OCP ORv3 Rack Design

AMAX ENGINEERING

With 40 years of engineering expertise, our team specializes in transforming standard IT components into high-performance computing solutions with optimized thermal, electrical, mechanical, and networking design.

LiquidMax® RackScale 128

The LiquidMax® RackScale 128 is an ultra-high-density, fully liquid-cooled 51OU solution built on the OCP ORv3 architecture, delivering 128 GPUs for large-scale AI and ML workloads.

Key Features

- Supports up to 128x NVIDIA® Blackwell B200 GPUs or AMD Instinct™ MI300X / MI325X accelerators
- 8x OCP ORv3 5OU compute trays with cold plate liquid cooling
- Centralized 48V busbar power distribution for improved efficiency
- Built-in leakage detection, CDU support, and optional RDHx integration for thermal management

Built for Hyperscale AI Infrastructure

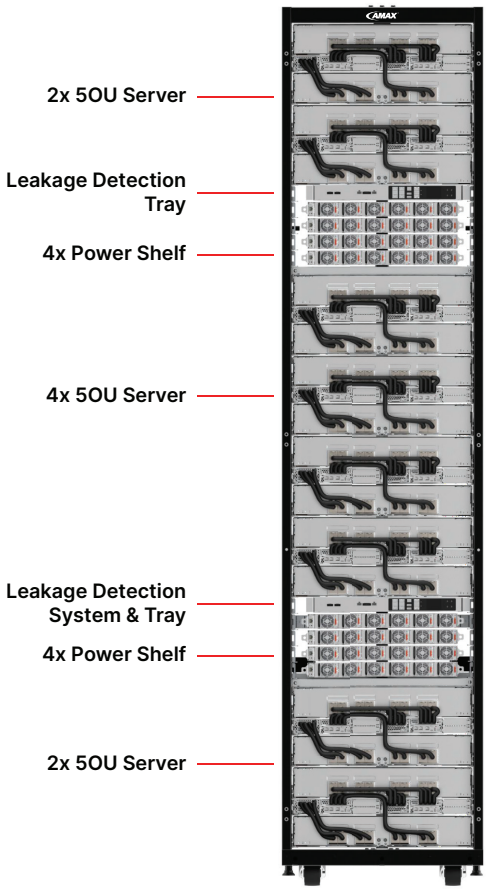
The RackScale 128 is designed for large-scale cloud providers, data centers, and enterprises with high-density compute needs. Its modular OCP ORv3 design supports 400W CPUs, 33kW power shelves, and cold plate liquid cooling, enabling efficient rack-level consolidation with reliable thermal and power delivery.

AMAX | 1565 Reliance Way, Fremont, CA 94539 | 1 (408) 505-4598 | www.amax.com | info@amax.com |

Specifications

LiquidMax® RackScale 128	
GPU	128x GPUs (8 x 5OU compute trays)
Cooling	Liquid-to-liquid cooling, CDU supported
Architecture	OCP ORv3, 8× 5OU compute trays
Power	8 x 33kW shelves
Management	Active leakage detection system with integrated trays

5OU Compute Tray	
Chassis	OCP ORv3 5OU(2+1+2) Chassis, Cold-Plate Liquid Cooling for CPU and GPU
2 x 2U GPU Node	8 x NVIDIA HGX B200 OR AMD MI300X/MI325X
1U Compute Node	AMD Turin, SP5 (2-Socket) support, Thermal Design Power (TDP) up to 400W
System Memory	• 24 x DDR5 DIMM slots; 1DPC • 96GB DDR5 RDIMM (5600MT/s rated):
Expansion slots	6 x PCIe 5.0 x 16 (SS FHHL): • 5 pcs ConnectX-7 or BCM957608-P1400GQF00 400Gb/s single port adapters • 1 pcs Dual ports 10Gb NIC



LiquidMax® RackScale 128

OCP ORv3 Architecture

Built on the OCP ORv3 standard, the RackScale 128 leverages an open, modular design optimized for high-density deployments. The wider 21" rack format increases airflow efficiency, while front-to-back cooling and blind-mate liquid manifolds simplify integration and maintenance. The shared busbar architecture enables efficient 48V power distribution across compute nodes, reducing cable complexity and improving serviceability.

5OU Compute Tray

Why AMAX

AMAX helps organizations deploy advanced computing infrastructure with confidence. From thermal and mechanical engineering to rack integration, testing, and deployment support, our team delivers reliable, high-performance solutions tailored to AI and high-density workloads. We work closely with customers to streamline implementation, optimize system performance, and support long-term success.

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