

Optical Characteristics

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

European P/N Coding	Fibre-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)
7 ^[b]	9/125 G.655 C&D	8.4 ± 0.6 125 ± 0.7	1550 1625	0.20 / 0.22 0.21 / 0.24	0.25 / 0.31 0.26 / 0.51	≤ 4.5 ≤ 7.9	≤ 0.04	≤ 1260
8 ^[b]	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.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	≤ 0.06	≤ 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 fibres according to IEC 60793

European P/N Coding	Fibre-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	Fibre-Type	Wave-length (nm)	Turns 100 Radius 30 mm (dB)	Turns 10 Radius 15 mm (dB)	Turn 1 Radius 16 mm (dB)	Turn 1 Radius 10 mm (dB)	Turn 1 Radius 7.5 mm (dB)	Turn 1 Radius 5 mm (dB)
7	9/125 G.655 C & D	1550 1625	0.05 0.05		0.5 0.5			
8	9/125 G.652D & G.657A1 BI OS2	1550 1625	0.03 0.03	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	Fibre-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