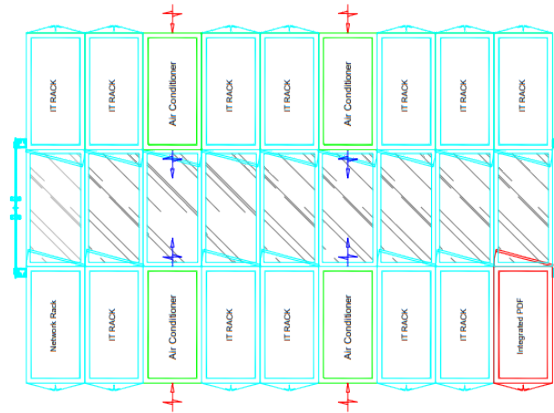
Single Row Module



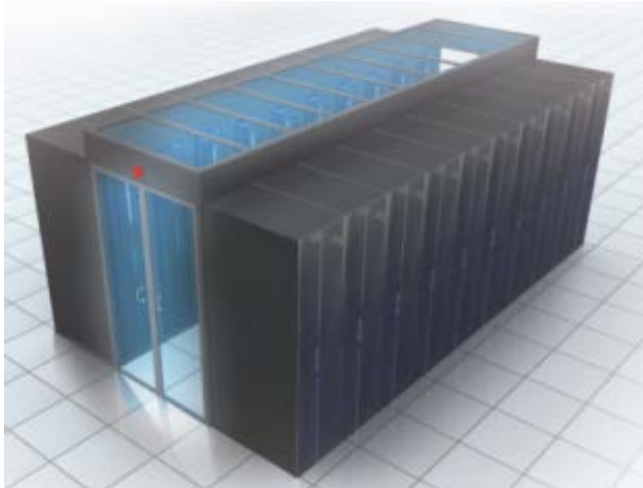
Double Row Module



N+1 Scenario(Tier I/II)



2N Scenario(Tier III)

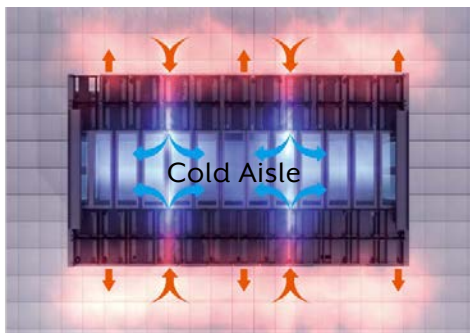


Cold/Hot Air Aisle Sealing System

Separate hot and cold air aisle to avoid the short circuit of heat/cool air flow or generate local hot spot

Increase return air temperature to raise cooling efficiency

Increase the power density of server cabinet to 15kW/rack, directly reducing machine room planning area and saving construction cost



Sealed cooling system,
Separate hot / cold aisle

Case Reference

Shanghai Geriatrics Center UPS Project (Shanghai)

Shanghai Geriatrics Center is a tertiary general hospital with 1,000 beds. The hospital will focus on the functions of geriatric medicine treatment, rehabilitation, teaching, scientific research, public services, and industry guidance, and carry out services such as medical care and nursing, medical teaching and research, health care personnel training, and health care and health education. UPS applications in tertiary hospitals have provided customers with good products and guarantees, and played a very good role in enhancing Mercury brand.



Major Equipment	Model & Capacity	Quantity	Unit
MPM3300 - 150	150K	16	Set

Levitation Production Workshop Reconstruction Project (Yunnan Province)

After a series of communications with the Mercury technical team, the UPS option is enlarged and the UPS is selected according to 4 times the margin to ensure reliable and stable operation of the UPS in the later stage. In 2020, after the project is completed, we will track the project situation and the fan will start. The load rate after stable is about 23%, the system operates reliably, and the environment safety of the laboratory is guaranteed.



Major Equipment	Quantity	Unit
MPM3300 series 400kVA high frequency modular UPS	2	Set
MPM3300 series 200kVA high frequency modular UPS	2	Set
MPM3300 series 250kVA high frequency modular UPS	3	Set
MPM3300 series 20kVA high frequency modular UPS	4	Set
MPM3300 series 80kVA high frequency modular UPS	1	Set
MPM3300 series 120kVA high frequency modular UPS	1	Set
Spare Module	6	Unit



Case Reference

Hangzhou Pfizer Pharmaceuticals (Zhejiang Province)

Founded in 1849, Pfizer Inc. has a history of more than 170 years and is headquartered in New York, USA. It is a science-based, innovative and patient-first biopharmaceutical company. The equipment purchased this time is used in the production line



Major Equipment	Quantity	Unit
EPS10-40K	4	Set
battery	1	Batch

High End UPS Installation Details in Nigeria

Mercury Solar / Power products are known for their superior quality, reliability, and performance, ensuring optimal efficiency for clients. Mercury high-end UPS's has been installed to big corporates and manufacturing units in Nigeria. To name a few; **Niger Biscuit, Charvet group, 94.5 FM Studio, Rock View Hotel, Buzzer Club.**



Company	Model	Capacity	Location
NIGER BISCUIT	EP ONLINE UPS	EP 30KVA	SAGAMU
CHARVET	EP ONLINE UPS	EP 30KVA	IKEJA
94.5 FM STUDIO	EP ONLINE UPS	EP 30KVA	IKEJA
ROCK VIEW HOTEL	EP ONLINE UPS	10 KVA	ABUJA
BUZZER CLUB	EP ONLINE UPS	10KVA	VI