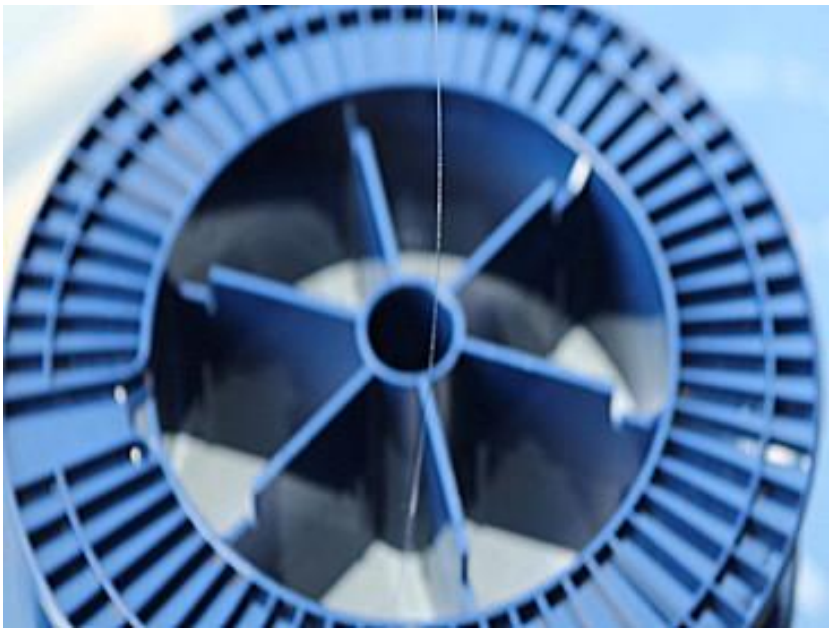
ZBLAN Mid-Infrared Large Core Power Transmission Fiber, Core Diameter 100µm



Product Description

ZBLAN fiber is a composite glass fiber composed of heavy metal fluorides such as ZrF4, BaF2, LaF3, AlF3, and NaF. Compared to the widely used silica fiber, ZBLAN fiber offers a wide transmission wavelength range (0.35µm to 4 µm) and high emission efficiency when doped with rare earth ions. Through the development of a unique fiber manufacturing technology, Idealphotonics Optics has introduced a low-cost method to produce high-quality (especially low-loss) fluoride fibers.

Product features

The effective transmission range is from 300nm to 5500nm、 Outstanding spectral uniformity、 High laser damage threshold、 Ideal choice for ho and erbium laser transmission、 High core-to-cladding ratio for high efficiency beams

Part Number

MP-ZMF-100/125-27-DE

Application area

Laser remote sensing spectroscopy 、 Chemical sensing 、 Medical diagnostics、 Laser beam transmission、 FLIR (Forward Looking Infrared)、 Thermometers

Core parameters

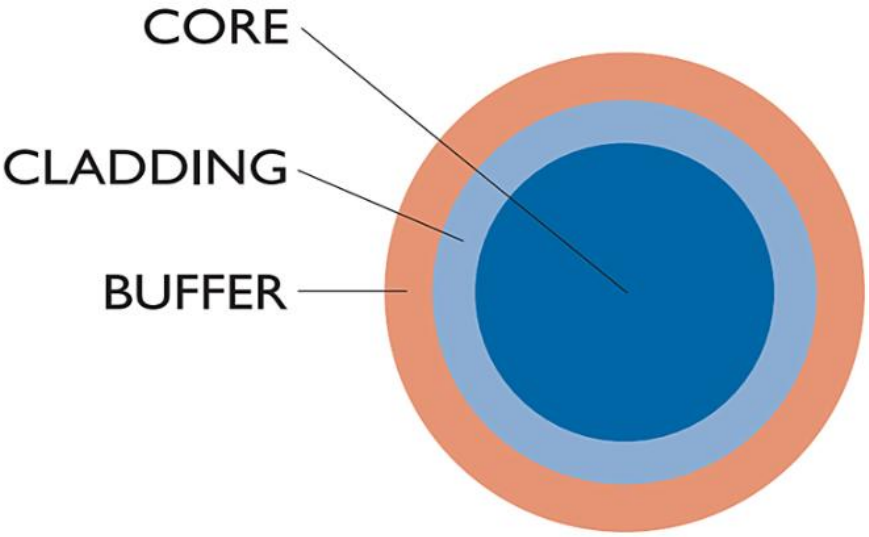
Core diameter	numerical aperture
95±5μm	0.27

General Parameters

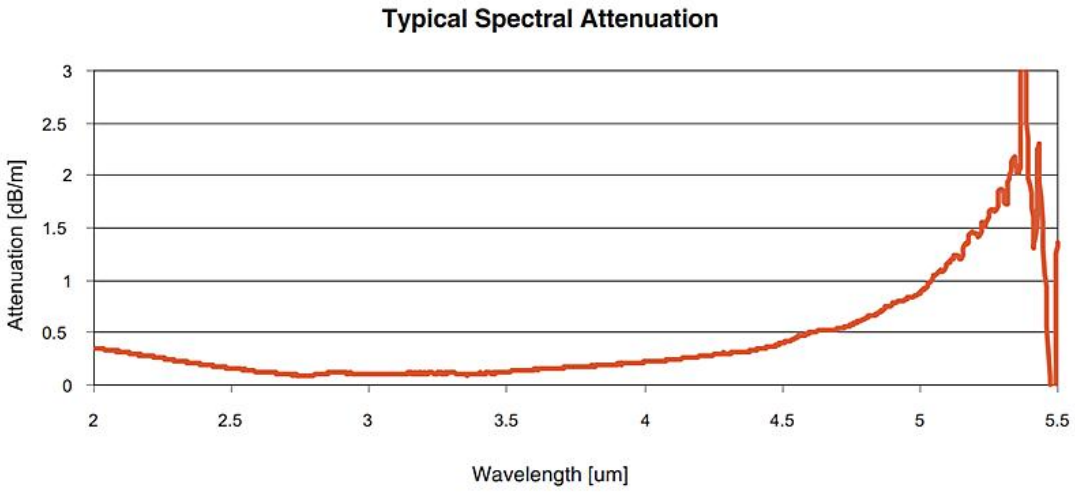
Item	MP-ZMF-400/500-27-DE	MP-ZMF-160/200-27-DE	MP-ZMF-100/125-27-DE	Custom fiber
Fiber type	Step Index			
Core dia. (μm)	400±25	160±10	95±5	60 ~ 800
Cladding dia. (μm)	500±25	200±10	123±5	80 ~ 1,000
Coating dia. (μm)	600±30	480±30	460±30	100~ 600
NA	0.27±0.01		0.22, 0.27, 0.30	
Loss@2.5μm (dB/m)	<0.1			
Core/ cladding glass	ZBLAN fluoride glass			
Coating material	UV curable acrylate			
Proof test	6cm radius	2cm radius	1.25cm radius	TBD

Item	RE doped Single Cladding Fiber	RE doped Double Cladding Fiber
Fiber type	Step index	
Dopant	Pr, Nd, Ho, Er, Dy, Tm, Yb, others	
Dopant concentration	500~60,000	
Core diameter (μm)	2~	
Core NA	0.06, 0.12, 0.16, 0.21, 0.26	
1st Cladding diameter (μm)	123±3	123, 200, 500
1st Cladding shape	Circular	Circular Octagonal Rectangular, etc.N/A
1st Cladding NA	N/A	> 0.5
2nd cladding thickness (μm)	N/A	>30
2nd cladding material	N/A	Fluoro-acrylate
Outer diameter (μm)	460±30	460, 480, 600
Core/Cladding glass	ZBLAN fluoride glass	
Coating material	UV curable acrylate	
Proof test	1.25cm radius	TBD

Fiber structure



Typical attenuation values at various wavelengths



Ordering info

Name: Single-mode Mid-Infrared Fluoride Fiber

Model: MP-ZSF-9/125-N-0.20

Core Diameter: 9 ± 1 μm

Numerical Aperture (NA): 0.20 ± 0.01

Cutoff Wavelength:<2.6 μm

Loss:<0.1 dB/m at 1.5 μm

Cladding Diameter: 123 ± 3 μm

Outer Coating Diameter: 460 ± 30 μm

Core/Cladding Material: ZBLAN Fluoride Glass

Name: 400 μm Large-Core Mid-Infrared Transmission Fiber

Model: MP-ZMF-400/500-N-0.27

Core Diameter: 400 ± 25 μm

Cladding Diameter: 500 ± 25 μm

Outer Coating Diameter: 600 ± 30 μm

Numerical Aperture (NA): 0.27 ± 0.01

Loss:<0.1 dB/m at 2.5 μm

Core/Cladding Material: ZBLAN Fluoride Glass

Name: 200 μm Large-Core Transmission Fiber

Model: MP-ZMF-160/200-N-0.27

Core Diameter: 160 ± 25 µm

Cladding Diameter: 200 ± 25 µm

Outer Coating Diameter: 480 ± 30 µm

Numerical Aperture (NA): 0.27 ± 0.01

Loss:<0.1 dB/m at 2.5 µm

Core/Cladding Material: ZBLAN Fluoride Glass

Name: 100 µm Large-Core Transmission Fiber

Model: MP-ZMF-100/125-N-0.27

Core Diameter: 95 µm

Cladding Diameter: 125 µm

Outer Coating Diameter: 460 ± 30 µm

Numerical Aperture (NA): 0.27 ± 0.01

Loss:<0.1 dB/m at 2.5 µm

Core/Cladding Material: ZBLAN Fluoride Glass