Passively Q-Switched Laser System
QSLU Series (Visible)

Data Sheet

Overview

The QSLU series is a family of visible diode pumped solid state (DPSS) q-switched lasers that deliver up to 500mW 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 industry (marking on diamond or stone), teaching of nonlinear optics, experiments of generating 355nm or 266nm laser, fiber communication, and many other applications.

Features

- Visible wavelength range
- Q-switched operating mode
- Pulse energy up to 60uJ
- Ultra-compact design
- FDA compliant

Applications

- Industry (marking on diamond or stone)
- Teaching of nonlinear optics
- Fiber communication
- Experiments of generating 355nm or 266nm laser

473-526.5 nm Specifications

Parameter		**QSLU473**		**QSLU523**	**QSLU526**
Wavelength		473±1 nm		523.5±1 nm	526.5±1 nm
Operating mode		Frequency conversion of Q-switched pulsed laser			
Max average power		1-10mW	1-4mW	1-150mW	1-150mW
Single pulse energy		1-10uJ	~1uJ	1-60uJ	1-60uJ
Pulse duration		~1.7 ns	~3ns	~5 ns	~5 ns
Peak power		5.8kW	0.3kW	0.2-12kW	0.2-12kW
Average power stability (rms, over 4 hours)		<5%, <3%	<5%, <3%	<5%, <3%	<5%, <3%
Repetition rate	Internal Fixed	1kHz	1kHz, 2kHz, 3kHz, 4kHz	1kHz, 2kHz, 3kHz, 4kHz	1kHz, 2kHz, 3kHz, 4kHz
	External Trigger	-	-	1kHz-4kHz	1kHz-4kHz
	QCW	-	-	Between 5kHz-9kHz	Between 5kHz-9kHz
Transverse mode		Near TEM_{00}		Near TEM_{00}	Near TEM_{00}
Beam diameter at aperture		~1.0 mm			
Beam divergence, full angle		<2.0 mrad			
M^2 factor		<1.5			
Polarization ratio		>100:1, Vertical			
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.

532-660 nm Specifications

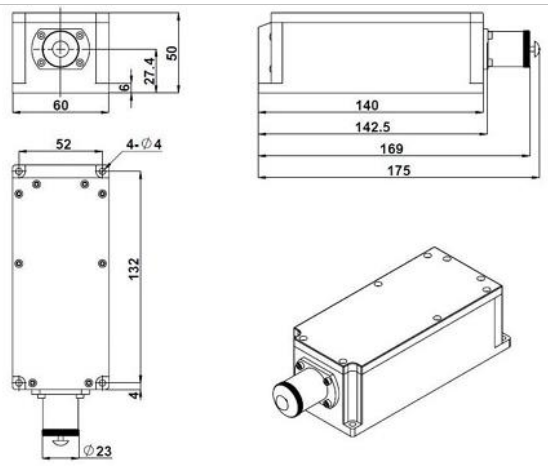
Parameter		**QSLU532**						**QSLU656**	**QSLU660**
Wavelength		532±1 nm						656.5±1 nm	660±1 nm
Operating mode		Frequency conversion of Q-switched pulsed laser							
Max average power		1-40mW	1-120mW	1-150mW		150-500mW		1-10mW	1-10mW
Single pulse energy		1-40uJ	1-30uJ	1-30uJ		30-60uJ		1-5uJ	1-5uJ
Pulse duration		~0.6 ns	~0.8 ns	~1.3ns	~5ns	~1.3ns	~4ns	~15 ns	~15 ns
Peak power		1.66-66kW	1.25-37.5kW	0.7-23kW	0.2-6kW	23-46kW	7.5-15kW	0.06-0.33kW	0.06-0.33kW
Average power stability (rms, over 4 hours)		<5%, <3%, <1%						<5%, <3%	<5%, <3%
Repetition rate	Internal Fixed	1kHz	1kHz, 2kHz, 3kHz	1kHz, 2kHz, 3kHz, 4kHz		4kHz, 5kHz, 6kHz		1kHz, 2kHz, 3kHz, 4kHz	1kHz, 2kHz, 3kHz, 4kHz
	External Trigger	/	/	1kHz-4kHz		4kHz-6kHz		1kHz-4kHz	1kHz-4kHz
	QCW	/	/	Between 5kHz-20kHz		Between 5kHz-12kHz		Between 2kHz-5kHz	Between 2kHz-5kHz
Transverse mode		TEM_{00}						Near TEM_{00}	Near TEM_{00}
Beam diameter at aperture		~1.0 mm							
Beam divergence, full angle		<2.0 mrad							
M^2 factor		<1.5							
Polarization ratio		>100:1, 45 deg polarization		>100:1, Vertical				-	-
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 (Visible) Laser Head Dimensions

Unit: mm

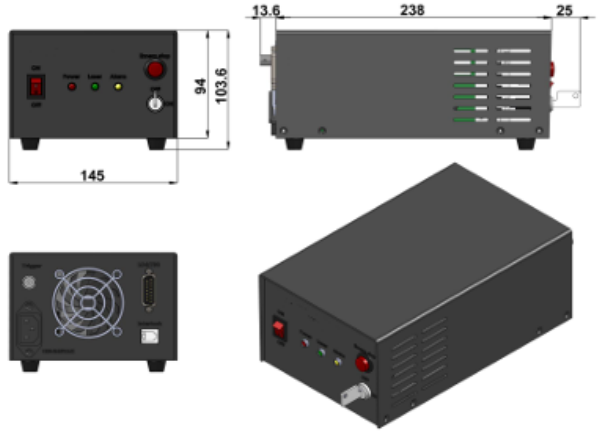


Parameter	QSLU Series (Visible)
Dimensions	175(L)×60(W) ×50(H) mm^3
Weight	
Beam height from base plate	27.4 mm
Beam exit (from side)	30 mm

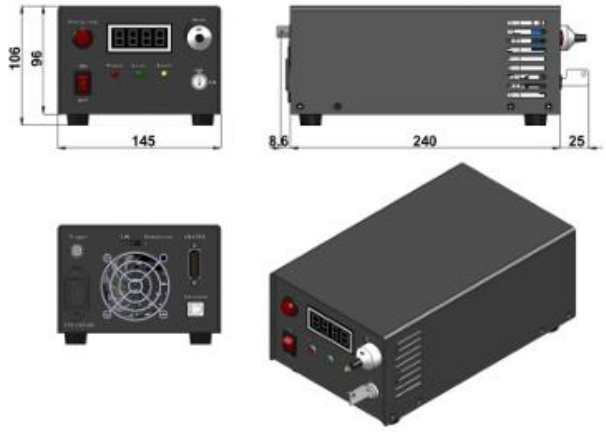
QSLU Series (Visible) Power Supply Dimensions

Unit: mm

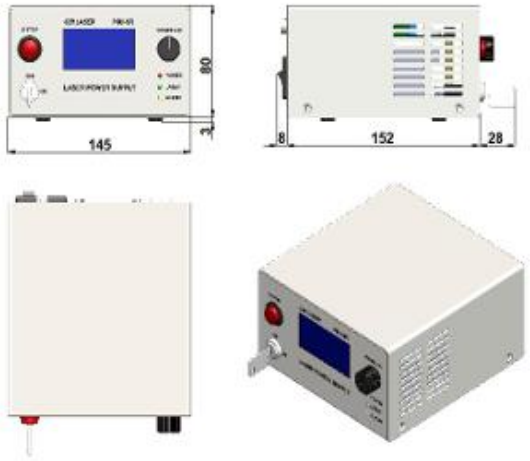
High Power Elite Power Supply



High Power Laboratory Power Supply



High Power S Version Laboratory Power Supply



Parameter	High Power Elite Power Supply (473, 523.5, 526.5, 532, 656.5, 660 nm)	High Power Laboratory 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^3	273.6(L) ×145(W) ×106(H) mm^3	188(L) ×145(W) ×83(H) mm^3
Weight	2.3 kg	2.3 kg	1.2 kg
Input voltage	90-264VAC	90-264VAC	90-264VAC
Feature	Standard	Adjustable power	Adjustable power

Ordering Information

For more information, please contact Lasermate directly at sales@lasermate.com.

Part Number Configuration QSLU[1][2][3][4][5][6]						
QSLU = Laser Model Series	**[1] = Wavelength**	**[2] = Pulse Width**	**[3] = Average Power or Pulse Energy**	**[4] = Power Supply**	**[5] = Power Stability**	**[6] = Repetition Rate**
	473= 473nm 523= 523.5nm 526= 526.5nm 532= 532nm 656= 656.5nm 660= 660nm	Blank= 3ns, 4ns, 5ns, 15ns S= 1.7ns, 1.3ns P= 0.8ns	3= 3mW 5= 5mW 10= 10mW 20= 20mW … 400= 400mW 500= 500mW 1J= 1uJ 2J= 2uJ 3J= 3uJ … 60J= 60uJ	H=High Power Elite Power Supply M=High Power Laboratory Power Supply S=High Power S Version Laboratory Power Supply	A= <5% E= <3% D= <1%	S1= INT FIXED 1kHz S2= INT FIXED 2kHz S3= INT FIXED 3kHz S4= INT FIXED 4kHz S5= INT FIXED 5kHz S6= INT FIXED 6kHz C= EXT TRIG U= QCW

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