

OM5 Multimode Fibre Standard



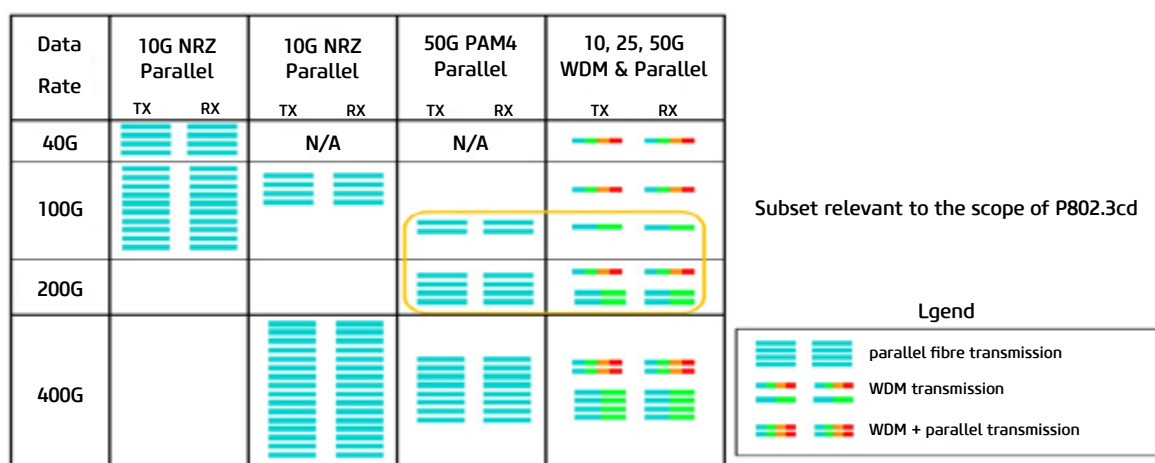
With the ever-increasing demand for mass data transmission in data centers, the conventional multi-mode fiber has found it difficult to meet the requirements of future more advanced networks. The new broadband multi-mode fiber (WBMMF) through different effective bandwidth utilization is providing another option for high-speed network transmission.

At the international standards conference, that ended on October 5, 2016, the OM5 was voted as the official name of the Broadband Multimode Fiber (WBMMF) by the participating organizations. ISO/IEC 11801, ANSI/TIA-492AAAE, IEC 60793-2-10 and other Standards have passed the corresponding fiber specifications.

The OM5 fiber standard enables optimal support of emerging Shortwave Wavelength Division Multiplexing (SWDM) applications that reduce parallel fiber count by at least a factor of four, for example, to allow the continued use of just two fibers (rather than eight) for transmitting 40 Gb/s and 100 Gb/s and reduces the number of fiber counts for higher speeds.

From the following figure, it can be seen that the traditional OM3/OM4 2-core 10G transmission (parallel transmission) multimode fiber is only suitable for 40G/100G transmission, and requires a large number of fiber cores; improved 2-core 25G transmission (parallel transmission) reduces the need for extra fiber cores, but also requires a lot more fiber in higher speed applications. The OM5 short wavelength division multiplexing (parallel transmission) technology significantly reduces the number of fiber cores needed.

Application Evolution Map Ethernet Example



* Parallel fibres remain essential to support break-out functionality

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- ♦ The OM5 multimode fiber is not just compatible with OM3 / OM4 multimode fiber, but also offers improved performance.
- ♦ It uses 50/125 laser optimized fiber.
- ♦ Added 953nm wavelength application, bandwidth 2470MHz * km.
- ♦ Optimized Dispersion.
- ♦ The attenuation of the 953nm wavelength is only 2.3dB / km.

Parameter	OM4	WBMMF	Comment re WBMMF
Effective modal bandwidth at 850nm, min (MHz*km)	4700	4700	Drop-in substitute for OM4
Effective modal bandwidth at 953 nm, min (MHz*km)	not spec'd	2470	Assures level total bandwidth over wavelength spectrum
Chromatic dispersion at 840nm, max (ps/nm*km)	108.4	103	Smaller dispersion boosts legacy application support
Chromatic dispersion at 953nm, max (ps/nm*km)	65	61.7	Smaller dispersion helps SWDM application support
Cabled attenuation at 953nm per 568.3-D, max (dB/km)	not spec'd	2.3	Assured maximum