

PRODUCT SPEC SHEET

NeuCool[®] MR250

Two-Phase Direct-to-Chip Multi-Rack System



PRODUCT OVERVIEW

The NeuCool MR250 is a highly-engineered two-phase, direct-to-chip cooling solution designed to provide up to 250kW of liquid cooling capacity to support large-scale deployments of high-density racks.

Connect the MR250 to one or two NeuCool racks, which will include integrated pumps, vaporators, and manifolds, for a holistic liquid cooling solution. This frees up a majority of the rack for additional servers and rack PDUs to enable dense AI and HPC workloads.



KEY FEATURES

Multiple Configurations

- 1 x 250kW Rack
- 2 x 125kW Rack
- Warm Rack Expansion



Commercial Refrigerant

- Dielectric, A1 safety rated, low GWP refrigerant
- No water enters IT equipment, limiting risk to GPUs and server electronics



Ease of Service

- Multiple redundancies with hot-swappable servicing (Pumps, PSUs, control board)



iCDU OVERVIEW

NeuCool Reservoir

- Storage tank provides:
 - Inlet pressure for pumps
 - Expansion volume to accommodate full transients from zero to full power without interruptions

15" NeuView™ Touchscreen

- System monitoring and controls with NeuView touchscreen and DCIM integration
- Intuitive mimic display visually supports servicing

Vaporators & Manifolds

- Integrated overhead manifolds and valving from CDU to rack(s)
- Integrated rack manifolds and in-server plumbing and vaporators with compatible servers



Brazed Plate Heat Exchanger

- Condenses refrigerant vapor and transfers heat from the IT loop to the facility water loop
- Facility water connection at top-rear, bottom-rear, or through the bottom

Pumps and Controls

- Efficiently circulates the refrigerant throughout the IT loop between the servers
- 2 pumps (N+1 redundant) and automatic pump switchover in case of failure ensures maximum uptime
- Redundant core logic and sensors control system

ADDITIONAL FEATURES AND BENEFITS



Industrial condenser with isolated facility water loop uses warm (ASHRAE W45) or chilled water



No water enters the IT rack, limiting risk to GPUs and server electronics



Multilayer nylon AC hosing from servers to manifolds



85% Predicted FIR rate does not require an HVAC technician

PRODUCT SPECIFICATIONS

Feature	Specification
Liquid Cooling Capacity	250kW
Racks Supported	1 or 2
Height, CDU only	95.71 in. (2431 mm)
With Top Valving	99.23 in. (2520 mm)
Width	31.4 in. (800mm)
Depth	47 in. (1200 mm)
Display	15" LCD touchscreen
Input Voltage	230VAC/400VAC/480VAC 50/60Hz, N+1 redundant
Power Consumption (Max)	2.6kW
Power Consumption (Full load)	1.1kW
Targeted Server Heat Removal	CPUs and GPUs, ~75-80%
Max Operating Pressure	178 psi
Pumps	2
Refrigerant	R-515B
Facility Water Flow Control	Characterized Control Valve (CCV)

Feature	Specification
Water Leak Detection	Drip tray and sensing cable
ASHRAE Compatibility (at rated performance)	W27
ASHRAE Compatibility (derated perf.)	W45
Redundancies	Pumps (N+1), dual main power feeds, sensors
Hot Swappable	Pumps, power supply units, sensors, main control board, LCD
Warm Rack Expansion	One rack → Two racks
Flow Rate (Facility)	375 Liters/min
Unit Weight (Empty)	CDU & Top Valving: ~1500 lbs
Communication Protocols	Redfish, BACnet, Modbus, SNMP, IPMI
Filter and Pressure Relief Valve	25 µm filter, integrated pressure relief valve

NeuGuard® Support & Warranty Program

Bolstered by a highly responsive network of professional service team members, our industry-first NeuGuard multi-year warranty is underwritten by CNA, one of the largest U.S. commercial property and casualty insurance companies, providing defined coverage in the unlikely event of a leak.

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