

400g optical module fiber optic cable



Article Overview

400G optical modules use either multimode fiber (MMF) for short-range links or single-mode fiber (SMF) for medium- to long-range connections, depending on the module type.

Short-Range Modules (SR8 / SR4.2)

For intra-data center connections, 400G modules like 400GBASE-SR8 and 400GBASE-SR4.2 use multimode fiber (MMF), typically OM3, OM4, or OM5. SR8 modules employ 8 parallel channels, each carrying 50G, with a maximum reach of 100 meters on OM4 fiber and around 70 meters on OM3 fiber. SR4.2 modules use 8 channels at 50G per channel, supporting distances up to 100 meters on OM4 and 70 meters on OM3, making them ideal for rack-to-rack or short intra-data center links (Cloudswit.ch, Fibermall, Arista) .

Medium-Range Modules (DR4 / FR4)

For medium-range connections, such as inter-data center links within a campus, 400GBASE-DR4 and 400GBASE-FR4 modules use single-mode fiber (SMF). DR4 modules typically use parallel SMF with 8 fibers, supporting distances up to 500 meters, while FR4 modules use duplex SMF and can reach up to 2 kilometers. These modules are suitable for high-speed aggregation and metro-area connections (Juniper, Fibermall) .

Long-Range Modules (LR4 / ER4)...

Article Content

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Ultimate Guide to QSFP-DD 400G Optical Modules: Everything

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

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Arista 400G Transceivers and Cables: Q& A

Arista supports a full range of 400G optical transceivers, Active Optical Cables (AOCs) and Direct Attach Copper cables (DACs) in

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800/400/200/100/40G Fiber Optical Modules

FS offers a growing portfolio of 800/400/200/100/40G optical transceiver modules and cables. The super-high density and backwards

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Overview of 400G DR4, FR4, LR4, and SR8 QSFP-DD Optical

Similar to the DR4, FR4, and LR4 modules, the 400G SR8 is widely used in short-reach intra-data center applications. Conclusion

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400G Optical Modules Explained: SR4 Vs. DR4 Vs. FR4 Vs. LR4

400G SR4.2 module is an updated version of the traditional 400G SR4 module, optimized for higher performance and

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Know Your 400G Transceiver | Juniper Networks

400 Gigabit Ethernet (400G) transceivers are optical modules capable of handling data rates of 400 Gbps. With a transmission rate

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400G Optical Transceivers | OEM Compatibility | Carritech Optics

What is a 400G optical transceiver? A 400G optical transceiver is a hot-swappable module that sits in a switch,

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400G QSFP-DD Transceiver Types and Fiber Connections

400G QSFP has become one of the most popular form factors in the next-generation network. And different types of

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Cisco 400G QSFP-DD Ultra Long Haul Coherent Optics Module Data

The Cisco 400G QSFP-DD Ultra Long-Haul Coherent Optics Module enables 400G traffic anywhere over dense

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Panduit Cable Ordering Guide For Cisco 400G Optics

The Cisco QDD-400G-FR4-S module supports link lengths of up to 2km SMF with duplex LC connector. It is compliant to IEEE

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400G Coherent Optical Devices: Architecture, Applications & Trends

Explore the architecture, key technologies, applications, and future trends of 400G coherent optical devices in modern

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Exploring the 400g PSM4 Optical Transceiver: A Comprehensive Guide

Discover the 400G PSM4 optical transceiver in our comprehensive guide. Learn about its compatibility, features, and

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400G Transceivers and Cables

400G transceivers are optical modules designed for ultra-high-speed data transmission. They are available in various form factors,

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Juniper 400G Optical Transceivers and Cables Guide

The 400G ZR/ZR+ and 0dBm tunable DWDM pluggable optical transceivers from Juniper are essential for metro

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

A: A 400G DR4 transceiver, as one of the 400G modules that use a four-element design, typically supports a reach of

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Panduit Cable Ordering Guide For Cisco 400G Optics

The 400 Gigabit Ethernet signal is carried over eight parallel pairs of fibers by 50Gbps signals per fiber. It can also be used as 8x

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Cisco 400G QSFP Transceiver Modules Data Sheet

High-bandwidth transceiver modules based on the QSFP112 form factor, targeting NICs used in data centers, high

May 29, 2026

Arista Optics Modules and Cables

Overview Arista's Optical Modules and Cable portfolio offer a wide variety of high-density and low-power 800G (dual 400G), 400G,

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Arista 400G Transceivers and Cables: Q&A

A 400G-2FR4 module has 2 of these links, resulting in a total of two pairs of single mode fiber (or 4 fibers total), and a total of 8

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Optical Transceivers

Optical transceivers have revolutionized data transmission, providing high-speed, long-distance, and secure data transmission

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400G vs 800G Optical Modules: Differences, Use Cases, and

Compare optical modules for data centers and AI clusters. Learn key differences in standards, power, cabling, and

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400G Optical Modules Explained: SR4 Vs. DR4 Vs. FR4 Vs. LR4

Key differences between SR4, DR4, FR4, and LR4 400G optical modules. Expert advice from Asterfusion engineers

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Understanding 400G Transceivers and Cables: Key Questions

Explore definitions, applications, and data center usage of 400G transceivers and cables. Get knowledge of the new

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400G Optical Transceiver Overview: A Beginner Guide

Final Words What is the 400G Optical Transceiver? 400G optical transceiver, also called 400G optics, or 400G optical

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OSFP 400G DR4 Explained: Standards, Cabling, MPO-12, and Breakout

If you need validated OSFP 400G DR4 optics, breakout cables, or compatibility guidance, the team at Network

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Understanding the OSFP 400G DR4 Optical Transceiver Module

Discover the OSFP 400G DR4 Optical Transceiver Module, a high-performance solution with a 1310nm wavelength,

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Know Your 400G Transceiver | Juniper Networks

However, a 400G module such as FR4 or LR4 that uses 4×100G optical lanes requires only four fibers (two duplex LC connectors) to

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

Differences Between 100G, 400G, and 800G Optical Transceivers Transmission Distance: 100G optical modules

Dec 10, 2025

High-Speed Transceivers: 400G, 800G, and the Leap to 1.6T

Technological progress in this field has been revolutionary, moving from 400G to 800G, and is now pushing the horizon

Aug 16, 2025

The Ultimate Guide to 400G QSFP-DD Transceivers and Cables

Discover the essentials of 400G QSFP-DD transceivers and cables, including optical modules, connectors, and MSA

Contact Us

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