

MixxWave

By Oxxius

Product range	Laser Diode Illuminators (LDI)
Product name	LDI-G2-4 Laser Diode Illuminator
Reference	LDI-G2-4
Description	<p>The LDI-G2-4 is a streamlined, next-generation illuminator designed around the laser lines corresponding to the four most widely used fluorescent stains (or fluorescent molecules): DAPI, FITC, TRITC, and Cy5. Researchers asked for simplicity without compromise, and the LDI-G2-4 delivers. With the new G2 architecture, higher power density, improved beam quality, and rock-solid stability are achieved—ensuring sharper illumination and reproducible results for essential imaging applications. Options are also available with 488 nm for FITC/GFP and 577 nm for TRITC/mCherry... or both. Note that we can also work with you to provide solutions for your unique needs. Key features</p> <ul style="list-style-type: none"> • 4 laser lines covering the most widely used fluorescence probes • Up to 1000 mW output power per line • Feedback-controlled optical stability • Optional 488 nm & 577 nm lasers • No user alignment required • TTL & Analog control



Product Variations

Part Number	Combined wavelengths
LDI-G2-4	405 / 470 / 555 / 640
LDI-G2-4-577	405 / 470 / 577 / 640
LDI-G2-4-488	405 / 488 / 555 / 640
LDI-G2-4-488-577	405 / 488 / 577 / 640

Performance by Wavelength

Wavelength	Optical Power Min ¹	CW Stability (typ.) ²	Max Rise Time (typ.) ³	Max On/Off Frequency ⁴
405	300 mW	0.2%	5 μ s	> 1000 Hz
470 or 488	1000 mW ⁵	0.2%	5 μ s	> 1000 Hz
555 or 577	700 or 500 mW ⁶	0.2%	2 ms	100 Hz
640	400 mW	0.2%	5 μ s	> 1000 Hz

Legends

1. Optical Power Min: Defined in accordance with the QUAREP-LiMi WG 1 standard, "Illumination Power, Stability, and Linearity Measurements for Confocal and Widefield Microscopes V.2", Section 8, with power output measured at the fiber output.

2. CW Stability (typ.): Measured at 100% intensity, 23°C \pm 2°C.

3. Max Rise Time (typ.): Defined in accordance with the QUAREP-LiMi WG 1 standard, "Illumination Power, Stability, and Linearity Measurements for Confocal and Widefield Microscopes V.2", Section 8, with power output measured at the fiber output.

4. Max On/Off Frequency: Measured at 100% intensity, 50% duty cycle

5. 470 or 488 - Optical Power Min: 488 nm optical power min preliminary estimate. Actual output power pending product release.

6. 555 or 577 - Optical Power Min: 577 nm optical power min preliminary estimate. Actual output power pending product release.

Optical Characteristics

Output Power	Up to 1000 mW per line + higher power density via 400 µm single fiber
Optical Stability	Active feedback control 0.2% CW stability (10× improvement)
Intensity Control	0.1% steps (10× finer) Full linear range
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	Improved beam quality Cleaner, more stable output profile
Fiber Output	400 µm single → higher power density
User Alignment	Not required

LDI-G2-4 Laser Diode Illuminator General specifications

Output Options	Optical fiber (400 µm single, 0.39 NA)
Control Options	TTL (> 2.3 V) Analog (0-5 V) USB-DSP (virtual COM port)
Safety	Interlocked housing Key interlock IEC 60825 compliant
QUAREP-LiMi WG1	✓ Compliant
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
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.