

The price of an optical module

Article Overview

Optical module prices vary widely, from around \$10 for basic 10G SFP modules to over \$130,000 for high-end 800G coherent modules, depending on speed, distance, and vendor.

Price Ranges by Module Type

- o 10G SFP Modules: Typically range from \$10 to \$300, depending on transmission distance, brand, and optical technology. Short-range SR modules are at the lower end, while long-range LR modules cost more due to single-mode optics and stricter tolerances .
- o 400G QSFP-DD Modules: Entry-level SR8 modules for in-rack connections cost \$1,400-\$1,800 from reputable third-party vendors. DR4 and FR4 modules are moderately priced, while LR4 and ZR modules from OEMs can exceed \$10,000 .
- o 800G Modules: High-speed 800G modules, especially coherent ZR+ types for long-haul data center interconnects, can cost over \$130,000 from OEMs. Third-party options for shorter distances are significantly cheaper but still expensive due to advanced DSP chips and high-speed electronics .

Factors Affecting Optical Module Prices

- o Electronic Components: DSP chips, driver ICs, and TIAs are major cost contributors, especially in 400G and 800G modules. DSP chips alone can account for 25% or more of total module cost .
- o Raw Materials: Lasers, silicon wafers, and photonic components are expensive and sourced from specialized suppliers .
- o R&D and Design Complexity: High-speed modules require advanced design, simulation, and engineering talent, which can account for 20-30% of total cost .
- o Transmission Distance and Technology: Longer distances and coherent optics increase cost due to stricter tolerances and higher performance requirements .
- o Vendor Type: OEM modules are generally more expensive than third-party alternatives due to branding, support, and proprietary technology .
- o Market Dynamics: Supply chain disruptions, demand surges, and adoption of new standards (e.g., 400G, 800G) can temporarily increase prices .

Summary

Optical module pricing is highly variable and depends on speed, distance, technology, and vendor. For budgeting purposes:

- o 10G modules: \$10-\$300
- o 400G modules: \$1,400-\$10,000+
- o 800G modules: \$10,000-\$130,000+ Understanding these ranges and cost drivers helps in selecting the right



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module for your network while optimizing procurement costs.

What is Optical Transceiver Modules/SFP? Optical Transceiver Modules/SFP, also called fiber optic

Average selling prices for 100G optical modules have declined approximately 70% over the past five years, forcing chip vendors to

This article compares typical cost ranges across speeds and transceiver types, explains why prices vary, and gives practical

Check OPTICAL MODULE price from the latest Cisco price list 2022.

This guide delivers clear, accurate pricing data. It breaks down the current costs for 400G and 800G modules,

Optical modules are electronic devices used in communication systems to transmit optical signals. These modules

Optical module demand is reshaping faster than most forecasts, with 2026 growth pointing to a clear change in where

Optical modules can be classified by data rate, form factor, transmission distance, and fiber type. Proper selection

Optical Module Procurement guide to pricing trends, OEM vs aftermarket insights, and

Summary: This article analyzes the cost components of optical transceivers, including material costs, manufacturing costs, R&D

Chinese Optical Modules Own 7 of the Top 10 Seats. So Why Are Chip Companies Still Making the Money? Assembly

Explore the working principles, structures, and performance metrics of optical modules, essential components of

The global Optical Transceiver Market size in terms of revenue was estimated to be worth \$13.6 billion in 2024 and is poised to reach

For traditional 10G and 25G optical modules, the structure is relatively simple, and electronic chips typically account



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Comprehensive guide to solar module prices in 2025. Current costs, market trends, buying strategies, and price

Complete guide to 800G optical module costs and TCO optimization for AI data centers. Includes pricing analysis,

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