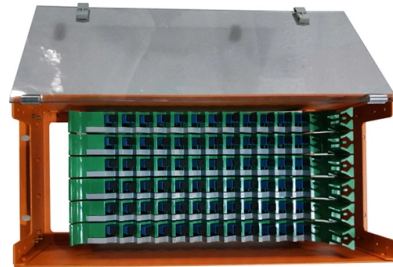


Types of optical cables used for communication



Article Overview

The main types of optical cables are single-mode fiber (SMF) for long-distance communication and multimode fiber (MMF) for medium-distance, high-speed data transmission.

Single-Mode Fiber (SMF)

Single-mode fiber features a very thin core, typically 8–9 μm in diameter, allowing only one light signal (mode) to propagate. This design minimizes signal dispersion, enabling data to travel long distances—up to 40 km or more—without significant signal degradation. SMF is ideal for telecommunications, long-haul networks, and high-bandwidth applications. It usually uses laser diodes as the light source and is commonly designated as OS2 for long-distance applications .

Multimode Fiber (MMF)

Multimode fiber has a larger core, typically 50 μm or 62.5 μm , which allows multiple light signals to travel simultaneously. MMF is suitable for shorter distances, such as within buildings or campus networks, and supports high-speed data transmission over medium-range distances. Common multimode types include OM3 and OM4, which are optimized for 10G, 40G, and 100G speeds up to 550 meters .

Core Components...

Article Content

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Multi-mode optical fiber

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Fiber Optic Cable Types by Application | Lightera

Communications Lightera provides high-strength fiber cables for use in various industrial, indoor, and

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