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Global Two-phase Liquid-cooled Cold Plate Module Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Two-phase Liquid-cooled Cold Plate Module market size is expected to reach $ 1459 million by 2032, rising at a market growth of 21.5% CAGR during the forecast period (2026-2032).

In 2025, the global production of two-phase liquid-cooled cold plate module reached approximately 452,500 units, with an average global market price of around US$800 per unit. In the same year, the global total production capacity of two-phase liquid-cooled cold plate module reached 565,000 units. The industry average gross profit margin of this product reached 32%.Two-phase liquid-cooled cold plate modules are advanced heat dissipation components for high-power electronic devices. They achieve high-density heat transfer by utilizing the liquid-to-gas phase change process of the working fluid within a sealed cold plate. When a heat source heats the working fluid inside the cold plate, the fluid rapidly vaporizes within microchannels, absorbing a large amount of latent heat. Subsequently, the gas condenses back into a liquid state in an external heat exchanger and circulates back, forming a highly efficient closed-loop thermal cycle system. Compared to traditional single-phase liquid cooling that relies solely on temperature rise for heat transfer, two-phase cold plates significantly improve heat dissipation capacity by utilizing the latent heat of phase change. Suitable for high-power AI chips ranging from 700W to 2000W, they are one of the core thermal management technologies for next-generation high-density computing infrastructure.

The two-phase liquid-cooled cold plate module industry chain consists of upstream materials and key components, midstream module manufacturing and system integration, and downstream AI and data center applications. The upstream sector includes high thermal conductivity materials, microchannel fabrication technology, sealing structures, and phase change media, and also involves thermal management

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control components. The midstream comprises cold plate module manufacturers and liquid cooling system vendors, responsible for cold plate design, microstructure fabrication, and system integration. The downstream sector comprises AI computing power and cloud computing infrastructure, including NVIDIA GPU server clusters, Amazon Web Services, and Google Cloud data centers. The overall industry exhibits a cross-disciplinary integration structure driven by 'materials engineering + precision manufacturing + AI computing power demand.'

Against the backdrop of continuously increasing GPU power consumption driven by large-scale AI model training, traditional air cooling and single-phase liquid cooling are gradually approaching their thermal management limits. Two-phase liquid-cooled cold plate modules have thus become an important direction for next-generation high-density heat dissipation technology. Their core advantage lies in utilizing the latent heat of phase change to achieve higher heat flux density processing capabilities, supporting the development needs of future ultra-large-scale AI clusters and high-density data centers. The industry will be in the pilot and small-scale introduction phase from 2025 to 2027, and will enter an accelerated penetration period after 2028 with the expansion of AI computing power infrastructure, gradually evolving towards CPO and chip-level thermal management. In the long run, this technology will become one of the standard heat dissipation solutions for high-power AI computing systems.

This report studies the global Two-phase Liquid-cooled Cold Plate Module production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Two-phase Liquid-cooled Cold Plate Module and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Two-phase Liquid-cooled Cold Plate Module that contribute to its increasing demand across many markets.

Highlights and key features of the study
Global Two-phase Liquid-cooled Cold Plate Module total production and demand, 2021-2032, (K Units)
Global Two-phase Liquid-cooled Cold Plate Module total production value, 2021-2032, (USD Million)
Global Two-phase Liquid-cooled Cold Plate Module production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (K Units), (based on production site)

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Global Two-phase Liquid-cooled Cold Plate Module consumption by region & country, CAGR, 2021-2032 & (K Units)
U.S. VS China: Two-phase Liquid-cooled Cold Plate Module domestic production, consumption, key domestic manufacturers and share
Global Two-phase Liquid-cooled Cold Plate Module production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (K Units)
Global Two-phase Liquid-cooled Cold Plate Module production by Type, production, value, CAGR, 2021-2032, (USD Million) & (K Units)
Global Two-phase Liquid-cooled Cold Plate Module production by Application, production, value, CAGR, 2021-2032, (USD Million) & (K Units)

This report profiles key players in the global Two-phase Liquid-cooled Cold Plate Module market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Feirongda, Envicool, Lengtrol, Beitou Xinchuang Technology, LiquidStack, NVIDIA, Yinlun, ZutaCore, Schneider Electric, Asetek Europe, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Two-phase Liquid-cooled Cold Plate Module market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (K Units) and average price (US$/Unit) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global Two-phase Liquid-cooled Cold Plate Module Market, By Region:

United States

China

Europe

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Japan

South Korea

ASEAN

India

Rest of World

Global Two-phase Liquid-cooled Cold Plate Module Market, Segmentation by Type:

700–1500W

Over 1500W

Others

Global Two-phase Liquid-cooled Cold Plate Module Market, Segmentation by System Architecture:

Rack-level Cold Plate System

Rack-level Liquid Cooling System

Chip-level Direct Liquid Cooling

Global Two-phase Liquid-cooled Cold Plate Module Market, Segmentation by Application:

Data Centers

Electronics & Power

Others

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Companies Profiled:

- Feirongda
- Envicool
- Lengtrol
- Beitou Xinchuang Technology
- LiquidStack
- NVIDIA
- Yinlun
- ZutaCore
- Schneider Electric
- Asetek Europe
- ERG Aerospace
- Fabric8Labs
- Guangdong Hec
- Gigabyte
- Wieland Electronics Cooling GmbH
- Calyos
- Nidec
- Advanced Cooling Technologies (ACT)

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Key Questions Answered:
1. How big is the global Two-phase Liquid-cooled Cold Plate Module market?
2. What is the demand of the global Two-phase Liquid-cooled Cold Plate Module market?
3. What is the year over year growth of the global Two-phase Liquid-cooled Cold Plate Module market?
4. What is the production and production value of the global Two-phase Liquid-cooled Cold Plate Module market?
5. Who are the key producers in the global Two-phase Liquid-cooled Cold Plate Module market?
6. What are the growth factors driving the market demand?

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