

Hot aisle immersion liquid cooling system



Article Overview

Hot aisle immersion liquid cooling systems submerge servers in dielectric fluids for maximum thermal efficiency, and leading manufacturers like DCX, STULZ, and Schneider Electric offer turnkey solutions directly.

Overview of Hot Aisle Immersion Cooling

Hot aisle immersion cooling involves submerging IT equipment in thermally conductive, non-conductive dielectric liquids, allowing heat to be absorbed directly by the fluid rather than relying on air cooling. This method maximizes heat transfer efficiency, reduces energy consumption, and supports high-density racks typical in AI, HPC, and hyperscale data centers . Unlike traditional air-cooled systems, immersion cooling can handle extreme heat loads while maintaining uniform temperature across all components.

Key Features and Benefits

- **Energy Efficiency:** Immersion cooling eliminates the need for air conditioning in the rack, reducing operational costs and enabling chillerless or low-chiller designs .
- **Scalability:** Systems can be scaled from single racks to hyperscale deployments, supporting hundreds of servers per tank .
- **Uniform Cooling:** All submerged components receive consistent cooling, preventing hotspots and improving server reliability .
- **Integration Flexibility:** Can be retrofitted into existing air-cooled data centers or deployed in new liquid-only facilities .

Article Content

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LiquidStack offers a range of liquid cooling systems to match customers' adoption approach. Coolant Distribution Unit (CDU) and

ThermalWorks

Our new HAC system combines integrated liquid cooling distribution with ultra-energy efficient air management, achieving faster

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Liquid vs Air Cooling for Data Centers 2026: Cost & Efficiency Analysis

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Immersion cooling

Immersion cooling is a method where electronic parts or whole servers are put into a special, electrically safe liquid for cooling. The

Choosing the Right Cooling Path for AI-Powered Data Centers

While hyperscalers have led the way, many data center operators are still exploring what liquid cooling entails and how to implement

Contact Us

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