

FlexxRay

By Oxxius

Gamme	CW & Modulated Lasers
Title	FlexxRay 642 nm
Reference	LBX-642
	<p>The FlexxRay LBX-642 is a compact 642nm 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.</p>
Description	<p>Key features</p> <ul style="list-style-type: none">• 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 <p>Fully compatible with Oxxius MixxWave combiners for single-mode fiber delivery alongside other laser lines.</p>



Product Variations

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

Optical Characteristics

Emission wavelength	642 nm
Tolerance	(-7/+5nm tolerance)
Control modes	Automated power control, Automated current control

Optical noise	$\leq 0.2\%$ rms, 10Hz-20MHz bandwidth
Spectral linewidth	$\leq 1.2\text{nm}$
Digital modulation function - Rise / fall time	$\leq 2\text{ns}$
Digital modulation function - Bandwidth	$\geq 150\text{MHz}$
Analog modulation function - Rise / fall time	$\leq 150\text{ns}$
Analog modulation function - Bandwidth	$\geq 3\text{MHz}$
Beam diameter, $1/e^2$ level, 50mm from the beam aperture	$1 \pm 0.2\text{mm}$
Beam divergence, $1/e^2$ level full beam, far field	$\leq 1.3\text{mrad}$
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	5V to 12V
Operating temperature	10°C to 50°C
Storage temperature and humidity	0°C to 60°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

Option 1	Single-mode fiber coupling
Option 2	Multimode fiber coupling
Option 3	Heat management
Option 4	Electromechanical shutter
Option 5	Band-pass filter
Option 6	OEM version