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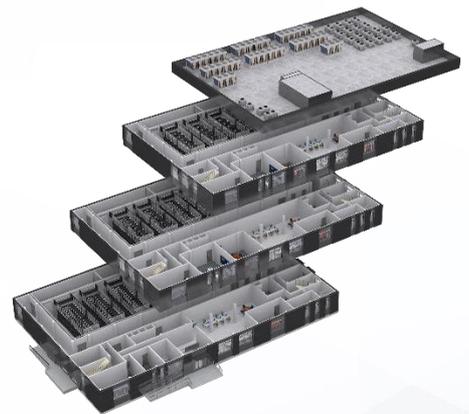
**Green**
- Building assembly rate > 95%, overall material recovery rate > 85%, and reduce construction carbon footprint by 90%.
- Huawei intelligent PowerPOD are used for power supply and distribution, ensuring high efficiency across the entire chain.

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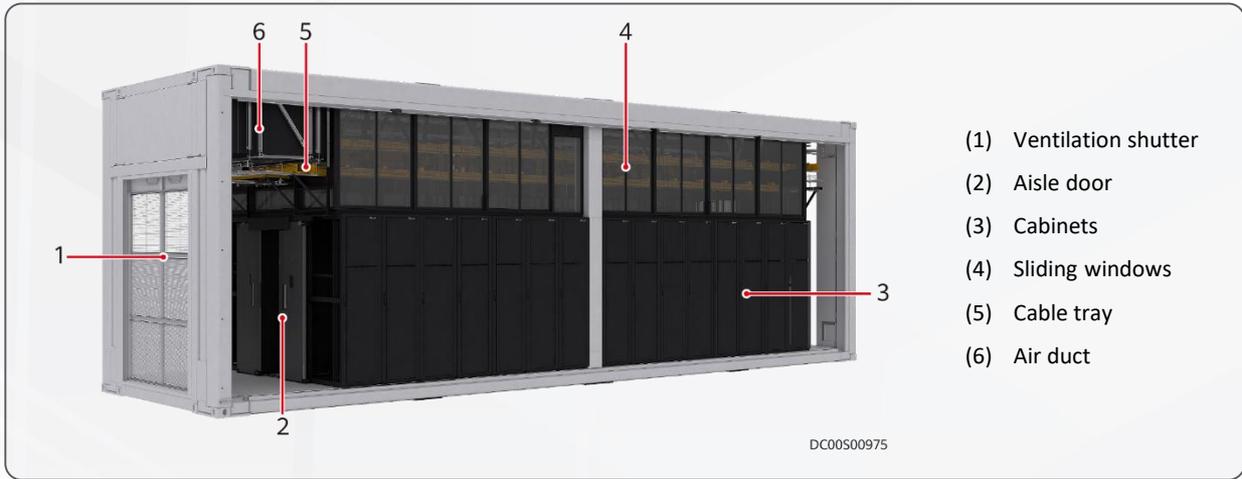- Digital Twins + AI + Cloud Enable Light-out Data Factory.

**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)



(1) Ventilation shutter
(2) Aisle door
(3) Cabinets
(4) Sliding windows
(5) Cable tray
(6) Air duct

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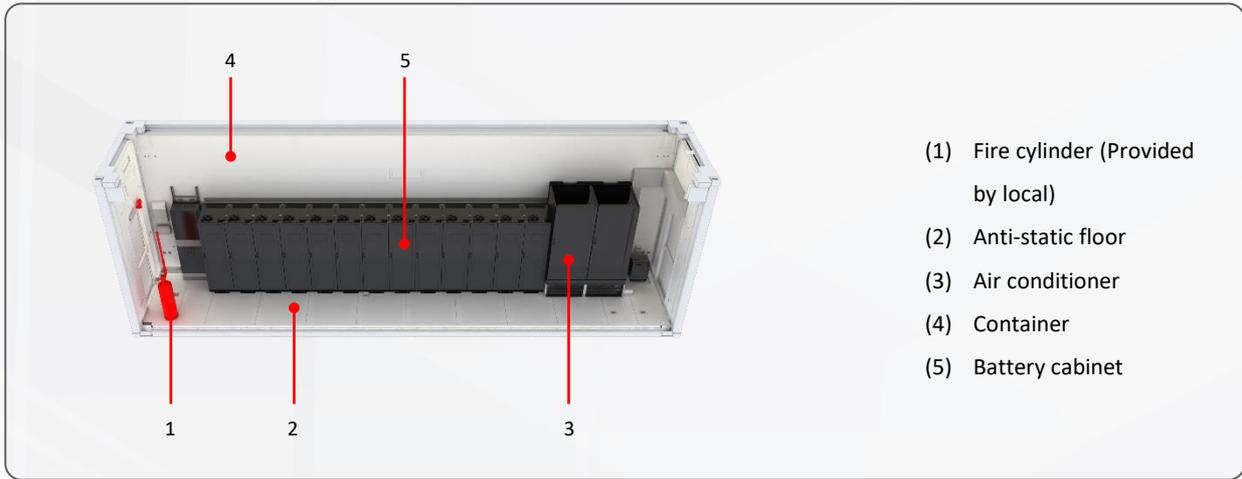| Category | Item | Specifications |
|---|---|---|
| System | IT power capacity | ≤ 336 kW/Module |
| | IT power density | ≤ 12 kW/Cabinet |
| | Number of IT cabinets | ≤ 30 Racks |
| | Cabinet dimension (H×W×D, mm) | 2000×600×1200<br>2200×600×1200<br>2200×800×1200 |
| Structure | Module dimension (L×W×H, 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)
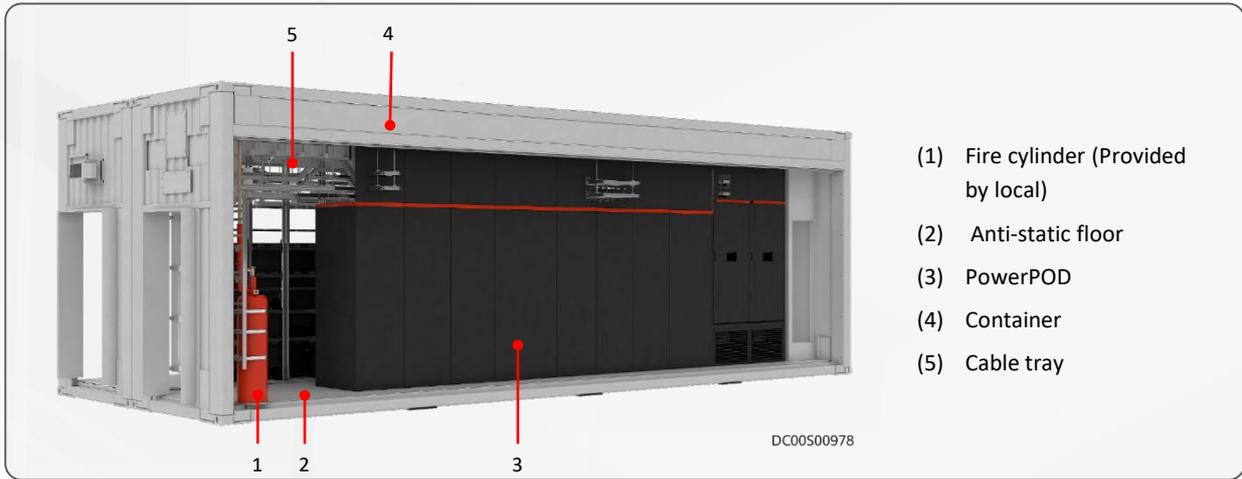


(1)  Fire cylinder (Provided by local)
(2)   Anti-static floor
(3)  PowerPOD
(4)  Container
(5)  Cable tray

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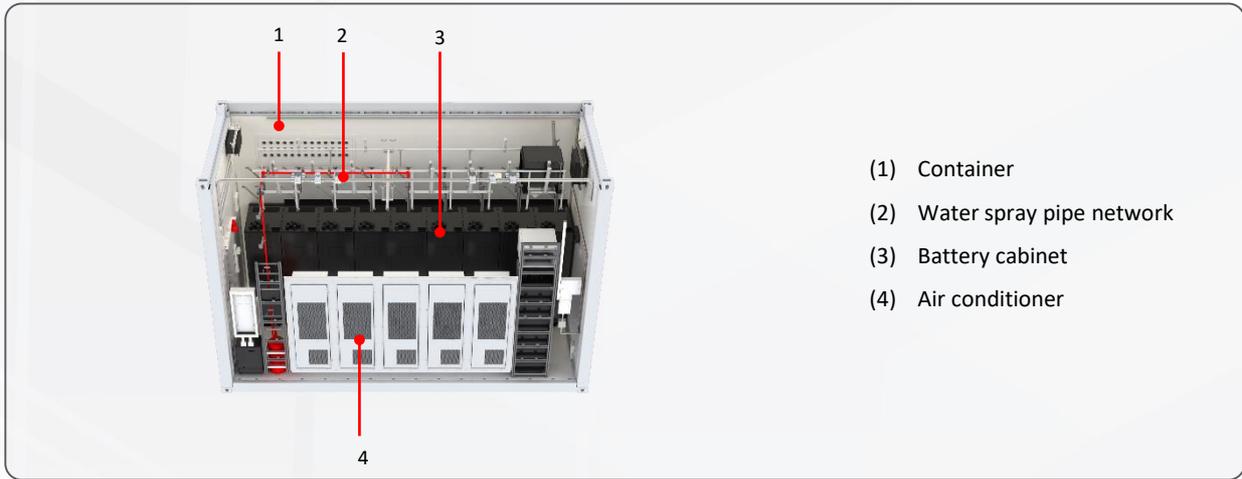| Category | Item | Specifications |
|---|---|---|
| System | Total IT load per layer | ≤1800kVA @ IT scenario，≤1500kVA @ IT + ME scenario |
| Structure | Module dimension(L×W×H, mm) | 12192×2438×4150 （2 containers each route） |
| | Floor | Without raised floor, floor-mounted |
| Power | Power system | 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 | 0～40ºC （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 | Cooling type | In-room air cooled （NetCol8000-A055D） |
| | Refrigerant | R410A |
| | Cooling capacity | 30.8kW/set<br>(indoor: return air temperature 30°C, relative humidity 35% RH, supply air temperature 20°C±1°C;<br>outdoor: inlet air temperature 50°C; pipe length: 50m, with a height difference of 15m) |
| | 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

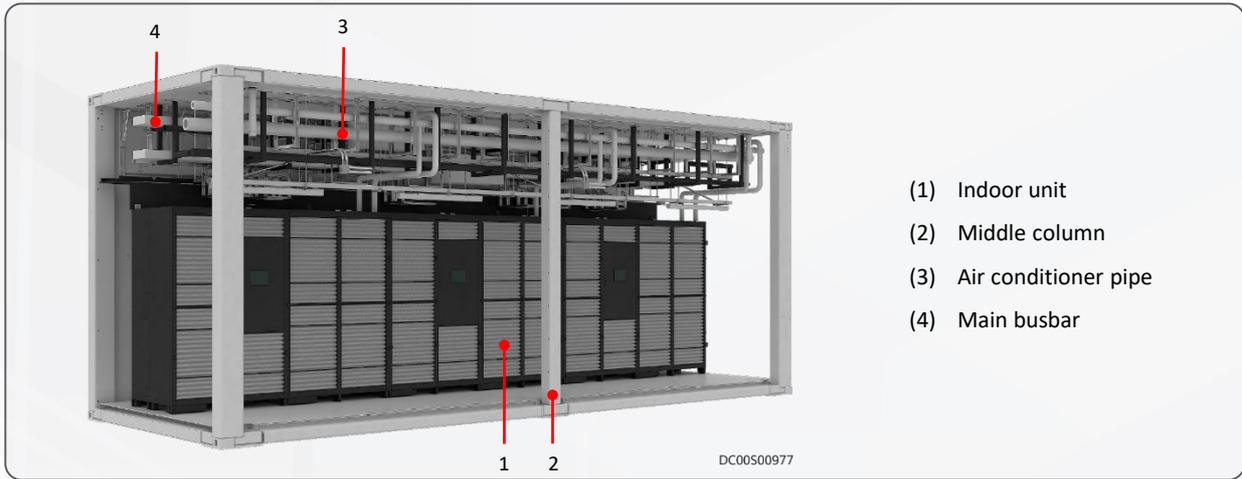| Category | Item | Specifications |
|---|---|---|
| System | Power capacity | ≤ 900 kWh/module |
| Structure | Module dimension(L×W×H, mm) | 12192×2438×4150 |
| | Floor | Without raised floor, floor-mounted |
| Power | Battery type | Lithium battery |
| | Battery model | SmartLi 3.0 ST |
| | Number of battery cabinet | 0~13 pcs |
| | Power backup time | 10~15min @ full load |
| Cooling | Cooling type | In-room air cooled （NetCol8000-A055D） |
| | Refrigerant | R410A |
| | Cooling capacity | 43.9kW @ Supply air 25°C, return air 36°C, outdoor environment temperature 45°C；<br>40.3kW @ Supply air 25°C, return air 36°C, outdoor environment temperature 50℃ |
| | 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 |
| Fire resistance | Load-bearing beams and columns | Beams 90min，Columns 120min |
| | 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 |
| Power | Battery type | Lithium battery |
| | Battery model | SmartLi 3.0 ST |
| | Number of battery cabinet | 0~8 |
| | Power backup time | 10~15min @ full load |
| Cooling | Cooling type | PC6H, wall-embedded air conditioner |
| | 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 |
| 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 | 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

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| 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, supportting continuous cooling |
| Cooling | Cooling type | In-room air cooled （FusionCol8000-A230） |
| | Dimension（H x W x D, mm） | 2450×3140×1100 |
| | Cooling mode | Air cooled |
| | Refrigerant | R410A |
| | Cooling capacity | 230 kW/set<br>Indoor: return air temperature 36°C, supply air temperature 24°C±1°C, relative humidity 25% RH<br>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 |
| Fire resistance | Load-bearing beams and columns | Beams 90min，Columns 120min |
| | Enclosure structures | 90min |
| | Internal partition walls | 60min |
| | Fireproof doors | 90min |