MixWave

By Oxxius

Product range	Laser Diode Illuminators (LDI)
Product name	LDI-4 Laser Diode Illuminator
Reference	LDI-4
Description 	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. You can also check out our new generation of LDI-4: LDI-G2-4 Laser Diode Illuminator **Key features** • 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-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 [1]	CW Stability (typ.) [2]	Max Rise Time (typ.) [3]	Max On/Off Frequency [4]
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

Output Power	Up to 1000 mW per line
Optical Stability	Feedback-controlled 2% CW stability
Intensity Control	1% steps 100:1 linear dynamic 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	Standard multimode output
Fiber Output	400 µm bifurcated
User Alignment	Not required

LDI-4 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)
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
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.