

Price list for silicon photonics modules for data center interconnects



AI Overview

Silicon photonics modules for data center interconnects typically range from several hundred to several thousand dollars per transceiver, depending on speed, integration, and volume.

Cost Factors

The price of silicon photonics technology is influenced by several key factors:

- Data Rate and Bandwidth:** Transceivers supporting 100G, 400G, or 800G speeds have higher costs due to more complex modulators, photodetectors, and wavelength-division multiplexing components.
- Integration Type:** Co-packaged optics (CPO) that integrate optical engines directly with switch ASICs or processors are more expensive than standard pluggable modules because of tighter thermal management and packaging requirements.
- Volume and Manufacturing:** Silicon photonics leverages CMOS fabrication, but initial design and prototyping costs are high. Large-scale production reduces per-unit cost, but lead times can extend to months.
- Component Complexity:** Active PICs with modulators and photodetectors cost more than passive chips with only waveguides and splitters. Lasers, often hybrid-integrated, are a significant cost contributor.
- Supplier and Region:** Major suppliers like Intel, Cisco, MACOM, Lumentum, and GlobalFoundries offer different pricing based on service, support, and regional market dynamics. North America and China dominate production and adoption, affecting pricing trends.

Estimated Price Ranges

While exact prices vary by supplier and contract, industry sources suggest approximate ranges:

- 100G transceivers: \$300–\$800 per module
- 400G transceivers: \$1,000–\$2,500 per module
- 800G transceivers and co-packaged optics: \$3,000–\$6,000 per module, depending on integration and volume

These prices reflect high-performance, AI-focused data center interconnects, where energy efficiency and low latency are critical. Silicon photonics modules can reduce power consumption by up to 60% co...

Article Content

800G Silicon Photonics Guide: Costs, Power & AI Applications | 2026 ...

As the backbone of high-speed data center interconnects, 800G optical modules must meet demands for high bandwidth density, low power consumption, and cost efficiency.

Data Center Optical Transceiver Market Size, Share, Trends

The data center optical transceiver market is served by a mix of vertically integrated photonics companies, specialized module manufacturers, and system integrators with optical networking divisions.

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Pluggable Optical Modules Market : Global Industry Analysis and ...

Colocation operators evaluate module availability beside tenant growth in data centre colocation facilities that host cloud and enterprise interconnects. How do top pluggable optical

CFP Optical Modules Market Growth: 16.4% CAGR Analysis

Furthermore, the broader Optical Transceivers Market, which encompasses CFP modules, is benefiting from technological advancements such as coherent optics and silicon photonics,

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1.6T OSFP-XD: Next-Gen Data Center Optical Module

For enterprises and data centers seeking to expand network capacity and enhance performance, the 1.6T OSFP-XD optical module can be seamlessly

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AI Optical Interconnect Market 2026

COMPETITIVE LANDSCAPE Key Industry Players AI Optical Interconnect Market: Competitive Overview AI optical interconnect market is dominated by a handful of large silicon-photonics vendors

Silicon Photonics

Silicon Photonics Market Analysis The silicon photonics market generates USD 3.11 billion in 2025 and is forecast to advance at a 27.21% CAGR, reaching USD 10.36 billion by 2030.

800G Silicon Photonics vs. EML: 2026 Cost Analysis & Buying Guide

We have aligned our product roadmap with the industry's leading Silicon Photonics supply chain to ensure our partners get the most cost-effective, carrier-grade 800G solutions.

Tower Semiconductor Partners with NVIDIA on 1.6T Silicon Photonics

On February 5, 2026, Tower Semiconductor announced a collaboration with NVIDIA to scale AI infrastructure using its advanced silicon photonics platform for 1.6-terabit data center optical modules ...

Global Optical Transceiver Market Strategic Audit 2026

Institutional analysis of the global optical transceiver market (2025-2031). Examines the 1.6T AI super-cycle, Silicon Photonics adoption, LPO/CPO power architectures, and China+1 supply

Data Center Photonics Market Outlook 2026-2034

The Data Center Photonics market is anchored by a few Tier-1 integrators that combine high-speed optical transceivers, silicon photonics platforms, and networking ASICs into end-to-end

Silicon Photonics Transceivers: 400G & 800G Data Center Guide

Silicon Photonics transceivers explained in depth. Learn how SiPh compares to traditional optics for 400G and 800G data centers in performance, power, cost, and scalability.

800G and 1.6 T Optical Transceivers Market's Tech

Explore the surging 800G and 1.6T Optical Transceivers Market, projected to reach ****15.44 billion**** by 2025 with an ****11.1% CAGR****. Discover key drivers like AI

QSFP-DD Transceiver: What Drives 11.47% CAGR Growth?

Intel: While known for its processors, Intel also has a significant presence in silicon photonics, developing and supplying optical transceivers, including QSFP-DD modules, primarily for

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Bringing together the performance and reliability of integrated photonics with the scalability of silicon to enable high-bandwidth, power-efficient connectivity.

High Power Silicon Photonics SiPh Chip Market 2025-2032

High Power Silicon Photonics (SiPh) Chips are advanced semiconductor devices that integrate optical and electronic components on a single silicon platform. These chips enable ultra-fast

Silicon Photonics Market Size, Share and Trends

The silicon photonics market share has been growing strongly as demands for high-bandwidth, low-latency and energy-efficient data communication increase. It is

AI Data Center Race Tightens Optical Component Supply as

Its Spectrum-X Photonics and Quantum-X Photonics switches use silicon photonics and co-packaged optics to improve power efficiency, signal integrity, and system resiliency at scale. A

Single Mode Optical Modules: Growth & Key Trends to 2033

Analyze the Single Mode Optical Modules market driving demand from telecom and data centers. Projecting 16.2% CAGR to 2033. Access key market dynamics and strategic insights.

Optical Interconnects Become Critical to AI Factory Expansion;

TrendForce's recent research on silicon photonics (SiPh) shows that the rapid growth of AI training and inference workloads is pushing AI data centers toward increased power use, higher

Optical Interconnect in AI Data Centers Market

The U.S. remains a core growth hub for optical interconnects as enterprises and hyperscalers pursue high-bandwidth, low-latency AI and HPC workloads. Providers are integrating

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