

# MAKO-NL

## 1W Narrow Linewidth 1064nm Fiber Laser

### Key Features

- Output Power >1W
- Linewidth <1MHz
- Stable Single Frequency
- Low intensity noise
- Single Mode,  $M^2 \approx 1$
- Standard or All-PM version
- Adjustable Wavelength & Power
- Compact & Rugged Module
- PM Output with High PER
- RS 232 Interface

### Applications

- LIDAR
- Fiber Optic Sensing
- Laser Spectroscopy
- Coherent communications
- Analog & RF Photonics

## MAKO SERIES

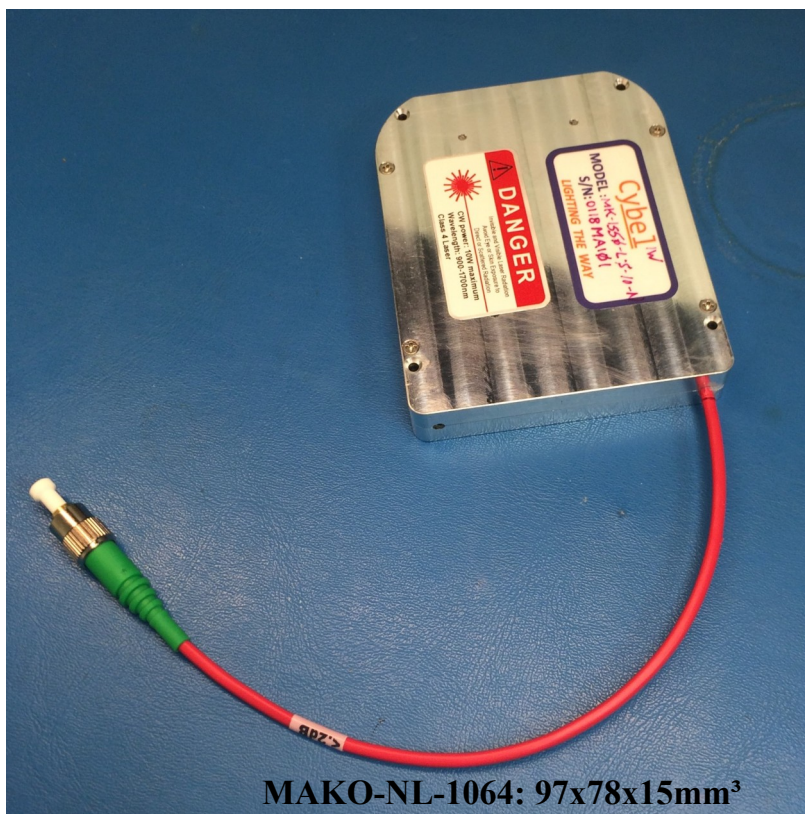
Also available at different standard wavelengths with same high performance and compact footprint:

- ♦ MAKO-1030
- ♦ MAKO-1550
- ♦ MAKO-1550+
- ♦ MAKO-NL-1900
- ♦ MAKO-NL-2000

The **CYBEL MAKO-NL-1064** is a single frequency narrow linewidth fiber laser designed for low noise applications. The **MAKO-NL1064** OEM module produces a highly stable 1064nm CW output up to 1.5W with a sub-MHz linewidth range, low RIN and intensity noise and excellent OSNR.

Since the **MAKO-NL-1064** design uses a Master Optical Power Amplifier design (MOPA), it allows large scalable output power and a wavelength selection in a robust and small form factor packaging ( $97 \times 78 \times 15 \text{mm}^3$ ). This OEM laser product comes as either a standard or an all polarization maintaining laser that provides steady performance in adverse environmental conditions.

The **MAKO-NL-1064** is ideally suited for integration in Lidar systems, optical sensing or RF & analog photonic applications. External monitoring and control can be achieved via RS 232 computer interface.



MAKO-NL-1064:  $97 \times 78 \times 15 \text{mm}^3$

# MAKO-NL-1064 Specifications

OPTICAL	Unit	Value	Comment
Center wavelength	nm	1064	Other wavelengths available
Output power	W	Up to 1.5	
Output signal linewidth (3 dB )	MHz	<1	Option of 100KHz or less
Beam quality (M <sup>2</sup> )	kHz	<1.1	
Side mode sup. ratio (SMSR)	dB	50	@Pout=1W, Res; 0.05nm
Polarization ext. ratio	dB	≥ 18	PM version
Relative intensity noise (RIN)	dBc/Hz	<120 @ 500Hz	
Output fiber stability	%	<1	With 30dB output isolator
Pigtail output fiber	m	SMF 28 or PM Panda fiber	Armored cable, optional
Fiber length	m	1	FC/APC connector termination
Output power tuning range	%	10 to 100	
ELECTRICAL/MECHANICAL			
Voltage	V	12 & 2	
Warm-up Time	min	20	
Mechanical package	mm	97x78x15	Without heat sink
Supply power consumption	W	25	@Pout max=1.5W
Control interface		RS 232	
ENVIRONMENTAL			
Operating temperature	°C	0 to 50	
Operating relative humidity	%	0 to 95	Non-condensing

## CUSTOMIZATION

The **MAKO** is a laser platform that can be customized to match Customers' specific requirements. Please contact Cybel.

**COMPLIANCE with Regulatory Requirements:** These OEM products are Class 4 lasers as designated by the Center for Device and Radiology Health (CDRH). As such they are intended only in integration into other equipment and do not comply with CDRH requirement. It is the customer responsibility for CDRH certification of the full system that incorporates this industrial laser.



1195 Pennsylvania Ave  
Bethlehem, PA 18018  
Phone: 610-691-7012

Sales: [contact@cybel-llc.com](mailto:contact@cybel-llc.com)

Website: [www.cybel-llc.com](http://www.cybel-llc.com)