

More About OM5 Multi-mode Fiber



In our last article we presented the standard and specifications for OM5 multimode fiber, here we are going to further explain the OM5 multimode fiber.

A small info about the naming process of the OM5: While naming the OM5 fiber, there were three alternatives on the table, namely OM4W, OM5, and OM5W, the Association failed to reach a consensus on the name, so ultimately it was decided by means of voting, that's how finally the OM5 came to be OM5.

OM5 vs OM3/OM4

OM3 and OM4 laser optimized multi-mode fiber is designed for use with 850nm wavelength. While the OM5 fiber will be able to use a spectral wavelength that extends over 100nm - from 850nm to 950nm, the spectral wavelength expansion also means that it can support at least four low-cost WDMs, these applications provide the necessary support for using 2-core fibers to transmit speeds of up to 100G.

OM5 vs Single Mode

Single-mode fiber has always been the most stable and versatile choice for a variety of different occasions and needs (in terms of distance, energy consumption, density, etc.), but the overall cost of single-mode system is too high. In order to provide users with a more cost-effective choice the OM5 was designed around the multi-mode fiber, with the same overall low cost as the OM3/OM4, and making use of the wavelength division multiplexing that allows to meet 40G-400G transmission applications, transmission distance is the same as OM4 but with fewer core fibers.

Hermesys has sold OM5 fiber worldwide, offering common field fusing and pre-terminated options for a wide range of traditional and high-speed network applications.

Finally, let's look at the advantages of OM5 fiber :

- ◆ *OM5 multimode fiber is not just compatible with OM3 / OM4 multimode fiber, but also offers improved performance.*

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- ◆ Also uses 50/125 laser optimized fiber.
- ◆ Added 953nm wavelength application, bandwidth of 2470MHz * km.
- ◆ Optimized Dispersion.
- ◆ The attenuation of the 953nm wavelength is only 2.3dB / km.
- ◆ From the following figure we can see a wider range of high-speed transmission applications of the OM5 Fiber

ETHERNET INTERFACES & NOMENCLATURE									
	Electrical Interface	Backplane	Twinax Cable	Twisted Pairs	MMF	Parallel SMF	2km SMF	10km SMF	40km SMF
10BASE				T					
100BASE				TX	FX			LX	
1000BASE		KX	CX	T	SX			LX	
2.5GBASE		KX		T					
5GBASE		KR		T					
10GBASE	SFI, XFI	KX4 KR	CR	T	SR			LR	ER
25GBASE	25GAUI	KR	CR	T	SR			LR	ER
40GBASE	XLAUI	KR4	CR4	T	SR4		FR	LR4	ER4
50GBASE	50GAUI (-2?)	KR	CR		SR		FR	LR	
100GBASE	CAUI10 CAUI4 CAUI-2	KR4 KR2	CR10 CR4 CR2		SR10 SR4 SR2	PSM4	10X10 CWDM4 CLR4	LR4 10X10	ER4 10X10
200GBASE	200GAUI-4	KR4	SR4		SR4		FR4	LR4	
400GBASE	CDAUI-16 CDAUI-8				SR16	DR4	FR8	LR8	

- ◆ Grey Text = IEEE Standard.
- ◆ Red Text = In Standardization
- ◆ Green Text = Under consideration in IEEE
- ◆ Blue Text = Non-IEEE standard but complies to IEEE electrical interfaces