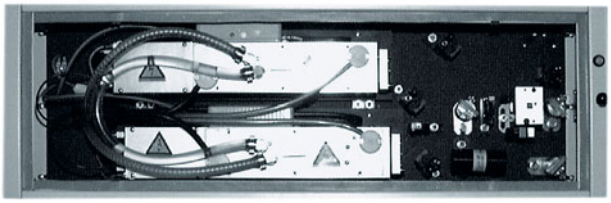
NL300D SERIES

DOUBLE PULSE Nanosecond Q-switched Nd:YAG Lasers' Systems for PIV

Stable output specifications, intelligent triggering and easy operation make **NL300D series lasers** an excellent choice for most liquid and many air-based PIV (particle image velocimetry) applications. Extremely low jitter of the optical pulse with respect to the sync pulse allows reliable synchronization of the laser with external equipment.

research needs. Excellent pulse energy stability and beam quality establish Ekspla lasers as ideal for tasks where high precision and exceptional performance are required. The compact power supply and cooling unit easily fits under tables and saves valuable lab space.

For customer convenience the laser is controlled through its RS232 type



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

Simple and proven design of the system allows offering of models for the most common as well as novel

PC interface with LabView drivers (included) or a user-friendly remote control pad. Both options allow easy control of laser settings.

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

FEATURES

- High output energy: **up to 360 mJ** at **532 nm**
- **Intelligent** triggering:
  - **Internal/external** synchronization
  - Triggering for each laser **independently**
  - **Single/double** electrical pulse triggering
- **Low** pulse timing **jitter**
- **10, 20** or **50 Hz** repetition rate
- Diode pumped version – **up to 1000 Hz** repetition rate
- Wide region of adjustable delay between pulses: **5 ns – 7.5 ms**
- **Excellent** pulse energy stability
- **Single** power supply
- **PC** control using RS232 and **LabView** drivers
- **Remote** control via keypad
- Low-energy adjustment mode
- **Water-water** or **water-air** cooling options

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SPECIFICATIONS

MODEL	NL220D	NL301D	NL301D50	NL303D
Max. pulse energy at 532 nm, mJ:	5	180	50	360/310 [8]
Pulse energy stability, % [1]	2	1.5	3	1.5
Long term energy drift, % [2]	3	5	5	5
Pulse duration (FWHM), ns [3]	26–28	4–6	4–6	4–6
Adjustable delay between pulses	From 5 ns to 7.5 ms			
Max. repetition rate, Hz	1000	20	50	10/20
Polarization at 532 nm	linear			
Optical pulse jitter, ns [4]	± 0.5			
Beam profile	TEM_{00}	"Hat-Top" in near and near Gaussian in far fields		
Beam diameter, mm	~2.5	~6	~6	~8
Beam height, mm	65	145–165	145–165	145–165
Beam divergence, mrad [5]	< 1.5	< 0.5	< 0.5	< 0.5
Beam pointing stability at 532 nm, μrad	±50	±50 / ±100 [8]	±100	±50 / ±100 [8]
PHYSICAL CHARACTERISTICS				
Laser head size (W×H×L), mm	210×145×730	210×140×670	210×140×670	210×140×670
Power supply/cooling cabinet size				
cooling water-water (W×H×L), mm	–	326×775×488	550×530×590	550×530×590
cooling water-air (W×H×L), mm	depends on chiller	555×840×800	–	555×840×800
Umbilical length, m	2.5			
OPERATING REQUIREMENTS				
Water consumption (max 20 °C), l/min	–	< 10	< 10	< 10
Room temperature, °C	15–30			
Relative humidity (noncondensing), %	20–80			
Voltage	208–240 VAC, 50/60 Hz			
	single phase	single phase	three phases	single phase
Power, kW	1	2.5 [6] / 4 [7]	4 [6], [7]	2.5 [6] / 4 [7]

[1] *At 532 nm, StDev, after 5 seconds of warm up time.*
[2] *StDev, 8 hours after 5 seconds of warm up time.*
[3] *At 532 nm, FWHM.*
[4] *With respect to syncpulse, StDev.*
[5] *Full angle at $1/e^2$.*
[6] *w-w = water cooling(water to water).*
[7] *w-a = air cooling(water to air).*
[8] *20 Hz version.*

Specifications are subject to changes without advance notice.

RELATED PRODUCTS

NL300 SERIES

NL300 series Q-switched Nd:YAG lasers are excellent choice for pumping of OPO/OPG:

- Up to 800 mJ pulse energy
- 3–6 ns pulse duration
- 10 or 20 Hz repetition rate
- Rugged sealed laser cavity
- Compact size
- Thermostabilized harmonics options
- PC control using RS232 and LabView drivers
- Remote control via keypad

NL310 SERIES

High energy nanosecond Q-switched Nd:YAG lasers are an excellent choice when high energy is required.

- Up to 1.6 J pulse energy
- 3–6 ns pulse duration
- Low jitter internal/external synchronization
- Thermostabilized harmonics options
- Robust and stable laser head
- PC control using RS232 and LabView drivers
- Remote control via keypad

Requests for custom made products are welcome !

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