Specialty Fiber

DrakaElite™ Erbium Fiber Family

A wide product range for many applications

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Draka Communications offers a complete range of Erbium Doped Fibers to meet the most stringent requirements both for fiber lasers and optical amplifiers. Main applications are:

- Telecom: Single and multi wavelength optical amplifiers (EDFA) for C-Band and L-Band, terrestrial or submarine
- CATV

Features	Advantages
Excellent geometry control	Repeatable, low loss and easy splices
Excellent spectral uniformity	Reliable performances
Industrial process control and consistent reproducibility	Reduces costs and increases production yield at the EDFA manufacturing stages
Wide range of products	Ensures the most cost effective fiber choice for your applications
Unique “NanoElite” doping technology	Unique performances for high power applications
Low PMD	Suitable for long reach applications
Standard dual acrylate coating	Provides superior mechanical resistance

Did you know?

Did you know that Draka has more than 20 years of experience in the development and manufacturing of Erbium Doped Fibers. Draka estimates that half of today transoceanic telecommunications rely on Draka’s erbium doped fiber technology!

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eHPW family

The erbium high power family is based on a high aluminum co-doping concept. It permits ultra-wide band amplifiers both in the C-band and L-band and ensures very high power conversion efficiency even at high erbium concentration. The combination of low attenuation at bending, high erbium and aluminum concentration make them the favorite fibers for compact and ultra compact amplifiers for medium and high power, WDM and single wavelength applications.

	Peak absorption* (dB/m, max [1530-1534])	Numerical aperture*	Mode field diameter* (µm, 1550 nm)	Cutoff wavelength (µm)	Coating/cladding diameter (µm)
eHPW-3-LC	3	0.21	5.7	≤ 980	125/242
eHPW-7	7	0.21	5.4	≤ 1300	125/242
eHPW-13	13	0.21	5.4	≤ 1300	125/242
eHPW-20	20	0.21	5.4	≤ 1300	125/242
eHPW-36-80	36	0.21	5.4	≤ 1300	80/175

* Typical value

eMPW family

The eMPW family has been specifically designed to cope with most of the present architectures of EDFAs for Telecom. The medium and perfectly adjusted aluminum concentration is a guarantee to get reproducible and flat gains on a wide spectrum range. Germanium is used as co-dopant. It permits high power conversion efficiency while low splice loss ensure low noise figures.

	Peak absorption* (dB/m, max [1530-1534])	Numerical aperture*	Mode field diameter* (µm, 1550 nm)	Cutoff wavelength (µm)	Coating/cladding diameter (µm)
eMPW-6	7	0.23	5.6	≤ 1300	125/242
eMPW-6-LC	7	0.23	5.8	≤ 980	125/242

* Typical value

eLPW family

The eLPW fibers range presents the advantages of a very high numerical aperture. It is a very efficient fiber for low power amplification. It can advantageously be used as well for single wavelength amplification schemes.

	Peak absorption* (dB/m, max [1530-1534])	Numerical aperture*	Mode field diameter* (µm, 1550 nm)	Cutoff wavelength (µm)	Coating/cladding diameter (µm)
eLPW	6	0.28	4.4	≤ 1300	125/242
eLPW-LC	6	0.28	4.6	≤ 980	125/242

* Typical value

eNanoElite family

The eNanoElite family gathers erbium doped fibers using Draka patented NanoElite technology. The erbium ions are included in nano-particles that permit a sharp control of their chemical environment. Notably it avoids erbium ions pairing and its associated quenching effect; to the immediate benefit of energy conversion, notably for high power applications in boosters or pre-amplifiers. It permits the inclusion of erbium ions in the fiber without additional dopant enlarging the scope of the applications to radiations exposed devices, like in the spatial industry. Accordingly this erbium doped fiber family is subdivised into specific family: for very high power applications (VPW), for radiation hardened characteristics (RH), … (and more to come!).

	Peak absorption* (dB/m, max [1530-1534])	Numerical aperture*	Mode field diameter* (µm, 1550 nm)	Cutoff wavelength (µm)	Coating/cladding diameter (µm)
eNanoElite-VPW-6	6	0.19	6.7	≤ 1300	125/242
eNanoElite-RH-x	3	0.28	4.4	≤ 1300	125/242

* Typical value

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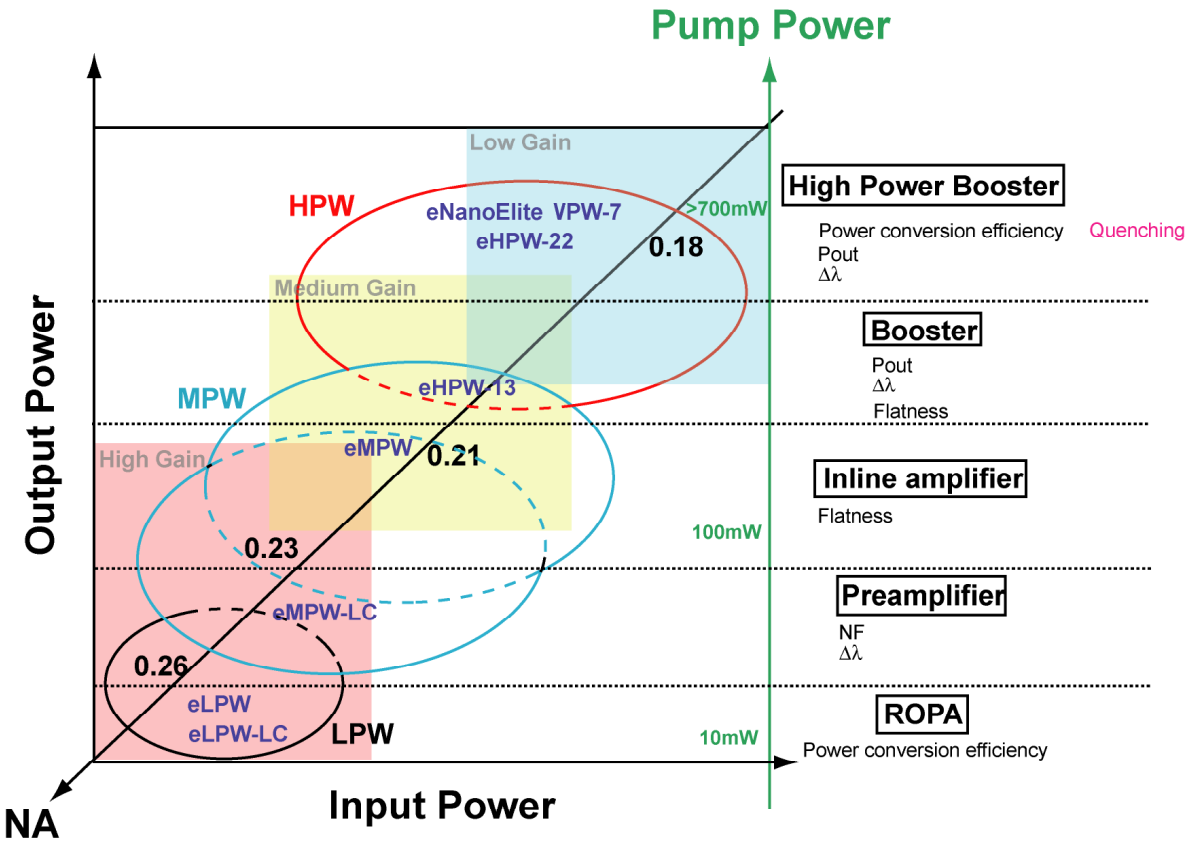
Erbium doped fiber guide

Draka is offering a wide range of erbium doped fibers. Any fiber from the eHPW family or eMPW family can cope with a wide range of amplifiers constructions. Whatever your philosophy, one fiber for all or choosing a fiber according to your application, Draka erbium doped fiber will bring you performance worth paying for!



This graph has been designed as a guide. It cannot, of course, catch the entire diversity of amplifier designs. For further information, please contact us.

The rare-earth doped fibers competence center

Draka has more than 20 years of experience in rare-earth doped fibers and notably in erbium doped fibers. This experience is leveraged in Draka erbium doped fiber competence center in Marcoussis, in France. From fiber and material modelization to prototyping our competence center is able to cope with any specific customer requests.

With innovation is at its heart, NanoElite process is an illustration of it; bringing the power of nano-technologies to optical fibers. The control at the atomic level of the erbium ions environment is boosting performances while opening doors for new applications in harsh environment.

For high volume production, Marcoussis competence center is backed by Draka's Douvrin factory, the largest European optical fiber plant.

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Common Specifications

Geometrical Specifications	
Cladding Diameter	125 ± 2 µm
Core / Cladding Offset	≤ 0.5 µm
Coating Diameter	242 ± 15 µm
Coating / Cladding Offset	≤ 12.5 µm
Standard Lengths	250, 500 and 1000 m

Mechanical Specifications	
Elongation Proof Test (1 second)*	1.5 % kpsi

Environmental Specifications	
Storage Temperature	- 40 to + 85 °C
Operating Temperature Range	- 5 to + 75 °C
Storage Humidity Range (Non Condensing)	5 to 95 %
Operating Humidity Range (Non Condensing)	5 to 95 %

* higher tensile proof stress on demand

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