



# Passively Q-Switched Laser System

## QSLU Series (IR)

Data Sheet



### Overview

The QSLU IR series is a family of infrared diode pumped solid state (DPSS) q-switched lasers that deliver up to 2000mW of average power. The QSLU series laser features high peak power, high repetition rate, short pulse duration, compact design, and FDA-compliant system with driver. The QSLU series is widely used in marking, carving, measurement, research, and many other applications.

### Features

- Available wavelengths: 946nm, 1047nm, 1053nm, 1064nm, 1313nm, 1319nm and 1444nm
- Q-switched operating mode
- Pulse energy up to 200uJ
- Ultra-compact design
- FDA compliant

### Applications

- Marking
- Carving
- Measurement
- Research

946-1053 nm Specifications

Parameter		QSLU946	QSLU1047	QSLU1053
Wavelength		946±1 nm	1047±1 nm	1053±1 nm
Operating mode		Q-switched pulsed laser		
Max average power		1-150mW	1-300mW	1-450mW
Single pulse energy		1-20uJ	1-150uJ	1-50uJ
Pulse duration		~5 ns	~10 ns	~10 ns
Peak power		0.1-2kW	0.1-15kW	0.1-5kW
Average power stability (rms, over 4 hours)		<5%, <3%	<5%, <3%, <2%	<5%, <3%, <2%
Repetition rate	Internal Fixed	1kHz, 2kHz, 3kHz, 4kHz	1kHz	1kHz
	External Trigger	1kHz-4kHz	1Hz-1kHz	1Hz-1kHz
	QCW	Between 5kHz-9kHz	Between 2kHz-5kHz	Between 2kHz-5kHz
Transverse mode		TEM <sub>00</sub>		
Beam diameter at aperture		~1.2 mm		
Beam divergence, full angle		<2.0 mrad		
M <sup>2</sup> factor		<2.0		
Warm-up time		<5 min		
Operating temperature		10-35°C		
Expected lifetime		10000 hours		
Warranty		10 months		

Remarks:

- Average power (mW) = Single pulse energy (µJ) \* Rep. rate (kHz)
- Peak Power (W) = Single Pulse Energy (µJ) / Pulse Duration (µs)
- The laser head needs to be used on a heat sink with good heat dissipation.
- Specifications of the Q-switched pulsed laser is based on the laser pulsed at the specified repetition rate. If the laser is run at a different repetition rate, the output characteristics may change.
- Specifications are subject to change without notice.

**1064-1313 nm Specifications**

Parameter		QSLU1064							QSLU1313
Wavelength		1064±1 nm							1313±1 nm
Operating mode		Q-switched pulsed laser							
Max average power		1-2000mW							1-100mW
Single pulse energy		1-20uJ			20-50uJ	50-100uJ	35-200uJ	1-20uJ	
Pulse duration		~1.3 ns	3-5ns	5-10ns	10-25ns	~1.5ns	~1.8ns	~5ns	~15 ns
Peak power		0.8-15kW	0.3-4kW	0.2-2kW	0.1-0.8kW	13-33kW	27-55kW	7-40kW	0.06-1.33kW
Average power stability (rms, over 4 hours)		Average power stability (rms, over 4 hours)							<5%, <3%, <2%
Repetition rate	Internal Fixed	1kHz, 2kHz, 3kHz, 4kHz							1kHz, 2kHz, 3kHz, 4kHz
	External Trigger	1kHz-4kHz							1kHz-4kHz
	QCW	Between 5kHz-20kHz							Between 5kHz-20kHz
Transverse mode		TEM <sub>00</sub>							
Beam diameter at aperture		~1.2 mm							
Beam divergence, full angle		<2.0 mrad							
M <sup>2</sup> factor		<2.0							
Warm-up time		<5 min							
Operating temperature		10-35°C							
Expected lifetime		10000 hours							
Warranty		10 months							

Remarks:

- Average power (mW) = Single pulse energy (µJ) \* Rep. rate (kHz)
- Peak Power (W) = Single Pulse Energy (µJ) / Pulse Duration (µs)
- The laser head needs to be used on a heat sink with good heat dissipation.
- Specifications of the Q-switched pulsed laser is based on the laser pulsed at the specified repetition rate. If the laser is run at a different repetition rate, the output characteristics may change.
- Specifications are subject to change without notice.

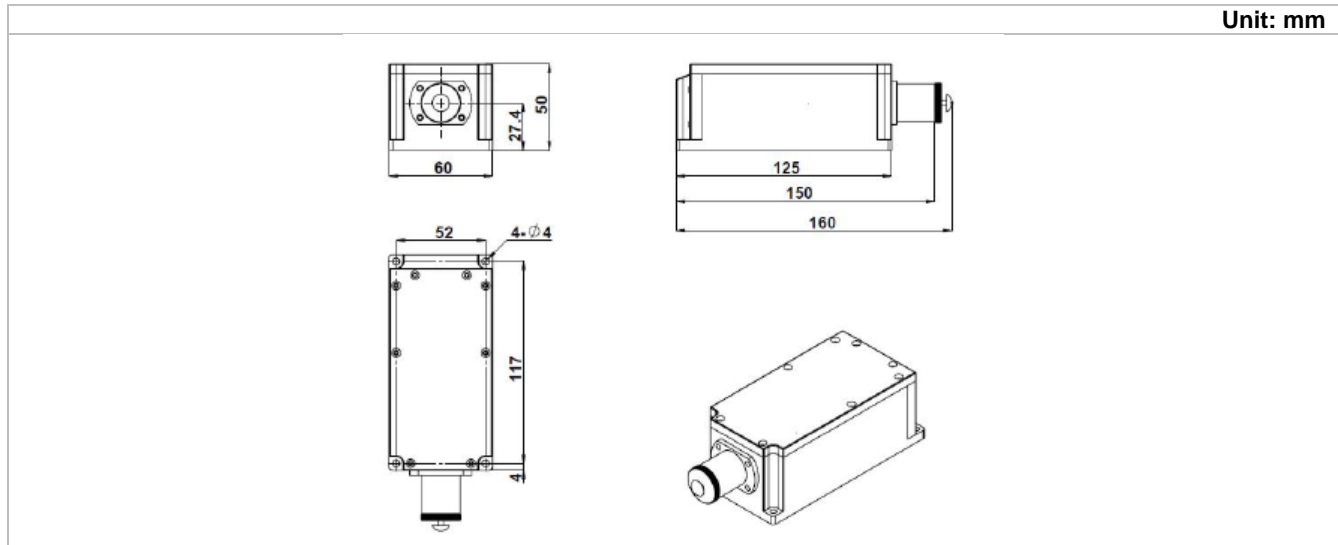
**1319-1444 nm Specifications**

Parameter		QSLU1319	QSLU1444
Wavelength		1319±1 nm	1444±1 nm
Operating mode		Q-switched pulsed laser	
Max average power		1-150mW	1-10mW
Single pulse energy		1-15uJ	1-3uJ
Pulse duration		~15 ns	~24 ns
Peak power		0.06-1.0kW	0.01-0.12kW
Average power stability (rms, over 4 hours)		<5%, <3%, <2%	<5%, <3%
Repetition rate	Internal Fixed	1kHz, 2kHz, 3kHz, 4kHz	-
	External Trigger	1kHz-4kHz	-
	QCW	Between 5kHz-20kHz	Between 4kHz-7kHz
Transverse mode		TEM <sub>00</sub>	
Beam diameter at aperture		~1.2 mm	
Beam divergence, full angle		<2.0 mrad	
M <sup>2</sup> factor		<2.0	
Warm-up time		<5 min	
Operating temperature		10-35°C	
Expected lifetime		10000 hours	
Warranty		10 months	

Remarks:

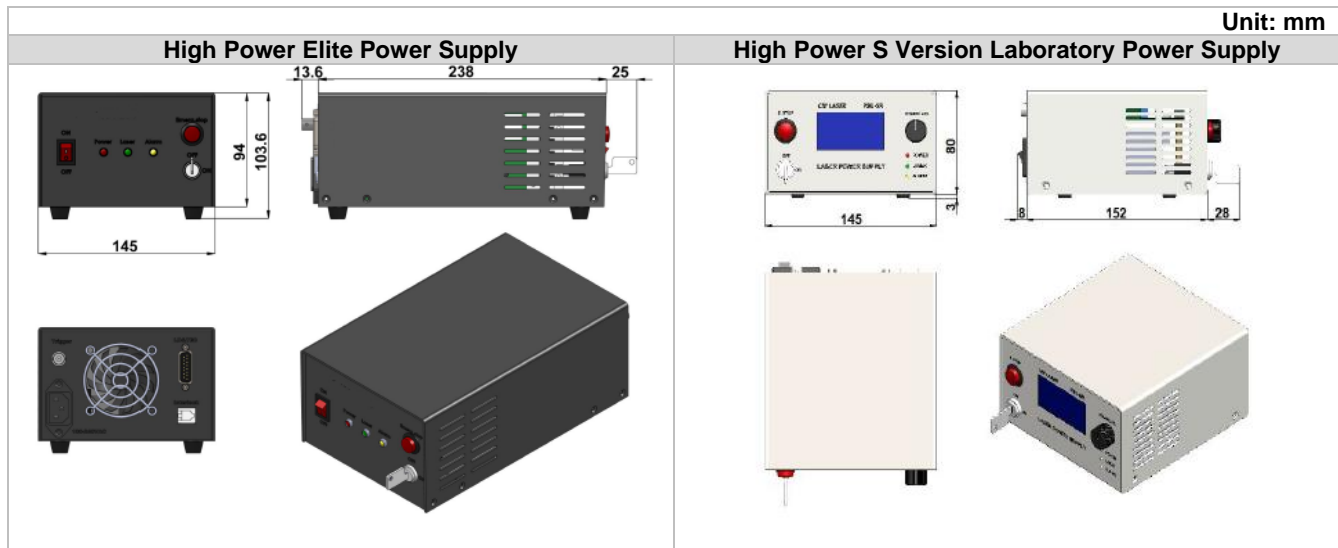
- Average power (mW) = Single pulse energy (µJ) \* Rep. rate (kHz)
- Peak Power (W) = Single Pulse Energy (µJ) / Pulse Duration (µs)
- The laser head needs to be used on a heat sink with good heat dissipation.
- Specifications of the Q-switched pulsed laser is based on the laser pulsed at the specified repetition rate. If the laser is run at a different repetition rate, the output characteristics may change.
- Specifications are subject to change without notice.

**QSLU Series (IR) Laser Head Dimensions**



Parameter	QSLU Series (IR)
Dimensions	160(L)×60(W) ×50(H) mm <sup>3</sup>
Weight	0.9 kg
Beam height from base plate	27.4 mm
Beam exit (from side)	30 mm

**QSLU Series (IR) Power Supply Dimensions**



Parameter	High Power Elite Power Supply (473, 523.5, 526.5, 532, 656.5, 660 nm)	High Power S Version Laboratory Power Supply (532 nm)
Dimensions	276.6(L) ×145(W) ×103.6(H) mm <sup>3</sup>	188(L) ×145(W) ×83(H) mm <sup>3</sup>
Weight	2.3 kg	1.2 kg
Input voltage	90-264VAC	90-264VAC
Feature	Standard	Adjustable power

**Ordering Information**

For more information, please contact Lasermate directly at [sales@lasermate.com](mailto:sales@lasermate.com).

Part Number Configuration QSLU[1][2][3][4][5]					
QSLU = Laser Model Series	[1] = Wavelength	[2] = Average Power or Pulse Energy	[3] = Power Supply	[4] = Power Stability	[5] = Repetition Rate
	946= 946nm 1047= 1047nm 1053= 1053nm 1064= 1064nm 1313= 1313nm 1319= 1319nm 1444= 1444nm	10= 10mW 50= 50mW ... 1W= 1000mW 2W= 2000mW 5J= 5uJ 10J= 10uJ ... 200J= 200J	H=High Power Elite Power Supply S=High Power S Version Laboratory Power Supply	A= <5% E= <3% 2= <2%	S1= INT FIXED 1kHz S2= INT FIXED 2kHz S3= INT FIXED 3kHz S4= INT FIXED 4kHz C= EXT TRIG U= QCW

Note: The above specifications are subject to change without notice.