

## Surelite™ PIV

Nd:YAG Laser for Dual Pulse Applications



SURELITE™ PIV SYSTEM

SURELITE™ PIV SPECIFICATIONS

DESCRIPTION	SL I PIV	SLII PIV
Repetition Rate (Hz)	10 / 15	10
Energy <sup>1</sup> (mJ)		
1064 nm	450 / 400	650
532 nm	200 / 170	270
Pulsewidth <sup>2</sup> (nsec)		
1064 nm		5-7
532 nm		4-6
Divergence <sup>3</sup> (mrad)		0.6
Rod Diameter (mm)	6	7
Beam Pointing Stability (μrads)		100
Jitter <sup>4</sup> (±ns)		0.5
Energy Stability <sup>5</sup> (±%)		
1064 nm		2.0; 0.7
532 nm		3.5; 1.2
Power Drift <sup>6</sup> (±%)		
1064 nm		3.0
532 nm		5.0
Beam Spatial Profile (fit to Gaussian) <sup>7</sup>		
Near Field (<1 M)		0.70
Far Field (∞)		0.95
Max. deviation from fitted Gaussian <sup>8</sup> (±%)		
Near Field (<1 M)		30

Two lasers are built on a single compact platform, providing symmetrical output beam at 532 nm, that consists of two pulses with equivalent energy, beam uniformity and polarization. An alternative configuration is available if orthogonal output polarizations are required in consecutive pulses. Temporal separation can be varied from <10 nsec to >100 nsec to measure most flow distributions.

### SURELITE™ PIV FEATURES & BENEFITS

*Safety Interlocks to ensure correct water flow, level, and temperature*

*No need for an external water hook-up, the system is completely self-contained*

*A built-in TTL interface for convenient external control*

*A decoupled kinematic mounted resonator structure ensures long-term thermal and mechanical stability*

**Surelite™ PIV-** Continuum's turn-key PIV system

The Surelite™ PIV system is based on Continuum's proven Q-switch Nd:YAG technology. The system features a compact turn-key design providing 100's of mJ in each pulse at 532 nm.

The system offers excellent beam quality, long term stability and increased overall reliability. The ease of operation and safety features, as well as long lifetime, make the Continuum PIV system an excellent choice for your dual pulse application.

### NOTES

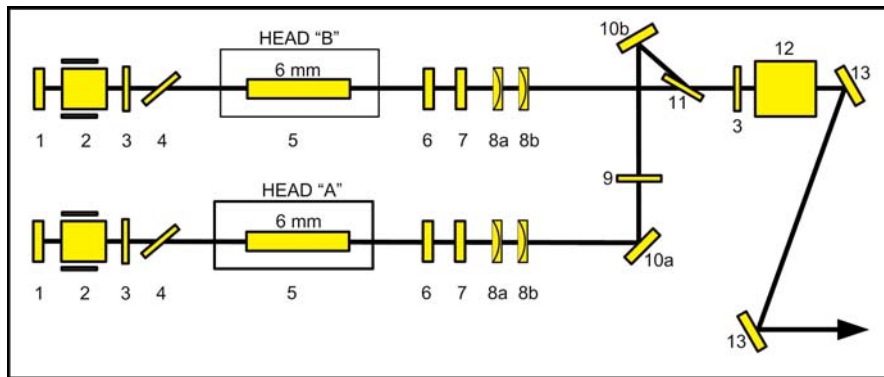
- Higher energy available with Powerlite Series
- Full width half max
- Full angle for 86% (1/e<sup>2</sup>) of energy
- With respect to external trigger
- The first value represents shot-to-shot for 99.9% of pulses, the second value represents RMS
- Average for 8 hours
- A least squares fit to Gaussian profile  
A perfect fit would have a coefficient of 1
- At beam center

All specifications at 1064 nm unless otherwise noted. As a part of our continuous improvement program, all specifications are subject to change without notice.

**MECHANICAL AND UTILITIES**

<b>Size</b>	Optical Head ( L x W x H )	996.9 x 457 x 298.4 mm (39.25 x 18 x 11.75 in.)
	Power Supply ( L x W x H )	622 x 282 x 508 mm ( 24.5 x 11.20 x 20.0 in. )
<b>Weight</b>	Optical Head	78.2 kg (172 lbs)
	Power Supply	44 kg (96 lbs ) each of two
<b>Water Service</b>		Closed loop water to air heat exchanger: external cooling water not required (10 oz. DI water per PS)
<b>Electrical Service (Specify on Order)</b>		220/240 V, single $\Phi$ , 10 A
		208 V, single $\Phi$ , 10 A
<b>Room Temperature</b>		18 to 29°C (64 to 85°F)
<b>Umbilical Length</b>		3.18 m (10.4 ft )

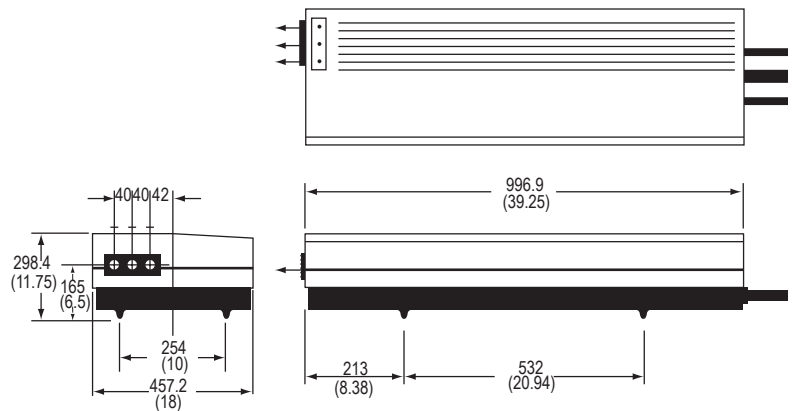
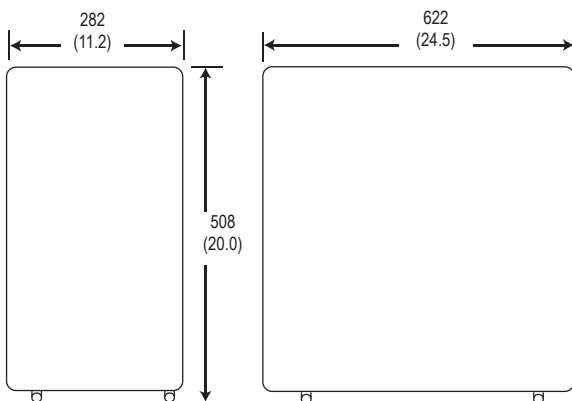
**SURELITE™ PIV OPTICAL LAYOUT**



1. HR mirror
2. Pockels Cell
3. Quarter Wave Plate
4. Dielectric Polarizer
5. Head
6. Gaussian Mirror Output Coupler
7. Compensator
8. Shaping Lenses
9. Half Wave Plate
10. 45 degree mirror, 1064 nm
11. Polarizer, 199-0055
12. SHG crystal in a sealed oven
13. 45 degree mirror, 532 nm

**SURELITE™ PIV PHYSICAL LAYOUT**

All dimensions in mm (inches)



**OPTICAL HEAD PACKAGE**

**SURELITE™ PIV POWER SUPPLY PACKAGE**  
System includes two power supplies

