Value Innovation is a way of looking at the world. How can we help our customers do more, make more, save more, achieve more. For many years Draka has applied this motto to its multimode fiber portfolio, supporting the important Datacom market. Draka plays an important role in the multimode fiber market, particularly in the top quality segment, because of the exceptional performance of the Draka PCVD (Plasma Chemical Vapor Deposition) process. PCVD can deposit literally thousands of layers of glass within the same space all other processes can only deposit a few hundred layers. This gives Draka multimode fiber for its future high speed solutions.

Further information
Interested in these high quality multimode products?
Want to get the complete Draka MaxCap-OM3 or MaxCap-OM4 datasheets?
Please contact us at one of our locations, for which full details are provided below or check our website.

Draka’s MaxCap-OM3 / MaxCap-OM4 multimode fiber:
higher capacity, longer distances, better accuracy

Data networks steadily demand more bandwidth. Standard 10Gb/s grade OM3 and higher grade OM4 multimode fiber can be used in several applications such as backbone connections in Local Area Networks (LAN), Data Centers as well as interconnections inside Telecom Central Offices.

OM4 multimode fiber is ideal for 10G link applications requiring a higher power budget, for example when more connectors are required, which is the case in Data Centers. They are also perfect for 10G applications requiring a longer distance than 300 meters (up to 550 meters). Finally, OM4 fibers are future proof, especially for 40 Gb/s and 100 Gb/s Ethernet solutions. These new system applications are currently under development by IEEE802.3ba, where an extended distance version is considered up to 125 meters using OM4 multimode fiber above the currently agreed 100 meters. In addition, Fiber Channel is considering using OM4 multimode fiber for its future high speed solutions.

The evolution of fiber optic technology through new manufacturing techniques and processes is revolutionizing data networks as they steadily progress towards 10Gb/s applications and upwards to 40Gb/s and 100Gb/s Ethernet solutions.

Draka is already able to conform to OM4 specifications with its MaxCap-OM4 multimode fiber, putting it in the forefront in complying to industry requirements for cable that can extend link distances in next generation data communications networks. In fact Draka’s MaxCap-OM4 fiber forms the blue print for the next generation high bandwidth OM4 multimode fiber, currently in the process of being standardized. In TIA this fiber has already been standardized as TIA-492-AAAD.

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Innovation

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MaxCap benefits

Higher capacity, longer distances
Draka started the development of high capacity multimode fibers directly following the establishment of the 1 GbE standard in 1998. In 2002 the 10 GbE standard was accepted. Draka was on the forefront of this effort, having already one year earlier officially launched its MaxCap-OM3 fiber, supporting development of this new standard. It is interesting to note that Draka started first commercial activities on MaxCap fiber in 1999, showing Draka's front-running position in this field. MaxCap-OM3 fibers fulfill the IEEE 10 GbE standard offering a 10 Gb/s capacity over 300 meters at 850 nm.

A brand new level of accuracy

Draka has learned that present standards do not fully guarantee good 10 Gb/s performance in actual system applications which may result in high Bit-Error-Rates (BER). Draka therefore thoroughly studied 10 Gb/s transmission issues and invested heavily in high-quality measurement procedures. Many new and proprietary quality features related to e.g. physical and metrological aspects have been developed and introduced in Draka's MaxCap fiber characterization programs, offering the highest quality OM3 / OM4 fibers in the world. While the details of these measures are proprietary, there is no doubt that these improvements have significantly improved the quality of fiber manufactured by Draka.

Be careful what you buy

Have you ever attempted to install a 10Gb/s network and could not get 10Gb/s transmission? You checked connectors, cabling, everything... but still could not get 10Gb/s... it may not be something you did - it may be your fiber!

Some years ago Draka obtained a sample of a low-cost 4-fiber OM3 cable to evaluate whether the quality of these low cost fiber cables always meet the unnamed manufacturer’s claims.

The DMD values of these fibers were shockingly poor, as shown in Figure 1.

Not one of these fibers could be qualified as OM3; some even were optimized at 1300 nm instead of 850 nm.

With the introduction of tighter DMD specified fibers like OM4, the necessity of perfect DMD testing is even more stringent.

Even today competitor fiber is on the market of claimed OM4 performance, which in reality shows clear and unacceptable DMD distortions, as shown in Figure 2. Therefore indeed be careful what you buy.

In addition Draka’s MaxCap-OM3 and MaxCap-OM4 fibers are more tightly specified than required by present standards and compared to other similar commercial products available in the market. Both MaxCap-OM3 and MaxCap-OM4 have to fulfill DMD as well as EMB requirements, which minimizes customer risks.

BER system tests (see Figure 3) demonstrate the high quality of Draka MaxCap-OM3 and MaxCap-OM4 fibers.

Fig. 1. Extremely poor DMD behavior of 4 fibers out of a low cost OM3 cable. All 4 fibers failed the OM3 specification.

Fig. 2. Draka MaxCap-OM4 fiber (top) with excellent 850nm DMD, passes OM4 requirements. Competitor A & B (bottom) claimed OM4, but failed the MaxCap-OM4 requirements due to too large inner, outer and sliding DMD after performance testing.

Fig. 3. BER 10Gb/s system test results for Draka OM4 fiber (A, B & C in 300m, 550m and 750m in length). Top: Using small spectral width source (0.33 nm) even 750m length fulfill the IEEE requirement. Bottom: For worst case spectral source (0.45 nm) 750m length samples result in large BER. 550m length samples still fulfill the IEEE requirement.