

# SC-5.0-1040

## Nonlinear fiber for supercontinuum generation



- Single mode
- Bending insensitive
- Dispersion optimized for 1  $\mu\text{m}$  wavelength pumping

This single-mode nonlinear photonic crystal fiber combines a high nonlinear coefficient with zero dispersion around 1040 nm to allow efficient nonlinear interactions using 1060 nm range lasers. The fiber is designed to convert passively Q-switched Nd<sup>3+</sup>-microchip lasers into a compact, low-cost, ultra-bright supercontinuum source.

Due to the optimized dispersion profile, a length of only 20 m of this fiber is sufficient to achieve near-unity conversion efficiency in combination with a laser that delivers pulses of ~1 ns, 5-10 kHz repetition rate and a few tens of milliwatts of average power at 1064 nm wavelength.

The fiber is available spliced to standard single mode fiber or endlessly single mode fiber, and is also available with hermetically sealed ends and FC/PC connectors.

An application note for using this fiber for supercontinuum is available from our website: [www.nktphotonics.com/support](http://www.nktphotonics.com/support)

### Applications

Broadband continuum generation for:

- Spectroscopy and Microscopy
- Metrology
- Optical coherence tomography, OCT

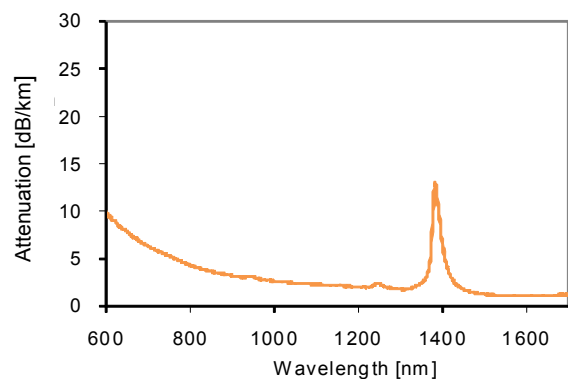
### Physical properties

Material	Pure silica
Cladding diameter	125 $\pm$ 3 $\mu\text{m}$
Coating diameter	244 $\pm$ 10 $\mu\text{m}$
Coating material	Acrylate
Core diameter	4.8 $\pm$ 0.2 $\mu\text{m}$

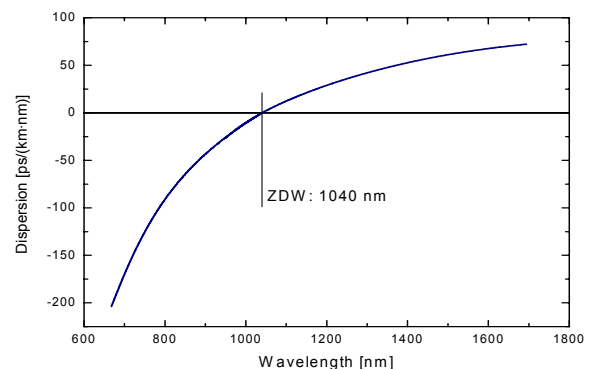
### Optical properties

Zero dispersion wavelength	1040 $\pm$ 10 nm
Cut-off wavelength	< 1000 nm
Nonlinear coefficient @ 1060 nm	11 (W $\cdot$ km) <sup>-1</sup>
Attenuation @ 1040nm	< 3 dB/km
Attenuation @ 1550 nm	< 2.5 dB/km
Attenuation @ 600 nm	< 15 dB/km
Mode Field Diameter	4.0 $\pm$ 0.2 $\mu\text{m}$
NA @ 1060 nm	0.20 $\pm$ 0.05

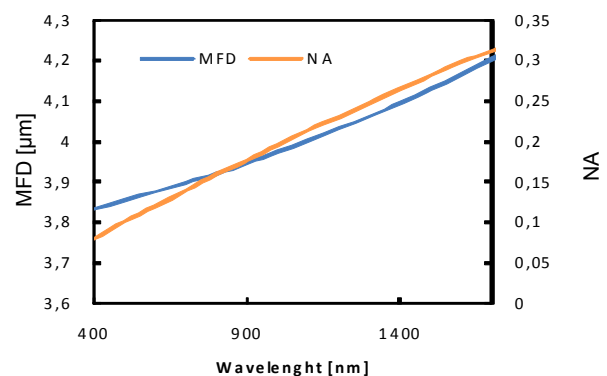
### Typical spectral attenuation



### Typical measured dispersion



### Mode field diameter and NA



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