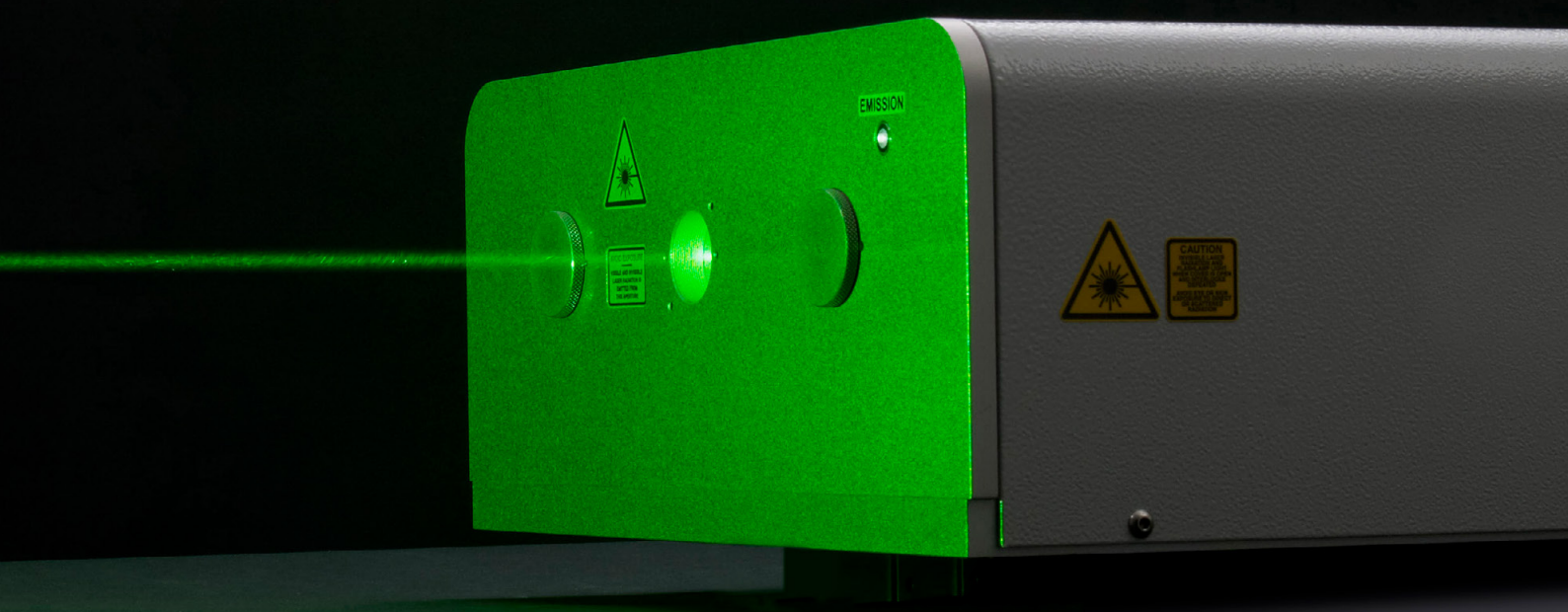
LASERS FOR PIV

2024

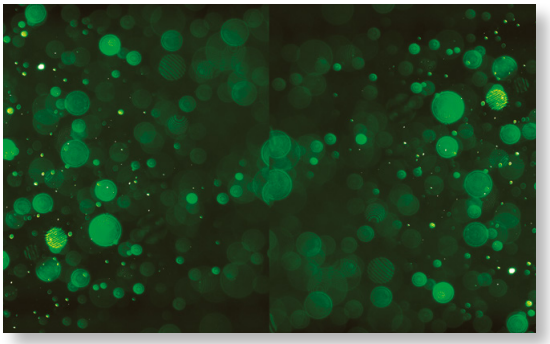


Litron Lasers

Lasers for PIV

Litron offers an extensive range of flashlamp-pumped and diode-pumped PIV laser systems. Output energies of up to 425mJ per laser per pulse and repetition rates of up to 200Hz for flashlamp systems and up to 50kHz for diode pumped systems are available.

All of the systems are twin head devices, meaning that the PIV laser head contains two totally independent lasers. The range of PIV systems is based around both the ultra-compact Nano series and the larger Invar-stabilised LPY and LD PIV series. The overriding factor that sets Litron's products apart is quality. This is evidenced not only in the product design and construction, but also in its performance.



In any imaging application the beam quality is of paramount importance as this determines the light sheet characteristics. By choosing a suitable resonator configuration the output beam quality can be controlled to give a very smooth spatial profile which remains homogeneous as it propagates through to the far field. Such resonators are almost always stable or stable-telescopic configuration.

Super-Gaussian-coupled resonators are not in general ideal for visualisation applications. These resonators produce very good super-Gaussian spatial profiles with low divergence in the far field, however, in the near to intermediate fields (within 10m of the laser output) the beam spatial profile often has significant structure. This phenomenon is typical of this resonator design and is a result of the physics of the system, making it unsuitable for forming uniform light sheets.

It is our philosophy to provide a laser system that suits an application. A 'one system fits all' approach, as offered by most manufacturers, does not allow the customer to optimise their process. For applications such as PIV, Litron has developed resonators that yield extremely uniform light sheets whose pulse to pulse structure remains constant. These are all based around our stable and stable-telescopic resonators.

The Nano PIV Series

Compact Lasers for PIV Applications

nanopiv

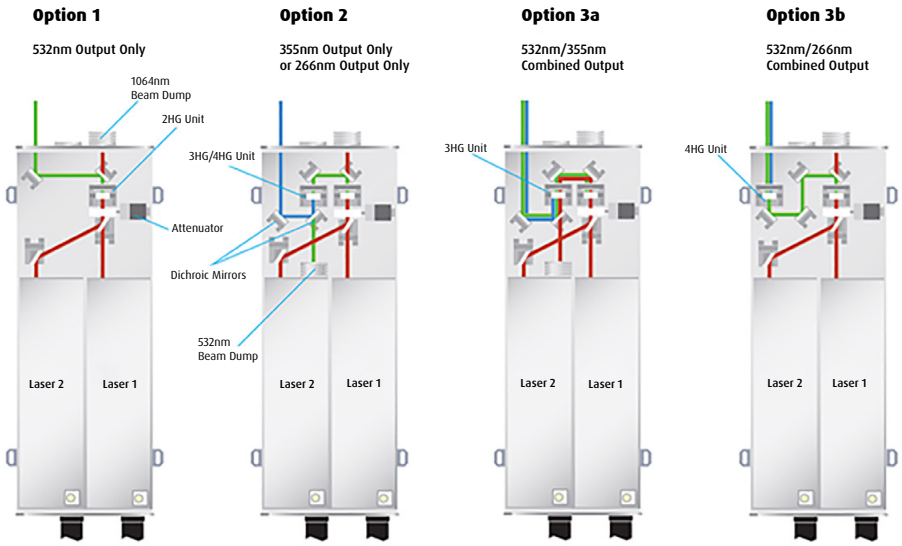
FEATURES

- ***Compact dual head design***
- ***Dedicated PIV laser head***
- ***Stable resonator design***
- ***Telescopic versions for low divergence***
- ***Rugged for industrial environments***
- ***3rd and 4th harmonics available for LIF and dual colour PIV***
- ***Repetition rates up to 100Hz***
- ***Energies up to 425mJ at 532nm***

Nano PIV

The construction of the Nano series of PIV laser systems is extremely robust. They have been developed as industrial tools that can be handled without worry of misalignment or damage. The PIV head is formed by an aluminium gauge-plate onto which two standard Nano series heads are mounted.

The output beams are combined by dielectric polarisers and then frequency doubled, and if desired can be frequency tripled, quadrupled or quintupled. Many of the Nano PIV systems are powered by a single power supply unit, making the overall package both powerful and portable.



Schematic showing the Nano PIV laser harmonic generation options.

There are two twin power supplies available, the LPU450 and the LPU550, the latter allowing outputs of up to 200mJ at 532nm at 15Hz from each laser. The laser systems are controlled via a remote controller or via RS232 interface. All trigger and synchronisation signals are TTL compatible and each laser is controllable entirely independently.

All Nano laser heads have a verified electronic intracavity safety shutter as standard, which ensures that the lasers cannot be started with the shutter open – an important safety feature.

The Nano L PIV range also includes high repetition rate models giving energies of up to 50mJ per pulse at 100Hz from each laser using two power supplies that are completely air cooled.

The Nano T PIV range has been designed incorporating stable telescopic resonators, giving very low divergence output beams that allow thinner light sheets to be formed than from conventional stable resonators.

For large area illumination, high energies are achieved with the birefringence-compensated TRL PIV range, which achieves output energies of up to 425mJ per pulse at 532nm, 10Hz. The footprint of the head is an extremely compact at 908mm x 270mm. These systems are supported either by twin LPU1000 power supplies or by a single 16U Rackmount.

TECHNICAL DATA

Model	Nano S 65-15 PIV	Nano S 30-15 PIV	Nano S 50-20 PIV	Nano S 30-30 PIV
Repetition Rate (Hz)	0-15	0-15	0-20	0-30
Pulse Energy Per Head (mJ) (1)	65	30	50	30
Parameter				
Pulse Stability (±%) (2)	2	2	2	2
Beam Diameter (mm)	4	3	4	3
Beam Divergence (mrad)	~2.5	~2.0	~2.5	~2.0
Pulse Width @ 1064nm (ns)	6-8	5-8	6-8	5-8
Pointing Stability (µrad)	<100	<100	<100	<100
Resonator Type	Stable	Stable	Stable	Stable
Lamp Life (pulses)	>5x10^7	>5x10^7	>5x10^7	>5x10^7
Timing Jitter (ns)	<0.5	<0.5	<0.5	<0.5
Services				
Voltage (VAC) (3)	90-250	90-250	90-250	90-250
Frequency (Hz) (4)	47-63	47-63	47-63	47-63
Power	Single Phase	Single Phase	Single Phase	Single Phase
Ambient (ºC) (5)	5-35	5-35	5-35	5-35
Consumption (W)	<350	<350	<350	<350
Cooling	Air	Air	Air	Air
Power Supply	LPU450	LPU450	LPU450	LPU550

All data provided for each laser head, unless specified otherwise.

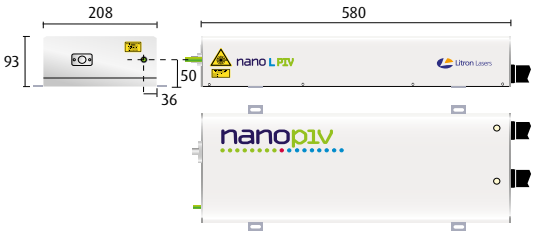
(1) At maximum repetition rate.
(2) Peak-to-Peak Energy - 99% of pulses.
(3) 110VAC option requires autotransformer to be specified on order.
(4) 50 or 60Hz to be specified on order.
(5) 0 to 80% non-condensing atmosphere.

Model	Nano L 200-15 PIV	Nano L 145-15 PIV	Nano L 120-20 PIV	Nano L 100-50 PIV	Nano L 50-50 PIV	Nano L 50-100 PIV
Repetition Rate (Hz)	0-15	0-15	0-20	0-50	0-50	0-100
Pulse Energy Per Head (mJ) (1)	200	145	120	100	50	50
Parameter						
Pulse Stability (±%) (2)	2	2	2	2	2	2
Beam Diameter (mm)	6.5	5	5	4	4	4
Beam Divergence (mrad)	~3.0	~3.0	~3.0	~2.0	~2.0	~2.0
Pulse Width @ 1064nm (ns)	6-9	6-9	6-9	5-8	5-8	5-8
Pointing Stability (µrad)	<100	<100	<100	<100	<100	<100
Resonator Type	Stable	Stable	Stable	Stable	Stable	Stable
Lamp Life (pulses)	>5x10^7	>5x10^7	>5x10^7	>5x10^7	>5x10^7	>5x10^7
Timing Jitter (ns)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Services						
Voltage (VAC) (3)	90-250	90-250	90-250	220-250	90-250	220-250
Frequency (Hz) (4)	47-63	47-63	47-63	47-63	47-63	47-63
Power	Single Phase	Single Phase	Single Phase	Single Phase	Single Phase	Single Phase
Ambient (ºC) (5)	5-35	5-35	5-35	5-35	5-35	5-35
Consumption (W)	<800	<650	<800	<2500	<800	<2500
Cooling	Air	Air	Air	Air	Air	Air
Power Supply	LPU550	LPU550	LPU550	2 x LPU1000	LPU550	2 x LPU1000

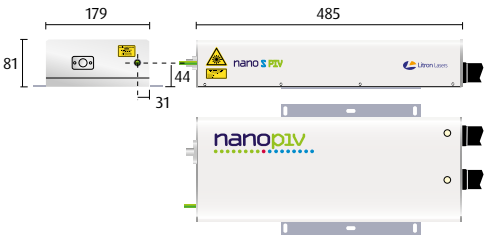
MECHANICAL DATA

All dimensions shown in mm

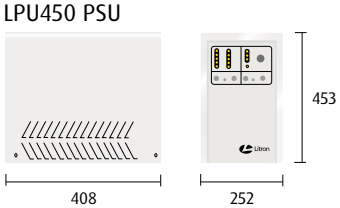
Nano L PIV Laser Head



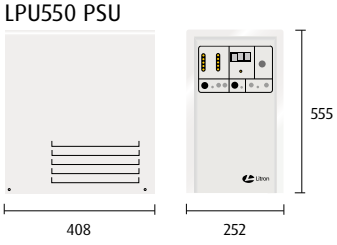
Nano S PIV Laser Head



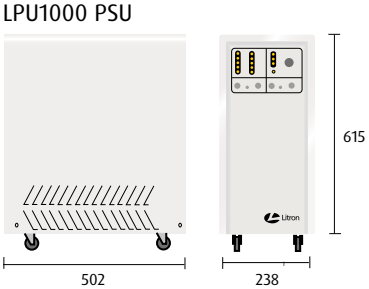
LPU450 PSU



LPU550 PSU



LPU1000 PSU



TECHNICAL DATA

Model	Nano T 180-15 PIV	Nano T 135-15 PIV
Repetition Rate (Hz)	15	15
Pulse Energy Per Head (mJ) (1)	180	135
Parameter		
Pulse Stability (±%) (2)	2	2
Beam Diameter (mm)	6.35	5
Beam Divergence (mrad)	0.8	0.8
Pulse Width @ 1064nm (ns)	7-9	7-9
Pointing Stability (µrad)	100	100
Resonator Type	Telescopic	Telescopic
Lamp Life (pulses)	>5x10^7	>5x10^7
Timing Jitter (ns)	0.5	0.5
Services		
Voltage (VAC) (3)	90-250	90-250
Frequency (Hz) (4)	47-63	47-63
Power	Single Phase	Single Phase
Ambient (°C) (5)	5-35	5-35
Consumption (W)	<800	<650
Cooling	Air	Air
Power Supply	LPU550	LPU550

All data provided for each laser head, unless specified otherwise.

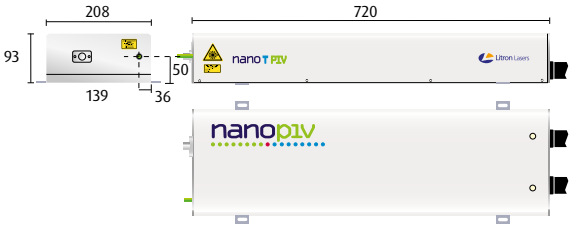
(1) At maximum repetition rate.
(2) Peak-to-Peak Energy - 99% of pulses.
(3) 110VAC option requires autotransformer to be specified on order.
(4) 50 or 60Hz to be specified on order.
(5) 0 to 80% non-condensing atmosphere.
(6) 200VAC available on request.

Model	TRL 425-10 PIV	TRL 350-10 PIV	TRL 400-15 PIV	TRL 300-20 PIV	TRL 250-20 PIV
Repetition Rate (Hz)	10	10	15	20	20
Pulse Energy Per Head (mJ) (1)	425	350	400	300	250
Parameter					
Pulse Stability (±%) (2)	3	3	3	3	3
Beam Diameter (mm)	9.5	8	9.5	9.5	6.35
Beam Divergence (mrad)	<2.5	<2.5	<2.5	<2.5	<2.5
Pulse Width @ 1064nm (ns)	9-12	9-12	9-12	9-12	9-12
Pointing Stability (µrad)	100	100	100	100	100
Resonator Type	Telescopic	Telescopic	Telescopic	Telescopic	Telescopic
Lamp Life (pulses)	>5x10^7	>5x10^7	>5x10^7	>5x10^7	>5x10^7
Timing Jitter (ns)	0.5	0.5	0.5	0.5	0.5
Services					
Voltage (VAC) (3)	220-250 (4)	220-250 (4)	220-250 (4)	220-250 (4)	220-250 (4)
Frequency (Hz) (4,6)	50-60 (5)	50-60 (5)	50-60 (5)	50-60 (5)	50-60 (5)
Power	Single Phase	Single Phase	Single Phase	Single Phase	Single Phase
Ambient (°C) (5)	5-35	5-35	5-35	5-35	5-35
Consumption (W)	<2500	<2500	<4500	<5500	<2500
Cooling	Air	Air	Water	Water	Air
Power Supply	2 x LPU1000	2 x LPU1000	16U Rack	16U Rack	2 x LPU1000

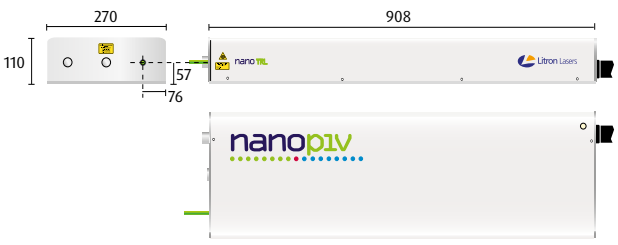
MECHANICAL DATA

All dimensions shown in mm.

Nano T PIV Laser Head



TRL PIV Laser Head



Rack-mount PSU

The Bernoulli PIV Series

Ultra Ruggedised Laser for PIV Applications in Demanding Environments

FEATURES

- ***Vibration and shock proof***
- ***Fully sealed laser head***
- ***2 year warranty***
- ***Ability to operate in all orientations***
- ***Compact size***
- ***Fast connections and start-up***
- ***Motorised attenuator***
- ***High frequency options***

Bernoulli PIV

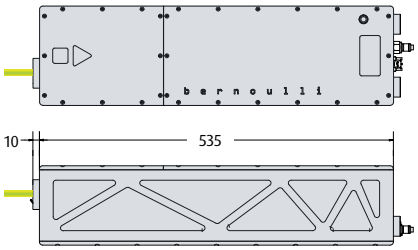
The Bernoulli PIV from Litron is the most advanced plug and play PIV laser system available today. It benefits from Litron's years of experience and the expertise gained from being the world's leading PIV laser manufacturer.

Thanks to its true turnkey operation and rugged, industrial construction, Bernoulli PIV is suited to operation in almost any environment.

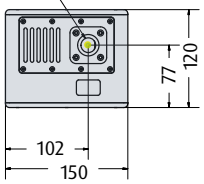
MECHANICAL DATA

All dimensions shown in mm

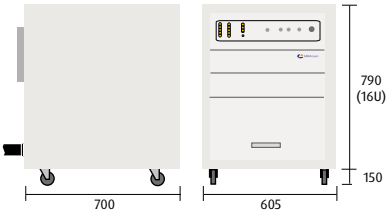
Laser Head



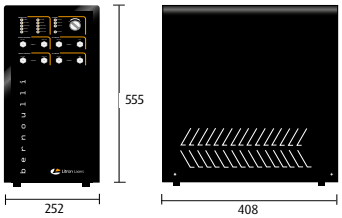
532nm Output



16U Rackmount PSU



LPU550B Power Supply



TECHNICAL DATA

Model	Bernoulli 200-15 PIV	Bernoulli 145-15 PIV	Bernoulli 120-20 PIV	Bernoulli 100-25 PIV	Bernoulli 100-50 PIV	Bernoulli 50-100 PIV
Wavelength (nm)	532	532	532	532	532	532
Repetition Rate (Hz)	0-15	0-15	0-20	0-25	50	100
Pulse Energy (mJ) (1)	200	145	120	100	100	50
Parameter						
Pulse Stability (±%) (2)	2	2	2	2	2	2
Pulse Width (ns) (3)	6-9	6-9	6-9	6-9	5-8	5-8
Beam Diameter (mm)	6.5	5	5	5	4	4
Beam Divergence (mrad) (4)	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5
Pointing Stability (µrad)	<100	<100	<100	<100	<100	<100
Far Field Beam Overlap (µrad)	±100	±100	±100	±100	±100	±100
Near Field Beam Overlap (µm)	±100	±100	±100	±100	±100	±100
Polarisation	Linear	Linear	Linear	Linear	Linear	Linear
Spectral Purity (%)	>99.5	>99.5	>99.5	>99.5	>99.5	>99.5
Services						
Voltage (VAC)	110-250	110-250	110-250	110-250	220-250	220-250
Frequency (Hz) (5)	50-60 (6)	50-60 (6)	50-60 (6)	50-60 (6)	50 or 60 (6)	50 or 60 (6)
Power	Single Phase	Single Phase	Single Phase	Single Phase	Single Phase	Single Phase
Operating Ambient (°C)	5-35	5-35	5-35	5-35	5-35	5-35
System Data						
Laser Head Sealing (6)	IP67	IP67	IP67	IP67	IP67	IPU67
Laser PSU Sealing	IP21	IP21	IP21	IP21	IP21	IP21
Power Supply	LPU550B	LPU550B	LPU550B	LPU550B	16U Rack	16U Rack
Cooling	Air	Air	Air	Air	Air	Air

(1) Per laser at maximum rep. rate.
(2) Peak-to-Peak Energy - 99% of pulses.
(3) At maximum energy 532nm (FWHM)
(4) Full angle for 90% of the output energy.
(5) 50 or 60Hz to be specified on order.
(6) With suitable connector set as an option, not suitable for full immersion.

The Plasma PIV Series

0-200Hz Pulsed Diode Pumped Nd:YAG Lasers for PIV Applications

FEATURES

- ***0-200Hz operation***
- ***M² <10***
- ***Fully diode pumped***
- ***Long diode life***
- ***Fully independent laser operation and timing***
- ***Smooth homogeneous profile***
- ***Optimised for high brightness light-sheets***

Plasma PIV

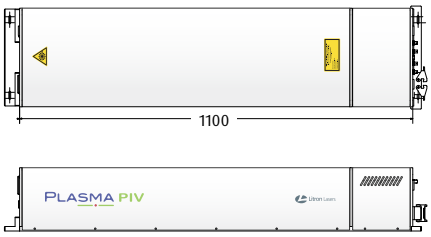
The Plasma PIV system is a fully diode-pumped dual-cavity laser system designed specifically for PIV applications. It comprises two fully independent frequency-doubled Nd:YAG lasers, beam combined to a common beam axis. These lasers each produce 532nm outputs of 100mJ per pulse up to 100Hz or 60mJ at 200Hz with pulse widths of ~10ns.

Pulsed diode pumping, ultra-stable mechanics, damage resistant optics and innovative design make the Plasma PIV system highly reliable. Offering a circular homogenous beam with a low M^2, it is an ideal tool for high brightness, high homogeneity light-sheet formation. With no services required except the mains electrical input, the Plasma PIV is a stand-alone turnkey system with an output suited to a huge range of PIV applications.

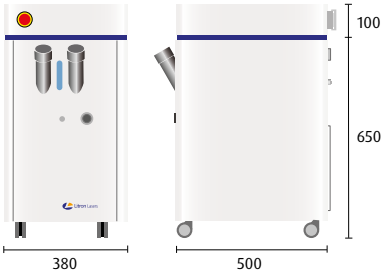
MECHANICAL DATA

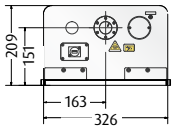
All dimensions shown in mm

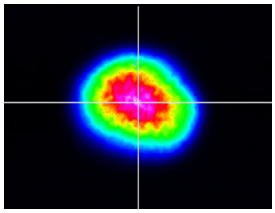
PIV Laser Head



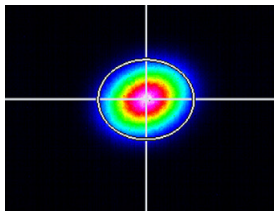
Free Standing PSU







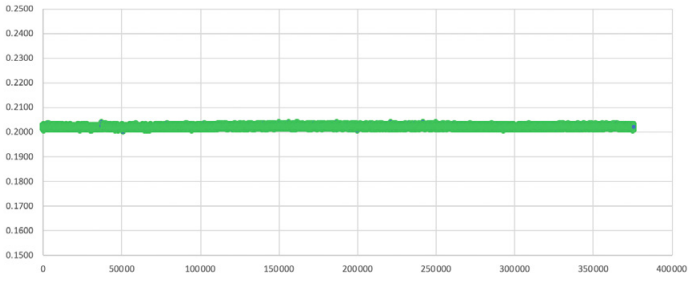
Near field 532nm profile at 100Hz



Far field 532nm profile at 100Hz

Pulse-to-Pulse Stability 532nm

Output energy (J) versus shot number/10



0.2% RMS

TECHNICAL DATA

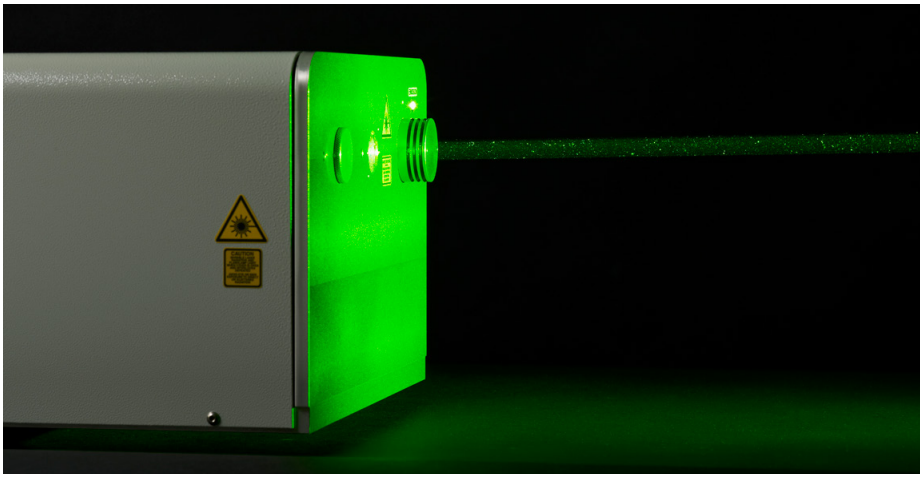
Model	Plasma 75-100 PIV
Repetition Rate (Hz) **Wavelength** (nm)	0-200 532
Pulse Energy (mJ) 10-100Hz 200Hz	 75 60
Parameter @ 100Hz M^2 Pulse Stability (±%) (1) Beam Diameter (mm) (2) Beam Divergence (mrad) (3) Pulse Width (ns) (4) Pointing Stability (µrad) Timing Jitter (ns) (5) Polarisation Approx. Diode Life (pulses)	 <10 <1.5 5 0.9 7-11 <70 <0.5 Linear $>10x10^9$
Operation Control (6) Q-switch Trigger and Sync (7)	 RS232 TTL
Services Voltage (VAC) Frequency (Hz) Power Ambient (°C) (8) Cooling (9)	 220-250 50 or 60 Single Phase 5-35 Air
Power Supply	Free Standing

All data provided for each laser head, unless specified otherwise.

(1) Peak-to-Peak Energy - 99% of pulses.
(2) 100% beam diameter at laser exit port.
(3) Full angle at specified beam diameter.
(4) FWHM – Fast photodiode and >1GHz oscilloscope.
(5) RMS with respect to Q-switch trigger input.
(6) Full software suite and programming tools supplied.
(7) Each laser head independently triggerable.
(8) 0 to 80% non-condensing atmosphere.
(9) Standard air-cooled or optional water-cooled chiller.

The LPY PIV Series

High Energy & High Repetition Rate Lasers for PIV



LPY•PIV • •

FEATURES

- ***Dedicated PIV laser head***
- ***Up to 200Hz repetition rates***
- ***High pulse energies up to 425mJ***
- ***True TEM_{00} output available***
- ***Stable resonator design***
- ***Telescopic versions for low divergence***
- ***3rd and 4th harmonics available for LIF and dual colour PIV***
- ***Line narrowed versions***
- ***Rugged industrial design***
- ***Motorised attenuator***

LPY PIV

For higher energy systems or systems where very low divergences are required, Litron offers twin configurations of its Invar-stabilised LPY series. Output energies of up to 425mJ per pulse of 532nm at repetition rates of up to 20Hz are available as standard, as are outputs of 100mJ at 532nm at 200Hz.

The LPY PIV series are based around a rugged, self-supporting, Invar rail. This imparts a large degree of mechanical and thermal stability, ideal for use in both research and industrial applications with little need for maintenance. The LPY PIV series can have a stable or a stable-telescopic resonator design, with the intra-cavity telescope yielding a lower divergence output.

All LPY700 series systems feature a birefringence compensating twin-rod design to give the best possible beam homogeneity, essential for the formation of uniform light sheets. The modular construction of the LPY series laser heads allow for easy customisation of systems. Options include line-narrowing etalons, injection seeding and third, fourth and fifth harmonic outputs.

TECHNICAL DATA

Model	LPY 300-20 PIV	LPY 400-20 PIV	LPY 200-30 PIV	LPY 325-15 PIV	LPY 425-15 PIV
Repetition Rate (Hz)	20	20	30	15	15
Pulse Energy Per Head (mJ)	300	400	200	325	425
Parameter					
Pulse Stability (±%) (1)	<3	<3	<3	<3	<3
Beam Diameter (mm)	8	9	6.5	8	9
Beam Divergence (mrad)	0.8	~3	0.8	0.8	~3
Pulse Width (ns)	7-11	7-11	7-11	7-11	7-11
Pointing Stability (µrad)	<70	<70	<70	<70	<70
Lamp Life (pulses)	$5x10^7$	$5x10^7$	$5x10^7$	$5x10^7$	$5x10^7$
Timing Jitter (ns)	<0.5	<0.5	<0.5	<0.5	<0.5
Services					
Voltage (VAC) (2)	220-250	220-250	220-250	220-250	220-250
Frequency (Hz) (3)	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
Water Temp Max. (°C)	Air Cooled (4)	20	20	20	20
Inlet Pressure (bar)	-	<2	<2	<2	<2
Cooling	Air	Water	Water	Water	Water
Power Supply	2 x LPU1000	16U Rack	16U Rack	16U Rack	16U Rack

All data provided for each laser head, unless specified otherwise.

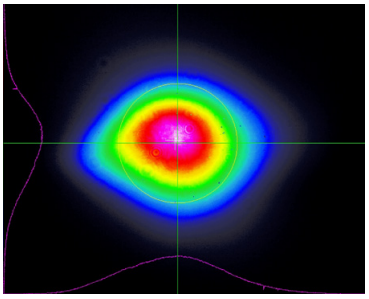
(1) Peak-to-Peak Energy - 99% of pulses.
(2) 110VAC option requires autotransformer to be specified on order.
(3) 50 or 60Hz to be specified on order.
(4) Ambient temperature 5-35°C, 0 to 80% non-condensing atmosphere.

TECHNICAL DATA

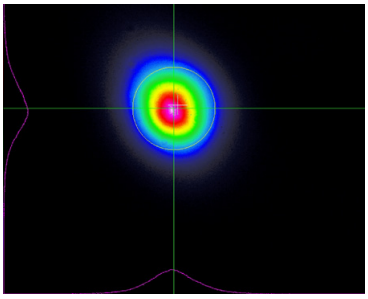
Model	LPY 100-100 PIV	LPY 50-200 PIV	LPY 200-100 PIV	LPY 100-200 PIV
Repetition Rate (Hz)	100	200	100	200
Pulse Energy Per Head (mJ)	100	50	200	100
Parameter				
Pulse Stability (±%) (1)	<3	<3	<3	<3
Beam Diameter (mm)	6.5	4	6.5	6.5
Beam Divergence (mrad)	~3	~3	~3	~3
Pulse Width (ns)	10-12	10-12	10-12	10-12
Pointing Stability (µrad)	<70	<70	<70	<70
Lamp Life (pulses)	10^8	10^8	10^8	10^8
Timing Jitter (ns)	<0.5	<0.5	<0.5	<0.5
Services				
Voltage (VAC) (2)	220-250	220-250	220-250	220-250
Frequency (Hz) (3)	50 or 60	50 or 60	50 or 60	50 or 60
Power	Single Phase	Single Phase	Single Phase	Single Phase
Water Temp Max. (°C)	20	20	20	20
Inlet Pressure (bar)	<2	<2	<2	<2
Cooling	Water	Water	Water	Water
Power Supply	16U Rack	16U Rack	2 x 16U Rack	2 x 16U Rack

All data provided for each laser head, unless specified otherwise.

(1) Peak-to-Peak Energy - 99% of pulses.
(2) 110VAC option requires autotransformer to be specified on order.
(3) 50 or 60Hz to be specified on order.



Near field 532nm profile at 200Hz

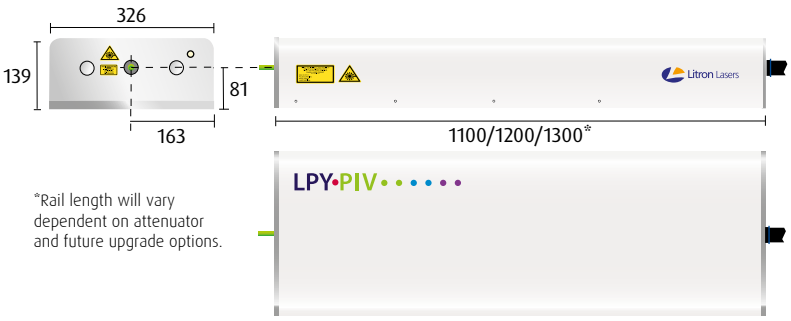


Far field 532nm profile at 200Hz

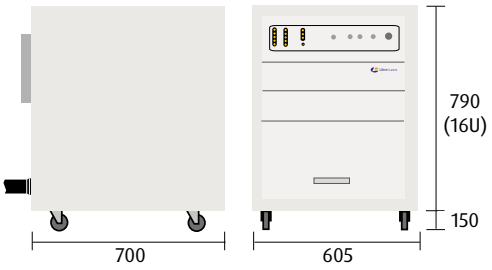
MECHANICAL DATA

All dimensions shown in mm

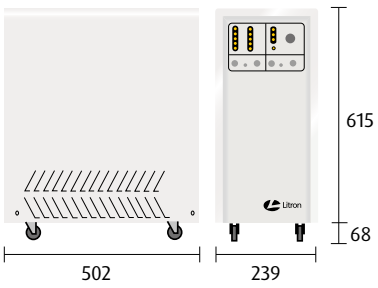
PIV Laser head Unit



16U Rackmount PSU



LPU1000 PSU



The LD-527 PIV Series

527nm Nd:YLF Lasers for High Speed Imaging Applications

LD527•PIV

FEATURES

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

The LD-527 PIV Series

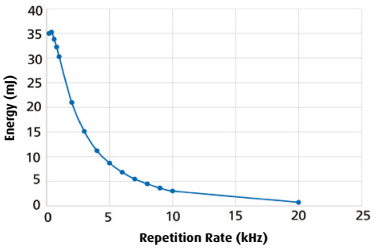
The LD-527 PIV series lasers are diode-pumped, intra-cavity doubled, dual-cavity, Nd:YLF laser systems ideally suited to imaging applications such as PIV and pump applications. Output energies of up to 30mJ, 527nm per cavity at 1kHz are available.

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. The resultant light sheets offer almost identical shot-to-shot illumination.

Motorised Optical Attenuators are fitted to both lasers as standard. The attenuators are controlled independently, allowing pulse energy to be varied precisely to balance outputs. The attenuators use a half-wave plate and polariser, which means the spatial and temporal profiles, the M^2 and the pulse width are unchanged.

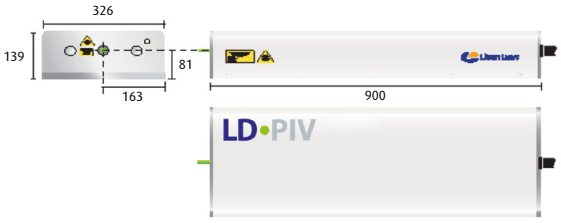
PERFORMANCE DATA

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



MECHANICAL DATA

PIV Laser Head



Freestanding PSU

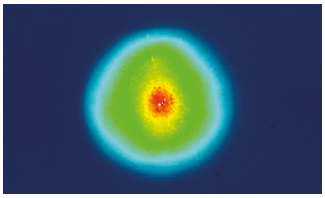
TECHNICAL DATA

Model	LD10-527 PIV	LD15-527 PIV	LD20-527 PIV	LD25-527 PIV	LD30-527 PIV
Repetition Rate	200Hz to 20kHz				
Pulse Energy @ 1kHz (mJ)	10	15	20	25	30
Pulse Stability (±%) (1)	1	1	1	1	1
Beam Diameter (mm) (2)	5	5	5	5	5
Beam Divergence (mrad) (3)	<2.5	<2.5	<2.5	<2.5	<2.5
Pulse Width @ 1kHz (ns)	<210	<160	<180	<140	<120
M^2	<12	<12	<12	<12	<12

All Models	
Services	
Voltage (VAC) (4)	220-250
Frequency (Hz) (5)	50 or 60
Power	Single Phase
Ambient (°C) (6)	5-35
Power Supply	Freestanding

All data provided for each laser head, unless specified otherwise.

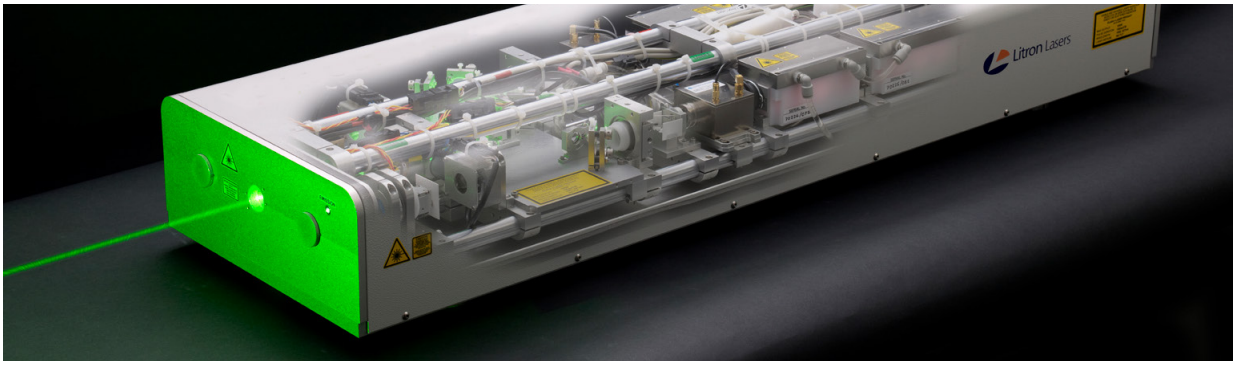
(1) Peak-to-Peak - 99% of pulses.
(2) Beam diameter is achieved with output telescope. Standard diameters quoted. Other diameters are available on request. In all cases M^2 is unchanged.
(3) At specified beam diameter.
(4) 110VAC option requires autotransformer to be specified on order.
(5) 50 or 60Hz to be specified on order.
(6) 0 to 80% non-condensing atmosphere.



Near field 527nm profile at 1kHz

The LD60-532 PIV Series

High Repetition Rate DPSS Nd:YAG Laser for Time Resolved PIV Applications



LD60•532PIV

FEATURES

- ***6mJ at 10kHz***
- ***Repetition rates of 50kHz with individual pulses***
- ***<0.5% RMS stability***
- ***Fully independent operation and timing***
- ***Circular beam profile***
- ***Optimised for high brightness light-sheets***

LD60-532 PIV

The LD60-532 PIV is a dual laser head system ideal for PIV applications. The system comprises two fully independent intra-cavity doubled Nd:YAG lasers, each giving outputs of 60W at 532nm, that are combined to a common beam axis. Both lasers are independently triggerable and controllable. The Invar rail around which the system is constructed ensures exceptional stability and the sealed head enclosure delivers continuous reliable operation in non-ideal environments.

The power supplies and chiller are fully integrated in a single unit. With no services required except the mains electrical input, the LD60-532 PIV is a stand-alone turnkey system with an output suited to many time-resolved PIV applications.

TECHNICAL DATA

Model	LD60-532 PIV
Total Output Power (W) (1)	120
Repetition Rate (kHz)	5-50
Pulse Energy @ 10kHz (mJ)	6.0
Parameters @ 10kHz	
Pulse Stability (±%) (2)	1
Beam Diameter (mm) (3)	5
Beam Divergence (mrad) (4)	<4
Beam Circularity (%)	>85
Pulse Width (ns)	<170
Pointing Stability (µrad)	<25
Long Term Stability (%rms)	1
Polarisation (5)	Linear
Operation	
Control (6)	RS232
Q-switch Trigger and Sync (7)	TTL
Services	
Voltage (VAC)	220-250
Frequency (Hz)	50 or 60
Power	Single Phase
Ambient (°C) (8)	5-35
Power Supply & Integrated Chiller	19" Rackmounted

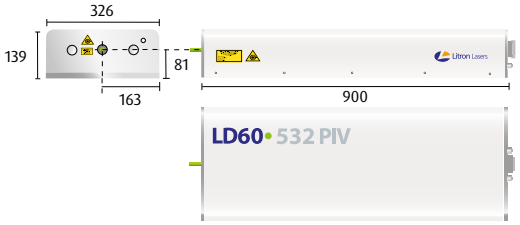
All data provided for each laser head, unless specified otherwise.

(1) Total output both laser heads.
(2) Peak-to-Peak Energy - 99% of pulses.
(3) Beam diameter is achieved with output telescope. Standard diameters quoted. Other diameters are available on request.
(4) At specified beam diameter.
(5) Lasers 1 and 2 have orthogonal polarisations at 532nm.
(6) Full software suite and programming tools supplied.
(7) Each laser head triggered independently.
(8) 0 to 80% non-condensing atmosphere.

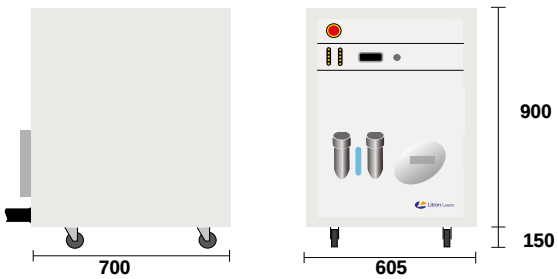
MECHANICAL DATA

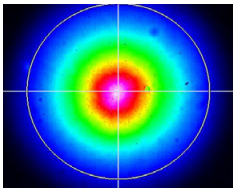
All dimensions shown in mm

PIV laser head

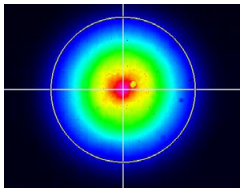


Rackmount PSU





Near field 532nm profile at 10kHz



Far field 532nm profile at 10kHz

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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