Price High-speed optical connection 800G



Overview

QSFP-DD price guide with 400G/800G module costs, OEM vs third-party comparison, volume discounts, and 3-year TCO analysis for data center buyers.

Key Takeaways

The cost of 800G optical modules is influenced by tariffs, supply chain dynamics, and operational expenses, with unit prices ranging from $700 to $1,900 depending on type and vendor. Direct Tariff ImpactsU. S. tariffs on optical modules, particularly those imported from China, have significantly affected pricing.

Modules containing less than 20% U. S.-sourced components face steep import duties, potentially inflating costs by 10-25% for high-volume purchasers like hyperscale data centers. Tariff exemptions are available for modules with at least 20% U.

S.-made components, allowing some Chinese manufacturers to maintain competitive margins while others face higher costs. Reciprocal tariffs from China also impact U. S. manufacturers relying on Southeast Asian production.

Module Acquisition Costs

Typical 800G optical modules have the following volume pricing for large deployments: OSFP-DR8: $1,100–$1,400QSFP-DD-DR8: $1,000–$1,300OSFP-FR4 (longer reach): $1,500–$1,900Linear Pluggable Optics (LPO, no DSP): $700–$900 Vendor tier, technology maturity, and customization can further increase costs by 15-50%. Early-generation modules are generally 40-60% more expensive than mature products.

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Operational and Hidden Costs

Beyond tariffs and acquisition, operational expenses significantly affect total cost: Power consumption: 800G modules typically draw 15–20W, with annual electricity costs around $20–$25 per module including cooling overhead. Cooling requirements: High-density 800G deployments generate substantial heat, requiring facility-level upgrades such as enhanced CRAC systems or liquid cooling. Maintenance and support: Spare inventory (10–15%), replacement modules (2–5% annual failure), and vendor support contracts (8–12% of purchase price) add to TCO.

Network performance risks: Thermal throttling of DSPs and FEC overhead can reduce throughput, indirectly increasing operational costs.

Market and Supply Chain Considerations

The global 800G market is dominated by Chinese suppliers (~70%), but tariffs and U. S. reshoring efforts are reshaping supply chains. Silicon photonics (SiPh) is expected to reduce unit costs over time due to CMOS manufacturing scale, but initial deployments remain expensive.

Price volatility is common, with competitive pressures leading to potential discounts or pricing wars among second-tier manufacturers.

Summary

While the unit cost of 800G optical modules ranges from $700 to $1,900, tariffs, power, cooling, maintenance, and supply chain factors can significantly increase the total cost of ownership. For large-scale AI or hyperscale deployments, careful TCO analysis—including tariff exemptions, vendor selection, and facility readiness—is essential to optimize both performance and cost.

Article Content

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

QSFP-DD price guide with 400G/800G module costs, OEM vs third-party comparison, volume discounts, and 3-year TCO analysis for data center buyers.

800G Optical Module Cost Analysis | TCO Optimization Guide

Complete guide to 800G optical module costs and TCO optimization for AI data centers. Includes pricing analysis, cost comparison, vendor strategies, and ROI calculations for informed

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NVIDIA/Mellanox compatible OSFP-800G-SR8 optical transceiver is an 800Gb/s multi-mode Ethernet transceiver with a integrated heat sink (IHS) or finned top,

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They offer flexible connectivity, with options for 800GE, 400GE, 200GE, and 100GE, for use in data centers, high-performance computing networks, enterprise core and distribution layers,

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The introduction of 25.6T switches with 800G ports creates new opportunities for data center operators to take advantage of use cases that can deliver significantly higher performance networks with

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AAOI Optical Transceiver 800G: High-Speed Data Solutions

Find top AAOI optical transceiver 800G options for AI, HPC, and data centers. Explore low-latency, high-density, and verified suppliers. Click to discover reliable, future-ready connectivity for

Eoptolink Technology Inc Ltd (300502) Fair Value Analysis

Eoptolink Technology Inc Ltd (300502) is a leading Chinese designer and manufacturer of high-speed optical transceiver modules for data centers, cloud networks and telecom

800G QSFP-DD Optical Module Market Revenue Forecast Driven

Overall, the 800G QSFP-DD optical module market is poised for sustained growth, driven by technological advancements, expanding application bases, and increasing demand for ultra-high

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The growth of the increasing adoption of high-speed optical modules for AI and cloud workloads, rising upgrades from legacy networks to advanced 100G to 800G architectures, expanding deployment of

Optical Transceiver Market Size, Share, Industry Report – 2035

The optical transceiver market is experiencing a strong boost from the expansion plans of hyperscale data centers to deploy 800G & 1.6T connectivity solutions.

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