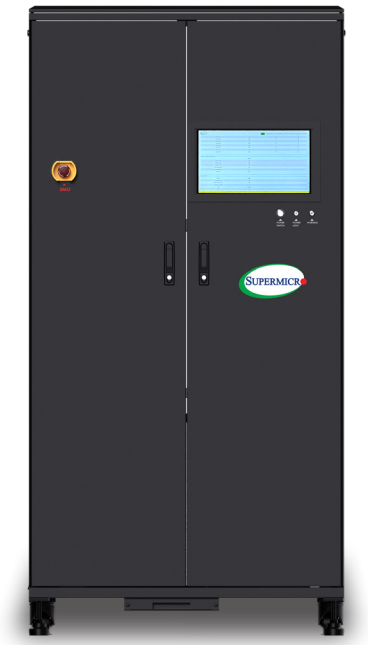
In-Row Coolant Distribution Unit (CDU)

High-Efficiency Liquid-to-Liquid Cooling Solution for Cluster-Level Deployment



Engineered for Extreme Density and Cooling Efficiency

- **Cooling Capacity:** Up to 1.8 MW — supporting ultra-high-density racks for maximum compute performance
- **Cost-Efficient Operation:** Handles warm water up to 40°C, elminating the need for mechanical chillers — reducing PUE and overall operational costs
- **Zero-Downtime Protection:** Redundant pumps with Automatic Transfer Switch (ATS) ensure continuous uptime and high reliability
- **Uninterrupted Power Continuity:** Redundant Power Supply Units (PSUs) enable power continuity during critical operations
- **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)

High Cooling Capacity for Dense Clusters

Supermicro's In-Row CDU adopts a liquid-to-liquid heat exchanger design to deliver exceptional cooling performance for high-power, high-density server clusters. With outstanding thermal transfer efficiency and a total cooling capacity of up to 1.8 MW, it can support multiple racks or entire clusters within a facility. When integrated with Supermicro's Water Cooling Tower, it maximizes overall efficiency and ensures long-term operational reliability for large-scale deployments.

Redundant Design for Continuous Uptime

Designed for mission-critical environments, the In-Row CDU integrates redundant Power Supply Units (PSUs) and a dual-pump architecture with an Automatic Transfer Switch (ATS) to maintain continuous operation. Even during maintenance or unexpected component failure, power and coolant flow remain functional and stable, delivering uninterrupted uptime and exceptional reliability.

Modular and Scalable Deployment

Supermicro's In-Row CDU supports modular expansion on a row-by-row basis, allowing cooling capacity to scale alongside cluster growth. Each unit can operate independently or in parallel, providing flexibility for phased data center deployment. This modular scalability makes it ideal for AI and HPC clusters and for large-scale liquid cooling rollouts designed to future-proof next-generation data centers.

Centralized Management and Monitoring

Supermicro's In-Row CDU features advanced control and monitoring capabilities, including a built-in touchscreen, Web UI, and support for SuperCloud Composer (SCC) for centralized management. It also supports industry-standard protocols, such as SNMP and Redfish, to enable seamless integration with existing data center platforms. Additionally, real-time monitoring of temperature, pressure, flow rate, and pump status ensures optimal and stable performance.

In-Row CDU	LCS-SCDU-1K3LR001
Application Type	Liquid-to-Liquid (L2L) Deployment
Cooling Capacity	Up to 1.8 MW
Redundancy	N+1 redundant pumps
Power Consumption (Max)	20 kW
Dimensions	1,000 (W) x 1,300 (D) x 2,000 (H) mm
Weight	1,560 kg (without coolant & water)
Protocols	• SNMP v2c • Ethernet/Web-based UI • Redfish • RESTful API

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

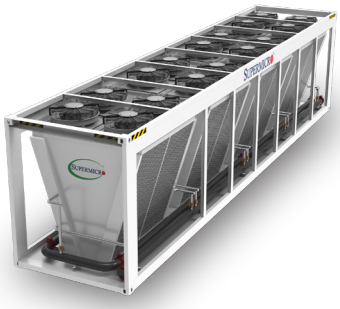
Supermicro's Data Center Building Block Solutions (DCBBS) delivers complete, modular AI infrastructure. Built from validated components and sub-systems, DCBBS provides end-to-end deployment flexibility — from individual GPUs and networking switches to complete racks, site infrastructure, management software,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

In-Rack CDU

In-Row CDU

L2A Sidecar CDU

Water Cooling Tower



Dry Cooler

Rear Door Heat Exchanger