Tariff Costs for Active Optical Module 800G



Overview

Procurement forecasts frequently project aggressive price drops for 800G optics by 2026, ignoring the non-linear power density scaling required at the physical layer.

Key Takeaways

The acquisition cost for 800G optical modules ranges from $700 to $1,900 per unit depending on form factor, reach, and vendor, with additional infrastructure and operational costs significantly impacting total deployment expenses.

Acquisition Costs800

G OSFP-DR8: $1,100–$1,400 per unit for volume orders of 1,000+ units800G QSFP-DD-DR8: $1,000–$1,300 per unit for large-volume purchases800G OSFP-FR4: $1,500–$1,900 per unit for longer reach and more complex optics800G LPO (Linear Pluggable Optics): $700–$900 per unit, lower cost due to no DSP400G QSFP-DD: $600–$800 per unit for comparison Price variation factors include vendor tier (OEM modules can cost 30–50% more than third-party compatible modules), volume discounts (10–20% for >1,000 units, 20–30% for >5,000 units), technology maturity (early-generation modules cost 40–60% more), market supply constraints (temporary 20–40% price increases), and customization options (adding 15–30% for special wavelengths or extended temperature ranges),.

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Infrastructure and Operational Costs

Deploying 800G modules requires significant supporting infrastructure: Switches: 64-port 800G switches cost $150,000–$250,000 depending on features and vendorFiber Cabling: MPO-16 trunk cables $50–$150 each, LC duplex $20–$50 eachPatch Panels: $500–$1,500 per 48-port panelCable Management: $2,000–$5,000 per rack for high-density deploymentsTesting Equipment: OTDR ($5,000–$15,000), power meters ($500–$2,000), inspection scopes ($1,000–$3,000), High-density 800G deployments also increase power and cooling requirements. A fully populated 64-port 800G switch can consume over 1,000 watts for optics alone, and inadequate cooling can trigger thermal throttling in DSPs, leading to performance degradation and additional operational costs for facility upgrades such as CRAC units or liquid cooling systems.

Market Trends and Cost Outlook

Silicon Photonics (SiPh) is expected to dominate 800G deployments due to CMOS manufacturing scale, which reduces unit costs over time. Price-per-gigabit for 800G modules is projected to decline 15–18% per year through 2034 as technology matures and production scales. Global market growth is driven by AI, machine learning, and hyperscale data center expansion, with the 800G segment projected to grow from $4.

8 billion in 2025 to $28. 6 billion by 2034.

Summary

The tariff cost for an 800G active optical module depends on the module type, vendor, volume, and reach, ranging from $700 to $1,900 per unit. Total deployment costs are significantly influenced by switches, cabling, patch panels, testing equipment, and cooling infrastructure. Market trends indicate declining per-unit costs over time due to silicon photonics adoption and production scale, but operational and facility costs remain a critical factor in total cost of ownership.

Article Content

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

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

This guide delivers clear, accurate pricing data. It breaks down the current costs for 400G and 800G modules, provides an objective comparison between OEM and third-party products,

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Optical Transceiver Market Price Trends 2026: TCO & Risks

Procurement forecasts frequently project aggressive price drops for 800G optics by 2026, ignoring the non-linear power density scaling required at the physical layer.

800G OSFP/QSFP-DD | Transceiver Modules

The 800G transceiver modules are ideal choice for AI data centers, enterprise networks and service provider networks. Click to get your 800G transceiver modules and cables from nearby warehouses.

200G/400G/800G Optical Transceiver Modules | FiberMall

200G/400G/800G optical module features up to 40km transmission distances using QSFP56/QSFP-DD footprints for data center interconnect applications - FiberMall

800G AEC, 800G OSFP to OSFP Active Electrical Cable (AEC), 2-3

10Gtek''s 800G OSFP Active Electrical Cable (AEC) is designed for use in 800 Gigabit Ethernet links, up to 3 meters. The module has 8 independent electrical input/output channels operating up to

800G Transceiver Modules

Coherent 800G Transceiver Modules transform networks for future connectivity, serving as a vital component for AI/ML, InfiniBand, and Ethernet applications. The Coherent 800G Modules are

800G Client Optics in the Data Center

By understanding the key developments for 400G and 800G, as well as the standards planned for 800G and 1.6T, data center operators can ensure that they benefit from 800G upgrades as solutions evolve.

Pluggables, Power, and Geopolitics: Mapping the 800G and 1.6T

Technologically, the industry is embroiled in a debate between Digital Signal Processor (DSP)-based retimed optics, which remain the standard for interoperability, and Linear Pluggable

HTF DWDM equipment,OTN Solution,QSFP28 OSFP

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Everything You Need to Know About 800G/1.6T Optical Transceiver

In contrast, the 800G tends to use 5nm DSP and traditional hybrid packaging. Additionally, the current power consumption and cost of the 1.6T optical module are quite high, and there is still a

The Evolution of Optical Modules: 400G → 800G → 1.6T – A Strategic ...

Discover the evolution from 400G to 800G and 1.6T optical modules. Learn key technologies, CPO vs pluggable, and upgrade strategies for future-ready data centers.

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Application Introduction for 800G OSFP and 800G QSFP-DD Optical Modules

A comprehensive selection of 800G optical modules is available, including AOC, DAC, and AEC, all provided in OSFP and QSFP-DD form factors.

NVIDIA/Mellanox MMS4A00-XM-FLT/MMS4C10-XM-RHS (980-9IAH0

No. The Flat Top transceiver has no active heat dissipation structure and relies on cold plate heat conduction, so it is only suitable for liquid-cooled architectures. Air-cooled platforms only support the

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.

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