VERTIV.

Vertiv™ CoolChip CDU 70

70kW Liquid-to-Air
Coolant Distribution Unit

Efficiently Deploy Liquid-Cooled Servers in any Data Center Environment

Vertiv™ CoolChip CDU 70 is a coolant distribution unit that allows you to easily and cost-effectively tap into the advantages of liquid cooling. By utilizing a liquid-to-air heat exchanger, it eliminates the need for facilities water and removes the traditional barriers to liquid cooling!

Artificial Intelligence, Machine Learning, and other data-intensive technologies like Virtual Reality are requiring data centers and colocation environments to deploy servers with ever-higher power and cooling requirements. While liquid-cooled servers afford tremendous efficiency benefits in these high-density environments, it is no small task for an air-cooled data center to make the infrastructure changes needed to support liquid-cooled servers. Until now.

Liquid Cooling Solution for Air-Cooled Environments

The Vertiv™ CoolChip CDU 70 makes it possible for data centers to deploy liquid cooled servers without extensive updates to existing infrastructure. The row-based heat exchanger is an easy-to-deploy, fully-enclosed system that is filled at the time of installation and mounted adjacent to or nearby a rack of liquid-cooled servers.

A secondary fluid network (SFN) running from the Vertiv CoolChip CDU 70 to the racks is controlled by variable speed pumps to deliver just enough cooling capacity to support the liquid cooled servers. The liquid-to-air heat exchanger then rejects the heat into the data center to match your facility's current air-cooling configuration, seamlessly integrating with existing thermal management solutions.

Key Benefits

- Significantly reduces the capital expense associated with liquid cooling in an air-cooled environment by eliminating the need for facilities water.
- Easily and quickly installs and deploys in any data center environment with in-row placement options that don't require valuable rack space.
- Delivers exceptional chip cooling heat rejection capacity (70+ kW) to accommodate high-density racks.
- Enable cooling reliability and efficiency with redundant pump design, VSD pump controls, and EC fans.
- Easy to control, monitor, service, and maintain system water quality.

Vertiv™ CoolChip CDU 70 Highlights

Efficient Heat Rejection

- 70kW+ cooling capacity with full modulation capabilities
- Redundant pumps provide additional reliability
- Variable Speed Drive (VSD) controls and EC fans increase efficiency
- Automatically match supply water temperature to heat load demand

Complete Visibility and Control

- 7 in. color touchscreen human machine interface (HMI)
- Communications via Modbus RTU (RS485) and TCP/IP
- Full alarm monitoring with real-time status of IT equipment
- Remote monitoring and control
- Unit-to-unit teamworking capabilities for increased redundancy and control

Serviceability

- Rapid deployment with in-row layout
- Full service access from front and rear doors
- Ease of installation, configuration, and operation
- Hot-swappable fans, pumps, and filters enable fast restoration time

Vertiv™ CoolChip CDU 70 Highlights

Closed-Loop Pipe Design with Integrated Leak Detection
Operates with limited water volume and hose piping to simplify deployment and protect data center equipment.

7” Color Touch Screen Display
With state-of-the-art controls for complete visibility of operating conditions and unit status.

Closed Loop Fan Speed Control with Extra Capacity
Automatically matches the supply water temperature to the load to eliminate overcooling and boost efficiency.

Integrated 50-Micron Filter
Keeps supply water clean to protect server integrity and performance.

Top or Bottom Liquid Supply & Return Connection
Accommodates any facility design including raised floor and non-raised floor data centers.

Adjacent or Remote Placement Options
To channel rejected hot air to the right location to coordinate with the facility’s current cooling configuration.

Liquid-to-Air Heat Rejection
Allows for high density liquid-cooled deployments in traditionally air-cooled environments without the need for significant infrastructure changes.

Redundant Pumps with VSD Control
Enable reliable, efficient cooling with a flow rate that can be set to meet the data center’s specific cooling requirements.

Full Service Access from Front and Rear Doors
Easy unit servicing in all installation environments.

Technical Specifications

Physical Data		
Unit Dimensions (H x W x D), mm (in)	2300 x 600 x 1200 (91 x 24 x 48)	
Shipping Dimensions (H x W x D), mm (in)	2400 x 1000 x 1400 (94.5 x 39.4 x 55.1)	
Weight (Dry), kg (lbs)	408 (899)	
Weight (Wet), kg (lbs)	457 (1007)	
Weight (Shipping), kg (lbs)	560 (1234)	
Performance Data	**at 40°C (104°F) fluid supply temperature (PG25)**	
Nominal Cooling Capacity	70 kW @ 11°C Approach Temperature Difference (ATD)	
Nominal Fluid Flow	60 l/min (15.8 gpm)	
Maximum Cooling Capacity	100 kW @ 20°C ATD	
Maximum Fluid Flow	80 l/min (21.1 gpm)	
Performance Data	**at 45°C (113°F) fluid supply temperature (PG25)**	
Nominal Cooling Capacity	70 kW @ 14°C ATD	
Nominal Fluid Flow	80 l/min (21.1 gpm)	
Maximum Cooling Capacity	108 kW @ 25°C ATD	
Maximum Fluid Flow	100 l/min (26.4 gpm)	
**All Performance Data listed above was calculated with 6 fan operation*		
Fan Data		
Maximum Airflow, 6 Fan Operation (N+1)	10,100 CMH (5,945 CFM)	
Maximum Airflow, 7 Fan Operation (N)	11,100 CMH (6,533 CFM)	
Noise Level at 3m (10ft)	< 72 dBA (Sound Pressure)	
Fluid Circuit Data		
Fluid Type	Water or PG-25 with inhibitors	
Fluid Filtration	50µ or 25µ	
Total Water Volume	23.5 (6.2)	
Base Unit, L (Gal)	39 (10.3)	
Reservoir Tank Capacity, L (Gal)	10 (2.6)	
Piping Connection, Top and Bottom	1.5 in. Sanitary Flange	
Electrical Data		
Power Supply	115V, 1ph, 60Hz	230V, 1ph, 50Hz
Full Load Amps (FLA)	16A	8A
Minimum Circuit Ampacity (MCA)	24A	20A
Overcurrent Protection Device (OPD)	40A	32A
Nominal Power Consumption	1.7 kW (at maximum flow and external pressure drop)	
Max Installed Load	3.91 kVA	
Dual Power Feeds (with ATS)	Standard Feature	
**Contact Vertiv for additional power configurations*		
Ambient Conditions		
Operating Conditions	0 to 40° C (32 - 104° F), 10 to 90% RH (non-condensing)	
Storage Conditions	-40 to 70° C (-40 - 158°F), 5 to 93% RH (non-condensing)	
Compliance		
Safety Compliance	CE, cULus, RoHS	

Related Liquid Cooling Solutions

Deployments made easy

- Modular and scalable approach to liquid cooling deployments
- Configure the deployment to meet the needs of the application
- No chilled water loop required
- Utilizes existing air-cooled infrastructure without the need for a complete overhaul
- Group high-density IT racks as needed to support business demands as they evolve

1-to-1 configuration

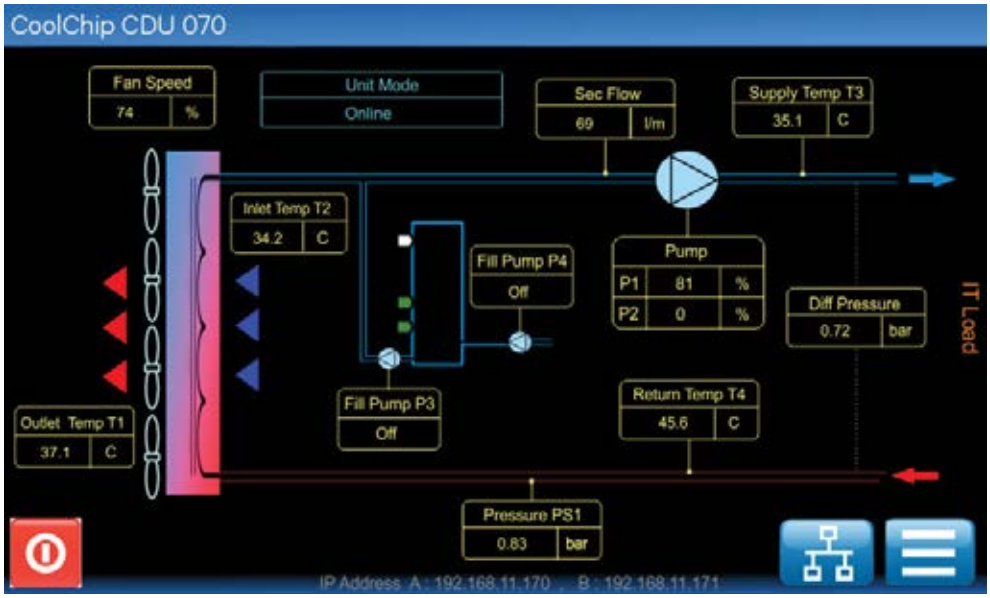
2-to-1 configuration

2-to-2 configuration

2-to-4 configuration

Monitor and control your IT

Monitoring environmental conditions and status around liquid cooled systems is pivotal to protecting the IT equipment. Liquid cooling is inherently different than air cooling when it comes to rapid system response time when a failure scenarios occur due to the higher heat densities associated with liquid cooling. The CoolChip CDU 70 controller is designed to monitor and control the temperature, pressure, flow rate, and fan speed of the unit, ensuring high system reliability and quality.



Built-in Features

- 7” touchscreen HMI display
- Piping schematic with available reference data
- Alarm status indicator
- Readily available IP address
- Menu icon for access to Status Screen, Data Curves, and Login Screen
- CANbus Group Control icon (visible when CANbus Communication is configured)

Related Liquid Cooling Solutions

Vertiv™ CoolChip DCD Rear Door Heat Exchanger

Capacity: 35, 47, and 50 kW
Type: Active and Passive
Key Applications: Hyperscale, Enterprise, Colocation, Finance, Government, Media & Entertainment

Scalable Cooling Capacity: allows for 0-100% modulation, meeting the ever-changing demands of the system. Available as active or passive models.

Rear-Door Mounting: reduces physical space required to deploy, saving valuable floorspace for addition racks for critical IT equipment.

Room-Neutral Cooling: removes heated air as it passes through the door, delivering room temperature air back into the data center.

Vertiv™ CoolPhase CDU

Capacity: 300 kW
Type: Liquid-to-Refrigerant CDU
Key Applications: Hyperscale, Enterprise, Colocation, Finance, Government, Media & Entertainment

Pumped Refrigerant Economization (PRE): efficiently and reliably cools pods of high-density racks without the need for chilled water.

Variable Speed Pumps: allow for variation in flow of PRE based on load demand, increasing efficiency and saving energy dollars.

Modular Design: supports efficiency and redundancy needs by allowing units to function independently or in teamwork mode.

Standard Footprint: that mirrors the size of air-cooled Vertiv™ Liebert® DSE units, simplifying retrofits and future-proofing new data center designs.

Vertiv™ CoolChip CDU Coolant Distribution Unit

Capacity: 450/600/1350 kW
Type: Liquid-to-Liquid CDU
Key Applications: Hyperscale, Enterprise, Colocation, Finance, Government, Media & Entertainment

Wide Cooling Capacity Range: from 450-1350kw of cooling capacity to accommodate customer facility design & performance requirements.

Stable Thermal management: Precise temperature control to eliminate thermal shock for CPU and GPUs.

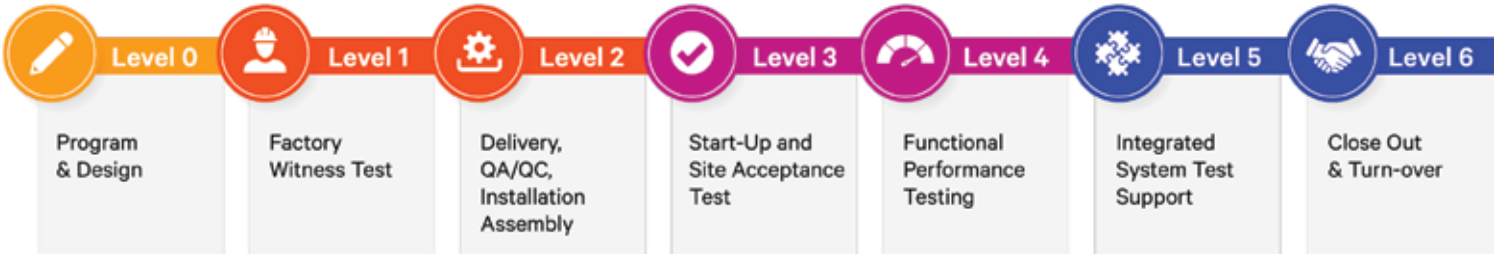
Closed-Loop Design: with hygienic couplings and leak detection helps ensure SFN integrity with strictly controlled water quality.

Redundant Pumps and Dual Power Feeds: for optimizing reliable operation.

Global Liquid Cooling Services

Vertiv is committed to providing the state-of-the-art product no matter the location. With thousands of factory trained and certified technicians around the globe, Vertiv offers value-added services at all stages of your Liquid Cooling deployment. Our full Liquid Cooling Service offering includes design, installation, and maintenance services, facilitating operational efficiency and enhanced system availability. Vertiv™ Services can also conduct routine fluid quality analysis to identify parameters that cause corrosion, degradation, and heat transfer limitations.

Learn more about Vertiv's Liquid Cooling Services by visiting Vertiv.com



Global Service Portfolio

	PM Contract	Basic	Essential/Preferred	Premier	
Performed by Vertiv Certified Technicians	✓	✓	✓	—	Unit Management
Guaranteed Emergency Response Time	✓	✓	✓	—	
Access to Customer Resolution Center	✓	✓	✓	—	
Preventive Maintenance Service Visits	✓	✓	✓	—	
Labor and Travel Coverage	—	✓	✓	—	
Parts Coverage	—	—	✓	—	
Secondary Circuit Fluid Sampling	✓	✓	✓	✓	Fluid Management
Secondary Circuit Fluid Analysis*	+	+	+	✓	
Secondary Circuit Fluid Remediation	+	+	+	✓	
Secondary Circuit Initial Fill	+	+	+	+	
Secondary Circuit Flush and Fill	+	+	+	+	

*Inclusion of fluid analysis and remediation is predicated upon the use of DOWFROST LC25. If another manufacturer fluid is being used, pricing and offering will need be evaluated

✓ These items are included at this level of service coverage

— These items are not included at this level of service coverage, and they will be quoted on time and material basis

\+ These items are available to be quoted on Time and Material basis

Vertiv.com | **Vertiv Headquarters,** 505 N. Cleveland Ave, Columbus, OH, 43082, USA

SL-71227 (Rev.1-04/25)