PHOTONICS BRETAGNE
Photonics Innovation Hub

SPECSHEET
11/2024

ACTIVE FIBRES

BISMUTH DOPED FIBRES

The development of the Bismuth doped fibre was driven by the demand of the telecom market for increasing the available data bandwidth through O-band amplifier.



Product line PERFOS

MAIN CHARACTERISTICS

- Single mode fibre with Bismuth and Phosphorus codoping
- All-solid step index fibre design based on our all-vapor phase delivery process

APPLICATIONS

- Fibre lasers/amplifiers for telecom or life science applications

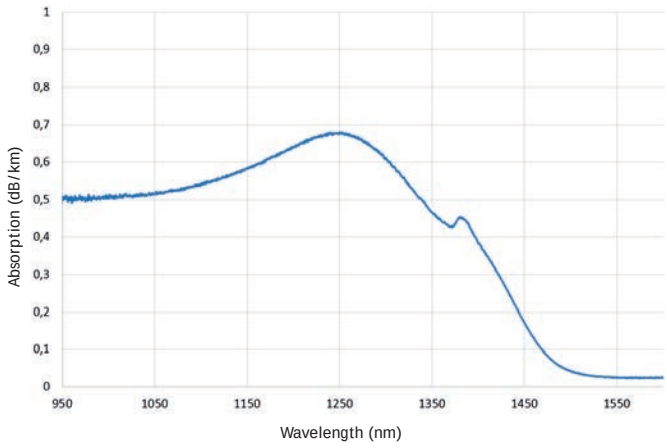
FIBRE SPECIFICATIONS	BDF-9-125 (1)
Optical Parameters	
Background Loss @ 1150 nm (dB/km)	< 43
Core Absorption @ 1240 nm (dB/m) (2)	0.6 typical
Cutoff Wavelength (µm)	< 1.4
Numerical Aperture (NA)	0.10 typical
O-Band Optical Gain (dB) (3)	> 30
Physical/Material Parameters	
Core Diameter (µm)	9.5 +/- 0.5
Cladding Diameter (µm)	125 +/- 2
Coating Outside Diameter (µm)	270 +/- 10
Coating Type	Dual Coat Acrylate
Proof-testing (kpsi)	> 50

(1) Preliminary specification

(2) See graph here below

(3) For a double pass amplification setup with a total fibre length of 167 meters, a signal input power near -20dBm@1350nm and a pump power about 350mW@1270nm (courtesy of Phlam Laboratory)

Absorption curve measured on our Bismuth doped fibre (courtesy of Phlam Laboratory)



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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.