



## NVIDIA H100 SmartPlate

Unleash Peak Performance and Efficiency with Precision Cooling

### Maximize GPU Efficiency, Minimize Energy Cost with Precision Cooling

NVIDIA H100 SmartPlate, designed for the NVIDIA Hopper H100 GPU series, is an advanced cold plate that unlocks unrivaled efficiency and performance. Built with our patented single-phase direct-to-chip liquid cooling technology, this best-in-class cold plate boasts an exceptionally low thermal resistance of 0.021C/W. With NVIDIA H100 SmartPlate, customers achieve maximum GPU utilization at full workloads while reducing server power consumption by up to 15%, driving substantial energy savings and improved operational efficiency.

#### How does it work?

Our patented microconvective cooling® uses arrays of fluid jets to target the hotspots on the industry's most powerful processors. Unlike typical heat sinks or traditional microchannel cold plates that pass fluid over the surface, our cooling jets route fluid directly at the surface, creating an order of magnitude improvement in heat transfer.



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## NVIDIA H100 SmartPlate Datasheet

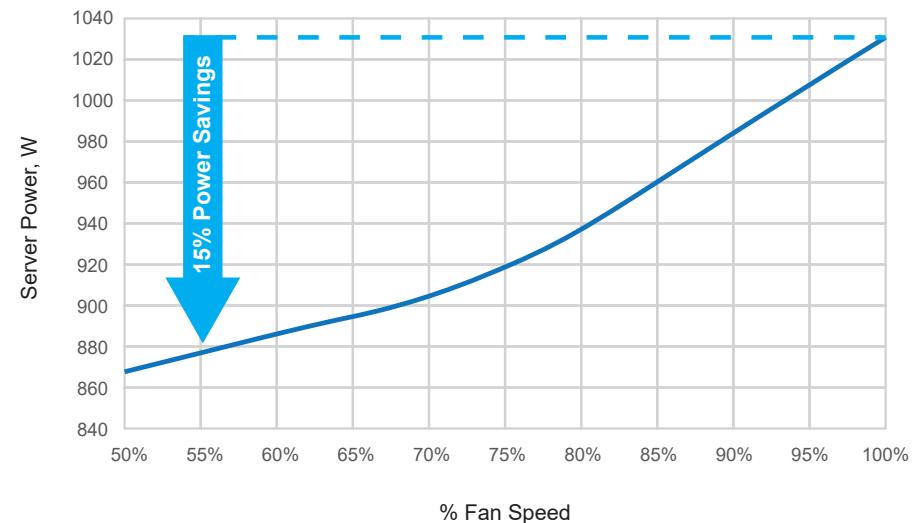
NVIDIA H100 SmartPlate facilitates full GPU utilization even under full workloads, without compromising on performance. Furthermore, it significantly reduces full AI cluster power consumption by 15%, thereby enhancing energy efficiency and reducing operational costs.

- **Tackle extreme AI workloads** over 1,500W per socket with industry-leading thermal resistance of 0.021C/W, maintaining performance in demanding computational tasks like deep learning and data analysis.
- **Maximize GPU utilization** with warm inlet temperatures up to 60°C, run at peak performance longer, accelerate computation-intensive processes and reduce time-to-solution for AI models.
- **Achieve 35°C cooler chips** than air-cooled servers, outperforming air alternatives by 82%, critical for data centers where hardware reliability and uptime are paramount.
- **Reduce overall AI cluster power consumption by 15%** through a decrease in fan speed and an increase in coolant inlet temperatures, significant in large-scale deployments where energy costs can form a considerable part of operational expenses.
- **Enable a quieter operational environment** with server noise levels lowered by 13dB.

## Physical Specifications

Description	Value
Module Dimensions	150mm (L) x 78mm (W) x 30mm (H) with 0.3125" ID hose fittings
Module Weight	455g
Coolant Temperature / Max. Pressure Rating	10 – 60°C / 100 psi
Thermal Resistance	0.021 C/W at 3.2 LPM
Coolant Fluid	PG25

## Power Consumption



*Patented Technology, Additional Patents Pending*

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