

# Data Center Cooling Market Size Worth USD 28.97 Billion in 2032 | Emergen Research

*Rising demand for high-performance computing is one of the major factors driving market revenue growth*

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/EINPresswire.com/ -- The global [data center cooling market size](#) was USD 11.40 Billion in 2022 and is expected to register a steady revenue CAGR of 9.8% during the forecast period, according to latest analysis by Emergen Research.

Technological advancements in data center cooling systems is the primary factor driving market revenue growth. Cooling is a standard part of data center operations as servers constantly run 24/7, which increases the core temperature, which, if not controlled, can lead to a data center outage. Direct-to-Chip (D2C) cooling is a more contemporary liquid cooling approach that uses tubes to feed liquid coolant to a chip.

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The coolant absorbs and transfers heat from the chip, directly cooling Central Processing Units (CPUs). D2C cooling is regarded as one of the most effective and efficient methods of removing heat from data centers. In addition, Calibrated Vecteded Cooling (CVC) is a data center cooling system designed for high-density servers, which optimizes the airflow path through equipment to let the cooling system to handle heat more effectively, allowing the ratio of circuit boards per server chassis to increase and less enthusiasts to be used.

Moreover, increasing data generation and consumption across various sectors is another factor driving revenue growth of the market. Data center cooling is the system that maintains ideal operating environment for all of the equipment in a data center and enables servers to stay online for longer periods of time. Maintaining an optimal temperature range is essential for the efficient operation of Information Technology (IT) equipment. Furthermore, proper cooling



ensures that servers and other components operate within their specified temperature limits, optimizing overall system performance, hence driving market revenue growth.

However, implementing advanced cooling technologies can be complex and costly, which could restrain market revenue growth. For instance, liquid cooling systems, may require changes to the data center infrastructure, including modifications to server racks and plumbing installations, which can be expensive.

### Some Key Highlights From the Report

The solution segment accounted for largest revenue share in the global data center cooling market in 2022. This is due to rising demand for data center cooling solutions since using energy-efficient computer units in the infrastructure not only reduce electricity consumption, but the system also generates less heat, requiring less energy to cool the environment and minimizing the likelihood of overheating. Every piece of IT equipment that uses power generates the same amount of heat. Proper cooling prevents IT equipment from overheating, ensuring consistent performance and reducing the risk of hardware failures.

The room-based cooling segment is expected to register steadily fast revenue growth rate in the global data center cooling market during the forecast period. This is attributed to increasing need for room-based cooling as these are designed to provide a more even distribution of cooled air throughout the entire data center. This helps to maintain a consistent temperature across server racks, preventing hot spots and ensuring optimal operating conditions for all IT equipment. In addition, room-based cooling solutions offer scalability, which allows data centers to adapt to changes in IT infrastructure and capacity requirements, hence driving revenue growth of this segment. Adding or removing server racks can be done more easily without the need for extensive modifications to cooling systems.

The Asia Pacific market accounted for largest revenue share in the global data center cooling market in 2022. This is due to rising demand for efficient data center cooling in various sectors, such as Banking, Financial Services, and Insurance (BFSI), and Information Technology (IT) & Telecom, for maintaining optimal operating conditions and ensuring the reliability and longevity of IT equipment. In addition, increasing strategic initiatives taken by major companies is also expected to drive market revenue growth of this region during the forecast period.

On 12 September 2023, Halton, a global leader in Heating, Ventilation, Air Conditioning (HVAC) innovation and indoor air comfort solutions, and Phononic, a global leader in sustainable solid-state cooling, announced a strategic partnership for the commercial launch of Terminal Treatment of Air with Peltier (TTAP) technology, an HVAC solution that significantly reduces greenhouse gas emissions. This innovative approach eliminates global-warming refrigerants and gives building owners and developers with a long-term solution that considerably reduces a building's Carbon Dioxide (CO<sub>2</sub>) emissions over its life cycle.

Some major companies in the global market report include Schneider Electric, Vertiv Group Corp, AIREDALE INTERNATIONAL AIR CONDITIONING LTD, STULZ GMBH, Rittal GmbH & Co. KG, Black Box, Nortek Air Solutions, LLC, 3M, Asetek, Inc., Delta Electronics, Inc., Fujitsu, Siemens, ALFA LAVAL, Trane Technologies plc, Johnson Controls, ABB, Degree Controls Inc., Geoclima S.r.l. Unipersonale, KyotoCooling, and Motivair Corporation.

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Emergen Research has segmented the global data center cooling market on the basis of component, cooling technique, type of cooling, end-use, data center type, and region:

Component Outlook (Revenue, USD Billion; 2019–2032)

Solution

Air Conditioning

Chilling Units

Cooling Towers

Economizers Systems

Control Systems

Others

Services

Consulting

Installation & Deployment

Maintenance & Support

Cooling Technique Outlook (Revenue, USD Billion; 2019–2032)

Air-based Cooling

Direct Expansion (DX) Cooling

Chilled Water Cooling

Liquid-based Cooling

Immersion Cooling

Cold Plate Cooling

Type of Cooling Outlook (Revenue, USD Billion; 2019–2032)

Room-Based Cooling

Row-Based Cooling

Rack-Based Cooling

End-use Outlook (Revenue, USD Billion; 2019–2032)

Information Technology (IT) & Telecom

Banking, Financial Services, and Insurance (BFSI)

Healthcare

Government & Defense

Research & Academic

Retail  
Energy  
Manufacturing  
Others

Data Center Type Outlook (Revenue, USD Billion; 2019–2032)

Large Data Centers  
Enterprise Data Center  
Mid-Sized Data Center

Regional Outlook (Revenue, USD Billion; 2019–2032)

North America

U.S.

Canada

Mexico

Europe

Germany

France

UK

Italy

Spain

Benelux

Rest of Europe

Asia Pacific

China

India

Japan

South Korea

Rest of APAC

Latin America

Brazil

Rest of LATAM

Middle East & Africa

Saudi Arabia

UAE

South Africa

Turkey

Rest of Middle East & Africa

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