Modular Containerized
Data Center (MCDC)



Modular Containerized Data Center (MCDC) offers mixed IT (information technology) and CT (communication technology) power and energy infrastructure in a prefabricated ISO container allowing immediate installation of server and telecom equipment to shorten the deployment and commissioning time.

MCDC is flexible to move and cost-saving. It is to be dustproof, waterproof and shock-resistant making it suitable to operate in various terrains as well as harshest environments. Designed for energy efficiency which enable power and cooling systems to match capacity and workload well, improving work efficiency and reducing over-configuration.

MCDC is easy to install and scale up. With high scalability, containerized data centers can meet the changing demands of the organization rapidly and effortlessly.

Features

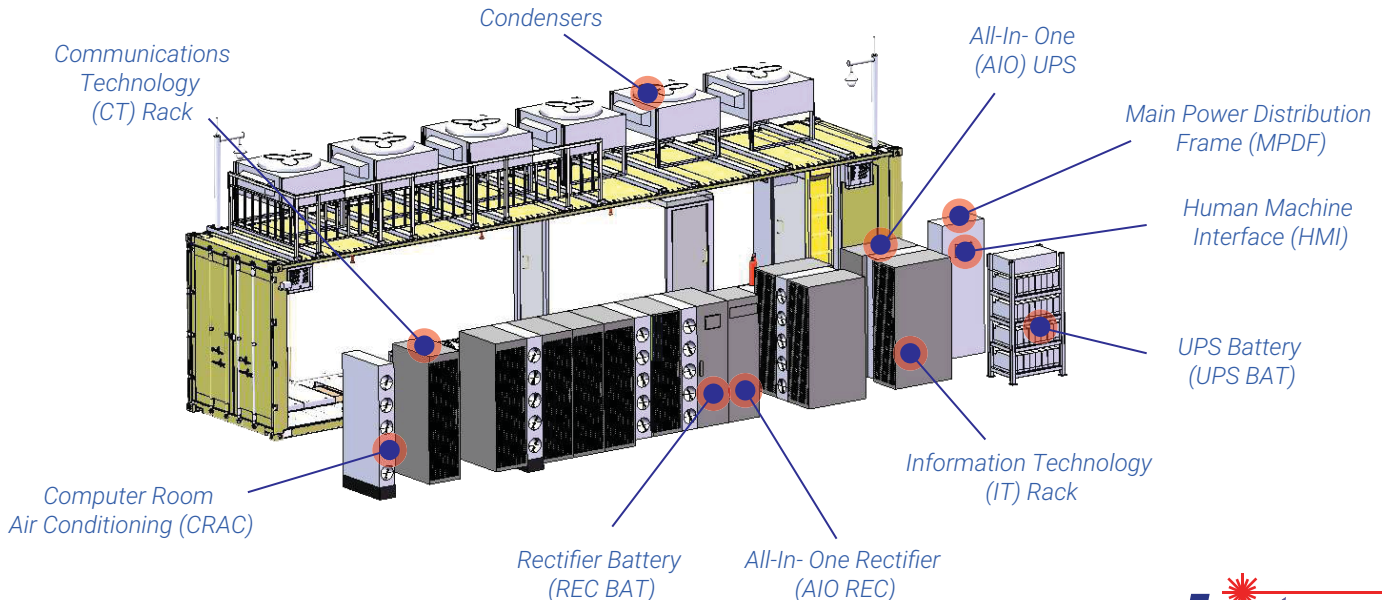
- High energy efficiency
- Reliability
- Modularity
- ICT cabinet flexibility
- ICT load flexibility
- Optimized space use
- Alternative power supplies
- Security
- Fire protection
- Central management
- Optional features and customized layouts possible.

Precision Cooling

- Cooling design according to CFD (computational fluid dynamics) simulation to optimize airflow distribution.
- Redundant configuration of in-row precision CRAC units.
- Variable speed compressor to adapt to server temperature.
- Variable speed and redundant fans.
- Easy-maintenance design with front and rear access panels.
- Replacement of CRAC units by sliding adjacent equipment cabinets.
- Outdoor condenser location to maximize indoor space.

Power Supply and Distribution

- Dual power inputs with automatic changeover for grid and standby generator system.
- Redundant configuration of power distribution paths as required.
- Support of IT and telecom equipment with different power and energy requirements.
- Configurable distribution of IT and CT cabinets.
- Modular UPS and DC rectifier system with redundant hot- swappable modules.
- High efficient UPS (>96%) with maintenance bypass.
- UPS with standard 15 minutes of battery backup time with option for longer duration.
- Intelligent battery management system.



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Product Specification	
Structure	
Container Dimensions (WxDxH,mm)	2438 x 6096 x 2896 (ISO20HC) , 2438 x 12192 x 2896 (ISO40HC)
Container Wall Panel Thickness	0.075 inch
Weight Fully Equipped	Up to 25 tons
Heat Transfer Coefficient	0.4W/m^2k
Protection Level	IP55/IP65 (Optional)
Air Curtain	Optional
Raised Floor	Standard (Cabinets height = 2000mm) , Optional (Cabinets height = 2200mm)
Material for bottom of container	Steel/Colored steel and steel channel
Material for cross section of container	Steel/Colored steel, rock wool and corrugated plate
Anti-seismic	GR-63-CORE Zone 3/9 intensity (the container)
Anti-bullet	GJB 4300-2002 V&N.I.J.0108.01 IIIA (customized configuration)
Anti-wind	Wind speed 32.7m/s
Anti-salt fog	Meets the 1440-hour salt spray test requirements
Container service life	Equivalent service life: 25 years
Environmental Conditions	
Ambient Temperature	-20°C to 55°C
Storage Temperature	-40°C to 70°C
Humidity	5 to 95%
Altitude	≤4000m (Derating start >1000m)
Corrosion	Class C (500m away from seashore)
Rack Power	
Total ICT Design Load	56 to 93kW
Design Load per STD Cabinet	5.6 to 9kW
Design Load per Deep Cabinet	8 to 13kW
ICT Equipment Cabinets	
Number of Cabinets	Up to 11 with outdoor condenser
Width (mm)	600/800
Depth (mm)	300 to 1200
Height (mm)	2000 to 2200
Front Clearance	710 to 1200
Rear Clearance	500 to 600
Sliding Cabinets	Optional
Rack PDU (STD)	IT Rack
Rack PDU (Optional)	CT Rack
Power Input	
Input Voltage and Frequency	3P+N+PE, 380/400/415 VAC,50Hz/60Hz
Design Input Capacity	110 to 175kVA
Number of Inputs	2,4 (Tier 3)
Number of ATS	1,2 (Tier 3)

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Product Specification	
Fire Protection	
System Type	Automatic fire detection with gas suppression system
Detection	Smoke and heat detectors
Alarms	Acoustic and visual alarms
Extinguisher type	HFC-227ea
UPS for IT Scenario	
UPS Capacity per Path	Up to 100kVA
Power Factor	1
Module Capacity	25 kVA
UPS Redundancy	N+1, 2N (Tier 3)
UPS Efficiency	96%
Battery Backup Time	15 minutes (min)
Battery Type	VRLA
Battery (optional)	LiFe
Rectifier for CT Load	
DC System Capacity (per path)	Up to 102kW
Rectifier Output Power	3kW
Number of Rectifiers + Redundancy	Up to 34+4
STD Rectifier Efficiency	96%
Optional High Efficiency Rectifier	97.80%
DC System Output Voltage	-42 to -58 VDC
Battery Backup Time	15 minutes (min)
Battery Type	VRLA
Battery (optional)	LiFE
Cooling	
Cooling Type	Direct expansion, in-row
Cooling Capacity	75 to 125kW
Compressor	DC variable frequency
Fan Type	EC Fan
Refrigerant	R410A
Group Control	Standard
Condenser Location	Indoor or Outdoor
Temperature Control Range	18 to 27°C
Humidity Control Range	20 to 80%
Continuous Cooling	Optional

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Product Specification	
Monitoring and Management	
Access Control	Electronic lock with IC Card reader
Video Monitoring	Infrared IP cameras
Data Monitoring	PDF, UPS, DC, A/C, T&H, water leakage, fire control, access control and ventilation
Local HMI	10" touch screen
Remote access	Web, App
Notification	SMS, email
DCIM	OwlEye

Monitoring System

General Architecture

