

Nanosecond and picosecond pulses from UV to near-IR

NanoLED Pulsed sources



The NanoLED series of pulsed light sources incorporate both LEDs and laser diodes, producing nanosecond and picosecond pulses from the UV to NIR. These sources are ideal for TCSPC applications. Ideal for OEM applications and for use with our full range of HORIBA Scientific fluorescence lifetime systems: TemPro FluoroCube Fluorolog® TCSPC FluoroMax® TCSPC DeltaFlex DeltaPro DeltaTime

Feature	Spectroscopy Benefits
Plug-and-play operation	Easily change wavelengths throughout entire range of NanoLEDs
Picosecond laser-diodes and nanosecond LEDs	Determination of short lifetimes
Proven reliability	Repeatable and secure experiments
Wavelengths from 250 nm to 1310 nm	Study the broadest range of samples
Ultra-compact design with built-in optics	Small footprint and no changing lenses
Gold-plated casings	Minimized electromagnetic emissions
Selectable output for synchronization	NIM and TTL compatible
“Sync delay” control	Quick adjustment of sync output relative to optical pulse (up to 200 ns)
Stand-alone controller with USB control and dedicated software	OEM applications



Specifications*

- ELEMENTAL ANALYSIS
- FLUORESCENCE
- GRATINGS & OEM SPECTROMETERS
- OPTICAL COMPONENTS
- PARTICLE CHARACTERIZATION
- RAMAN
- SPECTROSCOPIC ELLIPSOMETRY
- SPR IMAGING

Laser-diode heads

Model	Peak wavelength	Pulse width	Typical power	Other
N-375L	375 ± 10 nm	<200 ps	28 pJ/pulse	
N-395L	395 ± 10 nm	<200 ps	8 pJ/pulse	
N-405L	405 ± 10 nm	<200 ps	11 pJ/pulse	
N-415L	415 ± 10 nm	<200 ps	8 pJ/pulse	
N-425L	425 ± 10 nm	<200 ps	8 pJ/pulse	
N-440L	440 ± 10 nm	<200 ps	9 pJ/pulse	
N-470L	470 ± 10 nm	<200 ps	7 pJ/pulse	
N-485L	485 ± 10 nm	<200 ps	14 pJ/pulse	
N-510L	510 ± 10 nm	<200 ps	6 pJ/pulse	
N-635L	635 ± 10 nm	<200 ps	18 pJ/pulse	
N-650L	650 ± 10 nm	<200 ps	3 pJ/pulse	
N-670L	670 ± 10 nm	<200 ps	2 pJ/pulse	
N-785L	785 ± 20 nm	<200 ps	11 pJ/pulse	
N-830L	830 ± 20 nm	<200 ps	7 pJ/pulse	
N-980L	980 ± 20 nm	<500 ps	4 pJ/pulse	
N-1310L	1310 ± 20 nm	<500 ps	3 pJ/pulse	

Mounting: 35 mm bayonet coupling for fast interchange of source and exclusion of ambient light.

Gold-plated to minimize RF interference.



N-xxxxL New LED heads are always under development—contact HORIBA Scientific for other wavelengths

LED heads

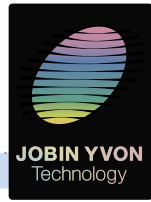
Model	Peak wavelength	Pulse width	Typical power	Other
N-250	250 ± 10 nm	<1.2 ns	1–2 pJ/pulse	Adjustable focusing lens
N-260	260 ± 10 nm	<1.2 ns	1–2 pJ/pulse	
N-265	265 ± 10 nm	<1.2 ns	1–2 pJ/pulse	Unpolarized output
N-270	270 ± 10 nm	<1.2 ns	1–2 pJ/pulse	
N-280	280 ± 10 nm	<1.2 ns	1–2 pJ/pulse	Shorter pulse widths available on request for certain LEDs ($\lambda < 370$ nm)
N-290	290 ± 10 nm	<1.2 ns	1–2 pJ/pulse	
N-295	295 ± 10 nm	<1.2 ns	1–2 pJ/pulse	Mounting: 35 mm bayonet coupling permits quick interchange and exclusion of ambient light.
N-300	300 ± 10 nm	<1.2 ns	1–2 pJ/pulse	
N-310	310 ± 10 nm	<1.2 ns	1–2 pJ/pulse	Gold-plated to minimize RF interference.
N-320	320 ± 10 nm	<1.2 ns	1–2 pJ/pulse	
N-330	330 ± 10 nm	<1.2 ns	1–2 pJ/pulse	
N-340	340 ± 10 nm	<1.2 ns	1–2 pJ/pulse	
N-350	350 ± 10 nm	<1.2 ns	1–2 pJ/pulse	
N-360	360 ± 10 nm	<1.2 ns	1–2 pJ/pulse	
N-370	370 ± 10 nm	<1.2 ns	4 pJ/pulse	
N-390	390 ± 10 nm	<1.3 ns	11 pJ/pulse	
N-455	455 ± 10 nm	<1.3 ns	7 pJ/pulse	
N-570	570 ± 10 nm	<1.5 ns	0.2 pJ/pulse	
N-590	590 ± 10 nm	<1.5 ns	2 pJ/pulse	
N-605	605 ± 10 nm	<1.5 ns	2 pJ/pulse	
N-625	625 ± 10 nm	<1.4 ns	4 pJ/pulse	
N-740	740 ± 10 nm	<1.6 ns	3 pJ/pulse	

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Notes:

1. Pulse width refers to optical pulse duration; in TCSPC the prompt FWHM is also a function of detector TTS
2. The values given are for guidance only; the exact characteristics are dependent on the individual diode
3. Heads require heat sinking by connection to spectrometer (standard on HORIBA Scientific systems)

Controller	Function	Typical power	
	Repetition rates	10 kHz, 25 kHz, 50 kHz, 100 kHz, 250 kHz, 500 kHz, 1 MHz	<p>Note: Plug in controller card also available for FluoroHub TCSPC modules (FluoroHub-NL). Some specifications may differ from NL-C2.</p> 
	Sync outputs	Selectable format: NIM-compatible ($-0.8 V_{pp}$, 50 Ω) or TTL-compatible (+2 V, 50 Ω)	
	Sync delay	0–200 ns	
	User interface	Keyswitch control of emission, operating parameters edited using supplied software and stored in non-volatile memory	
	PC interface	USB 2.0. 32-bit and 64-bit drivers are provided and the control panel software operates on all version of Windows® from XP onward	
	Power requirement	110 V to 240 V AC, 50/60 Hz, 100 VA	
	Operating temperature	+5°C to +30°C	
	Weight & dimensions	1 kg; 210 mm × 134 mm × 75 mm	

Class 3R/3B laser product
Class 3B LED product
Avoid exposure to beam
Conforms to international safety standards. USA: 21 CFR subchapter 1040.10. Elsewhere IEC 60825-1

INVISIBLE OR VISIBLE LASER RADIATION
AVOID EXPOSURE TO BEAM
CLASS 3B LASER PRODUCT
 <5W peak in <2ns in pulsed mode
 <0.5W average in pulsed & CW modes

INVISIBLE LED RADIATION
AVOID EXPOSURE TO BEAM
CLASS 3B LED PRODUCT
 <5W peak in <2ns in pulsed mode
 <0.5W average in pulsed & CW modes

LASER RADIATION
AVOID EXPOSURE TO BEAM
CLASS 3R LASER PRODUCT
 <5W peak in <2ns in pulsed mode
 <15mW average in pulsed & CW modes

Specifications and appearance are subject to change without notice.

