

Diode-pumped Gain Switched Picosecond Lasers

QS Lasers is actively developing a new series of gain-switched lasers designed to deliver short (sub-100 ps), intense pulses. The lasers feature a simple, compact architecture that is both cost-effective and reliable, making them well-suited for applications requiring ultrashort temporal resolution and high pulse energy. Their easy modulation and consistent performance provide a practical solution for scientific, industrial, and medical environments demanding fast and accurate pulsed laser output.

Features

- Sub-100 ps pulse duration (30 ps upcoming)
- Repetition rate up to 100 Hz (1 kHz upcoming)
- Compact and robust design
- Low jitter <2 μs
- Simultaneous or discrete 532 nm, 355 nm output options

Applications

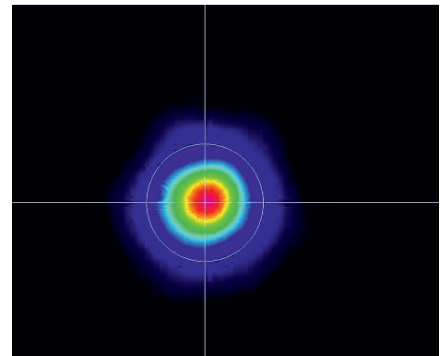
- Time resolved spectroscopy
- Nonlinear optics
- Bio-imaging
- LiDAR systems
- Laser-Induced Breakdown Spectroscopy (LIBS)
- Photoacoustic spectroscopy
- Flash photolysis

Specifications ¹

		GSL120	GSL121
Output characteristics			
Pulse energy (mj)	1064 nm	0.5	
	532 nm	0.25	
	355 nm	0.1	
Pulse duration ² (ps)		<100	
Pulse repetition ³ (Hz)		1 - 50	1 - 100
Pulse-to-pulse energy stability ⁴ (% RMS)	1064 nm	<1.5	
	532 nm	<2.0	
	355 nm	<2.0	
Power drift ⁵ (% RMS)		±3	
Optical pulse jitter ⁶ (ns RMS)		0.2	
Beam divergence ⁷ (mrad)		<9	
Beam diameter ⁸ (mm)		1.2	1.5
Pointing stability, full angle (μrad)		<50	
Polarization		linear, horizontal at 1064 & 532 nm, vertical at 355 nm	
Triggering modes		internal / external	
Beam spatial profile		close-to-Gaussian in near and far fields	
Dimensions W x L x H (mm)			
Laser head		TBD	
Laser controller		260 x 333 x 150	
Operating requirements			
Electrical requirements		100-240 V AC, single phase 50-60 Hz	
Power consumption		<50 W	
Cooling system		TEC	
Ambient temperature		20-30 °C	
Relative humidity		10-80% (non-condensing)	

* Customized models available on request

GSL120 Typical beam profile



¹ Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at 1064 nm and 100 Hz.

² FWHM level at 1064 nm.

³ Factory-set pulse repetition rate is set at 100 Hz.

⁴ Averaged from 30 second time interval in 5 series.

⁵ Over 8 hours when temperature variation is ±2 °C.

⁶ In respect to q-switch sync. signal in internal trigger mode, rising edge of TTL-sync. out signal. Internal trigger mode delivers TTL-sync. out signal.

⁷ Full angle measured at 1/e² level; can be adjusted to customer requirements, please inquiry for more details.

⁸ Beam diameter is measured 20cm from laser output at 1/e² level.