

ERBIUM-DOPED FIBERS FOR L-BAND Specification Sheet R37103



Erbium-Doped

Product Description

OFS offers the R37103 erbium-doped fiber designed specifically for L-band amplifiers operating in the 1565-1610 nm region. The fiber gives high efficiency and low noise figure, while reducing the length needed in amplifier designs.

Spectral Uniformity and Reproducibility.

For EDFA manufacturers designing DWDM amplifiers, the EDF parameter is the uniformity of the spectral shape from one coil of EDF to the next. More than 15 years of experience with EDF production at OFS has brought our EDF uniformity to an unprecedented level. This world class manufacturing is supported by precision characterization of the EDF in a DWDM amplifier setup. Combined with our latest patented improvements in splice performance, this means that our customers have the most reliable, efficient and cost-effective EDFA manufacturing.

Hydrogen Immunity. Erbium-doped R37103 shows negligible loss increase in the presence of hydrogen, even at elevated temperatures. The change in background loss is predicted to be less than 0.1 dB in the signal band over the lifetime of an amplifier at 70°C and 1% hydrogen (based on accelerated aging tests and models for temperature and H₂ pressure dependence).

OASiX Software Package. Accurate prediction of EDF performance is essential to applications design. To meet this need, OFS offers the OASiX Optical Amplifier Simulation System software to design and predict EDFA performance. This specialized software package allows you to accurately predict the performance at all pump powers. OASiX includes modeling parameters specific to the lot of EDF you purchase. OASiX is also available in a DLL version to combine with external optimization tools.

Typical Applications

- DWDM and CATV systems operating in the L-Band
- Pump applications at 980 nm or 1480 nm

Features and Benefits

- High efficiency
- High erbium concentration gives short device length, reducing length-accumulated impairments
- Flat gain spectrum
- Excellent batch-to-batch fiber uniformity
- High reliability
- H₂ insensitive
- High strength
- Low and consistent splice loss
- Dual-layer acrylate coating for excellent micro-bending, abrasion resistance, and mechanical strength
- OASiX modeling support

Related Products & Capabilities

- EDF for extended L-Band amplifier, R37105 XL
- EDF with 80 μm cladding, R37003-80 and R37102-80

Ask us about other options available:

- Colored or Natural Buffers
- Tighter Optical Property Specifications
- Coils
- Custom Designs

To order items on this spec sheet, please contact our facility in:

- Broendby, Denmark
+45 4345 8888
- or by email inquiry to:
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Fiber Specifications

Optical Properties

Peak absorption @ 1530 nm	16 - 24 dB/m
Cutoff wavelength	840 - 960 nm
Mode field diameter	5.4 ± 0.5 μm
Loss at 1200 nm	<10 dB/km
Numerical aperture	0.25 ± 0.02
PMD (typical)	2 fs/m
Spectral variation*	<0.75%

Physical Properties

Core diameter (typical)	3.1 μm
Cladding diameter	125 ± 0.7 μm
Cladding non-circularity	<1%
Core eccentricity	<0.3 μm
Coating diameter	245 ± 10 μm
Coating non-circularity	<2.5%
Coating/cladding concentricity error	<16 μm

Mechanical and Testing Data

Proof test level	2.0% (200 kpsi)
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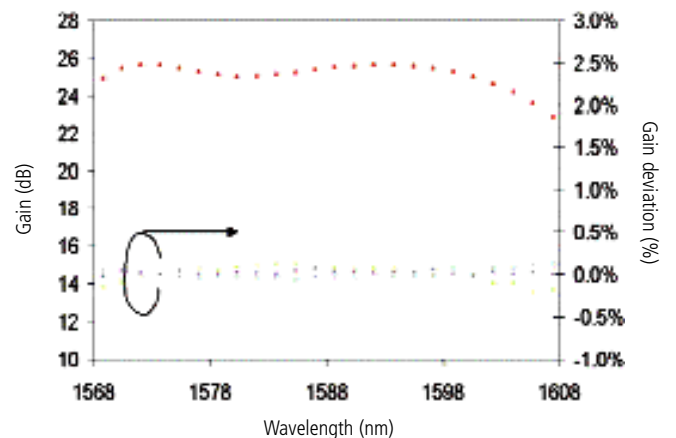
Order by Part Number

R37103

* Max deviation in gain spectrum over L-band from a reference fiber.

Erbium-Doped

Gain Spectrum



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