rgb lasersystems

λbeam WAVELOCK

HIGHLY STABILIZED COMPACT LASER SYSTEM
FOR RAMAN SPECTROSCOPY AND HIGH-RESOLUTION APPLICATIONS

KEY FEATURES:

* Exceptional wavelength stability < 0.015 nm
* Coherence length up to over 10.0 m
* Spectral linewidth up to < 0.05 pm
* Output powers up to 550 mW
* Temperature-stabilized
* Excellent beam quality and stability
* Highly cost-efficient
* Fiber coupler & fibers available

Wavelength nm	Maximum output power	Spectral linewidth*3	Coherence length*3
405	12, 25, 40 mW	<160 MHz / 0.1 pm	> 1.0 m
633	40, 70 mW	<20 MHz / 0.05 pm	> 10.0 m
638	120 mW	<150 MHz / 0.2 pm	> 2.0 m
640	32 mW	<300 MHz / 0.5 pm	> 1.0 m
658	35 mW	<300 MHz / 0.5 pm	> 1.0 m
685	45 mW	<100 MHz / 0.2 pm	> 3.0 m
785	100 mW	<175 MHz / 0.4 pm	> 1.5 m
785	225 mW	<10 MHz / 0.05 pm	> 10.0 m
808	120 mW	<50 MHz / 0.1 pm	> 2.0 m
808	450*2 mW	<10 MHz / 0.05 pm	> 10.0 m
852	550*2 mW	<10 MHz / 0.05 pm	> 10.0 m

Beam specifications

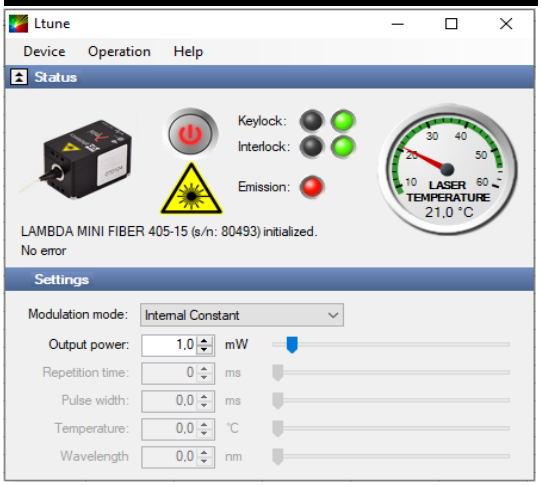
Beam diameter	1.1 x 2.2 to 1.2 x 2.8 mm
Divergence	< 1.2 mrad
Spatial beam mode	TEM00
Polarization	linear, > 100:1 typical
Beam alignment	< 5 mrad and < 0.1 mm
Pointing stability	< 5µrad/K
Noise	< 2% RMS
Power stability	< 1 % (10h)
Temp. accuracy	< 10 mK

The actual emission wavelenght may deviate from the specified wavelength by up to 1 +/-nm

General specifications

Warm-up time	ready for use after 5 s, calibrated operation after 3 min
Drive mode	active current control
Modulation modes*	constant adjustable power, analog & digital external modulation up to 1.5 MHz
Control modes	power, temperature and modulation via USB
CDHR classification	3b, 4 (for laser output > 500mW
Dimensions	63.5 x 31.0 x 32.5 mm
Weigth	94 g (laser head)
Operating temperature	0 °C to 45 °C (non-condensing)
Storage temperature	-25 °C to 70 °C

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. You can find downloads on our website

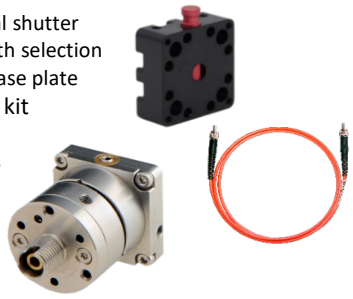
* Modulation may decrease beam quality and stability
*2 Water cooler recommended
*3 Running laser continuously at maximum output power

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.

Options and accessories

- Opto-mechanical shutter
- Diode wavelength selection
- Water cooling base plate
- Heatsink labor kit
- Cooling Ice kit
- RS-232 interface
- Fiber coupler
- fibers



Power Controller

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
Power consumption	12 V DC, up to 2A (depending on laser output power)
Dimensions	85.0 x 85.0 x 32.5 mm (technical drawing available)
Weight	416 g
AC adapter (included)	100 - 240 V AC, 50 - 60 Hz
Cable length	80 cm (default)

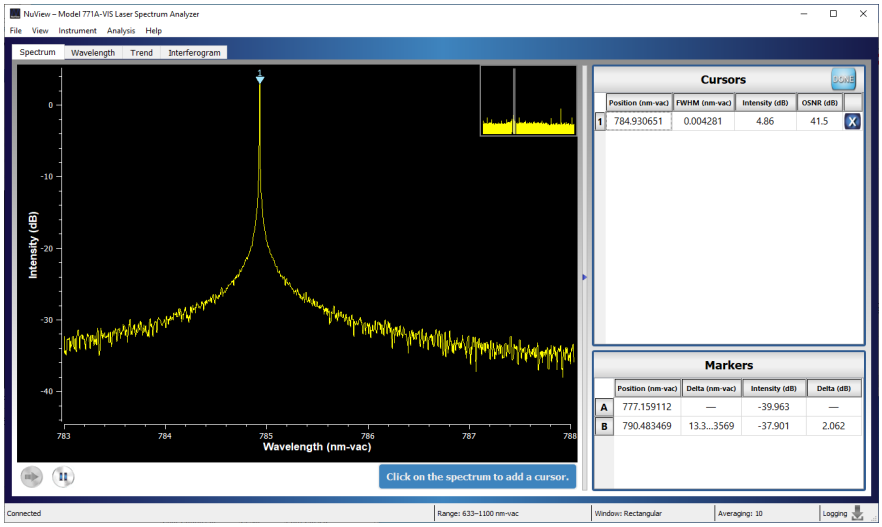
*1 Digital connection is not required for operation

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 2A (depending on laser output power)
Dimensions	39.0 x 39.0 x 32.5 mm (technical drawing available)
Weight	69 g

For more details, please see the PowerBox data sheet

Typical emission spectrum of Lambda Beam Wavelock 785 nm 100 mW



Please ask us for further technical specifications and test reports

Typical Applications

Analytical Instrumentation
Bio-Instrumentation
Confocal Microscopy
Holography
HeNe Replacement
LIDAR
Metrology
RAMAN
Speckle Interferometry
Photodynamic Therapy

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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