Spectral Filtering | Hollow Core | Single Mode | Large Mode-area

AIR-6-800

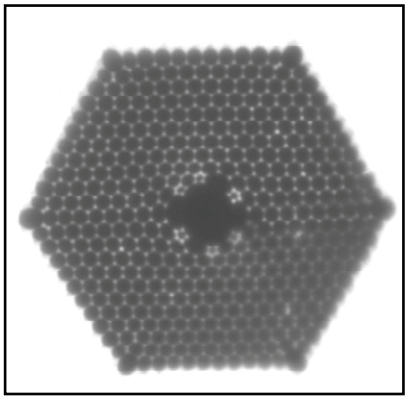
Airguiding photonic bandgap fiber

- High threshold power for nonlinear effects
- Pure silica fiber
- Core can be filled with gasses, particles etc.
- No Fresnel reflections at open fiber ends
- Bending insensitive

Airguiding photonic bandgap fibers use a microstructured cladding region with air holes to guide light in a hollow core.

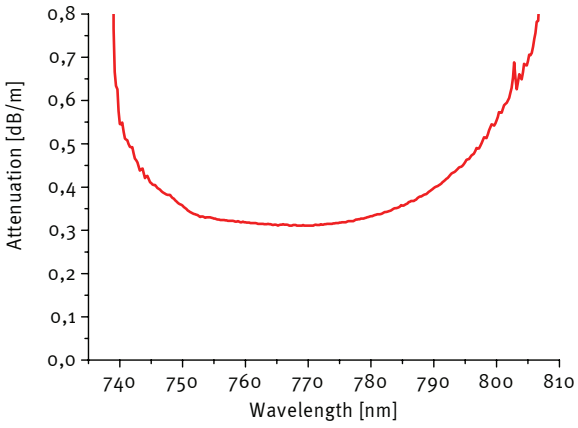
The photonic bandgap guiding mechanism is fundamentally different from the traditional total internal reflection guiding principle. This new technology provides the basis for high power delivery without nonlinear effects or material damage.

The wavelength range with photonic bandgap guidance is around 50 nm for this fiber. Outside this wavelength region the fiber is anti-guiding.

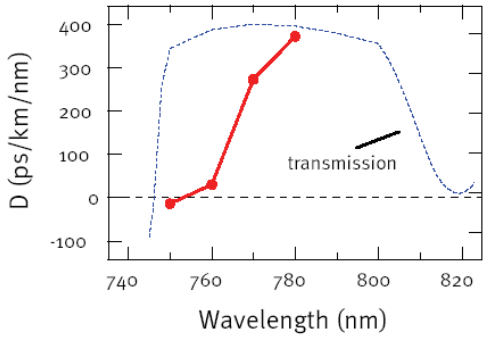


Applications
- High power delivery
- Particle guidance
- Nonlinear optics (gas-filled core)
- Waveguiding in radiative enviroments
- Short pulse delivery

Typical spectral attenuation - 40m fiber



Measured dispersion - red curve



Measured by D. Ouzounov and A. Gaeta, Cornell University

Physical properties	
Material	Pure Silica
Cladding diameter	122 ± 5 µm
Coating diameter	243 ± 10 µm
Coating material	Acrylate
Core diameter	6 ± 1 µm

Optical properties	
Attenuation @ 760-800 nm	<0.4 dB/m
Numerical aperture @ 780 nm	~ 0.17
Numerical aperture @ 830 nm	~ 0.22

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