

Erbium-Doped Fibers



Leading Optical Innovations

C-Band

Fiber Name	Peak Absorption @ 1530 nm	Numerical Aperture	Mode Field Diameter	Cutoff Wavelength	Cladding/Coating Diameter	Part Number
MP980	6.0 dB/m	0.23	5.6 μ m	875 nm	125/250 μ m	107 770 935
MP980 80	6.0 dB/m	0.23	5.6 μ m	875 nm	80/165 μ m	300 378 718
R37003	7.0 dB/m	0.27	4.9 μ m	900 nm	125/245 μ m	107 993 263
R37003X	7.0 dB/m	0.27	4.9 μ m	900 nm	125/245 μ m	R37003X
R37003 80	7.0 dB/m	0.28	4.9 μ m	900 nm	80/200 μ m	R37003 80
R37004	7.0 dB/m	0.22	5.9 μ m	905 nm	125 /245 μ m	107 993 263
HP980X	6.5 dB/m	0.18	6.0 μ m	1100 nm	125/250 μ m	552 ERFB 001
HE980	3.5 dB/m	0.29	4.4 μ m	875 nm	125/250 μ m	107 528 366
HE980 80	3.5 dB/m	0.29	4.4 μ m	875 nm	80/165 μ m	300 378 726

Typical PMD \leq 2 fs/m

L-Band

Fiber Name	Peak Absorption @ 1530 nm	Numerical Aperture	Mode Field Diameter	Cutoff Wavelength	Cladding/Coating Diameter	Part Number
LSL	17.5 dB/m	0.25	5.2 μ m	1250 nm	125/250 μ m	108 729 864
LSL 80	17.5 dB/m	0.25	5.2 μ m	1250 nm	80/165 μ m	300 378 742
R37103	20 dB/m	0.25	5.4 μ m	950 nm	125/245 μ m	108 729 872
R37102 80	20 dB/m	0.28	4.9 μ m	950 nm	80/200 μ m	R37102 80
LRL	30 dB/m	0.25	5.2 μ m	1250 nm	125/250 μ m	109 108 910
LRL 80	30 dB/m	0.25	5.2 μ m	1250 nm	80/165 μ m	300 378 734
R37105 XL	10 dB/m	0.23	6.0 μ m	950 nm	125/245 μ m	109 108 928

Typical PMD \leq 2 fs/m



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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

ASE Sources

Fiber Name	Peak Absorption @ 1530 nm	Numerical Aperture	Mode Field Diameter	Cutoff Wavelength	Cladding/Coating Diameter	Part Number
R37005	15 dB/m	0.28	4.4 μm	900 nm	125/250 μm	107 993 271
RE120101 80	25 dB/m	0.31	3.6 μm	1000 nm	80/190 μm	RE120101 80
HG980	17.5 dB/m	0.29	4.4 μm	875 nm	125/250 μm	107 528 974

Other Doped Fibers

Fiber Name	Peak Absorption	Numerical Aperture	Mode Field Diameter	Cutoff Wavelength	Cladding/Coating Diameter	Part Number
EDF 80	80 dB/m @ 1530 nm	0.29	4.9 μm	1000 nm	125/245 μm	EDF 80
EDF 150	150 dB/m @ 1530 nm	0.29	4.9 μm	925 nm	125/245 μm	EDF 150
R37PM01	18 dB/m @ 1530 nm	0.29	4.5 μm	1000 nm	125/245 μm	R37PM01
R37PM02	9 dB/m @ 1530 nm	0.25	4.9 μm	920 nm	125/245 μm	R37PM02
R37501 Er	20 dB/m @ 1530 nm	0.23	5.5 μm	890 nm	125/245 μm	R37501 Er
R38501 Tm	200 dB/m @ 790 nm	0.26	5.0 μm	1350 nm	125/245 μm	R3850 Tm
R39501 Yb	110 dB/m @ 915 nm 350 dB/m @ 977 nm	0.23	4.9 μm	890 nm	125/245 μm	R39501 Yb

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ERBIUM-DOPED FIBERS FOR C-BAND

Specification Sheet

MP980 and MP980 80



Erbium-Doped

Product Description

MP980 erbium-doped fiber is an industry standard and is a versatile erbium-doped fiber for all DWDM and CATV amplifier applications, with over 6000 km shipped to date. Excellent gain consistency has been proven with a large volume of production data. Pre-cut coils in a variety of sizes are also available to drop-in and splice for amplifier assemblies. We use patented processes to protect against hydrogen-induced loss.

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 amplifiers
- CATV amplifiers
- 980 and/or 1480 nm pumps

Features and Benefits

- High efficiency
- Excellent gain consistency
- Excellent batch-to-batch fiber uniformity
- Excellent spectral flatness for DWDM
- H₂ insensitive
- High reliability with extensive track record
- Low and consistent splice loss
- Dual-layer acrylate coating for excellent micro-bending, abrasion resistance, and mechanical strength
- OASiX modeling support

Related Products & Capabilities

- HP980X erbium-doped fiber for high-power C-Band
- LSL or LRL erbium-doped fiber for L-Band
- R37003 and R37004 erbium-doped fibers for C-Band

Ask us about other options available:

- Color-Coded Buffers**
- Coils**
- Custom Designs**
- Customized Spectral Shape**

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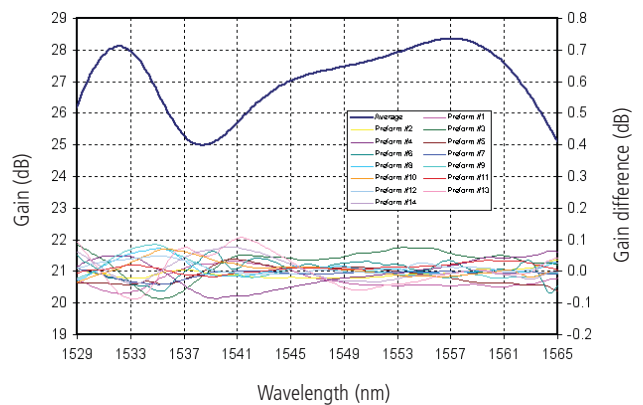
Fiber Specifications

Optical Properties	MP980	MP980 80
Peak absorption near 1530 nm	6.0 ± 1 dB/m	6.0 ± 1 dB/m
Cutoff wavelength	875 ± 75 nm	875 ± 75 nm
Numerical aperture	0.23 ± 0.02	0.23 ± 0.02
Mode field diameter @ 1550 nm	5.6 ± 0.7 μm	5.6 ± 0.7 μm
PMD (typical)	≤2 fs/m	≤2 fs/m
Loss at 1200 nm	<5 dB/km	<5 dB/km
Physical Properties		
Aluminum content (M%) (typical)	12	12
Cladding diameter	125 ± 2 μm	80 ± 2 μm
Coating diameter	250 ± 10 μm	165 ± 10 μm
Core/cladding concentricity error	<0.3 μm	≤0.3 μm
Mechanical and Testing Data		
Proof test level	2% (200 kpsi)	2% (200 kpsi)
Order by Part Number	107 770 935	300 378 718

Typical absorption variation: <2%

Gain Shape Consistency

for >1000 km
Shape Deviation <0.8% (PV)



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Product Description

OFS offers the R37003 and R37004 erbium-doped fibers from a line of C-Band amplifier products. These fibers feature excellent spectral reproducibility and batch-to-batch uniformity, drawing on more than 15 years of production experience for these products at OFS.

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 (see QCE graph). 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

- Optical amplifiers
- CATV and DWDM systems
- Pump power @ 980 nm:
 - 25 mW - 100 mW, use R37003
 - 100 mW - 300 mW, use R37003 or R37004
 - >300 mW, use R37004
- 1480 nm pump applications
- Later stages in multi-stage EDFAs, use R37004

Features and Benefits

- High efficiency for high pump power
- Low gain ripple
- Excellent batch-to-batch fiber uniformity
- H₂ insensitive
- High reliability with extensive track record
- 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

- R37103 and R37102 80 for L-Band
- 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
- Tighter Optical Property Specifications
- Coils
- Custom Designs

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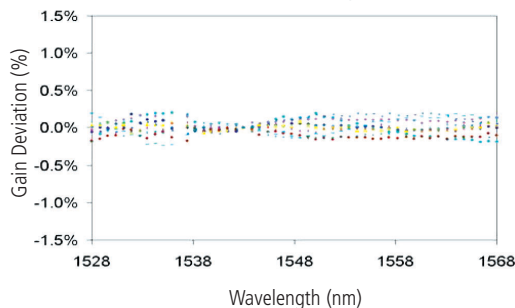
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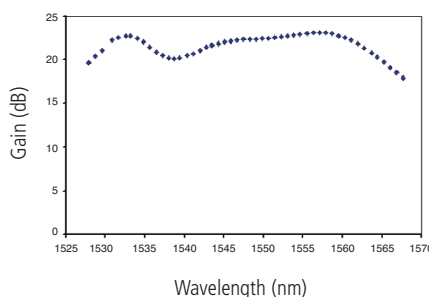
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Gain Consistency for R37003



Extensive fiber characterization includes DWDM amplifier measurements. The graph shows gain consistency as deviation from reference. Representing 700 km EDF.

Gain Spectrum for R37004



Extensive fiber characterization includes DWDM amplifier measurements.

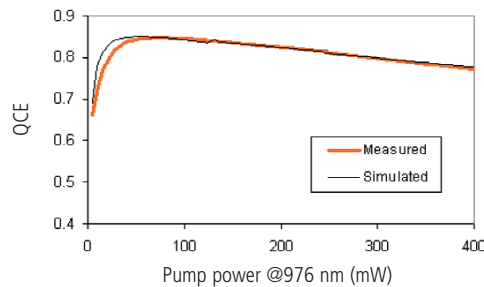
Fiber Specifications

Optical Properties	R37003 / R37003X	R37003 80	R37004
Peak absorption @ 1530 nm	7.0 ± 1.0 dB/m	7.0 ± 1.0 dB/m	7.0 ± 1.0 dB/m
Absorption variation over 1000 m reel	≤2%	≤2%	≤2%
Spectral variation	≤1%	≤1%	≤1%
Cutoff wavelength	840 - 960 nm	840 - 960 nm	850 - 960 nm
Mode field diameter	4.9 ± 0.5 μm	4.9 ± 0.5 μm	5.9 ± 0.7 μm
Loss at 1200 nm	<10 dB/km	<10 dB/km	<5 dB/km
Numerical aperture	0.27 ± 0.01	0.28 ± 0.02	0.22 ± 0.01
PMD (typical)	2 fs/m	2 fs/m	2 fs/m
QCE (typical)	>0.8	>0.8	>0.8
Physical Properties			
Core diameter (typical)	2.9 μm	2.9 μm	3.3 μm
Cladding diameter	125 ± 0.7 μm	80 ± 1 μm	125 ± 0.7 μm
Cladding non-circularity	<1%	<1%	<1%
Core concentricity error	<0.3 μm	≤0.3 μm	<0.3 μm
Coating diameter	245 ± 15 μm	200 ± 15 μm	245 ± 15 μm
Coating non-circularity	<2.5%	<2.5%	<2.5%
Coating/cladding concentricity error	<16 μm	<16 μm	<16 μm
Mechanical and Testing Data			
Proof test level	2% (200 kpsi)	2% (200 kpsi)	2% (200 kpsi)
Order by Part Number	107 993 263 / R37003X	R37003 80	107 993 263

Erbium-Doped

Quantum Conversion Efficiency

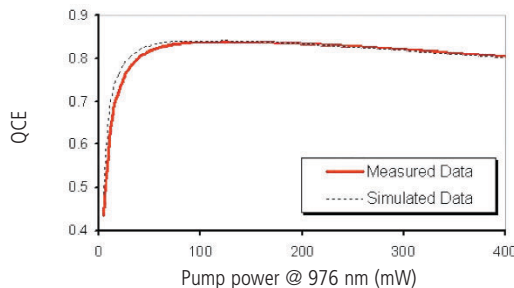
For R37003



Quantum conversion efficiency (QCE) shows the number of signal photons at the EDF output for each launched pump photon. Measured with 0 dB/m signal at 1550 nm and 976 nm copropagating pump. Please note that this parameter depends on the measurement conditions.

Quantum Conversion Efficiency

For R37004



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ERBIUM-DOPED FIBERS FOR C-BAND

Specification Sheet

HP980X



Erbium-Doped

Product Description

HP980X erbium-doped fiber is designed to provide high efficiency and spectral flatness for improved performance in high-power DWDM and CATV amplifiers. The co-dopant composition and waveguide design allow high-power conversion efficiency for 980 nm pump powers near 250 mW and higher. We use patented processes to protect against hydrogen-induced loss.

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

- High-power DWDM amplifiers
- High-power CATV amplifiers
- 980 and/or 1480 nm pumps

Features and Benefits

- High efficiency for high-power pumping
- Excellent spectral flatness for DWDM
- H₂ insensitive
- High reliability
- Low and consistent splice loss
- Low bend loss
- Dual-layer acrylate coating for excellent micro-bending, abrasion resistance, and mechanical strength
- OASiX modeling support

Related Products & Capabilities

- MP980 erbium-doped fiber for C-Band
- LSL or LSR erbium-doped fiber for L-Band
- R37003 and R37004 erbium-doped fibers for C-band

Ask us about other options available:

- Color-Coded Buffers**
- Coils**
- Customized Spectral Shape**
- Custom Designs**

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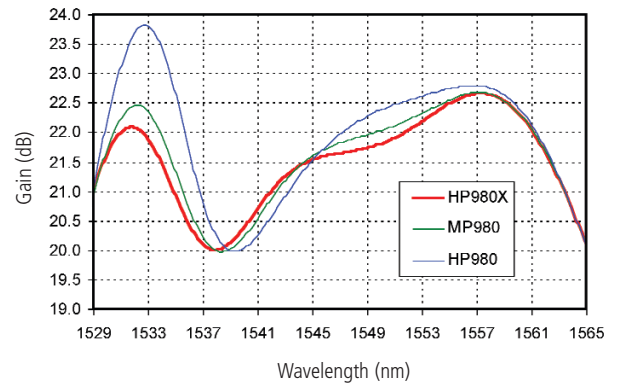
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Fiber Specifications

Optical Properties	HP980X
Peak absorption near 1530 nm	6.5 - 7.5 dB/m
Cutoff wavelength	1000 - 1200 nm
Numerical aperture	0.18 ± 0.02
Mode field diameter @ 1550 nm	6.0 - 7.8 μm
PMD (typical)	≤2 fs/m
Loss at 1200 nm	<5 dB/km
Physical Properties	
Aluminum content (M%) (typical)	12
Cladding diameter	125 ± 2 μm
Coating diameter	250 ± 10 μm
Core/cladding concentricity error	<0.3 μm
Mechanical and Testing Data	
Proof test level	2.0% (200 kpsi)
Order by Part Number	552 ERFB 001

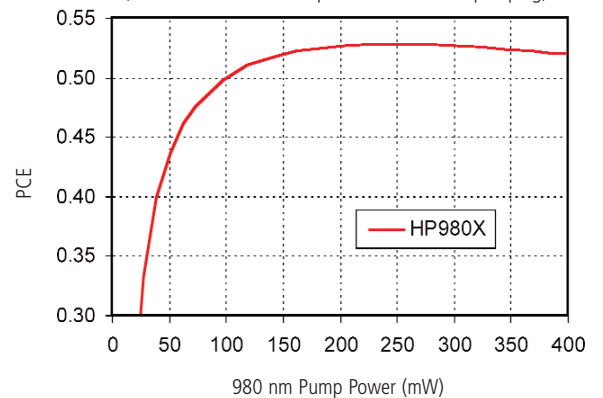
Erbium-Doped

Gain Flatness Comparison



Typical PCE with Co-Pumping

(1550 nm with 0 dBm input and 980 nm co-pumping)



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ERBIUM-DOPED FIBERS FOR C-BAND

Specification Sheet

HE980 and HE980 80



Leading Optical Innovations

Erbium-Doped

Product Description

HE980 and its reduced-cladding counterpart HE980-80, maximize efficiency over a wide range of pump powers in the C-Band. HE980 is optimized to be most efficient at low to medium pump powers. This fiber offers excellent spectral reproducibility and batch-to-batch uniformity. HE980 has been used extensively in transoceanic communication systems requiring ultra-high reliability. To further refine this selection, OASiX software modeling allows DWDM and CATV designers to plug in parameters such as efficiency, noise figure, and spectral gain shape. We use patented processes to protect against hydrogen-induced loss.

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

- Low-to-medium pump power applications
- DWDM amplifiers
- CATV amplifiers

Features and Benefits

- Excellent spectral reproducibility
- High efficiency for low-to-medium pump power
- High reliability with extensive track record
- H₂ insensitive
- Low and consistent splice loss
- Dual-layer acrylate coating for excellent micro-bending, abrasion resistance, and mechanical strength
- OASiX modeling support

Related Products & Capabilities

- See our full line of erbium-doped fibers for high-power C-Band, including HP980X, MP980, R37003, and R37004

Ask us about other options available:

- Color-Coded Buffers**
- Coils or Spools**
- Custom Designs**
- Customized Spectral Shape**

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Fiber Specifications

Optical Properties

	HE980	HE980 80
Peak absorption near 1530 nm	2.5 - 4.5 dB/m	2.5 - 4.5 dB/m
Cutoff wavelength	800 - 960 nm	800 - 960 nm
Numerical aperture	0.29 ± 0.02	0.29 ± 0.02
Mode field diameter @ 1550 nm	4.4 ± 0.8 μm	4.4 ± 0.8 μm
PMD (typical)	≤2 fs/m	≤2 fs/m
Loss at 1200 nm	<15 dB/km	<15 dB/km

Physical Properties

	HE980	HE980 80
Co-dopants	Ge/Al	Ge/Al
Aluminum content (m%) (typical)	12	12
Cladding diameter	125 ± 2 μm	80 ± 2 μm
Coating diameter	250 ± 10 μm	165 ± 10 μm
Coating/cladding concentricity error	≤15 μm	n/a
Core concentricity error	≤0.3 μm	≤0.3 μm

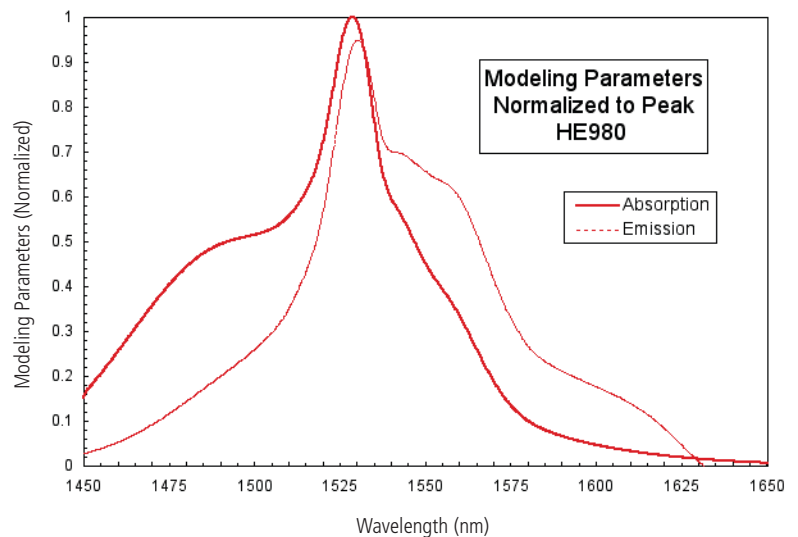
Mechanical and Testing Data

	HE980	HE980 80
Proof test level	2.0% (200 kpsi)	2.0% (200 kpsi)

Order by Part Number

HE980	HE980 80
107 528 366	300 378 726

Modeling Parameters



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ERBIUM-DOPED FIBERS FOR L-BAND

Specification Sheet

LSL and LSL 80



Erbium-Doped

Product Description

LSL standard and reduced cladding, erbium-doped fibers provide high efficiency, low noise figure, and spectral flatness in L-Band DWDM amplifiers. These fibers have been deployed in the largest volumes in L-Band transport systems. We use patented processes to protect against hydrogen-induced loss.

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

- L-Band DWDM amplifiers

Features and Benefits

- High efficiency for L-Band
- Flat gain spectrum
- H₂ insensitive
- High reliability with extensive track record
- Low and consistent splice loss
- Low bend loss
- Dual-layer acrylate coating for excellent micro-bending, abrasion resistance, and mechanical strength
- OASiX modeling support

Related Products & Capabilities

- LRL erbium-doped fiber for L-Band
- R37103 and R37102 80 for L-Band
- MP980 or HP980X erbium-doped fiber for C-Band

Ask us about other options available:

- Customized Spectral Shape**
- Coils**
- Custom Designs**

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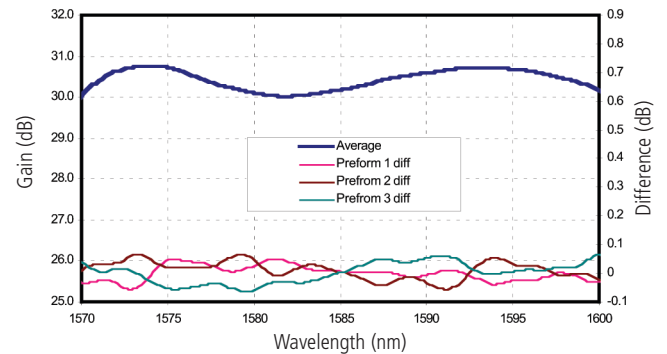
Fiber Specifications

Optical Properties	LSL	LSL 80
Peak absorption near 1530 nm	17.5 ± 2.5 dB/m	17.5 ± 2.5 dB/m
Cutoff wavelength	1100 - 1400 nm	1100 - 1400 nm
Numerical aperture	0.25 ± 0.02	0.25 ± 0.02
Mode field diameter @ 1550 nm	5.2 ± 0.5 μm	5.2 ± 0.5 μm
PMD (typical)	≤2 fs/m	≤2 fs/m
Loss at 1200 nm	<10 dB/km	<10 dB/km
Physical Properties		
Co-dopants	Ge/Al	Ge/Al
Cladding diameter	125 ± 2 μm	80 ± 2 μm
Coating diameter	250 ± 10 μm	165 ± 10 μm
Core/cladding concentricity error	<0.3 μm	≤0.3 μm
Mechanical and Testing Data		
Proof test level	2.0% (200 kpsi)	2.0% (200 kpsi)
Order by Part Number	108 729 864	300 378 742

Erbium-Doped

L-Band Gain Shape Consistency

for >150 km



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ERBIUM-DOPED FIBERS FOR L-BAND

Specification Sheet

R37103 and R37102 80



Erbium-Doped

Product Description

OFS offers the R37103 and R37102 80 μm erbium-doped fibers designed specifically for L-Band amplifiers operating in the 1565-1610 nm region. These fibers give high efficiency and low noise figure, while reducing the length needed in amplifier designs.

Hydrogen Immunity. Erbium-doped fibers co-doped with lanthanum and aluminum show 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 for C-Band
- LSL and LRL for L-Band amplifiers

Ask us about other options available:

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

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Fiber Specifications

Optical Properties

	R37103	R37102 80
Peak absorption @ 1530 nm	16 - 24 dB/m	16 - 24 dB/m
Cutoff wavelength	800 - 980 nm	800 - 960 nm
Mode field diameter	5.4 ± 0.5 μm	4.9 ± 0.5 μm
Loss at 1200 nm	<10 dB/km	<10 dB/km
Numerical aperture	0.25 ± 0.02	0.28 ± 0.02
PMD (typical)	2 fs/m	2 fs/m

Physical Properties

Core diameter (typical)	3.1 μm	2.9 μm
Cladding diameter	125 ± 0.7 μm	80 ± 1 μm
Cladding non-circularity	<1%	<1%
Core eccentricity	<0.3 μm	<0.3 μm
Coating diameter	245 ± 10 μm	200 ± 15 μm
Coating non-circularity	<2.5%	<2.5%
Coating/cladding concentricity error	<16 μm	<16 μm

Mechanical and Testing Data

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

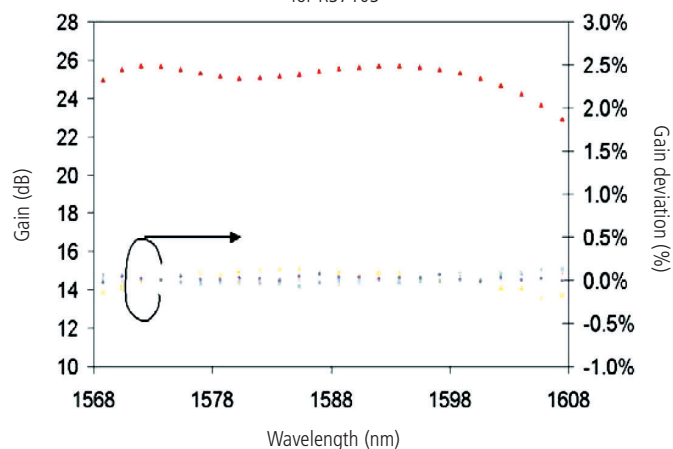
108 729 872

R37102 80

Erbium-Doped

Gain Spectrum

for R37103



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ERBIUM-DOPED FIBERS FOR L-BAND Specification Sheet

LRL and LRL 80



Erbium-Doped

Product Description

LRL erbium-doped fiber reduces the fiber length required to build L-Band amplifiers. It is ideal for amplifiers for L-Band applications. Using both LRL and LSL erbium-doped fibers in an amplifier adds flexibility to the amplifier designs to reduce non-linear effects. We use patented processes to protect against hydrogen-induced loss.

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

- L-Band DWDM amplifiers
- Small-channel-count L-Band amplifiers
- Compact L-Band amplifiers

Features and Benefits

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

Related Products & Capabilities

- LSL, R37103, and R37102-80 erbium-doped fibers for L-Band
- MP980 or HP980X erbium-doped fiber for C-Band

Ask us about other options available:

- Customized Spectral Shape**
- Coils**
- Custom Designs**

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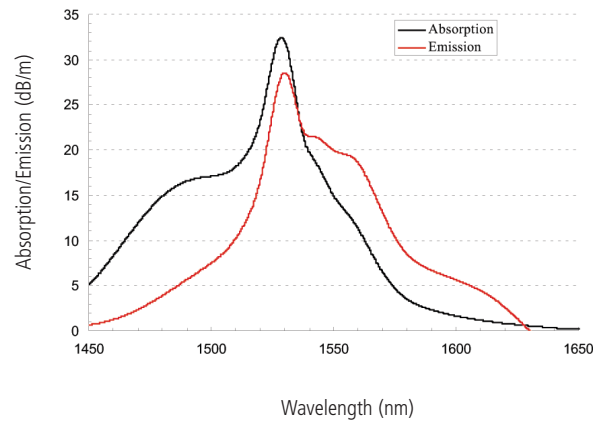
Fiber Specifications

Optical Properties	LRL	LRL 80
Peak absorption near 1530 nm	30 ± 3 dB/m	30 ± 3 dB/m
Cutoff wavelength	1100 - 1400 nm	1100 - 1400 nm
Numerical aperture	0.25 ± 0.02	0.25 ± 0.02
Mode field diameter @ 1550 nm	5.2 ± 0.5 μm	5.2 ± 0.5 μm
PMD (typical)	≤2 fs/m	≤2 fs/m
Loss at 1200 nm	<10 dB/km	<10 dB/km
Physical Properties		
Co-dopants	Ge/Al	Ge/Al
Cladding diameter	125 ± 2 μm	80 ± 2 μm
Coating diameter	250 ± 10 μm	165 ± 10 μm
Core/cladding concentricity error	<0.3 μm	<0.3 μm
Mechanical and Testing Data		
Proof test level	2.0% (200 kpsi)	2.0% (200 kpsi)
Order by Part Number	109 108 910	300 378 734

Erbium-Doped

Spectral Shape

LRL Erbium Fiber



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ERBIUM-DOPED FIBERS FOR L-BAND Specification Sheet *R37105 XL*



Erbium-Doped

Product Description

OFS offers this erbium-doped fiber designed specifically for extended L-Band fiber amplifiers operating in the 1565-1620 nm region. This fiber enables 30% more bandwidth for advanced L-Band amplifier designs.

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

- Advanced L-Band amplifiers

Features and Benefits

- High efficiency
- Broad gain spectrum over 1565-1620 nm
- Low and consistent splice loss
- Excellent batch-to-batch fiber uniformity
- OASiX modeling support

Related Products & Capabilities

- R37103 L-Band amplifier EDF

Ask us about other options available:

- Coils

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Fiber Specifications

Optical Properties

R37105 XL

Peak absorption @ 1530 nm	10 - 15 dB/m
Mode field diameter	$6.0 \pm 1.0 \mu\text{m}$
Loss at 1200 nm	<30 dB/km
Numerical aperture	0.23 ± 0.03

Physical Properties

Cladding diameter	$125 \pm 0.7 \mu\text{m}$
Core eccentricity	<0.5 μm
Coating diameter	$245 \pm 15 \mu\text{m}$
Coating/cladding concentricity error	<16 μm

Mechanical and Testing Data

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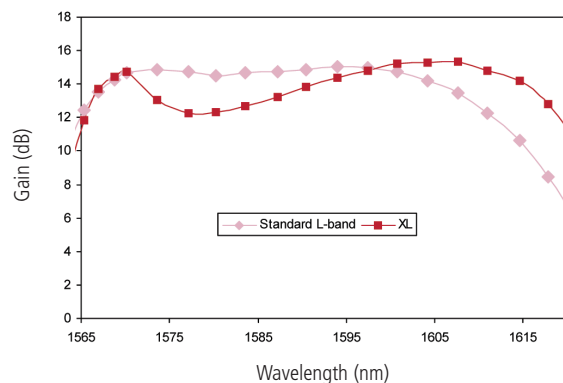
Order by Part Number

109 108 928

Erbium-Doped

Gain Spectrum

Measured with an input signal of 8 dB/m



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ERBIUM-DOPED FIBERS FOR ASE SOURCES

Specification Sheet

R37005 and RE120101 80



Erbium-Doped

Product Description

OFS offers a complete line of erbium-doped fibers (EDF) for ASE source applications. For ASE sources, fibers with a high NA and moderate erbium concentration are available. All of our EDF products meet the most stringent standards for performance and reliability.

The 80 μm cladding RE120101 allows for very tight bend radii without compromising the device reliability, building on OFS' more than 10 years of experience in 80 μm clad erbium-doped fibers.

Hydrogen Immunity. Erbium-doped fibers co-doped with lanthanum and aluminum show 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 a 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

- ASE source applications
- Small form-factor ASE sources

Features and Benefits

- Can be pumped at either 980 nm or 1480 nm
- Broadband ASE achieved with high aluminum
- High power conversion efficiency
- Low back-scattering for ASE source stability
- Low and consistent splice loss
- Excellent lot-to-lot uniformity
- H₂ insensitive
- High strength and reliability
- Standard or reduced cladding diameters

Related Products & Capabilities

- EDF for special amplifier applications (for very high- and very low-power applications)
- R37003 and R37004, EDF for C-Band amplifiers
- R37103, EDF for L-Band amplifiers
- HG980 for ASE Sources

Ask us about other options available:

- Customized Spectral Shape
- Tighter Optical Property Specifications
- Coils
- Custom Designs

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Fiber Specifications

Optical Properties	R37005	RE120101 80
Co-dopants	La/Al	La/Al
Peak absorption @ 1530 nm	15 - 25 dB/m	22 - 28 dB/m
Numerical aperture	0.28 ± 0.02	0.31 ± 0.02
Cutoff wavelength	800 - 1200 nm	900 - 1100 nm
Mode field diameter	4.4 - 5.4 μm	3.6 - 4.8 μm
Loss at 1200 nm	<25	<25
Physical Properties		
Cladding diameter	125 ± 1 μm	80 ± 1 μm
Coating diameter	250 ± 15 μm	190 ± 15 μm
Core eccentricity	<0.5 μm	<0.5 μm
Mechanical and Testing Data		
Proof test level	>2% (200 kpsi)	>2% (200 kpsi)
Order by Part Number	107 993 271	RE120101 80

Erbium-Doped

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ERBIUM-DOPED FIBERS FOR ASE SOURCES

Specification Sheet

HG980



Erbium-Doped

Product Description

HG980 is specifically designed to provide broadband and high efficiency for ASE applications. We use patented processes to protect against hydrogen-induced loss.

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

- ASE source applications

Features and Benefits

- Broadband ASE source
- H₂ insensitive
- Low background scattering for ASE stability
- Low and consistent splice loss
- High strength and reliability
- OASiX modeling support

Related Products & Capabilities

- MP980 or HP980X erbium-doped fiber for C-Band
- LSL or LRL erbium-doped fiber for L-Band
- LSL or LRL erbium-doped fiber for L-Band
- R37005 and RE120101 80 for ASE Sources

Ask us about other options available:

- Customized Spectral Shape**
- Coils**
- Custom Designs**

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Fiber Specifications

Optical Properties

HG980

Peak absorption near 1530 nm	17.5 ± 2.5 dB/m
Cutoff wavelength	875 ± 75 nm
Numerical aperture	0.29 ± 0.02
Mode field diameter @ 1550 nm	4.4 ± 0.8 μm
PMD (maximum)	≤0.5 ps/m
Loss at 1200 nm	≤15 dB/km

Physical Properties

Cladding diameter	125 ± 2 μm
Coating diameter	250 ± 10 μm
Core/cladding concentricity error	<0.3 μm

Mechanical and Testing Data

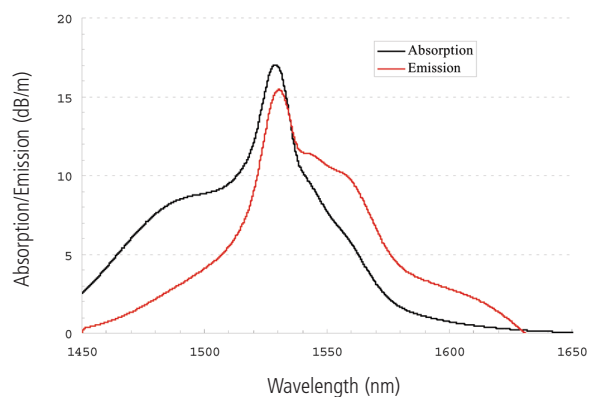
Proof test level	2.0% (200 kpsi)
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Order by Part Number

107 528 974

Erbium-Doped

Spectral Shape



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