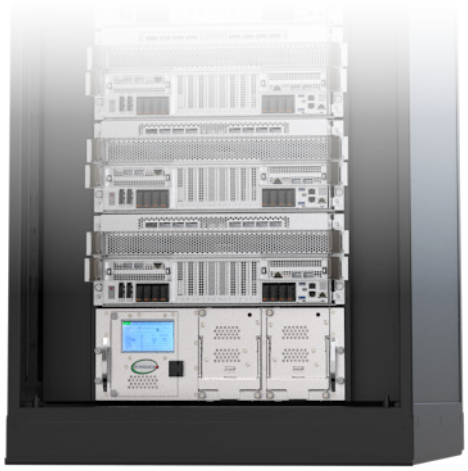
In-Rack Coolant Distribution Unit (CDU)

Compact, Plug-and-Play Cooling Solution for High-Density AI and HPC Racks



Ultimate Cooling Performance in Every Rack

- **Cooling Capacity:** Up to 250 kW — letting you deploy more powerful GPUs/CPUs to maximize compute density
- **Power & Cost Optimized:** Supports warm water up to 45°C, eliminating the need for mechanical chillers — reducing PUE and overall operational costs
- **Cooling Reliability:** Redundant pumps ensure constant coolant circulation and optimal thermal performance
- **Uninterrupted Power Continuity:** Redundant Power Supply Units (PSUs) maintain continuity and keep critical workloads running seamlessly
- **Easy Management:** Intuitive touchscreen and web interface simplify monitoring and adjustments
- **Multiple Integration Protocol Support:** Support for Redfish®, SNMP, Web-based UI, and Supermicro SuperCloud Composer® (SCC)

Compact Integration with Plug-and-Play Deployment

Supermicro's 4U In-Rack CDU features a compact, rack-integrated design that enables high-efficiency liquid cooling for high-density systems. Installed directly inside the rack, it shortens coolant loops and minimizes pressure drop to maximize thermal transfer and overall reliability. Each unit operates independently with up to 250kW cooling capacity, delivering scalable performance for AI and HPC deployments.

Redundancy Ensures Uptime

When it comes to mission-critical deployments, even brief periods of downtime can have significant impact on data center operations and productivity. To ensure continuous uptime and maximum reliability, every In-Rack CDU is designed with built-in redundancy across key components: Pump, Micro Control Unit (MCU), and Power Supply Unit (PSU). This robust design minimizes single points of failure and guarantess stable cooling performance under all conditions.

Dedicated Cooling Loop For Reliability

Each In-Rack CDU delivers liquid cooling through an independent, dedicated loop for the single rack it serves. This isolation prevents any impact on other IT equipment, while eliminating risks of leakage or pressure drop. The dedicated loop design simplifies management and enhances reliability, ensuring stable cooling for mission-critical workloads.

Full Compatibility with ORv3, MGX, and EIA Racks

Engineered for next-generation GPU infrastructure, the In-Rack CDU offers full compatibility with both EIA and OCP standards across diverse rack configurations. This ensures seamless integration and consistent liquid cooling performance for AI and HPC platforms, enabling data centers to deploy standardized and scalable cooling architectures with confidence.

In-Rack CDU	LCS-SCDU-250L4001 (EIA)	LCS-SCDU-250LP4002 (OCP)
Application Type	Rack-level deployment	Rack-level deployment
Cooling Capacity	Up to 250 kW	Up to 250 kW
Redundancy	2N redundant pumps	N+1 redundant pumps
Power Consumption (MAX)	1.2 kW	3 kW
Dimensions	480 (W) x 810 (D) x 177 (H) mm	480* (W) x 858 (D) x 177 (H) mm
Weight	100 kg (without coolant)	114 kg (without coolant)
Protocols	• SNMP v2c/v3 • Ethernet/Web-based UI • Redfish • RESTful API	• SNMP v2c/v3 • Ethernet/Web-based UI • Redfish • RESTful API

* Compatible with 21" OCP rack via adapter bracket (Accessory P/N: LCS-SPAT-SSC0009)

Learn More About Supermicro Direct Liquid Cooling & Data Center Building Block Solutions®

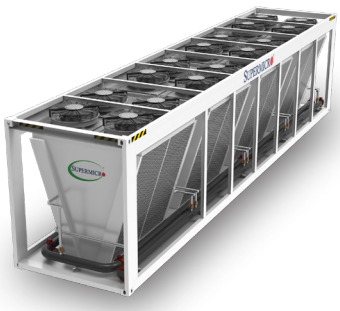
Supermicro's Data Center Building Block Solutions (DCBBS) delivers complete, modular AI infrastructure. Built from validated components and sub-systems, DCBBS provides end-to-end deployment flexibility — from individual GPUs and networking switches to complete racks, site infrastructure, management software, and professional services.

In-Rack CDU

In-Row CDU

L2A Sidecar CDU

Water Cooling Tower



Dry Cooler

Rear Door Heat Exchanger