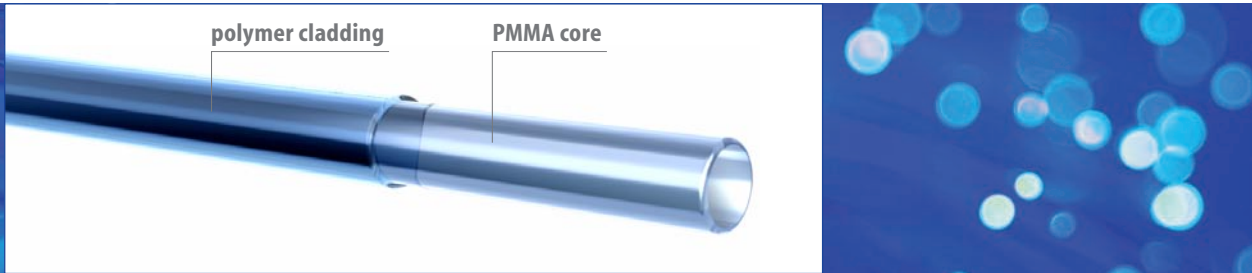


## Standard POF



### Polymer Optical Fiber (POF)

Description	P980/1000	P240/250	P486/500	P735/750	P1470/1500	P1960/2000
Description IEC 60793-2	A4a		A4c	A4b		

#### Geometric/thermal properties

Core diameter (µm)	980 ± 60	240 ± 15	486 ± 30	735 ± 45	1470 ± 90	1960 ± 120
Cladding diameter (µm)	1000 ± 60	250 ± 15	500 ± 30	750 ± 45	1500 ± 90	2000 ± 120
Working temperature (°C)	-55 to +85	-55 to +70	-55 to +70	-55 to +70	-55 to +70	-55 to +70

#### Transmission properties

Wavelength (nm)	650	650	650	650	650	650
Attenuation max. (dB/km)	160	300	200	180	180	180
Min. bandwidth (MHz x 100 m)	10					
Numerical aperture	0.5	0.5	0.5	0.5	0.5	0.5

Standard POF is made of a super pure polymethylmethacrylate (PMMA) fiber core, which is cladded with a sheath of fluoropolymer. The large fiber core facilitates coupling to transmitter and receiver elements and allows the use of low-cost connector systems some of which have been specially developed for plastic fiber optics.

LEDs in the wavelength range of  $\lambda = 650 \dots 670$  nm are used as transmitter elements. POF has a relative attenuation minimum of

160 dB/km in this range. The attenuation can be increased slightly (up to 200 dB/km for example) depending on the cable design. PIN diodes are used as receivers at the other end of the transmission path.

Because of the attenuation, the link length is typically limited to less than 100 m. Nowadays, green LEDs are used to get a smaller attenuation of about 100 dB/km.

#### Typical attenuation spectra for Standard POF 1 mm Ø

