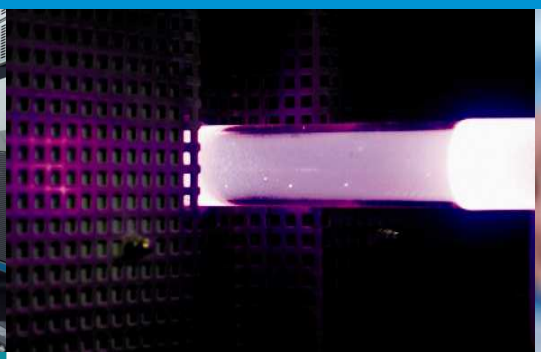
MaxCap-OM3 – 10 Gb/s Multimode Optical Fiber
(Formerly known as MaxCap300)

High-speed laser-launch multimode fiber (OM3)



Multimode Fiber

Product Type: 50 / 125 / 242 µm Multimode Fiber (OM3) **Issue date: 09/09**

Coating Type: Dual layer Primary Coating (DLPC9) **Supersedes: 07/09**

For premises cabling in Datacom networks

- Innovative products for Local Area Network (LAN) and Data Center applications

VALUE INNOVATION

Value Innovation is a way of looking at the world. How we can help our customers do more, make more, save more, achieve more.

Key Industry Leading Milestones

2001 In cooperation with IBM, Draka set a world record: 20 Gb/s over 1 km.

2003 First OM3 type fiber with an extended reach using 10 Gb/s over 550 m: MaxCap-OM4 multimode fiber.

850 nm Laser-Optimized 50 µm Multimode Fiber for 10 Gb/s application over 300 meters (OM3)
To support high performance, low-cost, short reach 10 Gb/s applications Draka developed a 850 nm laser-optimized 50 µm multimode fiber: MaxCap-OM3 multimode fiber, formerly known as MaxCap300. These applications are in particular Local Area Networks (LAN) backbones up to 300 m (10GBASE-SX), Storage Area Networks (SAN), Data Centers up to 100 m at 40G/100G speeds (40GBASE-SR4 and 100GBASE-SR10) and Central Office connections. The MaxCap multimode fibers are produced by the proprietary Plasma-activated Chemical Vapor Deposition process (PCVD), acknowledged worldwide as offering the best core profile accuracy in multimode fiber.

Application in other LAN systems
Thanks to the special bandwidth performance of the MaxCap-OM3 multimode fiber, a broad range of legacy and 10 Gb/s applications can be supported. Together with other multimode fiber products produced by Draka this range of multimode products offers end-users the best possible optimization of their networks in the most flexible way.

The MaxCap-OM3 multimode fiber complies with or exceeds IEC 60793-2-10 type A1a.2 Optical Fiber Specification, ISO/IEC 11801 OM-3 specification, TIA/EIA-492AAAC detail specification and Telcordia GR-20-CORE and GR-409-CORE specifications.

Features	Benefits
OM3 type MMF	The MaxCap-OM3 fully supports 850 nm (SX) serial 10 Gb/s applications over 300 m. An effective modal bandwidth (EMB) of 2000 MHz.km at 850 nm under laser launch is ensured by means of 850 nm DMD specifications
The overfilled launch (OFL) bandwidth of the MaxCap-OM3 Multimode fiber at 850 nm is ≥ 1500 MHz.km; at 1300 nm the OFL bandwidth is ≥ 500 MHz.km	OFL bandwidth performance gives strong support to legacy applications. The MaxCap-OM3 Multimode fiber offers a smooth, low-cost migration path for premises backbone cabling from 10 Mb/s up to 10 Gb/s over 300 m
MaxCap-OM3 fulfill both EMB as well as DMD requirements; Draka applies a tightened inner DMD mask (0 – 18µm in stead of 5 – 18µm)	Compared to the standards Draka's MaxCap fibers offer additional robustness in 10Gb/s systems
Coated with the dual layer UV Acrylate DLPC9	MaxCap-OM3 Multimode fibers have excellent micro-bending behavior, which results in easy cabling and installation, supporting the maximum cabled attenuation at 850 nm of 3.0 dB/km

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MaxCap-OM3 – 10 Gb/s Multimode Optical Fiber
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High-speed laser-launch multimode fiber (OM3)

Product Type: 50 / 125 / 242 µm Multimode Fiber (OM3) **Issue date: 09/09**

Coating Type: Dual layer Primary Coating (DLPC9) **Supersedes: 07/09**

Characteristics	Conditions	Specified Values	Units
Optical Specifications (Uncabled fiber)			
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[1]	850 nm	≥ 1500	MHz.km
	1300 nm	≥ 500	MHz.km
Effective Modal Bandwidth	850 nm	≥ 2000	MHz.km
Fiber capacity	850 nm; 10 Gb/s	≤ 300	m
DMD		See Note 2	
Numerical Aperture		0.200 ± 0.015	
Chromatic Dispersion			
Zero dispersion wavelength, λ_0		$1295 \le \lambda_0 \le 1340$	nm
Zero dispersion slope, S_0	$1295 \text{ nm} \le \lambda_0 \le 1310$ nm	≤ 0.105	ps/nm^2·km
	$1310 \text{ nm} \le \lambda_0 \le 1340$ nm	≤ 0.000375 (1590 - λ_0)	ps/nm^2·km
Bending Loss	850 nm, 1300 nm / 100 turns, 75 mm diam.	≤ 0.5	dB
Backscatter Characteristics[3]			
Point discontinuity[4]	850 nm, 1300 nm	≤ 0.1	dB
Irregularities over fiber length	850 nm, 1300 nm	≤ 0.1	dB
Reflections		Not allowed	
Group Index of Refraction (Typ.)	850 nm	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℃ to 85℃	≤ 0.1	dB/km
Temperature- Humidity cycling	850 nm, 1300 nm /-10℃ to 85℃, 4-98% RH	≤ 0.1	dB/km
Water Immersion	850 nm, 1300 nm / 23℃, 30 days	≤ 0.1	dB/km
Dry Heat	850 nm, 1300 nm / 85℃, 30 days	≤ 0.1	dB/km
Damp Heat	850 nm, 1300 nm / 85℃; 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). The modal bandwidth is linearly normalised to 1 km, according to IEC 60793-2-10.

2). DMD specification [ps/m]:

DMD template	*Inner Mask: (Radius 0 to 18 µm)*	*Outer Mask: (Radius 0 to 23 µm)*
1	*≤ 0.33*	*≤ 0.33*
2	*≤ 0.27*	*≤ 0.35*
3	*≤ 0.26*	*≤ 0.40*
4	*≤ 0.25*	*≤ 0.50*
5	*≤ 0.24*	*≤ 0.60*
6	*≤ 0.23*	*≤ 0.70*

Sliding Mask Interval:	*Max. DMD:*
7 – 13 µm	*0.25*
9 – 15 µm	*0.25*
11 – 17 µm	*0.25*
13 – 19 µm	*0.25*

Note: A minimum effective system modal bandwidth-length product of 2000 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 % and
Encircled Flux at radius 19 µm: ≥ 86 %.

3). OTDR measurement with 0.5 µs pulse width.

4). Mean of bi-directional measurement.

5). Aging at 85℃, 85% RH, 30 days

6). Aging:
- *23℃, 0℃ and 45℃*
- *30 days at 85℃ and 85% RH*
- *14 days water immersion at 23℃*

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