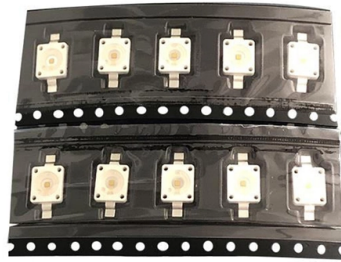


Inventory Enterprise-Grade Optical Router 400G



Overview

Cisco Transceiver Modules - Learn product details such as features and benefits, as well as hardware and software specifications.

Key Takeaways

Enterprise-grade 400G optical routers provide high-throughput, scalable, and secure networking solutions for data centers, telecom, and AI-driven networks. Key Products and Bundles

Cisco QDD400GZR-15-BUN is a routed optical networking bundle designed for high-performance environments, offering 15x400G ZR ports. It is optimized for data centers and telecom providers requiring high bandwidth and scalability, with advanced features for monitoring, diagnostics, and firmware management. Cisco 400G QSFP-DD High-Power (Bright) Optical Module supports Ethernet and OTN clients, leveraging coherent DP-mQAM signaling for high-capacity transmission. It provides enhanced Tx optical power, low power consumption, and security features like AES-256 encryption, making it suitable for DCI, metro, and campus interconnects. Juniper PTX Series Routers offer modular and compact 400G and 800G routing options. The PTX12000 line delivers up to 43.2 Tbps per line card, with ZR/ZR+ optics on every port, deep buffering, inline MACsec, and flexible filtering. These routers are ideal for core, peering, data center interconnect, and AI data center networking.

Technology and Standards

400G optical routers utilize pluggable coherent optics such as 400ZR and 400ZR+, enabling high-density, cost-efficient deployment. These optics support short-reach single-span applications and longer-reach multi-rate links, bridging IP and optical networks efficiently. Pluggable modules allow network evolution without changing the optical interface, supporting breakout to lower-speed Ethernet interfaces and versatile diagnostics for link performance, including pre-FEC BER and SNR monitoring.

Deployment Scenarios

- Data Center Interconnect (DCI): High-capacity links between data centers using 400G coherent optics.
- Metro and Regional Aggregation: Scalable routing for urban and regional networks.
- AI and High-Performance Computing Networks: Supporting ultra-high throughput and low-latency requirements.
- Telecom Core Networks: Secure, high-density routing with inline encryption and monitoring.

Advantages

- High Throughput: 400G per port with scalable aggregation to 800G or beyond.
- Energy Efficiency: Optimized pluggable optics reduce power consumption.
- Security: Inline encryption and authentication for sensitive traffic.
- Flexibility: Modular routers and breakout capabilities allow adaptation to evolving network demands.
- Future-Proofing: Support for next-generation 800G and 1.6T interfaces ensures longevity. Enterprise-grade 400G optical routers are essential for modern networks requiring high bandwidth, low latency, and secure transport, enabling seamless scaling for AI workloads, cloud services, and next-generation telecom infrastructure.

Article Content

400G Transceivers

Shop 400G optical transceivers including QSFP-DD and OSFP modules. High-density, multi-vendor compatible solutions for modern

The 400GE inflection point

Supplying the first commercial deployment of 400GE router interfaces in March 2019
The Nokia IP routing and optical systems

Cisco Transceiver Modules

Cisco Transceiver Modules - Learn product details such as features and benefits, as well as hardware and software specifications.

400g Optical Transceiver Market Report: Size, Growth, Trends

The 400G Optical Transceiver Market opportunity landscape is shaped by a concentration of spend in high-throughput data center

400G/800G for Hyperscale and Multi Tenant Data Centers

New transceiver formats The optical market for 400G is being driven by cost and performance as OEMs try to dial into the sweet spot

100G vs 400G vs 800G Ethernet: Enterprise & AI Network Upgrade

Compare 100G, 400G, and 800G Ethernet for enterprise and AI networks. Learn upgrade timing, power, cabling, and RS-supported

Cisco Routed Optical Networking

Routed Optical Networking is an architecture that delivers improved network efficiencies and operational simplicity. It does this by

PSE 100G/400G pluggable coherent optics

Our pluggable coherent modules are used across our optical network platforms, converged IP-optical routing and fixed network

Cisco 400G QSFP-DD High-Power (Bright) Optical Module

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

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