StaxBeam

By Oxxius

Single Frequency Lasers

473 nm to 1064 nm

Unlock unmatched performance with
Oxxius Single Frequency lasers,
built for ultimate precision and stability.

- Up to 800 mW
- TEM_{00} beam
- Narrow linewidth
- Compact size
- Integrated control electronics
- Wavelength stability down to 1 pm
- Same interface for all wavelengths

OXXIUS
Laser Matters

www.oxxius.com

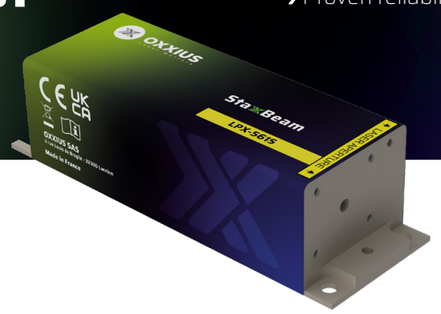
Precision you can measure. Stable power. Stable wavelength.

Oxxius Single Frequency Lasers

Whatever your experimental setup, you can rely on Oxxius single frequency lasers to deliver unmatched precision, spectral purity and long-term reliability.

Why Choose Oxxius?

- Unmatched wavelength stability
- Linewidth < 100 kHz
- Up to 800 mW CW
- Ultra-compact, OEM-ready design
- Proven reliability in the field



1 Key features

- TEM_{00} beam, up to 800 mW
- Narrow linewidth
- CW output
- Low-profile laser head with integrated electronics
- USB & RS-232 interfaces
- Fiber coupling options: SM / PM / MM
- Industry-standard 100 × 40 mm² footprint (LBX & LCX)

2 Reliable Performance You Can Count On

- Power stability (over 8 h and ±3°C) ±1 %
- Power adjustment optional with L1C-MPA/AOM
- Optical noise (10 Hz - 20 MHz bandwidth) ≤0.2 % rms

Alignment-free monolithic resonator
Oxxius unique and proprietary technology at the heart of its DPSS lasers.

Oxxius Patented Technology

Oxxius has developed a proprietary monolithic resonator technology, protected by over 10 patents, that sets our DPSS lasers apart with:

- **Exceptional robustness**: withstands wide thermal and mechanical variations, no moving parts or adhesives.
- **High beam quality**: enables diffraction-limited resolution in imaging systems.
- **Ultra-low heat emission**: compact, high-efficiency cavity minimizes thermal load.

3 Need power adjustment or modulation?

The power tuning can affect the emitted wavelength, which may be highly disruptive for applications such as Raman spectroscopy that require excellent wavelength stability. To preserve the laser's spectral performance, Staxxbeam models are available with different power-adjustment options:

- Fixed-power version (default for all our single-frequency lasers).
- Adjustable-power version with full dynamic range (0–100%): the laser is integrated into an L1C or L1C+ head, followed by a Motorized Power Attenuator (MPA).

High-rate modulation on DPSS lasers
LCX and LPX models can be upgraded with analog and digital modulation capabilities using the **L1C-AOM platform**.

L1C⁺ - AOM

Target models	**LCX or LPX**
Rise time / Fall time	≤ 150 ns
Modulation bandwidth	3 MHz
Insertion losses	≤ 15 %
Wavelength range	from 405 to 1064 nm Other wavelengths available upon request
Interfacing	Interfaces with the BTC-AOM driver, providing: - **Input ports** for digital and analog modulation - **USB and Ethernet connectivity** for monitoring
Laser head dimensions	**L1C+** 208(l) x 62 (w) x 64 (h) mm
Driver dimensions	**BTC-AOM** 156(l) x 203 (w) x 90 (h) mm

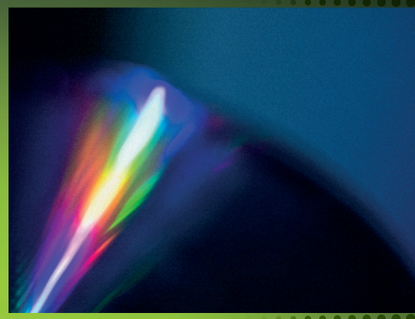
Test Our Lasers!

We offer demo units so you can validate performance in your own environment before moving forward.

» Contact us to check availability, lead times and the best configuration for your application.

Applications at a Glance

- Raman Spectroscopy
- Dynamic Light Scattering (DLS)
- Holography
- Shearography
- Laser Doppler Velocimetry
- Interferometry
- Filtered Rayleigh Scattering
- Brillouin spectroscopy



Optical specifications

NEW in 2026
473 nm - 50 mW

DPSS lasers

	LCX-532S	LPX-532S	LCX-553S	LCX-561S	LPX-561S	LCX-1064S
Central wavelength (Tolerance)	532.3 nm (±0.3 nm)	532.3 nm (±0.5 nm)	553.0 nm (±0.4 nm)	561.4 nm (±0.3 nm)		1064.6 nm (±0.6 nm)
Output power (CW mode)	50 / 100 / 150 200 / 300 mW	500 / 800 mW	50 / 100 / 200 mW	50 / 100 / 150 200 / 300 mW	300 / 500 mW	100 / 200 300 / 500 mW
Spectral linewidth (FWHM)	≤ 1 MHz					
Wavelength stability over 8 h and ±3°C	≤ 1 pm	≤ 3 pm	≤ 1 pm	≤ 1 pm	≤ 3 pm	≤ 2 pm
Wavelength drift over consecutive on/off cycles Temperature within ±3°C	≤ 1 pm					≤ 2 pm
Coherence length	≥ 100 m					
Side mode suppression ratio +/-0.5 nm from the main peak	≥ 30 db					
Side mode suppression ratio +/-5 nm from the main peak	≥ 60 dB typ.					≥ 60 dB typ.
Power stability over 8 h, temperature within ±3°C	±1.0%					
Control modes	Automatic Power Control (APC)					
Power adjustment range	0% to 100% power adjustment: optional L1C-MPA High speed modulation: optional L1C+-AOM (1)					
Optical noise 20Hz to 20kHz bandwidth	≤ 0.2% rms	≤ 0.5% rms	≤ 0.2% rms	≤ 0.2% rms	≤ 0.5% rms	≤ 0.2% rms
Beam quality TEM_{00} spatial mode	$M^2 \leq 1.1$					
Beam diameter ($1/e^2$ level)	0.7 mm					
Full angle divergence ($1/e^2$ level)	< 1 mrad					< 2 mrad
Polarization state extinction ratio	Linear, vertical ≥20 dB					
Warm-up time	≤ 10 minutes					
Power consumption	≤ 20 W					

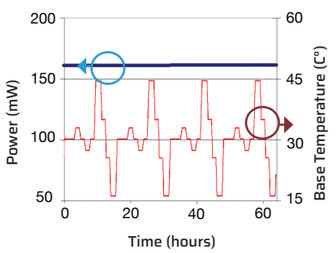
(1) Refer to "Modulation" section page 3

Diode lasers

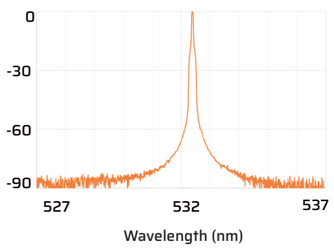
	LBX-633S	LSX-785S-ISO	LBX-785S-MM	LBX-830-S	LBX-830S-MM
Central wavelength (Tolerance)	633 nm (±0.5 nm)	785 nm (±0.5 nm)	785 nm (±0.5 nm)	830 nm (±0.5 nm)	830 nm (±0.5 nm)
Optical power (CW mode)	40 mW	150 mW with isolator	500 mW	100 mW	500 mW
Spectral linewidth (FWHM)	≤ 100 MHz	≤ 100 MHz	≤ 70 pm	≤ 100 MHz	≤ 70 pm
Wavelength stability over 8 h and ±3°C	≤ 10 pm				
Wavelength drift over consecutive on/off cycles Temperature within ±3°C	≤ 10 pm				
Coherence length	≥ 1 m		N/A	≥ 1 m	N/A
Side mode suppression ratio +/-0.5 nm from the main peak	≥ 35 dB	≥ 25 dB	≥ 30 dB	≥ 40 dB	≥ 30 dB
Side mode suppression ratio +/-5 nm from the main peak	≥ 50 dB	≥ 50 dB	≥ 40 dB	≥ 50 dB	≥ 40 dB
Power stability over 8 h, temperature within ±3°C	± 0.5%				
Control modes	Automatic Current Control (ACC)				
Power adjustment range	Fixed power only 0% to 100% power adjustment: optional L1C-MPA (1)				
Optical noise 20Hz to 20kHz bandwidth	≤ 0.2% rms				
Beam quality TEM_{00} spatial mode	$M^2 \leq 1.9$	$M^2 \leq 1.25$	N/A	$M^2 \leq 1.9$	N/A
Beam diameter ($1/e^2$ level)	0.4 mm	0.5 mm	N/A	0.4 mm	N/A
Full angle divergence ($1/e^2$ level)	< 7 mrad	< 3 mrad	N/A	< 10 mrad	N/A
Polarization state extinction ratio	Linear, vertical ≥17 dB	N/A	Linear, vertical ≥17 dB	Linear, vertical ≥17 dB	N/A
Warm-up time	≤ 2 minutes				
Power consumption	≤ 10 W				

(1) Refer to "Modulation" section page 3

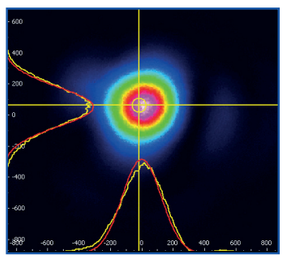
Reliable Performances



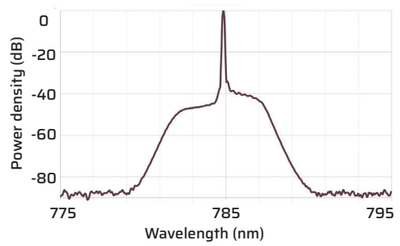
‹ Power stability vs temperature
LCX-561S



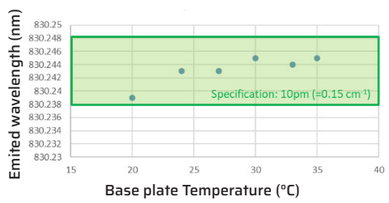
‹ Narrow linewidth spectrum
LCX-532S



^ Beam profile
LBX-633S



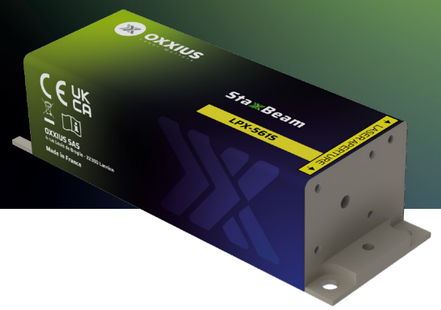
^ Narrow linewidth spectrum
LSX-785S-ISO



^ Wavelength dependency vs temperature
LBX-830S

Available options

Extend Your Performances



1 Fiber coupling

FOR EFFICIENT, TEMPERATURE-STABLE POWER DELIVERY

A rugged, compact assembly that injects the output beam into an optical fiber, providing high coupling efficiency and stable throughput across temperature variations.

STANDARD SPECIFICATIONS	Polarization-maintaining fiber FC-PM	Single-mode fiber FC-SM	Multimode fiber Round core FC-MM-R	Multimode fiber Square-shaped core FC-MM-SQ
Power injection ratio	≥ 70%		≥ 80%	
Power stability over 8 hours, temperature within ±3°C	≤±2.0%			
Fiber model and characteristics	PM-S405-XP+ N.A: 0.12	S405-XP N.A: 0.11	50, 105 or 200 µm diameter, 0.22 NA: FC-MM-R50 to -R200	70 or 200 µm side length, 0.22 NA: FC-MM-SQ70 or -SQ200
Polarization extinction ratio	≥ 20 dB	N/A		
Fiber output connector	FC/APC Other types available upon request			

2 Heat management

FOR STABLE OPERATION AND EXTENDED LASER LIFETIME

Use Oxxius heatsinks when:

› Ambient temperature is high (≥ 35 °C)

› The mounting structure has low thermal mass or poor heat dissipation

Compatibility

› **HTSK-1 / HTSK-7:** LBX, LCX, LPX, LSX

› **HTSK-10:** L1C, L1C+

3 Customization and other options

› Tailored beam diameter

› Band-pass filter for fluorescence applications

› Specific wavelength selection

› Optical isolator

› Customized designs for your application

Two Configurations. Same Performance.

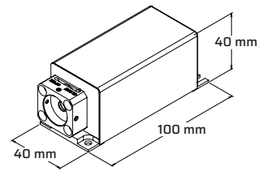
› End-User Version

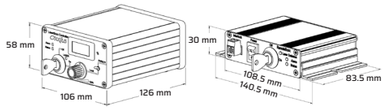
Ready to operate out of the box. Supplied with controller, power supply, and accessories. Safety functions are accessible via the laser controller (ControlBoxx for variable-power units, RemoteBoxx for fixed-power units).

› OEM Version

Designed for seamless integration into larger systems.
Includes the safety features needed to form part of a laser system compliant with IEC 60825-1 and FDA 21 CFR 1040.10.

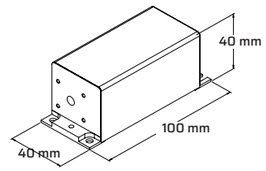
End-User Version (LBX model)
Supplied with controller, power supply and accessories ⌄





ControlBoxx RemoteBoxx

OEM Version (LBX model)
Stand-alone version for integrators ›



GENERAL SPECIFICATIONS (ALL MODELS)

	End-User Version	OEM Version
Compliance	CE compliant, including 60825-1 FDA 21 CFR 1040.10 and 1040.11	FDA 21 CFR 1040.10 and 1040.11
Operating temperature	10°C to 50°C (baseplate temperature) Refer to "Heat management" for the performance with a heatsink Humidity is non-condensing	
Storage temperature	0°C to 60°C	
Supply voltage	110 to 240 VAC	5 V to 12 V DC
Communication	USB, RS-232	

Combine up to 4 or 6 wavelengths by selecting your StaxxBeam® lasers

Harness multiple wavelengths in a single, powerful beam

A single laser beam combining multiple wavelengths has become an essential tool for many applications. The MixxWave combiner is designed for this purpose: a customizable laser source integrating several StaxxBeam modules.
Its output delivers multiple collinear laser beams, either coupled into a fiber or emitted in free space.

› Combine up to 4 wavelengths in the L4Cc or 6 in the L6Cc, by selecting your lasers from the StaxxBeam range

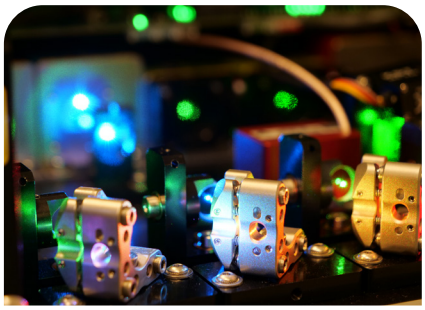
› Compact, robust design

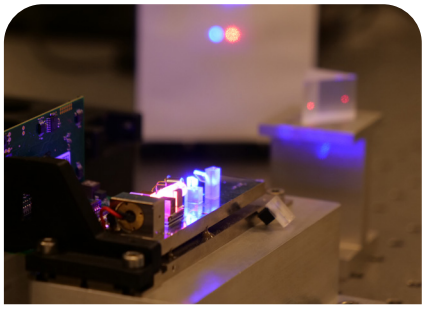
› High-efficiency coupling into a single-mode fiber

MixxWave By Oxxius

When laser matters, innovation happens.

Rely on Oxxius' stable and compact lasers to speed your development in life science, metrology, and industrial applications.

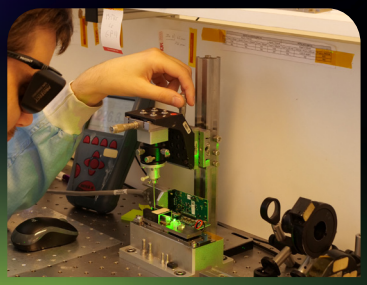




Oxxius develops, designs and delivers powerful, high-performance, spectrally pure visible lasers, built to evolve with your needs.

Our compact, ultra-stable, ISO 9001-certified solutions speed development, simplify integration, and enable breakthroughs in medical diagnostics, research, semiconductor inspection, and more.
Every system is backed by fast iteration, proven reliability and dedicated customer support.

Let's configure the right laser for your application: contact us for technical guidance, lead times and demo options at sales@oxxius.com.



Global sales network

Our distributors are worldwide, making Oxxius products easy to access wherever you are.
See the full list of partners and locations at www.**oxxius.com**.

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