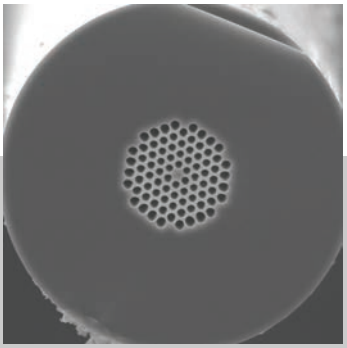
PHOTONICS BRETAGNE
Photonics Innovation Hub

SPECSHEET
01/2025

MICROSTRUCTURED FIBRES | SOLID-CORE SUPERCONTINUUM FIBRES



Product line PERFOS

These fibres offer both low dispersion at the pump wavelength and high numerical aperture and are therefore particularly suited for generating supercontinuum with Titane-Sapphire, Neodyme or Ytterbium pulsed pump sources. End-caps, connectorisation and simulation support available on request.

MAIN CHARACTERISTICS

- Pure silica core, low background losses
- Small effective area, high nonlinear coefficient
- Dispersion optimised for pumping near 780 nm, 1040 nm & 1060 nm

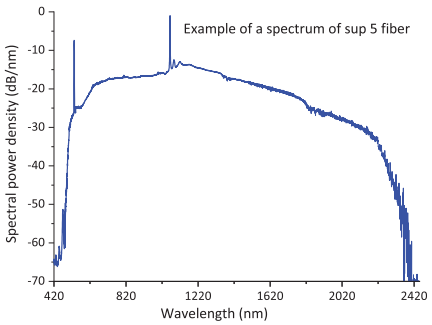
APPLICATIONS

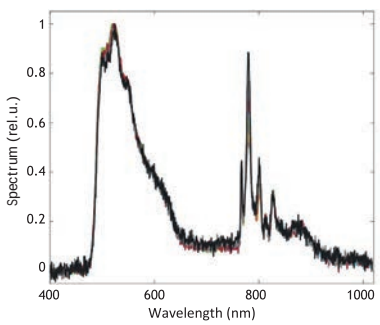
- Supercontinuum generation
- Frequency comb generation

FIBRE SPECIFICATIONS	SUP-2-135	SUP-4-135	SUP-5-125	SUP-5-125-PM
Optical parameters				
Zero Dispersion Wavelength (ZDW) (nm) (1) (2)	760 +/- 15	965 +/- 15	1050 +/- 5	1050 +/- 5
Mode Field Diameter @ ZDW (µm) (2)	1.6 +/- 0.2	3.4 +/- 0.5	4.5 +/- 0.5	4.5 +/- 0.5
Effective Area @ ZDW (µm2) (2)	1.9 typical	8.2 typical	14 typical	16 typical
Nonlinear Coefficient ($W^{-1}.km^{-1}$) (2)	105 +/- 10	20 +/- 2	10 +/- 1	10 +/- 1
Numerical Aperture (2)	0.4 typical	0.25 typical	0.2 typical	0.2 typical
Background Loss @ ZDW (dB/km)	< 90	< 20	< 20	< 20
Background Loss @ 1550 nm (dB/km)	N/A	< 10	< 15	< 30
Birefringence (x 10^{-4})	> 0.5	N/A	N/A	> 1.8
Physical/Material Parameters				
Material	F300 Silica			
Core Diameter (µm)	1.7 +/- 0.2	4.5 +/- 0.3	5 +/- 0.3	5 +/- 0.3
Cladding Diameter (µm)	135 +/- 5	135 +/- 5	125 +/- 2	125 +/- 3
Cladding Non-Circularity (%)	< 2	< 2	< 2	< 7.5
Coating Outside Diameter (µm)	240 +/- 10	250 +/- 10	245 +/- 10	240 +/- 10
Coating Type	Dual coat high index coating acrylate			
Proof-Testing (kpsi)	> 20			
Cleaved or End-Capped End-Face (on request)	M^2 parameter < 1.3 @ 632 nm			

(1) Other ZDW on request (2) Calculated value from simulation

Typical supercontinuum generated in two SUP fibres





- See left: a SUP-5-125 fibre pumped with a 1064 nm pulse laser (Pulse width: 1.2 ns, Peak power: 10 kW)
- See right: in an end-capped SUP-2-135 fibre pumped with a 780 nm pulse laser (Pulse width: 150 fs, peak power: 200 kW) - Courtesy of Charles University, Prague

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All our optical fibres and components are manufactured according to our ISO certified quality management system, which places the needs and values of customers and partners at the heart of our organization. Throughout the manufacturing process, our components and systems are subjected to rigorous tests and inspections, which guarantees their robustness and reliability in the most demanding environments.