

# Lowest distance of optical module



## Overview

The transmission distance of optical module is divided into short distance, medium distance and long distance.  $\geq 30\text{km}$  is long distance transmission. Whether deploying enterprise switches, telecom backbones, or data center links, engineers often assume that speed (1G, 2.5G, or 10G). The optical module serves as a crucial component in optical fiber communication systems, operating at the physical layer, which is the lowest layer in the OSI model. Its primary function is to achieve optoelectronic conversion by converting electrical signals into optical signals and vice versa. Optical modules generally have the following specifications: multi-mode 550m, single-mode 15km. Gray optical modules typically operate in the range of 850 nm to 1550 nm. Light commonly used in optical fiber is 850nm. Application Field: SR modules are the workhorses of data centers, facilitating high-speed connections for intra-data center communication.



## Article Content

Aug 31, 2025

Optical module selection for long-distance transmission

Next, we discuss wavelength selection. The wavelengths of optical modules usually include 850nm, 1310nm, 1550nm, etc. Among them, the 1550nm

Jan 09, 2026

Understanding the Transmission Distance of Optical

In the complex world of network design, understanding the reach of optical modules is crucial. From ensuring fast, local connections with SR to

Aug 05, 2025

Optical Modules: The Backbone of Next-Generation

They form the backbone of long-distance, high-capacity data transport in modern telecom networks. Deployed across fronthaul, midhaul, and backhaul

Jun 10, 2026

The relationship between wavelength and transmission

The transmission distance of optical modules is divided into short distance, medium distance, and long distance. Short distance transmission usually refers to

Jan 23, 2026

Fiber Optic Cable Range: Comprehensive Guide

How Does Fiber Optic Cable Range Work? Fiber optic cable transmission distance is determined by two primary physical factors that affect

Nov 18, 2025

Wavelength and transmission distance of optical modules

The transmission distance of optical module is divided into short distance, medium distance and long distance. Usually short distance

Nov 20, 2025

What is the relationship between optical module wavelength and ...

It is divided into three types: short-distance, medium-distance, and long-distance. Generally speaking, 2km and below are short distances, 10-20km are medium distances, and 30km, 40km and above are

Apr 22, 2026

### Comprehensive Knowledge Of Long-distance Optical

Optical modules are the most common optoelectronic converter components. In optical communication networks, transmission capacity is the

Apr 18, 2026

### What are the detailed parameters of the optical module

What are the detailed parameters of the optical module? Optical module center wavelength, transmission distance, loss and dispersion, laser type, fiber interface, etc. Let's take a

Sep 09, 2025

### 100G QSFP28 Optical Module Selection Guide: Medium to Long

Choose 100G LR4 or 100G ER4. 100G LR4 supports 10KM transmission distance, while 100G ER4 supports up to 40KM transmission distance. Both modules use single-mode optical fiber

Aug 10, 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.

Feb 26, 2026

### “Understanding Transmission Distance: Short-Range vs

Do you really need a 10km module for a 300m connection? Many customers unknowingly overspend by not matching transceiver distance with real

Apr 19, 2026

### 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

Nov 27, 2025

### Exploring the Correlation Between Optical Module Wavelength and ...

This article delves into the correlation between optical module wavelength and transmission distance, shedding light on the complexities that impact the efficiency of data transmission.

Jun 09, 2026

## What Are the Key Parameters of Optical Modules

Understand the key parameters of optical modules, including transmission rate, distance, wavelength, and fiber compatibility, for better network

Dec 04, 2025

## Fiber Optic Cable Distance: A Comprehensive Guide

Even if the optical signal power is low, the receiver can still detect and decode the signal correctly, extending the transmission distance of fiber optic

Jan 22, 2026

## How to Estimate an Optical Module's Transmission

Optical modules distinct from one another in their transmission distance, a feature that should be taken into account in addition to other

Jan 05, 2026

## 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

Apr 26, 2026

## Understanding Transmission Distance: Short-Range vs

Understanding Transmission Distance: Short-Range vs Long-Range Optical Modules! Do you really need a 10km module for a 300m connection?

Nov 20, 2025

## Basic Knowledge Of Optical Module Transmission Distance

Optical module transmission distance refers to the distance that the optical signal travels from the transmitting end to the receiving end within a fiber optic system.

Apr 25, 2026

## Exploring the Correlation Between Optical Module Wavelength and ...

Generally, distances of 2 km and below are considered short, 10 to 20 km are medium, and 30 km, 40 km, and above are long distances. Different wavelengths of optical modules paired

Nov 08, 2025

## What are the detailed parameters of the optical module

Loss and dispersion: the two mainly affect the transmission distance of the optical module. Generally, the link loss is calculated at 0.35dBm/km for the 1310nm optical module, and

Oct 23, 2025

SFP Distance Explained: Real-World Range, Limits, and Optics

Understand SFP distance, fiber optic range, and real-world limits of SR/LR modules. Learn how wavelength, fiber type, and optics affect performance.

Mar 16, 2026

Wavelength and transmission distance of optical modules

This is related to the optical signal transmission medium fiber loss. Through continuous research experiments, people found that fiber loss usually

## Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://piano-lessons.co.za>

Email: [info@piano-lessons.co.za](mailto:info@piano-lessons.co.za)

Phone: +31 6 37258914

Address: Herengracht 123, 1015 BT Amsterdam, Netherlands

This document is for informational purposes only. Specifications subject to change without notice.

