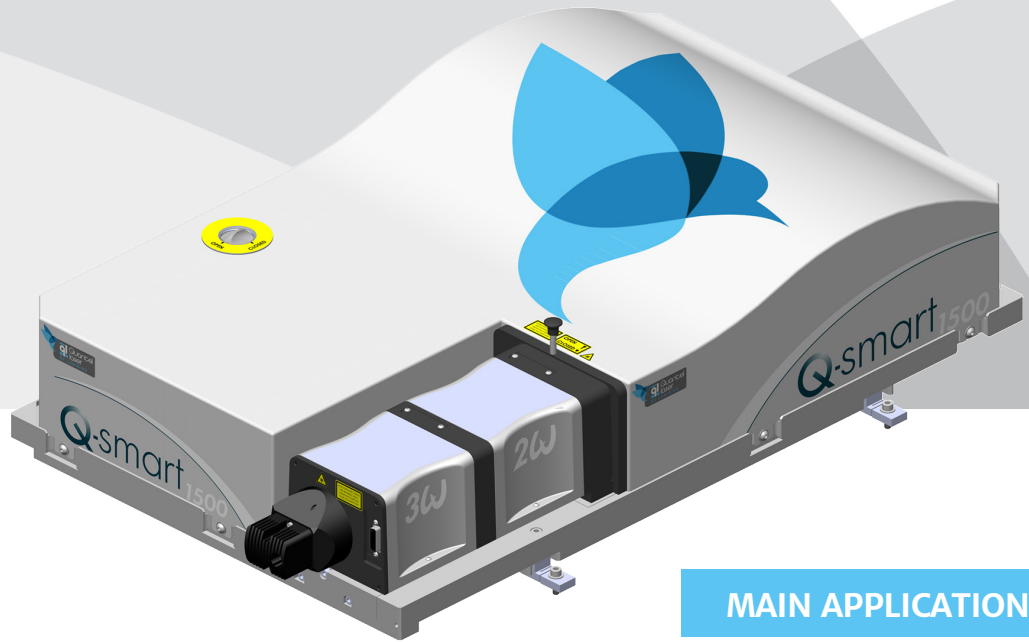


Q-smart HE

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



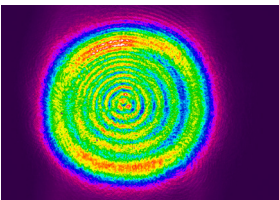
MAIN FEATURES

- 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)

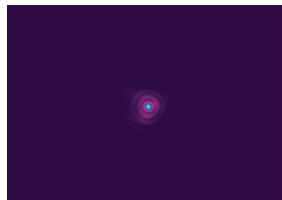
MAIN APPLICATIONS

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

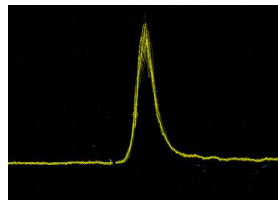
Typical beam profiles



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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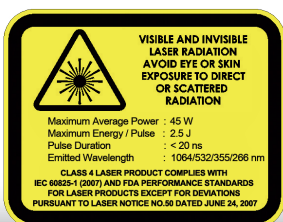
SPECIFICATIONS

		Q-smart 1200	Q-smart 1500	Q-smart 2300
Repetition rate (Hz) ⁽¹⁾		10		10
Energy per pulse (mJ)	1064 nm	1200	1500	2300
	532 nm	575 / 650 ⁽²⁾	750 / 850 ⁽²⁾	1150/1300 ⁽²⁾
	355 nm	280 / 350 ⁽³⁾	400 / 520 ⁽³⁾	620 / 850 ⁽³⁾
	266 nm	110	130	200
Pulse duration (ns) ⁽⁴⁾	1064 nm	6 - 10		
Beam diameter (mm) ⁽⁵⁾	1064 nm	≤ 10		≤ 13
Beam divergence (mrad) ⁽⁶⁾	1064 nm	≤ 0.5		
M ² ⁽⁷⁾	1064 nm	≤ 2		
Spatial profile @ 1064 nm ⁽⁸⁾ (fit to Gaussian)	Near field ⁽⁹⁾	≥ 0.7		
	Far field ⁽¹⁰⁾	≥ 0.9		
Polarization ratio (%) ⁽¹¹⁾	1064 nm	≥ 90	≥ 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/e² of the peak
 (7) At 1/e² of the peak, measured by Spricon 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 (%) ⁽¹²⁾	1064 nm	± 2 (0.6)
	532 nm	± 4 (1.3)
	355 nm	± 6 (2)
	266 nm	± 8 (2.6)
Power drift (%) ⁽¹³⁾	1064 nm	± 3
	532 nm	± 5
	355 nm	± 5
	266 nm	± 10
Pointing stability (µrad) ⁽¹⁴⁾	1064 nm	< 40
Linewidth @1064 nm (cm ⁻¹)	Standard ⁽¹⁵⁾	≤ 0.7
	SLM ⁽¹⁶⁾ 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) Measured at FWHM with a grating spectrometer with 0.045 cm⁻¹ resolution
 (16) Measured at FWHM with a slow scan Fabry-Perot etalon, ≤ 20% energy reduction @ 1064 nm

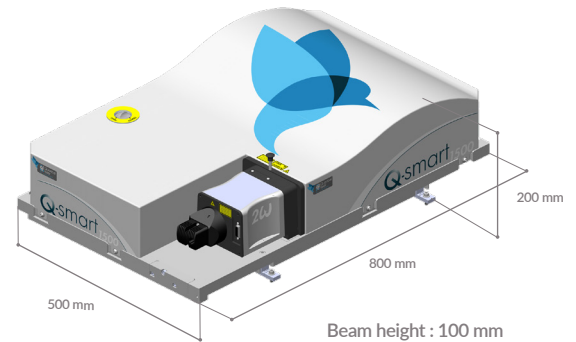


OTHER INFORMATION

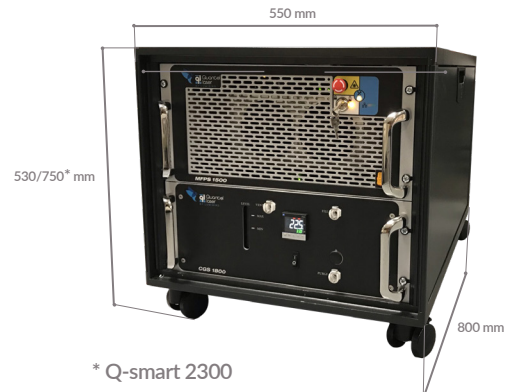
Power requirements	240 V (110 V on request) 16 to 20 A, 50/60 Hz	
Cooling	Water to water Optional chiller (stand alone or 19» rack)	
Operating temperature	+ 18 °C to + 28 °C	
Storage temperature ⁽¹⁷⁾	- 10 °C to + 50 °C	
Cable length (m)	3 ⁽¹⁸⁾	
Flashlamps warranty	50 million shots ⁽¹⁹⁾	
Weight (kg)	Laser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

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

Laser head



Integrated cooling & electronics



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