

Fiber specifications



Article Overview

Fiber optic specifications define the type, core size, bandwidth, transmission distance, and application suitability for single-mode and multimode fibers.

Types of Fiber

Single-Mode Fiber (SMF) has a small core diameter of 8-9 μm , allowing only one mode of light to propagate. It operates primarily at 1310 nm and 1550 nm wavelengths, offering low attenuation and minimal dispersion, making it ideal for long-distance communications up to 100 km or more with optical amplifiers and dispersion compensation. ITU-T G.652 is a widely used standard for single-mode fibers, specifying geometrical, optical, transmission, and mechanical parameters to ensure consistent performance. Multimode Fiber (MMF) has a larger core, typically 50-62.5 μm , allowing multiple light modes. It operates at 850 nm and 1300 nm wavelengths and is suitable for short-distance interconnections (up to 550 m) within buildings or data centers. MMF uses lower-cost light sources like LEDs or VCSELs.

Multimode Fiber Standards

ISO/IEC defines OM1, OM2, OM3, OM4, and OM5 multimode fibers:

- OM1: 62.5 μm core, LED source, orange jacket, suitable for legacy 1 Gbps networks.
- OM2: 50 μm core, LED source, supports higher bandwidth than OM1.
- OM3: 50 μm core, laser-optimized, supports 10 Gbps up to 300 m.
- OM4: 50 μm core, enhanced laser-optimized, supports 10-100 Gbps up to 550 m....

Article Content

Jun 15, 2026

Optical Fiber Product Information Sheets

An all inclusive list of the various optical fiber specification sheets.

Aug 17, 2025

Overview of optical fibres standardization

The specification of single-mode fibres is thus based on a series of 6 ITU-T G.65x recommendations (G.652, G.653, G.654, G.655,

Sep 15, 2025

Optical Fiber Technical Information

Find essential technical information on optical fibers at Ocean Optics today! Learn about fiber types, specifications, and applications

Jul 07, 2026

Single-Mode Optical Fiber (SMF)

The fiber complies with or exceeds the ITU-T Recommendation G.652.B, the IEC International Standard 60793-2-50 type B.1.1

Apr 30, 2026

Single-Mode Fiber Cable Guide: Types, Specs & Selection

This comprehensive guide explores Single-Mode Fiber Optic Cable, covering technical specifications, deployment

Jul 17, 2026

Specifications For Fiber Optic Networks

The Fiber Optic Association - Reference Guide Specifications For Fiber Optic Networks Per current standards and specs, maximum

Nov 25, 2025

Optical fiber

An optical fiber, or optical fibre, is a flexible glass or plastic fiber that can transmit light from one end to

Aug 05, 2025

OM1 vs OM2 vs OM3 vs OM4 vs OM5 Multimode Fiber Guide

Compare OM1, OM2, OM3, OM4, and OM5 multimode fiber specs, distances, bandwidth, and applications. Essential

Oct 03, 2025

FEATURES AND SPECIFICATIONS Fibre Cable Distribution Grade

Features and Benefits Molex OM4 fibre is a graded-index multimode fibre with extended reach, optimised for 10Gb/s transmission

Mar 30, 2026

Multimode Optical Fiber Selection & Specification

The OM fiber classification is often referenced in both LAN and DC applications. In general, the higher the OM numerical digit, the

Dec 29, 2025

Optical Fiber Specifications: A Guide by EXA Infrastructure

Optical fiber is a type of high-capacity transmission medium that uses light to carry signals over long distances. specifications are

May 27, 2026

Standards make fiber-cable specification easier

Fiber specifications contain detailed measurements and tolerances for core and cladding diameter, the degree of

Aug 13, 2025

2024 Optical Fiber Reference Guide

Trusted by leading entities worldwide, customized Fiber Lab solutions are built to your specifications and include high-precision

Jun 10, 2026

CORNING OPTICAL COMMUNICATIONS GENERIC SPECIFICATION

2.0 Fiber Specifications 2.1 Detailed information on the cabled performance of the fiber types available for this cable design can be

May 21, 2026

Fiber Optic Cable Specifications Guide

Fiber Specifications 4-13.pdf - Free download as PDF File (.pdf), Text File (.txt) or read online for free. This document provides

Aug 19, 2025

SINGLE-MODE OPTICAL FIBER IN LOOSE TUBE AND RIBBON

1.0 General Fiber Specifications 1.1 All fibers in the cable must be usable and meet required specifications. 1.2 Each optical fiber

Jul 04, 2026

Fibre Specification | Technicals | Belcom Cables

The fibre complies with or exceeds IEC 60793-2-10 type A1b Optical Fiber Specification, ISO/IEC 11801 OM1 / OM2, TIA/EIA

Aug 26, 2025

FOA Guide To Fiber Optics

This is the FOA's Online Guide To Fiber Optics, Fiber Broadband & Premises Cabling. It includes almost a thousand pages of

Aug 15, 2025

FIBRE OPTIC CABLES GENERAL SPECIFICATIONS

FIBRE OPTIC CABLES GENERAL SPECIFICATIONS ... * All attenuation values are valid for cabled fibres ** Zero Water Peak

Sep 17, 2025

Multimode Fiber Types: OM1 vs OM2 vs OM3 vs OM4 vs OM5

Identified by ISO 11801 standard, multimode fiber optic cables can be classified into OM1 fiber, OM2 fiber, OM3 fiber,

Apr 16, 2026

FIBER PROPERTIES & SPECIFICATIONS

General Description There are various types of fibers with their unique properties and specifications that made them suitable for

May 01, 2026

Multimode Fiber Types: OM1 vs OM2 vs OM3 vs OM4 vs OM5

How Many Types of Multimode Fiber? Identified by ISO 11801 standard, multimode fiber optic cables can be classified

May 21, 2026

Recommendation ITU-T G.652 (08/2024)

This document outlines the specifications for a single-mode optical fiber and cable designed for use around the 1310 nm zero

Jan 09, 2026

Multimode Fiber Data Sheet

All fibers are designed for use at 850 nm and/or 1300 nm. In addition, the fibers are suitable for use in premises wiring application like

Jun 11, 2026

Fiber Optic Cable Types Explained

Our comprehensive guide to types of fiber optic cables. Learn all about the differences between single mode and multimode cables,

Contact Us

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