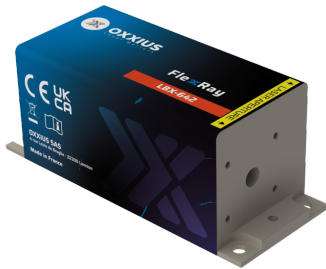


FlexxRay

By Oxxius

Product range	CW & Modulated Lasers
Product name	FlexxRay 642 nm
Reference	LBX-642
Description	The FlexxRay LBX-642 is a compact 642 nm laser source delivering one of the highest power available on the market over a beam of superior quality, and featuring a high-speed modulation. Its integrated control electronics and robust design suit both laboratory and industrial use. Performance, stability, and versatility make it a trusted solution for fluorescence-based microscopy, flow cytometry and illumination. Key features • TEM₀₀ spatial mode • ± 0.5 % long-term power stability; low optical noise • Modulation up to 150 MHz • Integrated control electronics • 100×40 mm industry-standard footprint Fully compatible with Oxxius MixxWave combiners for single-mode fiber delivery alongside other laser lines.



Product Variations

Part Number	Power
LBX-642-140-CSB-PPA	140 mW

Optical Characteristics

Emission wavelength	642 nm
Tolerance	(-7/+5 nm tolerance)
Power stability over 8 hours, temperature within $\pm 3^{\circ}\text{C}$	$\pm 0.5\%$
Control modes	Automated power control, Automated current control
Optical noise	$\leq 0.2\%$ rms, 10 Hz-20 MHz bandwidth
Spectral linewidth	≤ 1.2 nm
Digital modulation function - Rise / fall time	≤ 2 ns
Digital modulation function - Bandwidth	≥ 150 MHz
Analog modulation function - Rise / fall time	≤ 150 ns
Analog modulation function - Bandwidth	≥ 3 MHz
Beam diameter, $1/e^2$ level, 50mm from the beam aperture	1 ± 0.2 mm
Beam divergence, $1/e^2$ level full beam, far field	≤ 1.3 mrad
Beam quality factor M^2	≤ 1.25
Beam circularity, far field	$\geq 90\%$
Polarization state	Linear, vertical, extinction ratio $\geq 20\text{dB}$

General Specifications

Power consumption	2 W typ. / 10 W max.
Supply voltage	5 V to 12 V
Operating temperature	10 $^{\circ}\text{C}$ to 50 $^{\circ}\text{C}$
Storage temperature and humidity	0 $^{\circ}\text{C}$ to 60 $^{\circ}\text{C}$
Warm up time	≤ 2 minutes
Interfaces	USB, RS-232, direct modulation inputs
Dimensions (laser head)	100x40x40 mm
Weight (laser head)	≤ 330 g
Controller dimensions	106x126x56 mm
Compliance	CE (incl. IEC 60825-1) and FDA 21 CFR 1040.10 / 1040.11
Laser class	3B
Warranty	24 months or 5000 hours, whichever occurs first

Options

Single-mode fiber coupling
Multimode fiber coupling
Heat management
Electromechanical shutter
Band-pass filter
OEM version

Oxxius has a policy of continuous product improvement. Specifications may change without notice.