

LD30-527 PIV

Diode Pumped Solid State Q-switched Nd:YLF Laser
High Repetition Rate Laser for Time-Resolved PIV Applications

Key Features

- High energy at 527nm
- 0-20kHz repetition rate
- Pulse width ≤ 110 ns at 1kHz
- Best in class average $M^2 \leq 9$
- Improved beam circularity at 1kHz
- Optimised for light sheets and PIV
- Rugged industrial design
- Fully detachable umbilical
- New high efficiency compact diode modules
- RS232 control with full software support

Applications

- PIV
- Ti:Sa pumping
- Flow visualisation
- Dye laser pumping

System benefits include

- Fully integrated power supply and chiller
- RS232 interface with GUI software included
- Ruggedised laser head for harsh environments
- Worldwide warranty and service



The new **LD30-527 PIV** 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 promises improved performance and reliability over its predecessor.

The optical configuration has been honed to maximise the intra-cavity mode volume, thus reducing peak power. Incorporating Litron's new and improved diode pump modules which are at the centre of the new design, this new optical layout remains mounted within the well proven and highly stable Invar rail structure. The laser head is housed within an IP54 rated case which enables use in many demanding environments. The portability between experimental setups has also been improved by supplying a fully detachable umbilical.

The exceptional stability of the laser is in the main part due to Litron's proprietary drive electronics which offers outstanding reliability year after year. The use of Litron designed RF drive electronics, ultra-stable water chiller and a fully featured software suite ensures that performance is guaranteed by having control over all critical components of the laser design.

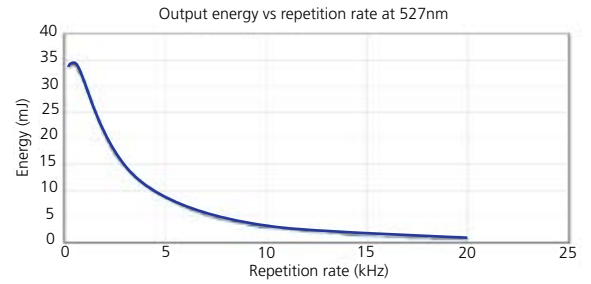
Having been designed and developed with the visualisation and pump-source markets in mind, the extremely smooth spatial and temporal beam profiles offer major advantages. This coupled with the exceptional stability enables light sheets to be formed with almost identical shot to shot illumination. Thin light sheets are possible to the industry best, average M^2 of less than nine.

TECHNICAL DATA

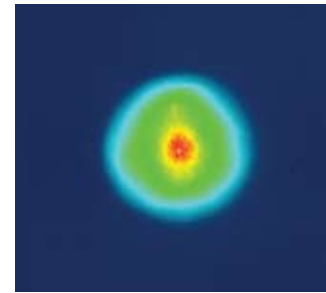
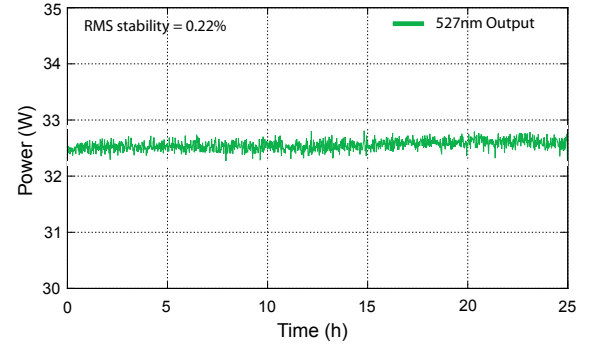
Model	LD30-527 PIV
Output energy at 1kHz at 527nm per laser head (mJ)	30
Max. output power at 3kHz at 527nm per laser head (W)	45
Parameter ⁽¹⁾	
Pulse to pulse stability ($\pm\%$)	1
Beam diameter (mm) ⁽²⁾	5
Beam divergence (mrad) ⁽³⁾	1.5
Pulse width at 1kHz (ns)	≤ 110
M ² x, M ² y	11, 7
SYSTEM	
Operation	
Control ⁽⁴⁾	RS232
Q-switch trigger and sync	TTL
Services	
Voltage (VAC)	220-250
Frequency (Hz)	50-60
Power	Single Phase
Ambient ($^{\circ}\text{C}$) ⁽⁵⁾	5-35
Ambient heating (kW)	<2.5
Power supply and integrated chiller	19" 13U Rack
Umbilical length (m)	3
Warm up time from cold start (mins)	<20
Weights	
Head (kg)	67
PSU including chiller (kg)	140

- (1) For each individual laser at 1kHz.
- (2) At output window.
- (3) At specified beam diameter.
- (4) Full software suite and programming tools supplied.
- (5) 0-80% non condensing atmosphere, laser head only.

LD30-527 PIV Performance curves at 527nm



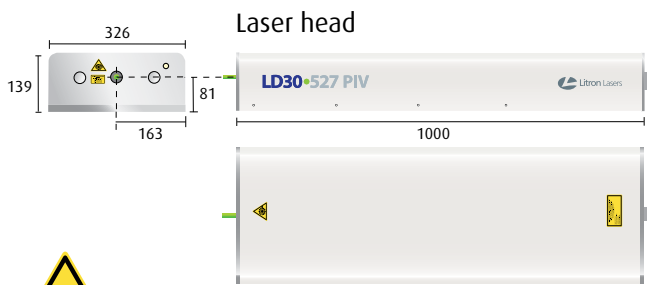
LD30-527 PIV Stability at 1kHz



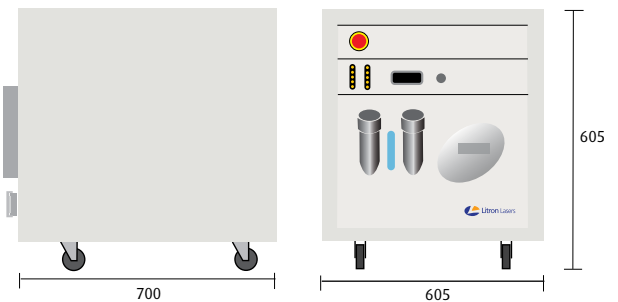
Near field 527nm profile at 1kHz.

MECHANICAL DATA

All dimensions shown in mm



Fully integrated rack-mounted PSU and chiller



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.

HEAD OFFICE
Litron Lasers Ltd
 8 Consul Road, Rugby,
 Warwickshire CV21 1PB,
 England.

T +44 (0)1788 574444
 F +44 (0)1788 574888
 E sales@litron.co.uk

 **Litron Lasers**
www.litronlasers.com