Model and Specification Table of Telecommunication Optical Cables



Overview

Handbook Optical fibres, cables and systems The optical fibres are specified in ITU-T with reference to the geometrical, optical, transmission and mechanic.

Key Takeaways

Telecommunication optical cables are classified by fiber type, core/cladding size, wavelength, and compliance with ITU-T and IEC standards, with models including G. 652, G. 657, OM1–OM4, and G.

654–G. 656 for various applications. Fiber Types and ModelsSingle-mode fibers (SMF) are primarily used for long-distance and high-speed transmission.

Common ITU-T models include: G. 652 (Standard SMF): Optimized for 1310 nm, low water peak, suitable for metropolitan and access networks. G.

652C/D: Low water peak fibers for CWDM systems, supporting 1310–1625 nm. G. 657 (Bending-resistant SMF): Designed for FTTH and optical distribution networks, minimizing macro-bending losses.

G. 654, G. 655, G.

656: Specialized fibers for long-haul, high-capacity, or dispersion-managed networks. Multimode fibers (MMF) are used for shorter distances, such as LANs and data centers: OM1 (62. 5/125 µm): Legacy applications, LED sources, 850/1300 nm.

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OM2 (50/125 µm): Supports higher bandwidth, LED or VCSEL sources. OM3/OM4/OM5 (50/125 µm, laser-optimized): High-speed data, 10–400 Gbps, suitable for VCSEL and laser sources. Core and Cladding DimensionsSingle-mode fibers: Core ~8–10 µm, cladding 125 µm.

Multimode fibers: Core 50–62. 5 µm, cladding 125 µm. Outer coatings vary by cable type and environmental requirements.

Wavelength and TransmissionSingle-mode: 1310 nm (low dispersion), 1550 nm (long-haul, low attenuation), 1625 nm (CWDM). Multimode: 850 nm and 1300 nm for LED/VCSEL sources.

Cable Specifications

Mechanical and environmental performance: Tensile strength, crush resistance, temperature range, water-blocking, and UV resistance. Attenuation: Typically measured at 1310 nm and 1550 nm for SMF; 850 nm and 1300 nm for MMF. Chromatic dispersion: Specified per ITU-T G.

65x series, critical for high-speed transmission. Standards compliance: ITU-T (G. 65x series), IEC 60793, ISO/IEC 11801, TIA/EIA-492, Telcordia GR-20/GR-409.

ApplicationsFTTH and access networks: G. 657 fibers, bend-insensitive SMF. Metropolitan and long-haul networks: G.

652, G. 654, G. 655 fibers.

Data centers and LANs: OM3/OM4 multimode fibers for high-speed interconnects.

Summary

Telecommunication optical cables are selected based on fiber type, transmission distance, wavelength, and environmental conditions. Single-mode fibers dominate long-distance and high-speed networks, while multimode fibers are used for shorter, high-bandwidth applications. Compliance with ITU-T, IEC, and Telcordia standards ensures interoperability, reliability, and performance across global networks.

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Article Content

Handbook Optical fibres, cables and systems

The optical fibres are specified in ITU-T with reference to the geometrical, optical, transmission and mechanical attributes listed in Table 1-1. However, as shown in the same table, for some attributes

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

Characteristics of a single-mode optical fibre and cable Summary Recommendation ITU-T G.652 describes the geometrical, mechanical and transmission attributes of a single-mode optical

Optical fiber tables and chromatic dispersion specs

In this table, 802.3 has analyzed available information on connector loss, optical return loss and PMD in order to define optical channel characteristics for those parameters that are specific to these PMDs.

Fiber Optic Cable Catalog

These products and the others found in this catalog are the result of Proterial Cable''s relentless desire to manufacture the finest communication cables in the world.

Fiber optic cable Catalog

Optical Fiber Core could be applied as G.652.D, G.655, G.657.A1, G.657.A2, OM1, OM2, OM3, OM4 according to needs. Maximum Tensile Strength could be changed according to technical demand.

Product Specification Sheets

Our team will make sure the configuration is tailored to your needs and will provide a detailed quote. Email us using the Request a Quote below, or give our team a call.

Optical Fiber Product Information Sheets

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

Optical Fibre Cable Technical Specification

The standard optical cable structure is shown in the following table, other structure and fibre count are also available according to customer requirements. The mechanical and environmental performance

Fiber Optic Cable Specifications Guide

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This document provides specifications for single mode and multimode optical fibers according to various ITU-T and IEC standards. For single mode fibers, it lists parameters such as attenuation, dispersion,

Fibre Optic Cable

The following icons are used throughout this catalogue to represent the fibre optic cable specification, features and value added services that FibreFab can offer:

Overview of optical fibres standardization

2. Historic Optical fibres used in telecommunications and data transport networks are standardized internationally under the guidance of several organizations.

Fiber Optic Cables Selection Guide: Types, Features, Applications ...

Fiber optic cables are composed of one or more transparent fibers enclosed in protective coverings and strength members. Fiber optic cables allow signals, such as light, to travel through without

directory-list-2.4.txt/directory-list-2.4.txt at main

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CORNING OPTICAL COMMUNICATIONS GENERIC SPECIFICATION

2.0 Fiber Specifications 2.1 Detailed information on the fiber types available for this cable design can be found in the following documents: Dispersion Unshifted and Non-Zero Dispersion-Shifted Single

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-dispersion wavelength, suitable for both the 1310 nm and 1550 nm regions,

Optical Fibre Cable Technical Specification

1. Scope This Specification covers the design requirements and performance standard for the supply of optical fibre cable in the industry. XCOM ensures a stable quality control system for our cable

Optical Fiber and Cable Characteristics

The tables in this edition have been renumbered. Tables 1 and 2 of this edition 9 correspond respectively to Tables 2 and 4 of edition 8. New clause 5 “Conventions” has been added. Following

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

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