

473 nm

532 nm

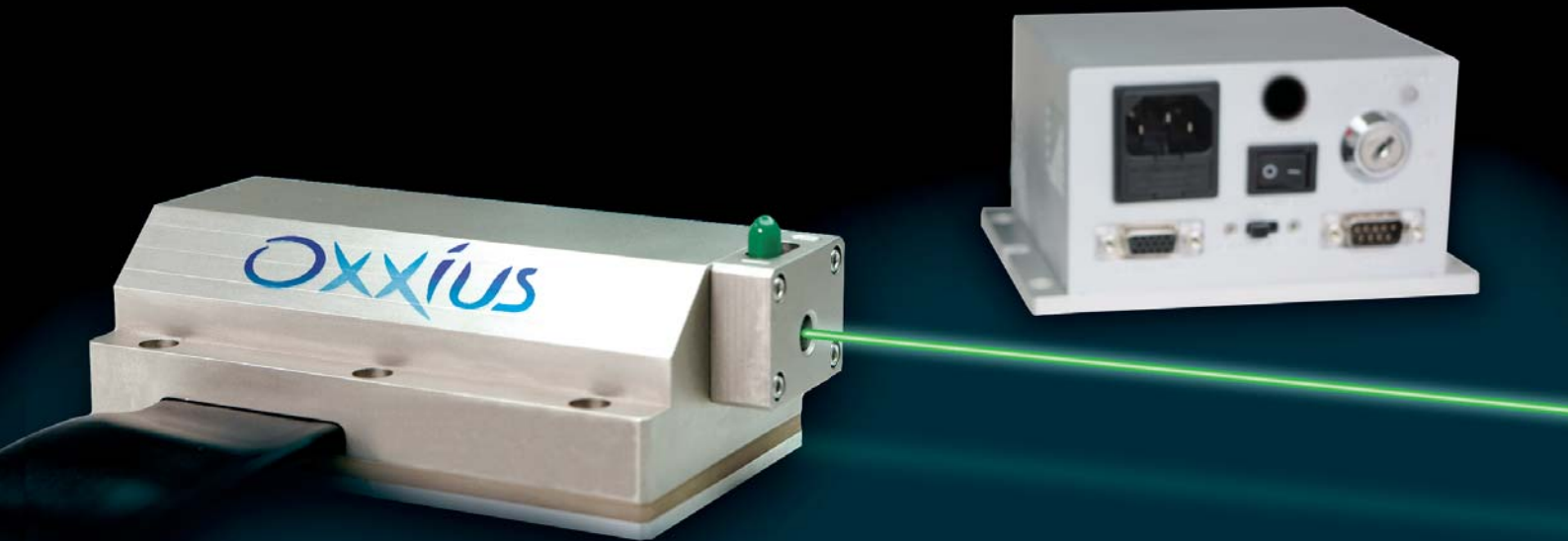
553 nm

561 nm

660 nm

SLIM

CW Monolithic DPSS Lasers



Super Resolution Imaging

Confocal Microscopy

Flow Cytometry

Fluorescence Excitation

Raman Spectroscopy

Holography

Metrology

Single Longitudinal Mode

High Output Power

Ultra Low Noise

Outstanding Power Stability

Superior Beam Pointing Stability

Exceptional Reliability

Plug and Play Version

SLIM Specifications

	SLIM-473	SLIM-532	SLIM-550	SLIM-561	SLIM-660*
Wavelength (± 1 nm)	473 nm	532 nm	553 nm	561 nm	660 nm
Power	50 mW	50, 100, 150, 200, 300 mW	50, 100, 200 mW	25, 50, 100, 200, 300 mW	50 mW

Optical Specifications Comments

SLM version ¹		
Linewidth	< 1 MHz	
Coherence Length	> 50 m	
Wavelength Stability	1 pm	over 8 hours and ± 3°C
Low Noise version ¹		
Linewidth	< 1 nm	
Common Optical Specifications		
Power Stability	< ± 1 %	p-p, over 8 hours and ± 3°C
Optical Noise	< 0.2 %	rms, 10 Hz - 20 MHz
Beam Quality	TEM ₀₀	M ² < 1.2
Beam Diameter ² - power < 150 mW	0.75 mm	1/e ² , at aperture
Beam Diameter - power ≥ 150 mW	0.60 mm	1/e ² , at aperture
Circularity	90 %	
Beam Divergence - power < 150 mW	1.0 mrad	1/e ² full angle
Beam Divergence - power ≥ 150 mW	1.2 mrad	1/e ² full angle
Beam Pointing Stability	5 μrad/°C	rms
Polarization Ratio	> 100:1	linear, vertical

System Specifications

Laser Head		
Operating Temperature	15°C to 45°C	measured at base
Start-up Time	< 10 min	
Dimensions	88 x 44 x 29 mm ³	L x W x H
Controller		
Power Supply Requirements		
Input Voltage	80 - 240 V	50 - 60 Hz
Power Consumption	30 W	
Dimensions	135 x 97 x 30 mm ³	L x W x H
Interfacing	RS-232 or Analog	

Maximum Environmental Ratings

Storage Temperature	0°C to 60°C	non-operating
Relative Humidity	10 % to 90 %	operating, non-condensing
Resistance to Shock	25 G	11 ms duration
Resistance to Vibration	2.5 G	sinusoidal, 10 to 500 Hz

* Specifications are preliminary for the SLIM-660

¹ Two versions of the SLIM are available:

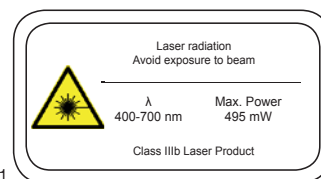
- a Single Longitudinal Mode (SLM) version, specifically intended for applications such as holography, interferometry or Raman spectroscopy;
- a Low Noise (LN) version, designed for applications that do not rely on a particularly narrow spectrum, such as light scattering or fluorescence analytics;

² At 473 nm, min. = 0.5 mm ; nominal = 0.75 mm ; max. = 1 mm



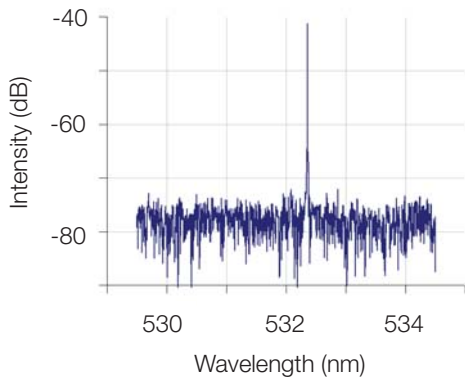
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MK-0096-DS Rev. D, 01/11



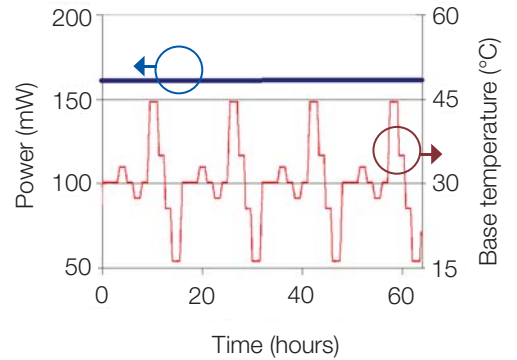
True Single Longitudinal Mode

SLIM-532 spectrum



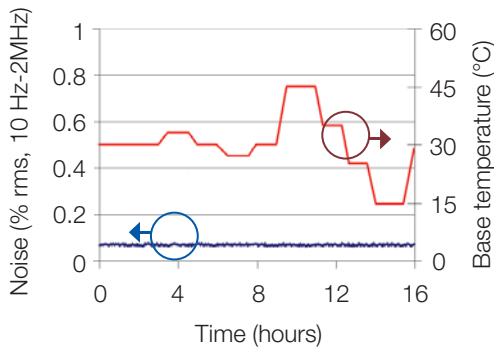
Power Stability

SLIM-561 power vs temperature

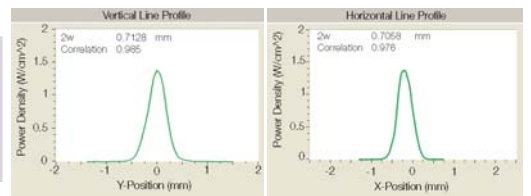
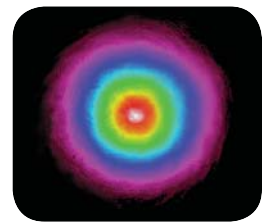


Ultra-low Optical Noise

SLIM-561 noise vs time and temperature

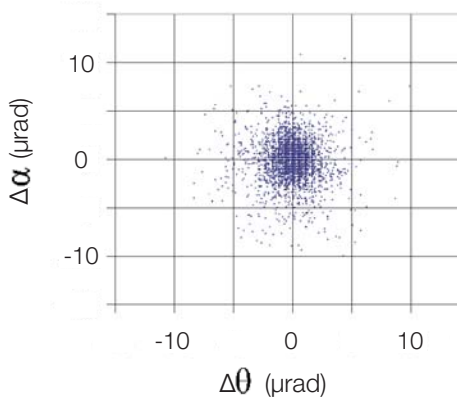


Ideal Beam Profile



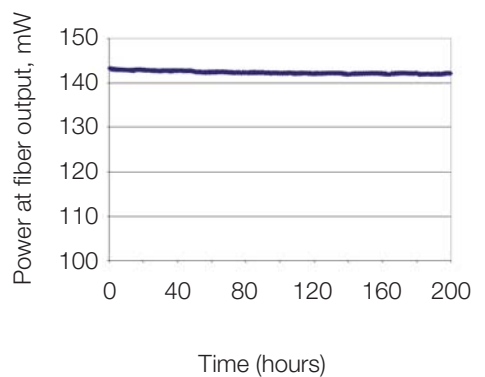
Beam Pointing Stability

Acquired over 1 hour and 3°C base temperature variation



Fiber Coupling Power Stability

Fiber coupled SLIM-561-200 power vs time



Key Features

Ideal Beam Excellent Pointing Stability



Fiber coupling
Flow cytometry
Confocal microscopy

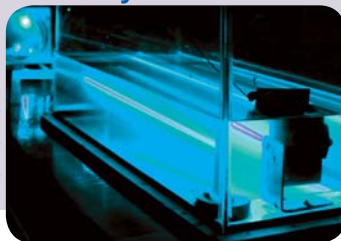
> 20,000 hours laser diode MTTF Monolithic Design



Dependable laser
Hassle-free operation

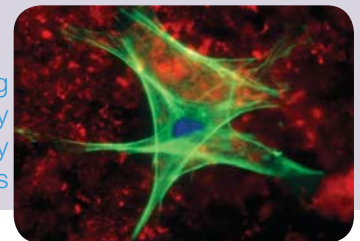
True Single Longitudinal Mode High Wavelength Stability

Harmonic generation
Holography
Interferometry
Raman spectroscopy



Outstanding Power Stability Low Noise Emission

Super Resolution imaging
Flow cytometry
Confocal microscopy
Fluorescence analytics



Fiber Coupling Option

The SLIM-FC-PM-PP option offers a rugged solution to couple the SLIM laser into a Polarization Maintaining fiber.

This option includes a high stability microbench, active heatsink and protective cover.



System Parameters		Notes
Coupling Efficiency	>70 %	
Power Stability	± 2 %	over 8 hours, ± 1.5 °C
Optical Noise	0.2 %	rms, 10 Hz - 20 MHz
Polarization Ratio	100:1	linear
Fiber Type	Polarization-maintaining, single mode fiber	
Fiber Output Connector	FC-APC	
Fiber length	1.5 m	

Output Options

The SLIM lasers are available with several output options to simplify integration and to optimize performance.



Standard manual shutter with filter or replaceable protective window



Large core diameter MM fiber coupler with SMA receptacle



Small core diameter MM fiber coupler with FC/APC receptacle



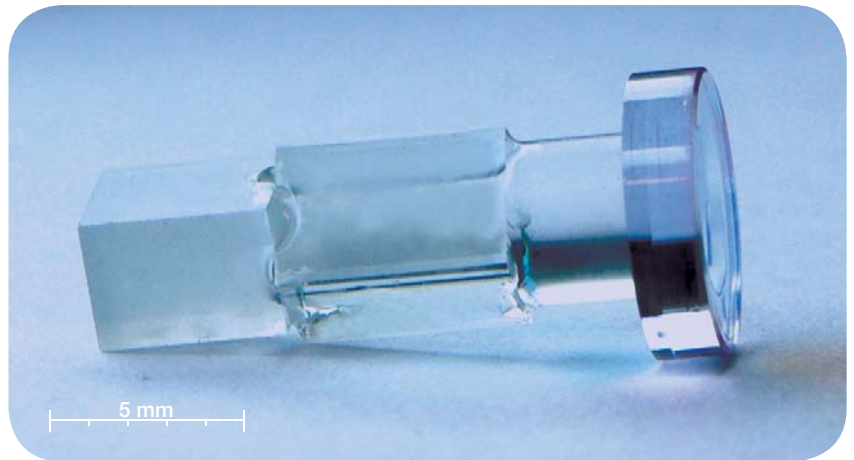
The SLIM-ISO option offers an efficient, compact and cost effective optical feedback protection to SLIM laser at 532, 553 or 561nm. The isolation is >25dB and the transmission is >90%. The output polarization is vertical.

The isolator is shipped aligned and mounted with the SLIM laser.

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.



Packed with performance

Record breaking

- Frequency stability
- Efficiency
- Power Consumption

Top notch laser

- True SLM
- Low noise
- TEM₀₀ beam

Dependable

- Power stability
- Beam pointing stability
- Mode-hop free

The right choice for the lab

A robust laser

- Hermetic package
- Thermally stabilized
- Permanently aligned

Quick to set up

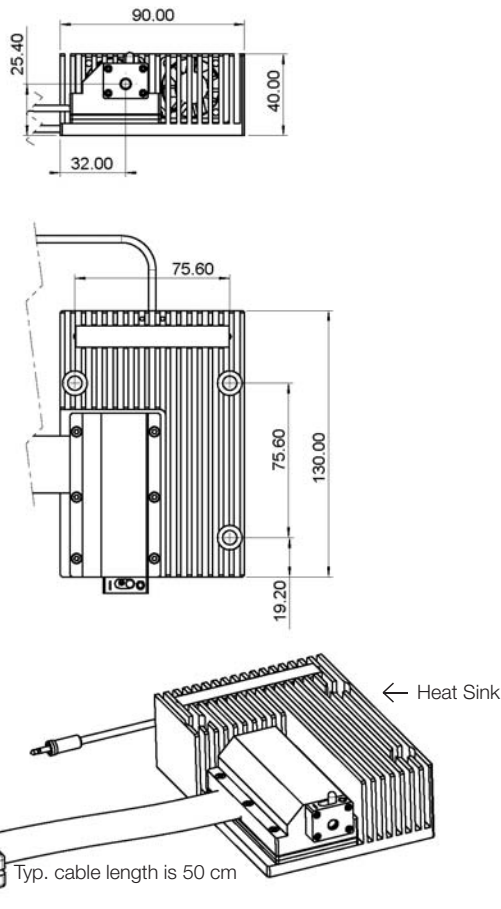
- Compact laser head
- Simple local or remote control
- Heat sink designed to optical tables standards

At your service

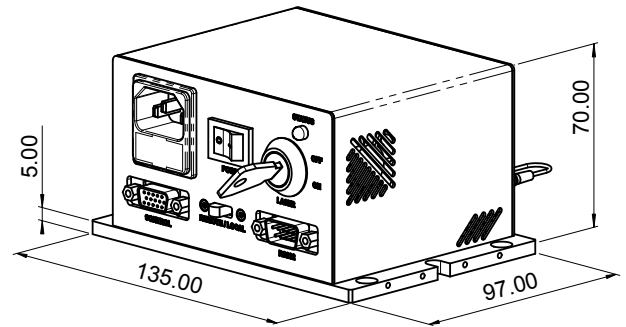
- Worldwide support
- Cost-effective solution
- Responsive technical team

Mechanical Drawings

Laser Head on Heat Sink



Plug and Play Driver for SLIM Series



All dimensions in mm

Accessories

For your convenience and to ensure the most straightforward laser setup, Oxxius provides all the equipment that is needed to use the SLIM. You will receive:

- Laser head with driver connection cable
- Laser head ESD protection
- Heat Sink
- Laser driver with embedded power supply
- User guide

SLIM lasers are registered with FDA. Accession number: 0710085-001.
Oxxius has a policy of continuous product improvement.
Specifications may change without notice.

Ordering Information

In order to request a laser, build the product code based on the following criteria:

Wavelength	Mode	Power	Beam Delivery	Package
473	S- for the SLM version	50	-COL	-OE for the OEM version
532		50, 100, 150, 200, 300		
550	L- for the Low Noise version	50, 100, 200		-PP for the Plug and Play version
561		25, 50, 100, 200, 300		
660		50		

Examples: **473S-50-COL-OE** for a SLIM-473, SLM version, 50 mW, collimated, OEM.

532L-300-COL-PP for a SLIM-532, Low Noise version, 300 mW, collimated, Plug and Play.

Contact us:

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