

DC-200/85-Yb-ROD

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

- Single mode
- Extremely large mode area
- High pump absorption

With an effective area above $4500 \mu\text{m}^2$, the DC-200/85-Yb-ROD represents the pinnacle of active single mode fibers. 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-200/85-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.

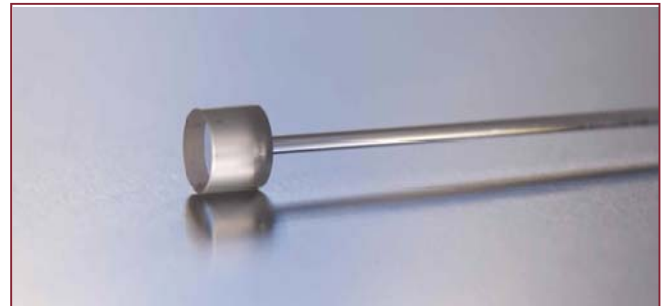
For polarization maintaining RODs, we recommend our DC-285/100-PM-Yb-ROD or the DC-200/70-PM-Yb-ROD.

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	$1.7 \pm 0.1 \text{ mm}$
Coating	None
Signal core diameter	$85 \pm 5 \mu\text{m}$
Pump-cladding diameter	$200 \pm 5 \mu\text{m}$
Pump-cladding shape	Circular
Outer cladding material	Pure silica
Inner cladding material	Pure silica



Optical properties

Signal core

Mode field diameter	$65 \pm 5 \mu\text{m}$
NA @ 1060 nm	~ 0.02

Multimode pump core

Numerical aperture @ 950 nm	0.55 ± 0.05
Pump absorption @ 920 nm	$\sim 10 \text{ dB/m}$
Pump absorption @ 976 nm	$\sim 30 \text{ dB/m}$

System performance

NL FOM ⁽¹⁾	$\sim 8 \text{ [rad}\cdot\text{ns/mJ]}$
Slope efficiency ⁽²⁾	$\sim 60 \%$

⁽¹⁾ The nonlinear figure-of-merit is calculated as:

$$\text{NL FOM} = \frac{\gamma}{g_0^{\max}} \cdot 10^6 \left[\text{rad} \cdot \frac{\text{ns}}{\text{mJ}} \right]$$

⁽²⁾ With respect to pump power in the fiber

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