



# Picosecond Pulsed Diode Laser

## PSDL Series

Data Sheet



### Overview

The PSDL series is a family of picosecond pulsed diode lasers that is available in twenty-four different wavelengths and delivers up to 100mW power. The series features narrow pulse duration, high repetition frequency, synchronized signal output, fast on/off multiplexing capability, and easy operation. The PSDL series offers 785nm, 808nm, 852nm, 905nm, 915nm, 940nm, 980nm, 1060nm and 1064nm in the infrared spectral range and visible wavelength options at 375nm, 400nm, 405nm, 445nm, 447nm, 450nm, 488nm, 520nm, 633nm, 635nm, 637nm, 640nm, 642nm, 655nm, and 660nm. The laser is commonly used in fluorescence excitation, time resolve spectrum, highly sensitive absorption spectroscopy, and many other applications.

### Features

- Wide selection of up to 24 different wavelength options
- Pulsed operating mode
- Output power 1mW to 100mW
- Pulse duration 100-1000ps
- Repetition rate 0.1-80MHz

### Applications

- Fluorescence excitation
- Time resolve spectrum
- Highly sensitive absorption spectroscopy

## 375-450 nm Specifications

Parameter	PSDL375	PSDL400	PSDL405	PSDL445	PSDL447	PSDL450
Wavelength	375±5 nm	400±5 nm	405±5 nm	445±5 nm	447±5 nm	450±5 nm
Operating mode	Pulsed					
Peak power	30mW, 50mW	30mW, 50mW, 100mW	30mW, 50mW, 100mW	30mW, 50mW, 60mW	30mW, 50mW, 60mW	30mW, 50mW, 60mW
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<2%, <1%	<2%, <1%	<2%, <1%
Pulse width	200-1000ps (nonadjustable)	100-1000ps (nonadjustable)				
User trigger frequency	100kHz-20MHz (Internal trigger available)	100kHz-20MHz (Internal trigger available), 20MHz-80MHz				
Transverse mode	Near TEM <sub>00</sub>					
Beam diameter at aperture	~3.0 mm	~1.2 mm				
Beam divergence, full angle	<0.5 mrad	~1.0 mrad				
Warm-up time	<5min					
Operating temperature	10-35°C					
Expected lifetime	10,000 hours					
Warranty period	10 months					

## Remarks:

- Specifications of the 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.

## 488-640 nm Specifications

Parameter	PSDL488	PSDL520	PSDL633	PSDL635	PSDL637	PSDL640
Wavelength	488±5 nm	520±5 nm	633±3 nm	635+7/-5 nm	637±5 nm	640±5 nm
Operating mode	Pulsed					
Peak power	30mW, 50mW	10mW, 20mW, 30mW	30mW, 50mW	30mW, 50mW	30mW, 50mW	30mW, 50mW
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%
Pulse width	100-1000ps (nonadjustable)					
User trigger frequency	100kHz- 20MHz (Internal trigger available)	100kHz-20MHz (Internal trigger available), 20MHz-80MHz				
Transverse mode	Near TEM <sub>00</sub>					
Beam diameter at aperture	~1.2 mm					
Beam divergence, full angle	~1.0 mrad					
Warm-up time	<5min					
Operating temperature	10-35°C					
Expected lifetime	10,000 hours					
Warranty period	10 months					

## Remarks:

- Specifications of the 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.

## 642-852 nm Specifications

Parameter	PSDL642	PSDL655	PSDL660	PSDL785	PSDL808	PSDL852
Wavelength	642±5 nm	655±10 nm	660±5 nm	785±5 nm	808±10 nm	852±10 nm
Operating mode	Pulsed					
Peak power	30mW, 50mW	30mW, 50mW	30mW, 50mW	30mW, 50mW	30mW, 50mW, 60mW	10mW, 20mW, 30mW
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<2%, <1%	<2%, <1%	<2%, <1%
Pulse width	100-1000ps (nonadjustable)					
User trigger frequency	100kHz-20MHz (Internal trigger available), 20MHz-80MHz	100kHz-20MHz (Internal trigger available)		100kHz-20MHz (Internal trigger available), 20MHz-80MHz		
Transverse mode	Near TEM <sub>00</sub>					
Beam diameter at aperture	~1.2 mm			~4 mm	~3.5 mm	~4.0 mm
Beam divergence, full angle	~1.0 mrad			<1 mrad		
Warm-up time	<5min					
Operating temperature	10-35°C					
Expected lifetime	10,000 hours					
Warranty period	10 months					

## Remarks:

- Specifications of the 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.

## 905-1064 nm Specifications

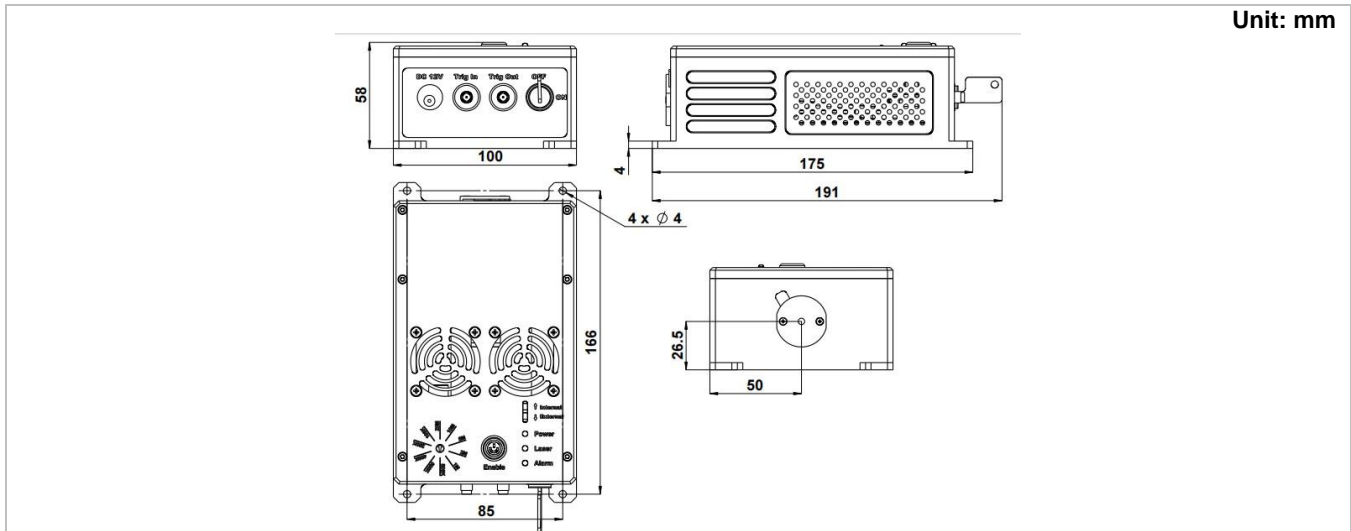
Parameter	PSDL905	PSDL915	PSDL940	PSDL980	PSDL1060	PSDL1064
Wavelength	905±10 nm	915±10 nm	940±5 nm	980±10 nm	1060±5 nm	1064±5 nm
Operating mode	Pulsed					
Peak power	10mW, 20mW, 30mW	10mW, 20mW, 30mW	20mW, 30mW, 50mW, 60mW	10mW, 30mW, 50mW	10mW, 20mW, 30mW	10mW, 20mW, 30mW
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<2%, <1%	<2%, <1%	<2%, <1%	<2%, <1%	<2%, <1%
Pulse width	100-1000ps (nonadjustable)	200-1000ps (nonadjustable)	200-1000ps (nonadjustable)	100-1000ps (nonadjustable)		
User trigger frequency	100kHz-20MHz (Internal trigger available), 20MHz-80MHz	100kHz-20MHz (Internal trigger available)	100kHz-20MHz (Internal trigger available)	100kHz-20MHz (Internal trigger available), 20MHz-80MHz	100kHz-20MHz (Internal trigger available)	
Transverse mode	Near TEM <sub>00</sub>					
Beam diameter at aperture	~3.5 mm					
Beam divergence, full angle	<1.0 mrad					
Warm-up time	<5min					
Operating temperature	10-35°C					
Expected lifetime	10,000 hours					
Warranty period	10 months					

## Remarks:

- Specifications of the 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.

**PSDL Series Laser Head Dimensions**

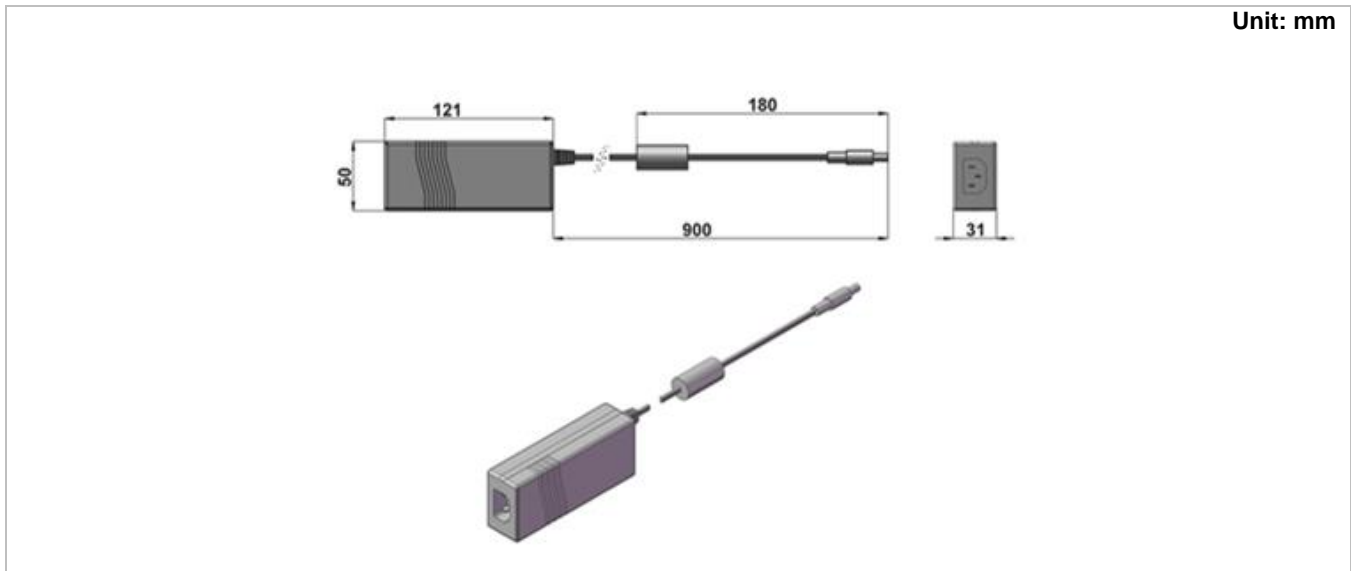
Unit: mm



Parameter	PSDL Series
Dimensions	191(L)×100(W) ×58(H) mm <sup>3</sup>
Weight	1.2 kg
Operating voltage	12VDC 4A
Beam height from base plate	26.5 mm

**PSDL Series Power Supply (Adapter) Dimensions**

Unit: mm



Parameter	Adapter
Dimensions	121(L) ×50(W) ×31(H) mm <sup>3</sup>
Weight	0.5 kg
Input voltage	100-240VAC

**Ordering Information**

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

Part Number Configuration PSDL[1][2][3][4][5]					
PSDL = Laser Model Series	[1] = Wavelength	[2] = Output Power	[3] = Power Stability	[4] = Pulse Width	[5] = Repetition Frequency
		10= 10mW 20= 20mW 30= 30mW 50= 50mW 60= 60mW	A=<5% E=<3% D=<1%		

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