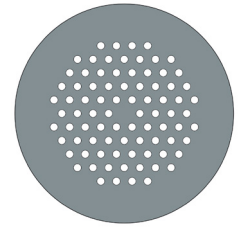


SPECIALTY OPTICAL FIBER

# IXF-SUP Series

Partnership with



## Supercontinuum Photonic Crystal Fibers

The IXF-SUP family are microstructured photonic crystal fibers designed for the efficient generation of supercontinuum with ti-sapphire and YAG pulsed pump sources. These fibers have a well-controlled Zero Dispersion Wavelength (ZDW) and feature low dispersion at the pump wavelength and high numerical aperture.



IXF-SUP fibers can be connectorized into patchcords or fiber assemblies for easier integration, handling and improved robustness.

### Benefits & Features

- Pure silica core, low background losses
- Small effective area, highly nonlinear
- Well controlled dispersion profile
- Dispersion optimized for pumping near 780 nm & 1060 nm
- Standard and PM version
- Connectorization into patchcords possible

### Applications

- Supercontinuum generation
- Frequency comb generation

	IXF-SUP-2-135-760	IXF-SUP-5-125-1050	IXF-SUP-5-125-1050-PM
<b>Physical and Material parameters</b>			
Material	Silica		
Core diameter (μm)	1.7 ± 0.2	5 ± 0.3	5 ± 0.3
Cladding diameter (μm)	135 ± 5	125 ± 2	125 ± 3
Cladding non-circularity (%)	< 2	< 2	< 7.5
Coating outside diameter (μm)	240 ± 10	245 ± 10	240 ± 10
Coating type	Dual coat high index acrylate		
<b>Optical properties</b>			
Zero dispersion wavelength (nm) *	760 ± 15	1050 ± 5	1050 ± 5
Mode field diameter @ZDW (μm)	1.6 ± 0.2	4.6 ± 0.3	4.5 ± 0.3
Effective area @ZDW (μm <sup>2</sup> )	1.9 ± 0.2	14 ± 2	16 ± 2
Nonlinear coefficient (W.km <sup>-1</sup> )	105 ± 10	10 ± 1	10 ± 1
Numerical aperture	0.4 ± 0.05	0.2 ± 0.02	0.2 ± 0.02
Background loss @ZDW (dB/km)	< 90	< 20	< 20
Background loss @1550 nm	–	< 15	< 30
Birefringence (x 10 <sup>-4</sup> )	1 ± 0.5	–	2.3 ± 0.5

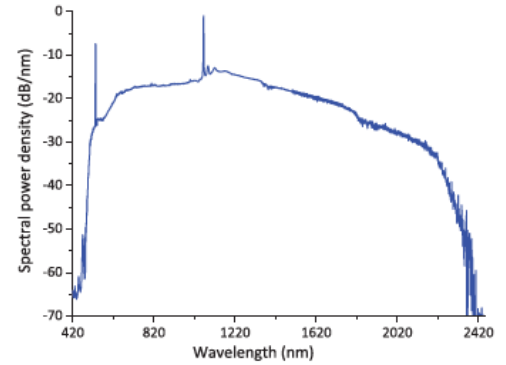
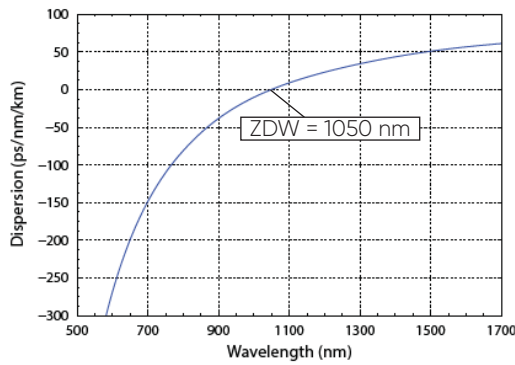
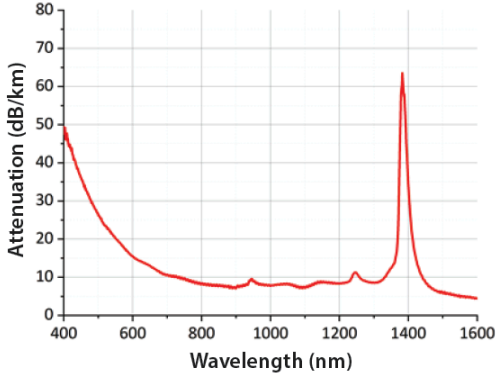
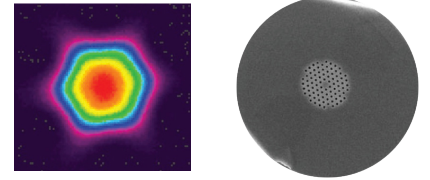
\* Zero dispersion wavelength (ZDW)

PSD-L-Q-E-086-L

IXF-SUP-Series\_edG\_22022024

# IXF-SUP Series

The SUP-2 fiber is optimized for pumping near 780 nm in the femtosecond regime, whereas the SUP-5 fiber is optimized for pumping near 1060 nm. The supercontinuum generated depends on the length of IXF-SUP fiber used and on the parameters of the seed laser : average power, pulse duration and repetition rate.



Typical attenuation and dispersion of IXF-SUP-5-125-1050-PM fiber.

Typical supercontinuum generated in 10 m of IXF-SUP-5-125-1050 with 300 mW 1064 nm pulse laser (1.2 ns @25 kHz)

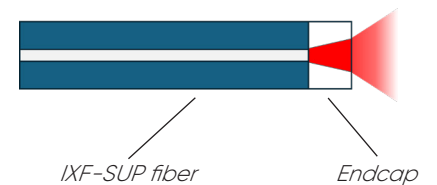
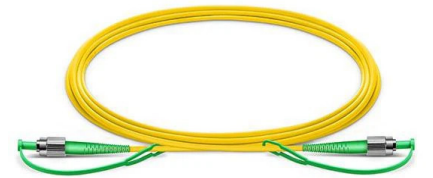
## PATCHCORDS & FIBER ASSEMBLIES

The IXF-SUP-5-125-1050 and IXF-SUP-5-125-1050-PM fibers can be connectorized into patchcords or pigtails for easier integration, handling and improved robustness. When connectorized, fiber end-faces are terminated with thin endcaps to seal and protect the hollow microstructure while maintaining the optical beam quality. Endcaps also reduce the power density at the glass/air interface which is beneficial for high-power operation.

### Patchcord

Length (m)	Up to 12	
Connectors	Non-PM :	FC (APC or PC), SC (APC or PC), SMA
	PM :	FC (APC or PC)
	Other upon request	
Jacket	No jacket (bare fiber)	
	Ø900 µm hytel	
	Ø3 mm PVC	
	Stainless steel	
Endcap length (µm)	< 100, other lengths upon request	
Endcap material	Fused silica	
Transmission (%) *	> 60	
PER (dB) *	> 20	
For PM fibers only		

\* Measured at 532 nm or 553 nm



Exail reserves the right to change, at any time and without notice, the specifications, design, function or form of its products described herein.

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