How much does an airtight optical module cost

Overview

Shop high-speed optical transceivers from Unitekfiber. We offer 100% compatible 40G, 100G, and 400G QSFP-DD modules for data centers. Expert technical support & wholesale pricing.

Key Takeaways

Airtight or high-reliability optical modules typically range from $700 to $1,900 per unit, depending on speed, reach, and vendor. Price Ranges by Module Type800G Modules: High-speed 800G modules such as OSFP-DR8 cost $1,100–$1,400 for volume orders, while longer-reach OSFP-FR4 modules can reach $1,500–$1,900 per unit. Linear pluggable optics (LPO) without DSP are lower-cost at $700–$900.

400G Modules: QSFP-DD modules typically cost $600–$800. 100G Modules: QSFP28 modules vary widely, with short-reach units starting around $200–$300, while specialized long-reach or coherent units can exceed $900.

Lower-

Speed Modules: 10G–25G SFP/SFP+ modules can range from $16–$900, depending on OEM branding, reach, and environmental specifications.

Factors Affecting Cost

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Vendor Tier: OEM modules (Cisco, Arista, Juniper) often carry a 20–50% premium over third-party compatible modules due to brand, quality control, and warranty. Volume Discounts: Large orders (1,000+ units) can reduce per-unit cost by 10–20%, and orders over 5,000 units may see 20–30% discounts. Technology and Reach: Modules with longer reach, higher speeds, or advanced optics (e.g., coherent or DWDM) are more expensive.

Early-generation modules can cost 40–60% more than mature products. Environmental and Customization Features: Airtight or ruggedized modules designed for extended temperature ranges, moisture resistance, or special testing can add 15–30% to the base price. Supply Chain and Market Dynamics: Component shortages, shipping costs, and geopolitical factors can temporarily increase prices by 20–40%.

Summary

For airtight optical modules, which are typically designed for reliability in harsh environments, you can expect $700–$1,900 per unit, with higher-end modules for longer reach or advanced speeds at the top of this range. Costs are influenced by vendor, volume, technology, and environmental specifications, so planning purchases in advance and considering third-party compatible modules can optimize 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

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

Optical Module Procurement Guide

In many instances, a less expensive optical module may have a shorter warranty or experience failure at a higher rate, which can be expensive after factoring in the costs of replacing

50/25/10/1G Transceiver Modules | Optical Transceivers

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FS provides 50/25/10/1G transceivers modules in SFP/SFP28/SFP56/QSFP28 form factor, supporting transmission distances from 30m to 160km over SMF/MMF fiber and enabling low power and cost

Wholesale Optical Transceivers Module | 100G QSFP28, 40G QSFP

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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

Cost structure of optical module chips | Weyland

The overall cost of an optical module chip depends on material choices, design complexity, manufacturing processes, packaging, testing, and integration, all of which play a role in the final

100G QSFP28 Module Cost: Pricing Guide & Factors | Vitex

Discover 100G QSFP28 module pricing. Learn key cost factors, considerations, and real examples to make informed purchasing decisions for your network.

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

100G QSFP28 Dual-Fiber Single Lambda Optical Module by ETU-LINK

As a professional platform for a full range of optical networking products and services, ETU-LINK provides you with a reliable and cost-effective, cost-saving single-wave 100G

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White Paper HiSilicon Optoelectronics 400G All

There are three methods by which an optical module can achieve a higher rate to meet the requirement described by the optical Moore''s Law: increasing the rate of optical components (higher baud rate),

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This document contains a long list of words beginning with "ab-" or "ac-". It does not appear to be a coherent text, but rather a collection of unrelated terms.

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Optical Bonding vs. Air Bonding: Which is Better for Your LCD Module ...

Optical bonding delivers superior light transmission (>90% vs ~75%), reduced reflection (0.2% vs 13.5%), and enhanced contrast ratios, while air bonding offers higher production yields

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Everything You Need to Know About Optical Modules

Optical modules are electronic devices used in communication systems to transmit optical signals. These modules convert electrical signals into optical signals, which can travel long distances

U.S. Patent Application for AIRTIGHT OPTICAL MODULE Patent

The commonly used packaging forms of an airtight optical module include a BOX packaging structure, in which chip-on-ceramic (COC) assemblies (including optical chips and ceramic carriers with optical

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