

Doped fibers

ED44 Series



OXFORD ELECTRONICS

Manufacture and supply of specialised optical fibers

- High gain efficiency
- Broad gain bandwidth
- Germano-alumino-silicate host glass

This fiber is designed for use in erbium doped fiber amplifiers (EDFAs). This design uses a germano-alumino-silicate host glass and confines the dopant to the central area of the core for optimum amplifier performance. It has a combination of high gain efficiency as well as broad gain bandwidth, making it suitable for a wide range of EDFA applications including CATV and in-line pre-amplifiers.

Efficiency

5dB/mW

N.A.

0.22

Background loss

10dB/km

Cut-off wavelength

930 nm

Cladding diameter

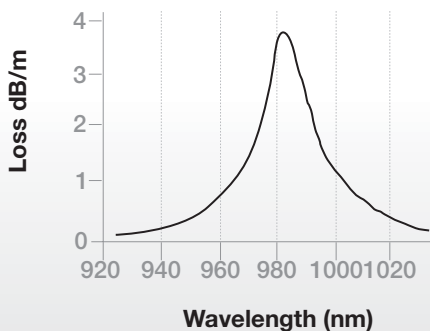
125 mm

Local dopant concentration

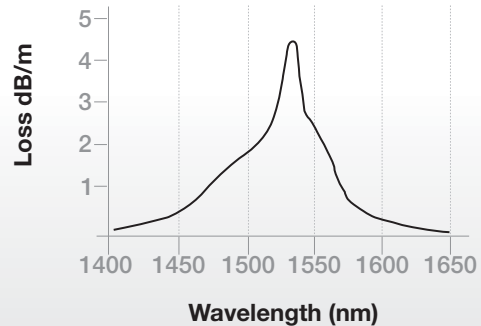
160-200 ppm

This optical fiber is one in a range of rare earth optical fibers available from Oxford Electronics. Other dopant concentrations are available as well as fibers doped with other rare earth materials such as Samarium and Thulium. Doping concentrations up to 1000 ppm are possible.

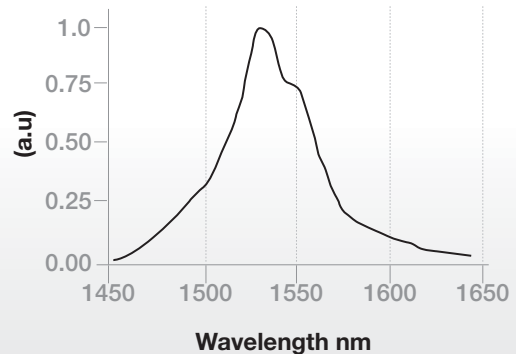
Absorption around the 980 nm pump-band



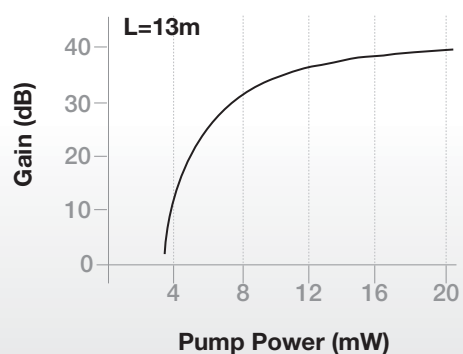
Absorption around 1530 nm



Fluorescence spectrum



Gain against pump-power @ 970 nm



Other doped fibers

Erbium doped fiber with a higher absorption (7.5dB/m) at 980 nm is available (ED9304). The absorption at 1532 nm is 8dB/m. Cut-off wavelength is 840 nm.

We can make single mode doped fibers with most rare earth elements with a doping concentration up to 1000 ppm. Examples include:

Cerium, Terbium, Thulium, Samarium