

FusionDC1000C Prefabricated Modular Data Center

Introduction

The FusionDC1000C prefabricated modular data center integrates civil engineering (L0) and electromechanical infrastructure (L1). The core functional area adopts modular design that the core modules are prefabricated, pre-integrated, and pre-commissioned in the factory, and LEGO assembly onsite. The construction of the auxiliary areas by engineering mode. So, it can minimize onsite workload, supports simplified, fast and green deploy. Core modules generally include IT modules, power supply modules, battery modules, and cooling modules.



Reference layout

Application Scenarios

- Public cloud, large colocation data centers
- Internet service data centers
- Medium- and large-sized data centers of enterprises or governments

Features & Value

Simple

- Pre-integration and pre-test of devices in the factory, reducing TTM by 50%.
- Unique Module Height 4.15m, that 15m high building can be built with three floors, improving Space Usage Efficiency 15%+

Green

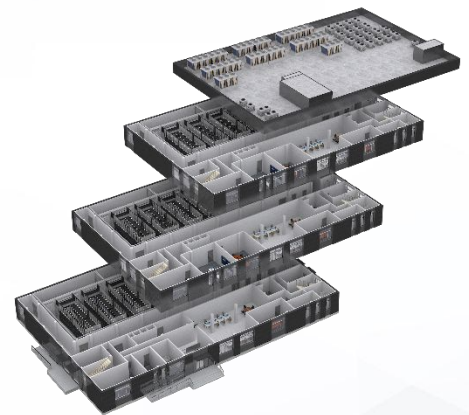
- Building assembly rate > 95%, overall material recovery rate > 85%, and reduce construction carbon footprint by 90%.
- Huawei intelligent PowerPOD are used for power supply and distribution, ensuring high efficiency across the entire chain.

Smart

- Digital design with BIM technology makes less design change.
- Digital delivery makes less site management risks with visualized and standardized operation.
- Digital Twins + AI + Cloud Enable Light-out Data Factory.

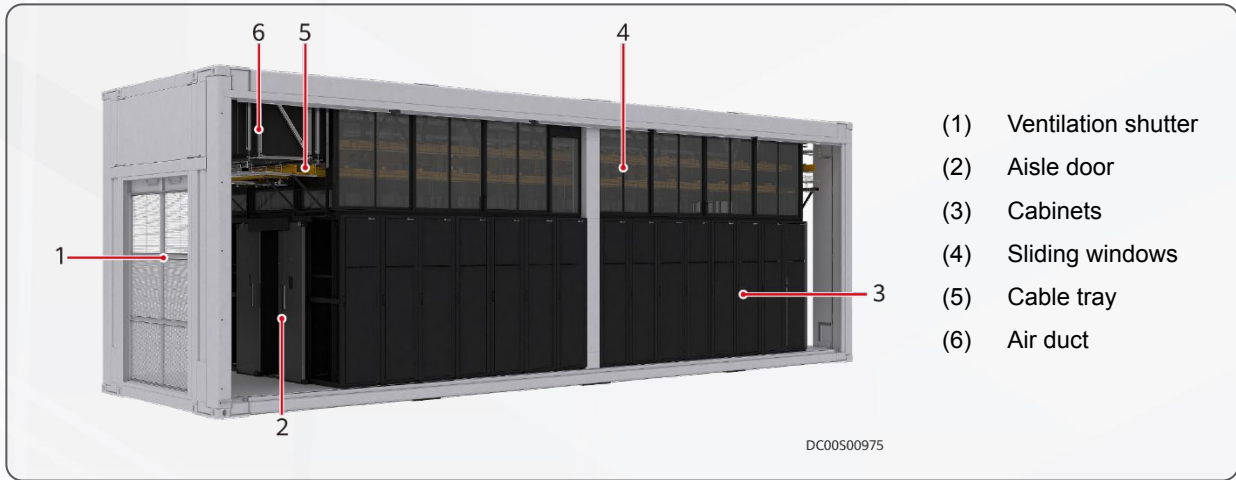
Reliable

- Meets the anti-seismic requirements of local buildings with solid structure.
- Meets building-grade fire resistance, waterproof, and wind resistance requirements.



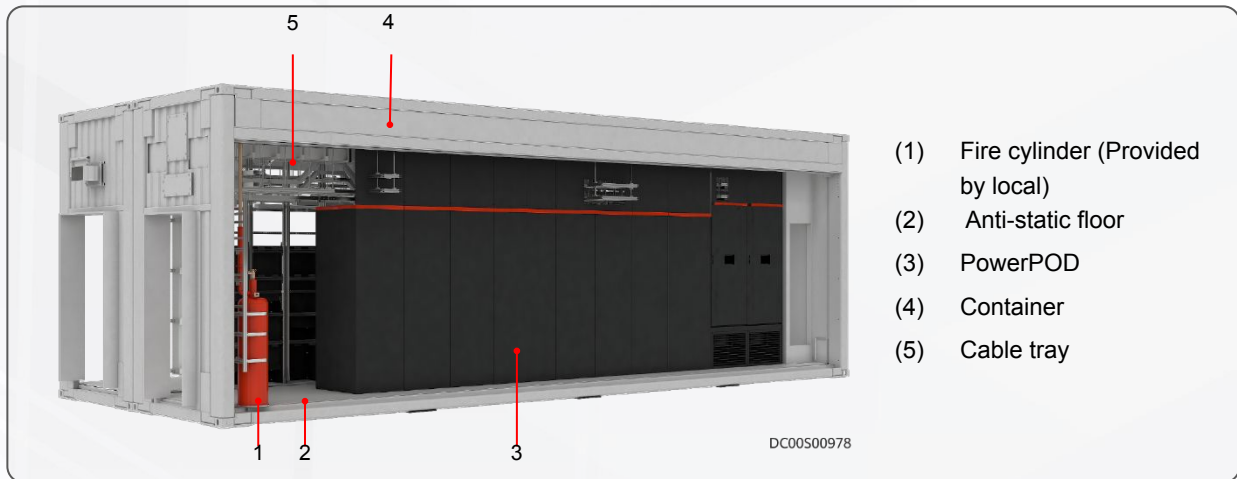
Exploded view

Introduction to Core Modules (IT Module)



Category	Item	Specifications
System	IT power capacity	≤ 336 kW/Module
	IT power density	≤ 12 kW/Cabinet
	Number of IT cabinets	≤ 30 Racks
	Cabinet dimension (H×W×D, mm)	2000×600×1200 2200×600×1200 2200×800×1200
Structure	Module dimension (L×W×H, mm)	12192×3495×4150
	Floor	Without raised floor, floor-mounted
Power	Power system	380/400/415V±10%, 50/60Hz±3Hz, three-phase four-wire + PE
	IT cabinet power	Routes A and B: 400/630A busbar
Cooling	Cold aisle supply air temperature /Hot aisle return air temperature	24°C/36°C, temperature rise by default: 12°C
	Aisle containment	Hot aisle containment
	Temperature range of cold aisles in the datahall	18~27°C (recommended), The highest temperature should not exceed 32°C
	Range of relative humidity in the datahall	20%~80% RH
Monitoring	Power and environment monitoring system	Supported, ECC800-Pro centralized collection
	Module-level ACS	Supported, three-in-one card reader and ECC800-Pro management
	Cabinet-level ACS	Not available
	Module-level CCTV	Supported, video storage for 90 days by default
Fire resistance	Load-bearing beams and columns	Beams 90min, Columns 120min
	Enclosure structures	60min
	Fireproof doors	90min

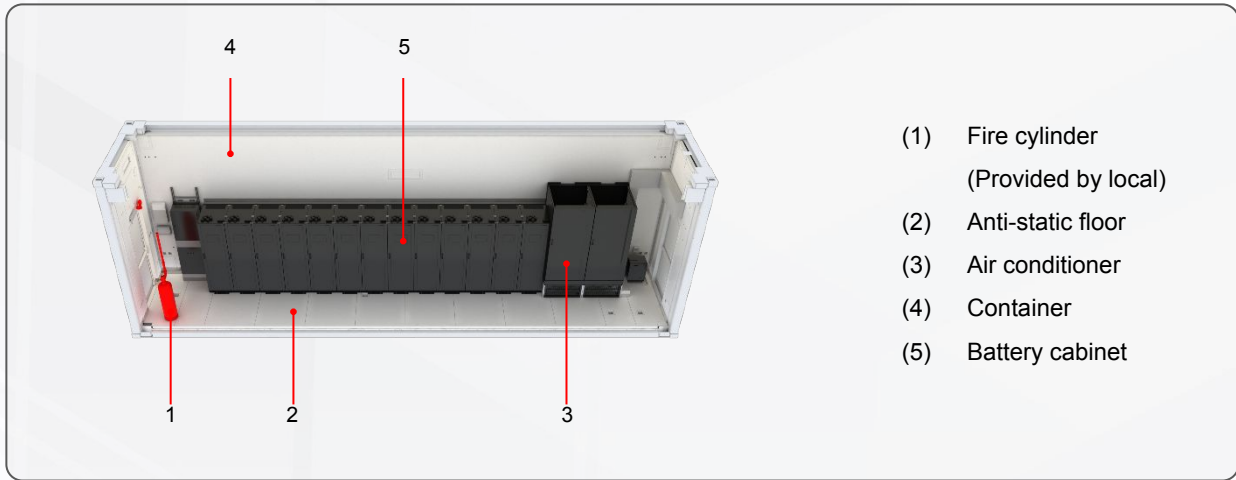
Introduction to Core Modules (Power Supply Module)



- (1) Fire cylinder (Provided by local)
- (2) Anti-static floor
- (3) PowerPOD
- (4) Container
- (5) Cable tray

Category	Item	Specifications
System	Total IT load per layer	≤1800kVA @ IT scenario, ≤1500kVA @ IT + ME scenario
Structure	Module dimension(L×W×H, mm)	12192×2438×4150 (2 containers each route)
	Floor	Without raised floor, floor-mounted
Power	Power system	380/400/415V±10%, 50/60Hz ±3Hz, 400V by default
	Input power factor of UPS	0.99
	IT UPS	3×600kVA or 3×500kVA or 2×600kVA
	Operating temperature	0 ~ 40°C (recommended: 20 ~ 25°C)
	Output power factor of UPS	1
	Output voltage distortion of UPS	THDv≤1% @ linear full load, THDv≤4% @ non-linear full load
	Cooling type	In-room air cooled (NetCol8000-A055D)
Cooling	Refrigerant	R410A 30.8kW/set (indoor: return air temperature 30°C, relative humidity 35% RH, supply air temperature 20°C±1°C; outdoor: inlet air temperature 50°C; pipe length: 50m, with a height difference of 15m)
	Cooling capacity	
	Range of temperature in the air intake channel	15~32°C
	Range of relative humidity in the air intake channel	20 ~ 80% RH
Monitoring	Power and environment monitoring system	Supported, ECC800-Pro centralized collection
	Room-level ACS	Supported, three-in-one card reader and ECC800-Pro management
	Room-level CCTV	Supported, video storage for 90 days by default
	Water detection system	Supported, non-location cable sensor
Fire resistance	Load-bearing beams and columns	Beams 90min, Columns 120min
	Enclosure structures	60min
	Internal partition walls	120min
	Fireproof doors	90min

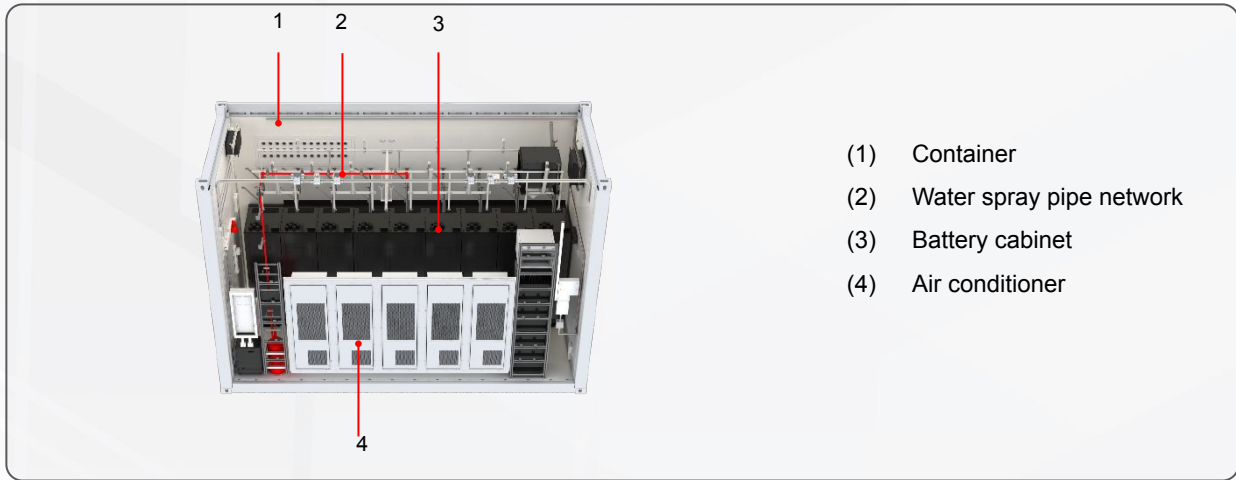
Introduction to Core Modules (Battery Module)



- (1) Fire cylinder
(Provided by local)
- (2) Anti-static floor
- (3) Air conditioner
- (4) Container
- (5) Battery cabinet

Category	Item	Specifications
System	Power capacity	≤ 900 kWh/module
Structure	Module dimension(L×W×H, mm)	12192×2438×4150
	Floor	Without raised floor, floor-mounted
	Battery type	Lithium battery
Power	Battery model	SmartLi 3.0 ST
	Number of battery cabinet	0~13 pcs
	Power backup time	10~15min @ full load
	Cooling type	In-room air cooled (NetCol8000-A055D)
Cooling	Refrigerant	R410A
	Cooling capacity	43.9kW @ Supply air 25°C, return air 36°C, outdoor environment temperature 45°C; 40.3kW @ Supply air 25°C, return air 36°C, outdoor environment temperature 50°C
	Range of temperature in the air intake channel	25°C±2°C
	Range of relative humidity in the air intake channel	5% ~ 95% RH
Monitoring	Power and environment monitoring system	Supported, ECC800-Pro centralized collection
	Room-level ACS	Supported, three-in-one card reader and ECC800-Pro management
	Room-level CCTV	Supported, video storage for 90 days by default
	Water detection system	Supported, non-location cable sensor
	Load-bearing beams and columns	Beams 90min, Columns 120min
Fire resistance	Enclosure structures	120min
	Fireproof doors	90min
	precaution	It is necessary to deploy lithium battery in a independent compartments and configure dry water fire extinguishing facilities such as water spray in the battery room.

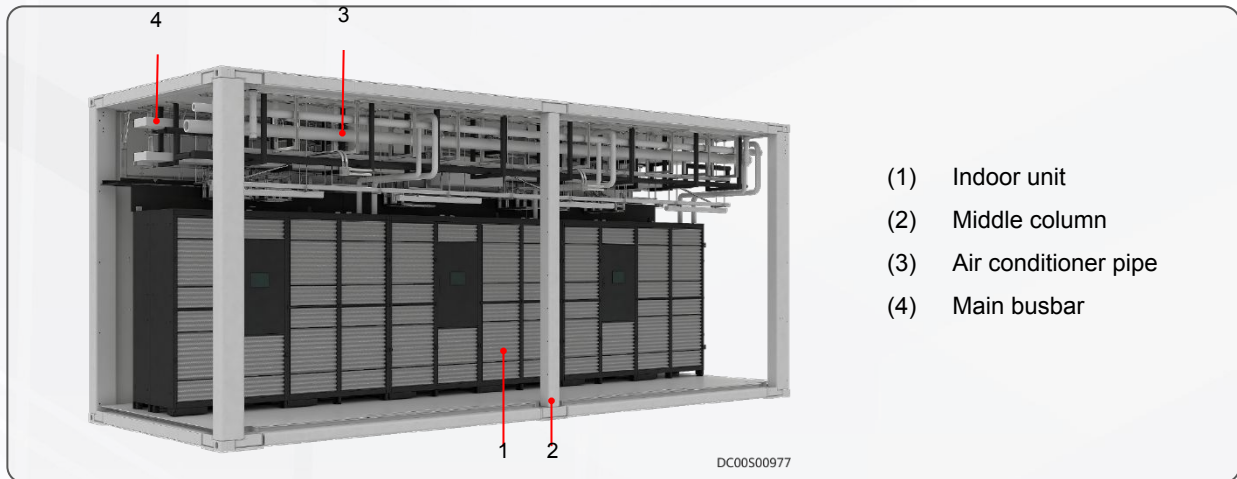
Introduction to Core Modules (Outdoor Battery Module)



- (1) Container
- (2) Water spray pipe network
- (3) Battery cabinet
- (4) Air conditioner

Category	Item	Specifications
System	Power capacity	≤ 600 kWh/module
Structure	Module dimension(L×W×H, mm)	6058×2438×4150
	Floor	Without raised floor, floor-mounted
	Battery type	Lithium battery
Power	Battery model	SmartLi 3.0 ST
	Number of battery cabinet	0~8
	Power backup time	10~15min @ full load
	Cooling type	PC6H, wall-embedded air conditioner
Cooling	Number of air conditioners	N @ 100% of load ; N+1 @ 50% of load
	Refrigerant	134A/R410A
	Cooling capacity	6.3kW @ indoor environment temperature 25°C, outdoor environment temperature 45°C
	Range of temperature in the air intake channel	25°C±2°C
	Range of relative humidity in the air intake channel	5% ~ 95% RH
	Power and environment monitoring system	Supported, ECC800-Pro centralized collection
Monitoring	Room-level ACS	Supported, three-in-one card reader and ECC800-Pro management
	Room-level CCTV	Supported, video storage for 90 days by default
	Water detection system	Supported, non-location cable sensor
Fire resistance	Enclosure structures	120min
	Fireproof doors	90min
	precaution	It is necessary to deploy lithium battery in a independent compartments and configure dry water fire extinguishing facilities such as water spray in the battery room.

Introduction to Core Modules (Cooling Module)



- (1) Indoor unit
- (2) Middle column
- (3) Air conditioner pipe
- (4) Main busbar

Category	Item	Specifications
Structure	Pipeline	Top-mount, 2500A busbar (purchased locally)
	Module dimension(L×W×H, mm)	9827×3495×4150
	Floor	Without raised floor, floor-mounted
Power	Power system	380/400/415V, 50/60Hz; three-phase four-wire
	Power supply to terminal devices	Indoor unit of FusionCol8000-A230, with two power supplies, supporting continuous cooling
	Cooling type	In-room air cooled (FusionCol8000-A230)
	Dimension (H x W x D, mm)	2450×3140×1100
Cooling	Cooling mode	Air cooled
	Refrigerant	R410A
	Cooling capacity	230 kW/set Indoor: return air temperature 36°C, supply air temperature 24°C±1°C, relative humidity 25% RH Outdoor: air intake temperature 50°C, standard pipe length 15m
	Air volume	65000 m³/h/unit for maximum
	Level of air filter	G4
	Net weight	1240 Kg
	Supply/Return air temperature	24°C/36°C, temperature rise is 12°C by default
Monitoring	Room-level CCTV	Supported, video storage for 90 days by default
	Water detection system	Supported, non-location cable sensor
	Load-bearing beams and columns	Beams 90min, Columns 120min
Fire resistance	Enclosure structures	90min
	Internal partition walls	60min
	Fireproof doors	90min