

# Supermicro DLC-2

Up to 40% More AI per Watt with The Next Generation Liquid Cooling Solutions



## The Next-Generation of Direct-to-chip Liquid Cooling

Supermicro liquid cooling solutions reduce power costs by up to 40%, accelerate time-to-deployment and time-to-online, and allow data centers to run more efficiently with lower PUE. Supermicro's proven liquid cooling solutions at scale enable data center operators to rapidly deploy the latest and most performant AI infrastructure while lowering TCO by up to 20%.

### Supermicro DLC-2

Data center resources that present an equal or even greater challenge than power are thermals and cooling. Supermicro leads the industry in direct-to-chip liquid cooling (DLC) technology. Liquid cooling infrastructure is planned and deployed at data center-scale, including the piping and facility-side liquid cooling tower for heat dissipation. As part of Supermicro Data Center Building Block Solutions (DCBBS), DLC-2 provides a total solution for DLC infrastructure, consisting of DLC systems, DLC cold plates, in-rack or in-row coolant distribution units, coolant distribution manifolds, cooling towers, and more.

#### Power Savings

up to **40%**

Savings in entire data center (vs. Air-cooling) by using Supermicro DLC-2

#### Water Savings

up to **40%**

Savings with 45 °C warm water operation and eliminating chilled water and compressor

#### System Heat Capture

up to **98%**

Heat capture in DLC-2 Liquid-cooling with CPU, GPU, PCIe Switch, DIMM, VRM, PSU, and more

#### Quiet Data Center

as low as **50dB**

Significantly reduces noise with less fans and lower fan speed. As quiet as a library

#### Space Savings

up to **60%**

Savings with more than 2.5x compute density compared to air-cooled systems

## DLC-2 Solution Stack

Supermicro provides total direct-to-chip liquid cooling solution stack at data center level, delivering completely tested and validated solutions at scale. It speeds up time to deployment and results in higher quality of the entire infrastructure.



### Liquid-Cooled Systems

- Variety of DLC systems optimized for high performance GPU + CPU compute workloads.
- Up to 98% heat capture through DLC-2 saves more power and achieves a quiet data center as low as 50dB.



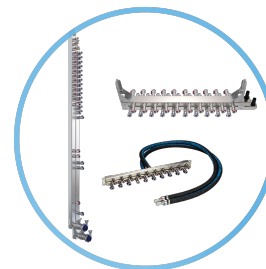
### Cold Plate Building Blocks

- Cold plates are mounted on top of CPUs, GPUs, DIMMs, VRMs, PCIe Switches, and more to cool components efficiently as coolant flows through micro-channels in the cold plates.



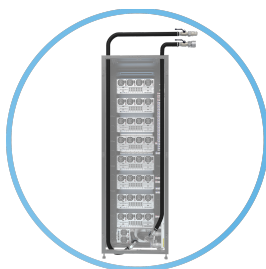
### Coolant Distribution Unit (CDU)

- DLC-2's 250kW in-rack CDU capacity and the up to 98% heat capture allow for an increased inlet liquid temperature at up to 45 °C, eliminating the need for chilled water and equipment cost, and saving up to 40% of water consumption.



### Coolant Distribution Manifold (CDM)

- CDMs distribute coolant to each server in the rack and return the hot coolant to the CDU.
- DLC-2 vertical CDMs save rack space further and increase density.



### Cooling Hose Kit

- Hose kits are designed to easily connect liquid cooling racks directly to data center primary water supply or cooling towers.
- The flexibility of hose kits ensures seamless integration with new or existing facility piping.



### Chilled Door and More

- Optional liquid-cooling solutions are also available to enable DLC infrastructure performance in challenging or restrictive environments, including chilled door, and liquid-to-air cooling racks, and more.



### Testing and Validation

- DLC-2 enabled racks and clusters are tested and validated at L11 or L12 before shipping to ensure the highest quality and plug-and-play deployment.



### Cooling Tower

- DLC-2 offers hybrid cooling towers as well as water towers that combine the features of dry and evaporative water towers into a single design for additional efficiency.
- 1MW or 5MW cooling capacity options with piping design and onsite installation.

## Management Software and Onsite Services

The entire DLC-2 solution stack is fully integrated with Supermicro SuperCloud Composer® software for data center-level management and infrastructure orchestration. Supermicro also offers a full portfolio of service-level building blocks such as data center design, solution validation, and professional onsite deployment.



### SuperCloud Composer

- SuperCloud Composer (SCC) Liquid Cooling Console Module collects and monitors vital real-time information from GPU, CPU, DIMM, CDU, PDU, and Cooling Tower to ensure maximum operating efficiency.
- Provides lifecycle management and orchestration of liquid-cooled data centers.



### Onsite Services

- Comprehensive onsite liquid cooling integration services to assure quick time-to-deployment and time-to-online.
- Includes continued on-site support to ensure long-term success, along with a 4-hour onsite response time for mission-critical uptime.