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Optical fiber duplex patch cord LC/PC, Multi-mode (MM) OM3, LSFH indoor

Multi-mode (MM) optical-fiber duplex patch cord Pre-terminated with LC/PC connectors for the connection of the elements of an optical network. Furthermore, since they are duplex, they are suitable for use in point-to-point networks that use the same window for both upstream and downstream traffic. The sheath being LSFH, it is recommended for indoor use. Supplied in individual packing.

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Highlights

- Includes identifiers for each of the fibers
- Includes aramid fibers to reinforce its structure
- Multimode OM3 ITU-T G.651.1 fiber type
- Duplex patch cord: two fiber cables
- LSFH sheath, aqua blue
- LC/PC connectors
- 2m long

Discover

Multimode fiber types

Multimode (MM) optical fiber is that which can transmit **more than one light mode simultaneously**, allowing multiple signals to be propagated at the same time. Its main advantage over single-mode (SM) fiber is the lower cost of both the fiber and the optical devices, making it an **ideal solution for short distances**, such as enterprise networks, communications rooms or data centers.

Multimode fiber cables are classified into **5 categories**, called OM (Optical Multimode), from OM1 to OM5, and are mainly differentiated by their **transmission speed in relation to distance**.

The following table shows the distance that each category reaches according to the transmission speed:

Category	Fast Ethernet	Gigabit Eth.	10Gigabit Eth.	40Gigabit Eth.	100Gigabit Eth.
OM1	2000m	275m	33m	-	-
OM2	2000m	550m	82m	-	-
OM3	2000m	-	300m	100m	70m
OM4	2000m	-	550m	150m	150m
OM5	-	-	550m	150m	150m

Additionally, multimode fibers differ in several factors:

- **OM1** fibers have a core **diameter** of **62.5µm**, while **OM2, OM3, OM4 and OM5** fibers have a smaller core of **50µm**
- **OM1 and OM2** were the first to be developed. They are designed for use with **LED light** sources and are now tending towards disuse, as they are not suitable for high-speed networks. The next categories, **OM3, OM4 and OM5**, have been designed for use with **laser emitters** (VCSEL) achieving higher levels of bandwidth and speed
- **OM3 and OM4** fibers work with **850 nm** wavelengths, however, **OM5** fiber has been optimized for **WDM** (Wave Division Multiplexing) applications. It is capable of transmitting up to **4 channels at higher wavelengths** (880, 910 and 940 nm), obtaining a very high bandwidth

The following table summarizes the main characteristics of each type of multimode fiber:

Category	Core/cladding diameter	Usual external color	Optical source	Bandwidth
OM1	65,2/125µm	Orange	LED	200 MHz·km
OM2	50/125µm	Orange	LED	500 MHz·km
OM3	50/125µm	Aqua blue	Laser (VCSEL)	2000 MHz·km
OM4	50/125µm	Magenta	Laser (VCSEL)	4700 MHz·km
OM5	50/125µm	Lime green	Laser (VCSEL)	28000 MHz·km

What is the difference between OM3 and OM4?

Among the different categories of multimode (MM) fiber, **OM3 and OM4** fibers stand out as the **most widely used today**, since they achieve high transmission speed and bandwidth at an affordable price. **OM4 fiber is an evolution of OM3**, thanks to its improved internal construction, it has **lower attenuation** and thus manages to operate with a **higher bandwidth** than OM3, reaching **greater distances**.

Technical specifications

Fiber core type		Multi-mode (ITU-T-G.651.1)
Optical fiber type category		OM3
Fiber core diameter	μm	50
Fiber cladding diameter	μm	125
Coating buffer diameter	μm	250
Cable structure		Tight buffer
Plastic buffer diameter	mm	0.85
Outer sheath Diameter	mm	3
Outer sheath Material		LSFH
Blocking jelly		No
Attenuation 1310nm	dB/km	< 1
Insertion losses in connector 1	dB	< 0.5
Insertion losses in connector 2	dB	< 0.5
Return losses in connector 1	dB	> 30
Return losses in connector 2	dB	> 30
Optical connector type 1		LC
Polishing type (Optical connector 1)		PC
Optical connector type 2		LC
Polishing type (Optical connector 2)		PC
Short tension	N	450
Long tension	N	200
Structure reinforcement element		Aramid fibers
Short crush (@100mm)	N	500
Long crush (@100mm)	N	100
Minimum bending radius	mm	15
Operating temperature	°C	-20 ... 70

