

Measurement & Spectroscopy



LaserBoxx
Same package for all colors

Raman Spectroscopy
Brillouin Scattering
Interferometry
Photoluminescence
Holography
Laser Doppler Velocimetry
Laser Ultrasonic
Dynamic Light Scattering

SLM CW Monolithic DPSS benefits

- Interchangeable controller
- Low profile laser head (32mm)
- Tailored beam diameter capability (0.6 up to 1.4mm)
- Graphic User Interface with remote diagnostics

VBG stabilized Laser Diode modules benefits

- Controllers integrated into laser head
- Proprietary SLM locking routine
- Enhanced beam quality versions
- Remote ControlBoxx with power display (CDRH)

Common key features

- Single Longitudinal mode
- TEM₀₀ beam
- Beam pointing < 5 μm/°C
- USB and RS232 computer interface
- SM/PM/MM fiber coupling options
- Industry standard footprint (100x40 mm)

532

553

561

594

730

785

830

Specifications

LMX-532S LMX-553S LMX-561S LBX-594* LBX-730S* LBX-785S LBX-830S* Units

Optical specifications								
Package	LMX			LBX-LD	LBX-S			
Wavelengths	532	553	561	594*	730*	785 ¹	830*	nm
Wavelength range	± 1			± 2	± 1			
Linewidth (SLM)	< 1			SLM	< 100			MHz
Coherence Length	> 50			SLM	> 1			m
Wavelength Stability over 8 hours and ±3°C				< 1				pm
Laser type	DPSS			Doubled LD	LD/VBG			
Single Mode (TEM ₀₀)								
Output Power	50 to 500	25 to 300	25 to 500	40	30	100	100	mW
Power Stability over 8 hours and ±3°C, p-p				± 1				%
Optical Noise rms, 10Hz - 20MHz				< 0.2				%
Polarization Ratio Vertical				> 100:1				-
Beam Pointing stability				< 5				μrad/°C
Beam characteristics								
Beam Diameter (typ.) at 1/e ² , at 50mm from aperture	0.7			1				mm
Beam Divergence (typ.) at 1/e ² , full angle, in far field	1.0			1.2				mrاد
Beam Circularity in far field	> 90			> 65				%
Beam Quality (typ.)	< 1.1			< 1.2			< 1.9	M ²
PM Fiber Coupling option								
Output Power FC/APC connectors, 1.5m fiber length	35 to 350	17 to 210	17 to 350	28	Contact us			mW

* for preliminary specifications - contact Oxixus representative

¹ LBX-785S - integrated laserline filter (Semrock LL01-785)

DPSS Monolithic Resonator

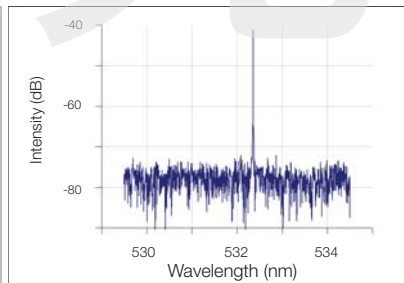
The unique feature of the LaserBoxx DPSS is a proprietary, alignment-free monolithic resonator. The elements in the cavity are assembled into a single ultra-low-loss optical subsystem, using a proprietary crystal bonding technique.



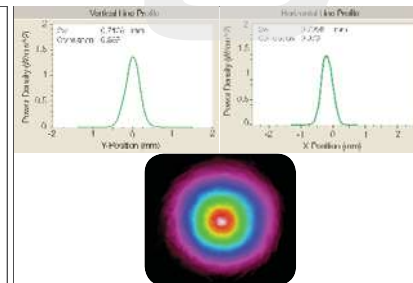
A highly transparent compound, deposited on chemically activated end-faces of two crystals, creates a bond that is extremely robust over time, temperature variations, and insensitive to mechanical vibrations. Dielectric mirrors coated at the end-faces of the crystals complete the monolithic assembly with no moving parts.

LaserBoxx LBX-S Platform

The LBX-S line is a performing controller integrated platform for Volume Bragg Grating stabilized laser diode. It delivers ultra narrow linewidth thanks to its excellent temperature stability and low noise current. The Oxixus proprietary embedded software locks the laser on same mode at each start up.

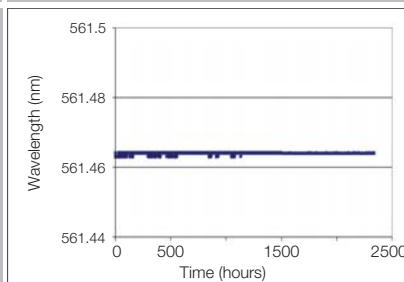


Single Longitudinal Mode
LMX-532S spectrum

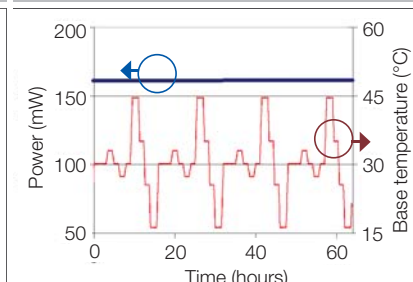


Beam Profile
LMX-553S-200

Wavelength Stability
LMX-561S wavelength vs time



Power Stability
LMX-561S power vs temperature



Single Frequency Lasers

System Specifications

Package	LMX		LBX-S / LBX-LD		Units
	P&P	OEM	P&P	OEM	
Laser Head					
Operating temperature measured at base, non condensing	10 - 45		10 - 50		°C
Start up time	< 10		< 2		min
Heat dissipation	Heatsink provided	< 20	< 10		W
Dimensions ¹ (LxWxH)	160 x 40 x 76	100 x 40 x 32	100 x 40 x 40		mm ³
Controller					
Input Voltage	115 - 230 V AC	4 - 5.5 V DC	115 - 230 V AC	5 - 6.5 V DC	V
Input Current	-	< 8	-	< 2.5	A
Power Consumption	< 30	-	< 10	-	W
Dimensions ¹ (LxWxH)	135 x 97 x 70	135 x 97 x 30	See ControlBoxx	Integrated in laser head	mm ³
interfacing	RS232, USB, Analog				

¹ Without heatsink
P&P versions are CDRH compliant

Isolator Output option



The Isolator Output option offers an efficient, compact and cost effective optical feedback protection to LMX or LBX-S lasers at 532, 553, 561 nm. The isolation is > 25dB and the transmission is > 85%. The output polarization is vertical.

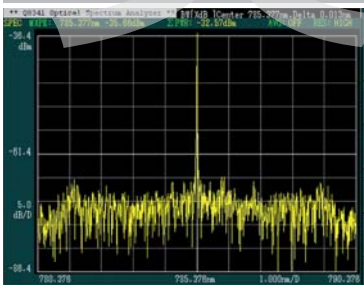
The isolator is shipped aligned and mounted with the laser.

Custom Capabilities

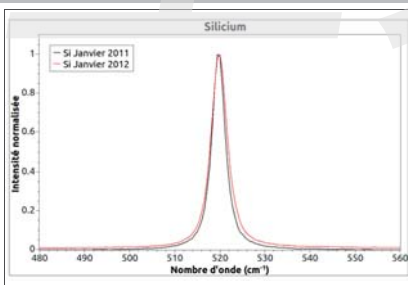
If your particular application requires additional features to take full benefit of the Oxsius laser performance, we would be happy to assist you with the design, development and production of these features.

Here are examples of what we offer:

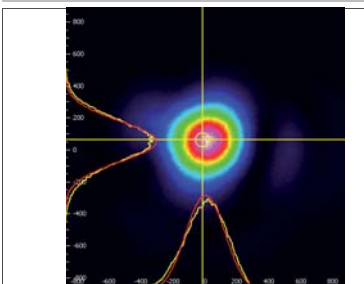
- o Power adjustment
- o Wavelength tunability
- o Wavelength selection
- o Custom wavelengths
- o Opto-mechanical Subassemblies including:
 - Wavelengths combiner (LBX-4C)
 - AO modulator and AOTF
 - Specific beam diameter and beam shaping
- o Custom control interface
- o Extended operational temperature range



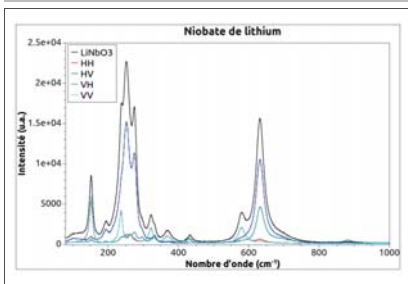
Single Longitudinal Mode
LBX-785S spectrum



Si Raman Spectrum
obtained with LBX-785S



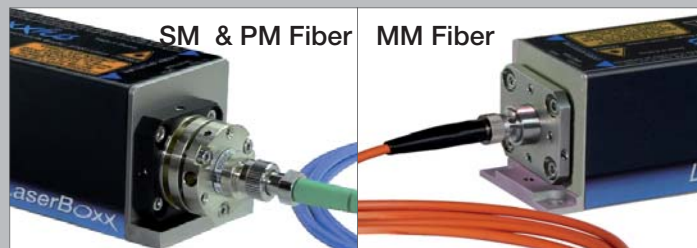
Beam Profile
LBX-405S-25-CIR



LiNb Raman Spectrum
obtained with LBX-785S

Fiber coupling options

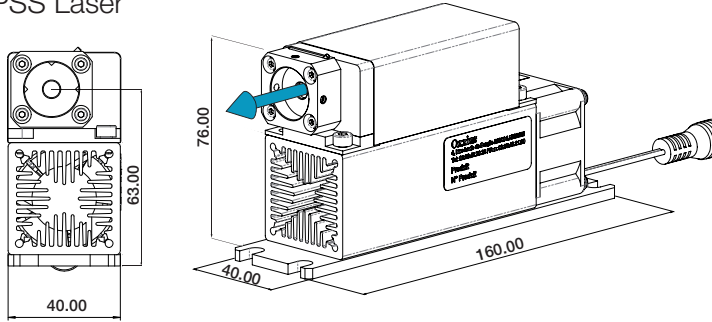
Fiber coupling options offer rugged and compact solutions to couple LaserBoxx into polarization maintaining, standard monomode fiber or multimode fiber.



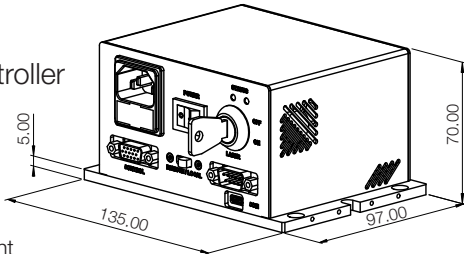
Specifications		
SM and PM Fiber		MM Fiber (50 μm, 0.22 NA)
> 70 %	Coupling Efficiency	> 80 %
100:1	Polarization Ratio	n/a
FC-APC	Fiber Output Connector	SMA
± 2 %	Power Stability over 8 hours, ± 1.5 °C	± 2 %
1.5 m	Fiber length	1.5 m

Mechanical Drawings

LMX series, PP
DPSS Laser

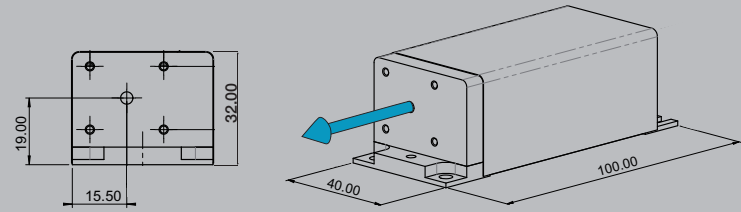


P&P Controller

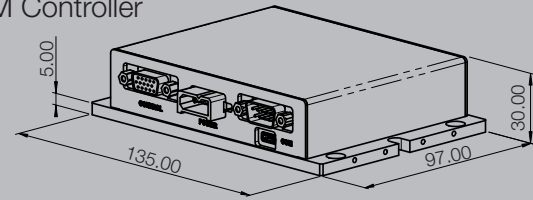


CDRH compliant

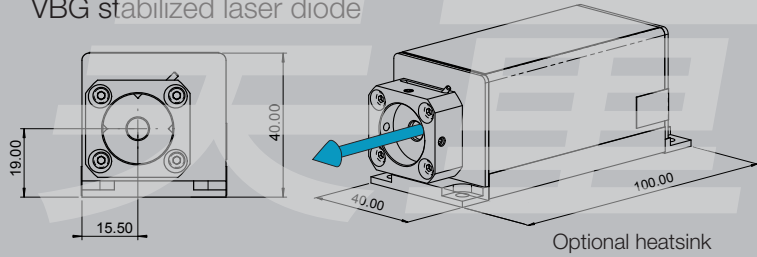
LMX series, OEM
DPSS Laser



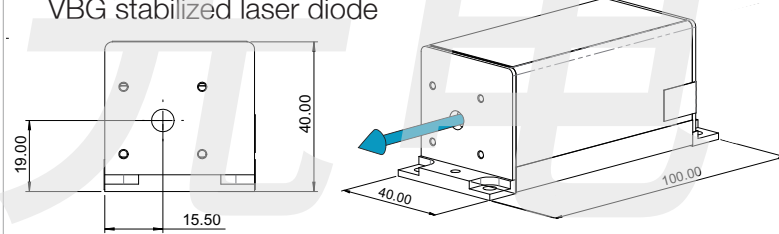
OEM Controller



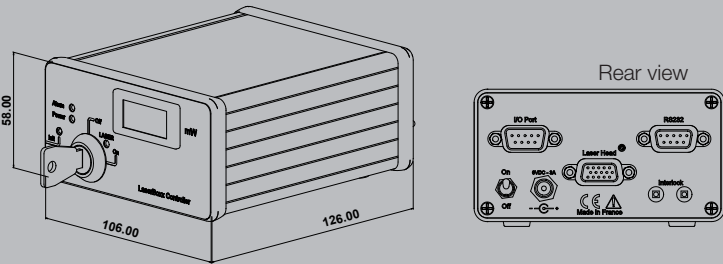
LBX-S series, PP
VBG stabilized laser diode



LBX-S series, OEM
VBG stabilized laser diode



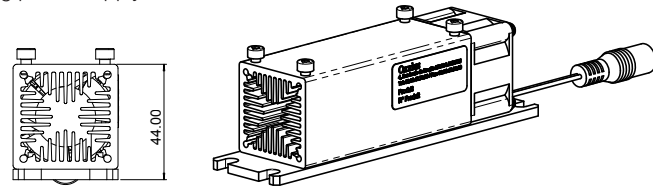
P&P remote ControlBoxx S



CDRH compliant

LaserBoxx optional heatsink

Optional air-forced heat sink for maximum ambient temperature of 35°C. Including power supply.



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