

Top 5 Innovations Formulated by EXTRCOOL, a China Leading Data Center Liquid Cooling System Supplier



Foshan, Guangdong Jul 29, 2026 ([Issuewire.com](https://www.issuewire.com)) - Did you know that high-density graphics processing units in artificial intelligence clusters now generate so much heat that conventional air conditioning systems consume up to 40 percent of a facility's total electricity just for climate control? As computing racks surpass 50 kilowatts per cabinet, facilities teams are rapidly pivoting toward liquid cooling architectures to maintain operational stability and contain rising power bills. Meeting these demanding thermal challenges requires purpose-built engineering and precise fluid management. As a China leading data center liquid cooling system supplier, [Extracool Industry Limited](#) delivers modular liquid cooling hardware designed to stabilize rack temperatures and boost overall facility efficiency. By replacing conventional air conditioning with direct-to-chip and secondary loop thermal management, these cooling platforms remove heat directly at the chip level, enabling modern data center facilities to maintain continuous operational uptime and stable computing performance under heavy computational loads.

Corporate Overview & Global Delivery Infrastructure

Headquartered in Guangdong, China, with an international financial branch office in Singapore, Extracool Industry Limited operates as an innovative high-tech engineering enterprise specializing in advanced thermal management hardware solutions. The company focuses on the research, development, engineering, and production of advanced liquid cooling devices, including air-to-liquid Coolant Distribution Units (CDUs), liquid-to-liquid CDUs, rear door liquid cooling heat exchangers, specialized cooling manifolds, and secondary cooling loop pipe assemblies. Alongside its high-density data center cooling portfolio, the firm acts as a specialized manufacturer of commercial refrigeration equipment for cold storage facilities, delivering reliable freezers and chillers to commercial catering, food logistics operations, and industrial cold storage systems worldwide.

With over 4 million liquid cooling devices deployed across more than 100 countries and regions,

EXTRCOOL has accumulated a total installed project capacity exceeding 10 gigawatts. These deployments have consistently demonstrated operational Power Usage Effectiveness (PUE) metrics below 1.05, achieving more than 40 percent energy savings compared to traditional air-cooled facilities. All manufacturing processes conform to recognized international standards, with products holding RoHS, CE, UL, and CCS certifications alongside numerous proprietary engineering patents.

Comprehensive Fluid Management & Liquid Cooling Product Portfolio

Extrcool Industry Limited builds a fully integrated thermal management hardware matrix designed to support primary and secondary fluid loops across diverse server room architectures. The core product lineup spans several key hardware categories:

- **Coolant Distribution Units (CDUs):** Available in air-to-liquid and liquid-to-liquid configurations, these units come in cabinet-style, rack-mounted, and stainless steel chassis options. They regulate fluid flow rates, control loop pressure, and effectively isolate primary facility water circuits from secondary dielectric fluid loops.
- **Rear Door Liquid Cooling Heat Exchangers:** Mounted directly onto standard server rack rear frames, these high-efficiency heat exchangers capture exhaust heat right at the rack boundary, preventing hot air recirculation within hot-aisle containment systems and maintaining consistent room ambient temperatures.
- **Liquid Cooling Manifolds:** Designed for ceiling, raised floor, or rack-internal installation, these precision stainless steel manifolds distribute cooling fluid evenly across individual server blades with precise hydraulic balance and minimal pressure drop.
- **Secondary Liquid Cooling Pipe Systems:** Engineered with leak-proof quick-disconnect couplings and anti-corrosive piping materials, these secondary loop assemblies ensure reliable fluid transport directly to cold plates mounted on high-density graphics processing units and central processing units.

This complete hardware coverage allows facility operators to integrate a complete [data center liquid cooling system](#) without sourcing components from multiple separate vendor supply chains.

Top 5 Innovations Shaping Next-Generation Cooling

To address changing thermal requirements across modern server facilities, Extrcool Industry Limited has developed five distinct engineering innovations spanning its product design, thermal technology, manufacturing network, application coverage, and global service structure.

1. Modular and Customized Hardware Architecture

Extrcool Industry Limited designs its CDUs, rear door heat exchangers, and liquid manifolds around a modular architecture. Rather than forcing facilities to adapt to rigid factory dimensions, hardware components feature customizable frame sizes, flexible fluid connection layouts, and variable pumping capacities. Rack-level manifolds can be tailored to specific server rack heights, pipe diameters, and port counts. This modular approach simplifies retrofits in existing server rooms while accommodating custom rack configurations in new hyperscale builds.

2. High-Efficiency Energy Management and Phase-Change R&D

Thermal efficiency translates directly into lower operational expenditure. By optimizing internal fluid dynamics and heat exchanger surface areas, a well-engineered data center liquid cooling system

reduces overall facility power consumption by more than 40 percent compared to traditional air cooling setups. Building on these baseline savings, EXTRCOOL is advancing two-phase immersion liquid cooling systems. By utilizing the phase-change transition of specialized working fluids from liquid to vapor at specific boiling points, two-phase liquid cooling achieves higher heat flux dissipation than single-phase liquid loops, preparing high-density computing hubs for future multi-hundred-watt processor architectures.

3. Standardized Manufacturing Across Global Facilities

To ensure reliable supply chain delivery, EXTRCOOL maintains dedicated manufacturing capacity across facilities in Asia and North America. Production processes adhere to ISO quality management standards and strict UL safety guidelines. Every data center liquid cooling system supplier must guarantee long-term component integrity; therefore, EXTRCOOL subjects all manifolds, heat exchangers, and CDU cabinets to automated pressure testing and helium leak detection before dispatch. This structured quality framework guarantees structural integrity, pressure resistance, and material compatibility across long operational lifecycles.

4. Broad Compatibility Across Computational and Storage Environments

The thermal management solutions developed by Extrcool Industry Limited extend beyond conventional cloud server rooms. The company adapts its cooling manifolds and secondary piping loops for high-density AI clusters, edge computing nodes, industrial temperature control systems, and battery energy storage power stations. In energy storage installations, uniform liquid cooling prevents thermal runaway in lithium battery banks, ensuring operational safety and long-term stability across fluctuating load cycles.

5. Worldwide Engineering Delivery and Custom ODM Support

Recognizing that thermal infrastructure demands localized technical support, EXTRCOOL offers end-to-end engineering services and original design manufacturing (ODM) capabilities. Technical engineering teams support clients from initial CFD thermal modeling and pipe layout design through on-site installation, system commissioning, and long-term maintenance services. This global service framework helps facility operators deploy a customized data center liquid cooling system quickly and efficiently.

Building Sustainable Infrastructure for High-Density Computing

With over 10 gigawatts of installed project capacity worldwide, EXTRCOOL has established a solid track record as a trusted hardware partner for energy-efficient computing infrastructure. As server power consumption continues to climb, selecting a reliable data center liquid cooling system supplier becomes essential for facility managers aiming to meet strict PUE targets, safeguard mission-critical IT assets, and reduce long-term operational overhead. Through continuous hardware customization, strict manufacturing quality control, and expanded research into next-generation phase-change thermal management, Extrcool Industry Limited remains committed to supporting sustainable, high-density data center operations across the global digital economy.

For more information on custom thermal management architectures or to request a project evaluation from our engineering team, please contact our liquid cooling specialists or visit <https://www.extrcool.com/>.



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