

## OTHER DOPED FIBERS Specification Sheet

# Rare Earth Doped (RED)

EDF 80, EDF 150, R37PM01, R37PM02, R37501 Er, R38501 Tm, and R39501 Tb



Leading Optical Innovations

Other Doped

### Product Description

OFS has developed several rare earth doped fibers, each designed for a different type of fiber laser:

- Fiber with high erbium concentration makes it possible to use very short fiber in a laser cavity
- R37PM01 fiber combines the features of an erbium-doped fiber with those of a polarization-maintaining fiber
- Single-mode Yb, Tm, and Er, doped fibers have photosensitive cladding which makes the fibers ideal for DFB lasers

### Features and Benefits

- Optimized for laser applications
- Various dopants
- High strength
- Dual-layer acrylate coating for excellent micro-bending, abrasion resistance, and mechanical strength

### Related Products & Capabilities

- Other custom PM EDFs with Stress Applying Parts available
- R37003, R37003 80 for C-Band amplifiers
- R37004, for high-power C-Band amplifiers
- R37103, R37102 80 for L-Band amplifiers
- R37005, for ASE source applications
- See our full line of erbium-doped fibers for high-power C-Band, including HP980X and MP980

Ask us about other options available:

- Colored or Natural Buffers**
- 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:  
Info@SpecialtyPhotonics.com



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### OFS Specialty Photonics Division

55 Darling Drive, Avon, CT 06001  
25 Schoolhouse Road, Somerset, NJ 08873  
Priorparken 680 DK-2605 Broendby, Denmark

[www.SpecialtyPhotonics.com](http://www.SpecialtyPhotonics.com)

## High Erbium Concentration Specifications

Optical Properties	EDF 80	EDF 150
Peak absorption near 1530 nm	80 dB/m	150 dB/m
Cutoff wavelength	1000 nm	925 nm
Numerical aperture	0.29	0.29
Mode field diameter	4.9 $\mu\text{m}$	4.9 $\mu\text{m}$
Cladding diameter	125 $\mu\text{m}$	125 $\mu\text{m}$
Coating diameter	245 $\mu\text{m}$	245 $\mu\text{m}$
<b>Order by Part Number</b>	<b>EDF 80</b>	<b>EDF 150</b>

## Polarization-Maintaining Specifications

Optical Properties	R37PM01	R37PM02
Peak absorption @ 1530 nm	18 dB/m	9 dB/m
Attenuation @ 1200 nm	<25 dB/km	<15 dB/km
Numerical aperture	0.29	0.25
Mode field diameter @ 1550 nm	4.5 $\mu\text{m}$	4.9 $\mu\text{m}$
Birefringence @ 1550 nm	$1 \cdot 10^{-4}$	$1.5 \cdot 10^{-4}$
h-parameter <sup>1</sup>	$3 \cdot 10^{-4}$	$3 \cdot 10^{-4}$
Cladding diameter	125 $\mu\text{m}$	125 $\mu\text{m}$
Coating diameter	245 $\mu\text{m}$	245 $\mu\text{m}$
<b>Order by Part Number</b>	<b>R37PM01</b>	<b>R37PM02</b>

<sup>1</sup>The h-parameter expresses the rate at which power is coupled between two polarization axes of the fiber. The polarization crosstalk after a length,  $l$ , is found from  $P_y/P_x = 10 \times \log(h \times l)$ . An h-parameter of  $3 \times 10^{-4} \text{ m}^{-1}$  corresponds to a crosstalk of <-28 dB for a 5 m length.

## Single-Mode Fiber Specifications

Optical Properties	R37501 Er	R38501 Tm	R39501 Yb
Peak absorption	20 dB/m @ 1530 nm	200 dB/m @ 790 nm	110 dB/m @ 915 nm 350 dB/m @ 977 nm
Cutoff wavelength	890 nm	1350 nm	890 nm
Numerical aperture	0.23	0.26	0.23
Mode field diameter	5.5 $\mu\text{m}$ @ 1550 nm	5.0 $\mu\text{m}$ @ 1700 nm	3.6 $\mu\text{m}$ @ 1000 nm
Cladding diameter	125 $\mu\text{m}$	125 $\mu\text{m}$	125 $\mu\text{m}$
Coating diameter	245 $\mu\text{m}$	245 $\mu\text{m}$	245 $\mu\text{m}$
<b>Order by Part Number</b>	<b>R37501 Er</b>	<b>R38501 Tm</b>	<b>R39501 Yb</b>

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