



Brand-Rex technical brief 019

The new ISO 11801 2nd Edition optical fibres and MillenniumM Premium grade fibre

Compared to the optical fibres defined in ISO 11801 2nd Edition, EN 50173 2nd Edition and ANSI/TIA/EIA-568-B.3.1, all Brand-Rex MillenniumM optical fibre exhibit lower attenuation. This allows a much greater optical power budget margin to be used when designing optical networks with MillenniumM fibre. These specifications are valid for Brand-Rex MillenniumM Fibre System, Blolite and MicroBlo.

The other technical details of the MillenniumM optical fibres conform to IEC 60793-2 A1a for OM2, A1b for OM1 and B1.1 for OS1. In addition, MillenniumM OS1 meets ITU G.652 and OM2 meets ITU G.651.

OM3 is specified in more detail in IEC 60793 A1a.2 and TIA/EIA-492AAAC with the overfilled modal bandwidth conditions described in FOTP-203 and IEC 61280-1-4 (Restricted Mode Launch and Encircled Flux Density).

Optical performance

Brand-Rex MillenniumM and ISO 11801 2nd Edition attenuation performance					Brand-Rex MillenniumM and ISO 11801 2 nd Edition bandwidth performance		
definition	Core size	Attenuation			OFL bandwidth		Modal bandwidth
		850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm
OM1	50 or 62.5/125	3.5 dB/km	1.5 dB/km	-	200 MHz.km	500 MHz.km	-
Millennium OM1-62.5	62.5/125	3.2 dB/km	0.8 dB/km				
OM2	50 or 62.5/125	3.5 dB/km	1.5 dB/km	-	500 MHz.km	500 MHz.km	-
MillenniumM OM2-50	50/125	2.8 dB/km	0.8 dB/km				
OM3	50/125	3.5 dB/km	1.5 dB/km	-	1500 MHz.km	500 MHz.km	2000 MHz.km
MillenniumM OM3-50	50/125	2.8 dB/km	0.8 dB/km	-			
OS1	singlemode	-	1 dB/km	1 dB/km	-	-	-
MillenniumM OS1	singlemode	-	0.38 dB/km	0.25 dB/km	-	-	-

Other geometrical and optical parameters

Parameter	Millennium OM1	Millennium OM2	Millennium OM3	Millennium OS1
Core diameter	50+-3 (μm)	62.5+-3 (μm)	50 +-2.5 (μm)	-
Cladding dia.	125+-2 (μm)	125+-2 (μm)	125+-2 (μm)	125+-2 (μm)
Core/cladding concentricity error	<3 (μm)	<3 (μm)	<1.5 (μm)	<1.5 (μm)
Core non-circularity	<6 %	<6 %	<6 %	<6 %
Cladding non-circularity	<2 %	<2 %	<1 %	<2 %
Overall coating diameter	245+-10 (μm)	245+-10 (μm)	245+-10 (μm)	245+-10 (μm)
Coating concentricity error	<12.5 (μm)	<12.5 (μm)	<12.5 (μm)	<12.5 (μm)
Coating non-circularity	<6 %	<6 %	<6 %	<6 %
Proof test level	>100kpsi, 0.7GPa	>100kpsi, 0.7GPa	>100kpsi, 0.7GPa	>100kpsi, 0.7GPa
Dispersion at 1310 and 1550 nm	-	-	-	<3.5/<18 ps/nm.km
Attenuation point or step defects	<0.2 dB	<0.2 dB	<0.1 dB	<0.1 dB
Attenuation extended variations	<0.2 dB	<0.2 dB	<0.1 dB	<0.1 dB
Numerical aperture NA	0.200+-0.02	0.275+-0.015	0.200+-0.015	-
Mode field diameter @ 1300 nm	-	-	-	9.3 +- 0.5 (μm)
Refractive index @ 850 nm	1.481	1.495	1.482	
Refractive index @ 1300 nm	1.476	1.490	1.477	-
Refractive index @ 1310/1550 nm	-	-	-	1.470