



Photosensitive

VERSION: NEWPORT 09/1
RELEASE DATE: 23 OCTOBER 2013

Datasheet

Boron Doped Photosensitive Fiber

Fibercore's photosensitive (PS) series of fibers are co-doped with Boron and Germanium. The combination of Boron and Germanium gives extremely high photosensitivity whilst maintaining a relatively large Mode Field Diameter (MFD). The high photosensitivity level ensures that high reflectivity Fiber Bragg Gratings (FBGs) can be inscribed in a short period of time with or without Hydrogen loading the fiber. PS-fiber may be used 'straight from the shelf', without hydrogenation, delivering a strong and consistent degree of photosensitivity indefinitely.

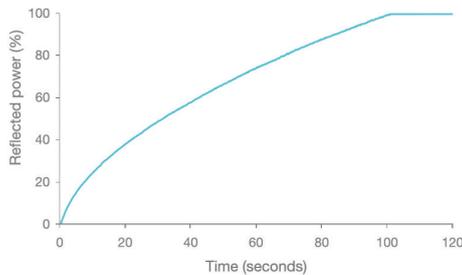
PS fibers provide significant advantages for high volume FBG production lines by dramatically reducing the production time per FBG, for example in diode laser FBG stabilizers and gain flattening filters.

PS1250/1500 has been designed to match the MFD characteristics of typical, dual-wavelength, 1310nm and 1550nm telecommunications fiber, making it ideal for the fabrication of add-drop multiplexers or Erbium Doped Fiber Amplifier (EDFA) Gain-Flattening Filters (GFFs).

PS980 has been designed to be used to pigtail 980nm EDFA pump diodes, enabling a wavelength-stabilizing (or 'pump-locking') grating to be written directly into the pigtail.

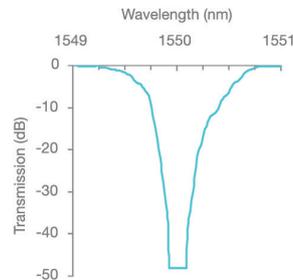
FBG Inscription in Boron Co-doped PS-Series

The special core-composition of PS-Series fiber enables rapid grating fabrication, without the need to hydrogen-load.



Writing Conditions: KrF excimer laser at 248 nm, 20Hz pulsed output over 100 seconds (2000 pulses).
Grating Characteristics: 3mm long, Bragg wavelength of 1544 nm.

Typical Grating Characteristics



Transmission spectrum 15mm long grating (248 nm source, 0.5J/cm²/pulse at 20Hz)

Advantages:

- Extremely high photosensitivity for rapid inscription of high reflectivity FBGs
- FBG inscription is possible without the need for Hydrogen loading
- Dual Band PS1250/1500 fiber suitable for 1310nm and 1550nm applications

Typical applications:

- FBGs
- Fiber Lasers
- Temperature Sensors
- Strain Sensors
- Biomedical Sensors

Product Variants:

- **PS750** Very highly photosensitive fiber for FBGs around 780nm
- **PS980** Very highly photosensitive fiber for FBGs around 980nm
- **PS1250/1500** Dual wavelength very highly photosensitive fiber for FBGs around 1310nm and 1550nm

Related Products:

- SM Fiber for Visible Through to Near IR (SM)
- High Temperature Acrylate Coated Fiber (SM-HT)
- Polyimide Coated SM Fiber (SM-P)
- Pure Silica Core SM Fiber (SM-SC)



Specifications

	PS750	PS980	PS1250/1500
Operating Wavelength (nm)	780	980	1310 1550
Cut-Off Wavelength (nm)	610 – 750	850 - 950	1100 – 1260
Numerical Aperture	0.12 – 0.14		
Mode Field Diameter (μm)	4.4 – 5.9 @780nm	5.6 – 6.8 @980nm	8.8 – 10.6 @1550nm
Attenuation (dB/km)	30 (typical) @780nm	20 (typical) @980nm	10 (typical) @1310nm 120 (typical) @1550nm
Proof Test (%)	1 (100 kpsi)		
Polarization Mode Dispersion (ps/m)	-	-	≤0.002 (typical) @1310nm
Cladding Diameter (μm)	125 ± 1		
Coating Diameter (μm)	245 ± 15		
Coating Type	Dual Acrylate		

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