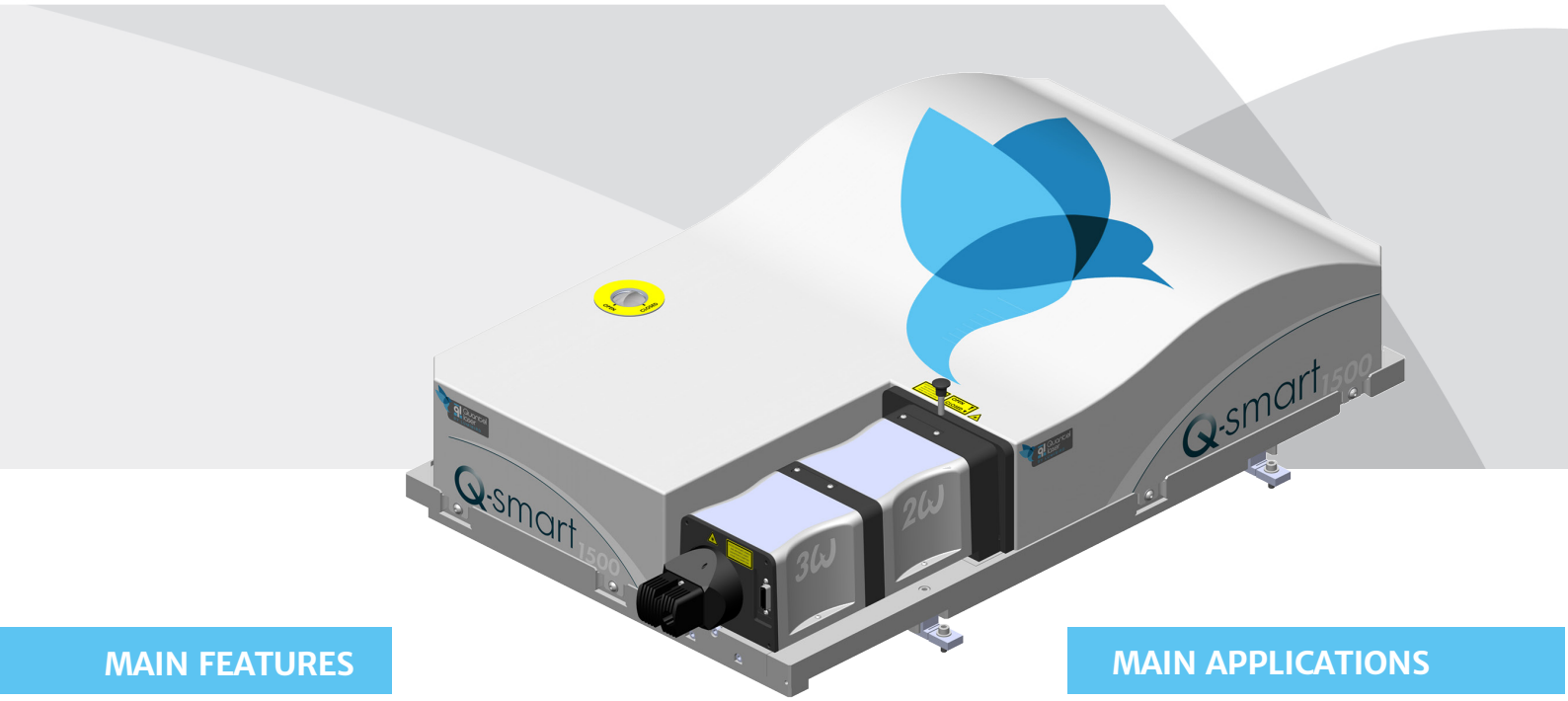
Q-smart HE

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

Quantel laser BY LUMIBIRD



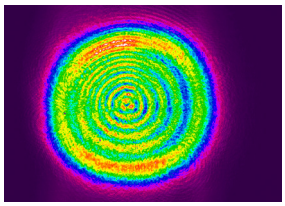
MAIN FEATURES

- Up to 2.3 J @ 1064 nm
- Robust and field-proven Q-smart™ technology
- Built to last thanks to ceramic reflectors
- Flashlamp warranty up to 50 million shots for operation without downtime
- Plug & play harmonic modules for user-friendly wavelength switch
- Automatic crystal phase-matching for hands-free operation
- Cables and cooling lines fully disconnectable for easy integration
- Intuitive GUI interface
- SLM option (Single Longitudinal Mode) for long coherence length
- Optional chiller for use in any environment

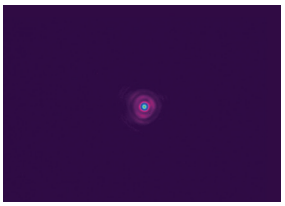
MAIN APPLICATIONS

- **LIDAR**
- **INSTRUMENTATION**
- **PLD**
- **DYE, OPO & TI:SA PUMPING**
- **SPECTROSCOPY**
- **LIF**
- **COMBUSTION**

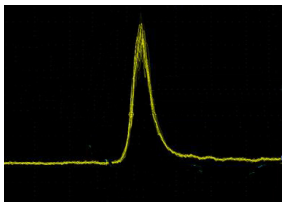
Typical beam profiles



Near field 1.5 J @ 1064 nm, 10 Hz



Far field 1.5 J @ 1064 nm, 10 Hz



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

04/26 - Lumibird reserves the right to modify the specifications without prior notice.

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.

LUMIBIRD MORE THAN LASERS

Lumibird has locations across the globe that are available to provide support for any product, service or inquiry. Visit www.lumibird.com to connect with any of our global sites.

CE RoHS

Q-SMART HE

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

Quantel laser BY LUMIBIRD

SPECIFICATIONS

		Q-smart 1200		Q-smart 1500	Q-smart 2300
Repetition rate (Hz) (1)		10	20	10	
Energy per pulse (mJ)	1064 nm	1200	1050	1500	2300
	532 nm	575 / 650 (2)	550	750 / 850 (2)	1100 / 1350 (2)
	355 nm	280 / 350 (3)	350	400 / 520 (3)	620 / 850 (3)
	266 nm	110	90	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	≤ 3	≤ 2	≤ 3
Spatial profile @ 1064 nm (8) (fit to Gaussian)	Near field (9)	≥ 0.7	≥ 0.65	≥ 0.7	
	Far field (10)	≥ 0.9	≥ 0.85	≥ 0.9	
Polarization ratio (%) (11)	1064 nm	≥ 90	≥ 80	≥ 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 $1/e^2$ of the peak
(7) At $1/e^2$ 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

		10 Hz	20 Hz
Pulse to pulse energy stability (%) (12)	1064 nm	± 2.2 (0.7)	± 3 (1)
	532 nm	± 4 (1.3)	± 5.5 (1.8)
	355 nm	± 6 (2)	± 7.5 (2.5)
	266 nm	± 8 (2.6)	± 9 (3)
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 on 200 consecutive shots
(13) Over 8 hours for ΔT° ≤ ± 3°C
(14) Measured with Spricon 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.
Energy reduction with SLM: ≤ 15% @ 1064 nm, 532 nm & 266 nm, ≤ 5% @ 355 nm

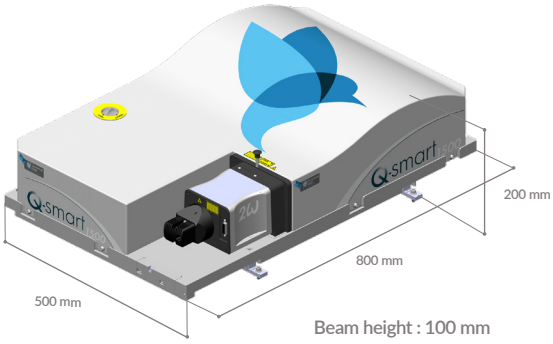


OTHER INFORMATION

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

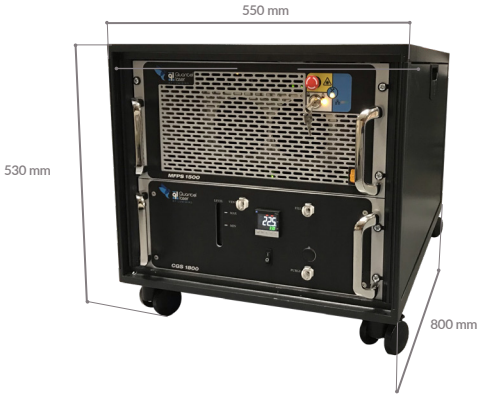
(17) System rinsed and drained with ethylene glycol/water mixture
(18) Other lengths on request. Some losses are to be expected.
(19) 80% of energy, or 1 year, whichever comes first

Laser head



Beam height : 100 mm

Integrated cooling & electronics



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.

04/26 - Lumibird reserves the right to modify the specifications without prior notice.

LUMIBIRD MORE THAN LASERS

Lumibird has locations across the globe that are available to provide support for any product, service or inquiry.
Visit www.lumibird.com to connect with any of our global sites.

CE RoHS