



CHALLENGING LIGHT
FOR OUR PARTNERS

PROGRAMMABLE NANOSECOND FIBER LASER

INO is a world-class center of expertise in industrial applications for optics and photonics and is a world leading technology developer and provider of pulsed fiber laser oscillator platform programmable pulse shapes in the nanosecond regime.



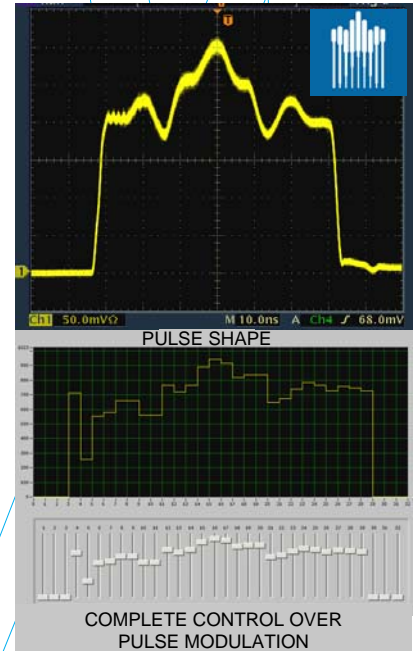
Pulse fiber laser oscillator including a 40 watts pump block

ADVANTAGES

- Fast rise times and fall times
- Programmable pulse shapes at the nanosecond time scale
- High pulse repetition frequency operation
- Spectrum tailoring capability
- Stable, polarized emission fully compatible with frequency conversion
- Ideal for seeding fiber or DPSS amplifiers
- Designed for 24/7 operation
- Maintenance-free
- 10W output power available with INO power amplifier

KEY APPLICATIONS

- Micromachining processes, welding, drilling
- Non-decorative deep engraving marking
- Stereolithography memory and display repair and resistor trimming
- Microfabrication in semi-conductors, solar cells and display
- Many board-level electronic applications



INO IS VERY FLEXIBLE IN ITS OFFER

> PROTOTYPING > SHORT RUN PRODUCTION > TECHNOLOGICAL TRANSFER

MASTER OSCILLATOR WITH PROGRAMMABLE AMPLITUDE WAVEFRONT (MOPAW)

TYPICAL SPECIFICATIONS

PARAMETERS	UNIT	MOPAW-1064-LPS-50	MOPAW-1064-LPS-200
Rise time	ns	<1.5, 1.0 typical	
Fall time	ns	<2.0, 1.5 typical	
Programmable pulse shaping temporal resolution	ns	2.5	
Programmable pulse shaping amplitude resolution	levels	1024	
Programmable pulse width range	ns	2.5-640	
Burst mode		Available	
Trigger mode		Internal/External	
Emission modes		Pulsed, quasi-continuous	
Pulse repetition frequency range ¹	kHz	100-1000	
Maximum energy per pulse ²	μJ	0.5	2.0
Maximum average output power ³	mW	50	200
Jitter between successive laser pulses	ns	<15	
Pulse energy stability, 3σ value over 10 000 pulses	%	<±3, ±2 typical	
Output power stability, 3σ value over 24 hours	%	Variations <±3	
Wavelength of emission ⁴	nm	1064.3 ± 0.3	
Wavelength tuning range ⁵	pm	±75	
Spectral bandwidth, FWHM ⁶	nm	<0.3	
Polarization of output signal		Linear	
Polarization extinction ratio		>500:1, >1000:1 typical	
Standard delivery fiber ⁷		Single mode Panda PM980 with FC/APC connector	
Standard delivery fiber length ⁸	m	2.0	
Warm-up time	min	<15	
Cooling		Air	
Optical isolation		Built-in isolator included, isolation > 30 dB	
Control interface		RS-232, 9 pin Dsub connector	
Power supply voltage	VAC	Single phase, Universal Input 90-260	
Power consumption	W	<135	
Dimensions		4RU 19"	
Operating temperature range	°C	+15 to +30	
Storage temperature range	°C	-20 to +50	
Lifetime	h	>10 000, 24/7 operation	
Maintenance interval		Maintenance-free	

COMM-100149

OPTIONS

- ¹ Lower repetition frequencies available on request
- ² Available soon: 25 μJ version
- ³ Available soon: 2.5 W version
- ⁴ Other wavelengths in Yb and Er bands available on request
- ⁵ Fine tuning of wavelength through seed laser diode operating temperature adjustment (e.g. to match Nd:VO₄ gain spectrum)
- ⁶ Factory tunable between 0.2 and 0.5 nm
- ⁷ Optional collimator available on request
- ⁸ Custom lengths available on request

PROGRAMMABLE PULSE SHAPES

