

Accelsius Achieves Industry-Leading Thermal Milestones for Next-Generation AI Computing

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- Successfully tested NeuCool technology at 4,500W per GPU socket—the highest in the industry for direct-to-chip liquid cooling
- Demonstrated the highest cooling capacity two-phase CDU on the market, supporting a full 250kW AI server rack while maintaining GPU temperatures below thermal limits even with 40°C facility water
- Accelsius will showcase these capabilities at Data Center World in Washington, DC (Booth #524), and present innovative cold-plate research for vertically oriented servers at the OCP EMEA Summit in Dublin

AUSTIN, Texas--(BUSINESS WIRE)--Apr. 10, 2025-- [Accelsius](#), a leader in advanced liquid cooling technologies, announced two major thermal testing milestones today, demonstrating the unmatched performance and scalability of its proprietary two-phase, direct-to-chip NeuCool™ solution. These breakthroughs address critical cooling challenges for next-generation AI infrastructure and support sustainability goals through significant energy efficiency improvements.

In preparation for the next wave of ultra-high-power GPUs, Accelsius tested a thermal test vehicle representative of a GPU socket. In the experiment, the cold plate was heated to 4,500W before reaching the power limit of the test infrastructure, not the cooling system. Cold-plate temperatures remained stable and within operational limits even at these unprecedented loads. This represents the highest cooling capacity achieved in the industry for direct-to-chip liquid cooling, proving NeuCool has the thermal headroom to support multiple upcoming generations of processors.

In a second test, Accelsius successfully demonstrated the ability of its in-row two-phase CDU to cool a full 250kW rack of AI servers. A four-way H100 server was retrofitted with two-phase cold plates directly contacting the switches, CPUs and GPUs, and then installed in a densely configured 250kW rack.

The CDU was subjected to facility water (PG25) at 20°C, 30°C and 40°C, and 375 liters per minute of flow. Even under maximum rack load and using 40°C inlet temperatures, the junction temperature of the hottest GPU remained below NVIDIA's thermal throttle limit (~87°C), highlighting the flexibility and efficiency of two-phase cooling even in warm-water environments.

The ability to operate with facility water 6-8°C higher than competing solutions can translate to over 25% cooling energy savings while enabling more free cooling hours, depending on the local climate. An extensive thermal margin was observed at lower facility water temperatures, signaling the solution's scalability to future chip, server and rack architectures.

"We're showing customers that we can easily meet current performance requirements and scale our performance to meet the needs of the recently announced 600kW racks," said Dr. Richard Bonner, chief technical officer at Accelsius. "Our R&D team has also prepared us for rapidly evolving chip and server architectures, such as 4,500W TDP sockets and vertically oriented blade servers."

Accelsius will be on the show floor at Data Center World in Washington, DC, from April 15–17 (Booth #524), where team members will share additional insights from these test campaigns and help data center operators evaluate the path forward for AI, HPC and sustainable thermal management.

Accelsius will also present innovative cold-plate research at the OCP EMEA Summit's Future Technologies Symposium in Dublin, Ireland, on April 29. The research demonstrates the ability to cool vertically oriented servers, critical to the requirements of next-generation NVIDIA Kyber racks.

To learn more about Accelsius' NeuCool two-phase direct-to-chip in-rack liquid cooling solution, email info@accelsius.com or visit accelsius.com.

About Accelsius

Founded by Innventure, Inc. (NASDAQ:INV), Accelsius empowers data center and edge operators to achieve their business, financial and sustainability goals through advanced cooling solutions. The proprietary NeuCool platform provides best-in-class thermal efficiencies through a safe, two-phase liquid cooling system that scales from single racks to entire data centers. For more information, visit accelsius.com or follow us on [LinkedIn](#).

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