

SM Optical Fiber Specifications

Single Mode Fibers - Standard Specifications ⁽¹⁾

Parameter	Standard per ITU-T G.652D IEC 60793-2-50 B-652.D Max./Typical	NZDS per ITU-T G.655 IEC 60793-2-50 B.655 Max./Typical	Bend-Insensitive ITU-T G.657.B3 IEC 60793-2-50 B.657.B3 Max./Typical	Bend-Insensitive ITU-T G.657.A2 IEC 60793-2-50 B657.A2 Max./Typical	Bend-Insensitive ITU-T G.657.A1 IEC 60793-2-50 B657.A1 Max./Typical	Bend-Insensitive ITU-T G.657.A1 Enhanced IEC 60793-2-50 B657.A1 Max./Typical	Units
Teldor Fiber Code	9	8	B	7	L	A	
Attenuation ^(4,5,6,7) , Loose Tube Cables:							
@ 1310 nm	0.35 / 0.34	N/A	0.35 / 0.34	0.35 / 0.34	0.35 / 0.34	0.35 / 0.34	dB/km
@ 1550 nm	0.23 / 0.20	0.23 / 0.20	0.23 / 0.20	0.23 / 0.20	0.23 / 0.20	0.23 / 0.20	
@ 1625 nm	0.25 / 0.22	0.26 / 0.23	0.25 / 0.22	0.25 / 0.22	0.25 / 0.22	0.25 / 0.22	
Attenuation ⁽⁴⁾ , Tight Buffer Cables:							
@ 1310 nm	≤ 0.40	-	≤ 0.40	≤ 0.40	≤ 0.40	≤ 0.40	dB/km
@ 1550 nm	≤ 0.30	-	≤ 0.30	≤ 0.30	≤ 0.30	≤ 0.30	
Dispersion: between 1285 and 1330 nm (O Band)	≤ 3.5	N/A	≤ 3.5	≤ 3.5	≤ 3.5	≤ 3.5	ps/(nm·km)
between 1460 and 1530 nm (S Band)	-	⁽²⁾	-	-	-	-	
between 1530 and 1565 nm (C Band)	≤ 18	2 – 6 ⁽³⁾	≤ 18	≤ 18	≤ 18	≤ 18	
between 1565 and 1625 nm (L Band)	≤ 22	4.5 – 11.2 ⁽³⁾	≤ 23	≤ 23	≤ 22	≤ 22	
Zero Dispersion Wavelength	1312±12	< 1520	1312±12	1312±12	1312±12	1312±12	nm
Zero Dispersion Slope	≤ 0.092	-	≤ 0.092	≤ 0.092	≤ 0.092	≤ 0.092	ps/(nm ² ·km)
Mode Field Diameter							
@ 1310 nm	9.2±0.4	N/A	8.6±0.4	8.6±0.4	9.2±0.4	9.2±0.4	μm
@ 1550 nm	10.4±0.6	9.6±0.6	9.6±0.5	9.6±0.5	10.4±0.5	10.3±0.5	
Cable Cut-Off Wavelength	≤1260	≤1480	≤1260	≤1260	≤1260	≤1260	nm
PMD (Individual fiber)	≤ 0.2	≤ 0.1	≤ 0.2	≤ 0.2	≤ 0.15	≤ 0.1	ps/km ^{1/2}
Cladding Diameter	125±0.7	125±0.7	125±0.7	125±0.7	125±0.7	125±0.7	μm
Core/Cladding Concentricity Error	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	μm
Cladding Non-Circularity	≤0.7	≤0.7	≤0.7	≤1.0	≤1.0	≤1.0	%
Coating Diameter (non-colored)	242±5	242±5	242±5	242±5	242±5	242±5	μm
Proof-Test Level	0.7	0.7	0.7	0.7	0.7	0.7	GN/m ²
Induced Macrobend loss (1 turn around mandrel)							
Mandrel Radius	16	16	5.0	7.5	10	10	mm
Max. @ 1550 nm	0.03	0.5	0.1	0.4	0.75	0.5	dB
Max. @ 1625 nm	N/A	N/A	0.3	0.8	1.5	1.5	dB

- For other fiber types or improved attenuation values (e.g. "Low Loss", "ULL"), consult the Teldor Sales Department
- Non-standard range. Dispersion is typically negative. Consult Teldor for details
- Tighter dispersion tolerances may be available, consult Teldor for details
- For attenuation values of fibers in tactical cables (Product Description TAC-...), consult Teldor for details
- Maximum attenuation values for microduct cables intended for blown installation (FTX cable series) are: 0.25 dB/km @1550nm and 0.28 dB/km @1625nm
- Maximum attenuation values for ADSS cables (ADS cable series) as measured under maximum installation tension
- For cabled "ULL" fibers, Max. Individual Attenuation @1310nm/1550nm/1625nm = 0.31/0.19/0.23 dB/km
Average Attenuation @1310nm/1550nm/1625nm = 0.30/0.18/0.21 dB/km

MM Optical Fiber Specifications

Multi Mode Fibers - Standard Specifications ⁽¹⁾

Parameter	50/125 μm				62.5/125 μm	Units
Teldor Fiber Code	5	4	3	0	6	
ISO/IEC 11801-1 Performance Category	OM2 ⁽²⁾	OM3 ⁽³⁾	OM4 ⁽⁴⁾	OM5 ⁽⁵⁾	OM1	
Attenuation ^(6,13) , Loose Tube Cables:						
@ 850 nm	≤ 2.8				≤ 3.2	dB/km
@ 1300 nm	≤ 0.9				≤ 1.0	
Attenuation ⁽⁷⁾ , Tight Buffer and Semi-Tight Cables:						
@ 850 nm	≤ 3.0				≤ 3.5	dB/km
@ 1300 nm	≤ 1.0				≤ 1.0	
OFL Bandwidth ⁽⁶⁾						
@ 850 nm	≥ 500 ⁽⁸⁾	≥ 1500	≥ 3500	≥ 3500	≥ 200	MHz·km
@ 953 nm	N/A			≥ 1850	N/A	
@ 1300 nm	≥ 500 ⁽⁸⁾	≥ 500	≥ 500	≥ 500	≥ 500	
Effective Modal Bandwidth@ 850nm	N/A	≥ 2000	≥ 4700 ⁽⁹⁾	≥ 4700 ⁽⁹⁾	N/A	MHz·km
Effective Modal Bandwidth@ 953nm	N/A			≥ 2470	N/A	
Supported Ethernet Link Lengths (max.)						
40GbE ⁽¹⁰⁾ @ 850 nm (40GBASE-SR4)	N/A	100	150	150	N/A	m
100GbE ⁽¹¹⁾ @ 850 nm (100GBASE-SR4)	N/A	70	100	100	N/A	
200GbE ⁽¹²⁾ @ 850 nm (200GBASE-SR4)	N/A	N/A	100	100	N/A	
Numerical Aperture	0.20±0.015				0.275±0.015	
Core Diameter	50±2.5				62.5±3	μm
Cladding Diameter	125±1				125±2	μm
Core Non Circularity	≤ 5				≤ 5	%
Cladding Non-Circularity	≤ 1				≤ 1	%
Core/Cladding Offset	≤ 1.5				≤ 1.5	μm
Coating Diameter (Un-dyed)	242±5				242±5	μm
Induced Macrobend Attenuation						
100 turns on 37.5mm radius	-				0.5/0.5	dB (max.) 850nm/1300nm
2 turns on 15mm radius	0.1 / 0.3				-	
2 turns on 7.5mm radius	0.2 / 0.5				-	

- For other fiber specifications, (e.g. specialty fibers) consult the Teldor Sales Department
- As per IEC 60793-2-10 type A1-OM2 and TIA 492AAAB
- As per IEC 60793-2-10 type A1-OM3 and TIA 492AAAC
- As per IEC 60793-2-10 type A1-OM4 and TIA 492AAAD
- As per IEC 60793-2-10 type A1-OM5 and TIA 492AAAE
- As per IEC 60794-1-41 and TIA/EIA 455-204
- For attenuation values of fibers in tactical cables (Product Description TAC-...), consult Teldor for details
- 500/800 and 600/1200 MHz·km fibers may also be ordered dependent on stock availability
- As per TIA 492AAAD and TIA 492AAAE
- Per 40GBASE-SR4, assuming the requirements of the Standard and associated documents are met
- Per 100GBASE-SR4, assuming the requirements of the Standard and associated documents are met
- Per 200GBASE-SR4, assuming the requirements of the Standard and associated documents are met
- Maximum attenuation values for ADSS cables (ADS cable series) as measured under maximum installation tension