

NL303D SERIES



Stable output specifications, intelligent triggering and easy operation make NL303D series nanosecond lasers an excellent choice for most liquid and many air-based PIV (particle image velocimetry) applications. Extremely low jitter of optical pulse with respect to sync pulse allows reliable synchronization with external equipment.

Optional double UV (355 nm) pulse models allow pumping of double-pulse optical parametric oscillators.

Operating convenience is achieved through versatile triggering capabilities and adjustable delay between pulses.

Simple and proven design allows offering of models for the most common as well as novel research needs. Excellent pulse energy stability and beam quality establish Ekspla lasers as ideal for tasks where high precision and exceptional performance are required.

Compact power supply and cooling units easily fit under tables thus saving valuable laboratory space.

For customer convenience the laser is controlled through either its RS232 type PC interface with LabView™ drivers (included) or a user-friendly remote control keypad. Both options ensure easy control of laser settings.

Double-Pulse Q-switched Lasers for PIV

FEATURES

- ▶ **Double-pulsed** output at 1064 nm, 532 nm, 355 nm or 266 nm
- ▶ Robust design allows easy switching between colors
- ▶ Control electronics allow operation from external trigger or internal trigger electronics
- ▶ Frame-delay (delay between pulses) variable from 30 ns to 7.5 ms
- ▶ Single power supply cabinet
- ▶ May be controlled by keypad or computer (RS232)
- ▶ LabView™ drivers are included
- ▶ Single output for 532 nm, 355 nm and 266 nm
- ▶ Separate output for 1064 nm
- ▶ Intelligent triggering:
 - Internal/external synchronization
 - Triggering for each laser independently
 - Single/double electrical pulse triggering

SPECIFICATIONS ¹⁾

Model	NL301D	NL303D
Pulse energy		
at 1064 nm	2 × 400 mJ	2 × 720 mJ
at 532 nm	2 × 180 mJ	2 × 340 mJ
at 355 nm	2 × 100 mJ	2 × 190 mJ
at 266 nm	2 × 40 mJ	2 × 90 mJ
Pulse energy stability (StdDev)		
at 1064 nm	<1 %	
at 532 nm	<1.5 %	
at 355 nm	<3 %	
at 266 nm	<3.5 %	
Pulse repetition rate	10 / 20 Hz ²⁾	
Pulse duration ³⁾	3–6 ns	
Delay between pulses ⁴⁾	30 ns–7.5 ms	
Power drift (StdDev)	±2 % at 1064 nm	
Beam divergence ⁵⁾	<0.5 mrad	
Optical pulse jitter (StdDev)	≤0.5 ns	
Focusability	<2x diffraction limit at 1064 nm	
Beam pointing stability	±50 μrad at 266 nm	
Linewidth	<1.4 cm ⁻¹ at 532 nm	
Beam profile	Top Hat in near field, near Gaussian in far field	
Beam diameter ⁶⁾	6 mm	8 mm
Polarization	horizontal, >90 % at 1064 nm	

PHYSICAL CHARACTERISTICS

Laser head (W × L × H)	320 × 820 × 220 mm
Power supply/cooling cabinet size (W × L × H)	555 × 600 × 460 mm (water-water cooling) (MR-9) 555 × 600 × 660 mm (air-water cooling) (MR-12)
Umbilical length	2.5 m

OPERATING REQUIREMENTS

Water consumption (max 20 °C)	<10 l/min
Ambient temperature	18–27 °C
Relative humidity	5–80 % (non-condensing)
Power requirements	208–230 V AC, single phase 60 Hz
Power consumption	<3 kVA × 2 = 5 kVA

¹⁾ Specifications are subject to changes without advance notice.

²⁾ 20 Hz is available, please inquire for detailed specifications.

³⁾ FWHM at 1064 nm.

⁴⁾ Variable by 125 ns step. Can be adjusted virtually to any value when externally triggered.

⁵⁾ Full angle at FWHM level.

⁶⁾ Measured at 1/e² level.

