

RIVO MULTITRADE OPTICAL SYSTEMS

The price of optical modules has increased



Overview

The reasons behind the recent sharp price increase of optical modules. Costs are driving optical chip shortages and price increases. High-speed optical c.

Key Takeaways

Optical module prices are likely to continue rising in the near term due to supply constraints, high demand from AI and data centers, and increasing raw material costs. Supply and Demand Pressures

The demand for high-speed optical modules, particularly 800G and emerging 1.6T modules, is surging due to AI computing, cloud expansion, and 5G infrastructure growth. Data centers alone accounted for 45% of global optical module revenue in 2022, and AI-driven workloads are driving further expansion. However, production capacity for high-end modules is limited, with orders already scheduled through Q2 2025, creating a short-term supply bottleneck.

Technological and Cost Factors

High-speed optical chips above 25G are in short supply, and the self-sufficiency rate for these chips is below 30%, giving leading manufacturers significant pricing power. Additionally, the cost of key raw materials, such as indium phosphide substrates, has risen sharply, with 2-inch substrates increasing by 50%. Advanced packaging capacity is also limited, further constraining production and contributing to higher prices.

Market Trends and Projections

The optical module market is projected to grow from \$13.2 billion in 2022 to \$35.8 billion by 2030, with a CAGR of 11.6% . Investments in co-packaged optics, silicon photonics, and AI-driven solutions are increasing, which may initially raise module prices due to R&D and production costs . While competition in the 400G segment has led to some price reductions, the adoption of 800G and 1.6T modules is expected to maintain upward pricing pressure .

Geopolitical and Policy Influences

Geopolitical pressures and supply chain diversification are also driving costs. European and American customers are reducing reliance on Chinese supply chains, and domestic subsidies for key materials like indium phosphide are influencing pricing strategies .

Conclusion

In summary, optical module prices are expected to rise in the short to medium term due to high demand from AI and data centers, limited production capacity, rising raw material costs, and technological upgrades. While long-term market growth may stabilize prices as production scales and new technologies mature, the near-term outlook points to continued price increases, especially for high-speed modules like 800G and 1.6T .

Article Content

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Costs are driving optical chip shortages and price increases. High-speed optical chips (such as those above 25G) are

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Rising Fiber Optic Prices and Supply Challenges: Cost Trends

For instance, the retail price of a 1.6T optical module has increased from approximately \$1200 to over \$2000, an

Optical Modules

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