

Showcase your liquid cooling capabilities with our **NeuCool™** Thermal Simulation Rack

The Thermal Simulation Rack (TSR) incorporates our highly engineered two-phase, direct-to-chip NeuCool in-rack system in addition to unique power, control, and measurement elements



Thermal Simulation Rack “Thermal banking” for liquid cooling

- Cost-effective rack-level solution to simulate a high-density server load
- Simple control and monitoring through a laptop with custom Labview GUI
- Optimized for our environmentally friendly dielectric fluid
- Load Simulation Sleds (LSS) provide up to 5kW of thermal load in 1U at fraction of AI-HPC server costs
- Rack thermal load is modular and capable of up to 50kW/rack

Load Simulation Sled (LSS) Specifications

- 1U chassis that mounts to standard 19" rails
- Each LSS has (5) thermal test vehicles (TTVs) with NeuCool Vaporators
- Each TTV generates up to 1kW of heat in the footprint of a single CPU
- Industry-leading density of 5kW per 1U LSS
- Allows testing NeuCool system with heat flux and density exceeding highest performance GPU and CPU servers on the market
- “TSR-30” and “TSR-50” configurations have up to (6) or (10) LSSs, respectively
- (1) LSS comes equipped with transparent lid vaporators to demonstrate phase change



1835 Kramer Lane Suite 2-180
Austin, TX 78758

www.accelsius.com

info@accelsius.com

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The **NeuCool** Thermal Simulation Rack is supported by the following components:

Power Distribution Sled

- Contains (2) power controllers that manage and distribute electrical power to the LSSs
- Each 3U power sled distributes up to 30kW of power across (6) LSSs
- Power for each LSS is monitored and controlled individually, via a PC-based application
- (2) 3-phase 208-240 VAC power feeds recommended; can accommodate lower voltage or single-phase connections with a reduction in total power capacity

Instrumentation Sled

- 3U sled consists of a rackmount data acquisition (DAQ) system for thermocouple measurement
- Interfaces with a PC using to monitor and record temperatures from up to 125 thermocouples from the TTV Sleds or other key thermal measurement points in the user's facility
- Includes a measurement and control application built in LabVIEW. Data can also be accessed via the user's own LabVIEW, Python, or other language application

Laptop Tray

- 2U tray and software provided for laptop (laptop provided by customer)
- GUI-based application displaying the recorded temperatures for each TTV, as well as power/heat measurements for each LSS
- The power output by the Power Distribution Sleds to the TTVs can be controlled by the user via the application

...and be sure to ask us about our two 42U rack configurations!

TSR-30

- Up to 30 kW coolable heat
- Up to (6) LSS @ 5kW each
- (1) 3U DAQ Instrumentation Sled
- (1) 3U Power Distribution Sled
- (1) LabVIEW GUI (for end-user control & monitoring)
- (1) 2U Laptop Tray (laptop not provided)
- Can scale to higher rack load by adding 2-phase NeuCool servers (up to 16U available)

TSR-50

- Up to 50 kW coolable heat
- Up to (10) LSS @ 5kW each
- (1) 3U DAQ Instrumentation Sled
- (2) 3U Power Distribution Sled
- (1) LabVIEW GUI (for end-user control & monitoring)
- (1) 2U Laptop Tray (laptop not provided)
- Can scale to higher rack load by adding 2-phase NeuCool servers (1U available if all 10 LSSs installed)

Commercial Terms

- This is a demo only; not for re-sale
- No regulatory or environmental certifications
- Designed for in-lab testing
- Requires access to facility water (FWS)



ACCÆLSIUS

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