

Vertiv™ CoolChip CDU 2300kW

Liquid-to-liquid coolant distribution unit for direct-to-chip
high-density deployments



Key features

- **Ultra high-density cooling:** 2300 kW nominal capacity at 4°C ATD supports scalable rack clusters for AI, HPC, and ML pods.
- **High cooling availability:** Redundant pumps and unit-to-unit group operating modes, with component and unit failover protocols.
- **Precisely maintained fluid:** Secondary fluid temperature controlled within $\pm 1^\circ\text{C}$; differential pressure or flow rate control modes meet varied application requirements.
- **Fluid integrity by design:** Built-in unit leak detection (spot leak detection available), integrated filtration, and fluid monitoring options.
- **High-efficiency operation:** Supports ASHRAE W45 cooling at low approach temperatures for high-efficiency deployments.
- **Flexible installation:** In-row or perimeter placement with configurable top and bottom hygienic connections.
- **Local and remote management:** 7" color touchscreen HMI; Modbus RTU (RS485) and TCP/IP; full alarm monitoring with remote control.
- **Global services:** All-in-one offerings from design, installation, and startup to fluid management and troubleshooting.

Product overview

As AI data infrastructure scales, racks are not only increasing in density and compute power but are also being deployed as scalable rack clusters. Direct-to-chip liquid cooling places the IT equipment's cooling fluid on the critical path of every deployment. The Vertiv™ CoolChip CDU 2300kW addresses this requirement: a liquid-to-liquid, in-row coolant distribution unit that provides effective separation of the facility fluid circuit and the secondary fluid network (SFN) while maximizing space for high-density IT.

Delivering 2300 kW of nominal cooling capacity with a 4°C approach temperature difference, the CDU 2300kW is engineered for large-scale, multi-pod, and campus deployments of AI, high performance computing (HPC), and machine learning (ML) infrastructure. Redundant pumps, sensors, and component/unit failover protocols maintain continuous cooling. Unit-to-unit group operating modes coordinate multiple CDUs to increase redundancy. Industry-approved wetted materials, hot-swappable integrated filtration, and automated fluid sampling preserve fluid integrity, while integrated controls regulate flow rate, pressure, and temperature for precise fluid management.



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Technical specifications

Nominal Cooling Capacity	2300 kW @ 4°C ATD
Application Support	Large scale, multi-pod, campus
Primary Fluid	Chilled water or glycol mixture
Secondary Fluid	Treated water or propylene glycol mix
Primary Filtration	Field supplied 500μ
Secondary Filtration	25μ or 50μ
Piping Connections	6" sanitary flange (primary and secondary), top or bottom
System Resiliency	Redundant pumps, sensors, component / unit failover protocols
Power Supply	400 V, 50/60 Hz; 480 V, 60 Hz
Nominal Power Consumption	47.8 kW
Communication	Modbus RTU (RS485) and TCP/IP
Management	7" color touchscreen HMI; remote monitoring and control; unit-to-unit communications
Dimensions (H×W×D)	2400 × 1200 × 1200 mm (94.5 × 48 × 48 in)
Weight (wet)	1,793 kg (3,953 lb)
Operating Conditions	0 to 40°C (32 to 104°F), 10–90% RH (non-condensing)
Storage Conditions	-40 to 70°C (-40 to 158°F), 5–93% RH (non-condensing)
Service Access	Front / rear
Safety Compliance	CE, cULus, RoHS

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