

# MixxWave

By Oxxius

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <b>Product range</b> | Laser Diode Illuminators (LDI)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Product name</b>  | LDI-NIR Laser Diode Illuminator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Reference</b>     | LDI-NIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Description</b>   | <p>The LDI-NIR laser diode illuminator is the most spectrally complete model in the MixxWave Gen1 range, combining 7 lines from 405 nm to 730 nm in a single compact unit. The dedicated 730 nm NIR channel — delivering up to 850 mW — extends illumination beyond the visible spectrum for deep-tissue imaging, NIR-dye multiplexing and optogenetics applications, while all visible lines retain the same feedback-controlled stability and 100:1 linear dynamic range as the rest of the LDI family. <b>Key features</b></p> <ul style="list-style-type: none"> <li>• 7 laser lines from 405 nm to 730 nm (full visible + NIR)</li> <li>• Up to 1000 mW output power per line</li> <li>• Dedicated 730 nm NIR channel for deep-tissue imaging &amp; multiplexing</li> <li>• No user alignment required</li> <li>• TTL &amp; Analog control</li> </ul> <p>Discover the next-generation LDI-G2-NIR.</p> |



## Product Variations

| Part Number     | Combined wavelengths                    |
|-----------------|-----------------------------------------|
| LDI-NIR         | 405 / 445 / 470 / 520 / 555 / 640 / 730 |
| LDI-NIR-577     | 405 / 445 / 470 / 520 / 577 / 640 / 730 |
| LDI-NIR-488     | 405 / 445 / 488 / 520 / 555 / 640 / 730 |
| LDI-NIR-488-577 | 405 / 445 / 488 / 520 / 577 / 640 / 730 |

## Performance by Wavelength

| Wavelength | Optical Power Min <sup>1</sup> | CW Stability (typ.) <sup>2</sup> | Max Rise Time (typ.) <sup>3</sup> | Max On/Off Frequency <sup>4</sup> |
|------------|--------------------------------|----------------------------------|-----------------------------------|-----------------------------------|
| 405        | 450 mW                         | 2 %                              | 10 µs                             | >1000 Hz                          |
| 445        | 1000 mW                        | 2 %                              | 10 µs                             | >1000 Hz                          |
| 470 or 488 | 1000 mW                        | 2 %                              | 10 µs                             | >1000 Hz                          |
| 520        | 500 mW                         | 2 %                              | 10 µs                             | >1000 Hz                          |
| 555 or 577 | 1000 or 700 mW                 | 2 %                              | 2 ms                              | 100 Hz                            |
| 640        | 900 mW                         | 2 %                              | 10 µs                             | >1000 Hz                          |
| 730        | 850 mW                         | 2 %                              | 10 µs                             | >1000 Hz                          |

### Legends

1. Optical Power Min: Measured at 100% intensity, 23 °C ±2 °C.
2. CW Stability (typ.): Standard Deviation relative to mean power, at 100% intensity, 23 °C ± 2 °C.
3. Max Rise Time (typ.): Measured at 100% intensity, 23 °C ±2°C.
4. Max On/Off Frequency: Measured at 100 % intensity, 50 % duty cycle

# Optical Characteristics

|                      |                                                                          |
|----------------------|--------------------------------------------------------------------------|
| Output Power         | Up to 1000 mW per line                                                   |
| Optical Stability    | Feedback-controlled<br>2 % CW stability                                  |
| Laser Lines          | Up to 7 lines: 405 / 445 / 470 or 488<br>520 / 555 or 577 / 640 / 730 nm |
| NIR Channel (730 nm) | ✓ Deep-tissue imaging<br>Extended spectral range beyond visible          |
| Beam Quality         | Standard multimode output                                                |
| Fiber Output         | 400 µm bifurcated                                                        |
| User Alignment       | Not required                                                             |

# LDI-NIR Laser Diode Illuminator General specifications

|                   |                                                             |
|-------------------|-------------------------------------------------------------|
| Output Options    | Optical fiber<br>(400 µm bifurcated, 0.39 NA)               |
| Control Options   | TTL (>2.3 V)   Analog (0-5 V)<br>USB-DSP (virtual COM port) |
| Intensity Control | 1 % steps<br>100:1 linear dynamic range                     |
| Safety            | Interlocked housing   Key interlock<br>IEC 60825 compliant  |
| QUAREP-LiMi WG1   | --                                                          |
| Dimensions        | 318 × 234 × 146 mm<br>(12.5" × 9.2" × 5.75")                |
| Weight            | ~4 kg (~9 lbs)                                              |
| Operating Temp.   | 15 to 30 °C                                                 |
| Storage Temp.     | -18 to 50 °C                                                |
| Humidity          | 80 % non-condensing                                         |
| Voltage           | 90-220 V AC, 50-60 Hz                                       |
| Warranty          | 2 years                                                     |

# Options

|                     |
|---------------------|
| Fiber sets          |
| LDI Breakout Box    |
| Fiber Bend Box      |
| External Despeckler |

## Applications / Techniques

|                                          |
|------------------------------------------|
| Confocal Microscopy                      |
| Spinning Disk Microscopy                 |
| Widefield Microscopy                     |
| Light Sheet Microscopy                   |
| Structured Illumination Microscopy (SIM) |
| Super Resolution Imaging                 |
| TIRF                                     |
| PALM / STORM / DNA-PAINT                 |
| FRAP                                     |
| Photoactivation / Photoconversion        |
| Photoablation                            |
| Optogenetics                             |
| Near Infrared (NIR) Imaging — 730 nm     |
| Neuroscience / Physiology                |
| Cellular Biology                         |
| Single Molecule FISH (smFISH)            |
| Spatial Transcriptomics / Proteomics     |
| Digital Pathology                        |

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