

DC-135/14-PM-Yb

Single-mode PM double-clad Yb fiber



LARGE AREA, SINGLE-MODE GAIN FIBER

Ideal for pulsed fiber amplifiers

The DC-135/14-PM-Yb is a truly single-mode, all-solid-core step-index gain fiber.

Based on a unique refractive index control, the 14 μm polarization-maintaining core delivers diffraction-limited output in a single mode covering the entire ytterbium emission bandwidth. The mode quality is stable over time and independent of coiling.

The single-mode advantages

Our single-mode fibers offer several advantages compared to standard multi-mode large area fibers:

- Excellent output stability
- Outstanding beam quality
- No need for tight coiling
- No coiling-induced mode area compression

High reliability and a large numerical aperture

Multi-mode pump light is guided by our proven airclad technology, ensuring high reliability, high damage threshold, and a large numerical aperture. The large numerical aperture relaxes the tolerances on coupling optics.

The fiber is spliceable to commercially available pump/signal combiners. The fiber can be used in combination with our passive single-mode, single-clad SC-250/14-PM-Ge fiber.

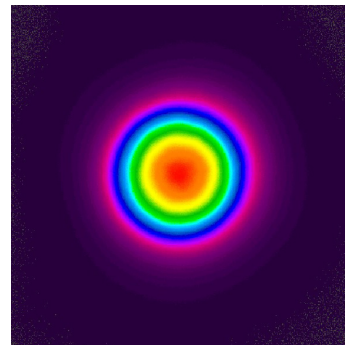
Features

- Truly single-mode
- Large 15 μm mode diameter
- Solid step-index
- Polarization maintaining
- High NA pump cladding
- High pump absorption
- Mode-matching with our passive single-clad fiber: SC-250/14-PM-Ge

SPECIFICATIONS

Signal core	
Mode properties	Single-mode
Cut-off [nm]	≤ 1000
Beam quality (typical) @ 1064 nm	$M^2 < 1.2$
Mode-field diameter, $1/e^2$ @ 1064 nm [μm]	15 ± 1
Multi-mode pump core	
Numerical aperture @ 950 nm	≥ 0.5
Pump absorption @ 915 nm [dB/m]	2.30 ± 0.35
Pump absorption @ 976 nm, typical [dB/m]	≈ 7
Polarization parameters	
Birefringence Δn @ 1100 nm, typical	$\geq 1 \times 10^{-4}$
Physical properties	
Signal core diameter [μm]	≈ 14
Pump cladding diameter [μm]	135 ± 3
Outer cladding diameter [μm]	275 ± 8
Coating diameter [μm]	360 ± 15
Coating material, single-layer	High-temperature acrylate
Minimum bending diameter [cm]	18

Typical near field intensity profile

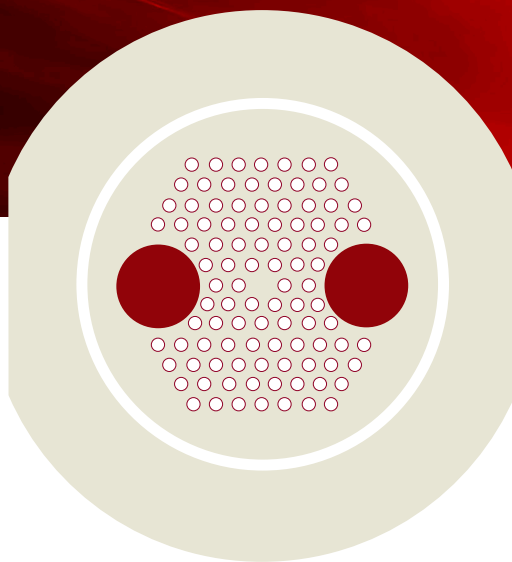


All NKT Photonics fiber products are produced under our quality management system certified in accordance with the ISO 9001:2015 standard.



DC-200/40-PZ-Yb

Single-mode, polarizing double-clad Yb fiber



LARGE AREA, SINGLE-MODE GAIN FIBER

Ideal for industrial fiber lasers

With a mode area of more than $700 \mu\text{m}^2$, this fiber represents the best in flexible single-mode ytterbium fibers. The single-polarization core improves the PER compared to normal PM fibers.

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

The single-mode advantages

Our single-mode fibers offer several advantages compared to standard multi-mode large area fibers:

- Excellent output stability
- Outstanding beam quality
- No need for tight coiling
- No coiling-induced mode area compression

Perfect for industrial fiber lasers

The combination of robust single-mode guidance, excellent PER, and a large mode area has made the DC-200/40-PZ-Yb the preferred choice for many high-end industrial fiber laser manufacturers.

Coil Control

Coil Control ensures that the fiber coils in one plane leading to superior mode stability. Depending on the wavelength, we recommend a 25-40 cm coiling diameter and operating the fiber in the slow (in-plane) axis.

Features

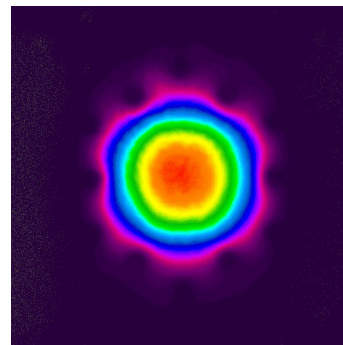
- Single-mode polarizing
- Large mode area
- High NA circular pump core
- High pump absorption, no skew rays
- Coil Control ensuring excellent stability

Also available in a passive version:
DC-200/40-PZ-Si

SPECIFICATIONS

Signal core	
Mode properties	Single-mode
Beam quality (typical) @ 1064 nm	$M^2 < 1.2$
Mode-field diameter, $1/e^2$ @ 1064 nm [μm]	31 ± 2
Numerical aperture @ 1064 nm	≈ 0.03
Multi-mode pump core	
Numerical aperture @ 950 nm	0.60 ± 0.05
Pump absorption @ 915 nm [dB/m]	3.75 ± 0.75
Pump absorption @ 976 nm, typical [dB/m]	≈ 12
Polarization parameters	
Birefringence Δn @ 1100 nm	$\geq 1 \times 10^{-4}$
Physical properties	
Signal core diameter [μm]	≈ 40
Pump cladding diameter [μm]	200 ± 3
Outer cladding diameter [μm]	450 ± 20
Coating diameter [μm]	540 ± 30
Outer and pump cladding material	Pure silica
Coating material, single-layer	High-temperature acrylate

Typical near field intensity profile



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