

Quotation for a 400G optical module for a 10G cloud computing project

Article Overview

400G optical modules suitable for cloud computing projects typically range from \$1,400 to \$1,800 for short-reach SR8 modules, with higher-end coherent modules exceeding \$130,000 depending on distance and technology.

Pricing Overview

For a 10G cloud computing project requiring 400G interconnects, the most relevant modules are short-reach SR8 or DR4/FR4 types:

- o SR8 (Short-Reach, 8 lanes x 50Gbps): Ideal for in-rack or cross-row connections, priced between \$1,400 and \$1,800 from reputable third-party vendors .
- o DR4/FR4 (Data Center Reach / Fiber Reach): Suitable for inter-row or campus links, prices vary from \$3,000 to \$5,000 depending on vendor and distance .
- o ZR+ or coherent modules: Designed for long-haul metro or DCI applications, costs can exceed \$130,000, but these are generally unnecessary for standard cloud data center deployments .

Technical Considerations

- o Bandwidth and Lanes: 400G modules support 4x100Gbps or 8x50Gbps lanes, enabling dense connectivity without increasing port counts .
- o Modulation: PAM4 modulation doubles the bit rate per lane, allowing 400G speeds in compact form factors .
- o Power Efficiency: Typical power consumption is only a few watts, suitable for dense cloud environments .
- o Diagnostics: Integrated digital diagnostics provide real-time monitoring of temperature, voltage, and optical power, enhancing reliability .
- o Form Factors: QSFP-DD is the dominant form factor for 400G modules, compatible with most modern cloud switches and servers .

Deployment Guidance

- o In-Rack / East-West Traffic: SR8 modules are optimal for short-distance, high-density cloud deployments .
- o Inter-Row / Campus Links: DR4 or FR4 modules provide moderate reach without recabling existing fiber infrastructure .
- o Long-Haul / Metro: Only consider ZR+ or coherent modules if distances exceed 80 km, which is uncommon for typical cloud computing projects .

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Recommendation

For a 10G cloud computing project, a 400G SR8 QSFP-DD module is the most cost-effective and practical choice, balancing bandwidth, power efficiency, and deployment flexibility. Bulk purchases may qualify for volume discounts, and third-party vendors often provide OEM-compatible modules at lower cost without sacrificing reliability. By selecting the appropriate module type and reach, you can optimize total cost of ownership while ensuring high-speed connectivity for cloud workloads.

This is where 400G and 800G optical transceivers step in--delivering high-speed, low-latency, and energy-efficient

A clear, engineer-friendly overview of 400G optical modules, including standards, packaging formats, functions, and

The global 400G Optical Module market is projected to grow from US\$ 1130 million in 2025 to US\$ 2066 million by 2032, at a CAGR

400G Optical Module Market Outlook 2025-2034 The global 400G optical module market was valued at \$5.8 billion in 2025 and is

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

The QSFP-DD 400G optical module has become a key element in the fast-changing field of data transmission

Discover the evolution from 400G to 800G and 1.6T optical modules. Learn key technologies, CPO vs pluggable, and

The demand for high-speed datacom optical modules has surged, with shipments of 400G and 800G units exceeding

Pluggable Optical Modules: QSFP-DD or OSFP Both variants support all the technical

Introduction: Why 400G and 800G Matter? The rise of AI training, HPC (high-performance computing), and

Whether in data centers, cloud computing platforms, or in the telecommunications industry,

Discover the increasing demand for optical modules in AI computing and the role they play in supporting

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high-speed

The global 400G Optical Module market size is expected to reach \$ million by 2030, rising at a market growth of %

With the advent of 400G, optical communication is entering a new era, moving from single

The global 400G Optical Module market size was valued at approximately USD 1.5 billion in 2023 and is projected to reach around

The 400G Optical Module market is projected to reach \$14.8B by 2025, growing at 11.5% CAGR. Demand from data

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