

Cost-effective optical transceiver module

QSFP-DD

Article Overview

QSFP-DD module prices range from around \$1,400 for short-reach 400G SR8 modules to over \$130,000 for long-haul coherent ZR+ modules, depending on type, distance, and vendor.

Price Ranges by Module Type

- o SR8 (Short-Reach, in-rack connections): Typically \$1,400-\$1,800 from reputable third-party vendors, making them the most cost-effective option for standard 400G data center deployments .
- o DR4 and FR4 (Data center row and campus links): Prices are higher than SR8 but remain competitive due to a robust third-party market, with significant price compression over recent years .
- o LR4 (Long-Reach, 10 km): OEM modules can exceed \$10,000, reflecting the higher cost of long-distance optical transmission .
- o ZR and ZR+ (Ultra-long-haul, coherent DCI): Prices can reach \$130,000 or more for OEM modules, particularly for 400G coherent ZR+ transceivers .

Factors Affecting Pricing

- o Vendor Type: OEM modules are generally more expensive than third-party equivalents, sometimes by a factor of 10 or more .
- o Transmission Distance: Longer-reach modules (LR4, ZR, ZR+) cost significantly more due to advanced optics and coherent technology .
- o Volume Discounts: Many vendors offer tiered pricing for bulk purchases, which can substantially reduce the per-unit cost .
- o Module Type and Features: Active Optical Cables (AOCs) and modules with advanced Digital Coherent Optics (DCO) or encryption features may carry additional costs .

Purchasing Considerations

- o Short-reach SR8 modules are ideal for in-rack or cross-row connectivity and are the most economical entry point for 400G adoption.
- o Longer-reach modules like LR4, ZR, and ZR+ are necessary for data center interconnects or campus links but require careful budgeting due to high costs.
- o Third-party vendors can provide cost-effective alternatives without compromising performance for many standard deployments . In summary, QSFP-DD module pricing is highly variable, ranging from a few thousand dollars for short-reach modules to over \$100,000 for ultra-long-haul coherent modules, with vendor choice, module type, and transmission distance being the primary cost drivers.



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Product overview The Cisco QSFP-DD800 modules introduce 8x100G and 2x400GGBASE Quad Small Form-Factor Pluggable

? Introduction: High-Speed Optical Networking Essentials In the world of high-speed data transmission, selecting the

These small, modular optical interface transceivers offer a convenient and cost-effective solution for an array of applications in the

Smartoptics 400G coherent QSFP-DD transceivers offer three rare advantages for specific use cases.

This transceiver is compliant with IEEE802.3ck, IEEE 802.3cu, QSFP-DD MSA and CMIS Rev 5.0 standards, suitable

FS 800G/400G Coherent OSFP/QSFP-DD optical transceiver module solutions offer a range of OSFP/QSFP-DD modules

NVIDIA/Mellanox MMS4X00-NM16 (980-9I30J-F4NM00) Compatible 800GBASE-DR8 OSFP IHS/Closed Finned Top PAM4 1310nm

Explore the essentials of 800G QSFP-DD optical transceivers, including specs, form factors, and compatibility for high

How to Power Your QSFP-DD Optical Transceiver Growth in the optical transceiver market is driven by demand for higher Ethernet

Learn how Cisco 400G QSFP-DD High-Power (Bright) Optical module's small size and low

What is QSFP-DD? QSFP-DD is an advanced hot-pluggable optical transceiver form factor

A: Cisco QSFP-DD transceivers are high-capacity optical modules that enable 400G data transmission in a breakable

The QSFP-DD transceiver serves as an optical module which provides 400G and 800G connectivity through its 8

Optical module is the optoelectronic device that realizes photoelectric and photoelectric conversion in optical

The Cisco's family of QSFP-DD modules provide the industry's highest bandwidth density



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Executive Summary: Navigating the 2025 Optical Landscape In 2025, the optical transceiver market has shifted

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