N K Photonics

Hollow-core PM fiber

Hollow-core photonic bandgap fiber



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Unique properties for demanding applications

Hollow-core fibers enable a large variety of applications

In hollow-core photonic bandgap fibers, a microstructured silica cladding with air holes confines the light inside a hollow core.

Hollow-core fibers enable a large variety of applications which require performances that can not be met using traditional solid-core fibers.

Unique properties

The hollow core allows control of the gas composition and pressure, enabling extremely long interaction lengths between the light and the gas.

The weak interaction between the fundamental mode and the surrounding silica also makes these fibers radiation insensitive.

Reduced non-linearities

Since only a small fraction of the light propagates in silica, the effect of material non-linearities is significantly reduced compared to solid core fibers.

Features

> 98% of the optical power is located in the hollow core Can be gas or particle filled **Ultra-low bend loss** Low Fresnel reflections at end faces Group index close to unity **Radiation insensitive Pure silica**

Typical near field intensity profile



HC920-PM

Schematic fiber cross section



Hollow-core **PM fiber**

Applications

Two-photon microscopy **Power delivery** Pulse shaping and compression Gas spectroscopy **Nonlinear optics** Fiber optic gyroscopes Sensors Narrow linewidth delivery

Specifications

Optical

Model

Operating wavelength [nm]

Transmission loss [dB/km]

Mode field diameter @ design wavelength [μ m] ¹

Typical group birefringence

Typical dispersion @ 920 nm [ps/nm/km]

Physical properties

Model

Core diameter [µm]

Cladding diameter [µm]

Coating diameter (single-layer acrylate) [µm]

Physical properties

HC-920-PM	
900-940	
< 150	
6.0 ± 1	
≥ 2.8 · 10-4	
90	



HC-920-PM

8.0 ± 2

120 ± 10

 240 ± 40

Hollow-core **PM fiber**

200 150 l/km] 100 50 **D** 0 Sio -50 -100 . Display="block-color-bl -150

-200

All NKT Photonics products are produced under our quality management system certified in accordance with the ISO 9001:2015 standard.







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