



Containerized Liquid Cooling Data Center

End-to-End Data Center Solutions for AI & HPC Workloads





Containerized Infrastructure Platform

ZTMM containerized infrastructure integrates power supply, cooling, IT equipment and monitoring systems in modular container modules.

Factory-assembled, commissioned, and tested in advance, which greatly reduces on-site construction workload and realizes flexible, fast and movable computing power deployment.



// Flexible Deployment Architectures

All-in-One Architecture

Power, cooling, IT equipment, monitoring and fire safety systems are fully integrated within a container.

Functional Modular Architecture

Dedicated independent containers for each functional module, including:

- IT Equipment
- Power System
- Cooling System
- Fire Safety System
- Monitoring System
- Diesel Generator System

Cluster Deployment

Multiple containers can be combined to build standardized compute capacity modules. Designed with 1.25 MW as the minimum single unit for scalable expansion, the solution supports a capacity range from 100 kW to 10+ MW. It enables convenient operation and maintenance, and a single module failure will not affect the operation of other modules.

// Key Benefits

Rapid Deployment

Up to 60% faster deployment compared to traditional build.

Relocatable Design

Easy transportation and redeployment.

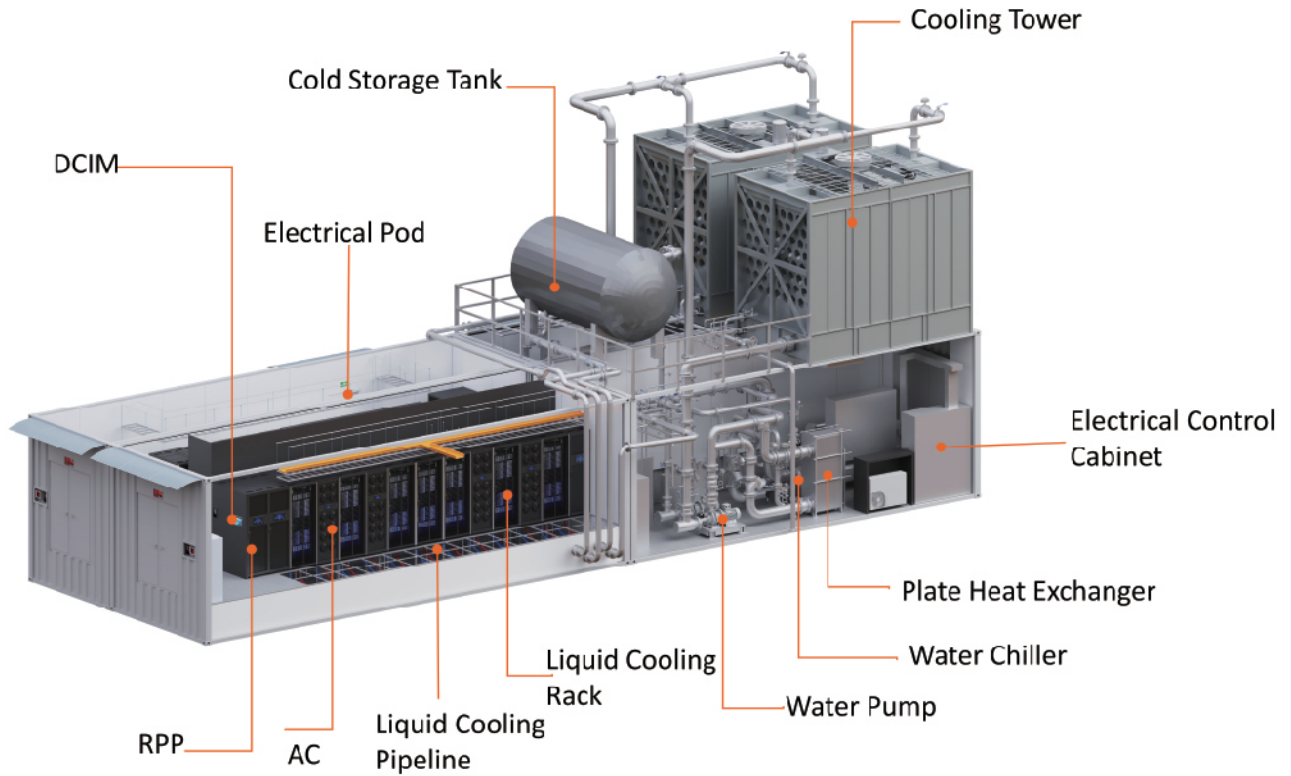
Modular Expansion

Scale from a single container to multi-megawatt clusters.

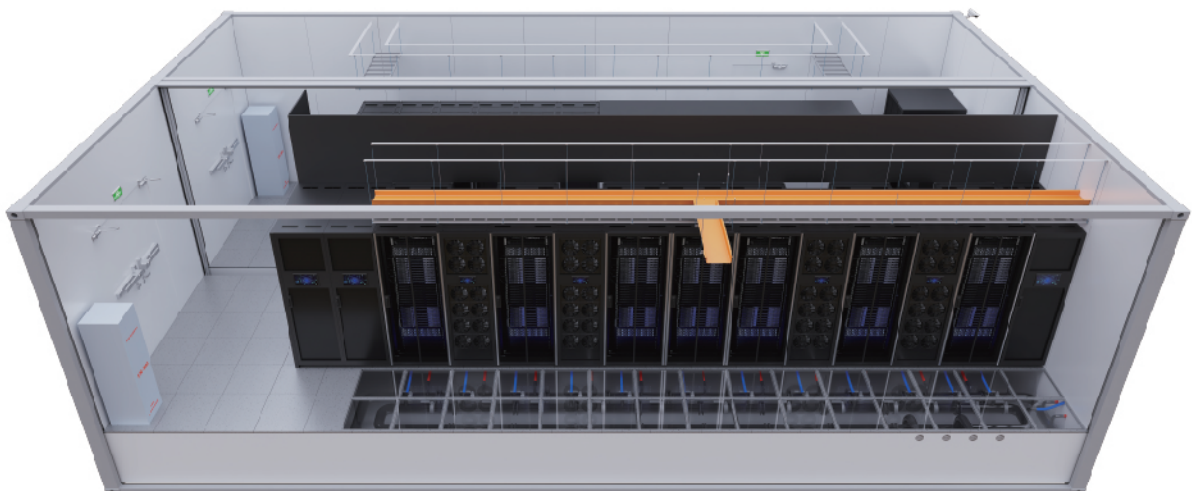
Outdoor Deployment

Suitable for harsh environmental conditions.

Typical Component Overview



Oblique View of Containerized Data Center



Side View of Containerized Data Center

Application Scenarios



AI Training Data Centers

High-density GPU clusters.



HPC Centers

Scientific and engineering computing.



Cloud Data Centers

Hyperscale and enterprise cloud services.



Telecom Edge Facilities

Distributed infrastructure deployment.



Government & Smart City Projects

Mission-critical computing environments.



Advanced Cold Plate Liquid Cooling Technology

ZTMM cold plate liquid cooling delivers direct heat dissipation for high-density CPUs and GPUs, ideal for high-density AI & compute deployments.

Key Design Highlights

Dual-loop isolated architecture

Primary and secondary cooling loops are fully separated. Heat is exchanged between loops through a plate heat exchanger, then discharged via external cooling infrastructure.

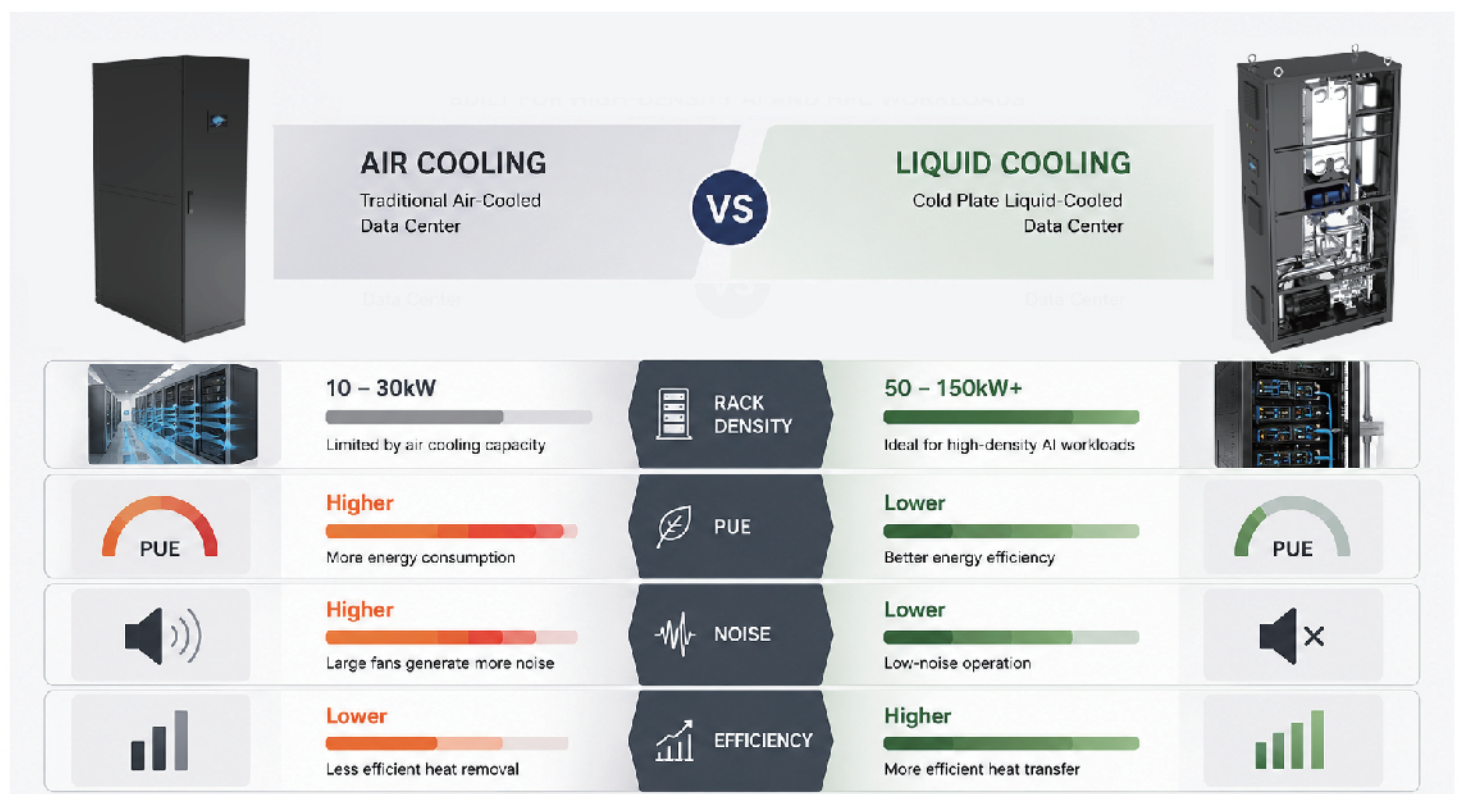
Chip-level direct cooling

The secondary loop extracts heat directly from CPUs and GPUs through cold plates, achieving precise, efficient heat capture at the heat source.

Hybrid thermal management

The system takes liquid cooling as the main cooling method, supplemented by precision air cooling, to realize high-efficiency thermal control with optimized energy efficiency.

Compared with traditional air cooling:



Dual-Loop Cooling Architecture

Primary-side System

- The primary-side loop serves as the final heat rejection stage of the cooling infrastructure, transferring absorbed heat to the external environment through outdoor cooling systems.

Secondary-side System

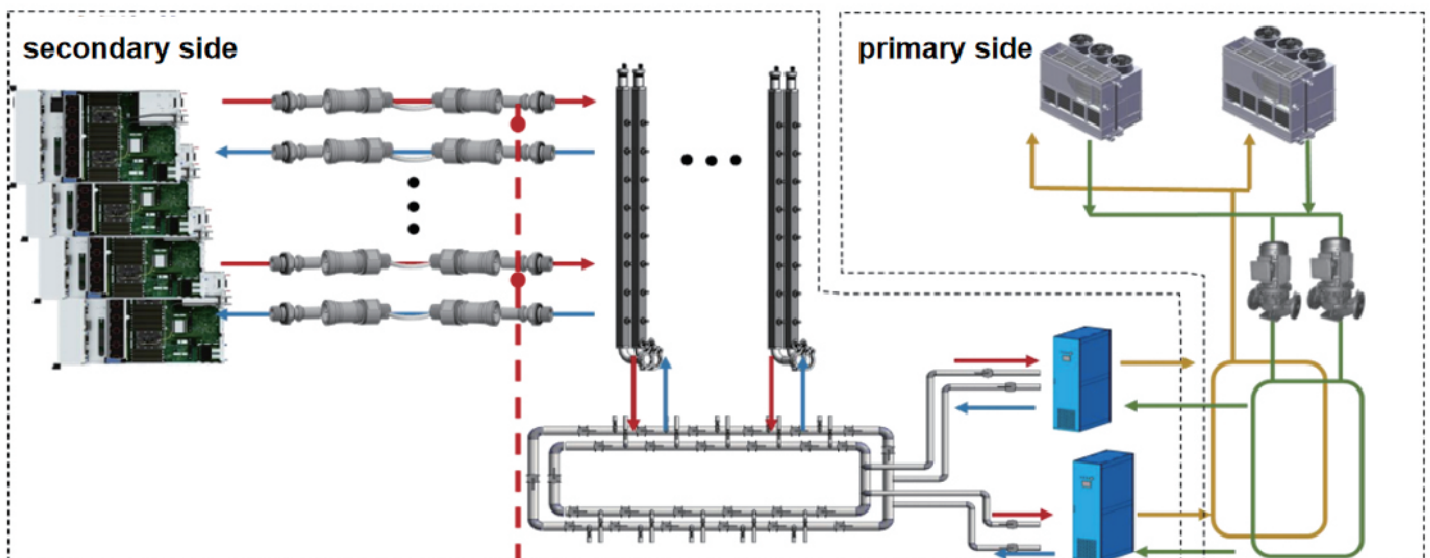
- The secondary-side loop operates as a closed-loop liquid cooling circuit directly serving IT equipment. Heat generated by CPUs and GPUs is transferred through cold plates for efficient heat removal. The integrated CDU systems provide precision temperature control, flow regulation, and intelligent monitoring.

Main Components

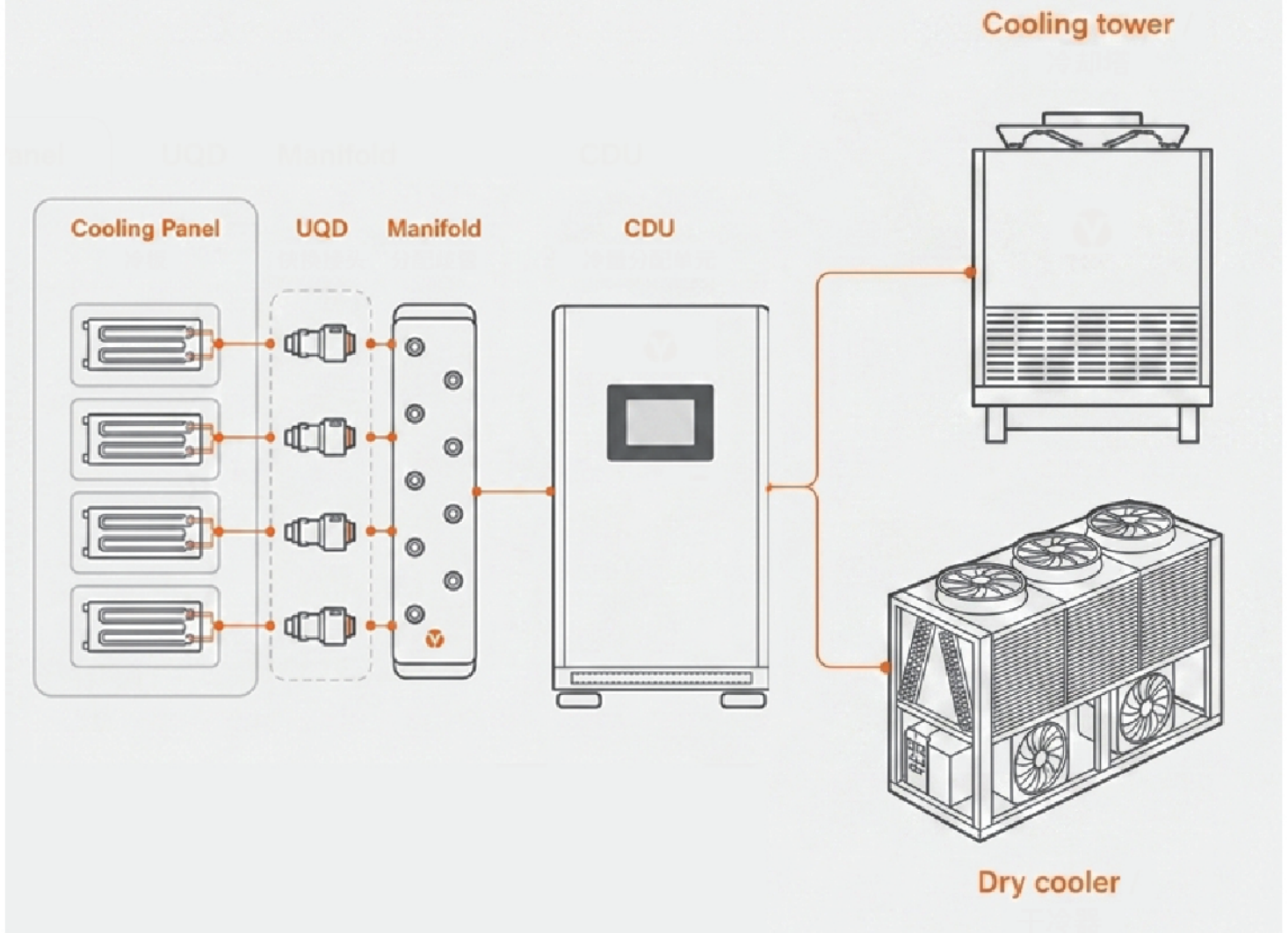
- Cooling towers, dry coolers, air-cooled chillers
- Primary-side circulation pumps

Main Components

- CDU systems
- Manifold systems
- Quick-connect couplings
- In-row precision cooling units



LIQUID COOLING SYSTEM - CORE COMPONENTS



Technical Advantages

High Heat Transfer Efficiency

Optimized micro-channel cold plate design.

Modular Expansion

Flexible CDU and manifold architecture.

Dynamic Flow Control

Intelligent cooling based on IT load.

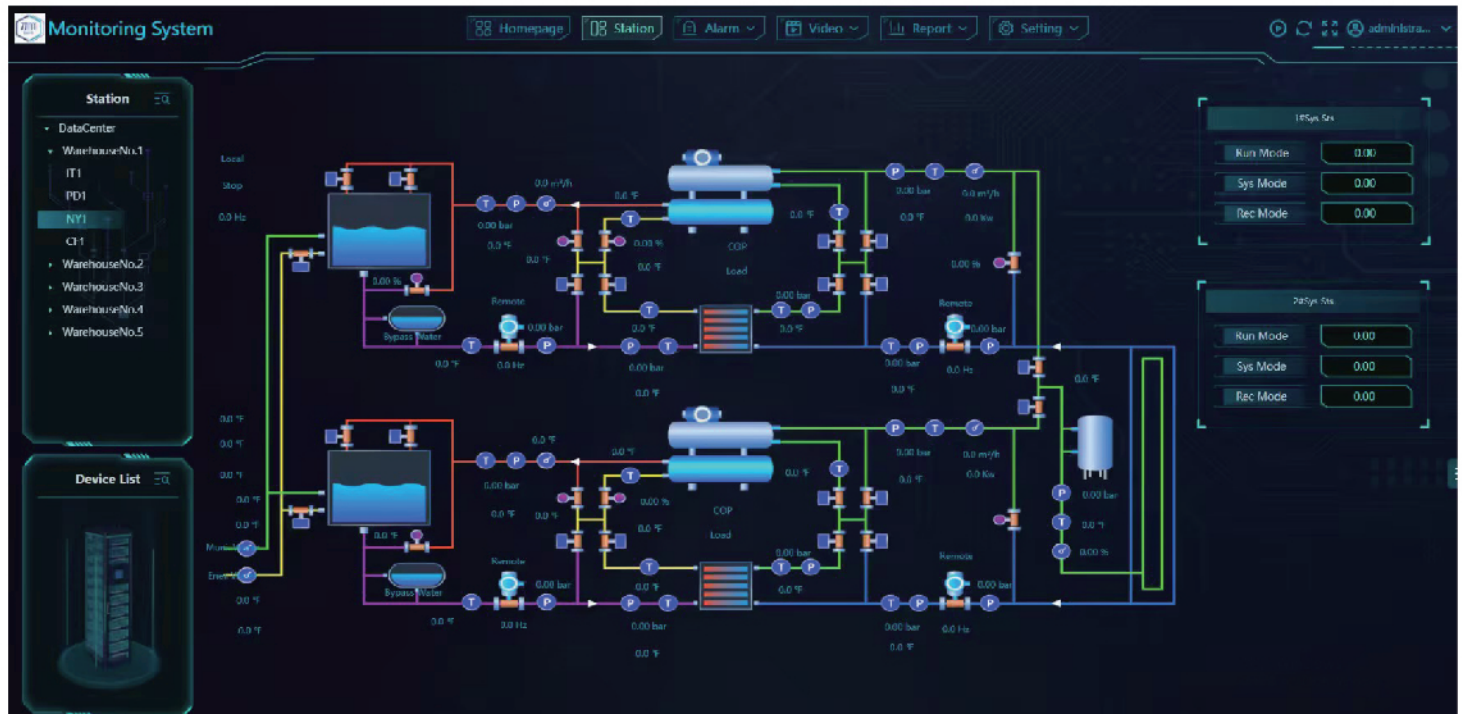
High Reliability

N+1 redundancy design.

Smart Data Center Management



The intelligent monitoring platform enables real-time visibility across all infrastructure systems.



01

Power System

UPS, batteries and distribution equipment.

02

Cooling System

CDU, pumps, valves and coolant status.

03

Environment

Temperature, humidity and air quality.

04

Security

Access control and CCTV.

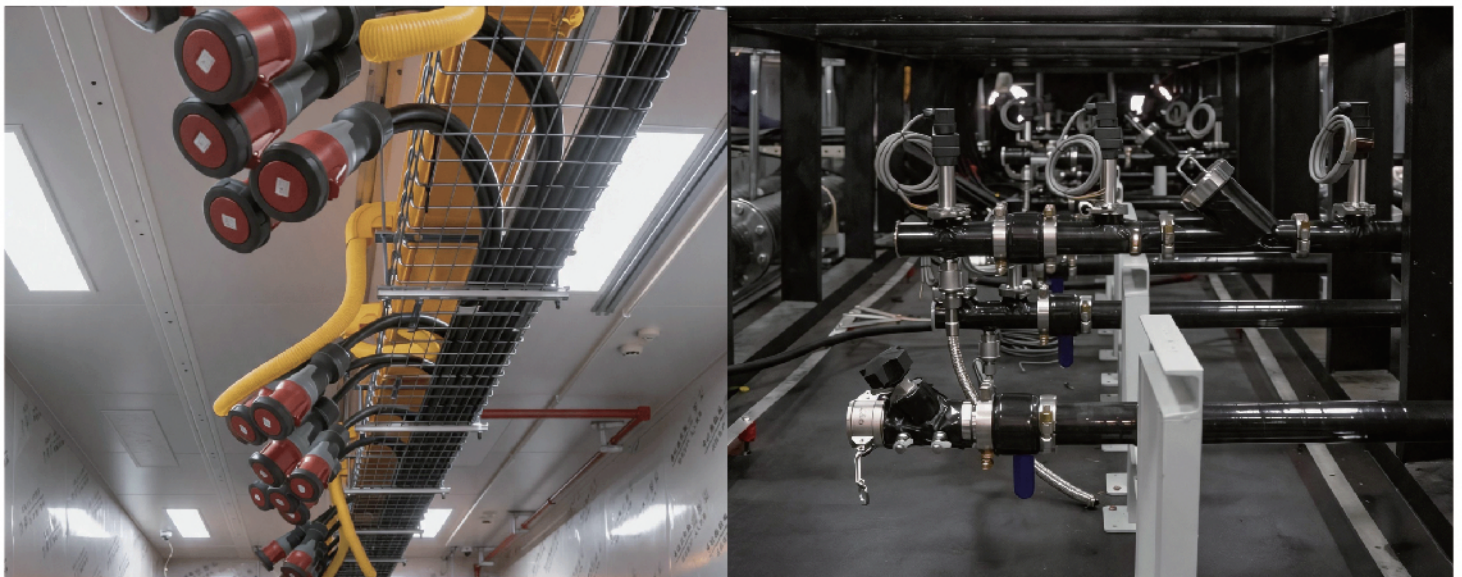
Intelligent Functions

- Real-time Monitoring
- Alarm Management
- Predictive Maintenance
- Historical Reports
- Remote Access
- Multi-Site Management

Liquid Cooling for Global High-Density Data Center Deployments

Customized 5MW Liquid Cooling Data Center with Air-Cooled Magnetic Bearing Chiller

- IT Capacity: 5MW
- Rack Density: 100kW+
- UPS Redundancy: 2N
- Battery Backup: 10-min Autonomy (Lithium battery)
- Fire Safety: Novec 1230 & VESDA
- Cooling: Air-Cooled Magnetic Bearing Chiller with Free Cooling, hybrid air/liquid-cooling systems



Customized 5MW Liquid Cooling Data Center with Water chiller and plate heat exchanger

- IT Capacity: 5MW
- Rack Density: 100kW+
- UPS Redundancy: 2N
- Battery Backup: 10-min Autonomy (Lithium battery)
- Fire Safety: Novec 1230 & VESDA
- Cooling: Water chiller and plate heat exchanger with free cooling. Heat is rejected through a cooling tower. Hybrid air/liquid cooling system.



Customized 0.6MW Liquid Cooling Data Center Water chiller and plate heat exchanger

- IT Capacity: 0.6MW
- Rack Density: 100kW+
- UPS Redundancy: N+1
- Battery Backup: 10-min Autonomy (Lithium battery)
- Fire Safety: Novec 1230 & VESDA
- Cooling: Water chiller and plate heat exchanger with free cooling. Heat is rejected through a cooling tower. Hybrid air/liquid cooling system.



Parameter	Configuration Range
IT Capacity	100kW – 10MW+
Rack Quantity	4 – 100+ Racks
Rack Power Density	10kW – 150kW+ per Rack
Container Type	Customized
Cooling Technology	Air Cooling / Liquid Cooling / Hybrid Cooling
Cooling Capacity	100kW – 10MW+
Cooling Method	Dry Cooler/Cooling Tower/Air-Cooled Chiller/Water-Cooled Chiller/Hybrid Cooling System
UPS Capacity	100kVA – 5000kVA+
UPS Topology	N / N+1 / 2N
Battery Technology	Lithium-ion
Operating Temperature	-40°C to +55°C
Fire Protection	FM200 / Novec 1230
Monitoring System	BA+DCIM
Power Input Voltage	Customized per Regional Standards

*Actual values depend on project configuration and operating conditions

