How much does a standard optical module typically cost



Overview

Optical Transceiver Pricing: Cost Ranges by Speed and TypeThis article compares typical cost ranges across speeds and transceiver types, explains why price.

Key Takeaways

Optical module prices vary widely, from as low as $5 for basic 1G SFPs to several hundred dollars for high-speed 100G QSFP28 modules, depending on type, reach, and brand. Price Ranges by Module Type1G SFP Modules: Generic or compatible modules typically cost $5–$25, while OEM-branded or industrial-grade modules can range from $60–$120+ depending on specifications and temperature tolerance. 10G SFP+ Modules: Prices generally fall between $10 and $300, influenced by transmission distance, single-mode vs multi-mode optics, and brand.

Short-reach compatible modules are at the lower end, while long-reach or OEM modules are at the higher end. 100G QSFP28 Modules: Third-party compatible modules can cost $35–$280, whereas OEM-branded modules, especially long-reach LR4 or ZR4 types, may reach $780 or more per module. Cost per gigabit is often lower for higher-speed modules, e.g., a $35 SR4 module delivers 100G connectivity at $0.

35 per Gbps.



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Factors Affecting Cost

Brand and Vendor: OEM modules from Cisco, Juniper, or HPE are priced higher due to warranty, support, and platform-specific coding, while third-party compatible modules offer significant savings. Speed and Reach: Higher-speed modules (100G, 400G, 800G) and long-reach optics require advanced DSPs, tunable lasers, and precise alignment, increasing material and R&D costs. Technology: Coherent optics, silicon photonics, and specialized lasers for ultra-high-speed modules are more expensive than standard short-reach modules.

Production and Overhead: Engineering development, testing, reliability verification, and overhead costs contribute to the final price. Market Dynamics: Volume discounts, supply chain timing, and procurement strategy can significantly affect module pricing, especially for large-scale deployments.

Summary

In practice, optical module costs are highly variable. For enterprise or data center networks, compatible third-party modules often provide reliable performance at a fraction of OEM prices, while high-end or long-reach modules command premium pricing. Buyers should consider speed, reach, brand, and warranty when evaluating cost-effectiveness.

Article Content

Optical Transceiver Pricing: Cost Ranges by Speed and Type

This article compares typical cost ranges across speeds and transceiver types, explains why prices vary, and gives practical guidance for choosing the right optics for a given budget and performance

Cost of optical module electronic chips | Weyland

For traditional 10G and 25G optical modules, the structure is relatively simple, and electronic chips typically account for 10%–20% of total cost, while optical components and packaging

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,

Optical Module Procurement Guide

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For example, Cisco SFP modules typically have a price premium of 20–40% over aftermarket brands that we consider reliable. OEM typically have a longer warranty period and

Optical Transceiver Modules Prices & Specifications

What is Optical Transceiver Modules/SFP? Optical Transceiver Modules/SFP, also called fiber optic transceiver or optical transceiver, is a typically hot-pluggable device used in high-bandwidth data

10G SFP Price Guide: How Much Does a 10G SFP Module Cost

The average 10G SFP price typically falls between $10 and $300, depending on the module type, transmission distance, and brand. For most standard enterprise and data center deployments, the

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

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; in 40G/100G modules, this rises to

800G Optical Module Cost Analysis | TCO Optimization Guide

Optical module costs represent a significant portion of AI data center network investment—typically 15-25% of total network infrastructure costs. However, the impact of these

Understanding Optical Modules: Types and Troubleshooting Guide

Gray Light (Black-and-White): Standard optical modules typically operate at center wavelengths of 850nm, 1310nm, and 1550nm. Since their center wavelengths are singular, this type of light is

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The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right module for your fiber network.

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400G Optical Modules Explained: SR4 Vs. DR4 Vs. FR4 Vs. LR4

Key differences between SR4, DR4, FR4, and LR4 400G optical modules. Expert advice from Asterfusion engineers to optimize your data center network.

Fiber Optic Cable Pricing Guide: Factors That Affect

Fiber optic cables are essential components in today''s broadband, FTTx, and data center networks. Whether you''re planning a national fiber rollout

Optical Transceiver Pricing: Cost Ranges by Speed and Type

See practical price ranges for 1G–100G optical transceivers, DAC/AOC options, and why cost varies by speed, reach and technology — buying tips included.

What factors influence 400G optical transceiver modules price？

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

SFP Module Prices Comparison by Top 5 SFP

This post hence illustrates the SFP module price comparison by researching top competitors'' SFP price of our brand. The author hopes it can

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This guide outlines the major factors that influence fiber optic cable costs and provides practical tips for estimating pricing in bulk or project-based scenarios.

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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