

## Optical Characteristics

### Characteristics Single-Mode – Matched-Cladded optical fibers according to ITU.

European P/N Coding	Fiber-Type	Mode-Field /Cladding Diameter (um)	Wave-length (nm)	Fiber Attenuation typical/max (dB/km)	Cabled Fiber Attenuation typical/max (dB/km)	Dispersion (ps/(nm-km))	PMD (ps/√km) [A]	Cable Cut-off Wave-length (nm)
8 <sup>[b]</sup>	9/125 G.652D & G.657A1 BI OS2	9.2 ± 0.4 125 ± 0.7	1310 1550 1625	0.33 / 0.34 0.18 / 0.19 0.20 / 0.24	0.38 / 0.39 0.23 / 0.24 0.25 / 0.29	≤ 3.2 ≤ 17	≤ 0.06	≤ 1260
A	9/125 G.652D & G.657A1 BI OS2	8.9 ± 0.4 124.8 ± 0.3	1310 1550 1625	0.34 / 0.35 0.19 / 0.21 0.20 / 0.24	0.39 / 0.40 0.25 / 0.30 0.25 / 0.30	≤ 3.5 ≤ 18	≤ 0.06	≤ 1260
F	9/125 G.657A2 BI	8.9 ± 0.4 124.8 ± 0.3	1310 1550 1625	0.34 / 0.35 0.19 / 0.21 0.20 / 0.24	0.39 / 0.40 0.25 / 0.30 0.25 / 0.30	≤ 3.5 ≤ 18	≤ 0.2	≤ 1260
I	9/125 G.657B3 BI	8.8 ± 0.4 125 ± 0.4	1310 1550 1625	0.34 / 0.35 0.19 / 0.21 0.20 / 0.23	0.39 / 0.40 0.25 / 0.30 0.25 / 0.30	≤ 3.5 ≤ 18	≤ 0.06	≤ 1260

Note [A] - Link design value

Note [B] – Ethernet performance **1GBE**: 5km @ 1310nm; **10GBE**: 10km @ 1310nm, 40km @ 1550nm

Note - Due to cabling the optical attenuation values can increase (see under cabled fiber attenuation).

### Characteristics Multi-Mode Graded-Index optical Fibers according to IEC 60793

European P/N Coding	Fiber-Type	Core/Cladding Diameter (um)	Wave-length (nm)	Fiber Attenuation typical/max (dB/km)	Cabled Fiber Attenuation typical/max (dB/km)	Bandwidth (MHz•km)	Ethernet Performance (m)				Num. Apert. (μm)
							1 GBE	10 GBE	40 Gbps WDM	100 Gbps WDM	
1	62.5/125 OM1	62.5 ± 2.5 125 ± 1	850 1300	2.7 / 3.0 0.7 / 0.8	3.1 / 3.4 0.7 / 0.9	≥ 200 ≥ 600	220 550	33 300			0.275 ± 0.015
2	50/125 OM2 BI	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.5 0.5 / 0.6	2.7 / 2.9 0.7 / 0.9	≥ 500 ≥ 500	600 600	83 300			0.20 ± 0.015
D	50/125 OM3 BI	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.5 0.5 / 0.6	2.7 / 2.9 0.7 / 0.9	≥ 1500 ≥ 500	1000 550	300 300			0.20 ± 0.015
E	50/125 OM4 BI	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.5 0.5 / 0.6	2.7 / 2.9 0.7 / 0.9	≥ 3500 ≥ 500	1100 550	550 300			0.20 ± 0.015
C	50/125 OM5 BI	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.5 0.5 / 0.6	2.7 / 2.9 0.7 / 0.9	≥ 3500 ≥ 500			440	150	0.20 ± 0.015

Note - Due to cabling the optical attenuation values can increase (see under cabled fiber attenuation).

## Macro Bending Performance Fibers

Maximum attenuation increase for Bend Insensitive Single Mode fibers in dB depending on turns and radius.

European P/N Coding	Fiber-Type	Wave-length (nm)	Turns 100 Radius 30 mm (dB)	Turns 10 Radius 15 mm (dB)	Turn 1 Radius 10 mm (dB)	Turn 1 Radius 7.5 mm (dB)	Turn 1 Radius 5 mm (dB)
8	9/125 G.652D & G.657A1 BI OS2	1550 1625	- 0.05	0.25 1.0	0.75 1.5		
A	9/125 G.652D & G.657A1 BI OS2	1550 1625	- 0.05	0.25 1.0	0.75 1.5		
F	9/125 G.657A2 BI	1550 1625		0.03 0.1	0.1 0.2	0.5 1.0	
I	9/125 G.657B3 BI	1550 1625			0.03 0.1	0.08 0.25	0.15 0.45

Maximum attenuation increase for Bend Insensitive Multi Mode fibers in dB depending on turns and radius.

European P/N Coding	Fiber-Type	Wave-length (nm)	Turns 100 Radius 37.5 mm (dB)	Turns 2 Radius 15 mm (dB)	Turns 2 Radius 7.5 mm (dB)
1	62.5/125 OM1	850 1300	0.5 0.5		
2	50/125 OM2 BI	850 1300	0.5 0.5	0.1 0.3	0.2 0.5
D	50/125 OM3 BI	850 1300	0.5 0.5	0.1 0.3	0.2 0.5
E	50/125 OM4 BI	850 1300	0.5 0.5	0.1 0.3	0.2 0.5
C	50/125 OM5 BI	850 1300	0.5 0.5	0.1 0.3	0.2 0.5