

# LASERS FOR PIV

## **LDY300 PIV**

### High Repetition Rate Diode Pumped Q-switched Nd:YLF Lasers for PIV

The LDY300 PIV diode pumped, dual cavity, laser systems are ideally suited to imaging applications such as PIV and to pump applications. Output energies of up to 25mJ, 527nm per cavity at 1kHz are available.

The LD-527 PIV Series is an evolution of the well-established LDY range of lasers. With data gathered from years of use in the field, the next generation of diode pumped Nd:YLF lasers offers improved performance and reliability over its predecessor giving energies of up to 30mJ per cavity at 1kHz.

The lasers are built around a rugged self supporting Invar rail that bestows excellent mechanical and optical stability. This, coupled with the proprietary resonator design, leads to excellent output beams that are spatially and temporally extremely smooth and stable, giving rise to light sheets that offer almost identical shot to shot illumination.

[LD-527 PIV DATA SHEET](#)

The robust design of these lasers suits them to the harshest of industrial applications

and research applications alike.

The power supply and closed-circuit chiller are all housed in a compact rack. The system can be controlled either by the in-built LCD interface or via RS232 with the supplied software suite or DLL, and external triggering of the lasers is accessible via a TTL interface.

## PRODUCT RANGE



### FEATURES

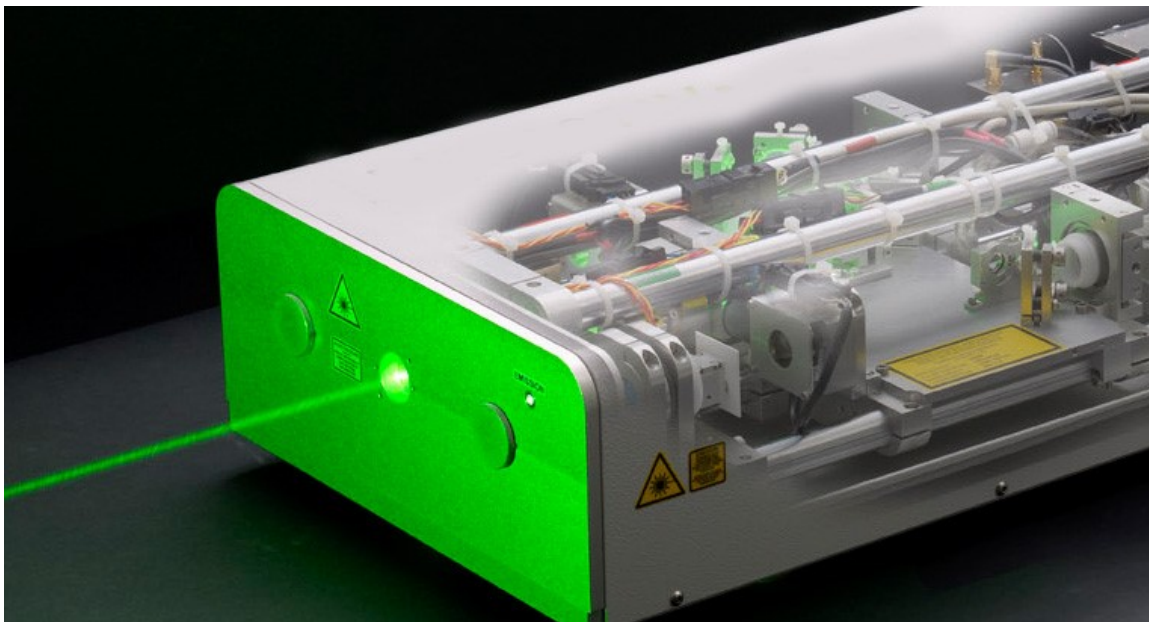
- High Energy at 527nm
- Rugged industrial design
- Field replaceable pump module
- Dual cavity system
- 0.2-20kHz continuously variable

### APPLICATIONS

- PIV
- Particle Sizing
- Ti:Sa Pumping
- Flow Visualisation
- Dye Laser Pumping

## LDY300 PIV Specification Highlights

Model	LDY 301	LDY 302	LDY 303	LDY 303HE	LD 30-527
Repetition Rate per laser head (kHz)	0.2-20	0.2-20	0.2-20	0.2-20	0.2-20
Output Energy at 1kHz, at 532nm per laser head (mJ)	10	15	20	25	30



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## LD-527 PIV SERIES

High Repetition Rate Nd:YLF Lasers for Time-Resolved PIV Applications

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LD-PIV ● ● ● ● ●

# LD-527 PIV Series

527nm Nd:YLF Lasers for High Speed Imaging Applications

## FEATURES

- **Improved beam quality for brighter light sheets**
- **Short pulse width**
- **Independent motorised attenuators to balance pulse energies easily**
- **Small footprint**
- **Efficient Q-switching**
- **Lightweight conduit**

## APPLICATIONS

- **PIV & Time-Resolved PIV**
- **Particle Sizing**
- **Flow Visualisation**

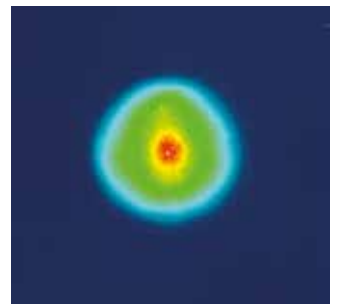


The **LD-527 PIV** series lasers are diode pumped, intra-cavity doubled, dual-cavity, Nd:YLF laser systems ideally suited to imaging applications such as PIV and pump applications. Output energies of up to 30mJ, 527nm per cavity at 1kHz are available.

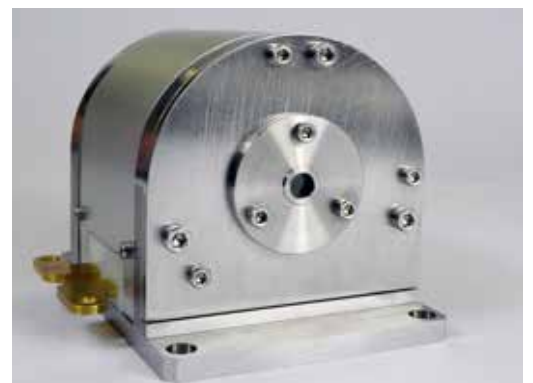
The lasers are built around a rugged self-supporting Invar rail that bestows excellent mechanical and optical stability. This, coupled with the proprietary resonator design, leads to excellent output beams that are spatially and temporally extremely smooth and stable, giving rise to light sheets that offer almost identical shot-to-shot illumination.

The system can be controlled either by the in-built LCD interface or via RS232 with the supplied software suite or dII. External triggering of the lasers is accessible via a TTL interface.

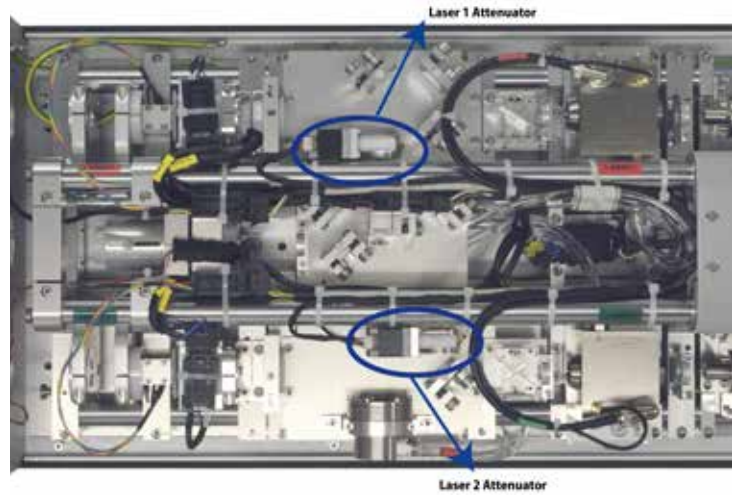
The LD-527 PIV lasers incorporate Litron's new diode pump module. This state-of-the-art module gives high homogeneity rod pumping, which, in turn, leads to a highly stable, uniform output.



Near field 527nm profile at 1kHz.



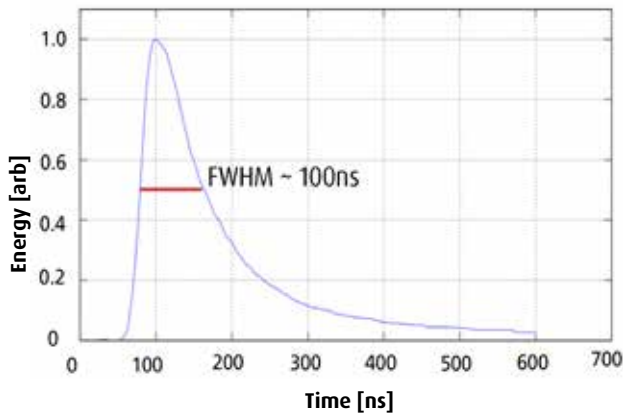
**Motorised Optical Attenuators** are fitted to both lasers. Each attenuator is controlled independently allowing complete pulse energy control of each laser. As the attenuators act on the output of the laser (using a half-wave plate and a polariser), beam parameters such as the spatial and temporal profiles, the  $M^2$  and the pulse length are unchanged by the attenuators.



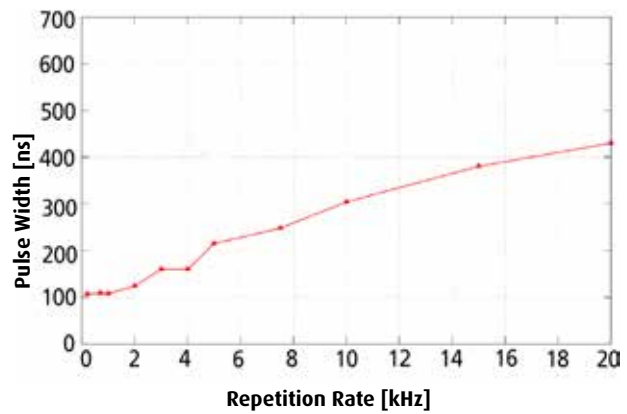
Litron Lasers manufactures both the **power supply units and chillers** for all LD-527 PIV lasers, thus providing the entire system. All systems have a detachable umbilical and carrying handles for added portability.

## PERFORMANCE DATA

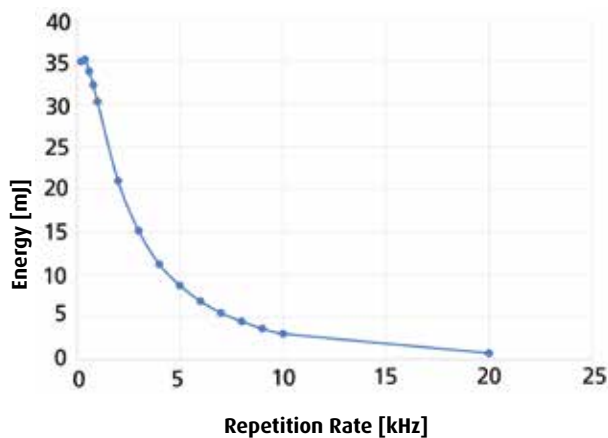
LD30-527 PIV Typical Pulse Shape



LD30-527 PIV Pulse Width



LD30-527 PIV Output Energy vs. Repetition Rate at 527nm



# The LD-527 PIV Series

## Dual Cavity Diode Pumped Q-switched Nd:YLF Lasers

### TECHNICAL DATA

Model	LD10-527 PIV	LD15-527 PIV	LD20-527 PIV	LD25-527 PIV	LD30-527 PIV
Repetition rate (each cavity) (kHz)	0.2-20	0.2-20	0.2-20	0.2-20	0.2-20
Output Energy at 1kHz at 527nm per laser head per pulse (mJ)	10	15	20	25	30
Pulse - pulse stability ( $\pm\%$ ) <sup>(4)</sup>	1	1	1	1	1
Beam diameter (mm) <sup>(4)</sup>	5	5	5	5	5
Beam divergence (mrad) <sup>(5)</sup>	<2.5	<2.5	<2.5	<2.5	<2.5
Pulse width @ 1kHz (ns)	<120	<120	<120	<120	<120
M <sup>2</sup>	<12	<12	<12	<12	<12
<b>Services</b>					
Voltage <sup>(1)</sup> (VAC)	220-250	220-250	220-250	220-250	220-250
Frequency <sup>(2)</sup> (Hz)	50 or 60	50 or 60	50 or 60	50 or 60	50 or 60
Power	Single Phase	Single Phase	Single Phase	Single Phase	Single Phase
Ambient <sup>(3)</sup> (°C)	5-35	5-35	5-35	5-35	5-35
Power Supply	19" 13U Rack	19" 13U Rack	19" 13U Rack	19" 13U Rack	19" 13U Rack
<b>Weights</b>					
Head (kg)	40	43	46	46	46
PSU (kg)	105	105	105	105	105
Umbilical 3.5m (kg)	5	5	5	5	5

(1) 110VAC option requires autotransformer to be specified on order.

(2) 50 or 60Hz to be specified on order.

(3) 0-80% non condensing atmosphere.

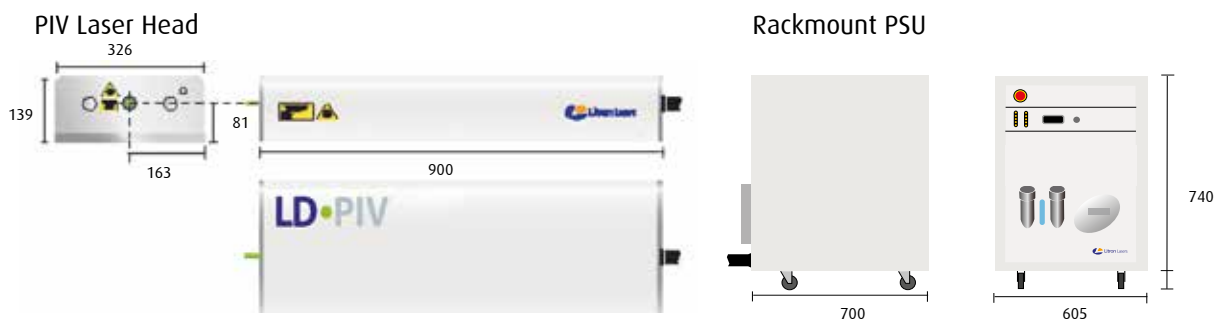
(4) Beam diameter is achieved with output telescope.

(5) Standard diameters quoted. Other diameters are available on request. In all cases M<sup>2</sup> is unchanged.

(5) At specified beam diameter.

### MECHANICAL DATA

All dimensions shown in mm



Our policy is to improve the design and specification of our products. The details given in this document are not to be regarded as binding.

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