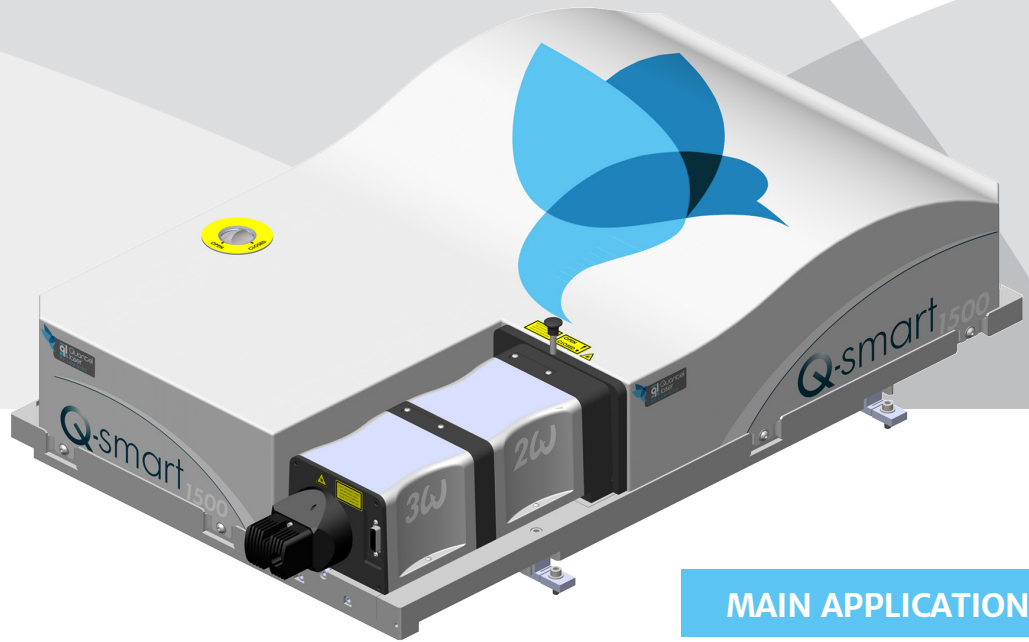


Q-smart HE

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



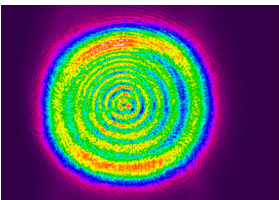
MAIN FEATURES

- Up to 2.3 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
- Optional chiller
- Intuitive GUI interface
- SLM option (Single Longitudinal Mode)

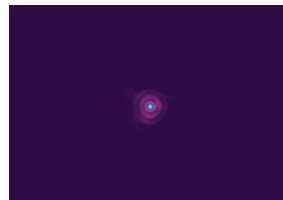
MAIN APPLICATIONS

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

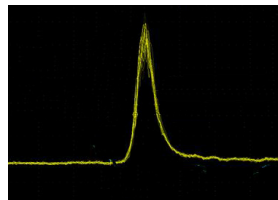
Typical beam profiles



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

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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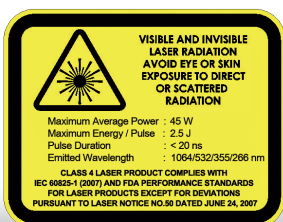
SPECIFICATIONS

		Q-smart 1200		Q-smart 1500		Q-smart 2300		
Repetition rate (Hz)		10	20	10	20	10		
Energy per pulse (mJ)	1064 nm	1200	1000	1500	1400	2300		
	532 nm	575 / 650 ⁽¹⁾	480 / 540 ⁽¹⁾	750 / 850 ⁽¹⁾	660 / 750 ⁽¹⁾	1150/1300 ⁽¹⁾		
	355 nm	280 / 350 ⁽²⁾	220 / 270 ⁽²⁾	400 / 520 ⁽²⁾	360 / 460 ⁽²⁾	620 / 850 ⁽²⁾		
	266 nm	110	80	130	100	200		
Pulse duration (ns) ⁽³⁾	1064 nm	5 - 10						
Beam diameter (mm) ⁽⁴⁾	1064 nm	≤ 10				≤ 12		
Beam divergence (mrad) ⁽⁵⁾	1064 nm	≤ 0.5						
M ² ⁽⁶⁾	1064 nm	≤ 2						
Spatial profile @ 1064 nm ⁽⁷⁾ (fit to Gaussian)	Near field ⁽⁸⁾	≥ 0.7						
	Far field ⁽⁹⁾	≥ 0.9						
Polarization ratio (%) ⁽¹⁰⁾	1064 nm	≥ 90				≥ 80		

- (1) 532 nm high energy version
- (2) 355 nm high energy version
- (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) At 1/e² of the peak, measured by Spricon LBA FWB
- (7) Least square fit to Gaussian (perfect fit = 1)
- (8) Measured at 1 m from laser output
- (9) Measured at focal plane of a 2 m focus lens
- (10) Polarization is horizontal @ 1064, 355 & 266 nm and vertical @ 532 nm

Pulse to pulse energy stability (%) ⁽¹¹⁾	1064 nm	± 2 (0.6)
	532 nm	± 4 (1.3)
	355 nm	± 6 (2)
	266 nm	± 8 (2.6)
Power drift (%) ⁽¹²⁾	1064 nm	± 3
	532 nm	± 5
	355 nm	± 5
	266 nm	± 10
Pointing stability (µrad) ⁽¹³⁾	1064 nm	< 40
Linewidth @1064 nm (cm ⁻¹)	Standard ⁽¹⁴⁾	≤ 0.7
	SLM ⁽¹⁵⁾ option	≤ 0.005

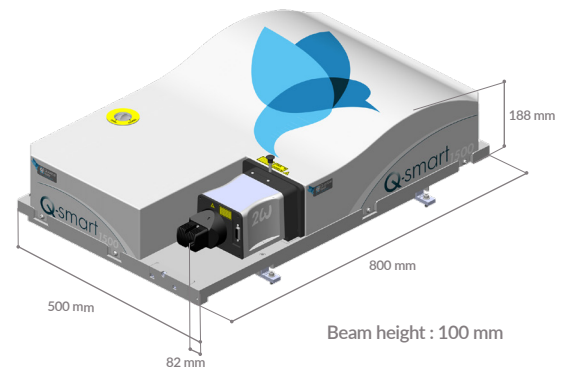
- (11) Peak-to-peak (RMS), 100% of shots
- (12) Over 8 hours for ΔT° ≤ ± 3°C
- (13) Measured with Spiricon LBA-100, rms, on 200 pulses at the focal plane of a 2 m focus lens
- (14) Measured at FWHM with a grating spectrometer with 0.045 cm⁻¹ resolution
- (15) Measured at FWHM with a slow scan Fabry-Perot etalon, ≤ 20% energy reduction @ 1064 nm



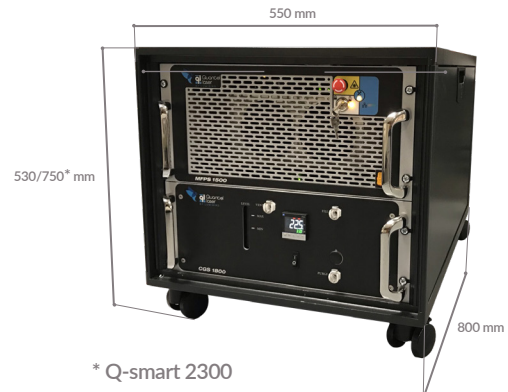
OTHER INFORMATION		
Power requirements	240 V (110 V on request) 16 to 20 A, 50/60 Hz	
Cooling	Water to water Optional chiller (stand alone or 19» rack)	
Operating temperature	+ 18 °C to + 28 °C	
Storage temperature ⁽¹⁶⁾	- 10 °C to + 50 °C	
Cable length (m)	3 ⁽¹⁷⁾	
Flashlamps warranty	50 million shots ⁽¹⁸⁾	
Weight (kg)	Laser head	45
	Harmonic modules	2.1
	Integrated cooling & electronics	50 / 70 ⁽¹⁹⁾

- (16) System rinsed and drained with ethylene glycol/water mixture
- (17) Other lengths on request. Some losses are to be expected.
- (18) 80% of energy, or 1 year, whichever comes first
- (19) Q-smart 1200-1500 / Q-smart 2300

Laser head



Integrated cooling & electronics



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