

473 nm

532 nm

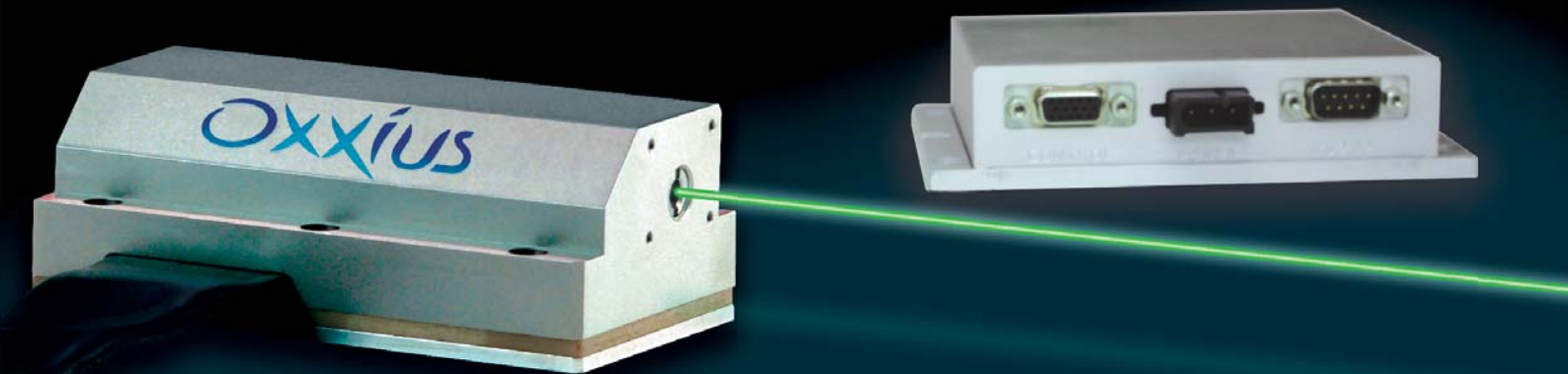
553 nm

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

OEM 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 | | | | | |
| | Min. | Nominal | Max. | Unit | 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 | | 1.1 | 1.2 | M ² | single transverse mode TEM ₀₀ |
| Beam Diameter ² - power < 150 mW | 0.60 | 0.75 | 0.90 | mm | 1/e ² , at aperture |
| Beam Diameter - power ≥ 150 mW | 0.45 | 0.60 | 0.75 | mm | 1/e ² , at aperture |
| Circularity | 0.85 | 0.90 | | - | |
| 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 | 10 | μrad/°C | rms |
| Polarization Ratio | 100:1 | | | - | linear, vertical |
| System Specifications | | | | | |
| Laser Head | | | | | |
| Operating Temperature | 15 | | 45 | °C | measured at base |
| Start-up Time | | 5 | 10 | min | |
| Heat Dissipation | | | 20 | W | |
| Weight | | 350 | | g | |
| Dimensions | | 88 x 44 x 29 | | mm ³ | L x W x H |
| OEM Controller | | | | | |
| Power Supply Requirements | | | | | |
| Input Voltage | 4.8 | | 5.3 | V | ripple < 1%, at Driver Input |
| Input Current | | | 8 | A | during start-up |
| Heat Dissipation | | | 15 | W | |
| Weight | | 420 | | g | |
| Dimensions | | 135 x 97 x 30 | | mm ³ | L x W x H |
| Interfacing | | RS-232 or Analog | | | |
| Maximum Environmental Ratings | | | | | |
| Storage Temperature | 0 | | 60 | °C | non-operating |
| Relative Humidity | 10 | | 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:

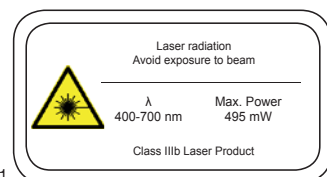
- a Single Longitudinal Mode (SLM) version, specifically intended for applications such as holography, interferometry or Raman spectroscopy;
- a Low Noise (LN) version, designed for applications that do not rely on a particularly narrow spectrum, such as light scattering or fluorescence analytics;

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



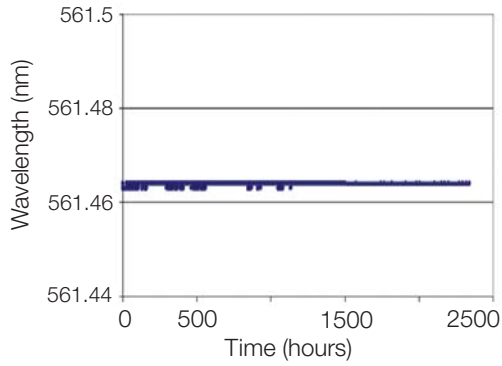
www.oxxius.com

MK-0095-DS Rev. D, 01/11



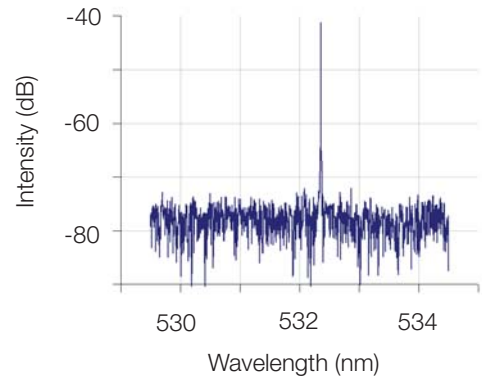
Wavelength stability

SLIM-561 wavelength vs time



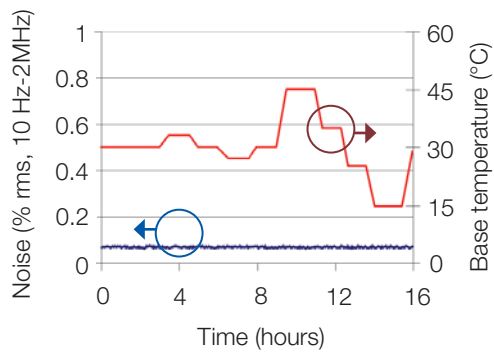
True Single Longitudinal Mode

SLIM-532 spectrum



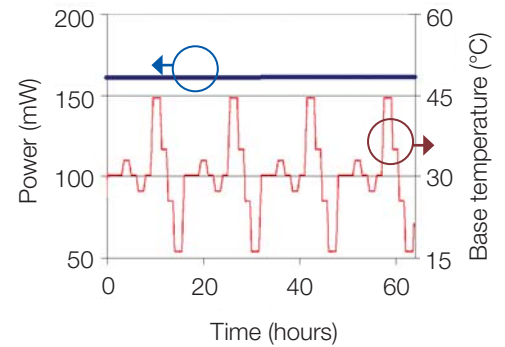
Ultra-low Optical Noise

SLIM-561 noise vs time and temperature

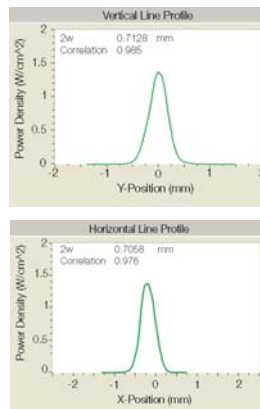
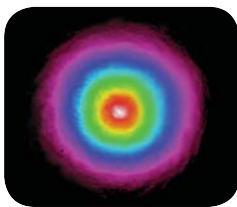


Power Stability

SLIM-561 power vs time and temperature

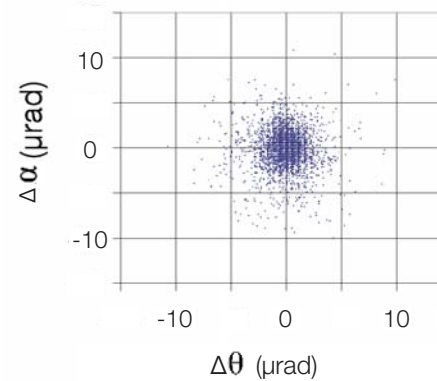


Ideal Beam Profile



Beam Pointing Stability

Acquired over 1 hour and 3°C base temperature variation



SLIM Output Options

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

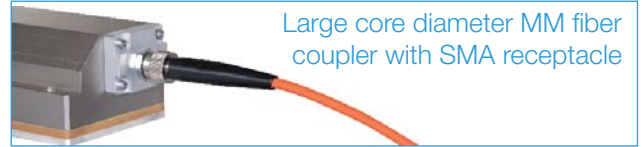
PM Fiber coupling option

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

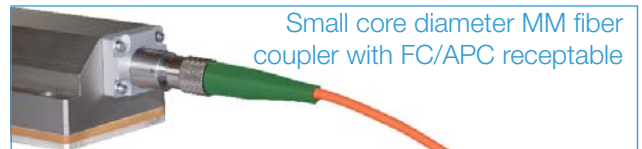


| System Specifications | | Notes |
|------------------------|---|------------------------|
| Coupling Efficiency | >70 % | |
| Power Stability | ± 2 % | over 8 hours, ± 1.5 °C |
| Optical Noise | 0.2 % | rms, 10 Hz - 20 MHz |
| Polarization Ratio | 100:1 | linear |
| Fiber Type | Polarization-maintaining,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

MM Fiber coupling options

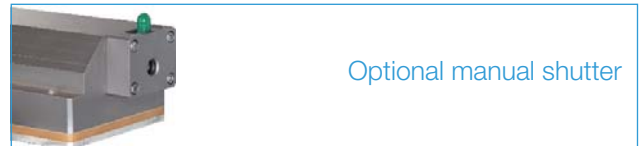


Large core diameter MM fiber coupler with SMA receptacle

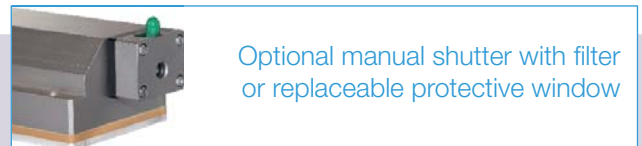


Small core diameter MM fiber coupler with FC/APC receptacle

Shutter options



Optional manual shutter

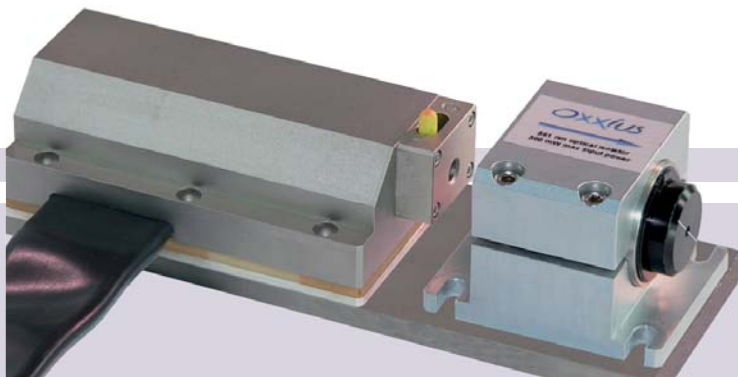


Optional manual shutter with filter or replaceable protective window

SLIM Optical Isolator

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.



Custom Capabilities

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

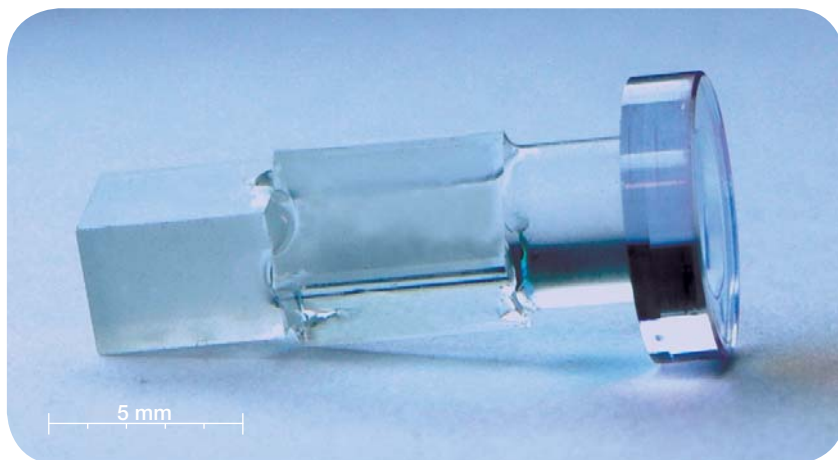
Here are examples of what we offer:

- o Power adjustment
- o Opto-mechanical Subassemblies including:
 - Wavelengths combiner
 - AO modulator and AOTF
 - Cost effective and compact isolator
 - Fiber coupling
- o Laser Head extension cable
- o Custom control interface
- o Extended operational temperature range

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.



An industrial solution

A robust laser

- Hermetic package
- Thermally stabilized
- Permanently aligned

Ready to deliver

- Simple, scalable process
- Laser to laser repeatability
- Cost effective

At your service

- Worldwide support
- Innovative warranty
- ISO-9001

Packed with performance

Record breaking

- Frequency stability
- Efficiency
- Power Consumption

Top notch laser

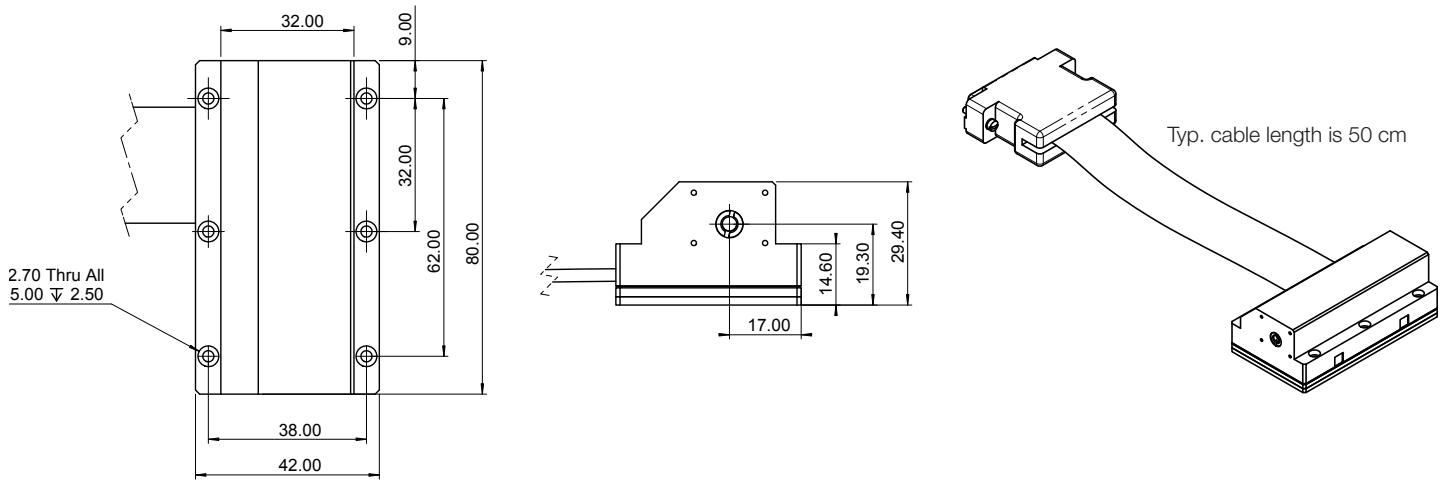
- True SLM
- Low noise
- TEM₀₀ beam

Dependable

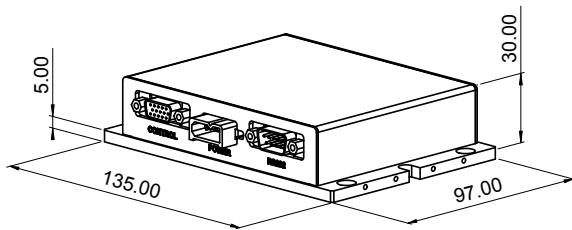
- Power stability
- Beam pointing stability
- Mode-hop free

Mechanical Drawings

OEM Laser Head for SLIM Series



OEM Driver for SLIM Series



SLIM lasers are registered with FDA. Accession number: 07R0452-001. Oxxius has a policy of continuous product improvement. Specifications may change without notice.

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
- Laser driver
- Interlock and power supply bare mating connectors
- User guide

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 -PP for the Plug and Play version |
| 532 | | 50, 100, 150, 200, 300 | | |
| 550 | 50, 100, 200 | | | |
| 561 | L- for the Low Noise version | 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:

| | | | |
|-----------------|---------------------------|-----------------------------|---------------------|
| USA | RPMC Lasers | rpmc@rpmclasers.com | (+1) 636 272 7227 |
| BeNeLux | Applied Laser Technology | info@alt.nl | (+31) 499 375 375 |
| France | Opton-Laser International | ventes@optonlaser.com | (+33) 1 69 41 04 05 |
| Germany | Laser 2000 GmbH | contact@laser2000.de | (+49) (0) 8153 4050 |
| Italy | Laserpoint s.r.l | sales@laserpoint.it | (+39) 02 274 00236 |
| Poland | Scitec Instruments Polska | sales@scitecinstruments.pl | (+48) 22 406 8127 |
| Scandinavia | Laser 2000 AB | info@laser2000.se | (+46) 11 369681 |
| Spain/Portugal | Laser 2000 Iberia | juanluis@laser2000.es | (+34) 976 299 150 |
| UK/Ireland | Laser 2000 Ltd | sales@laser2000.co.uk | (+44) 1933 461666 |
| China | Aunion Tech Co., Ltd | jinlong.wu@haoliangtech.com | (+86) 21 6257 8098 |
| Japan | Autex, Inc. | sales32@autex-inc.co.jp | (+81) 3 322 66321 |
| India | Anatech Instruments | anatech@mtnl.net.in | (+91) 22 26730463 |
| Singapore | Acexon Technologies | lawrence.chua@acexon.com | (+65) 6565 7300 |
| Taiwan | Bio Accord | biotical@ms37.hinet.net | (+886) 2 2250 5019 |
| Other countries | on the website | | |

www.oxxius.com