

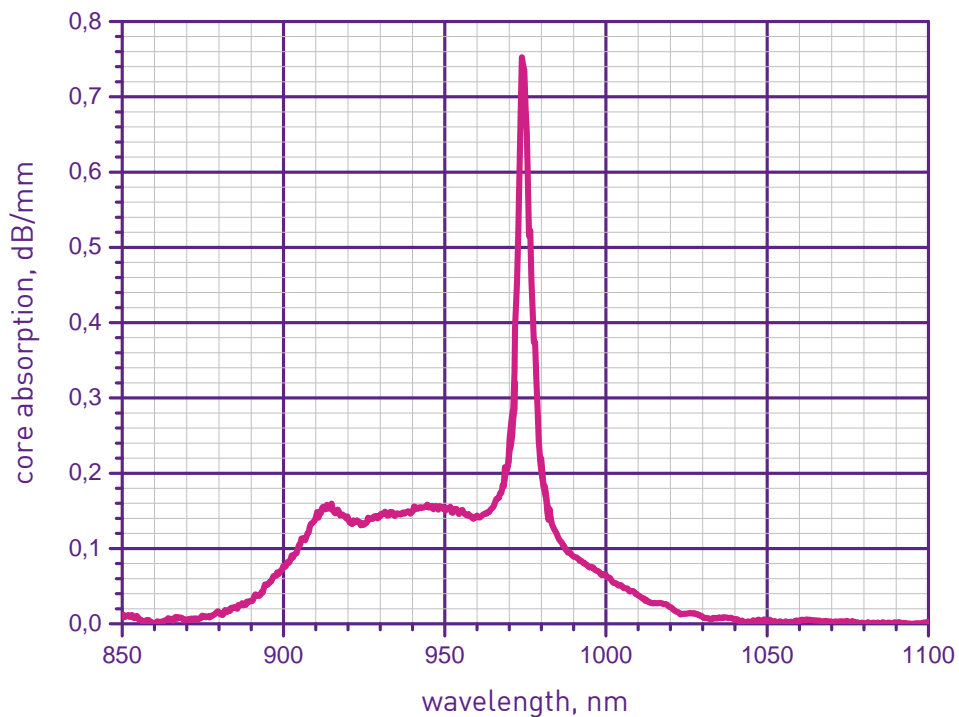
SPECIALTY FIBER YTTERBIUM DOPED FIBER

PHOTODARKENING FREE
Yb-DOPED SINGLE MODE FIBER

ARTICLE YDF-SM-6/125

Ytterbium doped fiber YDF-SM-6/125 series is designed for operation without power degradation in core-pumped laser and amplifier schemes.

Typical core absorption



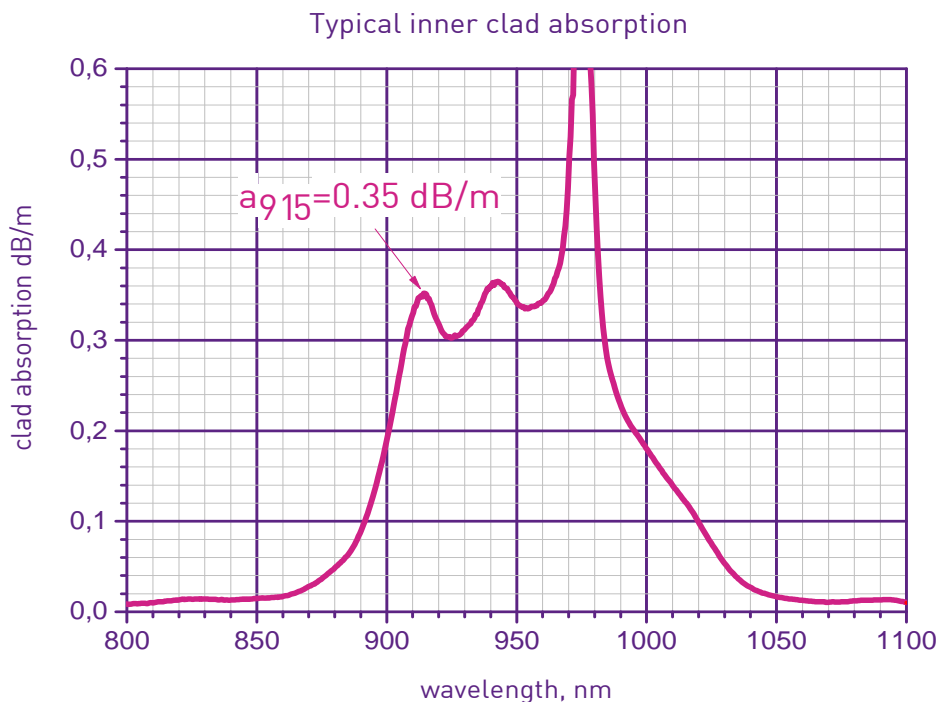
FIBER SPECIFICATIONS	YDF-SM-6/125
Core diameter, μm	5.5 ± 0.7
Clad diameter, μm	125 ± 3
Core NA	0.16 ± 0.02
Cutoff wavelength, μm	0.9 ± 0.1
Core absorption (915 nm), dB/m	150 ± 25
Core absorption (976 nm), dB/m	$> 750 \pm 130$
Background loss (1150 nm), dB/km	< 30
Photodarkening resistance	> 20 times better compare to the $\text{Al}_2\text{O}_3\text{-SiO}_2$ Yb-doped fiber

SPECIALTY FIBER YTTERBIUM DOPED FIBER

PHOTODARKENING FREE
Yb-DOPED DOUBLE CLAD FIBER

ARTICLE YDF-DC-6/125

Ytterbium doped fiber YDF-DC-6/125 series is specially designed for highly efficient high-reliability CW lasers operating in the 1.03-1.08 μm spectral range. Flat absorption in the range of 910-965 nm and specially designed polymer coating allow usage of laser based on such fibers in an extra wide temperature range (-60..+60°C).



FIBER SPECIFICATIONS	YDF-DC-6/125
Core diameter, μm	6.0 ± 0.5
Clad diameter, μm	125 ± 3
Clad shape	octagonal
Core NA	0.16 ± 0.02
Cutoff wavelength, μm	1.03 ± 0.02
Clad NA	0.44 ± 0.02
Clad absorption (915 nm), dB/m	0.35 ± 0.05
Clad absorption (976 nm), dB/m	~ 2
Core/clad background loss (1150 nm), dB/km	< 30
Effective pumping range, μm	$0.91 \div 0.984$
Photodarkening resistance	> 20 times better compare to the Al_2O_3 - SiO Yb-doped fiber

Other parameters including PM version are available on the request

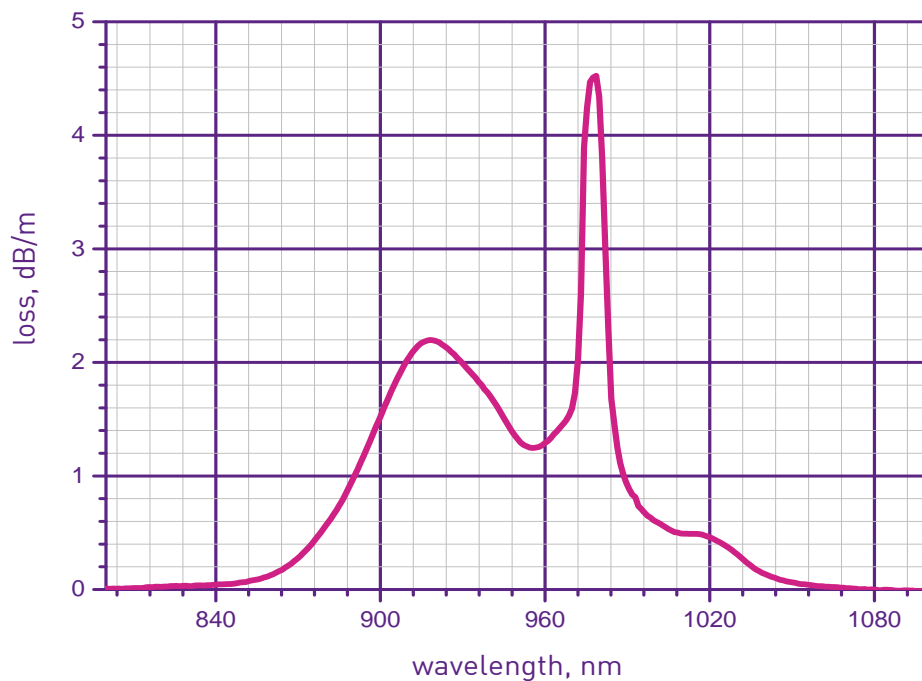
SPECIALTY FIBER YTTERBIUM DOPED FIBER

PHOTODARKENING FREE
Yb-DOPED DOUBLE CLAD FIBER

ARTICLE YDF-DC-10/125

Ytterbium doped fiber YDF-DC-10/125 series is designed for operation without any power degradation in a high-peak-power cladding pumped amplifiers. The highest clad absorption over the market allows usage of only 3 m of such fiber (with 976 nm pump) for efficient amplification.

Typical inner clad absorption



FIBER SPECIFICATIONS	YDF-DC-10/125
Core diameter, μm	10.0 ± 1
Clad diameter, μm	127 ± 3
Clad shape	PANDA or octagonal
Core NA	0.09 ± 0.01
Cutoff wavelength, μm	1.05 ± 0.1
Clad NA	> 0.46
Clad absorption (915 nm), dB/m	> 1.8
Clad absorption (976 nm), dB/m	~ 5
Core/clad background loss (1150 nm), dB/km	< 50
Photodarkening resistance	> 20 times better compare to the Al_2O_3 -SiO ₂ Yb-doped fiber

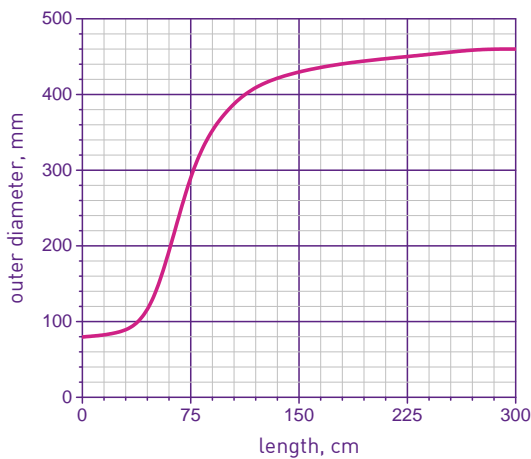
Other parameters including PM version are available on the request

SPECIALTY FIBER LMA YTTERBIUM TAPERED FIBER

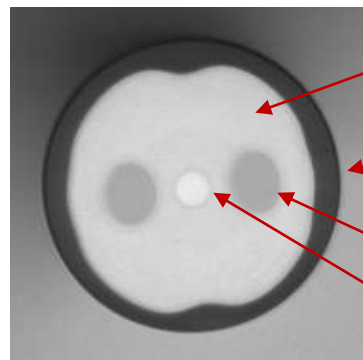
ARTICLE YDF-DC-40/400-PM-TPR-2.5

LMA Ytterbium doped tapered fiber YDF-DC-40/400-PM-TPR series is designed for operation without any power degradation in extremely high-peak-power cladding-pumped amplifiers. The new tapered fiber design has a single-mode end (typical dimension is 8/80 μm) for signal input and a very-large-mode-area end (typical dimension is 40/400 μm) for signal output and pump input. The all-glass double-clad fiber design (based on highly F-doped second cladding with typical NA=0.26) allow simple polishing of the thick 400 μm fiber end. Due to a high Yb concentration and a short tapered fiber length amplifiers based on this fiber has the highest threshold of nonlinear effects over the market (up to 0.5 MW) together with the diffraction limited beam quality at the output.

Distribution of the outer fiber diameter along the fiber length



Typical fiber cross-section



Pure silica cladding
(OD=300 ÷ 400 μm)

F-doped silica cladding
(OD=350 ÷ 450 μm ,
NA=0.26)

B-doped stress rods

Yb-doped core
(D= > 40 μm , NA=0.08,
2wt.% of Yb₂O₃)

FIBER SPECIFICATIONS

YDF-DC-40/400-PM-TPR-2.5

End type	Signal input end	Signal output / Pump input end
Core diameter, μm	9 ± 1	> 40
Clad diameter, μm	90 ± 10	400 ± 50
Cutoff wavelength, μm	< 1.0	-
MFD	10.0 ± 2.0	> 24 (25 ÷ 30 typical)
Clad shape	PANDA with F-doped second cladding	
Core NA	0.09 ± 0.01	
Clad NA	> 0.26	
Length, m	2.5 ± 0.5	
Clad absorption (915 nm), dB/m	> 5	
Clad absorption (976 nm), dB/m	> 20	
Core background loss (1150 nm), dB/km	< 50	
Photodarkening resistance	> 20 times better compare to the Al ₂ O ₃ -SiO ₂ Yb-doped fiber	