

How much do optical modules for data centers cost



Article Overview

Optical module costs in data centers range from around \$100 for short-reach 100G modules to \$1,500–\$1,900 for high-speed 800G long-reach modules, with total ownership costs influenced by power, cooling, spares, and vendor premiums.

Typical Acquisition Costs

- 100G SR4 modules: Commodity short-reach modules can cost as low as \$99 per unit, while branded versions may be slightly higher .
- 400G QSFP-DD: Prices typically range from \$600–\$800 per module .
- 800G OSFP-DR8: Volume pricing for large deployments is \$1,100–\$1,400 per unit, while QSFP-DD-DR8 modules cost \$1,000–\$1,300 .
- 800G OSFP-FR4: Longer-reach, more complex optics can cost \$1,500–\$1,900 .
- Linear Pluggable Optics (LPO): Lower-cost options without DSP range from \$700–\$900 .

Pricing is influenced by vendor tier, with OEM modules (Cisco, Arista) commanding 30–50% premiums over third-party compatible modules, and volume discounts of 10–30% for orders exceeding 1,000–5,000 units . Early-generation modules can cost 40–60% more than mature products due to supply constraints and manufacturing complexity .

Total Cost of Ownership (TCO) Considerations...

Article Content

Feb 14, 2026

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,

Aug 18, 2025

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

800G optical modules provide 2× bandwidth and ~30-40% better power efficiency per bit than 400G, while reducing

Aug 16, 2025

Data Center Optical Module Charting Growth Trajectories 2026-2034 ...

The booming Data Center Optical Module market is projected to reach \$15 billion in 2025, growing at a 15% CAGR

Jun 01, 2026

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

Mar 19, 2026

Optical Transceiver Modules Prices & Specifications

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

Feb 21, 2026

Data Center Optical Module Market Size, Trends & Growth 2035

The Data Center Optical Module Market Size was valued at 4,960 USD Million in 2024. The Data Center Optical Module Market is

May 23, 2026

Optical Modules Market Analysis 2026

The global Optical Modules market size was USD 9425.5 million in 2024. Data center expansion is expected to boost sales to USD

Sep 03, 2025

How to Reduce Power Consumption of Optical Transceivers in Modern Data ...

Reduce power consumption of optical transceivers with efficient modules, smart cooling, and intelligent management

Feb 21, 2026

Optical Modules Market Research Report 2034

Key Takeaways: Optical Modules Market Global optical modules market valued at \$14.8 billion in 2025 Expected to reach \$39.6

May 02, 2026

Cost trends of Ethernet switches and optical modules ...

Download scientific diagram | Cost trends of Ethernet switches and optical modules from 2010 to 2023; the values for 2020–2023 are

Aug 13, 2025

SFP Module Price: Strategic Cost Analysis and TCO Factors

It also requires demystifying the physical parameters that dictate optical pricing—such as data transmission rates (e.g., 10GBASE

Feb 12, 2026

Data Center Infrastructure Cost Analysis 2025: Breakdown of CapEx,

Q1. What is the average cost of building a 1 MW data center? Typically between \$7–12 million, depending on region

Jan 14, 2026

Opportunities in networking optics: Boosting supply for data centers

— Coherent-lite optics. This technology delivers cost-effective, lower-power coherent transmission for shorter reaches—such as data

Mar 21, 2026

Comprehensive Guide to Optical Transceiver Classifications and

They are widely used in data centers, telecommunications networks, and industrial communication systems.

Sep 29, 2025

Smallest Thinnest Power Modules for Data Center Optical Modules

Since in high -capacity data centers, multiple copper -fiber connections are required, multiple numbers of optical modules are used.

Oct 08, 2025

Cost structure of optical module chips | Weyland

The overall cost of an optical module chip depends on material choices, design complexity, manufacturing processes,

Apr 25, 2026

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

Sep 13, 2025

Recent advances in optical technologies for data centers: a review

Modern data centers increasingly rely on interconnects for delivering critical communications connectivity among numerous servers,

Jan 16, 2026

Optical Transceiver Market Price Trends 2026: TCO & Risks

An 800G-DR8 module might cost significantly more than two 400G-DR4 modules today, but the math changes when

Apr 15, 2026

Top Optical Transceiver Modules for Data Center Applications

Introduction: Why Optical Modules Are Critical to Data Center Infrastructure In today's cloud-first, AI-driven, and 5G

Apr 10, 2026

The four requirements for optical modules in data centers-ETU-LINK ...

As data centers and telecom operators require higher transmission rates for optical modules, what technologies do

Sep 18, 2025

800G Client Optics in the Data Center

When hyperscale data center operators start deploying a new generation of client optics, they immediately require massive volumes

Oct 11, 2025

Opportunities in networking optics: Boosting supply for data centers

Networking optics are mission-critical components in advancing AI and data center infrastructure build-outs. To move the massive

Jul 03, 2026

Low-Power Optical Modules Supplier Guide: to Lower Data center Costs ...

Modern data centers spend a lot on power — not just for servers and cooling but for every single network port. Optical modules

Sep 15, 2025

How to Reduce Optical Module Costs | SFP & QSFP Cost

In today's rapidly evolving network environments, reducing operational costs is a top priority for data centers, telecom

Nov 16, 2025

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

Feb 13, 2026

Cost of optical module electronic chips | Weyland

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

Aug 23, 2025

Optical Modules Usage in DATA CENTER

When the link distance is long, the cost of the CWDM4 solution is relatively low. The application of optical modules in data centers In

Jun 19, 2026

What factors influence 400G optical transceiver modules price□

From campus backbones to metro DWDM rings and hyperscale data centers, the cost of each 400g optical transceiver can swing

May 04, 2026

Understanding the applications of optical modules in a data center

All these features make optical modules relevant across wider choice of equipment, and also allow the IT managers to

Apr 01, 2026

Cisco Optics | Transform Your Network

Cisco optics are foundational to AI data centers. They deliver performance, efficiency, and reliability for AI workloads that maximize

Aug 02, 2025

Data Center Optical Module Market Research Report 2034

The Data Center Optical Module market was valued at \$16.9 billion in 2025 and is projected to reach \$77.6 billion by 2034, growing

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://greatpremiersolutions.co.za>

Email: sales@greatpremiersolutions.co.za

Phone: +27 82 914 3675

Address: Unit 5, Silicon Heights, 22 Electron Avenue, Cape Town, 8001, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

