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	Units
Teldor Fiber Code	9	8	B	7	
Attenuation[4,5,6,7], Loose Tube Cables:					
@ 1310 nm	0.35 / 0.34	NA	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	
@ 1625 nm	0.25 / 0.22	0.26 / 0.23	0.25 / 0.22	0.25 / 0.22	
Attenuation[4], Tight Buffer Cables:					
@ 1310 nm	≤ 0.40	-	≤ 0.40	≤ 0.40	dB/km
@ 1550 nm	≤ 0.30	-	≤ 0.30	≤ 0.30	
Dispersion: between 1285 and 1330 nm (O Band)	≤ 3.5	NA	≤ 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	
between 1565 and 1625 nm (L Band)	≤ 22	4.5 – 11.2[3]	≤ 22	≤ 22	
Zero Dispersion Wavelength	1314±10	< 1520	1314±10	1314±10	nm
Zero Dispersion Slope	≤ 0.092	-	≤ 0.092	≤ 0.092	ps/(nm^2•km)
Mode Field Diameter @ 1310 nm	9.2±0.4	NA	8.6±0.4	8.6±0.4	µm
@ 1550 nm	10.4±0.6	9.6±0.6	9.6±0.5	9.6±0.5	
Cable Cut-Off Wavelength	≤1260	≤1480	≤1260	≤1260	nm
PMD (Individual fiber)	≤ 0.2	≤ 0.1	≤ 0.2	≤ 0.2	ps/km$^{1/2}$
Cladding Diameter	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	µm
Cladding Non-Circularity	≤1.0	≤1.0	≤1.0	≤1.0	%
Coating Diameter (un-dyed)	245±5	245±5	245±5	245±5	µm
Proof-Test Level	0.7	0.7	0.7	0.7	GN/m^2
Induced Macrobend loss (1 turn around mandrel)					
Mandrel Radius			5.0	7.5	mm
Max. @ 1550 nm			0.1	0.4	dB
Max. @ 1625 nm			0.3	0.8	dB

1. For other fiber types or improved attenuation values (e.g. "Low Loss", "ULL"), consult the Teldor Sales Department
2. Non-standard range. Dispersion is typically negative. Consult Teldor for details
3. Tighter dispersion tolerances may be available, consult Teldor for details
4. For attenuation values of fibers in tactical cables (Product Description TAC-…), consult Teldor for details
5. 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
6. Maximum attenuation values for ADSS cables (ADS cable series) as measured under maximum installation tension.
7. For cabled "ULL" fibers, Max. Individual Attenuation @1310nm/1550nm/1625nm = 0.31/0.19/0.23 dB/km. Max. 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**	**6**	
ISO/IEC 11801 Performance Category	OM2(2)	OM3(3)	OM4(4)	OM1	
Attenuation(6,14), Loose Tube Cables:					
@ 850 nm	≤ 2.8			≤3.2	dB/km
@ 1300 nm	≤ 0.9			≤1.0	
Attenuation(6), Tight Buffer and Semi-Tight Cables:					dB/km
@ 850 nm	≤3.0			≤3.5	
@ 1300 nm	≤1.0			≤1.0	
OFL Bandwidth(5) @ 850 nm	≥500(7)	≥1500	≥3500	≥200	MHz•km
@ 1300 nm	≥500(7)	≥500	≥500	≥500	
Effective Modal Bandwidth@ 850nm	N/A	≥2000	≥4700(8)	N/A	MHz•km
Supported Ethernet Link Lengths (max.)					m
1GbE (9)					
@ 850 nm (1000BASE-SX)	550	970(12)	1040(12)	220	
@ 1300 nm (1000BASE-LX)	950(12)	550(12)	600(12)	550	
10GbE (10)					
@ 850 nm (10GBASE-SR)	82	300	550	33	
@ 1300 nm (10GBASE-LX4)	450(13)	300	300	300	
40/100 GbE (11)					
@ 850 nm (40/100 GBASE-SR4/10)	N/A	100	150	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	≤4			≤5	%
Cladding Non-Circularity	≤0.7			≤1	%
Core/Cladding Offset	≤1.5			≤1.5	µm
Coating Diameter (Un-dyed)	245±10			245±10	µm
Proof-Test Level	0.7			0.7	GN/m^2
Induced Macrobend Attenuation					
100 turns on 37.5mm radius	0.5 / 0.5			0.5 / 0.5	dB (max.)
2 turns on 15mm radius	0.1 / 0.3				850nm/1300nm
2 turns on 7.5mm radius	0.2 / 0.5				

1. For other fiber specifications, (e.g. OM5, specialty fibers) consult the Teldor Sales Department
2. As per IEC 60793-2-10 type A1-OM2 and TIA 492AAAB
3. As per IEC 60793-2-10 type A1-OM3 and TIA 492AAAC
4. As per IEC 60793-2-10 type A1-OM4 and TIA 492AAAD
5. As per IEC 60794-1-41 and TIA/EIA 455-204
6. For attenuation values of fibers in tactical cables (Product Description TAC-…), consult Teldor for details
7. 500/800 and 600/1200 MHz•km fibers may also be ordered dependent on stock availability.
8. As per TIA 492AAAD
9. Per IEEE 802.3z, assuming the requirements of the Standard and associated documents are met
10. Per IEEE 802.3ae, assuming the requirements of the Standard and associated documents are met
11. Per IEEE 802.3ba, assuming the requirements of the Standard and associated documents are met
12. Calculated per the IEEE 1GbE link model
13. Calculated per the IEEE 10GbE link model
14. Maximum attenuation values for ADSS cables (ADS cable series) as measured under maximum installation tension.