MixxWave

By Oxxius

Product range	Laser Diode Illuminators (LDI)
Product name	LDI-NIR Laser Diode Illuminator
Reference	LDI-NIR
Description	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. Formerly part of the 89 North product line, the LDI-NIR is now manufactured and supported by Oxxius. **Key features** • 7 laser lines from 405 nm to 730 nm (full visible + NIR) • Up to 1000 mW output power per line • Dedicated 730 nm NIR channel for deep-tissue imaging & multiplexing • No user alignment required • TTL & Analog control Discover the next-generation LDI-G2-NIR.

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 [1]	CW Stability (typ.) [2]	Max Rise Time (typ.) [3]	Max On/Off Frequency [4]
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 2 % CW stability
Laser Lines	Up to 7 lines: 405 / 445 / 470 or 488 520 / 555 or 577 / 640 / 730 nm
NIR Channel (730 nm)	✔ Deep-tissue imaging 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 (400 µm bifurcated, 0.39 NA)
Control Options	TTL (>2.3 V) | Analog (0–5 V) USB–DSP (virtual COM port)
Intensity Control	1 % steps 100:1 linear dynamic range
Safety	Interlocked housing | Key interlock IEC 60825 compliant
QUAREP-LiMi WG1	--
Dimensions	318 × 234 × 146 mm (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.