

1 MW Modular Liquid-Cooled Load Bank

Dynamic Power and Thermal Testing for AI Data Center Commissioning

Purpose-Built for AI Data Centers

The Nexatherm 1 MW Modular Liquid-Cooled Load Bank **replicates the rapid power and thermal fluctuations** of GPU and AI computing environments. Its modular, solid-state design provides precise load control and programmable transient testing, enabling teams to validate electrical and liquid-cooling infrastructure before critical IT equipment goes live.



1 MW Capacity

Two independently operable
500 kW modules



5 kW Resolution

Precise control across the full
load range



Liquid-Cooled

Validates chilled-water &
direct liquid-cooling systems



Fast Switching

Responds to load changes
in under 100 ms



Dynamic Load Profiles

Replicates rapid
1–10 Hz AI load fluctuations



Programmable Testing

CSV profile import with
integrated touchscreen control



ALOY1000-LLB

Key Specifications

Total Capacity	1,000 kW
Configuration	2 × 500 kW modules
Rated Voltage	480 VAC
Operating Range	0–1,000 kW
Load Resolution	5 kW
Transient Frequency	1–10 Hz
Dynamic Switching	<100 ms
Control Interface	15-inch touchscreen



Validate Performance

Test power & cooling systems
under realistic AI load conditions.



Accelerate Commissioning

Find infrastructure issues before
critical equipment arrives.



Reduce Deployment Risk

Confirm system readiness
before go-live.

Typical Applications

- ◆ AI & GPU data centers
- ◆ Data center commissioning
- ◆ Liquid-cooling validation
- ◆ Chilled-water system testing
- ◆ UPS & transformer testing
- ◆ High-density computing facilities
- ◆ Thermal-response testing
- ◆ Facility expansions & retrofits

1 MW Modular Liquid-Cooled Load Bank

TECHNICAL SPECIFICATIONS

System Overview

The ALOY1000-LLB is a 1 MW resistive load bank engineered to reproduce the dynamic electrical and thermal demands of high-density AI computing. Two independent 500 kW modules support partial- or full-capacity operation, while programmable profiles enable steady-state and transient testing.



System Configuration

Total Capacity	1,000 kW / 1 MW
Configuration	2 × 500 kW modules
Operating Modes	Independent or combined
Load Type	Pure resistive
Power Factor	Approximately 1.0
Cooling	100% liquid-cooled

Load Performance

Operating Range	0–1,000 kW
Load Resolution	5 kW
Display Accuracy	±2%
Transient Frequency	1–10 Hz
Dynamic Switching	Less than 100 ms
Test Profiles	User-defined CSV import

Electrical

Rated Voltage	480 VAC
Rated Current	1,210 A
Load Type	Pure resistive
Power Factor	~ 1.0

Liquid System

Coolant	Chilled Water or PG25/30
Rated Flow	274 GPM / 1,038 LPM
Supply Temp.	65–95°F / 18–35°C
Max. Pressure	250 PSI / ~16 bar
Main Pipe	4.5 in. / DN100

System Controls

Control System	Siemens PLC
User Interface	15-in. touchscreen
Protocols	EtherNet/IP, Modbus TCP
Data Interface	OPC UA Server
Optional	BACnet/IP

Standard Features

- Two independently operable modules
- Solid-state dynamic load control
- Continuous transient operation
- CSV load-profile import
- Local and remote monitoring
- Emergency-stop protection
- Casters and handling base

Physical & Environmental

Overall Dimensions	1,850 × 1,300 × 2,400 mm / 72.83 × 51.18 × 94.49 in.
Maximum Weight	2,800 kg / 6,173 lb
Ambient Temperature	0–40°C / 32–104°F
Touchscreen Protection	IP65 front panel