



Optical signal in a hollow core photonic bandgap fibre is guided in an air core surrounded by a high air filling factor PBG microstructured region (>90%). Added to the low bend sensitivity due to the core high NA, this confers to this fibre design significantly reduced material nonlinearities since more than 95% of optical power is propagating in air. In addition air/undoped silica provides excellent temperature immunity critical for high performance fibre sensing and metrology applications.

Main characteristics

- Air core, ultra-low nonlinear coefficient
- Low background losses
- Low dispersion in the centre of the transmission band

Applications

- Power delivery
- Fibre sensors
- Nonlinear applications (pulse compression, shaping)

Fibre specifications

Fibre type	HCF-11-80-750	HCF-12-85-785	HCF-10-100-950	HCF-10-110-1060
Optical parameters				
Center wavelength (nm)	750 +/- 10	785 +/- 10	950 +/- 10	1060 +/- 20
Minimum attenuation (dB/km)	135	125	125	40
Spectral transmission window (nm)	700 - 780	770 - 800	910 - 970	1030 - 1120
Maximum attenuation in transmission window (dB/km)	300	300	200	100
Optical power fraction in core	> 90%	> 90%	> 90%	> 90%
Effective modal index	~ 0.99	~ 0.99	~ 0.99	~ 0.99
Mode field diameter (μm)	8.5 +/- 1	8.5 +/- 1	8 +/- 1	8.5 +/- 1
Physical/Material parameters				
Fibre material	synthetic silica			
Core concentricity error (μm)	< 0.5			
Core diameter (μm)	11 +/- 1	12 +/- 1	10 +/- 1	10 +/- 1
Cladding diameter (μm)	80 +/- 5	85 +/- 5	100 +/- 5	110 +/- 5
Coating outside diameter (μm)	240 +/- 10			
Coating type	dual coat high index coating			
Proof test level (kpsi)	75			

Typical measured attenuation

