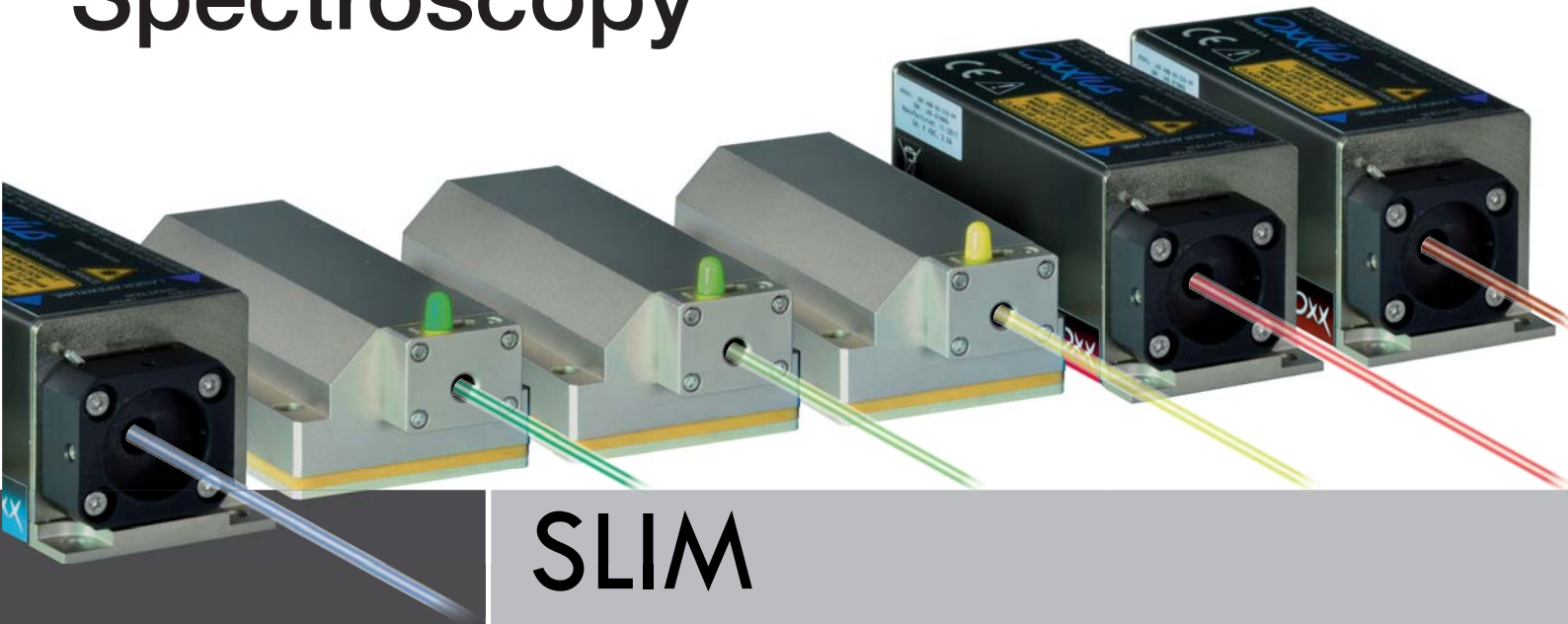


# Measurement Spectroscopy



## SLIM *LaserBoxx*

UV to IR  
CW Monolithic DPSS Lasers  
Laser Diode Modules

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

Single Longitudinal Mode  
Mode Hop Free  
Long Coherence Length  
Excellent Wavelength Stability  
TEM<sub>00</sub> Beam  
Superior Beam Pointing Stability  
Compact Packages

405

532

553

561

638

658

660

730

785

830

# Specifications

LBX-405S\* SLIM-532S SLIM-553S SLIM-561S LBX-638S LBX-658S SLIM-660S LBX-730S\* LBX-785S LBX-830S\* Units

Optical specifications												
Package	LaserBoxx				SLIM		LaserBoxx		SLIM			Units
Wavelengths	405*	532	553	561	638	658	660	730*	785	830*		nm
Wavelength range	± 1											
Linewidth	< 150	< 1				< 100		< 1	< 100			MHz
Coherence Length	> 1	> 50				> 1	> 50	> 1	> 1			m
Wavelength Stability over 8 hours and ±3°C	< 1											pm
Laser type	LD/VBG	DPSS				LD/VBG	DPSS	LD/VBG				

Single Mode (TEM <sub>00</sub> )												
Output Power	35	50, 100, 150 200, 300	25, 50 100, 200	25, 50, 100 200, 300	35	50	50	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 +/- 3 Deg.	> 100:1											-
Beam Pointing stability	< 5											µrad/°C

Beam characteristics												
Beam Diameter (typ.) at 1/e <sup>2</sup> , at 50mm from aperture	0.4 x 0.8	0.7				0.5	0.7	0.5				mm
Beam Divergence (typ.) at 1/e <sup>2</sup> , full angle, in far field	< 10	1.0				2.5	1.0	2.5				mrad
Beam Circularity in far field	n/a	> 90				> 65	> 90	> 65				%
Beam Quality (typ.)	< 1.6	< 1.1				< 1.3	< 1.1	< 1.3				M <sup>2</sup>

PM Fiber Coupling option											
Output Power FC/APC connectors, 1.5m fiber length	call	70 - 200	17 - 140	17 - 200	call	35	call				mW

\* for preliminary specifications - contact Oxixus representative

## System Specifications

Package	SLIM		LaserBoxx		Units
	P&P	OEM	P&P	OEM	
<b>Laser Head</b>					
Operating temperature measured at base, non condensing	15 - 45		10 - 50		°C
Start up time	< 10		< 2		min
Heat dissipation	Heatsink provided	< 20	< 10		W
Dimensions <sup>1</sup> (LxWxH)	88 x 44 x 29	80 x 44 x 29	100 x 40 x 40		mm <sup>3</sup>
<b>Controller</b>					
Input Voltage	80 - 240 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 <sup>1</sup> (LxWxH) interfacing	135 x 97 x 70	135 x 97 x 30	See ControlBoxx	Integrated in laser head	mm <sup>3</sup>
	RS232, USB <sup>2</sup> , Analog				

<sup>1</sup> Without heatsink

<sup>2</sup> Optional for SLIM

## Isolator Output option



The Isolator Output option offers an efficient, compact and cost effective optical feedback protection to SLIM and LBX lasers at 532, 553, 561 or 640 nm. The isolation is > 25dB and the transmission is > 90%. 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 Oxixus 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:

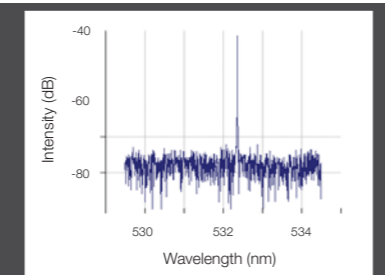
- o Power adjustment (SLIM)
- o Wavelength tunability (SLIM)
- o Wavelength selection
- o Custom wavelengths
- o Opto-mechanical Subassemblies including:
  - Wavelengths combiner
  - AO modulator and AOTF
  - Specific beam diameter and beam shaping
- o Custom control interface
- o Extended operational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

## SLIM Monolithic Resonator

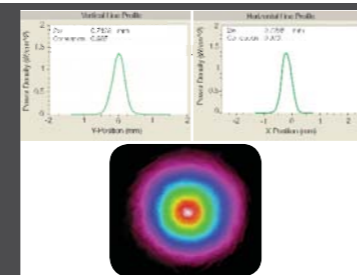
The unique feature of the SLIM is a proprietary, alignment-free monolithic resonator. The elements in the cavity are assembled into a single ultra-low-loss optical subsystem, using a process called optical contacting.



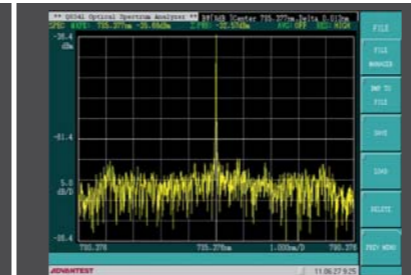
Contact forces between the end-faces of two crystals create a glue-less bond that is extremely robust over time, temperature variations, and insensitive to mechanical vibrations. Dielectric mirrors coated at the end-faces of the crystals complete the monolithic assembly with no moving parts.



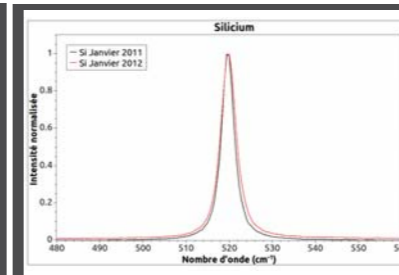
Single Longitudinal Mode SLIM-532S spectrum



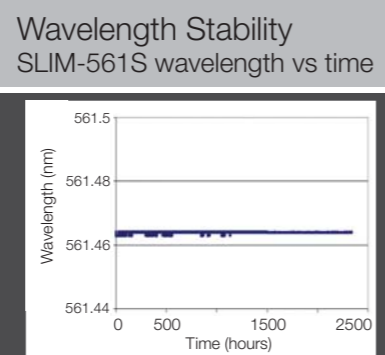
Beam Profile SLIM-553S-200



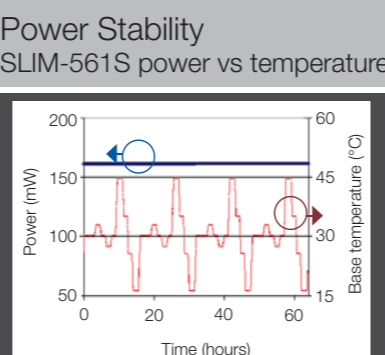
Single Longitudinal Mode LBX-785S spectrum



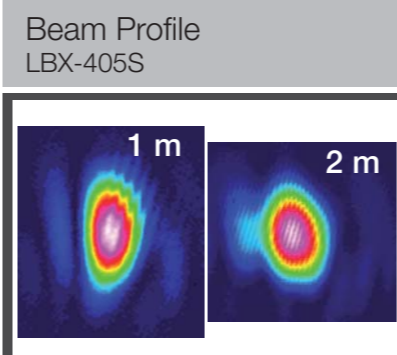
Si Raman Spectrum obtained with LBX-785S



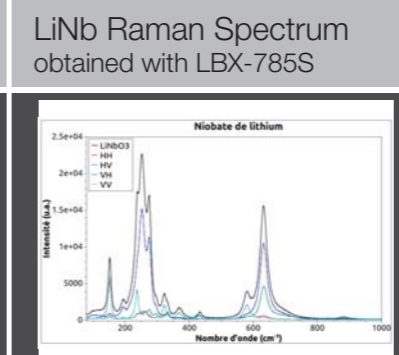
Wavelength Stability SLIM-561S wavelength vs time



Power Stability SLIM-561S power vs temperature



Beam Profile LBX-405S



LiNb Raman Spectrum obtained with LBX-785S

## LaserBoxx S Platform

The LaserBoxx S line is a performing driver 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.

## Fiber Coupling options

Fiber coupling options offer rugged and compact solutions to couple SLIM and LaserBoxx into Polarization Maintaining or Standard Monomode Fiber. Also available for MM Fiber



System Specifications	Notes	
Coupling Efficiency	>70 %	only SLIM
Power Stability	± 2 %	over 8 hours, ± 1.5 °C
Polarization Ratio	100:1	linear
Fiber Output Connector	FC-APC	
Fiber Length	1.5 m	

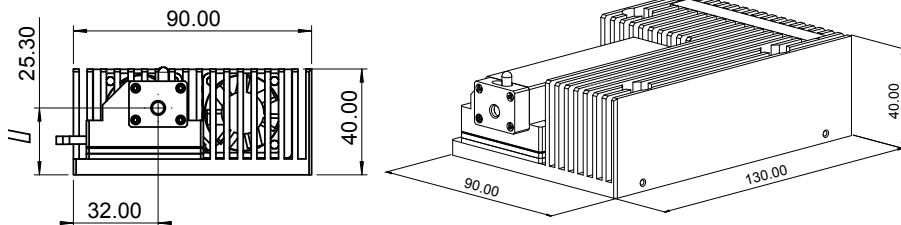


VISIBLE AND INVISIBLE LASER RADIATION  
AVOID EXPOSURE TO BEAM  
CLASS 3B LASER PRODUCT  
Power up to 500 mW

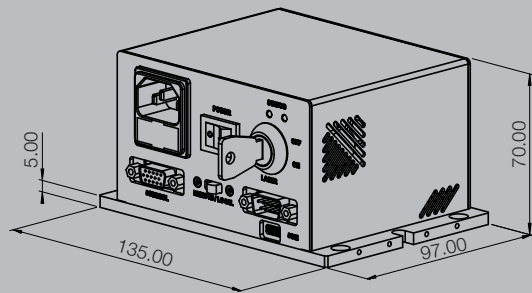
# Mechanical Drawings

## SLIM Series

P&P Laser head with heat sink

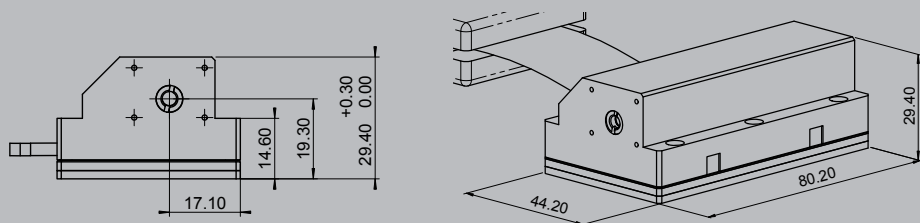


## P&P Controller

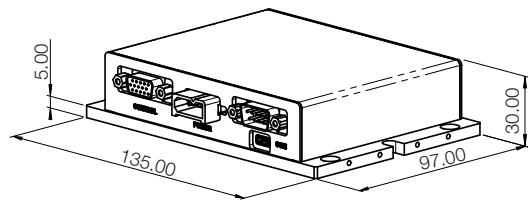


## SLIM Series

OEM Laser head

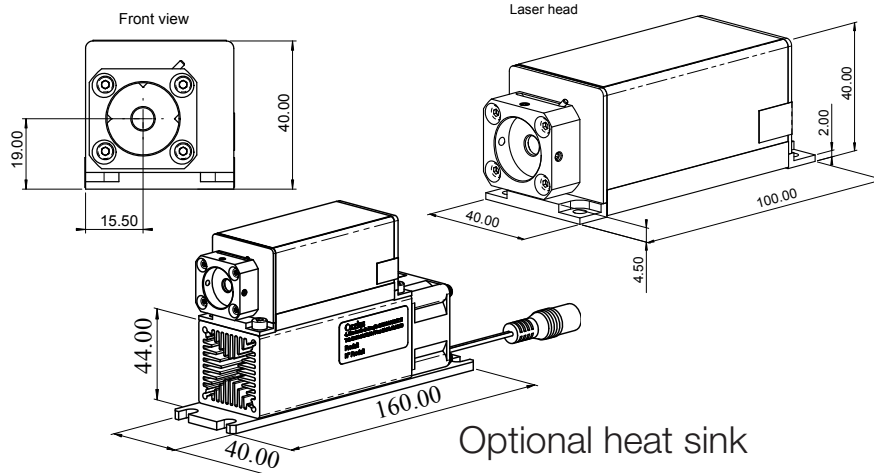


## OEM Controller

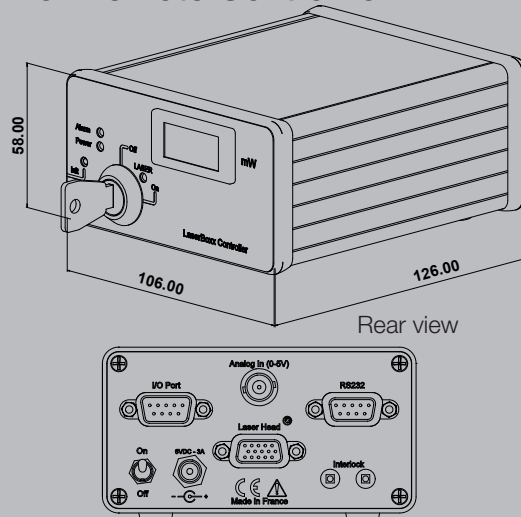


## LaserBoxx S Series

OEM and P&P Laser head with integrated drivers



## P&P remote ControlBoxx



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