

Modular Data Center

FusionModule2000 Smart Modular Data Center

Introduction

FusionModule2000 is a new generation of smart modular data center product which had been awarded the World's First "Uptime Tier IV Ready" Certification. It is a module that comprises power, cooling, rack & structure, cabling, and management. The structure of the module can be single-row or dual-row, and supports both cold or hot aisle containment. In addition, Huawei integrates AI technology into the data center which significantly improves the reliability, availability, and efficiency of the data center through iPower, iCooling, and iManager.

Application Scenarios

- Designed mostly for small-to-medium sized data centers
- Suitable for enterprise HQ or large regional branch, operator, bank secondary branch, government, education, healthcare, etc.

Features & Value

Modular design & automatic control

- Designed for fast deployment & flexible expansion
- eLight Module Status LED*, view operating status of each module more clearly
- Auto door* & smart lighting system for convenient inspection
- System-level face recognition, more secure and reliable

i³ Smart Management System

iPower

- Whole power supply system visualized inspection, fault auto-locating
- IT Circuit breaker terminal temp detection*, avoiding bad contract
- iBattery* can provide battery real time inspection, proactive auto-shutdown battery group, eliminating fire risk
- Smart PDU* supports socket-level power inspection and remote control, protecting IT devices
- Output circuit breakers are hot swappable for secure online maintenance*

iCooling

- Cooling system real time inspection & A/C key component status detection
- 3D Visualized temp control system* eliminate existing hot spot, while IT load & A/C interaction prevents the generation of hot spot
- AI optimized cooling system*, saving 8-15% energy by optimum operating status of A/C
- Pioneering refrigerant volume detecting system, avoids decline of cooling capacity
- Wet film humidifier*, saving 95% humidifying power

iManager

- 3D data center visualized management*, significantly increase O&M efficiency
- U-space level asset manager*, optimize DC facility usage automatically, "0" manual asset managing needed
- SPC (Space/Power/Cooling) management*, optimizing resource utilization of data center



Dual row, Contained cold/hot aisle



Single row, Contained cold/hot aisle

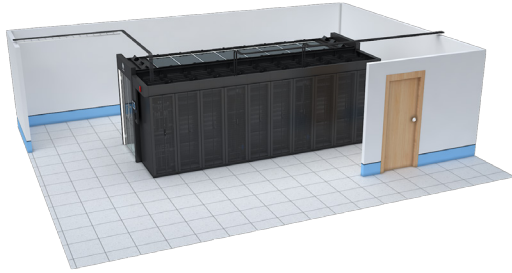


*: Optional Configuration

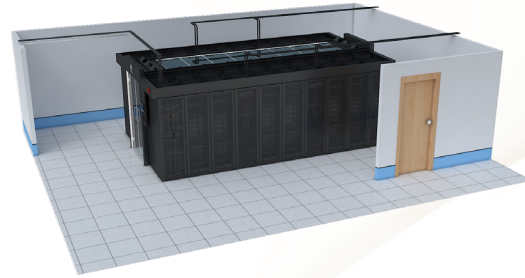
Specifications

| Item | Specifications | |
|---|------------------------|--|
| Micro Module | Dimension | Single row (with aisle containment) (L×W×H): L×2400×2410mm L×2300×2410mm L×2400×2610mm |
| | | Dual row (with aisle containment) (L×W×H): L×3600×2410mm L×3400×2410mm L×3600×2610mm |
| | Cabinets per module | Single row≤24 cabinets; dual row: ≤48 cabinets |
| | Power supply | 380/400/415Vac, 50/60Hz, 3Ph+N+PE |
| | Max IT load per module | 125kW (with integrated UPS)/ 145kW (with integrated PDC)/ 198kW (with New main way)/ 235kW (with precision PDC) |
| | Operation condition | Ultra low temperature condition: -40°C to 45°C(Need low-temp kit) T1 condition: -20°C to 45°C T3 condition: -5°C to 55°C(Need T3 outdoor unit) |
| | Cable routing | Routed in/out through the top of cabinets |
| | Installation | Installing on concrete floor or raised floor |
| Cabinet | Dimensions (H×W×D) | 2000mm×600/800mm×1200mm 2000mm×600mm×1100mm 2200mm×600/800mm×1200mm |
| | Space available | 42U/47U |
| | Protection level | IP20 |
| Air-cooled In-row air conditioner | Cooling capacity | 25kW/46kW |
| | Dimensions (H×W×D) | 2000mm×300mm×1100mm 2000mm×600mm×1200mm |
| | Power supply | 380V AC~415V AC 50/60Hz, 3Ph+N+PE |
| | Refrigerant | R410A |
| Integrated UPS (UPS inside) | Input voltage | 380/400/415Vac, 50/60Hz, 3Ph+N+PE |
| | Input | 250/400A MCCB (single input); 250A/400A ATS (dual input) |
| | Input power factor | Full load > 0.99, Half load > 0.98 |
| | Output power factor | 1.0 |
| | Rated capacity | 25~125kVA |
| | Output | IT: 40A/1P×24×2; A/C: 40A or 63A/3P×8; lighting: 10A/1P×3 |
| | Efficiency | ≥ 96% |
| | AC SPD | 5kA, 8/20μs |
| Integrated power distribution cabinet (UPS outside) | Input voltage | 380/400/415Vac, 50/60Hz, 3Ph+N+PE |
| | Input | IT: 160/250A MCCB; A/C: 160/250A MCCB (single/dual input) |
| | Rated input current | IT: 160A/250A, Air conditioner: 160A/250A |
| | Output | IT: 40A/1P×24×2; A/C: 40A or 63A/3P×8; lighting: 10A/1P×3 |
| | AC SPD | 20kA, 8/20μs |
| Precision power distribution cabinet (UPS outside) | Input voltage | 380/400/415Vac,50/60Hz,3Ph+N+PE |
| | Input | 160/250/400A MCCB (single/dual input) |
| | Output | 40A/1P, max 144 routes |
| Smart busway (UPS outside) | Input voltage | 380/400/415Vac,50/60Hz,3Ph+N+PE |
| | Input | 250/400A MCCB (single input) |
| | Output | 40/63A 1P (6 branches in one Power Distribution Unit, can be expanded with the length of cabinet) |

Recommended Configurations—UPS Inside



Single-row



Dual-row

| | | | | | | | | | |
|--------------------|-----------------|----|----|-----------------|----|----|-----------------|----|----|
| R8-32kW (aisle) | | | | | | | | | |
| Integrated UPS | Battery cabinet | IT | IT | Air conditioner | IT | IT | Air conditioner | IT | IT |

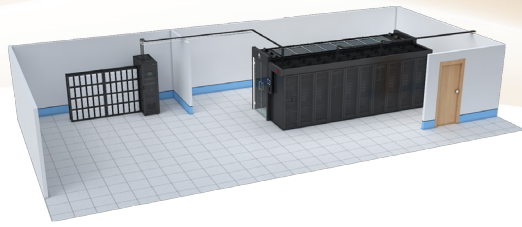
R8 single row module typical layout

| | | | | | | | | | | | | | | | |
|----------------------|-----------------|-----------------|----|-----------------|----|----|----|-----------------|----|----|----|-----------------|----|----|----|
| IT | IT | IT | IT | Air conditioner | IT | IT | IT | Air conditioner | IT | IT | IT | Air conditioner | IT | IT | IT |
| R24-112kW (aisle) | | | | | | | | | | | | | | | |
| Integrated UPS | Battery cabinet | Battery cabinet | IT | Air conditioner | IT | IT | IT | IT | IT | IT | IT | Air conditioner | IT | IT | IT |

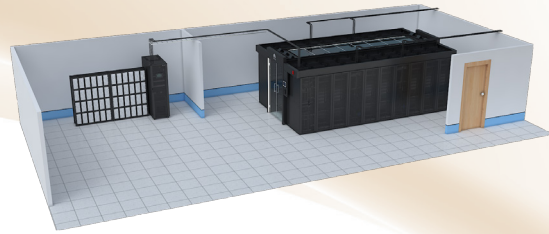
R24 dual row module typical layout

| IT Load (kW) | Power Supply | Redundancy | AC Configuration | Battery |
|--------------|----------------|------------|------------------|---|
| 20 | Integrated UPS | N+1/2N | 25kW×2 | In-row (Battery cabinet)/Outside Installation |
| 40 | | | 25kW×3 | |
| 60 | | | 25kW×4 | |
| 80 | | | 46kW×3 | |
| 100 | | | 46kW×4 | |
| 125 | | | 46kW×5 | |

Recommended Configurations—UPS Outside Installation Outside



Single-row



Dual-row

| | | | | | | | | | | |
|--------------------|----|----|-----------------|----|----|-----------------|----|----|-----------------|----|
| R8-32kW (aisle) | | | | | | | | | | |
| Integrated PDC | IT | IT | Air conditioner | IT | IT | Air conditioner | IT | IT | Air conditioner | IT |

R8 single row module typical layout

| | | | | | | | | | | | | | | |
|----------------------|----|-----------------|----|----|----|----|-----------------|----|----|----|----|-----------------|----|----|
| IT | IT | Air conditioner | IT | IT | IT | IT | Air conditioner | IT | IT | IT | IT | Air conditioner | IT | IT |
| R24-140kW (aisle) | | | | | | | | | | | | | | |
| Integrated PDC | IT | Air conditioner | IT | IT | IT | IT | IT | IT | IT | IT | IT | Air conditioner | IT | IT |

R24 dual row module typical layout

| IT Load (kW) | IT Power Supply | AC Power Supply | Redundancy | AC Configuration |
|--------------|---|---------------------------------------|------------|------------------|
| 20 | Integrated PDC/Precision PDC/Smart Busway | Integrated PDC/Power Distribution Box | N+1/2N | 25kW×2 |
| 40 | | | | 25kW×3 |
| 60 | | | | 25kW×4 |
| 80 | | | | 25kW×5 |
| 120 | | | | 46kW×4 |
| 145 | | | | 46kW×5 |
| 160 | Precision PDC | Power Distribution Box | | 46kW×5 |
| 200 | | | | 46kW×6 |
| 235 | | | | 46kW×7 |

Copyright © Huawei Technologies Co., Ltd. 2019. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

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