

### PLUTO-Series

PL.P532.\*\*\*

#### Features

- \* Compact housing
- \* 400 and 800 mW at 532 nm
- \* Modulation DC - 50 kHz
- \* Dot- and Line laser version

#### Applications

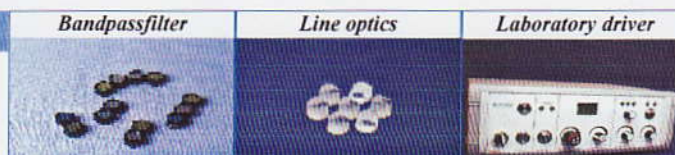
- \* Triangulation system
- \* Spectroscopy
- \* Process control
- \* Long range alignment



#### Related Products

The solid state laser system is especially designed for applications where small space is requested, thus ideal for integration in many systems due to very compact footprint. Despite small size, the laser delivers up to 800 mW optical power at 532 nm with near TEM00 beam quality.

Via external trigger, the output power can be directly modulated DC - 50 kHz (3 dB.)



In "stand alone" operation the laser can be controlled by a remote control panel to switch ON and OFF the laser by interlock button to set the output power.

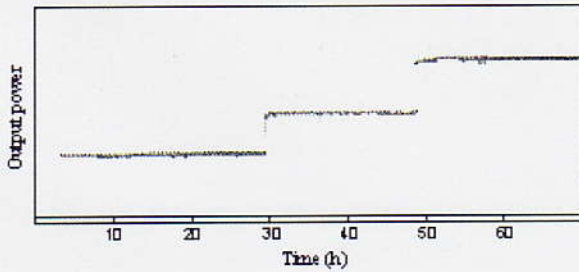
#### Specifications

Category	Parameter	Unit	Value
Optical	Wavelength	nm	532
	Output power	mW	400   800
	Beam diameter	mm	< 2.0
	Beam divergence	mrad	< 1.0
	Spatial mode		low multimode
	Power stability	%	< +/-5 (over 1 h)
	Polarisation		> 1:100 (horizontal)
	Modulation frequency	kHz	DC - 50
Electrical	Power supply voltage	VDC	+9.0
	Operation current	A	< 6 (typ. < 5 A)   < 7 (typ. < 6A)
	Modulation input	V	0 - 5 (analog)
Mechanical	Dimension laser head	mm <sup>3</sup>	120 x 60 x 30
	Dimension power supply	mm <sup>3</sup>	207 x 127 x 27.7
	Weight laser head	g	550
	Weight power supply	g	780
Environmental	Cooling		must be attached to heatsink
	Operating temperature	°C	+10 to +30
	Warm-up time	min	< 15
	Overtemperatur protection		Yes
	Storage temperature	°C	-10 to +60
	Protection class		typ. IP42

Specifications are given for T = 22°C at constant environment

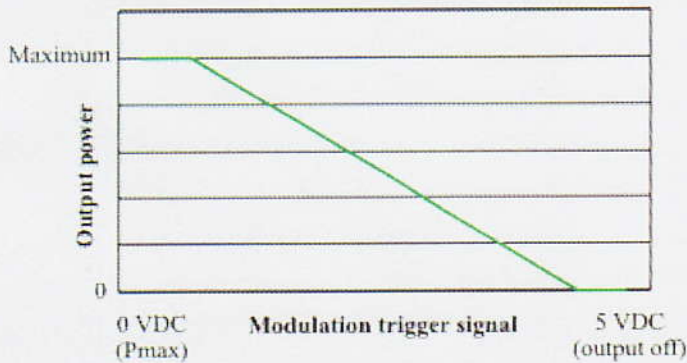


### Power stability



With internal temperature stabilization via thermoelectric cooler, the laser operates over wide environment temperature range with power stability < 5 % over 1 h (typ. < 3 %).

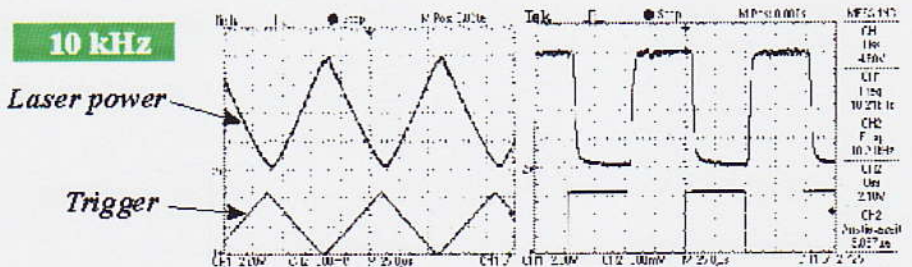
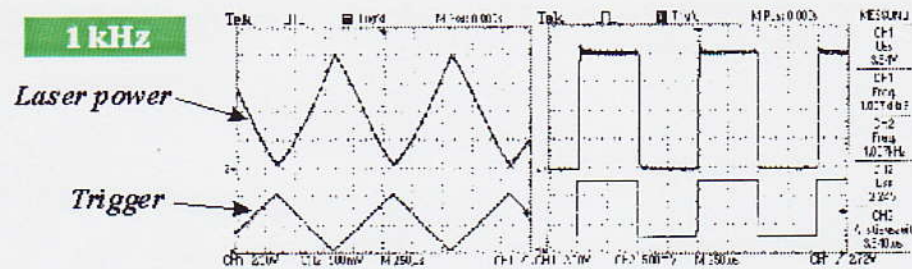
### Power control



External variable 0 - 5 VDC source allows the user to adjust output power. Signal between 0 and 0.5 VDC leads to maximum power. For 4.5 - 5 VDC the laser is off. 0.5 - 4.5 VDC produces power nearly analog increasing with input signal.

### Amplitude modulation

The laser design is optimized to allow direct modulation with high frequency. Via an external modulation input signal 0 - 5 VDC the laser power can be controlled with an analog signal, in order to trigger the laser with a measurement camera of detection system. With strobed illumination, fast processes could be frozen for image capture. Rectangular trigger can be used for rise times < 10  $\mu$ s to achieve amplitude modulation up to 50 kHz.



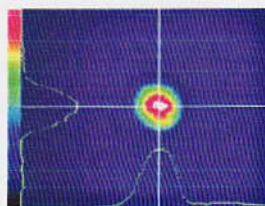


### Dotlaser PLUTO PL.P532.\*\*\*

The laser system offers a beam divergence  $< 1$  mrad (typ.  $< 0.8$  mrad) with diameter  $< 2$  mm (typ. 1.8 mm) at laser output. On customer request the optics can be focussed to specific projection distances at factory.

Distance	Beam diameter *
1 m	$< 2.6$ mm
2 m	$< 3.4$ mm
5 m	$< 5.8$ mm

\* measured at  $1/e^2$



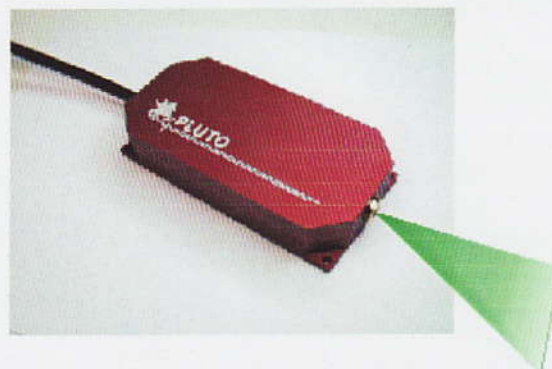
The laser system provides low multimode spatial profile with typically  $M^2 < 1.8$  and ellipticity typically  $< 90\%$ .

### Line laser PLUTO-L PL.P532.\*\*\*-Lzz

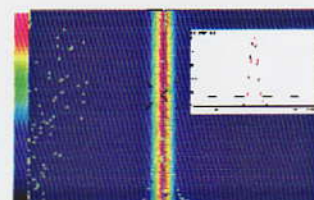
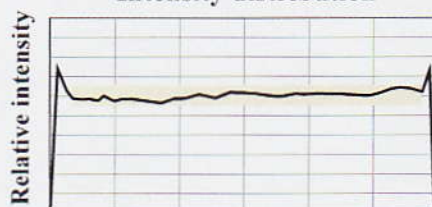
The high power line laser is especially designed for applications, where high contrast is needed, such as illumination source for triangulation systems for fast processes.

Line thickness *	0.5- 2.0 mm @ 1 m
Divergence	$< 1.0$ mrad
focusable	no
Line direction	parallel to baseplate
Fan angle	30°, 45° or 60°

\* to be set at factory



Intensity distribution



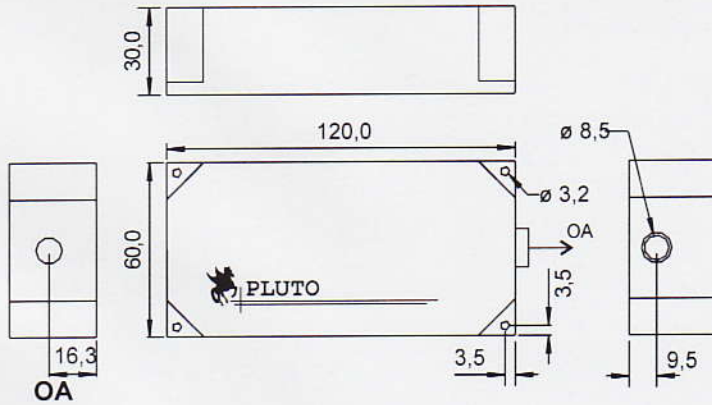
Assembled with Powell optics for homogenous intensity distribution along the line and Gaussian beam profile across the line.

### Ordering information

Model	Wavelength (nm)	Power (mW)	Beamshape	Fan angle (°)	Laserclass
PL.P532.400T	532	400	Dot	--	4
PL.P532.400T-L30	532	400	Line	30	3B
PL.P532.400T-L45	532	400	Line	45	3B
PL.P532.400T-L60	532	400	Line	60	3B
PL.P532.800T	532	800	Dot	--	4
PL.P532.800T-L30	532	800	Line	30	3B
PL.P532.800T-L45	532	800	Line	45	3B
PL.P532.800T-L60	532	800	Line	60	3B

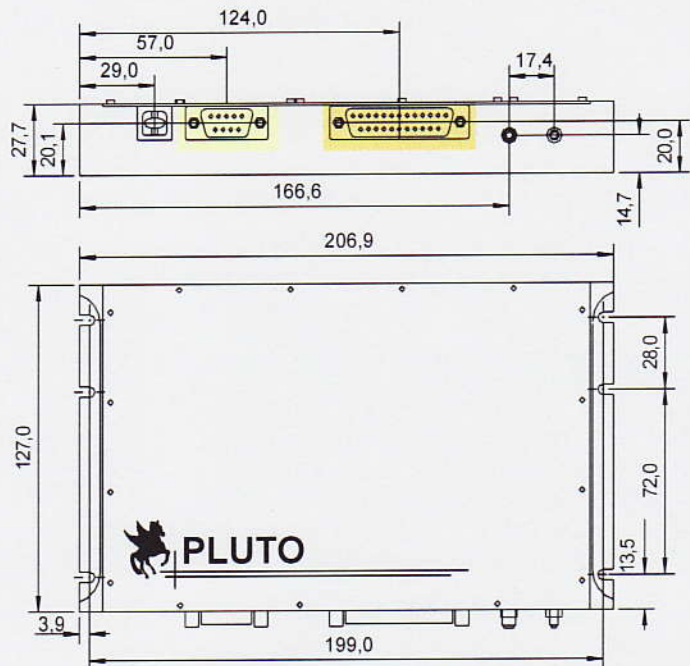


### Laser head



All dimensions are given in mm

### Electronic driver



All dimensions are given in mm

### Remote control (option)



- Display of 0 - 5 VDC signal (0 V = Pmax; 5 V = output off)
- Potentiometer for optical power adjustment
- Interlock ON / OFF
- Overtemperatur control

### Adapted benchtop driver PL.LD230/6-1. \*\*



Input voltage	230 VAC
Output current	6 A
External modulation input	0 - 5 V



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