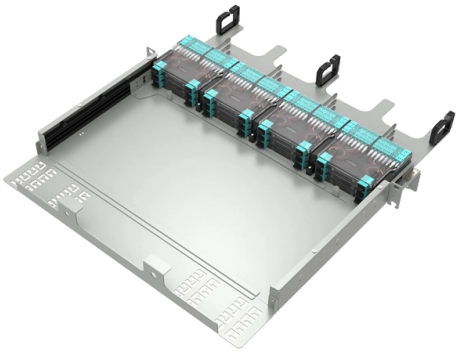
Optical Module LR4



Overview

Overview of QSFP28 LR4 Optical Transceiver The QSFP28 LR4 is a hot-pluggable, four-channel, and full-duplex 100GBASE QSFP-100G Modules Data Sheet The Cisco.

Key Takeaways

An LR4 optical module is a long-range, four-channel transceiver designed for high-speed data transmission over single-mode fiber, typically supporting distances up to 10 kilometers. What LR4 MeansLR4 stands for "Long Range 4", where "Long Range" indicates the module is designed for extended-distance transmission over single-mode fiber (SMF), and the "4" denotes that it uses four separate optical channels to transmit data in parallel. Each channel typically carries 25 Gbps in a 100G LR4 module, combining to achieve a total data rate of 100 Gbps.

For 400G LR4 modules, the principle is similar but scaled to higher aggregate speeds using multiple lanes.

Technical Details

Wavelengths: LR4 modules use four distinct wavelengths (commonly 1295 nm, 1300 nm, 1305 nm, and 1310 nm) for bidirectional communication over a single fiber pair. Modulation: Most 100G LR4 modules use NRZ (Non-Return-to-Zero) modulation, which provides a higher signal-to-noise ratio, while newer single-lambda 100G LR modules may use PAM4 for more efficient bandwidth utilization. Transmission Distance: Typically up to 10 kilometers over standard single-mode fiber (OS2), making it suitable for metro, regional, and inter-data center connections.

© 2026 FD SOLUCIONES OPTICAL SYSTEMS - All rights reserved

Connectors: LR4 modules generally use duplex LC connectors for single-mode fiber connections. Multiplexing: The four channels are multiplexed at the transmitter and demultiplexed at the receiver, allowing a single fiber pair to carry multiple wavelengths simultaneously. ApplicationsLR4 optical modules are commonly used in scenarios requiring long-distance, high-bandwidth connections, such as: Interconnecting data centers within a metropolitan areaEnterprise network backbonesTelecom and service provider infrastructureHigh-speed links in campus or regional networks Comparison with Other ModulesSR4 (Short Range 4): Uses multimode fiber for short distances (up to 300 meters) and four parallel channels.

ER4 (Extended Range 4): Supports longer distances (up to 40 km) with higher optical power. FR4 (Fiber Range 4): Designed for intermediate distances, typically up to 2 km. In summary, LR4 modules are optimized for long-distance, high-speed optical transmission using four parallel channels over single-mode fiber, making them a standard choice for 100G and 400G Ethernet links where distance and reliability are critical.

Article Content

100GBASE QSFP-100G Modules Data Sheet

The Cisco QSFP100 LR4 Module supports link lengths of up to 10km over a standard pair of G.652 single-mode fiber with duplex LC connectors. It

100G Optical Module: How to Choose Between SR4, DR4, FR4, LR4,

Long-distance modules (e.g., LR4/ER4) may have higher costs but offer reliable performance, justifying the investment for critical links. Today, we''ve delivered a clear and

100G LR vs LR4: Key Differences & Applications Guide | EDGE

Compare 100G LR vs LR4 optical modules. Learn about NRZ vs PAM4 modulation, channel differences, and which module fits your network needs best.

Huawei QSFP-DD-400G-LR4 Optical Module Datasheet

These compact optical transceivers. offer a convenient and cost-effective solution for short reach interconnections in the data center.

What Is QSFP28 LR4? In-Depth Analysis of Long

This article thoroughly reviews the core technologies of LR4, provides clear selection criteria, offers helpful tips for deployment, explores

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

© 2026 FD SOLUCIONES OPTICAL SYSTEMS - All rights reserved

Key differences between SR4, DR4, FR4, and LR4 400G optical modules. Expert advice from Asterfusion engineers to optimize your data center network.

SR4 vs LR4 vs ER4 vs ZR4: Which 100G QSFP28

Confused between SR4, LR4, ER4, and ZR4? We break down 100G QSFP28 modules by performance, cost, and compatibility. Stop guessing —

A Complete Guide to Selecting 100G QSFP28 Optical Transceivers:

Choose the best 100g qsfp28 optical transceiver for your network by comparing compatibility, distance, fiber type, and future-proofing options.

NADDOD Juniper Compatible 200G QSFP-DD 2xLR4 1310nm 10km SMF Optical ...

Juniper QDD-2X100G-LR4 Compatible 200GBASE-2xLR4 QSFP-DD 8x25G NRZ 1310nm 10km SMF DOM Dual CS Duplex Optical Transceiver Module The QDD-200G-2xLR4 transceiver module is

Optical Transceiver Module Wholesale,10g/25g/40g/100g SFP+ Optical ...

Fiber optic module manufacturer,ETU-Link supply full model optical transceivers,including standard 8g/10g/25g/40g/100g sfp+ optical modules and copper RJ45 transceiver,wholesale at factory price!

Used Ubiquiti 100G LR4 Single-Mode Optical Module QSFP28

UBB Store Ubiquiti 100G LR4 Single-Mode Optical Module QSFP28 Transceiver Supports 100G For Sale When you click on links to various merchants on this site and make a purchase, this can result

100GBASE QSFP-100G Modules Data Sheet

It also interoperates with Cisco''s QSFP100 and CPAK IEEE 100GBASE-LR4 modules up to 10km. Cisco QSFP-100G-B20U4-I and QSFP

100Gbps QSFP28 LR4 Optical Transceiver Module for Data Centers

TKQS28-100G-LR4 is a 100Gbps transceiver module designed for optical communication applications compliant to 100GBASE-LR4 of the IEEE P802.3ba standard. The module converts 4x 25Gbps

Optical module

An optical module is a typically hot-pluggable optical transceiver used in high-bandwidth data communications applications. Optical modules typically have an electrical interface on the side that

OSFP Transceivers: High-Density Optical Connectivity from 400G to

© 2026 FD SOLUCIONES OPTICAL SYSTEMS - All rights reserved

As hyperscale data centers shift toward AI-optimized fabrics and ultra-high-bandwidth switching platforms, the OSFP (Octal Small Form-Factor Pluggable) form factor has become central

Arista QDD-200G-2LR43 | 200G QSFP-DD Transceiver, 2x100G-LR4,

The Arista QDD-200G-2LR43 is a hot-pluggable QSFP-DD optical transceiver designed for high-speed 200 Gigabit Ethernet applications in data center and enterprise networks. Featuring 2x 100GBASE

Understanding High-Speed Transceiver Tests | 100G & 400G Optical ...

In this article, we''ll explain why high-speed optical transceiver testing matters, which tests are most important, and how to choose modules that deliver long-term stable performance.

100G to 1.6T Optical Module PHY Product Selection Guide

100G to 1.6T Optical Module PHY Product Selection Guide Broadcom''s Optical Module PHY portfolio spans multiple technology nodes — 16nm, 7nm and now 5nm, with data rates from 100 Gbs to 1.6

Related Video Reference

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

Contact Us

Continue your research online:

Website: https://fdsoluciones.es
Technical inquiry: https://fdsoluciones.es/project-enquiry.html

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

© 2026 FD SOLUCIONES OPTICAL SYSTEMS - All rights reserved