

# RG Lasers

## High Pulse Energy Picosecond Laser



### RG Series

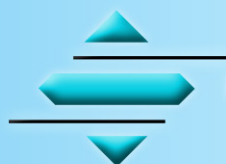
Photronics Industries' RG Series diode pumped pico-second lasers produce over 3mJ per pulse at 1kHz and more than 10Watts at 10kHz at 1064nm with ~ 15ps nominal pulse widths all while still maintaining TEM<sub>00</sub> mode quality in a compact, industrial reliable package. It is the most compact laser with the highest pulse energy in kHz range in the market. Higher power versions (25W and 40W @ 10kHz) or pulse energy (5mJ/pulse and 8mJ/pulse @1kHz) are also available with added amplifier stages. Harmonic output such as 532nm, 355nm, 266nm, and 213nm can be ordered as needed.

### Features

- Variable rep rate with two versions:
  - RG-L: Single Shot to 10kHz
  - RG-H: 10kHz to 1MHz
- Excellent beam quality ( $M^2$  typically <1.3)
- Closed loop chilled
- Small form factor, compact laser head
- Industrial grade
- Diode pumped technology
- Wide range of powers and harmonic options available

### Applications

- Process difficult materials
  - Quartz, other glasses
  - Ceramics
  - CIGS
- Metal welding, Cutting, and Deburring
- Improved micro and meso machining quality with less dross
- Cold ablation of materials with less "heat affected zone" than conventional nanosecond DPSS
- Improve cut quality and throughput for medical applications (e.g., heart stints)
- Stereo lithography
- LIDAR
- Satellite Laser Ranging



**Photronics Industries**

**International, Inc.**

**The Pioneer of Intra-Cavity Solid-State Harmonic Lasers**

# Optical Specifications

Wavelength (nm)	1064nm	
Model Number	RG-L 1064	RG-H 1064
Average Power*	10W @ 10kHz	10W @ 100kHz
Pulse Energy	3mJ/pulse @ 1kHz	200µJ/pulse @ 50kHz
Long term stability (8 hour)	1% rms	
Polarization	Vertical	
Wavelength (nm)	532nm	
Model Number	RG-L 532	RG-H 532
Average Power*	5W @ 10kHz	5W @ 100kHz
Pulse Energy	1.5mJ/pulse @ 1kHz	100µJ/pulse @ 50kHz
Long term stability (8 hour)	2% rms	
Polarization	Horizontal	
Wavelength (nm)	355nm	
Model Number	RG-L 355	RG-H 355
Average Power*	3W @ 10kHz	3W @ 100kHz
Pulse Energy	1mJ/pulse @ 1kHz	50µJ/pulse @ 50kHz
Long term stability (8 hour)	3% rms	
Polarization	Vertical	
Wavelength (nm)	266nm	
Model Number	RG-L 266	RG-H 266
Average Power*	1.5W @ 10kHz	1.5W @ 100kHz
Pulse Energy	400µJ/pulse @ 1kHz	25µJ/pulse @ 50kHz
Long term stability (8 hour)	3% rms	
Polarization	Vertical	
<b>Repetition rate</b>	Single Shot to 10kHz	10 to 500kHz
<b>Pulse width</b>	<25 ps	
<b>Spatial mode profile</b>	TEM <sub>00</sub>	
<b>M<sup>2</sup></b>	<1.3 (typical <1.2)	
<b>Output Beam Diameter</b>	0.9mm (Nominal)	
<b>Beam divergence</b>	5 mrad	
<b>Beam Ellipticity</b>	<10%	
<b>Beam Point Instability</b>	<50 urad (typical 5urad)	
<b>Ambient Temperature</b>	15 to 30 °C (59 to 86 °F) Operating Range	
<b>Relative Humidity</b>	Non condensing, 90% Max	

\* For power at 1064nm>10W, 532nm>5W, 355nm>3W, or 266nm>1.5W please contact Photonics Industries' factory

## Mechanical Specifications (Preliminary)

Cooling	Closed Loop Chiller
Laser head dimensions	191mm (W) x 127mm (H) x 600mm (L)**
Power supply dimensions	484mm (W) x 133mm (H) x 476mm (D)
Power requirement	400 Watts Maximum ( 100V or 220V )( excluding chiller )

\*\* For 532, 255 and 266nm, L = 800mm

Due to Photonics Industries' commitment to continuous product improvement, specifications are subject to change without notice.



**390 Central Ave, Bohemia, NY, 11716**  
**Phone: 631-218-2240**  
**Fax: 631-218-2275**  
**E-Mail: info@photonix.com**  
**Website: www.Photonix.com**