

Surelite[™] The Proven Performance and Reliability Leader



SURELITE[™] FEATURES & BENEFITS

RS-232 or TTL interface for remote or local operation

Water to air heat exchanger eliminates the need for external water cooling

Gaussian optics incorporated to provide low divergence and high spatial uniformity in beam

Graphite resonator structure ensures long-term thermal and mechanical stability

SURELITE[™] SPECIFICATIONS

DESCRIPTION	I-10	I-20	I-30	II-10	II-20	III-10
Repetition Rate (Hz)	10	20	30	10	20	10
Energy (mJ)						
1064 nm	450	420	380	650	550	850
532 ¹ nm	200	160	130	300	250	425
355 nm	65/100 ²	60/100 ²	25/70 ²	100/160 ²	70/120 ²	165/225 ²
266 nm	60	45	30	80	60	100
Pulsewidth ³ (nsec)						
1064 nm	5-7	5-7	5-7	5-7	5-7	4-6
532 nm	4-6	4-6	4-6	4-6	4-6	3-5
355 nm	4-6	4-6	4-6	4-6	4-6	3-5
266 nm	4-6	4-6	4-6	4-6	4-6	3-5
Linewidth (cm ⁻¹)						
Standard	1	1	1	1	1	1
Injection Seeded ⁴	0.005	0.005	0.005	0.005	0.005	0.005
Divergence ⁵ (mrad)	0.6	0.6	0.6	0.6	0.6	0.6
Rod Diameter (mm)	6	6	6	7	7	9.5
Pointing Stability (±μrad)	30	50	70	30	50	50
Jitter ⁶ (±ns)	0.5	0.5	0.5	0.5	0.5	0.5
Energy Stability ⁷ (±%)						
1064 nm	2.0; 0.7	2.0; 0.7	2.0; 0.7	2.5; 0.8	2.5; 0.8	2.5; 0.8
532 nm	3.5; 1.2	3.5; 1.2	3.5; 1.2	3.5; 1.2	3.5; 1.2	3.5; 1.2
355 nm	4.0; 1.3	4.0; 1.3	4.0; 1.3	4.0; 1.3	4.0; 1.3	4.0; 1.3
266 nm	7.0; 2.3	7.0; 2.3	7.0; 2.3	7.0; 2.3	7.0; 2.3	7.0; 2.3
Power Drift ⁸ (±%)						
1064 nm	3.0	3.0	3.0	3.0	3.0	3.0
532 nm	3.0	3.0	3.0	6.0	6.0	5.0
355 nm	3.0	3.0	3.0	6.0	6.0	5.0
266 nm	6.0	6.0	6.0	8.0	8.0	8.0
Beam Spatial Profile ⁹						
Near Field (<1 m)	0.70	0.70	0.65	0.70	0.65	0.70
Far Field (∞)	0.95	0.95	0.90	0.95	0.90	0.95
Deviation from Gaussian ¹⁰						
Near Field (<1 m)	30	30	35	30	35	30

Surelite[™] is the most imitated Nd:YAG laser design in the industry.

Surelite[™] lasers provide proven high performance and reliability at a very reasonable price. Over 3,000 Surelites are in operation throughout the world today in Scientific, Industrial and Medical applications. Surelites are being used for remote sensing, spectroscopic analysis, Particle Image Velocimetry (PIV), machining, marking, and biological investigations. Excellent beam quality and unsurpassed output energies make Surelite[™] the perfect choice for pumping OPOs, dye lasers and Ti:sapphire lasers.

FLASHLAMP PUMPED Nd:YAG

NOTES

1. With Type II doubler
2. High Energy UV option with Type I doubler
3. Full width, half maximum
4. Injection seeding reduces energy by 20 %
5. Full angle for 86% of energy
6. With respect to external trigger
7. The first value represents shot-to-shot for 99.9% of pulses, the second value represents RMS.
8. Average for 8 hours with $\Delta T_{\text{room}} < \pm 3 \text{ } ^\circ\text{C}$
9. A least squares fit to a Gaussian profile.
A perfect fit would have a coefficient of 1
10. Maximum deviation at beam center (±%)

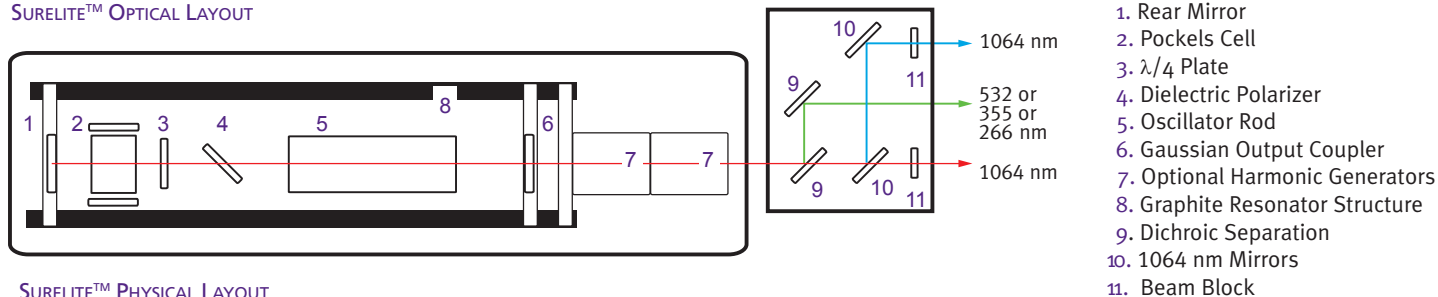
All specifications at 1064 nm unless otherwise noted. As a part of our continuous improvement program, all specifications are subject to change without notice.

The Surelite™ I, II and III all feature a simple and efficient single rod oscillator design. The Gaussian mirror-coupled resonator is optimally mode filled for maximum energy extraction. A unique rod design, proprietary Q-switch technology and Continuum's diffuse reflector technology all contribute to the Surelite's efficiency and high performance.

MECHANICAL AND UTILITIES

Size	Optical Head (L x W x H)	775 x 178 x 190 mm (30.5 x 7.0 x 7.5 in.)
	Power Supply (L x W x H)	622 x 282 x 508 mm (24.5 x 11.20 x 20.0 in.)
Weight	Optical Head	24 kg (52 lbs)
	Power Supply	44 kg (96 lbs)
Water Service		Closed loop water to air heat exchanger: external cooling water not required (1 gal deionized water)
Electrical Service		220/240 V, single Φ , 10 A
		208 V, single Φ , 10 A
Room Temperature		18.3 to 29.4°C (60 to 85°F)
Umbilical Length		3.18 m (10.4 ft)

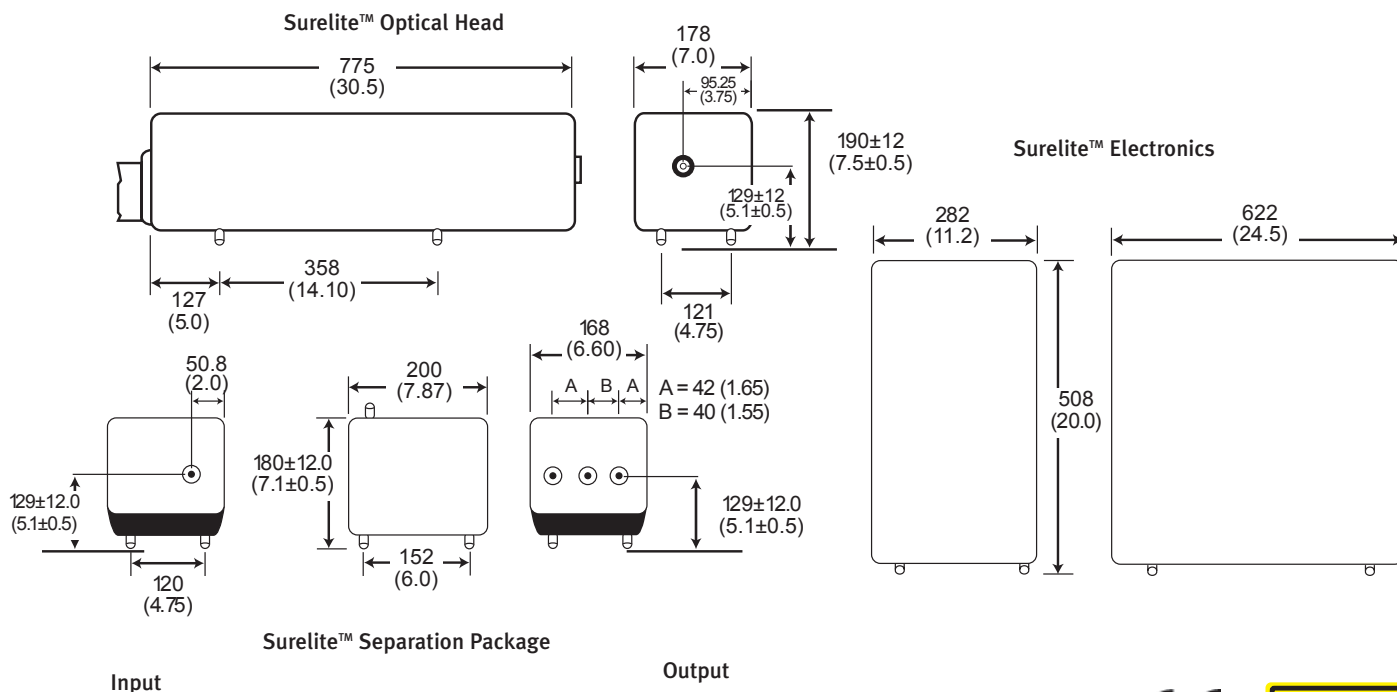
SURELITE™ OPTICAL LAYOUT



1. Rear Mirror
2. Pockels Cell
3. $\lambda/4$ Plate
4. Dielectric Polarizer
5. Oscillator Rod
6. Gaussian Output Coupler
7. Optional Harmonic Generators
8. Graphite Resonator Structure
9. Dichroic Separation
10. 1064 nm Mirrors
11. Beam Block

SURELITE™ PHYSICAL LAYOUT

All dimensions in mm (inches)



Input

Output

