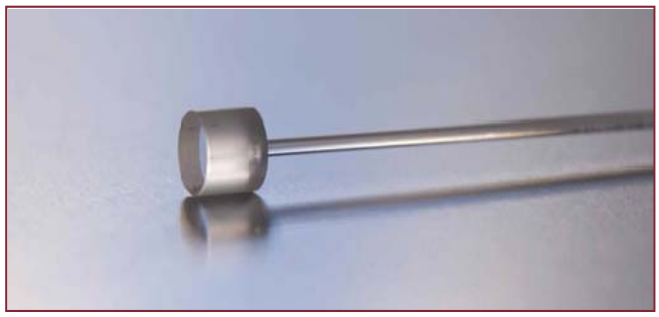
DC-285/100-PM-Yb-ROD

Rare Earth Doped | Large Mode-area | Rod Waveguide | Polarization Maintaining | Single Mode

Single-mode ytterbium doped PM ROD fiber with ultra large mode area

- Single mode
- Ultra large mode area
- Polarization maintaining
- High pump absorption



The DC-285/100-PM-Yb-ROD represents the pinnacle of active single mode fibers. The rod is polarization-maintaining and has an effective area above 4500 µm². The very large effective area combined with extremely high pump-absorption of up to 30dB/m pushes the nonlinear thresholds to a new regime in single-mode fibers. The rod is aimed at high peak-power pulsed amplifiers and has been shown to handle mega-Watt peak-power levels.

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 DC-285/100-PM-Yb-ROD is a rod fiber with an outer diameter of 1.7 mm – bridging the DPSS and fiber laser world. The large outer diameter ensures that the extremely large core will not suffer from bending loss. Moreover, the rod is coating free to facilitate thermal management in high-power setups. The rods are available with large AR coated end-caps in a range of standard lengths. Other configurations are available upon request.

More info on using ROD fibers can be found on our website at www.nktphotonics.com/support

Applications

- Ultra high-power amplifiers
- Ultra high-power polarized lasers
- Ultra high-power Q-Switched lasers

Physical properties	
Core material	Yb-doped silica
Outer cladding diameter	1.7 ± 0.1 mm
Coating	None
Signal core diameter	100 ± 5 µm
Pump-cladding diameter	285 ± 10 µm
Pump-cladding shape	Circular

End cap option	
Material	Pure silica
Length/diameter	8 mm / 8.2 mm
AR coating, R @ 1040-1080 nm	‹ 0.1 %
AR coating, R @ 976 nm	‹ 0.5 %
Angle	0° ± 0.7°
Signal return loss	‹ -35 dB
NA supported	› 0.6

Optical properties	
Signal core	
Single mode	Yes
Mode field diameter	76 ± 5 µm
Mode field area	4500± 200 mm²
NA @ 1060 nm	~ 0.02
Multimode pump core	
Numerical aperture @ 950 nm	0.6 ± 0.05
Pump absorption @ 920 nm	~ 10 dB/m
Pump absorption @ 976 nm	~ 30 dB/m
Slope effiency	~60%
Polarization Parameters	
Birefringence Dn	› $1 \cdot 10^{-4}$
Polarization Extinction Ratio	15-25dB*

* Depending on system configuration. The fiber should be operated in the slow-axis.

Standard configuration			
	Rod length	End 1	End 2
Type I	36 cm	End cap	End cap
Type II	55 cm	End cap	End cap
Type III	55 cm	End cap	Sealing
Type IV	80 cm	End cap	End cap
Type V	80 cm	End cap	Sealing
Type VI	120 cm	Sealing	Sealing

Sealed ends are angle-cleaved to 3° ± 1° to minimize reflection from the facet. Sealing length is 50 µm ± 25 µm (measured on the airclad).

The standard configurations are available from stock. Other configurations can be manufactured upon request.

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