DATASHEET

CoolD2C

In-rack liquid cooling units Direct-to-Chip

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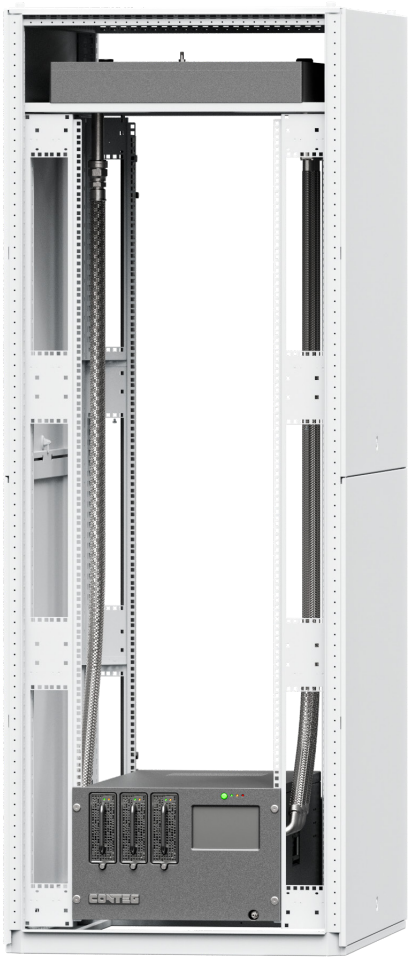
CHILLED WATER/DIELECTRIC-REFRIGERANT-BASED COOLING UNITS

COOLD2C

CoolD2C S



CoolD2C T

CoolD2C in-rack liquid cooling units (Direct-to-Chip) provide up to 100 kW of cooling capacity and reliably manage heat dissipation for the most demanding computing devices with high thermal power density.

We offer two flexible solutions that seamlessly integrate with existing facility water-loops and heat-rejection systems:

- ✓ CoolD2C S — single-phase, water-based cooling;
- ✓ CoolD2C T — two-phase, dielectric-refrigerant-based cooling.

Our portfolio includes complete systems with Intelligent Coolant Distribution Units (iCDUs), manifolds, and all required accessories.

↳ Main advantages

- ✓ Cooling capacity: up to 100 kW
- ✓ Up to 4.5 kW per socket with the 2-phase system
- ✓ iCDU with touchscreen and support for multiple communication protocols
- ✓ Built-in resilience with N+1 redundant pumps and N+N power supplies

		CoolD2C S	CoolD2C T
Total cooling capacity	kW	100	100
DIMENSIONS			
Height	mm	175.5 (4U)	301 (7U)
Width	mm	435	488
Depth	mm	958	912
BASIC DATA			
Refrigerant		Water, Water/Glycol	IT-safe dielectric
Max power draw	W	750	1 000
Power supply	V/ph/Hz	120/1/60 and 230/1/50, 90~264V AC/47~63Hz	120/240V AC and 480V AC at 50/60 Hz, N+1 phase redundancy
Dry weight	kg	40	91
Leakage detection systems		Inbed + External	Multi-tier leak detection with configurable alarm, alert, and reporting notifications
Control modes		Constant Flow, Constant Pressure Difference, Constant Temperature	Multiple system sensors provide data, reports, alarms, and updates to NMS and DCIM
Communication Protocol		Modbus RTU and Modbus TCP/IP	SNMP, IPMI, Redfish, DCIM integration
Plumbing		Triclamp, CGB20 (optional)	Brazed or welded stainless-steel or copper tubing; industrial five-layer nylon-braided hoses; aluminum dripless quick-connects

CHILLED WATER COOLING UNITS

COOLD2C S

CoolD2C S

CoolD2C S is an extremely efficient in-rack cooling unit designed to manage compute heat using ASHRAE W4 warm water. It offers a cooling capacity of 100 kW at a 4 °C Approach Temperature Difference (ATD) and has a rated pump flow of 100 liters per minute. Built-in redundancies, such as N+1 redundant pumps and N+N power supplies, reduce the risk of system failure. It also includes a 50-micron secondary filter, leak detection, and dew point control, while its stainless steel heat exchanger works with both copper and aluminum cold plates.

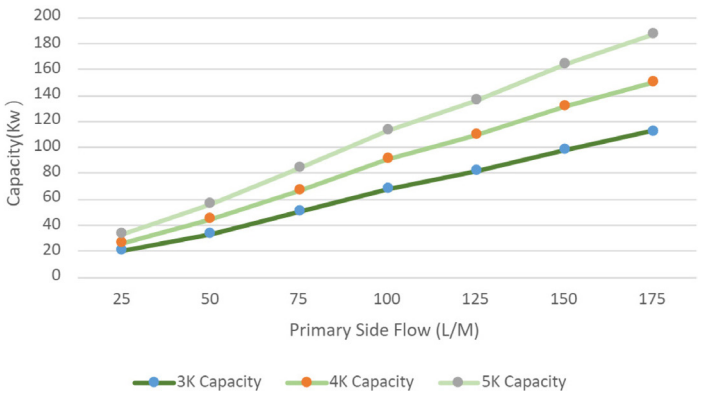
Additionally, the unit features redundant 24V DC variable-speed pumps that produce minimal noise and enhance reliability of the unit. A PLC control system optimizes coolant flow for safety, and comes with a 4.3-inch touch screen.

The unit supports RS485 and Ethernet communication as well as Modbus RTU and TCP/IP protocols; meets CE and EU RoHS certifications, with UL certification pending.

↳ Main advantages

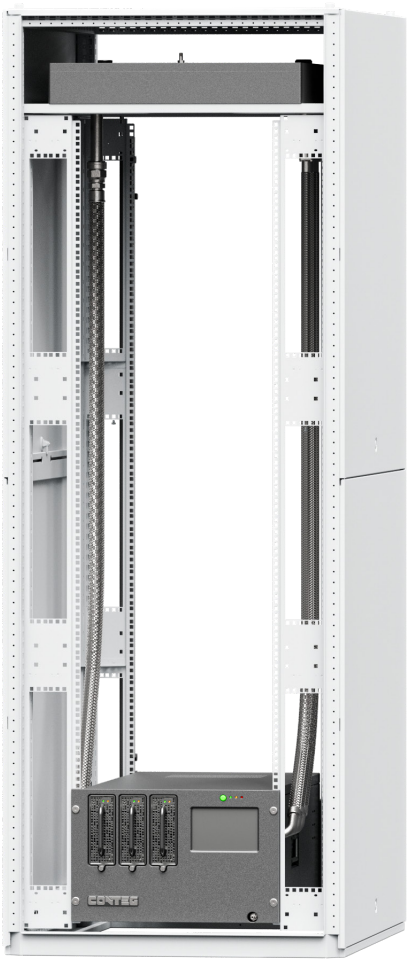
- ✓ Cooling capacity: 100 kW at 4 °C Approach Temperature Difference (ATD)
- ✓ Stainless steel heat exchanger, compatible with copper and aluminum cold plates
- ✓ Integrated PLC control system for precise monitoring and management, optimizing coolant flow and ensuring safety
- ✓ Supports RS485, Ethernet communication, Modbus RTU and TCP/IP protocols
- ✓ Built-in resilience with N+1 redundant pumps and N+N power supplies

		CoolD2C S
Nominal cooling capacity (4K ADT)	kW	100
Maximum cooling capacity (5k ADT)	kW	120
Height	mm	175,5 (4U)
Width	mm	435
Depth	mm	958
Refrigerant		Water, Water/Glycol
Max power draw	W	750
Power supply – available options	V/ph/Hz	120/1/60, 230/1/50; 90~264V AC, 47~63 Hz
Operating conditions	°C	+5 to +45
Operating noise	dB	<=70
Max operating altitude	m	4 000
Control modes		Constant Flow, Constant Pressure Difference, Constant Temperature
Control accuracy		0,1 L/min, ±1 °C
Dry weight	kg	40
Wet Weight	kg	50
Leakage detection systems		Inbed + External
Communication Protocol		Modbus RTU and Modbus TCP/IP
Plumbing		Triclamp, CGB20 (optional)



DIELECTRIC-REFRIGERANT-BASED COOLING UNITS

COOLD2C T



CoolD2C T

CoolD2C T 2-phase in-rack liquid-cooling units (Direct-to-Chip) provide up to 100 kW of cooling capacity and reliably manage heat dissipation for the most demanding computing devices — GPUs and CPUs — with high thermal power density.

Hot-swappable components in a familiar in-rack form factor deliver unmatched reliability and easy field serviceability. Two-phase, direct-to-chip cooling is built for next-generation processors. It's validated to 4,5 kW per socket and removes typical heat fluxes of 0,25 kW/cm² and hot-spot fluxes above 0,5 kW/cm². A non-conductive dielectric fluid protects electronics so components remain safe.

↳ Main advantages

- Cooling capacity: up to 100 kW
- Up to 4,5 kW per socket and hot-spot fluxes above 0,5 kW/cm²
- Thermal uniformity eliminates hot spots
- Industrial condenser with an isolated facility water loop accepts warm (ASHRAE W45) or chilled water. Design prevents water contact with electronics, eliminating water-related risk to GPUs and CPUs.
- Multiple redundancies with hot-swappable servicing ensure continuous operation and fast field replacement
- 7" touchscreen provides local monitoring and control of the CoolD2C T system
- Multilayer nylon AC hosing runs from servers to manifolds for robust fluid delivery
- Most field repairs and maintenance can be completed without an HVAC technician
- Standard data-center compatibility enables fast installation and minimal training

↳ IT-safe dielectric

- ASHRAE A1 rating, non-toxic, non-flammable, non-conductive and non-corrosive
- ~1 Global Warming Potential (GWP), zero ozone depletion potential (ODP)
- 40× less refrigerant than used in immersion cooling
- Low two-phase system operating pressure and 4-9× lower flow rate than single-phase Direct-to-Chip systems
- Zero risk of leak damage: the dielectric refrigerant is non-damaging to servers and IT equipment

↳ Facility water

- The facility water only enters the iCDU and flows through the condenser; the water loop can be replaced by a refrigerant one for water-free installations
- Characterized Control Valve (CCV) controls water flow rate
- Water temperature compatibility with ASHRAE W45 and below, depending on kW load

		CoolD2C T
Nominal cooling capacity	kW	80
Maximum cooling capacity	kW	100
Height	mm	301 (7U)
Width	mm	488
Depth	mm	912
Compatibility		42U–52U racks of 600+ mm width and 1 200+ mm depth
Refrigerant		IT-safe dielectric
Max power draw	W	1 000
Power supply – available options	V/ph/Hz	120/240V AC and 480V AC at 50/60 Hz, N+1 phase redundancy
Control modes		Multiple system sensors provide data, reports, alarms, and updates to NMS and DCIM
Dry weight	kg	91
Leakage detection systems		Multi-tier leak detection with configurable alarm, alert, and reporting notifications
Communication Protocol		SNMP, IPMI, Redfish, DCIM integration
Evaporator		Copper (skived) baseplate, aluminum housing; industrial-grade, rigid copper/aluminum plumbing, aluminium compression fittings
Plumbing		Brazed or welded stainless-steel or copper tubing; industrial five-layer nylon-braided hoses; aluminum dripless quick-connects