



Passively Q-Switched Laser System

QSLT Series

Data Sheet



Overview

The QSLT series is a line of diode pumped solid state (DPSS) passively Q-switched lasers available at 532nm, 1064nm and 1535nm, and delivers up to 350mW average power. The QSLT series features high peak power and short pulse duration. The QSLT laser series is commonly used in scientific research, laser micromachining, laser radar ranging, environment monitoring, laser ultrasonic monitoring, LIBS (Laser Induced Breakdown Spectroscopy), and many other applications.

Features

- Green at 532nm, Infrared at 1064nm and 1535nm
- Q-switched operating mode
- Pulse energy up to 400uJ
- Ultra-compact design

Applications

- Laser micromachining
- Scientific research
- Laser radar ranging
- Environment monitoring
- Laser ultrasonic monitoring
- LIBS

532 nm Specifications

Parameter		QSLT532			
Wavelength		532±1 nm			
Operating mode		Frequency conversion of Q-switched pulsed laser			
Max average power		~3mW	~3mW	~30mW	~180mW
Single pulse energy		1-3uJ	1-5uJ	1-5uJ	1-10uJ
Pulse duration		~0.5ns		~1.3ns	3-5ns
Peak power		2-6kW	2-10kW	0.8-4kW	0.3-2kW
Rep. rate	Internal Fixed	0.7kHz-1kHz	0.1kHz-0.6kHz	1kHz, 2kHz, 3kHz, 4kHz	
	External Trigger	/		1Hz-4kHz	
	QCW	/		Between 5kHz-15kHz	
Power stability (over 4 hours)		<5%, <3%, <1%			
Transverse mode		TEM ₀₀			
M ² factor		<1.5			
Beam diameter at aperture (1/e ²)		~1.2 mm			
Beam divergence, full angle		<1.5 mrad			
Polarization ratio		>100:1, Vertical			
Warm-up time		<5 min			
Operating temperature		0-35°C			
Expected lifetime		10000 hours			
Warranty		10 months			

Remarks:

- 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.
- Average power (mW) = Single pulse energy (µJ) * Rep. rate (kHz)
- Peak Power (W) = Single Pulse Energy (µJ) / Pulse Duration (µs)

1064 nm Specifications

Parameter		QSLT1064					
Wavelength		1064±1 nm					
Operating mode		Q-switched pulsed laser					
Max average power		~8mW	~6mW	~40mW	~100mW	~200mW	~350mW
Single pulse energy		1-8uJ	1-10uJ	1-4uJ	1-2.5uJ	1-20uJ	1-35uJ
Pulse duration		~0.5ns				~1.5ns	3-5ns
Rep. rate	Internal Fixed	0.7kHz-1kHz	0.1kHz-0.6kHz	/	/	1kHz, 2kHz, 3kHz, 4kHz	
	External Trigger	/				1Hz-4kHz	
	QCW	/		Between 4kHz-10kHz	Between 10kHz-40kHz	Between 5kHz-20kHz	
Power stability (over 4 hours)		<5%, <3%, <1%					
Transverse mode		TEM ₀₀					
M ² factor		<1.5					
Beam diameter at aperture (1/e ²)		~1.2 mm					
Beam divergence, full angle		<1.5 mrad					
Polarization ratio		>100:1, Horizontal					
Warm-up time		<5 min					
Operating temperature		0-35°C					
Expected lifetime		10000 hours					
Warranty		10 months					

Remarks:

- 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.
- Average power (mW) = Single pulse energy (µJ) * Rep. rate (kHz)
- Peak Power (W) = Single Pulse Energy (µJ) / Pulse Duration (µs)

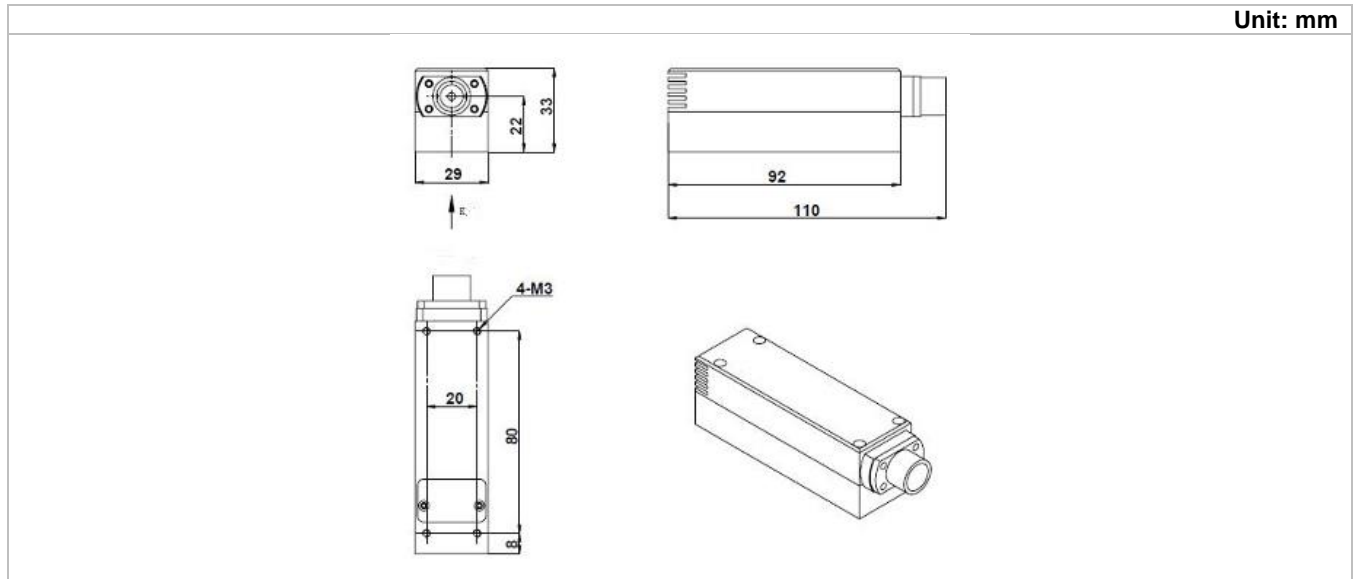
1535 nm Specifications

Parameter		QSLT1535				
Wavelength		1535±2 nm				
Operating mode		Q-switched pulsed laser				
Max average power		0.1-1mW	0.2-2mW	0.3-3mW	0.4-4mW	40mW
Single pulse energy		100uJ	200uJ	300uJ	400uJ	40uJ
Pulse duration		3-6ns				3-5ns
Rep. rate	Internal Fixed	-	-	-	-	-
	External Trigger	1-10Hz				1000Hz
	QCW	-	-	-	-	-
Energy stability (over 4 hours)		<5%				
Transverse mode		TEM ₀₀				
Beam divergence, full angle		≤12			≤15	
Warm-up time		<5 min				
Operating temperature		0-35°C				
Expected lifetime (hours)		>10 ⁷ times irradiate	>2x10 ⁷ times irradiate	>10 ⁷ times irradiate		
Warranty		10 months				

Remarks:

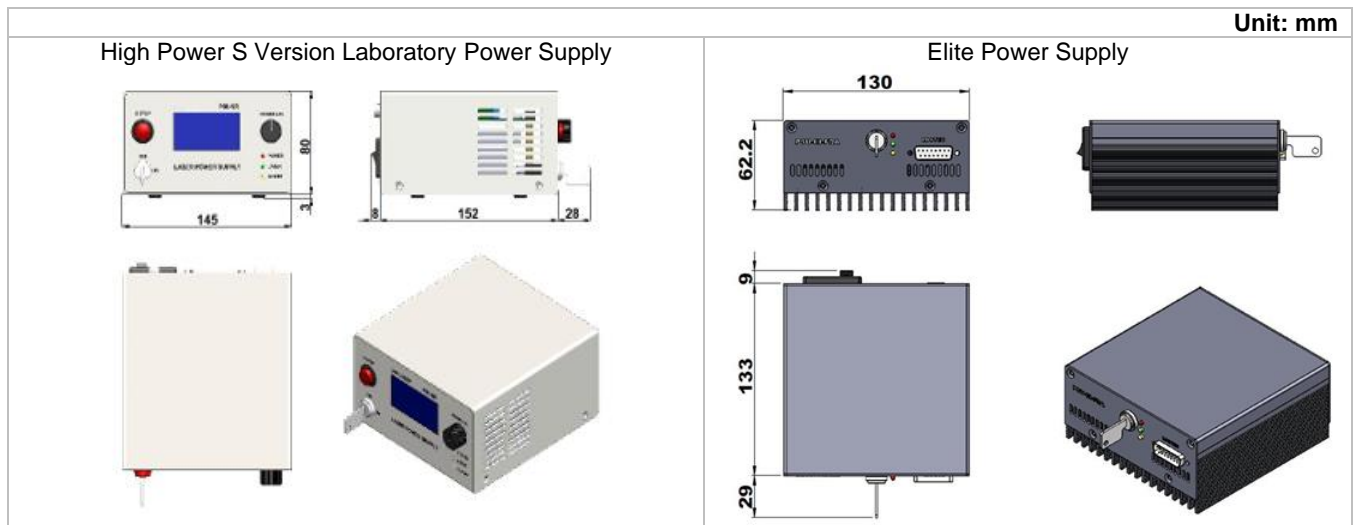
- The laser head needs to be used on a heat sink with good heat dissipation.
- Specifications of the Q-switched pulsed laser is based on the laser pulsed at the specified repetition rate. If the laser is run at a different repetition rate, the output characteristics may change.
- Average power (mW) = Single pulse energy (μJ) * Rep. rate (kHz)
- Peak Power (W) = Single Pulse Energy (μJ) / Pulse Duration (μs)

QSLT Series Laser Head Dimensions



Parameter	QSLT Series
Dimensions	110(L)×29(W) ×33(H) mm ³
Weight	0.34 kg
Beam height from base plate	22 mm

QSLT Series Power Supply Dimensions



Parameter	High Power S Version Laboratory Power Supply (532nm 3mW, 1064nm 8mW, 6mW, 1535nm)	Elite Power Supply (532nm, 1064nm)
Dimensions	188(L) ×145(W) ×83(H) mm ³	171(L) ×130(W) ×62.2(H) mm ³
Weight	1.2 kg	1.2 kg
Input voltage	90-264VAC	90-264VAC
Feature	Adjustable power	Standard

Ordering Information

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

Part Number Configuration QSLT[1][2][3][4][5][6]						
QSLT = Laser Model Series	[1] = Wavelength	[2] = Pulse Width	[3] = Average Power or Pulse Energy	[4] = Power Supply	[5] = Power Stability	[6] = Repetition Rate
	532= 532nm 1064= 1064nm 1535= 1535nm	Blank= 3-5ns, 500ps S= 1.3ns P= 0.5ns	20= 20mW 30= 30mW 50= 50mW 80= 80mW 100= 100mW 150= 150mW 180= 180mW 200= 200mW 300= 300mW 350= 350mW 2J= 2uJ 3J= 3uJ 5J= 5uJ 10J= 10uJ 20J= 20uJ 30J= 30uJ 35J= 35uJ	E=Elite 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.