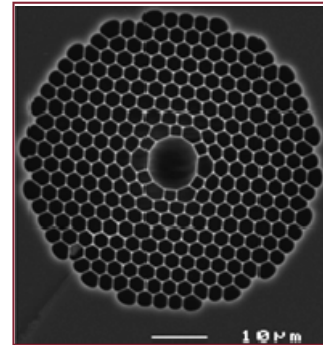


HC-1060-02

Hollow Core Photonic Bandgap Fiber for 1060nm Range Applications



- >95% of optical power located in air
- Quasi-Gaussian fundamental mode
- Can be filled with gas
- Low bend loss down to few mm bend radius
- Fresnel reflection to air at the end faces $<10^{-4}$
- Up to 80% of fiber cross section composed of solid silica, facilitating fusion splicing to conventional fibers
- Undoped silica for good temperature stability



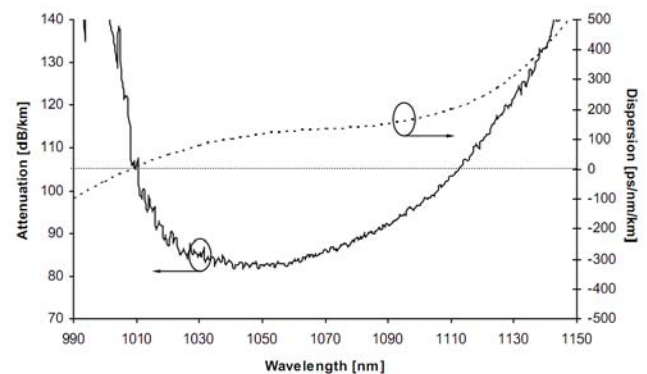
Hollow core photonic bandgap fibers guide light in a hollow core surrounded by a microstructured cladding formed by a periodic arrangement of air holes in silica.

Since only a small fraction of light propagates in glass, the effect of material nonlinearities is significantly reduced and the fibers do not suffer from the same loss limitations as fibers made from all solid material.

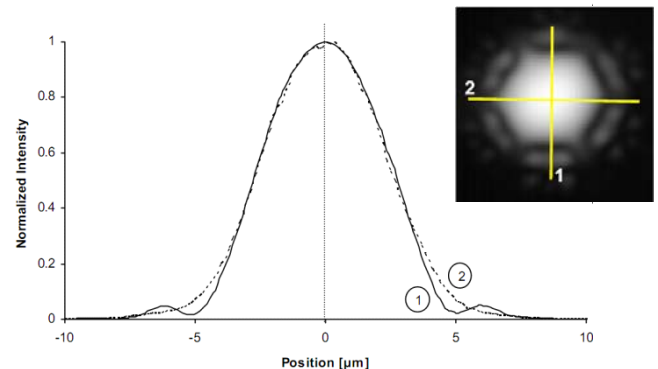
Applications include power delivery, pulse shaping and compression, sensors and nonlinear optics.

Physical properties	
Core diameter*	10 μm ± 1 μm
Pitch	2.75 μm
Air filling fraction PBG region	> 90%
Diameter of holey region	50 μm
Cladding diameter	123 μm ± 5 μm
Coating diameter (single layer acrylate)	220 μm ± 50 μm
Optical properties	
Center wavelength	1060 nm
Attenuation @ 1060 nm	< 0.1 dB/m
Dispersion @ 1060 nm	120 ps/nm/km
Dispersion slope @ 1060 nm	1 ps/nm ² /km
Dispersion slope @ zero disp. wavelength	4.4 ps/nm ² /km
10 dB width of transmission band	> 90 nm
Fraction of light in air	> 90%
Mode field diameter (1/e ²)	7.5 μm ± 1 μm
Effective mode index	~0.99
Mode shape overlap with std. SMF	> 90%

Typical attenuation and dispersion



Typical near field intensity



* Core formed by removing 7 hexagonal unit cells of the cladding

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