Prefabricated Modular Data Center FusionDC1000 Series

FusionDC1000B Prefabricated Modular Datacenter

HUAWEI

Introduction

The FusionDC 1000B is a small- and medium-sized prefabricated modular infrastructure solution that supports flexible configuration and online capacity expansion for ICT convergence scenarios. The overall solution consists of device modules, power modules, and auxiliary modules (optional). The module type, quantity, and layout can be flexibly configured to meet different requirements for ICT device deployment. All modules are prefabricated in the factory to minimize onsite workload and implement quick deployment.

Outdoor application

Application Scenarios

- Small- and medium-sized government and enterprise data- centers
- Carrier-owned data center
- Small- and medium-sized IDC

Shed application

Warehouse application

Features & Value

Simple

- Pre-integration and pre-test of devices in the factory, reducing the TTM by 50%+
- Modular design, on-demand deployment, and online capacity expansion.

Green

- Hot aisle containment design, cold and hot aisle isolation, improving cooling efficiency.
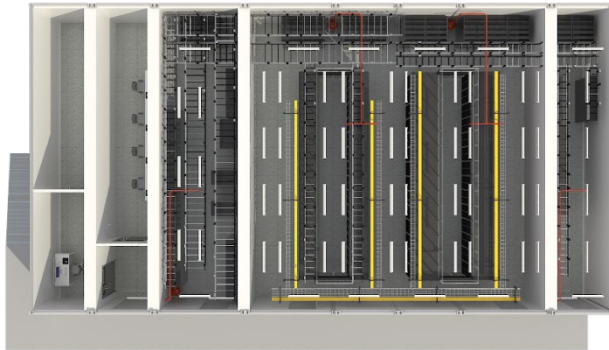- Green onsite construction, no dust and noise on the construction site.

Smart

- The unique iCooling technology to dynamically link the Indoor and outdoor units for self-optimization.
- Precise resource status identification and tenant information management to maximize the value of data center resources.
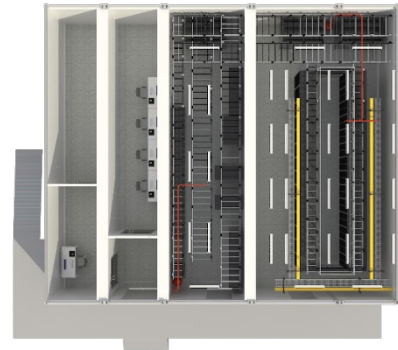
Reliable

- GR 63-Zone3 shockproof, which equivalent McN9 intensity earthquake resistance.
- Huawei iPower technology implements full-link monitoring of power supply and distribution to ensure automatic fault diagnosis and reporting.

Layout and Overall Parameters
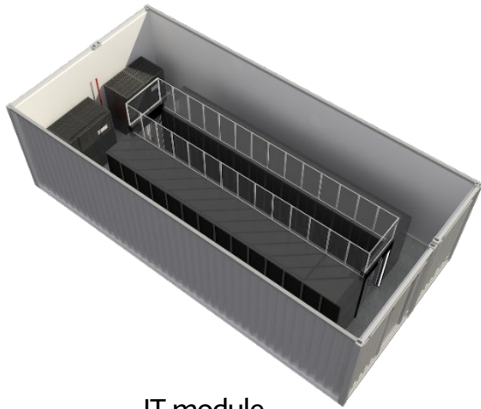

ICT Scenario Layout

CT Scenario Layout

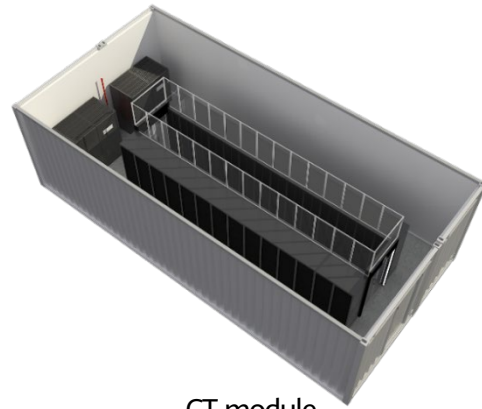| Category	Item	Parameters
General	Application scenario	Outdoor, shed, and warehouse
	Installation type	Floor-mounted installation
	Altitude Range	≤4000m（derating above 1000m）
	Number of stacking layers	≤ 3 floors
	Working humidity	5% RH～95% RH
	Operating temperature	-20℃～+55℃, -40°C~+45°C (an electric heating belt is installed at the bottom if the temperature is lower than –5°C)
	Environment adaptability	A/B/C type environment [1]
	Enclosure lifespan	25 years
Structure	Module dimensions (HxWxD)	Wide pre-fab. module: 3600 mm x 3495 mm x 12192 mm；Standard pre-fab. module: 3600 mm x 2438 mm x 12192 mm
	Raised floor	No
Load	Anti- seismic	GR 63-Zone3
	Windproof	Wind speed 32.7m/s
Power	Power mode	380/400/415V 50/60Hz; three phase and four wire +PE
	Power configuration	IT module: 200kVA-UPS, 2N;CT module: TP482000B DC power supply (dual parallel system), 2N
	Smart Bus Configuration	IT module: Huawei 250A bus, dual-bus A and B configurations for single-row cabinetsCT module: 4 x 2000 A DC PDF (TPD48202B)
	Backup power specifications	IT module: Huawei SmartLi –backup power of 15 minutes for one side at full load;CT module: Huawei BoostLi –backup power of 2 hours for one side at full load.
Cooling	Cooling	Huawei NetCol8000-A055D
	Redundancy	N+1
Monitoring	DCIM	NetEco
	Power and environment monitoring system	Centralized ECC collection
	Access control system	By default, the card reader is configured at the in-room and module levels.The cabinet access control system supports customized password locks in the front door.
	CCTV	The default storage duration is 30 days.
Fire extinguishing	Fire extinguishing system	Automatic gas fire extinguishing, CE version, non-addressable [2]
	Gas	HFC227-ea
	Fire resistance time to the external sheathing structure (structural wall)	Standard: the external wall 90 minutes and the internal wall 60 minutes
	Fire resistance time of the fireproof door	90 minutes
	ASD	support customized

① Type C environments are between500 m to 3700 m away from strong corrosive environments (such as the seaside, garbage piled up, and heavily polluted chemical plants).
② The fire extinguishing system can be selected and addressed. The fire extinguishing system can be removed.

Equipment module parameters

IT module

CT module

Category	Item	Parameters	
		IT equipment module	CT equipment module
General	Total Capacity	≤150kW	
	Average power per cabinet	6kW（25x6kW+Monitoring cabinet） 5.5kW（27x5.5kW+Monitoring cabinet）	6.25kW（24x6.25kW+precision PDF）
	Maximum power per cabinet	10kW	
	600mm wide cabinet	26(Main aisle width≤ 1.5m); 28(Main aisle width≤ 0.9m)[1]	
Structure	Module dimensions (H x W x D)	Wide pre-fab. module: 3600 mm x 3495 mm x 12192 mm Standard pre-fab. module: 3600 mm x 2438 mm x 12192 mm	
	Box assembly	ICT scenarios: 2pcs-3495mm+2pcs-2438mm; CT scenario: 2pcs-3495mm	
	Raised floor	No	
Power	Power mode	380/400/415V 50/60Hz; three phase and four wire +PE	
	Power configuration	200kVA-UPS, 2N	TP482000B DC power supply(dual parallel system), 2N
	Average power per cabinet	6 kW (25 x 6 kW + monitoring cabinet) 5.5 kW (27 x 5.5 kW + monitoring cabinet)	6.25 kW (24 x 6.25 kW + PDF)
	Backup power specifications	Huawei SmartLi –backup power of 15 minutes for one side at full load.	Huawei BoostLi –backup power of 2 hours for one side at full load.
Cooling	Cooling	Huawei NetCol8000-A055D	
	Redundancy	3+1	
	Cooling capacity	55kW@35℃/35℃	
	Aisle containment	Hot aisle containment	
	Continuous cooling	15min@full load	
	Temperature control range of the cold aisle	18~27° C	
	Humidity control range of the cold aisle	20%~80% RH	
Monitoring	DCIM	NetEco	
	Power and environment monitoring system	Centralized ECC collection	
	Access control system	By default, the card reader is configured at the in-room and module levels. The cabinet access control system supports customized password locks in the front door.	
	CCTV	The default storage duration is 30 days.	
Fire extinguishing	Fire extinguishing system	Automatic gas fire extinguishing, CE version, non-addressable [2]	
	Gas	HFC227-ea	
	Fire resistance time of the external protective structure (structure wall)	Standard: the external wall 90 minutes and the internal wall 60 minutes	
	Fire resistance time of the fireproof door	90 minutes	
	ASD	support customized	

①By default, only IT cabinets are provided. The depth of a CT cabinet ranges from 600 mm to 1200 mm.
② The fire extinguishing system can be selected and addressed. The fire extinguishing system can be removed.
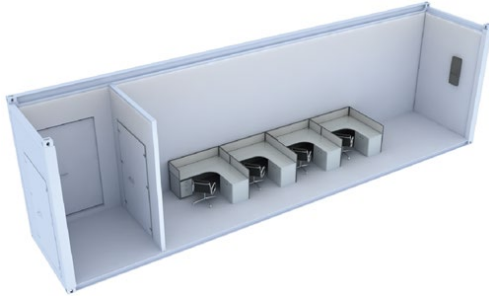
Power module parameters
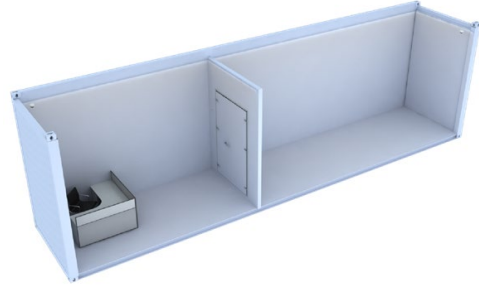
IT power module

CT power module

Category	Item	Parameters	
		IT power module	CT power module
General	Capacity	≤200kW	
Structure	Length × Width × Height (mm)	12192 × 2438 × 3600	12192 × 3495 × 3600
	Raised floor	No	
Power	Power mode	380/400/415V 50/60Hz; three phase and four wire +PE	
	Input voltage range	380/400/415V ± 15%，but the 415V power supply can only reach +10%.	
	Input power factor	0.99	
	Power configuration	200kVA-UPS，2N	TP482000B DC power supply(dual parallel system)，2N
	Battery Specifications	SmartLi, 512 V, 80 Ah, 2 PCS SmartLi-512 V-40 Ah-1 PCS	BoostLi-48 V-100 Ah-16 PCS (8 PCS for route A and 8 PCS for route B) SmartLi-512 V-40 Ah-1 PCS
	Backup time	15 minutes for one side at full load.	2 hours for one side at full load.
	Rated charge voltage of batteries	544 V DC	53.5 V DC
	Charge current of batteries	≤ 1C, 0.5C by default	Maximum: 1 C
	Maximum discharge current of batteries	480 A continuous discharge (6C)	100 A/100 A @ 35ºC
	Efficiency	96%	97%
Cooling	Cooling	Huawei NetCol8000-A055D	
	Redundancy	1+1	
	Cooling capacity	38kW@24℃/35℃	
	Inlet temperature range	20~30° C	
	Humidity range	Noncondensing	
Monitoring	Power and environment monitoring system	Centralized ECC collection	
	Access control system	By default, the card reader is configured at the in-room levels.	
	CCTV	The default storage duration is 30 days.	
Fire extinguishing	Fire extinguishing system	Automatic gas fire extinguishing, CE version, non-addressable [1]	
	Gas	HFC227-ea	
	Fire resistance time of the external protective structure (structure wall)	Standard: the external wall 90 minutes and the internal wall 60 minutes	
	Fire resistance time of the fireproof door	90 minutes	
	ASD	support customized	

[1] The fire extinguishing system can be selected and addressed. The fire extinguishing system can be removed.

Auxiliary module parameters

NOC module
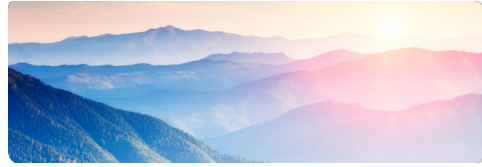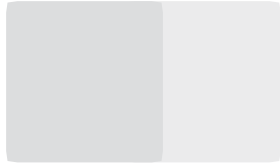

Spare part module

Category	Item	Parameters
		NOC module/Spare part module
Structure	Module dimensions (H x W x D)	3600mm × 2438mm × 12192mm
	Raised floor	None
General	Altitude	≤ 4000m
	Operating humidity	5% RH ~ 95% RH
	Storage temperature	-40℃ ~ +70℃
	Storage humidity	5% RH ~ 95% RH
	Application environment	Class A, B, or C environment. Class C environments are more than 500 m away from strong-corrosion environments (seas, garbage dump areas, and heavy pollution sources, such as a chemical factory)[1]
	Installation mode	Floor-mounted
Load	Bearing capacity	Total weight < 27,000 kg
	Ant seismic capability	GR 63-Zone3
	Wind resistance	Wind speed ≤ 32.7m/s(scale 12)
Monitoring	access control system	Card reader configured by default
	CCTV	Default storage duration: 30 days
Fire extinguishing	Fire resistance duration of enclosure structures (structural walls)	90 minutes
	Fire resistance duration of the partition walls in the internal area	60 minutes
	Fire resistance duration of fireproof doors	90 minutes

[1] Type C environments are betwween500 m to 3700 m away from strong corrosive environments (such as the seaside, garbage piled up, and heavily polluted chemical plants).

Huawei Digital Power

General Disclaimer

The information in this document may contain predictive statements including, without limitation, statements regarding the future financial and operating results, future product portfolio, new technology, etc. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied in the predictive statements. Therefore, such information is provided for reference purpose only and constitutes neither an offer nor an acceptance. Huawei may change the information at any time without notice.

HUAWEI TECHNOLOGIES CO., LTD.
Huawei Industrial Base
Bantian Longgang
Shenzhen 518129, P. R. China
Tel: +86-755-28780808
www.huawei.com