

Legacy 10, 40, 100 Gb/s Graded-Index Multimode Fibre

MaxCap-OM2 / OM2+ / OM3 / OM4

Product Type: MaxCap-OM2 / OM2+ / OM3 / OM4 Multimode Fibre
Coating Type: Dual Layer Primary Coating (DLPC9)

Issue date: 03-2013
Supersedes: 04-2012



Legacy 850 nm Laser-Optimized 50 µm **MaxCap-OM2 / OM2+ / OM3 / OM4** Multimode Fibre for 10, 40 and 100 Gb/s applications.

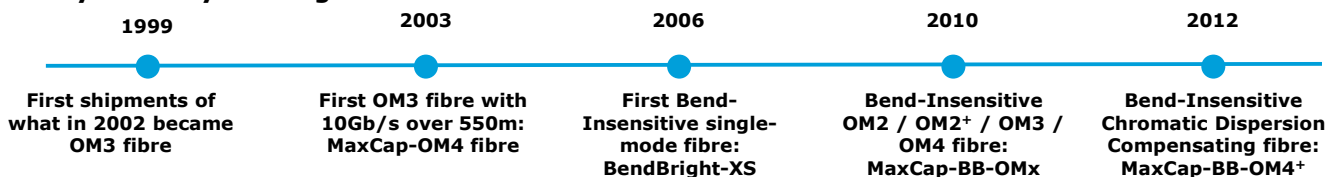
Already for many years Draka multimode fibre have been leading products in the market for enhanced high performance, low-cost, short reach 10 Gb/s applications and beyond. Draka legacy 850 nm laser-optimized 50 µm **MaxCap-OM2, OM2+, OM3 and OM4** multimode fibres have been developed for applications in Local Area Networks (LAN) backbones up to 550 m (10GBASE-SX), Storage Area Networks (SAN), Data Centres up to 150 m at 40G/100G bitrates (40GBASE-SR4 and 100GBASE-SR10) and Central Office connections. The **MaxCap-OM2, OM2+, OM3 and OM4** multimode fibres are produced by the proprietary Plasma-activated Chemical Vapour Deposition process (PCVD), acknowledged worldwide as offering the best core profile accuracy for multimode fibres.

Standards references

The **MaxCap-OM2 and OM2+** and **MaxCap-OM3 / OM4** multimode fibres types entirely comply with or exceed IEC 60793-2-10 type A1a.1 / A1a.2 / A1a.3 Optical Fiber Specification, ISO/IEC 11801 OM2 / OM3 / OM4 specification, TIA/EIA-492AAAB / 492AAAC / 492AAAD detail specification and Telcordia GR-20-CORE and GR-409-CORE specifications.

Features	Advantages
The MaxCap-OMx product family contains the famous flagship product MaxCap-OM4	MaxCap-OM4 supports under conditions 850 nm (SX) serial 10 Gb/s applications over 550 m; an effective modal bandwidth (EMB) of 4700 MHz.km at 850 nm under laser launch is ensured by means of 850 nm DMD specifications
Overfilled launch (OFL) bandwidth of the MaxCap-OMx Multimode fibre at 850 nm and at 1300 nm	OFL bandwidth performance gives strong support to legacy applications
All MaxCap-OMx fibers fulfill both EMB as well as DMD requirements; also a tighter inner-DMD mask (0 – 18 µm) is used	Compared to the standards (and competitors) Draka's MaxCap-OMx fibres ultimately offer additional robustness in 10Gb/s and beyond systems
Coated with the dual layer UV Acrylate	MaxCap-OMx multimode fibres show excellent micro-bending behaviour, which results in easy cabling and installation, supporting a maximum cabled attenuation of 3.0 dB/km at 850 nm

Key Industry Leading Milestones



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Characteristics	Conditions	Specified Values				Units
OPTICAL SPECIFICATIONS (Uncabled fibre)						
Attenuation Coefficient	850 nm	≤ 2.2	≤ 2.3			dB/km
	1300 nm	≤ 0.5	≤ 0.6			
Numerical Aperture		0.200 ± 0.015				
Chromatic Dispersion						
Zero Dispersion Wavelength, λ_0		1295 ≤ λ_0 ≤ 1340				nm
Zero Dispersion Slope, S_0	1295 nm ≤ λ_0 ≤ 1310 nm	≤ 0.105				ps/nm ² .km
	1310 nm ≤ λ_0 ≤ 1340 nm	≤ 0.000375 (1590 - λ_0)				
Fibre Capacity	40GBASE-SR4 / 100GBASE-SR10	OM2	OM2+	OM3	OM4	m
	10GBASE-SR	-	-	140 ¹	170 ¹	
	1GBASE-SR	83	150	300	550 ¹	
		600	750	1000	1100	
Overfilled Modal Bandwidth (min.)	850 nm	500	700	1500	3500	MHz.km
	1300 nm	500	500	500	500	
Effective Modal Bandwidth (EMB) (min.)	850 nm	-	950	2000	4700	MHz.km
DMD		See note 2				
Bending Loss	100 turns, D=75 mm; 850nm / 1300nm	≤ 0.5				dB
Backscatter Characteristics³						
Point Discontinuity ⁴	850 nm, 1300 nm	≤ 0.1				dB
Irregularities over fibre length	850 nm, 1300 nm	≤ 0.1				dB
Reflections		Not allowed				
Group Index of Refraction (Typ.)	850 nm	1.482				
	1300 nm	1.477				
GEOMERICAL SPECIFICATIONS						
Core Diameter		50 ± 2.5				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		≤ 10				µm
Length	Standard lengths up to Other lengths available on request	8.8				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 (Typical)	Dynamic fatigue, unaged and aged ⁵	$n_f > 25$				
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
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

- 1). Maximum cabled fibre attenuation 3.0 dB/km at 850 nm, maximum total connector loss of 1.0 dB and VCSELs maximum RMS spectral width of 0.29 nm (according to IEEE 10GbE model: http://grouper.ieee.org/groups/802/3/ae/public/adhoc/serial_pmd/documents/10GEPBud3_1_16a.xls).
- 2). DMD specifications are compliant with and more stringent than the requirements of IEC 60793-2-10 (type A1a.2 for OM3 and type A1a.3 for OM4), TIA-492AAAC (OM3) and 492AAD (OM4).
- 3). OTDR measurement with 0.5 µs pulse width.
- 4). Mean of bi-directional measurement.
- 5). Aging at 85°C, 85% RH, 30 days.
- 6). Aging at 23°C, 0°C and 45°C; 30 days at 85°C and 85% RH; 14 days water immersion at 23°C.