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LASER LAB SOURCE
marketplace for **Scientists & Engineers**

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λbeam

COMPACT LASER MODULE WITHOUT COMPROMISES
FOR INDUSTRIAL INTEGRATION AND SCIENTIFIC APPLICATIONS

KEY FEATURES:

- Output powers up to 1 W
- High beam quality and stability
- Broad selection of wavelengths, fine-tunable
- Modulation up to 1.5 MHz
- Temperature-stabilized
- Long lifetime

Type	Wavelength	Maximum output power
Diode	375 nm	20, 70, 200*1 mW
Diode	395 nm	120 mW
Diode	405 nm	75, 125, 175, 200, 300*2, 500*1*2, 1000*1*2 mW
Diode	415 nm	120 mW
Diode	420 nm	50 mW
Diode	422 nm	120 mW
Diode	430 nm	50 mW
Diode	445 nm	50, 75, 100, 250*1*2, 500*1*2, 1000*1*2 mW
Diode	450 nm	75, 1000*1*2 mW
Diode	455 nm	50, 100 mW
Diode	473 nm	100 mW
Diode	488 nm	20, 60, 200 mW
Diode	505 nm	75 mW
Diode	510 nm	50 mW
Diode	515 nm	25, 75 mW
Diode	520 nm	50 , 120, 500*1*2 mW
DPSS	532 nm	75, 100, 125, 175, 200 mW
DPSS	532 nm	125, 175, 200 mW narrow line
Diode	633 nm	75 mW
Diode	635 nm	75, 125 mW
Diode	638 nm	75, 125, 175, 250*1, 500*1 mW
Diode	642 nm	75, 125, 175 mW
Diode	650 nm	150*1 mW
Diode	660 nm	75, 120, 175, 250*1 mW
Diode	670 nm	15, 250*1*2 mW
Diode	685 nm	40 mW
Diode	705 nm	40 mW
Diode	730 nm	40 mW
Diode	785 nm	75, 125, 200 mW
Diode	805 nm	500*1*2 mW
Diode	808 nm	75, 125, 175, 1000*1*2 mW
Diode	830 nm	45, 75, 125, 1000*1 mW
Diode	852 nm	75, 125 mW
Diode	905 nm	100 mW
Diode	915 nm	75, 125, 175, 250, 1000*1*2 mW
Diode	940 nm	75, 125, 175, 200*1*2 mW
Diode	980 nm	75, 125, 175, 250, 1000*1*2 mW
Diode	1064 nm	125, 175, 300*2, 500*2, 1000*1*2 mW

Beam specifications		
	Diode lasers	**DPSS lasers**
Beam diameter	1.1 × 2.2 to 1.2 × 4.3 mm	Round beam 1.2 mm
Divergence	< 1.2 mrad	
Beam mode	TEM_{00} (except multi-mode lasers)	
Polarization	Linear, > 100:1	Linear, > 10:1
Beam alignment	< 5 mrad and < 0.1 mm (compared to base mount)	
Pointing stability	< 5 µrad/K	
Noise	< 2 % RMS	
Power stability	< 1 % (10 h)	< 3 % (8 h)
Temp. accuracy	< 10 mK	
Warm-up time	Ready for use after 5 s, calibrated operation after 5 min	
Drive mode	Active current control	Active power control
Modulation	Adjustable constant power, analog & digital external modulation up to 1.5 MHz	Constant nominal power, switchable up to 1 kHz *3
Control modes	Power, temperature and modulation mode via USB, optional remote control available	Power and modulation mode via USB

The actual emission wavelength may deviate from the specified wavelength by up to ± 5 nm (± 1 nm on request). It depends on the actual output power and can be fine-tuned by adjusting the temperature (except DPSS lasers).

General specifications	
CDRH classification	3b, 4 (for laser output > 500 mW)
Dimensions	63.5 × 31.0 × 32.5 mm (technical drawing available on our website)
Weight	94 g (laser head)
Operating temperature	0 °C to 45 °C (non-condensing)
Storage temperature	-25 °C to 70 °C

*1 multi-mode *2 Water cooler recommended
*3 Acusto-optical modulator recommended for stable and faster modulation

Laser Controller

The Lambda Beam laser head requires a laser controller to provide power and control all operating parameters. For scientific applications and prototyping we recommend using our PowerController. For industrial integration we also offer the highly compact PowerBox to be directly attached to the laser head or connected via a customized cable. The 532 nm DPSS laser is only available with the PowerBox.

PowerController

Modulation input	analog and digital 0 – 5 V DC
Modulation	up to 0.5 MHz
Digital interface	USB*1 (RS-232 optional)
Further control inputs	Interlock, key switch, modulation mode switch
Cable length	80 cm (default)
Power consumption	12 V DC, up to 2 A (depending on laser output power)
AC adapter (included)	100 – 240 V AC, 50 – 60 Hz
Dimensions	85.0 × 85.0 × 32.5 mm (technical drawing available on our website)
Weight	416 g

PowerBox

Modulation input	analog and digital 0 – 5 V DC
Modulation	up to 1.5 MHz
Digital interface	USB*1 (RS-232 optional)
Further control inputs	Interlock
Power consumption	12 – 36 V DC, up to 2 A (depending on laser output power)
Dimensions	39.0 × 31.0 × 32.5 mm (technical drawing available on our website)
Weight	69 g

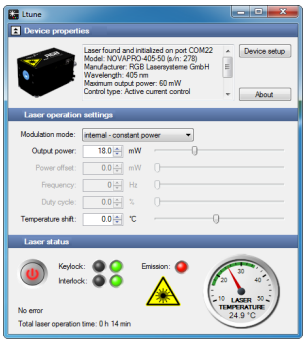
For more details, please see the PowerBox data sheet.

Options and accessories

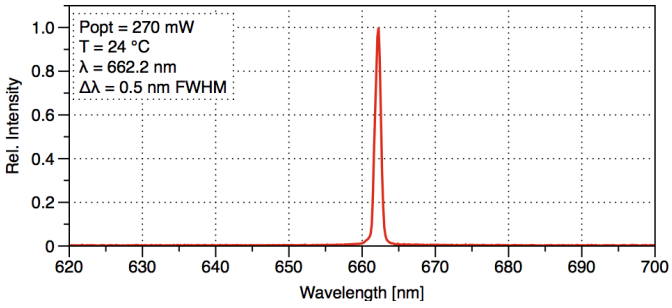
- Polarization > 10 000 : 1
- Opto-mechanical shutter
- Diode wavelength selection
- Water cooling base plate
- RS-232 interface
- Fiber coupler*2

Ltune control software

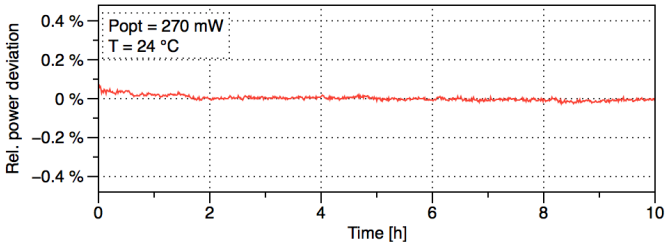
All operating parameters can be monitored and controlled from a PC using the Ltune laser control software for Windows. Alternatively, the laser can easily be controlled from your own application software. Please refer to the user manual for a detailed description of the communication protocol.



Typical emission spectrum



Typical power stability



*1 Digital connection is not required for operation.
*2 See separate data sheet for details.

Please contact us if your requirements are not matched by these specifications. Custom modifications are available for any quantities. All specifications are subject to change without notice. The latest versions can be found on our website.

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