



Documents n. 11
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TECHNICAL DATA SHEET

Specification for High-speed laser-launch multimode fibre OM4 50 μm MMF OM4 – 10Gb/s
Coating Type: Dual Layer Primary Coating (DLPC9)

Reference Standard: IEC 60793-2-10 type A1a.3
ISO/IEC 11801

TIA/EIA-492AAAD

Telcordia GR-20-CORE; GR-409-CORE

Characteristics	Conditions	Specified Values			Units
Optical Specifications (Uncabled Fibre)					
Attenuation Coefficient	850 nm	≤ 2.1	≤ 2.2	≤ 2.3	dB/km
	1300 nm	≤ 0.4	≤ 0.5	≤ 0.6	dB/km
Overfilled Modal Bandwidth	850 nm	≥ 3500			Mhz.km
	1300 nm	≥ 500			Mhz.km
Effective Modal Bandwidth	850 nm	≥ 4700			Mhz.km
Fibre capacity ²	850 nm; 10 Gb/s	≤ 550			m
DMD	-	See Note 1			-
Numerical Aperture	-	0.200 ± 0.015			-
Chromatic dispersion					
• Zero dispersion wavelength, λ_0	-	$1295 \leq \lambda_0 \leq 1340$			nm
• Zero dispersion slope, S_0	$1295 \leq \lambda_0 \leq 1310$	≤ 0.105			ps/nm ² .km
	$1310 \leq \lambda_0 \leq 1340$	$\leq 0.000375 (1590 - \lambda_0)$			ps/nm ² .km
Bending Loss	850nm, 1300 nm / 100 turn, 75mm diam.	≤ 0.5			dB
Backscatter Characteristics³					
• Point of discontinuity ⁴	850nm, 1300 nm	≤ 0.1			dB
• Irregularities over fibre length	850nm, 1300 nm	≤ 0.1			dB
• Reflections	-	Not allowed			-
• Group Index of Refraction (Typ.)	850nm	1.482			-
	1300 nm	1.477			-
Geometrical Specifications					
Core Diameter	-	50 ± 2			μm
Core Non-Circularity	-	≤ 5			%
Core/Cladding Concentricity error	-	≤ 1			μm
Cladding Diameter	-	125.0 ± 1.0			μm
Cladding Non-Circularity	-	≤ 0.7			%
Coating Diameter	-	242 ± 5			μm
Coating Non-Circularity	-	≤ 5			%
Coating/Cladding Concentricity error	-	≤ 6			μm
Length	Standard lengths up to	8.8			km



Environmental Specifications			
Temperature cycling	850 nm, 1300 nm / -60°C to 85°C	≤0.1	dB/km
Temperature-Humidity cycling	850 nm, 1300 nm / -10°C to 85°C, 4-98% RH	≤0.1	dB/km
Water immersion	850 nm, 1300 nm / 23°C, 30 days	≤0.1	dB/km
Dry Heat	850 nm, 1300 nm / 85°C, 30 days	≤0.1	dB/km
Damp Heat	850 nm, 1300 nm / 85°C; 85% RH, 30 days	≤0.1	dB/km
Mechanical Specifications			
Proof test	Off line	> 0.7 (100)	GPa (kpsi)
Dynamic tensile strength (median value)	0.5 meter gauge length, unaged and aged ⁵	> 3.8 (550)	GPa (kpsi)
Fatigue parameter (Typ.)	Dynamic fatigue, unaged and aged ⁵	$n_d > 25$	-
Coating strip force	Average strip force, unaged and aged ⁶	1 to 3	N
	Peak strip force, unaged and aged ⁶	1.3 to 8.9	N

1) DMD Specification [ps/m]

DMD template	Inner Mask: (Radius 0 to 18 μm)	Outer Mask: (Radius 0 to 23 μm)	Sliding Mask interval	Max. DMD	Note: A minimum effective system modal bandwidth-length product of 4700 MHz.km is achieved when combining this 50 μm fiber with transmitters meeting the following transmitter power distribution (per IEC 60793-2-10): Encircled Flux at radius 4.5 μm: ≤ 30 % & Encircled Flux at radius 19 μm: ≥ 86 %.
1	≤0.14	≤0.14	7 - 13 μm	0.11	
2	≤0.11	≤0.17	9 - 15 μm	0.11	
3	≤0.10	≤0.30	11 - 17 μm	0.11	
			13 - 19 μm	0.11	

- 2) 10 Gb/s distance of 550 metres is offered using a maximum cabled fibre attenuation of 3.0 dB/km at 850 nm and maximum total connector loss of 1 dB
- 3) OTDR measurement with 0.5 μm pulse width
- 4) Mean of bi-directional measurement
- 5) Aging at 85°C, 85% RH, 30 days
- 6) Aging:
 - 23°C, 0°C and 45°C
 - 30 days at 85°C and 85% RH
 - 14 days water immersion at 23 °C