

# Fiber specifications



## G50/125 Multimode fiber G50/125 acc. to IEC 60 793-2-10

### Geometric/mechanical properties

Core diameter ( $\mu\text{m}$ )	$50 \pm 2.5$	Cladding non-circularity (%)	< 1
Cladding diameter ( $\mu\text{m}$ )	$125 \pm 2$	Core/cladding concentricity error ( $\mu\text{m}$ )	< 1.5
Coating diameter ( $\mu\text{m}$ )	$245 \pm 10$	Eccentricity of coating ( $\mu\text{m}$ )	< 10
Core non-circularity (%)	< 5	Screen test	1% expansion for 1 s ( $\neq$ 100 kpsi)

Transmission properties	Fiber type F		Fiber type G		Fiber type H		Fiber type I		Fiber type J	
	(OM2)		(OM2+)		(OM2++)		(OM3)		(OM4)	
Wavelength (nm)	850	1300	850	1300	850	1300	850	1300	850	1300
Attenuation max. (dB/km)	3.0	1.0	2.7	0.8	2.7	0.7	2.5	0.7	2.5	0.7
Bandwidth min. OFL (MHz · km)	500	500	500	1000	600	1200	1500	500	3500	500
Bandwidth min. EMB (MHz · km)							2000		4700	
Effective group of refraction	1.483	1.478	1.483	1.478	1.483	1.478	1.483	1.478	1.483	1.475
Numerical aperture	$0.200 \pm 0.020$		$0.200 \pm 0.015$		$0.200 \pm 0.015$		$0.200 \pm 0.015$		$0.200 \pm 0.015$	

## G62.5/125 Multimode fiber G62.5/125 acc. to IEC 60 793-2-10

### Geometric/mechanical properties

Core diameter ( $\mu\text{m}$ )	$62.5 \pm 3$	Cladding non-circularity (%)	< 1
Cladding diameter ( $\mu\text{m}$ )	$125 \pm 2$	Core/cladding concentricity error ( $\mu\text{m}$ )	< 1.5
Coating diameter ( $\mu\text{m}$ )	$245 \pm 10$	Eccentricity of coating ( $\mu\text{m}$ )	< 10
Core non-circularity (%)	< 5	Screen test	1% expansion for 1 s ( $\neq$ 100 kpsi)

Transmission properties	Fiber type L (OM1)		Fiber type M (OM1+)	
	Wavelength (nm)	850	1300	850
Attenuation max. (dB/km)	3.2	0.9	3.0	0.8
Bandwidth min. OFL (MHz · km)	200	500	300	800
Effective group of refraction	1.497	1.493	1.497	1.493
Numerical aperture	$0.275 \pm 0.015$		$0.275 \pm 0.015$	



**Singlemode fiber E9/125  
(matched cladding type)**

acc. to ITU-T Rec. and IEC 60 793-2-50

#### Radiation resistance

All fiber types are also available in a radiation-resistant version or with approval according to MIL-PRF-49291C (6B MMF 62.5/125, 1B MMF 50/125, 7C SMF 9/125).

## E9/125 Singlemode fiber E9/125 (matched cladding type) acc. to ITU-T Rec. G.652.D, ITU-T Rec. G657.A and IEC 60 793-2-50

Other fiber types e.g. ITU-T G.655 or ITU-T G.657.B on request

### Geometric/mechanical properties

Cladding diameter (µm)	125 ± 0.7	Mode field/cladding concentricity error (µm)	< 0.5
Coating diameter (µm)	245 ± 10	Eccentricity of coating (µm)	< 12
Cladding non-circularity (%)	< 1	Screen test	1% expansion for 1 s (≅ 100 kpsi)

Transmission properties	Fiber type A		Fiber type B		Fiber type E	
	acc. to ITU-T G.652.D and ISO 11801 type OS 2		acc. to ITU-T G.652.D and ISO 11801 type OS 2		acc. to ITU-T G.657.A	
	for semi-tight and tight buffered fibers		for loose tubes			
Wavelength (nm)	1310	1550	1310	1550	1310	1550
Attenuation max. (dB/km)	0.38	0.28	0.36	0.22	0.36	0.22
Dispersion coefficient max. (ps/nm <sup>2</sup> · km)	3.5	18	3.5	18	3.5	18
Zero dispersion wavelength (nm)	1302 – 1322		1302 – 1322		1302 – 1322	
Dispersion slope (ps/nm <sup>2</sup> · km)	≤ 0.090		≤ 0.090		≤ 0.092	
Cut-off wavelength (cabled) (nm)	≤ 1260		≤ 1260		≤ 1260	
Polarisation mode dispersion (ps/√ km)	≤ 0.2		≤ 0.2		≤ 0.2	
Effective group of refraction	1.4695	1.4701	1.4695	1.4701	1.4695	1.4701
Mode field diameter at 1310 µm (µm)	9.2 ± 0.4		9.2 ± 0.4		8.9 ± 0.4	

### Applications and link lengths

	G50/125					G50/125	
	F	G	H	I	J	L	M
Type acc. to ISO 11801: 09/2002	OM2	OM2+	OM2++	OM3	OM3+	OM1	OM1+
Gigabit Ethernet 1000BASE-SX (850 nm)	500 m	525 m	525 m	1000 m	1500 m	350 m	400 m
Gigabit Ethernet 1000BASE-LX (1300 nm)	550 m	1000 m	2000 m	550 m	550 m	550 m	1000 m
10 Gigabit Ethernet 10GBASE-SX (850 nm)				300 m*	550 m		
10 Gigabit Ethernet 10GBASE-LX4 (1310 nm WDM)				300 m	300 m**		

\* 10 GE Link Length acc. to ISO 11801.2

\*\* Radiation resistance