

POWERLITE 9000

High-Energy pulsed Nd:YAG lasers
with excellent beam quality and versatility



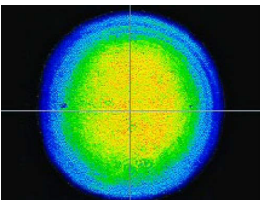
MAIN FEATURES

- Up to 3 J @ 1064 nm
- Robust and field-proven technology
- Barium sulfate diffuser for improved beam uniformity and pump efficiency
- Flashlamp warranty up to 50 million shots for operation without downtime
- User-configurable harmonic modules for user-friendly wavelength switch
- Cables and cooling lines disconnectable for easy integration
- Intuitive GUI interface, laptop included
- SLM option (Single Longitudinal Mode) for long coherence length
- Optional chiller for use in any environment

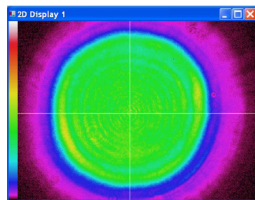
MAIN APPLICATIONS

- LiDAR
- INSTRUMENTATION
- PLD
- DYE, OPO & Ti:Sa PUMPING
- SPECTROSCOPY
- LIF
- COMBUSTION

Typical beam profiles



Near field 2 J @ 532 nm, 10 Hz



Near field 2.5 J @ 532 nm, 10 Hz

www.quantel-laser.com

Many options and configurations are available. Please contact Lumibird to find the best match for your needs and compatibility between options.



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SPECIFICATIONS

		9010	9020	9030	9050	Plus	Plus 2 J	Plus 2.5 J
Repetition rate (Hz)		10	20	30	50	10		
Energy per pulse (mJ)	1064 nm	2000	1800	1600	1200	3000	-	-
	532 nm	1000 ⁽¹⁾ /1400	900 ⁽¹⁾ /1200	800 ⁽¹⁾ /1100	600 ⁽¹⁾ /800	1500 ⁽¹⁾	2000 ⁽¹⁾	2500 ⁽¹⁾
	355 nm ⁽²⁾	550	475	400	350	800	NA	
	266 nm	160	110	90	75	160	NA	
Pulse duration (ns) ⁽³⁾	1064 nm	6 - 9				-	-	-
	532 nm	5 - 8				5 - 8	6 - 8	-
	355 nm	4 - 7				NA		
	266 nm	4 - 6				NA		
Beam diameter ⁽⁴⁾ (mm)	1064 nm	9			12			
Beam divergence ⁽⁵⁾ (mrad)	1064 nm	0.45		0.5	0.45			
Spatial profile @ 1064 nm ⁽⁶⁾	Horizontal near field ⁽⁷⁾	0.7			0.65	0.7		
	Far field ⁽⁸⁾	0.95			0.9	0.95		
Max deviation from fitted Gaussian ⁽⁹⁾ (± %)	Near field	40						
Polarization	1064 nm	Horizontal						
	532 nm	Vertical						
	355 nm	Horizontal						
	266 nm	Horizontal						

- (1) Using type II doubler
- (2) Using type I doubler
- (3) Measured at FWHM with fast photodiode and 1 GHz oscilloscope
- (4) At the output of the laser
- (5) Full angle, at 1/e² of the peak
- (6) Least square fit to Gaussian (perfect fit = 1)
- (7) Measured at 1 m from laser output
- (8) At focal plane of a 2 m focus lens
- (9) Within FWHM points near field at 1 meter

Pulse to pulse energy stability (%) ⁽¹⁰⁾	1064 nm	± 2.5 (0.8)	± 2.5 (0.8)	± 3 (1)	± 2.5 (0.8)	-
	532 nm	± 3 (1)	± 3 (1)	± 4 (1.3)	± 3 (1)	± 3 (1)
	355 nm	± 4 (1.3)	± 4 (1.3)	± 6 (2)	± 4 (1.3)	NA
	266 nm	± 8 (2.6)	± 9 (3)	± 9 (3)	± 8 (2.6)	NA
Power drift (%) ⁽¹¹⁾	1064 nm	± 3				-
	532 nm	± 6				± 6
	355 nm	± 6				NA
	266 nm	± 8				NA
Pointing stability (µrad) ⁽¹²⁾	All wavelengths	± 30				
Jitter @ 1064 nm (ns) ⁽¹³⁾	Standard	± 0.5		± 0.6	± 0.5	
	SLM	± 1				
Linewidth @ 1064 nm (cm ⁻¹)	Standard	1 ⁽¹⁴⁾				
	SLM	0.003 ⁽¹⁵⁾				

- (10) Peak to peak, 99% of the shots (RMS), on 200 consecutive shots
- (11) Over 8 hours for ΔT² ≤ ± 3°C
- (12) 99.9% shots will be < ± 30 µrad with ΔT room < ± 3°C
- (13) With respect to external trigger
- (14) Measured at FWHM with a grating spectrometer with 0.045 cm⁻¹ resolution
- (15) Measured at FWHM with a slow scan Fabry-Perot etalon

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Power requirements		200 - 240 VAC, single phase, 50/60 Hz						
		9010	9020	9030	9050	Plus	Plus 2 J	Plus 2.5 J
		14 A	21 A	24 A	35 A	21 A	30 A	
Cooling (water to water)	GPM (gallons/minute) ⁽¹⁶⁾	1 - 2		2 - 3		1 - 2		
	Temperature ⁽¹⁷⁾	< 22° C / 70° F						
Operating temperature		18 to 30° C / 65 to 87° F						
Cable length		5 m (16.4 ft)						
Flashlamp warranty		50 million shots ⁽¹⁸⁾						

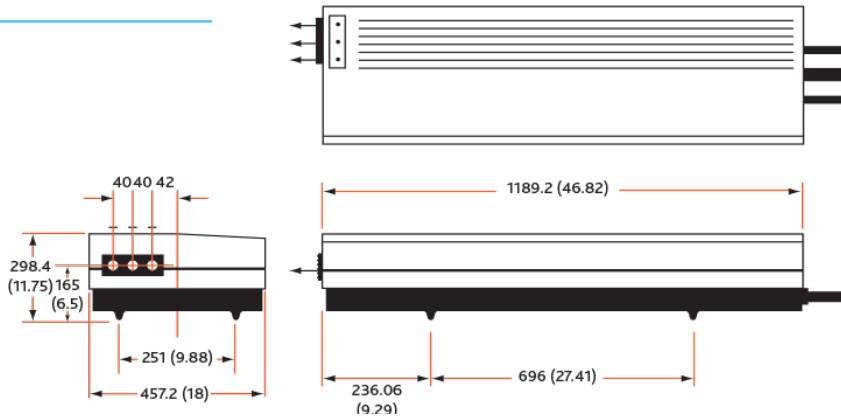
(16) at 10 - 40 PSI pressure drop

(17) higher flow rate for higher temperature

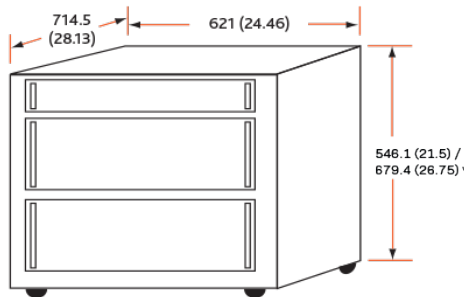
(18) 80% of energy, or 1 year, whatever comes first

Laser head

Dimensions in mm (inches)



Integrated cooling & electronics



* 9050 & Plus series



DANGER
INVISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE TO
DIRECT OR SCATTERED RADIATION
CLASS 4 LASER PRODUCT

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