

# 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 <sub>1</sub> | CW Stability (typ.) <sub>2</sub> | Max Rise Time (typ.) <sub>3</sub> | Max On/Off Frequency <sub>4</sub> |
|------------|--------------------------------|----------------------------------|-----------------------------------|-----------------------------------|
| 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

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

## LDI-NIR Laser Diode Illuminator General specifications

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