

Enhanced LaserWave® *FLEX*

Bend-Optimized Multimode Fiber

OFS has made significant improvements to our LaserWave® *FLEX* fiber specifications. That means we can provide superior system performance for end users, and better cabling and connectivity performance for their channel partners. Specific improvements include lower fiber attenuation at 850 nm, tighter numerical aperture (NA) requirements, and tighter geometry requirements, as outlined in the table below.

	Industry Standard Specs OM3/OM4 (TIA 492-AAAC/AAAD)	Previous LaserWave Fiber	Enhanced LaserWave <i>FLEX</i> Fiber
Attenuation	≤ 2.5 dB/km	≤ 2.3 dB/km	≤ 2.2 dB/km
Core Diameter	50 ± 3.0 μm	50 ± 2.5 μm	50 ± 2.5 μm
Numerical Aperture (NA)	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.010
Clad Diameter	125 ± 2 μm	125 ± 1.0 μm	125 ± 0.8 μm
Clad Non-Circularity	≤ 2%	≤ 1%	≤ 0.7%
Core / Clad Concentricity	≤ 3 μm	≤ 1 μm	≤ 1 μm

Table 1

Why are these specification changes significant?

With every increase in network speed, OFS works tirelessly with end users and cable manufacturers to support the more stringent demands on their systems. As loss budgets decrease,

OFS continues to lower our fiber attenuation while supporting efforts on the part of cable assembly providers to improve connector performance. We do this by providing fiber with tighter geometry requirements. As the table above indicates, OFS has always had tighter requirements than required by the TIA standard – now, the advantages offered by OFS fiber are even larger.

When will enhanced LaserWave *FLEX* Fiber be available?

OFS has already implemented these tighter specifications on the fiber we are supplying to our cabling customers.

What do these changes mean to cable and assembly manufacturers?

For cable manufacturers, the specification for lower fiber attenuation means that there is potential to reduce cable attenuation specifications. For manufacturers of cable assemblies and/or preterminated cables, the improved specifications can provide improved cable loss *as well as* better connector mating performance. A Monte Carlo simulation shows the following improvements in connection loss, based on the corresponding fiber specs from Table 1:

	Industry Standard Specs OM3/OM4 (TIA 492-AAAC/AAAD)	Previous LaserWave® Fiber	Enhanced LaserWave <i>FLEX</i> Fiber
Average	0.23dB	0.13 dB	0.11 dB
95%	0.50dB	0.29 dB	0.23 dB

Table 2

What does this mean for end users?

These specification improvements mean that end users can better support the latest high speed applications with the lowest possible link loss. By improving these key fiber parameters, OFS provides the tools to meet the low link loss budgets. In the chart below, the decreasing loss budgets are shown for short-reach Ethernet.

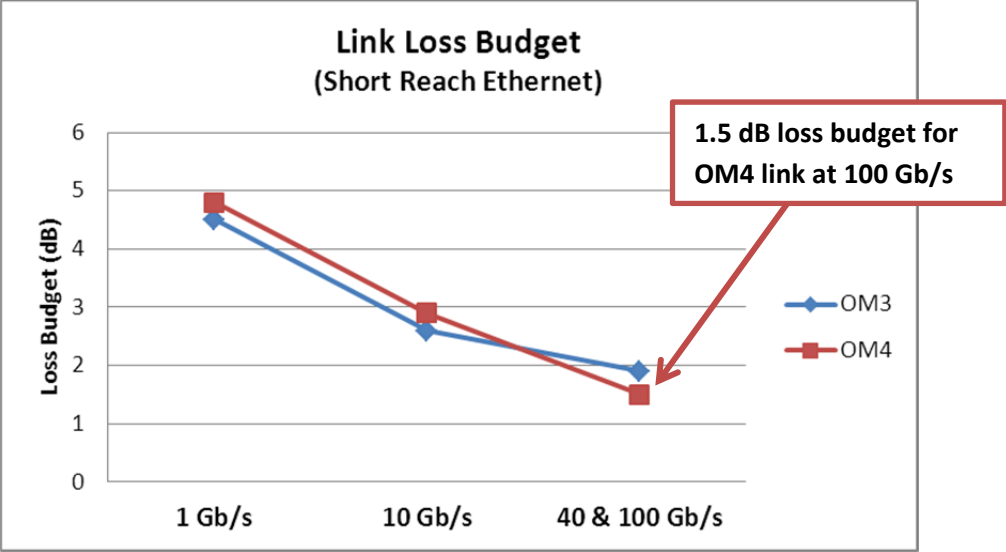


Figure 1

How does enhanced LaserWave *FLEX* Fiber compare to other fibers on the market?

This table compares our specifications to our largest competitors:

	Industry Standard Specs OM3/OM4	Competitor A	Competitor B	Enhanced LaserWave <i>FLEX</i> Fiber
Attenuation	≤ 2.5 dB/km	≤ 2.3 dB/km	≤ 2.3 dB/km	≤ 2.2 dB/km
Core Diameter	50 ± 3.0 μm	50 ± 2.5 μm	50 ± 2.5 μm	50 ± 2.5 μm
Numerical Aperture (NA)	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.010
Clad Diameter	125 ± 2 μm	125 ± 1.0 μm	125 ± 1.0 μm	125 ± 0.8 μm
Clad Non-Circularity	2%	≤ 0.7%	≤ 1%	≤ 0.7%
Core Eccentricity	≤ 3 μm	≤ 1 μm	≤ 1.5 μm	≤ 1 μm

Table 3

And that means significant improvements in connector performance:
(Based on the fiber specifications from Table 3)

	Industry Standard Specs OM3/OM4	Competitor A	Competitor B	Enhanced LaserWave FLEX Fiber
Average	0.23 dB	0.13 dB	0.15 dB	0.11 dB
95%	0.50 dB	0.29 dB	0.31 dB	0.23 dB

Table 4

OFS continues to lead the way in multimode fiber performance. With these improvements, end users can feel confident specifying OFS fiber for their increasingly demanding enterprise and data center applications.