

POWERLITE 8000

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



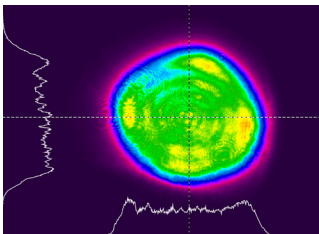
MAIN FEATURES

- Up to 1.65 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

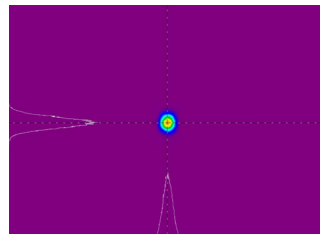
MAIN APPLICATIONS

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

Typical beam profiles



Near field, 1.65 J @ 1064 nm, 10 Hz



Far field, 1.65 J @ 1064 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

		8000	8010	8020	8030	8050
Repetition rate (Hz)		10		20	30	50
Energy per pulse (mJ)	1064 nm	1200	1650	1200	650	550
	532 nm	600 ⁽¹⁾ /800	800 ⁽¹⁾ /1100	550 ⁽¹⁾ /780	300 ⁽¹⁾ /420	210
	355 nm ⁽²⁾	310	450	300	150	95
	266 nm	120	150	80	50	30
Pulse duration (ns) ⁽³⁾	1064 nm	6 - 8			7 - 9	
	532 nm	5 - 7			6 - 8	
	355 nm	5 - 7			6 - 8	
	266 nm	5 - 7			6 - 8	
Beam diameter ⁽⁴⁾ (mm)	1064 nm	9			7	
Beam divergence ⁽⁵⁾ (mrad)	1064 nm	0.45			0.5	
Spatial profile @ 1064 nm ⁽⁶⁾	Horizontal near field ⁽⁷⁾	0.7				
	Far field ⁽⁸⁾	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)	± 3 (1)
	532 nm	± 3.5 (1.2)	± 4.5 (1.5)
	355 nm	± 4 (1.3)	± 5 (1.7)
	266 nm	± 10 (3.3)	
Power drift (%) ⁽¹¹⁾	1064 nm	± 3	± 5
	532 nm	± 5	± 6 ± 7
	355 nm	± 5	± 6 ± 8
	266 nm	± 8	± 8
Pointing stability (µrad) ⁽¹²⁾	All wavelengths	± 30	
Jitter @ 1064 nm (ns) ⁽¹³⁾	Standard	± 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 ΔT ≤ ± 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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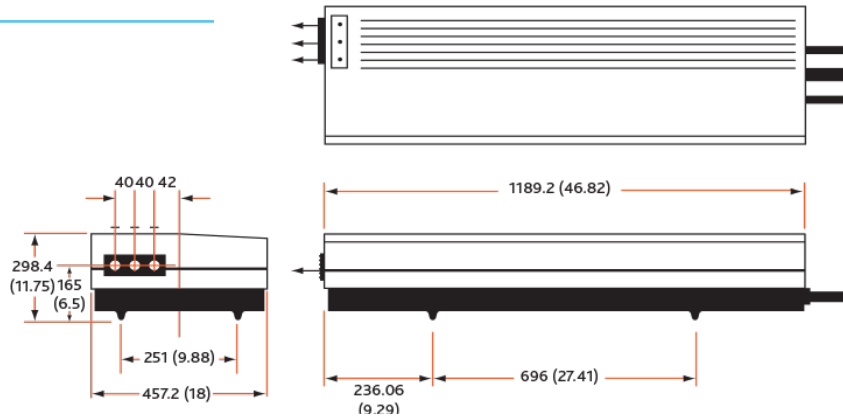
SPECIFICATIONS

Power requirements		200 - 240 VAC, single phase, 50/60 Hz				
		8000	8010	8020	8030	8050
		10 A	11 A	16 A		17 A
Cooling (water to water)	GPM (gallons/minute) ⁽¹⁶⁾	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⁾				

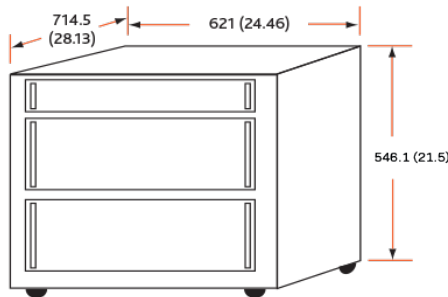
(16) at 10 - 40 PSI pressure drop
(17) higher flow rate for higher temperature
(18) 80% of energy, or 1 year, whatever comes first

Laser head

Dimensions in mm (inches)



Integrated cooling & electronics



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

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