Data Center Liquid Cooling Market by Component (Solution and Services), End User (Colocation Providers, Enterprises, and Hyperscale Data Centers), Cooling Medium, Data Center Type, Type of Cooling, Enterprise, and Region - Global Forecast to 2032

Market Report | 2025-03-28 | 308 pages | MarketsandMarkets

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Report description:

The global data center liquid cooling market will rise from USD 2.84 billion in 2025 to USD 21.14 billion by 2032 at a CAGR of 33.2% from 2025 to 2032. The liquid cooling market for data centers is increasing owing to increased power densities of high-performance computing devices such as GPUs and CPUs, requiring efficient cooling mechanisms. Liquid solutions such as direct-to-chip and immersion cooling are being adopted increasingly to deal with high-density data center problems better than conventional air cooling. The growth in edge computing and IoT further stimulates demand for compact and efficient cooling solutions. There is also significant emphasis placed on minimizing energy and water consumption, preferring liquid cooling due to its sustainability advantages. Government support and rising data center investments around the world are also driving faster adoption of newer cooling technologies to boost efficiency and cut operational expenses.

"The services sector within the components category is projected to witness the fastest compound annual growth rate (CAGR) from 2025 to 2032."

The services by component segment in the data center liquid cooling market is anticipated to witness the highest CAGR of 35.7% due to the increasing complexity of liquid cooling systems, which require specialized installation and maintenance. As organizations proceed to embrace enhanced cooling systems, consulting services with the capacity to enhance performance and energy efficiency are in great demand. Edge computing also demands that cooling requirements be addressed through expert support. In addition, ongoing maintenance and development are critical for upholding compliance and sustainability with future regulations in this dimension's evolution.

"The small and mid-sized data center segment is expected to experience the fastest growth rate from 2025 to 2032."

Small and midsize data centers are best poised for the largest CAGR of 35.8% in adoption of liquid cooling because of many key factors. These data centers often are limited spatially, making liquid cooling technologies like direct-to-chip and immersion

cooling more attractive because of their compact architecture and higher cooling effectiveness. Furthermore, increasing emphasis on energy efficiency and sustainability is compatible with the performance objectives of small data centers to lower energy expenditures. Increasing adoption of edge computing and IoT applications requires innovative cooling solutions, thus driving the use of liquid cooling technologies in this market. The combination of these factors creates small and mid-sized data centers as a critical driver of the liquid cooling market growth.

"The hyperscale data center segment within the liquid cooling market is expected to experience the fastest compound annual growth rate (CAGR) from 2025 to 2032."

Hyperscale data centers are expected to register the best CAGR of 33.8% with their ability to handle large amounts of data along with scalability and cost benefits. Increased demand for cloud services and big data analysis drives infrastructure investment to facilitate quick growth to meet consumer demands. Besides, advancements in energy-saving technology and state-of-the-art cooling systems make their operation more efficient, which makes them an attractive investment opportunity. As more businesses shift to the cloud, hyperscale data centers offer the flexibility and scalability needed for demanding workloads. This is further supplemented by advancements in artificial intelligence and machine learning, which consume lots of computation, making the hyperscale business model essential in modern data infrastructure.

"The liquid cooling market for data centers within the IT and Telecom sectors is anticipated to have the fastest compound annual growth rate (CAGR) from 2025 to 2032."

This expansion is due to a myriad of influencing factors. The rapid digital transformation in many sectors is creating a need for better data processing and storage technologies. The increasing use of cloud computing, big data analytics, and artificial intelligence requires infrastructure capable of effectively managing increased thermal output. Furthermore, the deployment of 5G networks escalates bandwidth requirements, resulting in increased demand for data centers that employ efficient cooling techniques. The proliferation of IoT devices necessitates scalable cooling systems to support the growing quantity of linked devices. These advancements underscore the imperative for novel cooling systems that enhance energy efficiency and facilitate high-performance operations in the IT and Telecom sectors.

"The data center liquid cooling market's cold plate liquid cooling segment is expected to experience the fastest compound annual growth rate (CAGR) between 2025 and 2032."

The cold plate liquid cooling market is expected to register the highest CAGR of 35.0% (CAGR) in the market because of several key reasons. Firstly, its ability to actively cool high-power chips such as CPUs and GPUs with high efficiency negates the growing heat densities found in modern data centers. Besides, innovations in cold plate technology have enhanced thermal efficiency with enhanced heat dissipation over conventional air-cooling. Growing application of high-performance computing and artificial intelligence applications necessitates enhanced cooling systems, hence expanding demand. Besides, the segment's energy efficiency advantages resonate with global efforts to minimize environmental footprint, hence expanding attraction with data center operators looking for green cooling solutions.

"North America region's data center liquid cooling market is also anticipated to achieve the highest CAGR during the same period."

The North America region is expected to witness the highest CAGR of 34.2% in the data center liquid cooling market due to several significant reasons. The rapid digital revolution and the growing usage of clouds in countries like US and Canada lead to high power densities in data centers. The growth in demand for efficient cooling technologies is also driven by the growth in edge computing and IoT applications across the region. Additionally, government policies supporting energy efficiency and sustainability ease the implementation of advanced cooling solutions. Finally, high investments in data center infrastructure, particularly by technology giants and new players, are driving the growth in liquid cooling systems in the North America region.

The distribution of the main participants in the report is as follows:

-□By Company Type: Tier 1 - 20%, Tier 2 - 40%, and Tier 3 - 40%

-□By Job Title: C-level Executives - 10%, Directors - 70%, and Other Roles - 20%

-□By Geographic Region: North America - 45%, Asia Pacific - 25%, Europe - 20%, Middle East & Africa - 5%, and South America - 5%

Rittal GmbH & Co. KG (Germany), Vertiv Group Corp. (US), Green Revolution Cooling Inc. (GRC) (US), Submer (Spain), Schneider Electric (France), LiquidStack Holding BV (US), Iceotope Precision Liquid Cooling (UK), COOLIT SYSTEMS (Canada), DUG Technology

(Australia), DCX Liquid Cooling Systems (Poland), Delta Power Solutions (Taiwan), Wiwynn (Taiwan), LiquidCool Solutions, Inc. (US), Midas Immersion Cooling (US), BOYD (US), Kaori Heat Treatment Co,. Ltd (Taiwan), Chilldyne, Inc. (US), Asperitas (Netherlands), Zutacore, Inc. (US), Flex Ltd (US), Asetek (Denmark) and STULZ GMBH (Germany) are among the key players leading the market.

Research Coverage:

The study delineates, categorizes, and projects the liquid cooling market for data centers based on component, data center type, cooling method, end user, organization, and region. It offers a summary of the primary variables affecting market growth, including drivers, constraints, opportunities, and challenges pertinent to certain industries. It systematically profiles principal providers of data center liquid cooling solutions and offers a comprehensive analysis of their market shares and core competencies; it also observes and evaluates competitive actions, including expansion initiatives, agreements, contracts, partnerships with other entities in this sector, as well as acquisitions or divestitures undertaken by them. The study delineates, categorizes, and projects the data center liquid cooling market according to components, data center classifications, cooling kinds, end users, enterprises, and geographical regions. This document outlines the principal variables affecting market growth, including drivers, constraints, opportunities, and sector-specific obstacles. Furthermore, it systematically profiles prominent entities in the data center liquid cooling solutions sector, offering comprehensive analyses of their market shares and fundamental competencies while monitoring competitive activities, including expansions, agreements, contracts, partnerships, and their acquisitions or divestitures.

Reasons to Buy the Report:

Market leaders and new entrants are expected to benefit from the report, which will provide them with close estimates of revenue figures for the forthcoming data center liquid cooling market and its segments. The report is also expected to assist stakeholders in improving their understanding of the competitive landscape in the market, obtaining insights for enhancing their business position and designing relevant go-to-market strategies. In addition, it allows them to comprehend the market's pulse and informs them about key drivers, restraints, challenges, and opportunities.

Insights from this report include:

- Analysis of key drivers (rising number of data centers and server density), restraints (high capital expenditure and maintenance), opportunities (emergence of AI, blockchain, and other advanced technologies) & challenges (lack of standardization) influencing growth in the liquid cooling solutions for the data center market.

- Product Development/Innovation: Detailed information on emerging technologies, research & development initiatives in liquid cooling within data centers.
- Market Development: Detailed analysis of data center liquid cooling market across different areas for analyzing lucrative markets - comprehensive details included in the report
- Market Diversification: Detailed information about innovative offerings and regions with no market penetration. We are considering investment opportunities as well as new products and services in the context of this cooling system
- Competitive Assessment: A thorough estimation involving how much share a particular firm has got, its strategies for increasing its size over time, and the range of products it sells, including Rittal GmbH & Co KG (Germany), Vertiv Group Corp. (US), Green Revolution Cooling Inc. (GRC) (US), Submer (Spain), Schneider Electric (France), LiquidStack Holding BV (US), Iceotope Precision Liquid Cooling (UK), COOLIT SYSTEMS (Canada), DUG Technology (Australia), DCX Liquid Cooling Systems (Poland), Delta Power Solutions (Taiwan), Wiwynn (Taiwan), LiquidCool Solutions, Inc. (US), Midas Immersion Cooling (US), BOYD (US), Kaori Heat Treatment Co, Ltd (Taiwan), Chilldyne, Inc. (US), Asperitas (Netherlands), Zutacore, Inc. (US), Flex Ltd (US), Asetek (Denmark) and STULZ GMBH (Germany) are the key players in the data center liquid cooling market.

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