

# Types of Long-Distance Optical Modules



## Overview

Long-distance variants, typically referred to as LX, EX, ZX, or ER/LR SFPs, are engineered with higher optical power budgets and longer wavelength lasers (e., 1310nm, 1550nm), enabling transmission distances from 10 km up to 80 km or more over single-mode fiber (SMF). Unlike short-reach optics that operate over multimode fiber at 850 nm, long. Guide to Types, Specs, and How They Work – Optical Transceiver Manufacturer -SFP+ Optical Transceivers,Fiber Optic Transceivers,Fiber Optic Cables -Svelolsfp What Are Long-Distance Optical Modules?

Guide to Types, Specs, and How They Work Optical modules are fundamental components in fiber optic. DR (Distance Range): Up to 500 meters, using single-mode fiber for inter-data center links. ER (Extended. SFP (Small Form-factor Pluggable) modules are standardized network transceivers that support a range of data rates (1G, 10G, 25G) and fiber types. The chips are essential ingredients in the 600+ subsea Internet cables that crisscross the oceans (see map here) and the extended geographic links weaving together telecommunications networks. An optical module is a device in an optical fiber communication system responsible for converting electrical signals into optical signals, or conversely, converting optical signals into electrical signals. This conversion process is achieved using lasers or photodiodes.

## Article Content

Mar 05, 2026

Optical module selection for long-distance transmission

In long-distance transmission, single-mode optical modules are the first choice due to their smaller core diameter and lower transmission loss. Single

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Five Things to Know About the Future of Long Distance

While 800G coherent DSPs and modules began sampling last year and are now starting to become more commercially available, work is already

Oct 15, 2025

Long Distance UAV FPV Fiber Optic Module 3KM 5KM 10KM 20KM

Material Carbon Fiber, ABS, Ceramic brand name CFOFC private mold Yes place of origin Guangdong, China Type RC Quadcopter Parts, RC Helicopter Parts, RC Airplane Parts Gender Unisex Age

Feb 01, 2026

FS Community

Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

Aug 10, 2025

What are the types of optical modules

The transmission distance of the optical module is divided into three types: short distance, medium distance and long distance. It is generally considered that 2KM and below are short distances, 10

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How to choose an optical fiber link and an SFP module?

What cables suit an SFP module? What distance can be there between SFP modules? And many other questions. The main advantages of optical fiber

Feb 07, 2026

Optical module selection for long-distance transmission

This article will delve into the selection of optical modules for long-distance transmission, from basic concepts to technical details to practical

Oct 13, 2025

## Optical Modules: The Backbone of Next-Generation

Overview: Why Optical Modules Are Fundamental to Modern Telecom Optical modules, also known as optical transceivers, are essential components

Nov 24, 2025

## Comprehensive Knowledge Of Long-distance Optical

Among the types of optical modules SFP, SFP+, SFP28, QSFP+, and QSFP28, there are long-distance optical modules. The common specifications of

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## The Difference Between Long-distance Optical Modules

Long distance optical modules address the needs of long-distance transmission, such as urban area network construction and synchronous fiber

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## Long Distance Transceiver: Types, Reach and Selection Guide

This guide provides a technically accurate and standards-aligned explanation of long distance transceivers, including reach classifications, wavelength considerations, optical link budget

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## Understanding Single-mode and Multi-mode Optical

Single-mode optical modules are optimized for long-distance transmission, thanks to their ability to minimize signal loss and dispersion. They are commonly employed

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## SFP Optical Transceiver Modules for Long Distance: A

Discover everything you need to know about SFP optical transceiver modules for long-distance fiber transmission. Compare LX, EX, ZX models and

Aug 06, 2025

## 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 to optimize your data center network.

Dec 06, 2025

## Introduction to Common 100G Optical Module Types,

By understanding the different types of 100G optical modules available, their advantages, and application scenarios, organizations can make informed

Dec 03, 2025

### SFP Optical Module Selection Guide for 2025: Key

Explore our comprehensive SFP optical module selection guide for 2025. Learn about crucial factors like data rate, distance, fiber type, and

Sep 11, 2025

### Key Differences Between Single-Mode and Multimode

Compare single-mode and multimode optical modules by core size, distance, speed, and cost. Choose the right module for your network's needs.

Nov 03, 2025

### Cisco 40GBASE QSFP Modules Data Sheet

Cisco FET-40G Cisco FET-40G QSFP Modules are fabric-extender transceiver modules used to connect to fabric links (links between the fabric extender switch and the parent switch). The

Apr 30, 2026

### Optical module transmission distance and related classification

There are long-distance optical modules in the types of SFP optical modules, SFP+ optical modules, XFP optical modules, 25G optical modules, 40G optical modules and 100G optical

Aug 26, 2025

### Optic Modules Datasheet

These platforms support multiple interface types and technologies such as Ethernet, ATM, and SONET. Depending on the deployment scenario, they support different pluggable optic modules that can be

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### Long Distance Optical Module Characteristics and Application

Among them, the long-distance SFP+ optical module uses EML laser components and photodetector components to reduce the power consumption of the optical module while also improve the

Jan 23, 2026

### Long Distance Transceiver: Types, Reach and Selection Guide

Complete guide to long distance transceivers covering 10km to 120km optics, 1310nm vs 1550nm, ER/ZR modules, link budget calculation, and deployment best practices.

Jan 03, 2026

What Are Long-Distance Optical Modules? Guide to Types, Specs,

Bysvelolsfp18.01.202618.01.2026 Optical modules are fundamental components in fiber optic communication networks, serving as essential photoelectric converters. A key performance

Nov 30, 2025

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right module for your fiber network.

Jul 21, 2025

Comprehensive Guide to Optical Transceiver

Understanding their classifications and types is essential for selecting the appropriate module for specific networking requirements. This guide covers

Dec 18, 2025

Laser Types in Optical Transceivers: A Comprehensive

Optical transceivers are critical components in modern fiber-optic communication systems, acting as the bridge between electrical and optical

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10G Optical Modules: Short-Range vs. Long-Range Comparison Guide

Understand short-range and long-range 10G optical modules in terms of distance, budget, energy use, and scalability to make the right choice.

Feb 08, 2026

What Are Long-Distance Optical Modules? Guide to Types, Specs,

Short-Distance: Supports links up to 2 km. Medium-Distance: Supports links of 10 km to 20 km. Long-Distance: Supports links of 40 km and beyond (common specs include 40km, 80km,

Jun 24, 2026

Which Types of SFP Modules Are Suitable for Long-Distance

Understanding which specific types of SFP modules excel in long-distance applications enables network engineers and telecommunications professionals to make informed decisions when

## Contact Us

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