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Data Center Cooling Market Forecasts to 2030 – Global Analysis By Data Center Type (Enterprise Data Centers, Hyperscale Data Centers, Colocation Data Centers, Cloud Data Centers, Edge Data Centers and Other Data Center Types), Component, Cooling Technique, End User and By Geography

https://marketpublishers.com/r/DE1974142877EN.html
Date: February 2025
Pages: 150
Price: US$ 4,150.00 (Single User License)
ID: DE1974142877EN

Abstracts

According to Stratistics MRC, the Global Data Center Cooling Market is accounted for $12.92 billion in 2024 and is expected to reach $30.24 billion by 2030 growing at a CAGR of 14.8% during the forecast period. Data center cooling refers to the technologies and strategies used to regulate temperature, humidity, and airflow in data centers to prevent overheating and ensure optimal performance of IT equipment. With increasing adoption of cloud computing, AI, and edge data centers, energy-efficient cooling systems have become a priority to reduce operational costs, carbon footprints, and power consumption, ensuring long-term data center sustainability and performance.

According to Brightlio, as of December 2023, there are around 10,978 data center locations worldwide.

Market Dynamics:

Driver:

Rising data center deployments

As cloud computing, AI, IoT, and 5G expand, businesses and hyperscalers are building larger, high-density data centers, generating significant heat. This necessitates

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advanced cooling technologies like liquid cooling, immersion cooling, and AI-based climate control to maintain optimal performance and energy efficiency. Additionally, the push for green data centers encourages investments in sustainable cooling methods to reduce power consumption and carbon footprints. With more data centers coming online, the need for cost-effective, scalable cooling solutions continues to grow.

Restraint:

Complexity in retrofitting existing data centers

Retrofitting existing data centers for advanced cooling solutions is complex due to space constraints, legacy infrastructure, and high integration costs. Many older data centers were designed for low-density computing, making it challenging to implement modern cooling technologies like liquid cooling or AI-driven thermal management. Upgrading requires modifying airflow management, electrical systems, and rack layouts, leading to downtime risks and high capital investments. Therefore, this complexity slows down the market growth.

Opportunity:

Growing demand for energy-efficient cooling solutions

Traditional cooling methods, such as CRAC units, consume large amounts of energy, prompting a shift toward liquid cooling, free cooling, and AI-driven thermal management. Government regulations and corporate sustainability goals further accelerate the adoption of eco-friendly cooling solutions. Additionally, hyperscale and edge data centers require innovative, scalable cooling technologies to handle increasing heat loads efficiently. This trend fuels technological advancements and investments, driving the overall growth of the data center cooling market.

Threat:

Risk of system downtime

The risk of system downtime in data center cooling arises from cooling system failures, power outages, or inefficiencies that lead to overheating. Without proper thermal management, servers can malfunction, causing data loss, service disruptions, and financial losses. Additionally, downtime affects customer trust, compliance with SLAs,

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and overall productivity, pushing data centers to invest in high-redundancy cooling solutions, which can be costly and hinder the market expansion.

Covid-19 Impact:

The covid-19 pandemic significantly impacted the data center cooling market, driving increased demand due to surging cloud adoption, remote work, and digital transformation. However, supply chain disruptions, component shortages, and project delays hindered deployments. Companies prioritized energy-efficient and remote monitoring technologies to minimize operational risks. The shift toward hyperscale and edge data centers further boosted cooling innovations. Post-pandemic, sustainability and cost-efficiency continue to shape cooling strategies in the evolving data center landscape.

The enterprise data centers segment is expected to be the largest during the forecast period

The enterprise data centers segment is expected to account for the largest market share during the forecast period due to its ensured energy efficiency and cost-effectiveness. As enterprises expand their computing workloads, they adopt advanced cooling solutions like liquid cooling, hot/cold aisle containment, and AI-driven thermal management. Rising concerns over power consumption and carbon footprints drive the shift toward eco-friendly cooling technologies.

The IT & telecom segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the IT & telecom segment is predicted to witness the highest growth rate. Data center cooling in IT & telecom applications is crucial for managing the high heat densities generated by network infrastructure, cloud servers, and telecom exchanges. Energy efficiency and uptime reliability are top priorities, driving the shift toward modular cooling, free cooling, and AI-based thermal management. Telecom operators focus on sustainable cooling to reduce power consumption, carbon footprints, and operational costs in high-density environments.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share due to increasing cloud computing adoption, AI integration, and hyperscale data

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center expansion. Countries like China, India, Japan, and Singapore are major hubs, driven by rising digitalization and government initiatives for sustainable IT infrastructure. The region's focus on green data centers, smart cooling, and edge computing is shaping market trends.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR driven by the rise in hyperscale data centers, AI workloads, and edge computing. The U.S. dominates, driven by cloud adoption, stringent energy regulations, and sustainability initiatives. The demand for energy-efficient and eco-friendly cooling solutions is rising due to concerns over high power consumption and carbon emissions. The region's growing investments in green data centers and regulatory compliance further fuel market growth.

Key players in the market

Some of the key players in Data Center Cooling market include Schneider Electric, Vertiv Group, Alfa Laval Corporate AB, Johnson Controls Inc., Delta Electronics, Inc., Asetek Inc., Fujitsu Ltd., LiquidStack Inc., Asperitas, Chilldyne Inc., 3M Company, Mitsubishi Electric Corporation, Danfoss Corporation, Aligned Data Centers, Nexalus, STULZ GmbH, Rittal GmbH & Co. KG, Nortek Air Solutions LLC, CoolIT Systems Inc. and Iceotope Technologies Corporation.

Key Developments:

In December 2024, Nexalus collaborated with Hewlett Packard Enterprise (HPE) to integrate Nexalus' energy-efficient liquid cooling technology into HPE's server lineup. This collaboration aims to address the rising energy and environmental demands of data centers, an industry that contributes over 100 million tonnes of CO2e annually, by transforming data centers from energy consumers into clean energy generating assets, delivering a closed-loop, circular economy solution.

In January 2024, Aligned Data Centers introduced DeltaFlow~, a patent-pending liquid cooling technology designed to meet the high-density computing demands of next-generation applications and high-performance computing (HPC), including artificial intelligence (AI), machine learning (ML), and supercomputers. DeltaFlow~ is capable of cooling densities up to 300 kilowatts (kW) per rack.

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Data Center Types Covered:

- Enterprise Data Centers
- Hyperscale Data Centers
- Colocation Data Centers
- Cloud Data Centers
- Edge Data Centers
- Other Data Center Types

Components Covered:

- Solution
- Services

Cooling Techniques Covered:

- Air-Based Cooling
- Liquid-Based Cooling
- Hybrid Cooling

End Users Covered:

- IT & Telecom
- Banking, Financial Services, and Insurance (BFSI)
- Healthcare

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- Government & Public Sector
- Retail & E-commerce
- Manufacturing
- Energy & Utilities
- Media & Entertainment
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe
- Asia Pacific

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- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil
- Chile
- Rest of South America

Middle East & Africa

- Saudi Arabia
- UAE
- Qatar
- South Africa
- Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments

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- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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