AMAX Liquid Cooling Solutions

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Retrofit and Entry-level Liquid Cooling Solutions

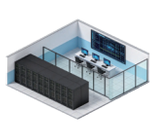
Liquid-to-Air Cooling

Traditional liquid cooling infrastructure comes with prohibitive upfront costs and long lead times — a non-starter for small-scale compute users. To fix this, AMAX has launched our innovative Liquid-to-Air Cooling Retrofit Solution, **built exclusively for operations with IT loads under 80kW.**

Heat Dissipation Path


Server Chip


Liquid-to-Air Heat Exchanger Unit


Environment


CRAC

Product Highlights

Rapid Deployment

Zero CapEx Infrastructure

Stable and Reliable

L2A CDU Solution Cooling Capacity-8/16 kW

Product Highlights

Fast Deployment 01
- Direct rack mounting
- Hour-scale rapid upgrade

High Availability 02
- 1+1 redundant pump configuration
- Real-time adaptive load regulation

High Operational Stability 03
- Integrated liquid filter
- 24/7 remote real-time monitoring

Configurations

CDU					
Height	- 4U/6U	**Coolant**	- PG25	**Pump redundancy**	- 1+1
Cooling capacity	- 8/16kW	**Power supply**	- 90V-264V AC or 127V-370V DC	**Environmental-protection temperature**	- 0℃-25℃
Weight	- Dry weight 30KG	**Power consumption**	- 500W	**Noise**	- 60dB

RDLC Solution Cooling Capacity-30 kW

Product Highlights

Hybrid Deployment 01
- Reuse of existing air-cooled devices
- Minimize resource waste

High stability 02
- Integrated liquid storage pump
- 1+1 redundant pump design

High Compatibility 03
- 42U standard rack cabinet
- Rapid server compatibility & adaptation

Configurations

CDU			
Size	- 2000mm × 600mm × 1370mm (H x W x D)	Height	- 42U
Coolant	- PG25	Pump redundancy	- 1+1
Cooling capacity	- 30kW	Power supply	- 220V
Ambient temperature	- 0℃-25℃	Power consumption	- 1.25kW
Fluid infusion	- Automatic	Noise	- 60dB
RPU			
Height	- 4U	Traffic	- > 60LPM @1.2 Bar
Supply liquid temperature	- 30℃-55℃，dew point control		

Sidecar Solution Cooling Capacity-80 kW

Product Highlights

High-Density Deployment 01
- Upgraded Computing Density
- 1-3 times higher than air cooling solutions

Computing Performance Unleashed 02
- GPU temperature reduced by 20%
- Stable and high-efficiency operation

Simplified O&M 03
- Multi-protocol communication supported
- Remote real-time monitoring

Configurations

Size	- 2347mm × 597mm × 1200mm（H x W x D），including RDH x 1370mm（D）
Power Supply	- 200-208 3Φ（4-wire），380-480V 3Φ（5-wire）
Weight	- Dry Weight：634.5kg，Wet Weight：680.3kg
Coolant	- PG25
Pump redundancy	- N+N
cooling capacity	- 80kW
ambient temperature	- 5℃-45℃
system power consumption	- 4.6kw
fan redundancy	- N+1
noise	- 86dB（1m）

Comprehensive Professional-level Liquid Cooling Solution

Liquid-to-Liquid Cooling

Though this solution calls for a full build-out of primary and secondary loop liquid cooling infrastructure, its ultra-low energy use (PUE down to 1.2) cuts carbon emissions, delivers full payback on your initial build cost, drives strong long-term financial returns, and guarantees rock-solid compute stability — all in one high-value package.

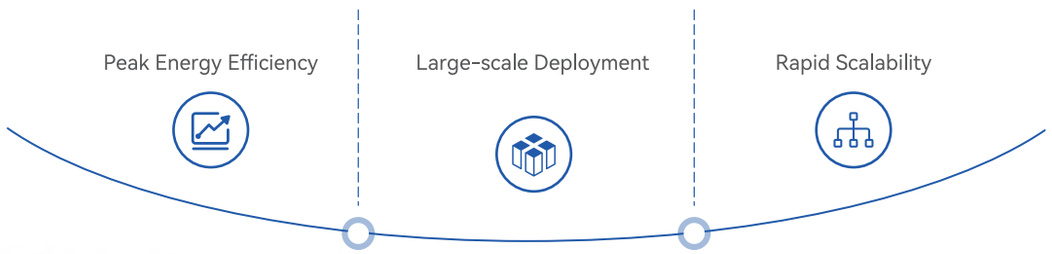
Heat Dissipation Path


Server Chip


Liquid-to-Liquid CDU


Cooling Tower

Product Highlights



AMAX Datacenter Solution-Modular

While the solution requires full primary and secondary liquid cooling infrastructure, its ultra-low energy use with annual PUE below 1.2 delivers lasting power savings that quickly recoup upfront construction costs at scale.

It enables energy conservation and carbon reduction, maintains stable computing performance, and creates long-term economic value for comprehensive benefits.

Product Highlights

High Efficiency & Energy Conservation 01

- Featuring an innovative enclosed in-rack cooling system, it delivers efficient and precise heat dissipation for the entire computing cluster, reducing annual PUE to under 1.2.

Lower Total Cost 02

- Our self-developed in-rack cooling modules replace traditional chilled water row AC units.No dual cooling piping is required, simplifying deployment and cutting overall TCO.

Ultra-high Density 03

- Occupying just 0.72 m^2 per rack, it supports up to 96 PFLOPS computing power,with space utilization improved by 43% versus conventional row cooling and liquid cooling solutions.

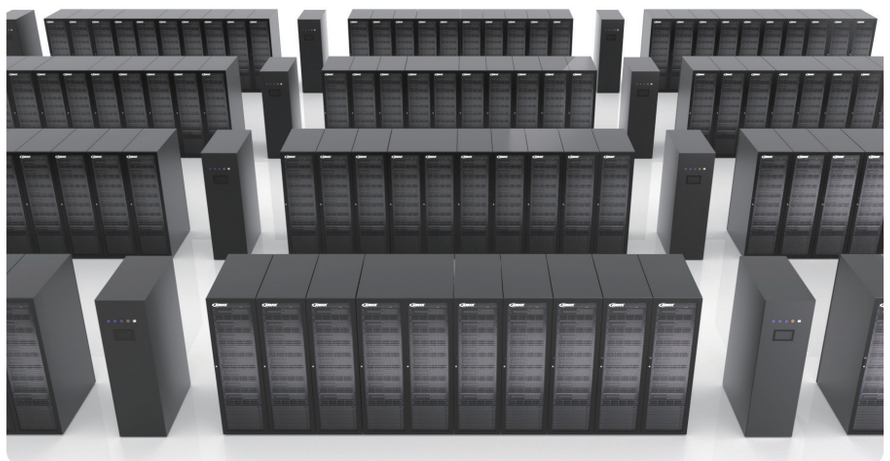
Compare IT Load of 300 kW Data Center

Construction Type	Air Cooling Datacenter	Liquid Cooling Datacenter	Advantages
Server Quantity (Compute Density)	39	49	Increased by 26%
Per-Rack Compute	≤21.6PFLOPS	≤50.4PFLOPS	Increased by 133%
Annual Average PUE	1.4	1.2	Reduced by 14%
Annual Electricity Cost	NT$10,582,773	NT$9,240,677	Reduced by 13%

Compared with air-cooling data centers, the **incremental cost payback period** of the liquid-cooling data center is approximately 1.4 years (annual average PUE of liquid cooling: 1.2).

AMAX Datacenter Solution-Scalable

Compliant with China Class A national standards, this solution ensures high-level safety and energy efficiency. Built on a modular architecture with centralized CDU as the core, it controls flow distribution error within 2% and temperature deviation within ±1°C, shortens project delivery cycles, enables rapid computing replication and flexible expansion, and supports full liquid cooling coverage for 10,000-GPU clusters.



Product Highlights

Dynamic Load Regulation
01

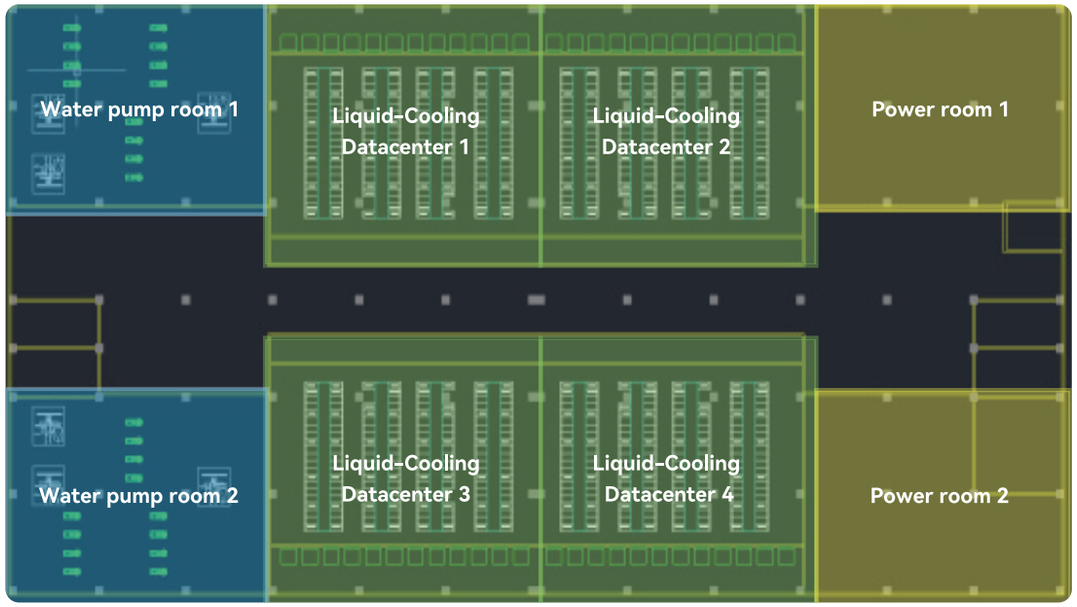
- The centralized control system continuously collects regional temperature and power data.It proactively adjusts loads to eliminate hotspots and maintain optimal operating temperature.

Lower TCO
02

- Fixed costs decrease with scaling.Per-rack CAPEX drops by 18%–25% vs. traditional distributed air cooling.Centralized cooling and unified O&M deliver outstanding scale benefits.

Linear Scalability
03

- No independent CDU or air conditioner needed for single racks.New racks connect via cooling loop connection and pressure testing for fast deployment,slashing expansion time by 80%.



Data center equipment layout

Proprietary Liquid Cooling Components

AMAX has deployed a full lineup of self-developed liquid cooling core components, achieving end-to-end independent control covering hardware parts to management systems. It eliminates reliance on external supply chains, enables deep compatibility between hardware and software, and greatly improves heat dissipation stability and product reliability.

Complete Ecosystem

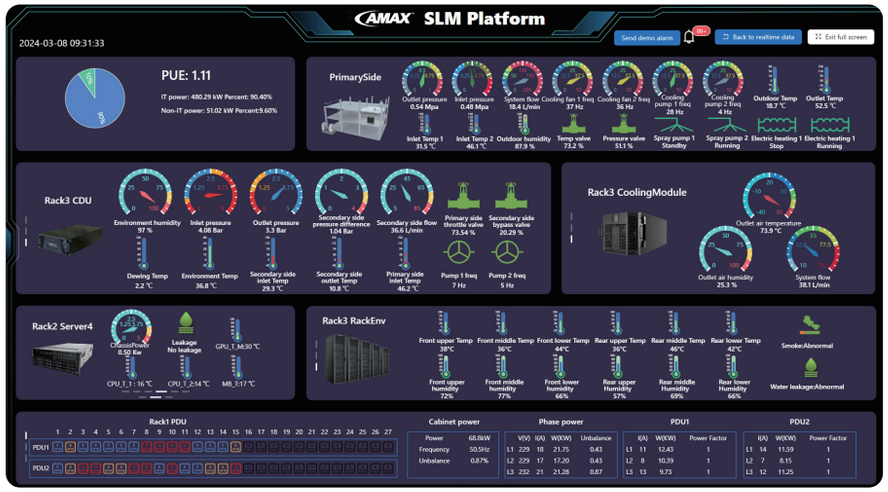


Software ▶ Hardware ▶ Service

Highlights

Intelligent Monitoring and Management System

The dynamic environmental monitoring and intelligent control system utilizes a graphical interface to map the status of server nodes, CDU, water pumps, valves, and all temperature, pressure, and flow sensors in real time, with data refreshed in seconds for a comprehensive view at a glance. With rapid early warning of data anomalies, operation and maintenance personnel can accurately locate and quickly handle issues, ensuring that the entire liquid cooling data center operates efficiently and with low risk at all times.



Product Highlights

Precise Equipment Monitoring
01

- Full real-time monitoring of core parameters.
- Accurate visualized display of key metrics.
- Covering cabinet environment and primary-side systems.
- Active fault alarming for rapid troubleshooting.

System Linkage Simulation
02

- Real-time interaction and data transmission with physical systems.
- Accurately simulate all interaction between devices.
- Parameter simulation and adjustment without impacting live systems.
- Optimize efficient coupling among equipment.

Intelligent Data Analysis
03

- Based on multi-dimensional data of the data center.
- Automatically generate weekly, monthly and annual reports.
- Covers energy consumption analysis, fault prediction and more.
- Deliver solid decision support for operation and maintenance teams.

LL-120 CDU

Product Highlights

Multi Operating Modes
01

- Rated cooling capacity reaches 120kW, supporting energy-saving, high-performance and commissioning modes.
- It enables one-click startup for regular users and flexible parameter adjustment for professionals.

High Stability
02

- Fully integrated with pressure relief valves, makeup liquid tanks, filters, redundant water pumps and other key components.
- Significantly enhances system stability and reduces overall data center failure rates.

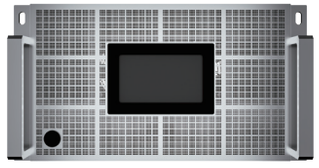
Comprehensive Monitoring
03

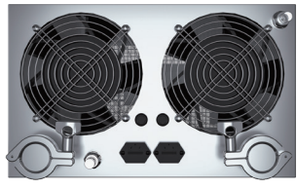
- Monitors supply/return water temperature, pressure, flow rate, pump speed and valve opening.
- Front-panel diagrams provide intuitive visualization, with graded real-time alarms for abnormal data.

Efficient O&M
04

- Real-time and historical data of primary and secondary systems are displayed in line charts.
- Abnormal trends are quickly identified for fast fault location, improving overall O&M efficiency.

AL-8 CDU





Product Highlights

Precise Cooling
01

- 19-inch standard 4U rack design, compatible with air-cooled rooms and liquid-cooled servers.
- Provides 8kW cooling capacity at 25°C ambient temperature.

High Efficiency & Stability
02

- Stainless steel piping and all-copper heat exchangers with quick-fit connectors for easy installation.
- 1+1 dual redundant pumps ensure high reliability and extended service life.

Real-Time Monitoring
03

- Tracks air outlet temperature, coolant supply/return temperature, pressure and flow.
- 7-inch touch screen displays operating status, alarms and self-check data.

Convenient O&M
04

- Real-time alarms for fast and accurate fault location.
- Auto/manual liquid replenishment simplifies commissioning and daily maintenance.

AMAX HostMax Service

AMAX HostMax is an AI-ready global instant colocation service optimized for large AI model training, HPC and high-density GPU clusters.

Customers can deploy their own servers in AMAX's self-built data center in Fremont, California. AMAX provides full support including stable power, professional cooling, network access, 7×24 monitoring and remote management. With secure remote access, users can leverage premium computing resources anytime.

This solution cuts site preparation delays and third-party dependencies, delivering a one-stop computing experience with customer-owned hardware, local colocation, global access and efficient operation.

Product Highlights

Technical Specifications & Infrastructure
01

- Supports both air and liquid cooling deployment, perfectly adapted to high-density AI systems.
- Rack power density up to 132kW, meeting power supply and cooling demands of high-density GPU clusters.
- On-site engineering team provides configuration updates, fault handling and timely technical support.

Compatibility with Latest AI Computing Platforms
02

- Compatible with air/liquid-cooled HGX B300/B200 servers.
- Supports GB300 NVL72 full rack solutions.
- Adaptable to AMD MI355X liquid-cooled servers.

Elastic Scalable Architecture
03

- Features flexible deployment with on-demand activation and phased expansion, allowing capacity upgrade alongside business growth.
- AMAX engineering team delivers end-to-end design and technical support for scalable cluster architecture.
- Applicable to phased launch, pilot projects and long-term capacity expansion planning.

Testing, Verification & Engineering Support
04

- Provides pre-deployment quality assurance, prototype validation and performance testing.
- Enables remote access via customer's native software stacks with full system visibility.
- Professional engineers conduct workload-specific optimization to guarantee optimal operational performance.

About AMAX

With 48 years of expertise in end-to-end IT solutions, AMAX focuses on high-performance computing, artificial intelligence, storage systems, liquid cooling, and smart manufacturing. We offer a comprehensive product portfolio including edge industrial controllers, high-performance workstations, rack servers, full liquid-cooling cabinet systems, liquid-cooling intelligent computing centers, intelligent computing/storage software, and industry-specific AI application solutions.

AMAX has established complete R&D, manufacturing and technical service hubs in the United States, Ireland, Taiwan and mainland China. Covering Asia, Europe and America with a total production area of over 30,000 square meters, we deliver round-the-clock global support and rapid product delivery, earning a solid reputation as a trusted preferred brand in the worldwide computing power market.

48Years
IT Solution Experience

22Years
Manufacturing System Experience

18Years
HPC Solution Experience

13Years
AI Solution Experience

8Years
Liquid Cooling Solution Experience