

DC-150-30-PM-Yb-01

Single-mode PM double-clad ytterbium-doped fiber with large mode area

- Single mode, with large mode area
- High pump absorption
- High NA circular pump core
- Efficient pump absorption - no skew rays

The DC-150-30-PM-Yb is in many ways a smaller version of the industrially proven DC-200-40-PZ-Yb and features many of the same virtues: Large mode area, good PER and excellent single mode beam quality, but these features are now available with a smaller coiling diameter for applications where a smaller package size is needed.

The multimode pump light is guided by our proven airclad technology, ensuring low loss, high damage threshold and a large numerical aperture (NA). The large NA relaxes tolerances on coupling optics and facilitates the use of lower brightness diodes.

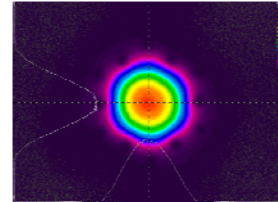
The fiber is available with sealed ends, end-caps and high power connectors as an option.

Applications

- High pulse energy fiber amplifiers
- Fiber lasers

Optical properties	
Signal core	
Mode properties ⁽¹⁾	Single mode
M ² @ 1060 nm ⁽¹⁾	< 1.25
Mode field diameter	22 ± 1.5 μm
Mode field area	380±60 μm ²
NA @ 1060 nm	~ 0.04
Multimode pump core	
Numerical aperture @ 950 nm	0.6 ± 0.05
Pump absorption @ 920 nm	> 3 dB/m
Pump absorption @ 976 nm	~ 10 dB/m
Polarization Parameters	
Birefringence Δn	> 1·10 ⁻⁴
Polarization Extinction Ratio	> 15 dB

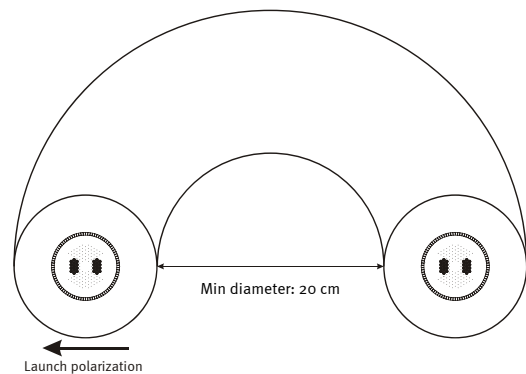
Covered by U.S. Patents 5907652, 6334019, 6603912, 6888992



Physical properties	
Signal core diameter	30 ± 2 μm
Inner cladding diameter, ID	150 ± 5 μm
Outer cladding diameter, OD	330 ± 20 μm
Coating diameter	440 ± 30 μm
Outer and inner cladding material	Pure silica
Coating material, single layer	HT acrylate

Operating the fiber

⁽¹⁾ It is recommended to orient the fiber with the slow axis in the bending plane (see illustrated below) and to use a bending diameter in the range 20-30 cm. Best PER is obtained when operating the fiber in the slow axis. Degradation of the PER and efficiency can occur if the fiber is twisted in the coil (i.e. if the polarization axes are not oriented identically at in- and output).



The single-mode advantage

All our double-clad fibers in the Crystal Fibre range are strictly single-mode leading to several advantages compared to standard multimode LMA fibers:

- Better output stability
- Highest possible beam quality
- No requirements on tight coiling
- No coiling-induced mode area compression

DC-150-30-PM-Yb-01-100409