

# MiXXWave

By Oxxius

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| <b>Product range</b> | Laser Diode Illuminators (LDI)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Product name</b>  | LDI-4 Laser Diode Illuminator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Reference</b>     | LDI-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Description</b>   | <p>The LDI-4 laser diode illuminator was designed in direct response to researcher demand for a streamlined, 4-channel solution covering the most essential fluorescence probes: DAPI (405 nm), FITC/GFP (470 or 488 nm), TRITC/mCherry (555 or 577 nm) and Cy5 (640 nm). Built on the same robust platform as the LDI-7, it delivers up to 1000 mW per line with feedback-controlled optical stability, TTL and analog modulation, and zero user alignment — making it an ideal drop-in laser source for spinning disk confocal, widefield, TIRF and super-resolution setups. Formerly part of the 89 North product line, the LDI-4 is now manufactured and supported by Oxxius.</p>  <p><b>Key features</b></p> <ul style="list-style-type: none"> <li>• 4 laser lines covering the most widely used fluorescence probes</li> <li>• Up to 1000 mW output power per line</li> <li>• Feedback-controlled optical stability</li> <li>• Optional 488 nm &amp; 577 nm lasers</li> <li>• No user alignment required</li> <li>• TTL &amp; Analog control</li> </ul> <p>You can also check out our new generation of LDI-4: LDI-G2-4 Laser Diode Illuminator</p> |

## Product Variations

| Part Number   | Combined wavelengths  |
|---------------|-----------------------|
| LDI-4         | 405 / 470 / 555 / 640 |
| LDI-4-577     | 405 / 470 / 577 / 640 |
| LDI-4-488     | 405 / 488 / 555 / 640 |
| LDI-4-488-577 | 405 / 488 / 577 / 640 |

## 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        | 300 mW                         | 2 %                              | 10 µs                             | >1000 Hz                          |
| 470 or 488 | 1000 mW                        | 2 %                              | 10 µs                             | >1000 Hz                          |
| 555 or 577 | 1000 or 700 mW                 | 2 %                              | 2 ms                              | 100 Hz                            |
| 640        | 400 mW                         | 2 %                              | 10 µs                             | >1000 Hz                          |

### Legends

1. Optical Power Min: Optical power measured at 100% intensity, 23°C ± 2°C.
2. CW Stability (typ.): Continuous Wave Stability: Standard Deviation relative to mean power, at 100% intensity, 23°C ± 2°C.
3. Max Rise Time (typ.): Optical power 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>Intensity Control</b>    | 1% steps<br>100:1 linear dynamic range                                    |
| <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-4 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>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                             |
| 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.*