



# LaserNGN-40mini

## HIGH-POWER GAIN MODULE

### SOLUTION OVERVIEW

INO LaserNGN-40mini is optimized for high peak power and high average power applications. The optical fiber at the heart of the gain module is based on our low photodarkening core chemistry and features a distinctive and proprietary refractive index profile. The result is a gain module that can be operated at up to 100 W of average output power, with excellent beam quality and good polarization maintenance. The module can be easily integrated to a pigtailed oscillator with its standard 10/125 PM input fiber.

The module integrates everything needed to handle power, high thermal load and high peak fluence pulses:

- 40  $\mu\text{m}$  core diameter output
- large endcap
- liquid cooled

### APPLICATIONS

- High power ultrafast fiber laser
- Frequency conversion

### FEATURES

- Singlemode-like output
- Easy to integrate
- Liquid cooled
- Robust construction
- Long lifetime, TMI-free operation

### BENEFITS

- High nonlinear threshold
- High peak power
- High average power
- High gain
- Excellent beam quality
- Good polarization maintaining capabilities
- Broad gain bandwidth
- Excellent optical-to-optical efficiency



MAIN SPECIFICATIONS

PARAMETERS	SPECIFICATIONS	NOTES
Rated Average power*	100W	
M <sup>2</sup>	≤1.15 (CMOS - ISO Standard 11146)	Measured with a 33mm EFL plano-convex spherical lens for collimation
Beam diameter	2 mm (typical)	Measured 60 cm from the collimating lens (33mm EFL plano-convex spherical lens)
Wavelengths	1030nm, 1064nm	
Pumps (λ, φ, NA, #)	976nm, 105/125 0.22, 2x	
Input fiber	PM 10/125 NA 0.08	
Pumping configuration	Co-pumping	
Gain*	<26dB	
PER	≥16dB	(at 1064nm)
Polarization orientation	Vertical, perpendicular to the module	
High power termination	8 x 16.5 mm endcap, AR coated	
Recommended module temperature	20±5°C	
Efficiency	≥80%	
Certifications	RoHS, REACH, CE	
Peak power class*	200kW (Actual performance depends on seed power, seed spectral characteristics and seed temporal format)	
Power stability	≤ 1% over 8h	
Dimensions (AA x CC x DD mm <sup>3</sup> )	254x250x11 mm <sup>3</sup>	(without cold plate)
Dimensions (AA x CC x DD mm <sup>3</sup> )	254x250x34 mm <sup>3</sup>	(with cold plate)
Weight (without cold plate)	<1.4kg	
Weight (with cold plate)	<2.3kg	
Temperature (non-operationnal)	-20°C à 55°C	
Transport (non-operationnal)	MIL-STD810H 514.8C-3 Category 4 MIL-STD810H 516.8	

\* Based on 300mW seed power

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