

Which has more room for growth optical modules or data centers



Summary of Content

Optical modules currently show higher near-term growth potential than data centers due to AI-driven demand, technological upgrades, and supply constraints.

Optical Modules Growth

The optical modules market is experiencing rapid expansion, driven by hyperscale AI data centers and high-speed interconnect requirements. The global market was valued at \$14.8 billion in 2025 and is projected to reach \$39.6 billion by 2034, with a CAGR of 11.5% from 2026 to 2034 . Demand is fueled by the transition from 100G to 400G and 800G modules, AI training clusters, and 5G backhaul infrastructure . Supply constraints, particularly in EML lasers, have created bottlenecks, further emphasizing the strategic importance of optical modules . Emerging technologies like silicon photonics and co-packaged optics (CPO) are expected to accelerate adoption and integration in data centers .

Data Centers Growth

Data centers continue to expand globally, with \$6.7 trillion projected in investment by 2030 to meet compute demand, especially for AI workloads . Hyperscale operators like AWS, Google, and Microsoft are investing heavily in new builds and retrofits, but growth is constrained by energy consumption, real estate, and regulatory factors . While AI and cloud computing drive demand, the physical expansion of data centers is slower compared to the rapid adoption of optical modules, which are essential for scaling existing infrastructure efficiently .

Comparative Analysis

Article Content

Data Center Optical Module Market Research Report 2034

The Data Center Optical Module market was valued at \$16.9 billion in 2025 and is projected to reach \$77.6 billion by 2034, growing

Optical Module Industry Statistics 2026

Optical Module Industry Statistics Data centers will keep dominating optical module demand as AI and cloud drive

The Future of 800G Optical Modules: Market Forecast and Key

The global demand for high-speed optical modules is accelerating, and 800G modules are at the forefront of this shift.

Pluggable Optics for Data Centers Business Analysis Report 2024

The "Pluggable Optics for Data Centers - Global Strategic Business Report" has been added to

Data Center Optical Module Market Size, Growth, Forecast Till 2032

The Data Center Optical Module Market is expected to grow from USD 15.36 Billion in 2025 to USD 30.23 Billion by 2032, at a

Data Center Optical Module Charting Growth Trajectories 2026-2034 ...

The data center optical module market is experiencing robust growth, driven by the increasing demand for higher

Fiber optics for data centers: the state of the art in 2025

Blog Fiber optics for data centers: the state of the art in 2025 The datacom optical component market will grow over

Igniting the Future of Data Centers with 400G Optical Modules

With 400G optical modules at the forefront, the future of data centers promises unprecedented speed, scalability, and

Global Optical Module and DCI Market Size, Growth Trends, Industry ...

From a macroeconomic perspective, the growth trajectory of the Optical Module and DCI market is intertwined with

Data Center Optical Module Market Research Report 2034

The standardization of optical interconnects and dramatic growth in cloud computing workloads have made data centers the single

Understanding Optical Modules and Their Role in Data

In conclusion, 1G SFP modules and optical modules, in general, are indispensable

How optical interconnect and optical processing are changing data centers

Although optics has been used in data centers for decades, it is now reaching further and further into the beating heart

Key Technology Trends Shaping Data Center and Telecom

Explore the latest trends in data center technology for 2025 with Semtech, focusing on AI-driven evolution, optical

Data center networking optics supply shortages | McKinsey

Potential shortfalls in networking optics supply could hinder data center and AI expansion.

Optical Communication Industry Trends 2026: AI, 800G/1.6T Optical ...

Explore optical communication industry trends in 2026, driven by AI infrastructure, 800G and 1.6T optical modules,

AI Data Centers Ignite a Laser Shortage Wave; Nvidia's Strategic

TrendForce's recent research indicates that high-speed optical interconnects are now central to performance and

Networking chips and modules for AI data centers: Infiniband, Ultra ...

When AI models scale to a million or more processors, they will require gigawatts of power and have to span more

The Evolving Landscape of AI Optical Modules 400G and 800G

Explore the development trends of AI optical modules, including higher speeds, enhanced integration, lower power

Data centre electricity use surged in 2025, even with tightening ...

Building on the IEA's landmark Energy and AI report from April 2025, the new analysis published today finds that the

Optical Module Industry Statistics 2026

Data centers will keep dominating optical module demand as AI and cloud drive revenue growth through 2030.

Opportunities in networking optics: Boosting supply for data centers

As AI market growth skyrockets and technology advances, industry dynamics are in flux

LightCounting :: Scale-up networks in AI Clusters is a new market for ...

Use of optical connectivity in AI scale-up networks will contribute to the market's expansion in 2026-2030. We expect that CPO will

Optical Module Market Size, Competitors & Forecast to

The Optical Module Market, valued at USD 30.01B in 2026, is projected to reach USD 66.94B by 2032,

Optical Module Market Growth Driven by AI Demand

In the era of cloud computing, big data, and AI-driven applications, the DWDM DCI Box has become a critical solution

Data centre electricity use surged in 2025, even with tightening ...

Electricity demand from data centres soared by 17% in 2025, and that of AI-focused data centres climbed even faster

Opinion: optical transceivers at the chokepoint of AI growth and supply ...

In this Opinion Series, Yole Group explores how the optical transceiver ecosystem is evolving under the combined

Optical Modules Market Size, Growth Trends & Forecast

This market exists to address the insatiable demand for faster, more reliable data transmission across

Optical Modules Market Size, Trends & Forecast 2025-2035 | Core

Optical Modules Market Outlook The global optical modules market is projected to reach a valuation of approximately USD 20 billion

The future of US hyperscale data centers | McKinsey

We look at why hyperscale data centers are rapidly expanding across the United States and

Understanding Optics Module Trends and Growth Dynamics

The Optics Module market is expanding rapidly, driven by data center proliferation and 5G deployment. Analyze the 12% CAGR to

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