



QSLU Series

Passively Q-Switched DPSS Lasers

Data Sheet



Overview

The QSLU series is a family of visible and 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 industry (marking on diamond or stone), teaching of nonlinear optics, fiber communication, research, and many other applications.

Features

- Available wavelengths from 473nm to 1444nm
- Passively Q-switched operating mode
- Average output power up to 2000mW
- Pulse energy up to 200uJ
- Ultra-compact design
- FDA compliant

Applications

- Laser marking on diamond and stone
- Nonlinear optics education and research
- Fiber communications
- Scientific research
- Precision material processing
- Laboratory instrumentation
- OEM photonics integration

473-660 nm Specifications

Parameter		QSLU473	QSLU473S	QSLU523	QSLU526	QSLU532	QSLU656	QSLU660
Wavelength		473±1 nm	473±1 nm	523.5±1 nm	526.5±1 nm	532±1 nm	656.5±1 nm	660±1 nm
Operating mode		Passively						
Average power ⁽¹⁾		1-4 mW	1-10 mW	1-150mW	1-150mW	1-500 mW	1-10 mW	1-10 mW
Single pulse energy ⁽²⁾		~1 uJ	1-10 uJ	1-60uJ	1-60uJ	30-60 uJ	1-5 uJ	1-5 uJ
Pulse duration		~3 ns	~2.2 ns	~5 ns	~5 ns	3-5 ns	~15 ns	~15 ns
Peak power ⁽³⁾		0.3 kW	0.5-6 kW	0.2-12 kW	0.2-12 kW	10-12 kW	0.06-0.33 kW	0.06-0.33 kW
Average power stability (rms, over 4 hours)		<5%, <3%, <2%	<5%, <3%, <2%	<5%, <3%, <2%	<5%, <3%, <2%	<3%, <2%, <1%	<5%, <3%, <2%	<5%, <3%, <2%
Repetition rate	Internal Fixed ⁽⁴⁾	1-4 kHz	0.001-1 kHz	0.001-4kHz	0.001-4kHz	4-6 kHz	1-4 kHz	1-4 kHz
	External Trigger	1-4 kHz	0.001-1 kHz	0.001-4kHz	0.001-4kHz	4-6 kHz	1-4 kHz	1-4 kHz
	QCW ⁽⁵⁾	-	-	5-9 kHz	5-9 kHz	5-12 kHz	2-5 kHz	2-5 kHz
Transverse mode		TEM ₀₀						
Beam diameter at aperture		~1.0 mm						
Beam divergence, full angle		<1.5 mrad						
M ² factor		<1.5	<1.5	<1.5	<1.5	<1.3	<1.5	<1.5
Polarization ratio		>100:1, Vertical	>100:1, Vertical	>100:1, Vertical	>100:1, Vertical	>100:1, Vertical	-	-
Warm-up time		<5 min						
Operating temperature		10-35°C						
Expected lifetime		>10000 hours						

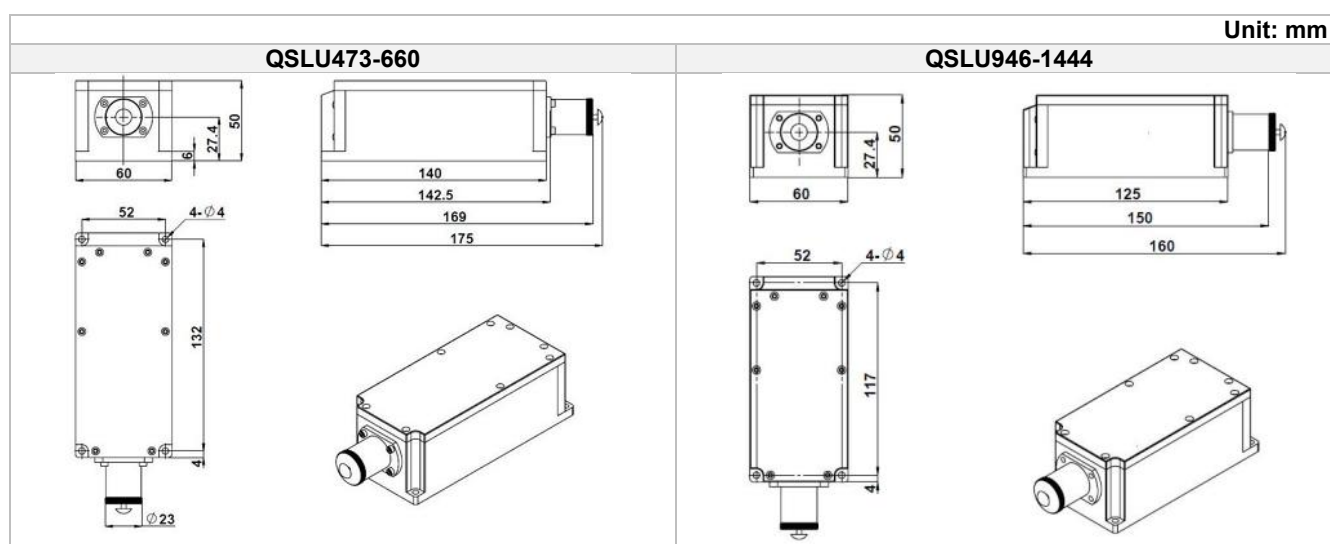
946-1444 nm Specifications

Parameter		QSLU946	QSLU1047	QSLU1053	QSLU1064	QSLU1313	QSLU1319	QSLU1444
Wavelength		946±1 nm	1047±1 nm	1053±1 nm	526.5±1 nm	532±1 nm	656.5±1 nm	660±1 nm
Operating mode		Passively						
Average power ⁽¹⁾		1-150 mW	1-300 mW	1-450 mW	1500-2000 mW	1-100 mW	1-150 mW	1-10 mW
Single pulse energy ⁽²⁾		1-20 uJ	1-150 uJ	1-50 uJ	100-200 uJ	1-20 uJ	1-15 uJ	1-3 uJ
Pulse duration		~5 ns	~10 ns	~10 ns	~5 ns	~15 ns	~15 ns	~24 ns
Peak power ⁽³⁾		0.1-2 kW	0.1-15 kW	0.1-5 kW	20-40 kW	0.1-1.3 kW	0.1-10 kW	0.04-0.12 kW
Average power stability (rms, over 4 hours)		<5%, <3%, <2%	<5%, <3%, <2%	<5%, <3%, <2%	<3%, <2%, <1%	<5%, <3%, <2%	<5%, <3%, <2%	<5%, <3%, <2%
Repetition rate	Internal Fixed ⁽⁴⁾	0.001-4 kHz	0.001-1 kHz	0.001-1 kHz	1-4 kHz	1-4 kHz	1-4 kHz	-
	External Trigger	0.001-4 kHz	0.001-1 kHz	0.001-1 kHz	1-4 kHz	1-4 kHz	1-4 kHz	-
	QCW ⁽⁵⁾	5-9 kHz	2-5 kHz	2-5 kHz	5-15 kHz	5-20 kHz	5-20 kHz	4-7 kHz
Transverse mode		TEM ₀₀						
Beam diameter at aperture		~1.2 mm						
Beam divergence, full angle		<2.0 mrad						
M ² factor		<2.0						
Warm-up time		<5 min						
Operating temperature		10-35°C						
Expected lifetime		>10000 hours						

Remarks:

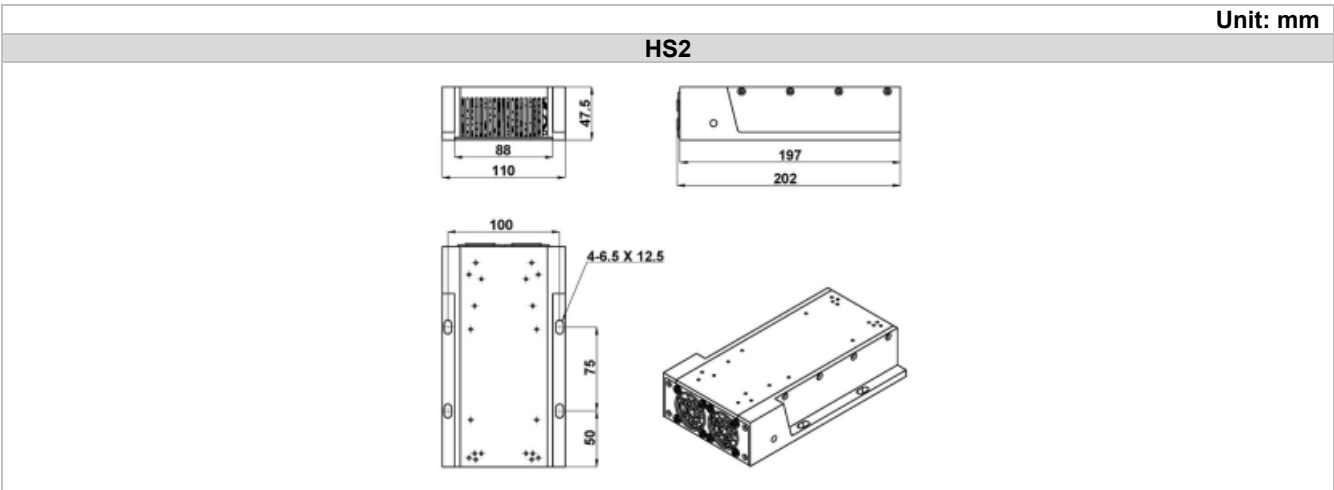
1. Average power (mW) = Single pulse energy (μJ) * Rep. rate (kHz)
2. Any energy level can be selected within this range.
3. Peak Power (W) = Single Pulse Energy (μJ) / Pulse Duration (μs)
4. The frequency is selectable from one or five discrete values within the range.
5. The repetition rate is a free running value within this range.
6. The laser head needs to be used on a heat sink with good heat dissipation.
7. Specifications of the Q-switched pulsed laser are 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.
8. Specifications are subject to change without notice.

QSLU Series Laser Head Dimensions



Parameter	QSLU473-660	QSLU946-1444
Dimensions	175(L)×60(W) ×50(H) mm ³	160(L)×60(W) ×50(H) mm ³
Weight	1.0 kg	0.9 kg
Beam height from base plate	27.4 mm	27.4 mm
Beam exit (from side)	30 mm	30 mm

QSLU Series Heat Sink Dimensions



Parameter	HS2
Dimensions	202(L)×110(W) ×47.5(H) mm ³
Weight	1.25 kg

QSLU Series Power Supply Dimensions



Parameter	High Power Elite Power Supply	High Power Laboratory Power Supply (473, 523.5, 526.5, 532, 656.5, 660 nm)	High Power S Version Laboratory Power Supply (473, 523.5, 526.5, 946, 1047, 1053, 1064, 1313, 1319, 1444 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	100-240 VAC	100-240 VAC	100-240 VAC
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]					
QSLU = Laser Model Series	[1] = Wavelength	[2] = Pulse Energy	[3] = Power Supply	[4] = Power Stability	[5] = Repetition Rate
			H=High Power Elite Power Supply M=High Power Laboratory Power Supply S=High Power S Version Laboratory Power Supply	A= <5% E= <3% 2= <2% 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.

