

General Description:

Model 1050 – Flashlamp Pumped Nd:YLF Laser

The Model 1050 flashlamp pumped Nd:YLF laser produces a short Q-switched output pulse operating at 1053 nm. The laser delivers up to 100 mJ of output energy with an 8-ns FWHM pulse duration. An unstable resonator is used with this laser to produce excellent output beam quality.

The mechanical design of the laser makes lamp changing easy. The laser uses o-ring seals for clean operation in industrial environments. This opto-mechanical platform can be used with any flashlamp pumped laser crystal to produce many useful wavelengths for industrial processes.

Harmonics of the fundamental output are available with add-on modules. All of the parameters of the laser system including output wavelength, repetition rate, pulse energy, pulse duration, beam quality, and others can be customized to match application requirements.



System Specifications – Model 1050 Flashlamp Pumped Nd:YLF Laser

The following table is a complete list of the specified parameters for this laser system. All other parameters are unspecified. Exceeding any of the specified operating limits at any time will void the warranty.

Specification	Quoted specification
Output Wavelength (nm)	1053 nm
Output pulse energy, mJ per pulse	Up to 100 mJ per pulse
Repetition rate	1-20 Hz, and single shot (not to be operated at a repetition rate > than 20 Hz at any time.
Pulse width	< 10 ns FWHM
Beam size at aperture	Per application requirements
Beam quality	Single transverse mode, $M^2 < 2$ in the far field
Pulse energy stability (short term)	< 3% rms
Estimated flashlamp lifetime	> 3.5×10^7 shots
Laser Head	Sealed, with output window
Cooling	Closed loop water cooling
Laser head size	W: 6.9" x H: 5.3" x L: 13.8"
Pulse power size	W: 16.9" x H: 7.1" x L: 18.1"
Water cooler size	W: 19.6" x H: 7.1" x L: 13.8"
Operating temperature range	10-35 °C
Operating humidity range	0-85%, non-condensing
Shock and vibration limit	< 4g
Available outputs	Lamp Sync, Q-switch sync, Pulse sync
Available inputs	Lamp Trigger, Q-switch Trigger
Operator interface	LCD Panel and membrane keypad RS-232 Communication interface
Input power requirements	100-120V AC, 50-60 cycle Pulse power - 8 amps maximum Cooling system - 5 amps maximum