HIGH-DENSITY DATA CENTER COOLING

SCALABLE CDU PLATFORM FOR HIGH-DENSITY DATA CENTERS

As compute density accelerates—driven by AI, machine learning, and HPC workloads—your cooling solution must scale just as fast. ACT's next-generation Two-Phase CDU platform is designed to support today's power demands and tomorrow's breakthroughs.

APPLICATIONS

Hyperscale | AI/Ml Training Clusters | High-Density Computing Racks | High-Performance Edge Computing

KEY FEATURES

- ### SCALABLE FOR THE NEXT GENERATION

  ACT's modular CDU platform is engineered to meet the rising thermal demands of AI and HPC workloads. Featuring a Two-Phase architecture and future-ready design, it's built to scale— already demonstrated at 200 kW, with ongoing development of a 1 MW system underway.

- ### FUTURE-PROOF EFFICIENCY

  With advanced Two-Phase cooling, our system delivers unmatched thermal performance, reduced pumping power, and higher energy savings. As chip power and heat flux increases, Two-Phase technology allows for a single solution for today and tomorrow's requirements.

- ### HIGH RELIABILITY IN DEMANDING ENVIRONMENTS

  Features like N+1 pump redundancy, smart controls, and real-time diagnostics ensure uninterrupted cooling, even under peak loads.

- ### INTRINSIC SAFETY

  The nature of Two-Phase flow allows for the use of dielectric working fluids, offering enhanced safety compared to water-based systems.

PERFORMANCE & DESIGN INSIGHTS

• TWO-PHASE COOLING ADVANTAGE

Leverages vaporization to manage ultra-high heat flux with low mass flow—minimizing thermal resistance and operational costs. Compared to single phase water coolant systems, Two-Phase provides higher capacity, better thermal performance, and lower energy consumption.

• PRECISION-ENGINEERED FLUID CONTROL

Seamless liquid/vapor routing via advanced manifolds ensures minimal pressure drops and optimized flow. Maintain consistent chip temperatures regardless of operational demands.

• SMART, CONNECTED, ADAPTIVE

Intelligent monitoring and control architecture enable dynamic load balancing, predictive maintenance, and simplified integration with data center infrastructure.

PERFORMANCE SPECIFICATIONS

COOLING CAPACITY	200kW
METHOD/MEDIUM TO COOL REFRIGERANT	Facility Water
MAX INLET TEMPERATURE (WATER)	45+°C
MIN INLET TEMPERATURE (WATER)	7°C
MAX REFRIGERANT PRESSURE	300 PSIG
MAX PUMP DIFFERENTIAL PRESSURE	100 PSID
MAX REFRIGERANT TEMPERATURE	60°C
MIN REFRIGERANT TEMPERATURE	20°C

ELECTRICAL DATA

POWER SUPPLY	460V, 60Hz, 3-Phase, 20 amp
PUMP CAPACITY	25 gpm, at 100 psi differential pressure
PUMP RELIABILITY	Minimum 61,500 hours continuous operation at full load

TECHNICAL DIMENSIONS

DIMENSIONS (WxLxH)	600mm x 1200mm x 2000mm
WEIGHT	1490 lbs
DISPLAY	Color touchscreen HMI
PUMPS	2 with N+1 redundancy
CONDENSER	Liquid-to-liquid
ACCUMULATOR	Accommodates up to 10 racks
HOT SWAPPABLE CONNECTIONS	Yes
REFRIGERANT	Dielectric, low GWP, non-corrosive

ACT

www.1-ACT.com

4/2025