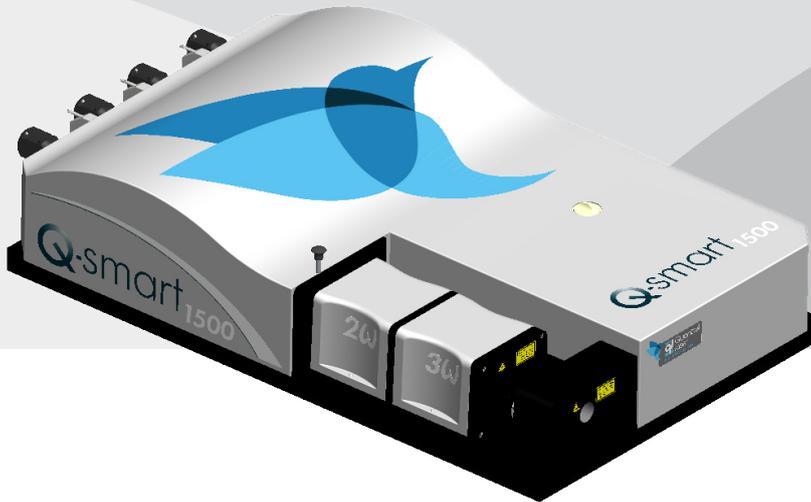


# Q-smart 1200 & 1500

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



## MAIN FEATURES

- Up to 1.5 J @ 1064 nm
- Robust and field proven technology
- Built to last thanks to ceramic reflectors and long flashlamp life time warranty
- Plug & play harmonic modules with automatic phase-matching
- Cables and cooling lines fully disconnectable
- Easy to use and maintain
- No need for external water
- Universal voltage
- Intuitive GUI interface
- SLM option (Single Longitudinal Mode)

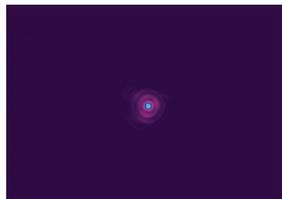
## MAIN APPLICATIONS

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

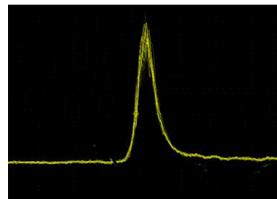
## Typical beam profiles



Near field 1.5 J @ 1064 nm, 10 Hz



Far field 1.5 J @ 1064 nm, 10 Hz



6 ns typical temporal profile  
@ 1064 nm  
(1 GHz oscilloscope)

[www.quantel-laser.com](http://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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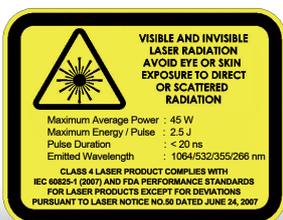
## SPECIFICATIONS

	Q-smart 1200	Q-smart 1500	
Repetition rate (Hz) <sup>(1)</sup>	10	10	
Energy per pulse (mJ)	1064 nm	1200	1500
	532 nm	575 / 650 <sup>(2)</sup>	750 / 850 <sup>(2)</sup>
	355 nm	280 / 350 <sup>(3)</sup>	400 / 520 <sup>(3)</sup>
	266 nm	110	130
Pulse duration (ns) <sup>(4)</sup>	1064 nm	5 - 10	
Beam diameter (mm) <sup>(5)</sup>	1064 nm	≤ 10	
Beam divergence (mrad) <sup>(6)</sup>	1064 nm	≤ 0.5	
M <sup>2</sup> <sup>(7)</sup>	1064 nm	≤ 2	
Spatial profile @ 1064 nm (fit to Gaussian)	Near field <sup>(9)</sup>	≥ 0.7	
	Far field <sup>(10)</sup>	≥ 0.9	
Polarization ratio (%) <sup>(11)</sup>	1064 nm	≥ 80	

- (1) Other repetition rates on request  
 (2) 532 nm high energy version  
 (3) 355 nm high energy version  
 (4) Measured at FWHM with fast photodiode and 1 GHz oscilloscope  
 (5) At the output of the laser  
 (6) Full angle, at 1/e<sup>2</sup> of the peak  
 (7) At 1/e<sup>2</sup> of the peak, measured by Spiricon LBA FWB  
 (8) Least square fit to Gaussian (perfect fit = 1)  
 (9) Measured at 1 m from laser output  
 (10) Measured at focal plane of a 2 m focus lens  
 (11) Polarization is horizontal @ 1064, 355 & 266 nm and vertical @ 532 nm

Pulse to pulse energy stability (%) <sup>(12)</sup>	1064 nm	± 2 (0.6)
	532 nm	± 4 (1.3)
	355 nm	± 6 (2)
	266 nm	± 8 (2.6)
Power drift (%) <sup>(13)</sup>	1064 nm	± 3
	532 nm	± 5
	355 nm	± 5
	266 nm	± 10
Pointing stability (μrad) <sup>(14)</sup>	1064 nm	< 40
Jitter @ 1064 nm (ns) <sup>(15)</sup>	Standard	± 0.5
	SLM option	± 1
Linewidth @1064 nm (cm <sup>-1</sup> )	Standard <sup>(16)</sup>	≤ 0.7
	SLM <sup>(17)</sup> option	≤ 0.005

- (12) Peak-to-peak (RMS), 100% of shots  
 (13) Over 8 hours for ΔT° ≤ ± 3°C  
 (14) Measured with Spiricon LBA-100, rms, on 200 pulses at the focal plane of a 2 m focus lens  
 (15) With respect to Q-Switch trigger, at half-width of 500 accumulated shots for 99% of shots  
 (16) Measured at FWHM with a grating spectrometer with 0.045 cm<sup>-1</sup> resolution  
 (17) Measured at FWHM with a slow scan Fabry-Perot etalon, ≤ 20% energy reduction @ 1064 nm

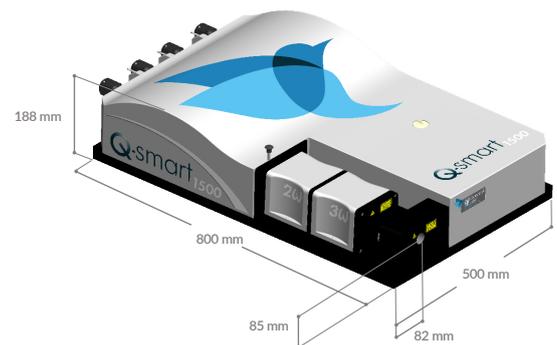


## OTHER INFORMATION

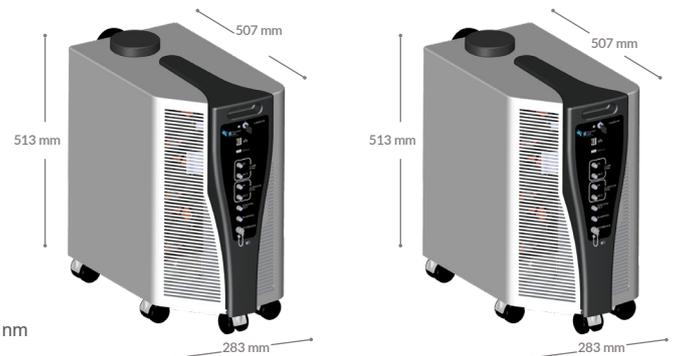
Power requirements	2 x 100-240 VAC, 50/60 Hz, single phase, 2 x 1100 VA	
Cooling	Water to air	
Operating temperature	+ 18 °C to + 28 °C	
Storage temperature <sup>(18)</sup>	- 10 °C to + 50 °C	
Cable length (m)	3	
Flashlamps warranty	50 million shots <sup>(19)</sup>	
Weight (kg)	Laser head	45
	Harmonic modules	2.1
	Integrated cooling & electronics	2 x 27

- (18) System rinsed and drained with ethylene glycol/water mixture  
 (19) 80% of energy, or 1 year, whichever comes first

## Laser head



## Integrated cooling & electronics



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