

Standard Table for Classification of Optical Cable Line Levels



Overview

International standard ISO/IEC 11801 Information technology — Generic cabling for customer premises specifies general-purpose systems () that are suitable for a wide range of applications (analog and ISDN telephony, various standards, building,). It is published by //WG 3 of the (ISO) and the (IEC). It cover.

Article Overview

Optical cable lines are classified by fiber type, transmission distance, bandwidth, and application, following ITU-T and ISO/IEC standards.

Optical Cable Classification Table

Level / Type	Fiber Type	Typical Bandwidth	Maximum Distance	Typical Applications	Standard References
OS1	Single-mode	Up to 1 Gbps (legacy)	≤ 2 km (indoor)	Indoor backbone, short-distance building connections	ITU-T G.652, ISO/IEC 11801
OS2	Single-mode	10 Gbps and above	≥ 10 km (outdoor)	Long-distance, campus backbone, data center interconnects	ITU-T G.652, G.657
OM3	Multimode (laser-optimized)	10–40 Gbps	300–400 m	Enterprise LANs, 10G/40G links	ISO/IEC 11801, TIA-568
OM4	Multimode (enhanced laser-optimized)	10–100 Gbps	400–550 m	High-speed LANs, 40G/100G links	ISO/IEC 11801, TIA-568
OM5	Multimode (wideband, SWDM)	40–400 Gbps	150–550 m	Data centers, short wavelength division multiplexing (SWDM)	ISO/IEC 11801, TIA-568
Loose Tube	Single or multimode	Varies by fiber	Long-distance outdoor	Outdoor backbone, high fiber count	ITU-T G.652, G.655
Ribbon Cable	Single or multimode	Varies	Medium to long	Mass fusion splicing, high-density applications	ITU-T G.657
Unitube / Multitube	Single or multimode	Varies	Short to long	L...	

Article Content

Jan 07, 2026

Fiber Optic & Cable Standards Guide | FiberMania Standards

Get a complete guide to fiber optic & related products standards—from basics to advanced, covering all key details for

Jul 24, 2026

Fibre Optic Cabling Basics

The EN 50173-1 standard describes different categories of fibre-optical cables (OM1, OM2, OM3, OM4, OS1, OS2) and different

Dec 26, 2025

OPTICAL FIBER CLASSIFICATIONS UNDER ISO 11801 & EN

A lot better known and more widely used than plastic fibre optics, these glass fibres are special in that they can carry several light

Sep 02, 2025

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics

Aug 12, 2025

Fiber Optic Cable Types | SMB & Campus Backbones –

Practical guide to fiber optic cable types for SMB and campus networks. Compare OS2 vs

Jan 29, 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

Oct 22, 2025

Optical Fiber and Cable Characteristics

Chromatic dispersion specification for G.652.D fibres has been changed into boundary line specification. In clause 6.10 the text

May 29, 2026

ISO/IEC 11801

OverviewClasses and categoriesAbbreviations for twisted pairs2017 editionVersionsFurther reading

International standard ISO/IEC 11801 Information technology — Generic cabling for customer premises specifies general-purpose telecommunication cabling systems (structured cabling) that are suitable for a wide range of applications (analog and ISDN telephony, various data communication standards, building control systems, factory automation). It is published by ISO/IEC JTC 1/SC 25/WG 3 of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). It cover

Feb 19, 2026

The Fiber Optic Association

Standards for premises cabling are described in the FOA Reference Guide to Premises Cabling. More detailed information can be

Nov 10, 2025

Fibre Optic Cabling Basics

Fibre Optic Cabling Basics Fibre Optic Cabling Basics The EN 50173-1 standard describes different categories of fibre-optical cables

Oct 26, 2025

Optical Level

There are optical connectors and splices that have loss, and of course the cable itself has loss. To an extent, the loss in the optical

Apr 20, 2026

Fiber-optic cable

A fiber-optic cable, also known as an optical-fiber cable, is an assembly similar to an electrical cable but containing one or more

Nov 25, 2025

Fiber Optic Cable Types – Multimode and Single Mode

The Optical Core – a glass tube (core) propagates the light signals through the fiber cable. Glass is inherently reflective and is a

Apr 10, 2026

The FOA Reference For Fiber Optics

Designers of fiber optic cable plants and networks depend on these specifications to determine if networks will work for the planned

Jun 08, 2026

The FOA Reference For Fiber Optics

(Here is a table of link losses from industry standards for many links.) The designer should analyze link loss early in the design stage

Jul 22, 2026

What does OS1, OS2, OM1, OM2, OM3 and OM4 mean? | Proterial

These are fiber optic cable designations that originated in the international ISO/IEC 11801 standard. The designations indicate a

Mar 16, 2026

Fiber Optic Cable Types: A Complete Guide

The plethora of fiber optic cable types can seem overwhelming, but choosing the right cable

Oct 22, 2025

Structured Cabling Specifications and Standards

Structured Cabling Specifications and Standards In the past, companies often had several cabling infrastructures because no single

Jun 14, 2026

Optical fibre standards and norms

In the case of optical fibres, the appropriate group for describing standards on the characteristics of transmission media and photonic

Jul 05, 2026

The differences between optical fiber grades A, B, C, and D

In summary, optical fiber grades A, B, C, and D differ significantly in terms of their end-face quality standards, which directly impact

Dec 03, 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,

Nov 29, 2025

The FOA Reference For Fiber Optics

Topic: Fiber Optic Cable Table of Contents: The FOA Reference Guide To Fiber Optics
Fiber Optic Cable

Aug 08, 2025

The differences between optical fiber grades A, B, C, and D

These grades are defined by standards that specify acceptable tolerances for various geometric parameters of the fiber end-face.

Jun 03, 2026

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

Sep 08, 2025

FIBER OPTIC STANDARDS

The attachment of communication cables to transmission line poles is limited to JEA owned fiber optic cables only. The installation

Nov 04, 2025

ISO/IEC 11801

International standard ISO/IEC 11801 Information technology — Generic cabling for customer premises specifies general-purpose

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