

# OM4 MULTIMODE OPTICAL FIBER

(Americas, Asia Pacific, EMEA)

## Technical Information

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Panduit® OM4 Multimode Fiber is designed to enable robust and reliable channels for 1 Mb/s through 100 Gb/s applications that include:

- LAN Riser cabling and Fiber to the Desk (FTTD) applications
- Data Center Ethernet backbones and Storage Area Networks
- High-Speed Computing switch fabrics

Panduit® Laser-Optimized OM4 fibers extend the application of multimode fiber to support transmission at 10 Gb/s (at extended reach) and future speeds such as 40 and 100 Gb/s. When using low cost 850 nm Vertical Cavity Surface Emitting Laser (VCSEL) transceivers, these fibers support a wide variety of current application including 10 Gigabit Ethernet, 8 Gigabit Fibre Channel, and 40 Gigabit InfiniBand.

Panduit® OM4 Fiber extends the system cost benefits of Panduit® OM3 Fibers to ultra long building backbones and medium length campus backbones. The patented MCVD fiber manufacturing process provides this extraordinary performance by producing a fiber with nearly zero differential mode delay (DMD) and 5000 MHz km of EMB, more than 2.5 x the IEEE requirements for 10 Gb/s 300 meter support. Panduit® OM4 fibers exceed the specification requirements of EMBc and the more discriminating DMD mask methods for verifying Effective Modal Bandwidth.

When deployed in loss-optimized QuickNet™ cabling systems, Panduit® OM4 Fiber can provide extended reach beyond the rated length, as well as the ability to deploy more connectivity with greater headroom.

Panduit's industry-standard 50/125µm OM4 supports legacy applications like Ethernet, Token Ring, Fiber Distributed Data Interface (FDDI) and Fast Ethernet. Panduit® OM4 also provides support up to 1040 meters for short wave Gigabit Ethernet (1000BASE-SX) applications. These fibers also extend the reach beyond stated standards-based reach for 2.5 Gb/s, 5.0 Gb/s and 10.0 Gb/s parallel applications (InfiniBand and higher speed Ethernet)

### Geometry

<b>Dimension</b>	<b>Value</b>
<b>Core Diameter:</b>	50.0µm ± 2.5µm
<b>Core Non-Circularity:</b>	≤5%
<b>Cladding Diameter:</b>	125µm ± 1µm
<b>Cladding Non-Circularity:</b>	≤1%
<b>Core-Cladding Concentricity:</b>	≤1.0µm
<b>Coating Diameter:</b>	245µm ±10µm
<b>Coating-Cladding Concentricity:</b>	≤8µm

### Attenuation

<b>Wavelength</b>	<b>Value</b>
<b>850nm:</b>	2.3dB/km
<b>1300nm:</b>	0.6dB/km
<b>1300nm thru 1380nm:</b>	≤1.0dB/km

### Optical Characteristics

<i>Property</i>	<i>Value</i>
<b>Point Discontinuity:</b>	≤0.08dB
<b>Numerical Aperture:</b>	0.200 ± 0.015
<b>Group Index of Refraction – 850nm:</b>	1.483
<b>Group Index of Refraction – 1300nm:</b>	1.479
<b>Macrobend Attenuation – 100 turns around a 75mm mandrel:</b>	≤0.5dB/km

### Mechanical Properties

<i>Property</i>	<i>Value</i>
<b>Proof Test:</b>	100 kpsi (0.7 GN/m <sup>2</sup> )
<b>Coating Strip Force:</b>	0.7lbs (3.0 N)

### Environmental Properties

<i>Test</i>	<i>Value</i>
<b>Operating Temperature:</b>	-60°C to + 85°C
<b>Temperature Dependence – 850nm (-60°C to + 85°C):</b>	≤0.10dB/km
<b>Temperature Dependence – 1300nm (-60°C to + 85°C):</b>	≤0.10dB/km
<b>Temperature – Humidity Cycling – 850nm (-10°C to + 85°C, &gt;90% RH):</b>	≤0.10dB/km
<b>Temperature – Humidity Cycling – 1300nm (-10°C to + 85°C, &gt;90% RH):</b>	≤0.10dB/km

### Transmission Properties

<i>Condition</i>	<i>Value</i>
<b>850nm OFL Launch:</b>	3500 MHz-km
<b>850nm EMB Launch:</b>	5000 MHz-km
<b>1300nm OFL launch:</b>	500 MHz-km

### Application Reach

<i>Ethernet Data Rate</i>	<i>Standard</i>	<i>Transceiver Type</i>	<i>Wavelength</i>	<i>Reach</i>
<b>1 Gb/s</b>	IEEE 802.3z	1GBASE-SX	850nm	Up to 1040m
<b>1 Gb/s</b>	IEEE 802.3z	1GBASE-LX	1310nm	Up to 600m
<b>10 Gb/s</b>	IEEE 802.3ae	10GBASE-SR/SW	850nm	Up to 550m
<b>10 Gb/s</b>	IEEE 802.3ae	10GBASE-LX4	CWDM (1310nm)	Up to 300m
<b>10 Gb/s</b>	IEEE 802.3ae	10GBASE-LX	1310nm	Up to 300m
<b>10 Gb/s</b>	IEEE 802.3ae	10GBASE-LRM	1310nm	Up to 220m
<i>Fibre Channel Data Rate</i>	<i>Standard</i>	<i>Transceiver Type</i>	<i>Wavelength</i>	<i>Reach</i>
<b>4 Gb/s</b>	ANSI FC	400 MSE-SN-I	850nm	Up to 400m
<b>8 Gb/s</b>	ANSI FC	800 MSE-SN-I	850nm	Up to 190m
<b>16 Gb/s</b>	ANSI FC	1600 MSE-SN-I	850nm	Up to 125m
<b>10 Gb/s</b>	ANSI 10 GFC	1200 MSE-SN-I	850nm	Up to 500m