

# FlexxRay

By Oxxius

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product range</b> | CW & Modulated Lasers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Product name</b>  | FlexxRay 640 nm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Reference</b>     | LPX-640L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Description</b>   | <p>The FlexxRay LBX-640 is a compact 640nm laser source delivering one of the highest power available on the market over a beam of superior quality, and featuring an analogue modulation function. Its integrated control electronics and robust design suit both laboratory and industrial use.</p> <p>Performance, stability, and versatility make it a trusted solution for super-resolution microscopy, DNA sequencing and illumination. Key features</p> <ul style="list-style-type: none"> <li>• TEM<sub>00</sub> spatial mode</li> <li>• <math>\pm 0.5</math> % long-term power stability</li> <li>• Modulation up to 1.5 kHz</li> <li>• Integrated control electronics Fully compatible with Oxxius MixxWave combiners for single-mode fiber delivery alongside other laser lines.</li> </ul> |



## Product Variations

| Part Number           | Power   |
|-----------------------|---------|
| LPX-640L-300-CSB-PPA  | 300 mW  |
| LPX-640L-500-CSB-PPA  | 500 mW  |
| LPX-640L-1000-CSB-PPA | 1000 mW |

## Optical Characteristics

|                                                                          |                                           |
|--------------------------------------------------------------------------|-------------------------------------------|
| <b>Emission wavelength</b>                                               | 639.7 nm                                  |
| <b>Tolerance</b>                                                         | (±0.5 nm tolerance)                       |
| <b>Power stability over 8 hours, temperature within ±3°C</b>             | ±0.5 %                                    |
| <b>Control modes</b>                                                     | Automated power control                   |
| <b>Optical noise</b>                                                     | ≤2.0 % rms, 10 Hz-100 kHz bandwidth       |
| <b>Spectral linewidth</b>                                                | ≤0.5 nm                                   |
| <b>Digital modulation function - Rise / fall time</b>                    | ≤20 µs                                    |
| <b>Digital modulation function - Bandwidth</b>                           | ≥1.5 kHz                                  |
| <b>Analog modulation function - Rise / fall time</b>                     | ≤20 µs                                    |
| <b>Analog modulation function - Bandwidth</b>                            | ≥1.5 kHz                                  |
| <b>Beam diameter, 1/e<sup>2</sup> level, 50mm from the beam aperture</b> | 0.7 ±0.1 mm                               |
| <b>Beam divergence, 1/e<sup>2</sup> level full beam, far field</b>       | ≤1.5 mrad                                 |
| <b>Beam quality factor M<sup>2</sup></b>                                 | ≤1.1                                      |
| <b>Beam circularity, far field</b>                                       | ≥90 %                                     |
| <b>Polarization state</b>                                                | Linear, vertical, extinction ratio ≥30 dB |

## General Specifications

|                                         |                                                         |
|-----------------------------------------|---------------------------------------------------------|
| <b>Power consumption</b>                | 20 W max.                                               |
| <b>Supply voltage</b>                   | 5 V to 12 V                                             |
| <b>Operating temperature</b>            | 10 °C to 50 °C                                          |
| <b>Storage temperature and humidity</b> | 0 °C to 60 °C                                           |
| <b>Warm up time</b>                     | ≤5 minutes                                              |
| <b>Interfaces</b>                       | USB, RS-232, direct modulation inputs                   |
| <b>Dimensions (laser head)</b>          | 120x40x32 mm                                            |
| <b>Weight (laser head)</b>              | 250 g                                                   |
| <b>Controller dimensions</b>            | 106x126x56 mm                                           |
| <b>Compliance</b>                       | CE (incl. IEC 60825-1) and FDA 21 CFR 1040.10 / 1040.11 |
| <b>Laser class</b>                      | 3B, 4                                                   |
| <b>Warranty</b>                         | 24 months or 10000 hours, whichever occurs first        |

# Options

|                          |
|--------------------------|
| Multimode fiber coupling |
| Heat management          |
| High rate modulation     |
| OEM version              |

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