

Powerlite™ DLS 8000



Powerlite DLS 8000 Series

The Powerlite Series of high energy YAG lasers is known for its beam quality, reliability, and ease of use. The New DLS (Digital Laser Source) Series remains consistent with the Continuum approach to laser design, keeping the features that have made it so popular, and adding new capabilities to enhance its performance and utility.

The DLS power supply is compact and quiet, taking up half the space of the one it replaces. The components are modular and rack mounted to simplify maintenance and service. It uses distributed intelligence, with microprocessors in both the laser head and power supply. Communications from the head to the supply are digital and much more reliable than TTL and analog inputs.



A new cooling group with active digital control has been added for more accurate monitoring of pump chamber temperatures. Better water management to the laser head lowers pump chamber operating temperatures for improved performance and reliability.

The complete control of all functionality is made possible through a digital interface, thus eliminating the need for knobs or switches.

A powerful Windows®-based Graphical User Interface is standard for all Powerlite DLS systems. An optional touch screen remote control is available, as are LabView drivers.

High Energy Nd:YAG
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Distributed intelligence, with microprocessors in both the laser head and power supply for more precise system control

Rack mounted and modular components for easier maintenance and service

New cooling group with active digital control for accurate temperature monitoring and improved thermal management

Standard, powerful Windows®-based Graphical User Interface for complete control of all system functionality

LabView drivers available

Powerlite DLS 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 ¹ nm	600	800	550	300	210
355 ² nm	310	450	300	150	95
266 nm	120	150	80	50	30
Pulsewidth ³ (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 ⁴ (cm ⁻¹)					
Standard	1	1	1	1	1
Injection Seeded, SLM	0.003	0.003	0.003	0.003	0.003
Divergence ⁵ (mrad)	0.45	0.45	0.45	0.5	0.5
Beam Pointing Stability ⁶ (±μrad)	30	30	30	30	30
Beam Diameter (mm)	9	9	9	7	7
Jitter ⁷ (±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 ⁸ (±%)					
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 ⁹ (±%)					
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) ¹⁰					
Horizontal Near Field (<1m)	0.7	0.7	0.7	0.7	0.7
Far Field (∞)	0.95	0.95	0.95	0.95	0.95
Max Deviation from fitted Gaussian ¹¹ (±%)					
Near Field (<1m)	40	40	40	40	40
Service Requirements					
208-240 VAC, single Φ	10A	11A	16A	16A	17A
Water GPM at 10-40 PSI	1-2	1-2	1-2	1-2	1-2
Polarization					
1064 nm	----- Horizontal -----				
532 nm	----- Vertical -----				
355 nm	----- Horizontal -----				
266 nm	----- Horizontal -----				



Notes

1. Using Type II doubler
2. Using Type I doubler
3. FWHM full width half max
4. FWHM (1cm⁻¹ = 30 GHz)
5. Full angle for 86% (1/e²)
6. 99.9% shots will be <±30 μrads with ΔT_{room} <±3°C
7. With respect to external trigger
8. The first value represents shot-to-shot for 99.9% of pulses, the second value represents RMS
9. Average for 8 hours with ΔT±3°C
10. A least squares fit to a Gaussian profile. A perfect fit would have a coefficient of 1.
11. Within FWHM points near field at 1 meter

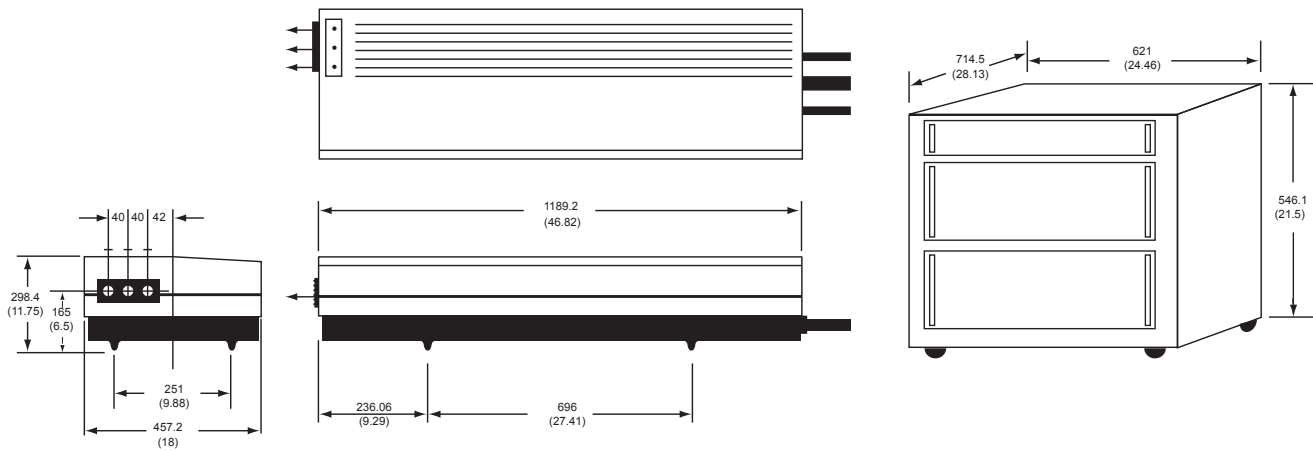
All specifications at 1064 nm unless otherwise noted. As a part of our continuous improvement program, all specifications are subject to change without notice.

Powerlite DLS 8000 System Requirements

Size	Optical Head (LxWxH)	1189.2 x 457.2 x 298.4 mm (46.82" x 18" x 11.75")
	Power Supply (LxWxH)	714.5 x 621 x 546.1 mm (28.13" x 24.46" x 21.5")
Water	Service	1-2 GPM (gallons/minute) at 10 - 40 PSI pressure drop
	Temperature	<22° C / 70° F (higher flow rate for higher temperature)
Electrical Service		200 - 240 VAC, single ϕ , 50/60 Hz
Room Temperature		18 to 30° C / 65 to 87° F
Umbilical Length		5 m (16.4 ft)

Powerlite DLS 8000 Physical Layout

All dimensions are in mm (inches)



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