



Yb-Doped Fiber Gain Module

High Peak Power – High Beam Quality

INO introduces its new OEM fiber gain modules for optimized operation of its **PM** depressed-clad large mode area (LMA), **tapered**, ytterbium-doped family of fibers [1].

The input fiber can be spliced to a standard low-NA single-mode fiber for seamless integration with preamp/booster amplifier stages.



The module is equipped with a high-power **large diameter endcap** termination for increased laser output power handling.

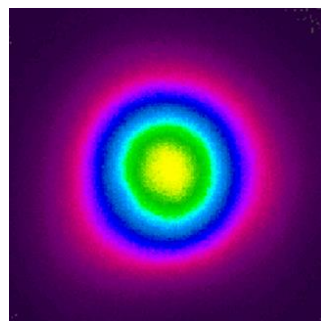
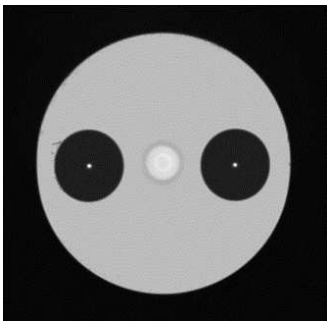
Both the **counter-propagating** and **co-propagating** pumping designs are offered.

Applications

- High Peak Power Lasers
- Ultrafast Amplifiers
- Frequency Conversion

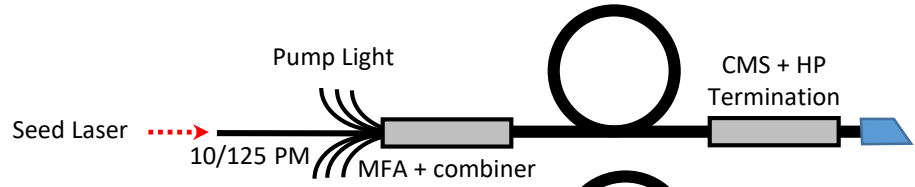
Benefits

- Quasi-Gaussian Beam
- Polarized Output
- High Efficiency
- Easy to Splice
- Long Lifetime
- Efficient Cooling
- High Nonlinear Threshold

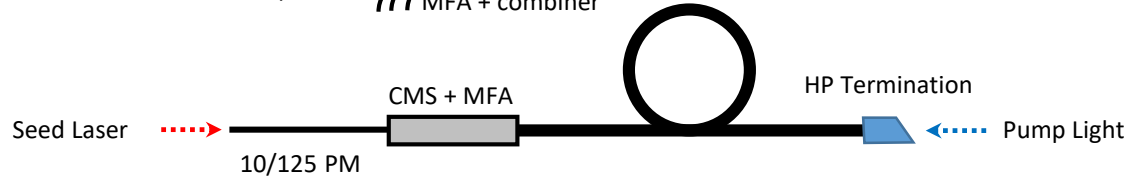


[1] US Patent No. 8,731,358 "Multi-cladding fiber", Paré et al.

P: co-pumping



N: counter-pumping



Parameters	Specifications	Notes
Amplifier Fiber	Yb-MCOF-35/250-56/400-07-2.5-PM	1000 μm^2 effective mode area, long taper (fiber type: ab)
Saturation Energy	500 μJ @ 1064 nm	
Output Power	100 W max.	
Gain	30 dB max. @ 1064 nm	
Peak Power Class	500 kW max.	Actual performance depends on the pumping wavelength, pumping configuration, seed wavelength, seed power, seed spectral characteristics and seed temporal format
Input Pump Power	150 W total max.	co-pumping : 6x 0.22NA – 105/125 μm counter-pumping : 400 μm , NA < 0.15 or equivalent brightness
Pumping Wavelength	915 or 976 nm	
Seed Wavelength	1030 or 1064 nm	
Beam Quality	$M^2 < 1.3$ ($D4\sigma$)	ISO Standard 11146
Polarization Extinction Ratio	> 16 dB	
Slope Efficiency	> 70%	
Recommended Seeding Power	> 500 mW	
Input Fiber	10/125 μm	Low NA, PM
High Power Termination	integrated to the module	10 x 10 mm endcap, angle polished (2°) & AR coated
Dimensions	474 x 451 x 27 mm ³	
Case Temperature	25 \pm 2 $^\circ\text{C}$	As measured by the integrated thermistor
Cooling	water cooled	minimum flow rate > 1L/min

Technical Specifications: **Yb-LE40-2-ab-x-y-z**

gain module generation: 2

fiber type: ab (Yb-MCOF-35/250-56/400-07-2.5-PM)

P : co-pumping

N : counter-pumping

915 nm pump WL

976 nm pump WL

1030 nm seed WL

1064 nm seed WL