

CDU-1MW Coolant Distribution Unit

Universal direct-to-chip liquid cooling solution delivering 1,350kW

Powerful, efficient, and equipped

LiquidStack's universal Coolant Distribution Unit (CDU-1MW) can be configured for virtually any direct-to-chip (DTC) solution, and is powerful, compact, efficient, and easy to manage. Designed for the latest AI chips and servers, it offers powerful coolant flow distribution in the smallest form factor, optimized energy efficiency through advanced water circuit design, and modern control and logic to meet resiliency and management needs. The CDU-1MW delivers 1,350kW of cooling capacity, rightsized for DLC data halls.

Intelligent design and operation

Designed specifically for direct-to-chip applications

- Elevated operating water temperatures
- Narrow approach temperatures
- Higher differential pressure operation
- Rack-based form-factor
- Resiliency and non-corrosive material

Features and benefits

- Up to 1,350kW cooling capacity*
- Dual, hot-swappable VSD pumps
- 316SS plate heat exchanger
- Integrated ATS with controller supercapacitor
- 2-way E-PICV or 3-way control valve
- Row-style dimensions: 900 mm (35 in) width, 1,242 mm (49 in) depth, 2,200 mm (87 in)
- Dual 25 micron filtration



The CDU's compact form factor and high entering water temperatures make it perfect for new retrofit data centers. The reduction of energy and water use leads to significant TCO savings.

36% reduction

In energy used for cooling

48% CAPEX reduction

versus air-cooling

62% reduction

in Data Center white space

25% improvement

in TCO over 20 years (nominal)

- MODBUS TCP/IP, RESTful API, BACnet IP, SNMP
- Top/bottom piping and electrical, optional floorstand
- PN16 static pressure rating
- Unit grouping of setpoints, rotation schedules, and duty cycles across multiple units
- 7" color user interface displaying with live P&ID view
- Environmental monitoring w/ dew point control
- Temperature, pressure, and flow sensors across TCS and FWS loops
- ETL with CE and CSA certification



Accessories and options:

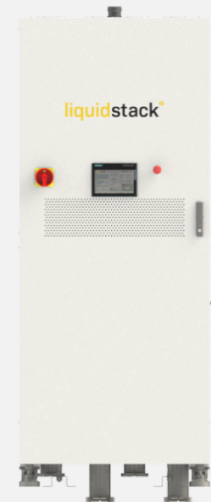
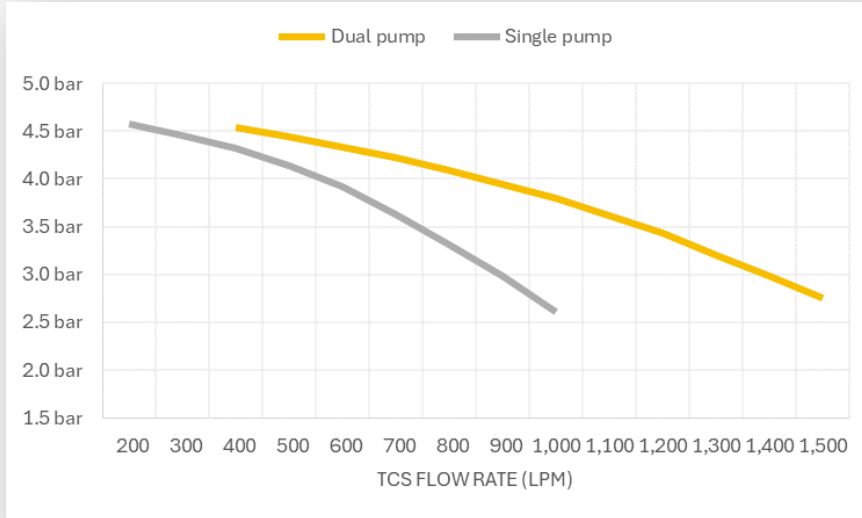
- N+1 component upgrade (expansion tanks, sensors, etc)
- Floorstand (for bottom piping feed)
- Remote firmware upgrade
- Rope type leak sensor
- Pump dry run protection sensor

Performance information

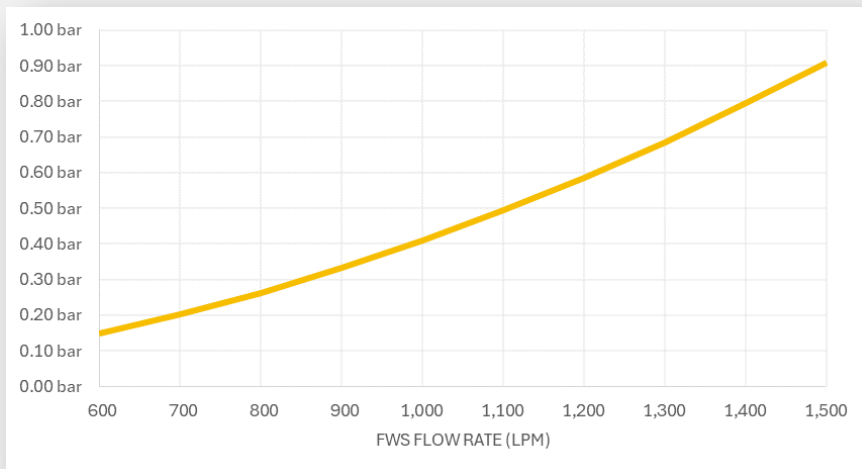
CDU-1MW TCS performance

Delta-T (TCS)	10 degC	12 degC	13 degC
Max flow rate (TCS)	1,500 lpm	1,500 lpm	1,500 lpm
Glycol rating	PG 25	PG 25	PG 25
Cooling capacity (4 degC ATD)	1,004 kW	1,202 kW	1,350 kW
Heat dissipation ratio	1.50 lpm/kW	1.25 lpm/kW	1.15 lpm/kW

TCS pump curve



FWS pressure differential



Technical information

Dry/operating/shipping weight	911 (2,004 lb) / 1,165kg (2,563 lb) / 1,100kg (2,420 lb)
Water temp range - FWS	10degC to 45degC (50degF to 113degF)
Power input	380~480VAC, 50/60Hz, 3 Phase 3W+N+E
MOP / MCA / FLA	70A / 62.5A / 47A
Power consumption	23kW (11kW per pump)
Coolant volume (TCS)	78.92L (20.85 gal)
Coolant volume (FWS)	119.24L (31.50 gal)
Noise rating	<68dBA noise rating from 3m at full load