

Multi Mode Optical Fiber Specification



Multi Mode Fibres	OM1 MM62.5	OM1 + MM62,5	OM2 MM50	OM3 MM50	OM4 MM50	OM5 MM50
Applicable standards	IEC60793-2-10 Type A1b	IEC60793-2-10 Type A1b	IEC60793-2-10 Type A1a.1	ISO/IEC 11801	ISO/IEC 11801 IEC60793-2-10 Type A1a.3	ISO/IEC 11801-OM5 IEC60793-2-10 Type A1a.4
	Telcordia GR20-CORE	Telcordia GR20-CORE	Telcordia GR20-CORE	IEC60793-2-10 Type A1a.2	Telcordia GR20-CORE	Telcordia GR 20-CORE/409-CORE
			ITU-T G651.1, Am.1	ITU-T G651.1, Am.1	ITU-T G651.1, Am.1	TIA/EIA-492AAAE
Core Diameter	62,5 ± 2 µm	62,5 ± 2.5 µm	50 ± 2 µm	50 ± 2 µm	50 ± 2 µm	50 ± 2.5 µm
Core non-circularity	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Cladding diameter	125 ± 1,0 µm	125 ± 1,0 µm	125 ± 1,0 µm	125 ± 1,0 µm	125 ± 1,0 µm	125 ± 1,0 µm
Coating diameter	242 ± 5 µm	242 ± 7 µm	242 ± 5 µm	242 ± 5 µm	242 ± 5 µm	242 ± 5 µm
Cladding non-circularity	≤ 0,7 %	≤ 1,0 %	≤ 0,7 %	≤ 0,7 %	≤ 0,7 %	≤ 1,0 %
Core/Cladding concentricity error	≤ 1,0 µm	≤ 1,0 µm	≤ 1,0 µm	≤ 1,0 µm	≤ 1,0 µm	≤ 1,5 µm
Coating/Cladding concentricity error	≤ 10 µm	≤ 12 µm	≤ 6 µm	≤ 6 µm	≤ 6 µm	≤ 10 µm

Multi Mode Fibres	OM1 MM62.5	OM1 + MM62,5	OM2 MM50	OM3 MM50	OM4 MM50	OM5 MM50
Numerical aperture	0,275 ± 0,015 μm	0,275 ± 0,015 μm	0,200 ± 0,015 μm	0,200 ± 0,015 μm	0,200 ± 0,015 μm	0,200 ± 0,015 μm
Attenuation @ 850 nm	≤ 3,50 dB/km	≤ 2.80 dB/km	≤ 2,80 dB/km	≤ 2,80 dB/km	≤ 2,60 dB/km	≤ 2,40 dB/km
Attenuation @ 1300 nm	≤ 1,00 dB/km	≤ 0,70 dB/km	≤ 0,80 dB/km	≤ 0,80 dB/km	≤ 0,60 dB/km	≤ 0,60 dB/km
Bandwith @ 850 nm	≥ 200 MHz*km	≥ 250 MHz*km	≥ 500 MHz*km	≥ 1500 MHz*km	≥ 3500 MHz*km	≥ 3500 MHz*km
Bandwith @ 1300 nm	≥ 500 MHz*km	≥ 1000 MHz*km	≥ 500 MHz*km	≥ 500 MHz*km	≥ 500 MHz*km	≥ 500 MHz*km
Proof test	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi
Link lenghts						
100BASE FX	2000m	2000m	2000m	2000m	2000m	2000m
1000BASE SX	275m	500m	550m	1000m	1100m	1100m
1000BASE LX	550m	1000m	550m	550m	550m	550m
10GBASE SW/SR	565m	33m	82m	300m	550m	550m
10GBASE LX4	-	-	300m	300m	300m	300m
40GBASE SR4	-	-	-	100m	150m	150m
100GBASE SR10	-	-	-	100m	150m	100m

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Single Mode Optical Fiber Specification



Single Mode Fibres	OS2	OS2	OS2	OS2 NZD
Applicable standards	ITU G652.D	ITU G657.A IEC60793-2-50 Type B.1.3 / B.6.A	ITU G657.B	ITU G655.E / G656 IEC60793-2-50 Type B.4 / B5
	IEC60793-2-50 Type B.1.3	Telcordia GR20-CORE	IEC60793-2-50 Type B.1.3 / B.6.A&B	
	Telcordia GR20-CORE			
Mode Field Diameter @ 1310nm	9,0 ± 0,4 µm	9,0 ± 0,4 µm	8,9 ± 0,4 µm	

Single Mode Fibres	OS2	OS2	OS2	OS2 NZD
Mode Field Diameter @ 1550nm	10,1 ± 0,5 µm	10,1 ± 0,5 µm	9,9 ± 0,5 µm	9,2 ± 0,5 µm
Cladding diameter	125 ± 0,7 µm	125 ± 0,7 µm	125 ± 0,7 µm	125 ± 1,0 µm
Coating diameter	242 ± 7 µm	242 ± 7 µm	242 ± 7 µm	242 ± 7 µm
Cladding non-circularity	≤ 0,7 %	≤ 0,7 %	≤ 0,7 %	≤ 1,7 %
Core/Cladding concentricity error	≤ 0,5 µm	≤ 0,5 µm	≤ 0,5 µm	≤ 0,6 µm
Coating/Cladding concentricity error	≤ 12 µm	≤ 12 µm	≤ 12 µm	≤ 12 µm
Cable Cut off wavelength	≤ 1260 µm	≤ 1260 µm	≤ 1260 µm	≤ 1300 µm
Zero dispersion wavelength (λ ₀)	1300 ÷ 1322 µm	1300 ÷ 1322 µm	1300 ÷ 1324 µm	≤ 1440 µm
Dispersion slope (S ₀) @ (λ ₀)	≤ 0,090 ps/(nm ² * km)	≤ 0,090 ps/(nm ² * km)	≤ 0,092 ps/(nm ² * km)	-
Chromatic dispersion @ 1285—1330 nm	≤ 3,5 ps/(nm * km)	≤ 3,5 ps/(nm * km)	-	-

Single Mode Fibres	OS2	OS2	OS2	OS2 NZD
Chromatic dispersion @ 1550	≤ 18 ps/(nm * km)	≤ 18 ps/(nm * km)	-	-
Chromatic dispersion @ 1625	≤ 22 ps/(nm * km)	≤ 22 ps/(nm * km)	-	-
Chromatic dispersion @ 1530—1565	-	-	-	5,5 ÷ 10 ps/(nm * km)
Chromatic dispersion @ 1565—1625	-	-	-	7,5 ÷ 13,8 ps/(nm * km)
PMD @ 1550 nm	≤ 0,1 ps/√km	≤ 0,1 ps/√km	≤ 0,1 ps/√km	≤ 0,2 ps/√km
Attenuation @ 1310 nm	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 0,40 dB/km
Attenuation @ 1383 nm	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 1,00 dB/km
Attenuation @ 1550 nm	≤ 0,25 dB/km	≤ 0,25 dB/km	≤ 0,25 dB/km	≤ 0,25 dB/km
Attenuation @ 1625 nm	≤ 0,28 dB/km	≤ 0,28 dB/km	≤ 0,28 dB/km	≤ 0,28 dB/km
Attenuation with bending				

Single Mode Fibres	OS2	OS2	OS2	OS2 NZD
Mandrel radius 15mm @ 1550 10 turns	-	≤ 0,25 dB	≤ 0,03 dB	-
Mandrel radius 15mm @ 1625 10 turns	-	≤ 1,0 dB	≤ 0,1 dB	-
Mandrel radius 10mm @ 1550 1 turn	-	≤ 0,75 dB	≤ 0,1 dB	-
Mandrel radius 10mm @ 1625 1 turn	-	≤ 1,50 dB	≤ 0,2 dB	-
Mandrel radius 7,5mm @ 1550 1 turn	-	-	-	≤ 0,5 dB
Mandrel radius 7,5mm @ 1625 1 turn	-	-	-	≤ 1,0 dB
Proof test	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi
Link lengths				
1000BASE LX 5 000m	5 000m	5 000m	5 000m	
10GBASE L	10 000m	10 000m	10 000m	
10GBASE EW/ER	30 000m	40 000m	40 000m	
40GBASE LR4	10 000m	10 000m	10 000m	

Single Mode Fibres	OS2	OS2	OS2	OS2 NZD
100GBASE ER4	10 000m	10 000m	10 000m	

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