

How many kilometers is the ZR optical module



Overview

The 400G-ZR module is built for long-haul transmission, reaching up to 80 km using coherent optical technology. • This is the baseline OIF 400ZR standard for 400 Gbps coherent pluggables. It's fully open-standard, enabling multi-vendor interoperability, and is in the router-pluggable QSFP-DD format. This is an extended-reach variant supporting distances up to 2 km-10. Our family of ZR and ZR+ pluggable transceivers provides cost-efficient coherent transmission up to 400Gbit/s line speeds. Incorporating the latest silicon photonics and DSP technology, our coherent pluggable optics feature highly compact QSFP28 (100G ZR/ZR+) and QSFP-DD form factors (400G ZR/ZR+). Cisco QSFP-DD and OSFP 800G ZR/ZR+ digital coherent optics modules enable 800G traffic over amplified Dense Wavelength-Division Multiplexing (DWDM) links up to 120 km for 800ZR and over 1000 km for 800G ZR+. Coherent optical transmission manipulates three different light properties: amplitude, phase, and.



Article Content

Apr 30, 2026

400G ZR/ZR+ QSFP-DD-DCO | Lumentum

Capable of transmitting 400 Gbps over 120 km, Lumentum OSFP 400ZR coherent module features superior OSNR and power consumption in an OIF 400ZR Implementation Agreement and QSFP-DD ...

Jun 23, 2026

400G Optical Transceiver Guide | 400G OSFP SR4, SR8, DR4, FR4, ZR...

The 400G-ZR module is built for long-haul transmission, reaching up to 80 km using coherent optical technology. It is designed for metro and regional networks where long-distance ...

May 01, 2026

Guide to Optical Transceiver Standards

ZR/ZR+ – ZR stands for “Zero Dispersion Shifted Range” designed for long-distance connections up to 80 km (ZR+) between cities and different regions at 100G. Some of the latest transceivers, such as ...

Aug 27, 2025

Coherent ZR Series

Incorporating the latest silicon photonics and DSP technology, our coherent pluggable optics feature highly compact QSFP28 (100G ZR/ZR+) and QSFP-DD form factors (400G ZR/ZR+) and can be ...

Dec 20, 2025

400Gb/s QSFP-DD ZR+ Coherent Optical Transceiver

The 400G QSFP-DD ZR+ is a C-Band optical frequency tunable coherent optical module, combines 7nm coherent DSP ASIC functionality with best in class ultra-narrow line-width tunable ...

Apr 13, 2026

400G DCO QSFP56-DD ZR and ZR+ Optical Module

400G ZR is compliant with the Optical Internetworking Forum OIF-400ZR standard, and allows transmission of a 400G ethernet over a single optical wavelength. The typical budget of the 400G ZR ...

Apr 06, 2026

Coherent Optical Module: 400G QSFP-DD ZR/ZR+ Optical Module

Data Center Interconnection: The 400G QSFP-DD ZR/ZR+ optical module connects two 400G-capable switches (e.g., Cisco Nexus 9000 or Juniper PTX) via dual-core LC single-mode fiber patch cords, ...

Dec 22, 2025

Coherent Optical Module: 400G QSFP-DD ZR/ZR

Data Center Interconnection: The 400G QSFP-DD ZR/ZR+ optical module connects two 400G-capable switches (e.g., Cisco Nexus 9000 or Juniper PTX) via dual ...

Feb 14, 2026

Cisco QSFP-DD and OSFP 800G ZR/ZR+ Coherent Optics Modules ...

Cisco QSFP-DD and OSFP 800G ZR/ZR+ digital coherent optics modules enable 800G traffic over amplified Dense Wavelength-Division Multiplexing (DWDM) links up to 120 km for 800ZR ...

Mar 27, 2026

400G ZR/ZR+ pluggable coherent modules

400G modules and applications in the router-pluggable QSFP-DD format. Developed by the Optical Internetworking Forum (OIF) and released in March 2020, 400ZR is profile-optimized for high-density ...

Nov 02, 2025

400G Coherent Optics Guide: ZR, ZR+ & MZR Comparison

In practice, depending on the module, these can reach ~50km unamplified or ~75km unamplified at 400G and can scale up to ~2000 km at lower rates, offering unmatched flexibility. And ...

Contact Us

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