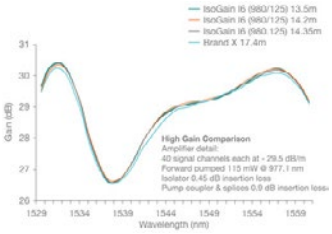
Fiber Optics

FIBERCORE

LASER COMPONENTS

VERSION: MD16/5
RELEASE DATE: 03 JANUARY 2018

Erbium Doped Fiber IsoGain™



Fibercore's IsoGain™ range of Erbium Doped Fibers (EDFs) offer a wide selection of absorption and cut-off wavelengths to allow the best choice of fiber for each type of Erbium Doped Fiber Amplifier (EDFA) design.

Fibercore's low absorption fibers offer best-in-class efficiency for C-band amplifiers, whilst higher absorption fibers are optimized for L-band EDFAs.

High cut-off wavelength (HC) fibers have larger core diameters, reducing non-linear effects and increasing efficiency at higher pump powers.

The core composition of Fibercore's IsoGain™ has been engineered to generate a substantially flattened wavelength response that closely matches that of other leading fiber types.

Supported by Fibercore's **GainMaster**™ simulation software

Advantages:

- High efficiency core composition
- 'HC' variants optimized for high pump power EDFAs
- High absorption fibers for L-band amplifiers and mini/micro C-band EDFAs
- Wide range of absorption values for EDFA design optimization

Typical applications:

- EDFAs / Telecoms
- ASE light sources
  - o Gyros
  - o Current sensors
  - o Distributed sensor systems
- Fiber lasers
- Biomedical illumination
- Optical Coherence Tomography (OCT)

Related Products:

- Dual Clad Erbium/Ytterbium Doped Fiber (CP1500Y)
- GainMaster™ Simulation Tool

Product Variants:

• **I-4(980/125)**	For high efficiency C-band EDFAs
• **I-4(980/125)HC**	For high efficiency, high power C-band EDFAs
• **I-4(980/125)HP**	For high efficiency, high power C-band EDFAs
• **I-6(980/125)**	Increased absorption for high efficiency C-band EDFAs
• **I-12(980/125)**	Mid level absorption fiber for short length C-band and L-band EDFAs
• **I-12(980/125)HC**	High cut off wavelength, mid level absorption fiber for higher power short length C-band and L-band EDFAs
• **I-15(980/125)HC**	High cut off wavelength, mid/high level absorption fiber for higher power short length C-band and L-band EDFAs
• **I-25(980/125)**	Very high absorption fiber for short length L-band EDFAs
• **I-25H(1480/80)**	80µm cladding diameter, high cut off wavelength, high absorption fiber for small coil diameter mini and micro EDFAs

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Specifications

High Efficiency C-Band Erbium Doped Fibers

	I-4(980/125)	I-4(980/125)HC	I-4(980/125)HP	I-6(980/125)
Cut-Off Wavelength (nm)	870 - 970	1050 - 1320	1100 - 1320	870 - 970
Numerical Aperture	0.22 - 0.24		0.19 - 0.22	0.22 - 0.24
Mode Field Diameter (µm)	5.4 - 6.6 @1550nm	5.2 - 5.8 @1550nm	5.7 - 6.6 @1550nm	5.5 - 6.3 @1550nm
Absorption (dB/m) @1531nm	5.0 - 6.7	7.7 - 9.4		7.2 - 8.4
Proof Test (%)	1 (100 kpsi)			
Attenuation (dB/km) @1200nm	≤10			
Polarization Mode Dispersion (ps/m)	≤0.005			
Cladding Diameter (µm)	125 ± 1			
Core Concentricity (µm)	≤0.3			
Coating Diameter (µm)	245 ± 7			
Coating Type	Dual Layer Acrylate			
Operating Temperature (°C)	-55 to +85			

L-Band and C-Band Erbium Doped Fibers

	I-12(980/125)	I-12(980/125)HC	I-15(980/125)HC	I-25(980/125)
Cut-Off Wavelength (nm)	900 - 970	1200 - 1320		900 - 970
Numerical Aperture	0.21 - 0.23	0.23 - 0.26		
Mode Field Diameter (µm)	5.7 - 6.6 @1550nm	5.0 - 5.5 @1550nm	4.8 - 5.4 @1550nm	5.2 - 6.3 @1550nm
Absorption (dB/m) @1531nm	14 - 21	17 - 21	27 - 33	35 - 45
Proof Test (%)	1 (100 kpsi)			
Attenuation (dB/km)	≤10 @1200nm			
Polarization Mode Dispersion (ps/m)	≤0.005			
Cladding Diameter (µm)	125 ± 1			
Core Concentricity (µm)	≤0.3			≤0.5
Coating Diameter (µm)	245 ± 7			
Coating Type	Dual Layer Acrylate			
Operating Temperature (°C)	-55 to +85			

Reduced Cladding Erbium Doped Fiber For Mini and Micro EDFAs

	I-25H(1480/80)
Cut-Off Wavelength (nm)	900 - 1075
Numerical Aperture	≥0.30
Mode Field Diameter (µm)	3.8 - 4.7 @1550nm
Absorption (dB/m)	23 - 27 @1531nm
Proof Test (%)	1 (100 kpsi)
Attenuation (dB/km)	≤30 @1200nm
Polarization Mode Dispersion (ps/m)	≤0.005
Cladding Diameter (µm)	80 ± 1
Core Concentricity (µm)	≤0.5
Coating Diameter (µm)	160 ± 5
Coating Type	Dual Layer Acrylate
Operating Temperature (°C)	-55 to +85

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