

Long Tapered Mid Infrared Fibers

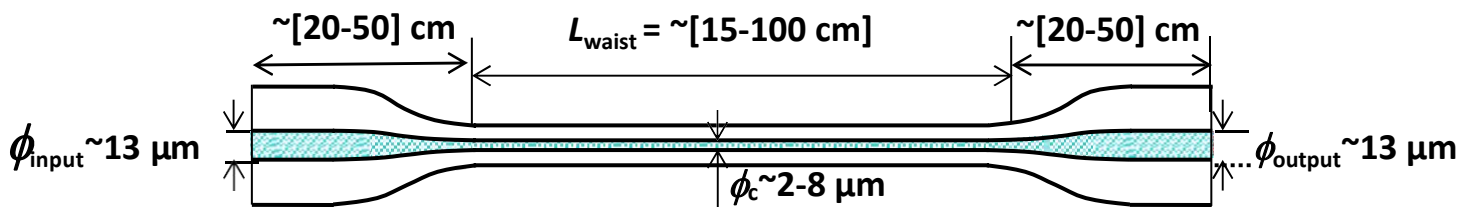
Advantages

- High nonlinearity in the waist region
- The fiber design is homothetic in the waist region
- Chromatic dispersion management
- Transmission from 1.5 to 10 μm (depending on the core size in the waist region)

Applications

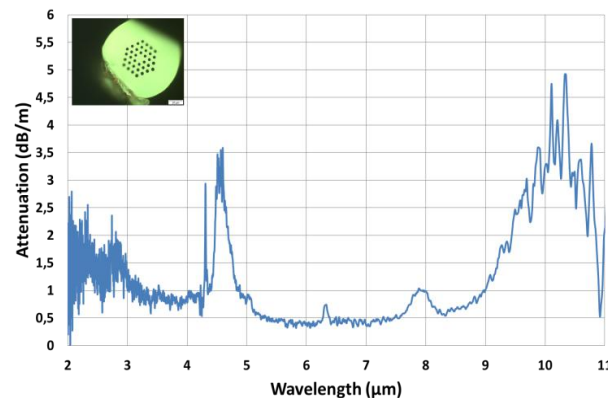
- Nonlinear Applications: Supercontinuum; Wavelength conversion; Brillouin Fiber Laser

Specifications



Reference	Long tapered GeAsSe fiber
Glass	$\text{Ge}_{10}\text{As}_{22}\text{Se}_{68}$
Refractive Index @1.55 μm	2.62
Nonlinear Refractive index n_2 (m^2/W)	$\approx 8.8 \cdot 10^{-18}$ ($\approx 400 \cdot n_2$ silica)
Brillouin Gain, gB (W/m)	$\approx 4.4 \cdot 10^{-9}$ ($\approx 100 \cdot \text{gB}$ silica)
Operating Range (μm)/Guiding Regime	1.5-10 (Single Mode)
Non tapered section	
Typical Attenuation (dB/m)	< 2.5 @ 1.55 μm ; < 1 @ 7 μm
Typical Core Diameter (μm)	13
Typical Cladding Diameter (μm)	125 +/- 2
Tapered section	
Core diameter in the waist (μm)	[2.5-8]
Length (cm)	[15-100]

GeAsSe 3NR 14/11/14-diameter=122/13 μm , pitch=8,5; d/pas=0,44
Core attenuation



Typical attenuation of a 13 μm core GeAsSe fiber

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