

How much does a 400g silicon photonics module cost



AI Overview

The price of a 400G silicon photonics module typically ranges from \$3,000 to \$6,000 per unit, depending on vendor, specifications, and volume. Market Context The global market for 400G silicon photonics modules was valued at approximately \$428 million in 2024 and is projected to grow rapidly due to increasing demand for high-speed data transmission in data centers and telecommunications networks. Technological advancements, such as integration of DSP chips, 3D packaging, and co-packaged optics, are improving performance while gradually reducing costs. Factors Affecting Price

Module Type and Form Factor: QSFP-DD, OSFP, and QSFP112 modules have slightly different costs due to packaging and lane configurations.

Transmission Distance: Modules supporting longer distances (e.g., 500m SMF) generally cost more than shorter-range modules.

Vendor and Brand: Leading vendors like Intel, Cisco, Lumentum, and Mellanox may charge premium prices due to reliability, support, and integration with existing infrastructure.

Volume and Procurement: Bulk purchases for hyperscale data centers can reduce per-unit cost, while single-unit purchases from distributors may be at the higher end of the range.

Example Products

- 400G QSFP-DD DR4:** Supports 500m SMF, integrates silicon photonics chips with 7nm DSP, suitable for 400GBASE data centers.
- 400G OSFP Transceivers:** Cost-effective, low-power modules for 400G Ethernet links over 500 meters, optimized for AI and high-speed data center applications.
- QSFP112 400G DR4:** Hot-pluggable, supports 500m SMF, compliant with IEEE 802.3bs and QSFP112 MSA standards.

Summary While exact pricing varies by vendor, module type, and purchase volume, most 400G silicon photonics modules are priced between \$3,000 and \$6,000 per unit. For large-scale deployments, contacting vendors directly can provide volume discounts and more p...

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NVIDIA's Spectrum-X (Ethernet) and Quantum-X (InfiniBand) photonic switches also incorporate multiple 1.6Tbps silicon-photonics-based

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How much does it cost to manufacture an NVIDIA B200? Based on our supply chain model, the estimated COGS for the NVIDIA B200 is approximately \$5,785, broken down into silicon die costs,

SiPh 400G QSFP112 DR4 1310nm 500m SMF MPO

FIBERSTAMP Silicon Photonics 400G QSFP112 DR4 optical transceiver module adopts 100G PAM4 and silicon photonics integration technology, which is widely

200G/400G Silicon Photonics Modules: \$428M Market, 30.5% CAGR

Key players in the 200G and 400G Silicon Photonics Modules Market are heavily invested in optimizing their silicon photonics platforms to meet data center specifications, focusing on

400G QSFP-DD DR4 1310nm 500m SMF MPO

It is a cost-effective and lower power consumption solution for 400GBASE data center. The 400GBASE-DR4 silicon photonics module supports link lengths of up

NLM Photonics Advances Silicon-Organic Hybrid PICs

Jim Carroll: So where does NLM fit into that challenge? Brad Booth: We bring a material science approach that enhances existing silicon photonics platforms rather than replacing them. For

Optical Transceiver Market Price Trends 2026: TCO & Risks

There is a massive production vs. lab gap when evaluating Silicon Photonics against traditional EML (Electro-absorption Modulated Laser) designs. In a pristine lab environment, a SiPh

NVIDIA's \$4B Photonics Play: Lumentum vs Coherent

NVIDIA is spending \$4 billion on silicon photonics through Lumentum and Coherent deals. Here's which partnership looks stronger heading into 2026.

Global 200G and 400G Silicon Photonics Modules Supply, Demand

Global 200G and 400G Silicon Photonics Modules Supply, Demand and Key Producers, 2024-2030

LRO, LPO, and Silicon Photonics: Reducing Power Consumption in

Silicon photonics reduces power consumption in both LRO and LPO modules by integrating optical components directly on silicon chips. Traditional optical modules require separate

Global 200G and 400G Silicon Photonics Modules Market 2025 by ...

According to our (Global Info Research) latest study, the global 200G and 400G Silicon Photonics Modules market size was valued at US\$ 440 million in 2024 and is forecast to a readjusted size of

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Discover how 2026 global logistics for optics and DSP lead times impact 800G data center deployments. Learn to troubleshoot PAM4, FEC, and CMIS failures.

200G and 400G Silicon Photonics Modules

This report aims to provide a comprehensive presentation of the global market for 200G and 400G Silicon Photonics Modules, focusing on the total sales volume, sales revenue, price, key companies

Opinion: optical transceivers at the chokepoint of AI

In practice, it simply moves the pressure point: from EML chip capacity to CW laser availability, silicon photonics foundry yield, known-good-die

What factors influence 400G optical transceiver

Discover the key factors that drive 400G optical transceiver pricing—from form-factor and component costs to market dynamics and sustainability.

Overview of 400G Optical Modules

Although only one optical chip is used in a 400G optical module, the cost is high. In 10G/25G modules, optical chips make up about 30% of the cost;

Global 200G and 400G Silicon Photonics Modules Market Research

The global market for 200G and 400G Silicon Photonics Modules was valued at US\$ 428 million in the year 2024 and is projected to reach a revised size of US\$ 2694 million by 2031, growing at a CAGR

Advanced Photonics Enable the Next Generation of AI Data Centers

A set of advanced photonics technology platforms is forming a converging road map toward more efficient, flexible, and sustainable data centers. By Christian Urricariet
The explosive growth of AI has

AI Data Center Optical Transceiver Module Market

3.1 Silicon Photonics: The Mainstream Platform Silicon photonics has emerged as the core technology platform for high-speed optical transceivers, driven by its

Photonics Startup Series A Funding Reshapes AI...

Conventional modulators require separate laser modules and complex assembly. OpenLight's heterogeneous integration puts the modulator and laser on the same silicon die,

SILICON PHOTONICS

Summary of the State of the Art Silicon photonics is an attractive technology for Photonic Integrated Circuits (PICs) because it builds directly on the extreme maturity of the silicon nano-electronics

Silicon Photonics Networking for Agentic AI | NVIDIA

NVIDIA co-packaged optics with silicon photonics deliver 5x power efficiency and 10x resiliency, enabling scalable, high-performance networking for agentic AI.

Pluggables, Power, and Geopolitics: Mapping the 800G

Acquisitions: Cisco acquired Luxtera (Silicon Photonics) for \$660 million and Acacia (Coherent DSPs) for \$2.6 billion.⁴⁷ Model: Cisco uses its

OFC 2026 News Roundup | Business | Mar 2026 | Photonics

LOS ANGELES — Silicon PICs developer Beeplux Semiconductor demonstrated a silicon photonics transmitter reaching 224-Gbps-per-lane operation. Evaluated using a MACOM

QSFP-DD Price Guide 2026: 400G/800G Costs & TCO Analysis

Priced between \$1,400 and \$1,800 from reputable third-party vendors, this range represents the standard entry point for 400G adoption. DR4 and FR4 modules bridge the gap

Why 1.6T Optical Transceivers Overtake 800G in 2026

How Does Silicon Photonics Technology Reduce 1.6T Transceiver Power Consumption Below 800G? Silicon Photonics (SiPh) captures 72% of the 1.6T

Co-Packaged Optics (CPO) 2026: Complete Technical

In short: these four terms — optical engine, silicon photonics, ELS, and fiber shuffle — are the building blocks every CPO switch is described with. 2.

Contact Us

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