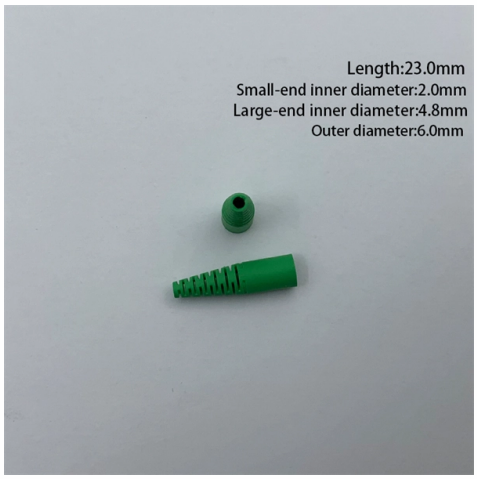
400G Long-Distance Optical Transceiver Available Now



Overview

Discover key factors driving the rapid adoption of 400G optical transceivers, including AI, 5G, coherent optics, and market trends shaping next-gen network infrastructure.

Key Takeaways

High-performance 400G long-distance optical transceivers, including Cisco QSFP-DD Ultra Long Haul and ER4 modules, are available for distances from 40 km up to ultra-long-haul DWDM networks. Key Available Options1. Cisco 400G QSFP-DD Ultra Long Haul (ULH) Coherent ModuleSupports ultra-long-haul DWDM networks with both C-band and L-band operation.

Mechanically compliant with QSFP-DD Type 2A and fits within a 24W power envelope. Uses duplex LC connectors over single-mode fiber with coherent signals up to 118 Gbaud. Offers multiple application select codes for 75–112.

5 GHz channel spacing, optimizing spectral efficiency or reach. Compatible with Cisco and third-party routers and switches, reducing operational costs due to lower power and cooling requirements. 2.

400G QSFP-DD ER4 Optical TransceiverDesigned for long-reach 400GbE connectivity up to 40 km over single-mode fiber. Uses four wavelength channels around 1310 nm with duplex LC connectors. Ideal for data center interconnects, cloud computing, AI workloads, and storage replication.



© 2026 ENSAA OPTICAL NETWORKS - All rights reserved

Provides high interoperability and vendor compatibility, simplifying integration into existing network infrastructure. 3. Cisco 400G QSFP-DD High-Power (Bright) Optical ModuleFeatures enhanced Tx power (+1 dBm) for extended reach in metro, DCI, and campus interconnects.

Supports Ethernet and multirate OTN clients, with coherent DP-mQAM signaling in the C-band. Includes Layer-1 security features such as AES-256 GCM encryption for secure transmission. 4.

400G DR4/FR4/VR4 TransceiversMedium to long-distance solutions for single-mode fiber networks, supporting distances from 100 m to 2 km. Leverages PAM4 modulation and wavelength multiplexing for high-speed, power-efficient transmission. Available in QSFP-DD and OSFP form factors, compatible with modern data center and telecom infrastructures.

Considerations for Selection

Distance Requirements: ER4 modules are suitable for up to 40 km, while ULH modules support ultra-long-haul DWDM links. Form Factor: QSFP-DD is widely supported; OSFP may be preferred for certain high-density deployments. Power and Cooling: ULH and high-power modules are optimized for lower power consumption relative to traditional transponders.

Compatibility: Ensure the transceiver is compatible with your existing routers, switches, or DWDM systems. Application Needs: Consider whether your network requires high spectral efficiency, multi-rate support, or secure Layer-1 transmission. These 400G long-distance optical transceivers are currently available from vendors like Cisco and SATE Optics, providing scalable solutions for modern high-capacity networks.

Article Content

How 400G Optical Modules Are Shaping Next-Gen Networks

Discover key factors driving the rapid adoption of 400G optical transceivers, including AI, 5G, coherent optics, and market trends shaping next-gen network infrastructure.

400G QSFP-DD LR4 10KM Transceiver

400G QSFP-DD transceivers have four optical lanes that operate at 100Gbps PAM4 modulation, providing solutions up to 400 Gbps. The transceivers have electrical side 8 lanes of 53.125Gbps

LINK-PP LQD-CW400-LR4C 400G QSFP-DD LR4 Transceiver: Up to

© 2026 ENSAA OPTICAL NETWORKS - All rights reserved

The LINK-PP LQD-CW400-LR4C is a QSFP-DD (Quad Small Form-Factor Pluggable Double Density) optical transceiver module that supports 400 Gigabit Ethernet over single-mode fiber

400G QSFP-DD/OSFP SR4 Transceivers – MMF Data Center

The 400G QSFP-DD and OSFP SR4 optical transceiver is the mainstream solution for short-reach, high-density data center interconnects. Based on parallel multimode transmission, it enables efficient

400G DR4/FR4/VR4 Transceivers – SMF Data Center Links

DESCRIPTION The 400G DR4 / FR4 / VR4 optical transceivers are designed for medium and long-distance transmission over single-mode fiber. Compared to SR4 modules, these solutions provide

Cisco Transceiver Modules

Cisco now offers a range of all new 400G Digital Coherent QSFP-DD transceivers. Cisco already offers a range of Digital Coherent CFP2 transceivers capable of supporting up to a 200-Gbps

Making long-haul large-capacity 400G optical network a reality

In this Review, we describe the key technologies necessary for long-haul large-capacity 400G optical transmission.

400G Optical Transceivers | OEM Compatibility

What is a 400G optical transceiver? A 400G optical transceiver is a hot-swappable module that sits in a switch, router, or NIC and converts

400G QSFP-DD ER4 Optical Transceiver for Long-Distance 400G

At SATE Optics, we provide high-performance 400G optical transceivers designed to deliver exceptional interoperability, stability, and cost efficiency for modern networking environments.

Optical Transceivers

Optical transceivers have revolutionized data transmission, providing high-speed, long-distance, and secure data transmission capabilities. Optical transceivers have enabled the development of high

400G Ethernet Transceiver: The Ultimate Guide to 400G Optical ...

What is a 400G Ethernet Transceiver? Overview of 400G Transceiver Technology A 400G Ethernet transceiver can be defined as an incarnation of the data transmission unit, which operates

© 2026 ENSAA OPTICAL NETWORKS - All rights reserved

HTF 400G Muxponder: Ultra-Long-Distance Optical

In today''s rapidly evolving optical communication landscape, achieving high-capacity, ultra-long-distance data transmission has become a

Understanding the 400g Optical Transceiver: An In-Depth Overview

Optical Amplifiers and Repeaters: These devices boost signal strength over long distances, making sure data integrity is maintained across extensive networks. Implementing these

400G Optical Transceivers: Market Trends, Growth Drivers

Discover key factors driving the rapid adoption of 400G optical transceivers, including AI, 5G, coherent optics, and market trends shaping next-gen network infrastructure.

400G QSFP-DD DR4 Optical Transceiver

Optech is proud to announce that the 400G QSFP-DD DR4 Optical Transceiver is now availabale ! It is a cost effective and high quality solutions to upgrade to a 400G network.

AI Data Center Upgrades 2025: Best 400G & 800G

Plan AI data center upgrades for 2025. Expert guide to selecting the best 400G and 800G optical transceivers, cables, and network solutions for AI

How 400G Optical Transceivers Are Reshaping Data Center

Explore how 400G optical transceivers are transforming data centers in 2025. Learn about standards, architectures, and LINK-PP''s high-performance 400G solutions.

Differences and Trends in 100G, 400G, and 800G Optical Transceivers

Differences Between 100G, 400G, and 800G Optical Transceivers Transmission Distance: 100G optical modules typically support a transmission distance of up to 100m in multi

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

© 2026 ENSAA OPTICAL NETWORKS - All rights reserved

Contact Us

Continue your research online:

Website: https://ensaa.es
Technical inquiry: https://ensaa.es/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 ENSAA OPTICAL NETWORKS - All rights reserved