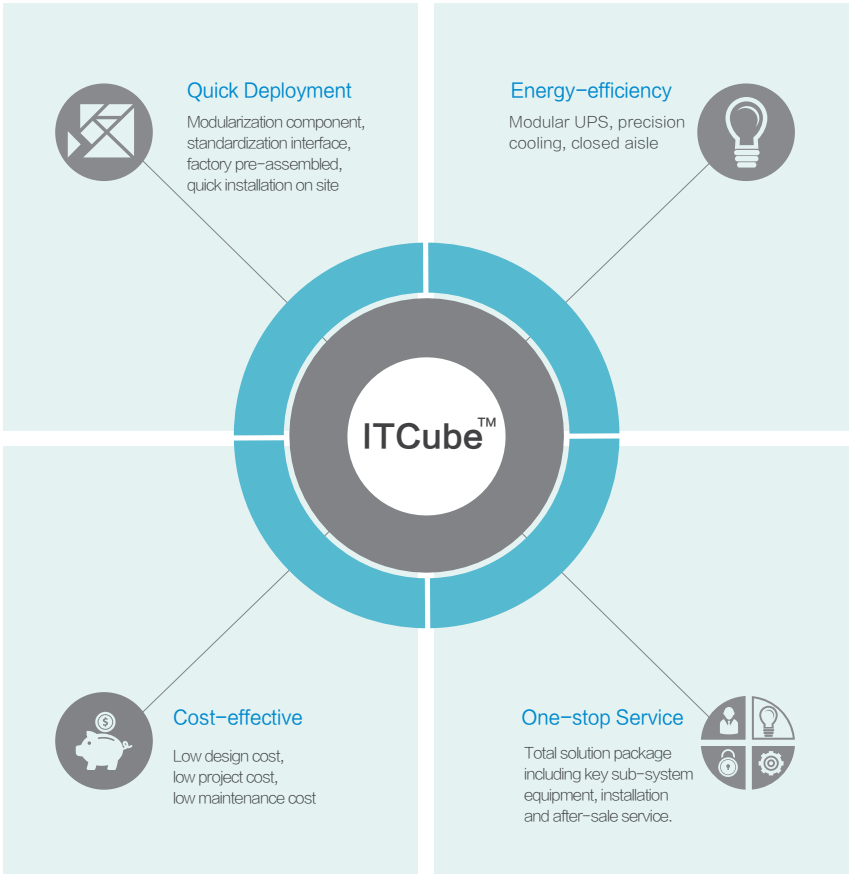
ITCube Data Center Integrated Solution

In order to meet the rapid increase of business of customers, achieve rapid deployment and flexible expansion, BPE has introduced ITCube series integrated data center solution. ITCube solution comprises all-in-one, green power-saving and modularization concept, this can help customer to realize rapid deployment, flexible expansion, high-efficient operation, straightforward management for new generation data center.

Core Value of ITCube



ITCube Product Overview

BPE ITCube series data center solution includes three solutions of IDU(Integrated Data Center Unit),IDM(Integrated Data Center Module), IDR(Integrated Data Center Room), covering all of indoor scenes of data center in order to meet the diverse needs of customers.

Micro-enterprises, branch office

IDU
(Integrated Data Center Unit)

Small and medium enterprises, regional center, high-density deployment

IDM
(Integrated Data Center Module)

Large enterprises

IDR
(Integrated Data Center Room)

One Row Intelligent IDU

Configuration with air conditioner

Configuration without air conditioner

Single cabinet configuration

General introduction

BPE IDU integrate with cabinets, monitoring, power supply and distribution system, batteries, inrow air conditioner and other infrastructure; BPE IDU can support one row sealed cold/hot aisle, battery packs can be configured inside or outside the cabinets.

Application

BPE IDU is better to be used in the small to medium data center of which power is less than 20kVA and space is less than 50㎡, computer room of large enterprises branch, financial service network, school, hospital, retailing, government department and so on.

Value to customer

Ease of Use

- Modularization component, standardization interface, quick installation on site
- Prefabricate assembly, plug and play, simple setting
- Centralized monitor, intelligent management, remote monitor

High efficiency

- Flexible configuration by high-efficiency power modules
- Short distance of cooling path, sealed aisle, cold air and hot air separation, avoid hot spot, total PUE is less than 1.5

Safety

- Sealed micro environment, dust-proof, noise-proof, little affected by the environment, lifetime lengthens 1 to 2 times.
- Key subsystem can be configured as N+1/N design and enhance the stabilization of the system.

Recommendation for the minimal configuration of IDU

Recommendation for the maximum configuration of IDU

Specification

General characteristics

Dimension(mm)	L × 1400 × 2000，600≤L≤4800
Number of cabinets	1~8
Power	3~20kVA
Reliability	Tier II or above
Installation	Deploy on flat ground

Power	3~10kVA	10~20kVA

UPS Redudant (Optional as Per Customer request)

Input	220/230/240Vac, 50/60Hz,1Ph+N+PE	380/400/415Vac, 50/60Hz, 3Ph+N+PE
Output power factor	≥0.9	
Nominal capacity	3~10kVA, Support single UPS running or working in parallel	15~20kVA, Support single UPS running or working in parallel
Maintenance bypass	Support	
Efficiency	≥92%	≥94%

Cooling system Redudant (Optional as Per Customer request)

Cooling capacity	3.8(Rack-mounted) / 5.5 / 7.5	7.5 / 12.5
Dimension (W×D×H) mm	300 × 1200 × 2000 466 × 720 × 266(3.8kW)	300 × 1200 × 2000
Cooling type	Air cooling	

Cabinet

Air supply method	Front supply, back return, total sealed	
Dimension(W×D×H) mm	600 × 1200 × 2000	
Available space	42U	
Optional	Blind plate, L bracket, Movable/fixed tray, cable management arm, sealed module	
IP level	IP20	

Power distribution

Input	220/230/240Vac, 50/60Hz, 1Ph+N+PE	380/400/415Vac, 50/60Hz, 3Ph+N+PE
Input	Single input/Dual input	
Number of output branch	2~8	2~14
Lightning protection	C level lightning protection	

Monitor system

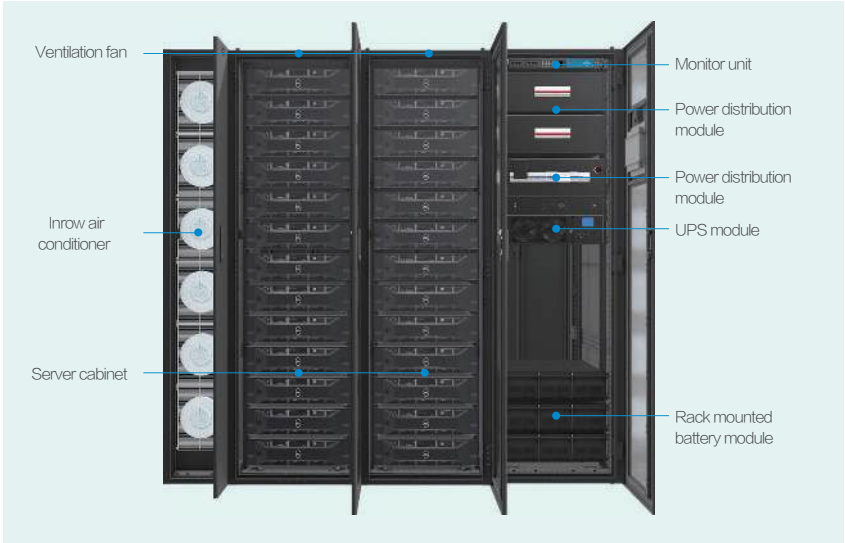
Alarm	Sound and light alarm, Phone call alarm, SMS alarm, E-mail alarm
User interface	Remote web interface, 10 inch touch screen, APP, Wechat
User interface	Centralized management(UPS/CRAC/Power distribution etc.), entrance guard management, CCTV management, alarm management, environment management(temperature and humidity, smoke sensor, water leakage)

Fire protection(Optional)

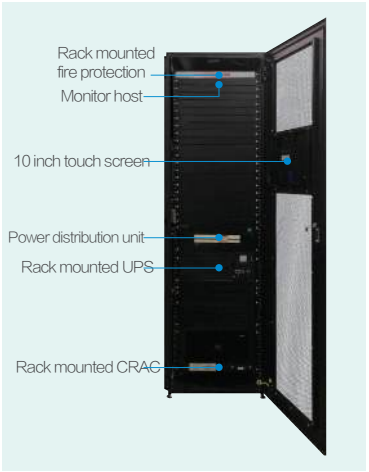
Fire protection module	FM200

One Row Intelligent IDU

Internal layout of one row intelligent IDU



Internal layout of one cabinet intelligent IDU



Cabinet	
Dimension (W × D × H) mm	600 × 1400 × 2000
Available space(U)	25 (Not contain battery inside)
UPS	
UPS Power (kVA)	3/6
Rack mounted CRAC	
Rated cooling capacity(kW)	3.8
Power distribution	
Input voltage(V)	220
Input phase (Ph)	1
Input frequency (Hz)	50
Power cable in	Top/bottom cable in
Optional	
Fire protection	Optional
Monitor	
Display on site	10 inch touch screen
Temperature/humidity sensor	Yes
Smoke sensor	Yes
Water leakage detection	Yes
UPS	Yes
Precision power distribution monitor	Yes
Emergent ventilation	Yes

Typical configuration Backup 1 hour

Total power 6kVA

Total power 10kVA

Total power 15kVA

Total power	Number of cabinets	Maximum power of single cabinet	CRAC cooling capacity	Dimension (W × D × H) mm
6kVA	1	4kW	5.5kW	1500 × 1400 × 2000
10kVA	1	7kW	7.5kW	1500 × 1400 × 2000
15kVA	2	12kW	12.5kW	2100 × 1400 × 2000

Typical configuration External batteries

Total power 6kVA

Total power 10kVA

Total power 15kVA

Total power	Number of cabinets	Maximum power of single cabinet	CARC cooling capacity	Dimension(W × D × H) mm
6kVA	1	4kW	5.5kW	1500 × 1400 × 2000
10kVA	1	7kW	7.5kW	1500 × 1400 × 2000
15kVA	2	12kW	12.5kW	2100 × 1400 × 2000

One Row Intelligent IDU

Typical configuration | Standard equipment

Mode	IDU-06	IDU-10	IDU-15
Appearance			
Power cabinet	**UPS module** Support single UPS running or working in parallel, nominal capacity≤6kVA **Power distribution unit** Power input + power output + C level lightning module + external maintenance bypass **Monitor host** Monitor the intelligent equipment in the IDU in real time	**UPS module** Support single UPS running or working in parallel, nominal capacity≤10kVA **Power distribution unit** Power input + power output + C level lightning module + external maintenance bypass **Monitor host** Monitor the intelligent equipment in the IDU in real time	**UPS module** Support single UPS running or working in parallel, nominal capacity≤15kVA **Power distribution unit** Power input + power output + C level lightning module + external maintenance bypass **Monitor host** Monitor the intelligent equipment in the IDU in real time
Inrow CRAC	• High efficiency inrow air conditioner • Air supply method: front supply and back return • Cooling capacity: 5.5kW • Cooling capacity: air cooling • Optional low temperature kit, drainage pump, etc.	• High efficiency inrow air conditioner • Air supply method: front supply and back return • Cooling capacity: 7.5kW • Cooling capacity: air cooling • Optional low temperature kit, drainage pump, etc.	• High efficiency inrow air conditioner • Air supply method: front supply and back return • Cooling capacity: 12.5kW • Cooling capacity: air cooling • Optional low temperature kit, drainage pump, etc.
Server cabinet	• High strength server cabinet • 2 PDU • 1 set emergent ventilation	• High strength server cabinet • 2 PDU • 1 set emergent ventilation	• High strength server cabinet • 2 PDU • 1 set emergent ventilation
Environment	• Recommended space 15~50㎡ • Recommended height ≥2.4m • Sealed aisle design, noise proof and sound proof	• Recommended space 15~50㎡ • Recommended height ≥2.4m • Sealed aisle design, noise proof and sound proof	• Recommended space 15~50㎡ • Recommended height ≥2.4m • Sealed aisle design, noise proof and sound proof
Optional	• Fire protection module	• Fire protection module	• Fire protection module
Dimension (W × D × H)mm	1500 × 1400 × 2000	1500 × 1400 × 2000	2100 × 1400 × 2000

Two Row Sealed Aisle Intelligent Micro Module IDM

General introduction

Key subsystem can be configured as N+1/N design and enhance the stabilization of the system. Sealed aisle adopts rotated skylight, and it work with fire protection system and will not affect the running of fire protection system.

Application

Recommended power of IDM is less than 200kVA, and space is larger than 50㎡. IDM is mainly used in small-medium data center. Multi-IDM solution can be used in large data center, cloud computing center, backup data center and so on.

Value to customer

Value to customer	High efficiency	Safety
• Modularization component, standardization interface, quick installation on site • Prefabricate assembly, plug and play,simple setting • Centralized monitor, intelligent management, remote monitor	• Flexible configuration by high-efficiency power modules • Short distance of cooling path, sealed aisle, cold air and hot air separation, avoid hot spot • Total PUE is less than 1.5	• Key subsystem can be configured as N+1/2N design and enhance the stabilization of the system. • Sealed aisle adopts rotated skylight, and it work with fire protection system and will not affect the running of fire protection system.

Two Row Sealed Aisle Intelligent Micro Module IDM

Specification

General characteristics

Dimension of single row IDM (L × W × H)	L × 2460mm × 2000mm, L ≤ 15m
Dimension of two row IDM (L × W × H)	L × 3600mm × 2000mm, L ≤ 15m
Number of cabinets in IDM	One row: 4~24; Two row: 6~48
Power of IDM	20~200kVA
Power input	380/400/415Vac, 50/60Hz, 3Ph+N+PE
Reliability	Tier Ⅱ or above
Installation	Deploy on flat ground, or deploy on raised floor

UPS

Nominal voltage	380/400/415Vac, 50/60Hz, 3Ph+N+PE
Input power factor	≥0.99
Output power factor	≥0.9
Rated power	20~200kVA, Support on-line expansion
Efficiency	≥96%
Modular UPS	Hot swappable power module make it easy to maintain

Cooling system

Cooling capacity (kW)	Air cooling: 25 / 40; Chilled water: 35 / 65
Dimension(W × D × H) mm	600 × 1200 × 2000
Cooling type	Air cooling/Chilled water

Cabinet

Dimension(W × D × H) mm	600 / 800 × 1200 × 2000
Available space	42U
Optional	Blind plate, L bracket, Movable/fixed tray, cable management arm, sealed module
IP level	IP20 or above

Power distribution

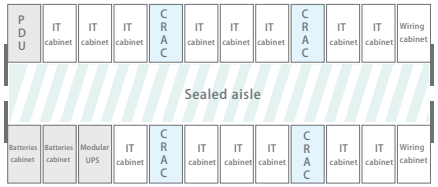
Input voltage	380/400/415Vac, 50/60Hz, 3Ph+N+PE
Rated capacity	0~630A
Input	Single input/Dual input
Number of output branch	21P~126P
Others	B level lightning protection, 7 inch touch screen, remote monitor

Monitor

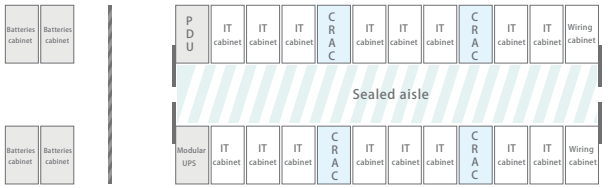
Alarm	Light and sound alarm, phonecall alarm, SMS alarm, E-mail alarm
User interface	Remote web interface, 10.4/21.5 inch touch screen, APP, Wechat
Function module	Centralized management(UPS/CRAC/Power distribution etc.), entrance guard management, CCTV management, alarm management, environment management(temperature and humidity, smoke sensor, water leakage detection)

Typical configuration Internal / external batteries

Internal batteries configuration solution ①



External batteries configuration solution ②



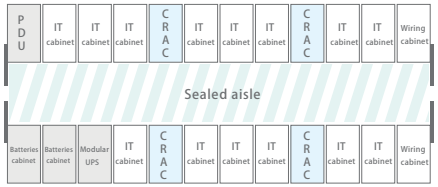
Total power	Number of cabinet	Maximum power of single cabinet	CRAC	Redundancy	Width of aisle
20 kVA	4~6	4 kW	25 kW × 2	N+1	1200
60 kVA	10~18	5 kW	25 kW × 3	N+1	1200
100 kVA	12~18	7 kW	40 kW × 3	N+1	1200
200 kVA	25~36	7 kW	40 kW × 5	N+1	1200

Note: length of sealed aisle≦15m

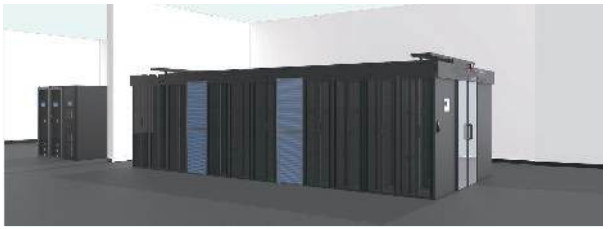
Two Row Sealed Aisle Intelligent Micro Module IDM

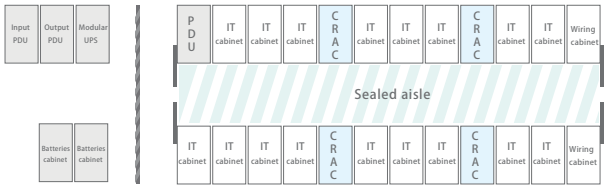
Typical configuration | Internal / external batteries

Internal UPS configuration solution ①



External UPS configuration solution ②



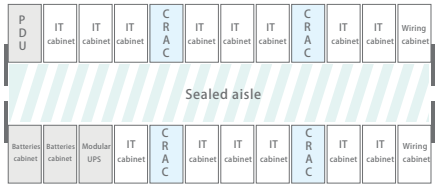


Total power	Number of cabinet	Maximum power of single cabinet	CRAC	Redundancy	Width of aisle
20 kVA	4~6	4 kW	25 kW×2	N+1	1200
60 kVA	10~18	5 kW	25 kW×3	N+1	1200
100 kVA	12~18	7 kW	40 kW×3	N+1	1200
200 kVA	25~36	7 kW	40 kW×5	N+1	1200

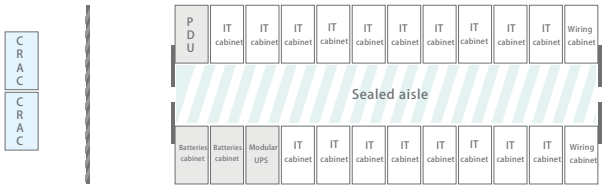
Note: length of sealed aisle≦15m

Typical configuration | Internal / external batteries

Internal CRAC configuration solution ①



External CRAC configuration solution ②



Total power	Number of cabinet	Maximum power of single cabinet	Internal CRAC	External CRAC	Redundancy	Width of aisle
20 kVA	4~6	4 kW	25 kW×2	20 kW×2	N+1	1200
60 kVA	10~18	5 kW	25 kW×3	35 kW×2	N+1	1200
100 kVA	12~18	7 kW	40 kW×3	40 kW×3	N+1	1200
200 kVA	25~36	7 kW	40 kW×5	60 kW×3	N+1	1200

Note: length of sealed aisle≦15m

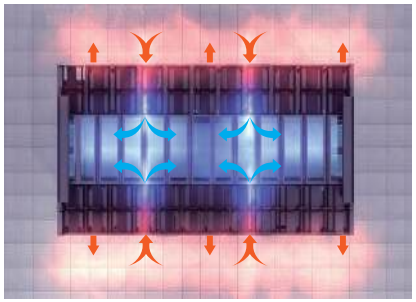
Two Row Sealed Aisle Intelligent Micro Module IDM

Typical configuration | One row / With pillar solution

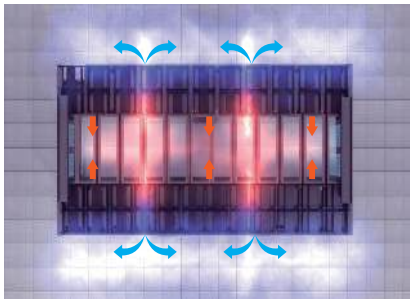
One row sealed solution---mainly used in the limited space

Surrounding pillar solution---mainly used in the space with pillar

Typical configuration | Cold aisle / hot aisle



Cold aisle

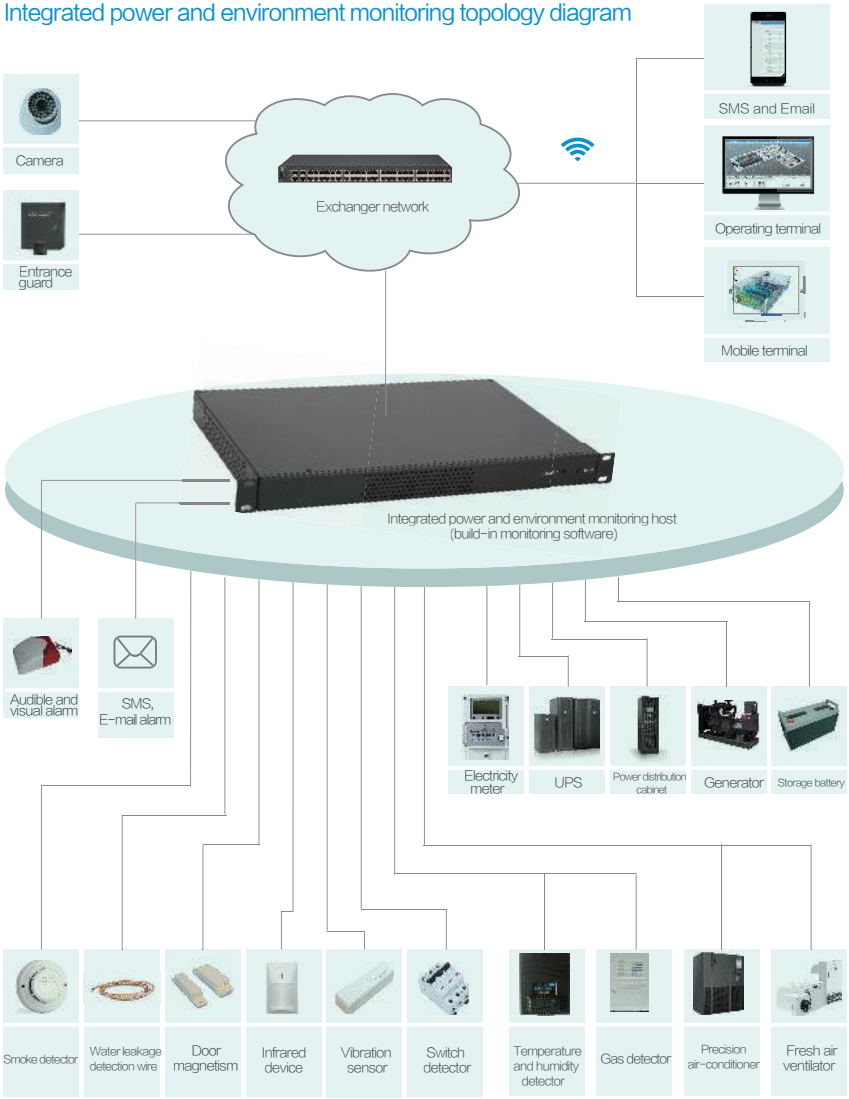


Hot aisle

Layout of two row sealed aisle intelligent micro module IDM

Medium and Large Scale Data Center Solution (IDR)

Integrated power and environment monitoring topology diagram



IDR (Integrated Data Center Room) solution is mainly faced to medium and large data center, which integrated with UPS, precision air conditioner, precision power distribution, IT cabinet, cold aisle enclosed system products, so provide integrated datacenter solution.