

## Powerlite™ Precision II 8000



### PRECISION II FEATURES & BENEFITS

<5 Minutes to reach full energy  
at all wavelengths

<30 Minutes to reach  $\leq \pm 30 \mu\text{rads}$   
beam pointing stability

Can be injection seeded  
for narrow bandwidth allowing  
pumping of a narrow band OPO,  
mixing with a dye laser, or for  
high resolution experiments

Laser head can be readily  
removed for lamp changes and  
replaced without realignment

Incorporates Gaussian optics  
pioneered by Continuum®  
to provide high spatial  
uniformity in the beam

Laser package physically bolts  
to tunable laser products such as  
ND6000, Panther® EX OPO or  
Sunlite™ EX OPO for enhanced  
stability and ease of use

Fully CE certified

FLASHLAMP PUMPED Nd:YAG

POWERLITE™ 8000 SPECIFICATIONS

DESCRIPTION	8000	8010	8020	8030	8050
Repetition Rate (Hz)	10	10	20	30	50
Energy (mJ)					
1064 nm	1200	1650	1200	650	550
532 <sup>1</sup> nm	600	800	550	300	210
355 <sup>2</sup> nm	310	450	300	150	95
266 nm	120	150	80	50	30
Pulsewidth <sup>3</sup> (nsec)					
1064 nm	6-8	6-8	6-8	7-9	7-9
532 nm	5-7	5-7	5-7	6-8	6-8
355 nm	5-7	5-7	5-7	6-8	6-8
266 nm	5-7	5-7	5-7	6-8	6-8
Linewidth <sup>4</sup> (cm <sup>-1</sup> )					
Standard	1	1	1	1	1
Injection Seeded, SLM	0.003	0.003	0.003	0.003	0.003
Divergence <sup>5</sup> (mrad)	0.45	0.45	0.45	0.5	0.5
Beam Pointing Stability <sup>6</sup> ( $\pm\mu\text{rad}$ )	30	30	30	30	30
Warm up time <sup>7</sup> (<min)	5	5	5	5	5
Jitter <sup>8</sup> ( $\pm\text{ns}$ )					
Unseeded	0.5	0.5	0.5	0.5	0.5
Seeded	1.0	1.0	1.0	1.0	1.0
Energy Stability <sup>9</sup> ( $\pm\%$ )					
1064 nm	2.5; 0.8	2.5; 0.8	2.5; 0.8	3.0; 1.0	3.0; 1.0
532 nm	3.5; 1.2	3.5; 1.2	3.5; 1.2	4.5; 1.5	4.5; 1.5
355 nm	4.0; 1.3	4.0; 1.3	4.0; 1.3	5.0; 1.7	5.0; 1.7
266 nm	10; 3.3	10; 3.3	10; 3.3	10; 3.3	10; 3.3
Power Drift <sup>10</sup> ( $\pm\%$ )					
1064 nm	3.0	3.0	3.0	5.0	5.0
532 nm	5.0	5.0	5.0	6.0	7.0
355 nm	5.0	5.0	5.0	6.0	8.0
266 nm	8.0	8.0	8.0	8.0	8.0
Beam Spatial Profile (Fit to Gaussian) <sup>11</sup>					
Horizontal Near Field (<1m)	0.7	0.7	0.7	0.7	0.7
Far Field ( $\infty$ )	0.95	0.95	0.95	0.95	0.95
Max Deviation from fitted Gaussian <sup>12</sup> ( $\pm\%$ )					
Near Field (<1m)	40	40	40	40	40
Service Requirements					
220 or 240 VAC, single $\Phi$	10A	11A	16A	15A	21A
208 VAC, 3 $\Phi$	6A	7A	10A	9A	13A
Water GPM at 40-60 PSI	1-2	1-2	1-2	1-2	1-2

### NOTES

- Using Type II doubler
- Using Type I doubler
- FWHM full width half max
- FWHM ( $1\text{cm}^{-1} = 30\text{ GHz}$ )
- Full angle for 86% ( $1/e^2$ )
- 99.9% shots will be  $\leq \pm 30 \mu\text{rads}$  with  $\Delta T$  room  $\leq \pm 3^\circ\text{C}$
- Time to reach full 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 with  $\Delta T \pm 3^\circ\text{C}$
- A least squares fit to a Gaussian profile  
A perfect fit would have a coefficient of 1
- Within FWHM points near field at 1 meter

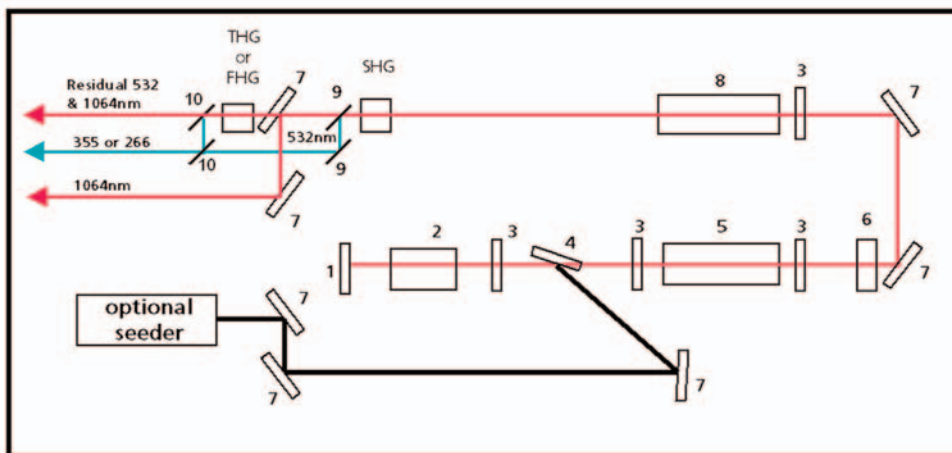
All specifications at 1064 nm unless otherwise noted.  
As a part of our continuous improvement program, all specifications are subject to change without notice.

The **Powerlite™ Precision II 8000** series is the no compromise laser source for applications where energy and beam quality are required. The Precision II 8000 series is the ideal pump source for OPO's such as Continuum's Sunlite™ EX OPO, or the Panther® EX OPO, or a dye laser such as ND6000. Gaussian mirror coupled resonator is optimally mode filled for maximum energy extraction allowing amplification to >1.6 J / pulse. The Gaussian mirror coupled resonator can be injection seeded (US Patent # 4,918,704) for narrow bandwidth.

### MECHANICAL AND UTILITIES

Size	Optical Head (L x W x H)	1190 x 457 x 300 mm (46.8 x 18 x 11.75 in)
	Power Supply (L x W x H)	715 x 622 x 721 mm (28.2 x 24.5 x 28.4 in)
Water	Service	1 - 3 GPM (gallons / minute) at 10 - 40 PSI pressure drop
	Temperature	<22° C / 70° F (higher flow rate for higher temperature)
Electrical Service		220 or 240 VAC, single $\Phi$ 16 to 20 A
		208 VAC , 3 F, 18 A / $\Phi$
Room Temperature		18 to 30° C / 65 to 87° F
Umbilical Length		3.81 m (12.5 ft)

### POWERLITE™ PRECISION II 8000 OPTICAL LAYOUT



1. Rear Mirror
2. Pockels Cell
3. 1/4 Wave Plate
4. Dielectric Polarizer
5. Oscillator Head
6. Output Coupler
7. IR Mirror
8. Amplifier Head
9. Dichroics, 532 nm
10. Dichroics, 355 nm or 266 nm

### POWERLITE™ PRECISION II 8000 PHYSICAL LAYOUT

All dimensions in mm (inches)  
Legs adjustable  $\pm$  12 mm

