

QUANTAS Q2

HIGH ENERGY AIR-COOLED Q-SWITCHED LASER

Description

Quantas Q2 models employ MOPA (Master Oscillator/Power Amplifier) architecture in order to produce high pulse energies while maintaining low divergence output. Two models are available, offering 50 mJ @ 20 Hz or 70 mJ @ 10 Hz pulse energies.

Typical applications are Light Induced Breakdown Spectroscopy (LIBS), Light Induced Fluorescence Spectroscopy (LIF), laser ablation and remote sensing.

Less than 8 ns pulse duration allows efficient fundamental wavelength conversion to higher harmonics with shortest wavelength available of 211 nm. Wavelength extensions into infrared range are available by request.

Quantas Q2 is forced air cooled laser due its good wall-plug efficiency. Liquids are not used for heat transfer, as result, maintenance associated with regular replacements of cooling liquid and/or cleaning of cooling system is not required.

Low jitter triggering pulses for user equipment are available with up to 450 μ s lead in internal triggering mode. If required, laser pulsing can be externally triggered from delay generator, allowing operation in single-shot or variable pulse repetition modes.

Laser controller has ethernet interface for convenient monitoring and control from personal computer.

FEATURES AND APPLICATIONS

Features

- Up to 70 mJ pulse energy.
- Air cooled.
- Variable pulse repetition rate.
- Build-in sync pulse generator for triggering of user equipment.
- Remote monitoring and control via build-in Ethernet interface.
- Optional 2nd, 3rd, 4th or 5th harmonic generators.
- Optional attenuator for fundamental wavelength.

Applications

- Light Induced Breakdown Spectroscopy (LIBS).
- Time-of-Flight Spectroscopy (TOFS).
- Light Induced Fluorescence (LIF) Spectroscopy.
- Flash photolysis.
- Matrix Assisted Laser Desorption/Ionization (MALDI).
- Pulsed light deposition (PLD).
- Remote sensing.
- Laser ablation.

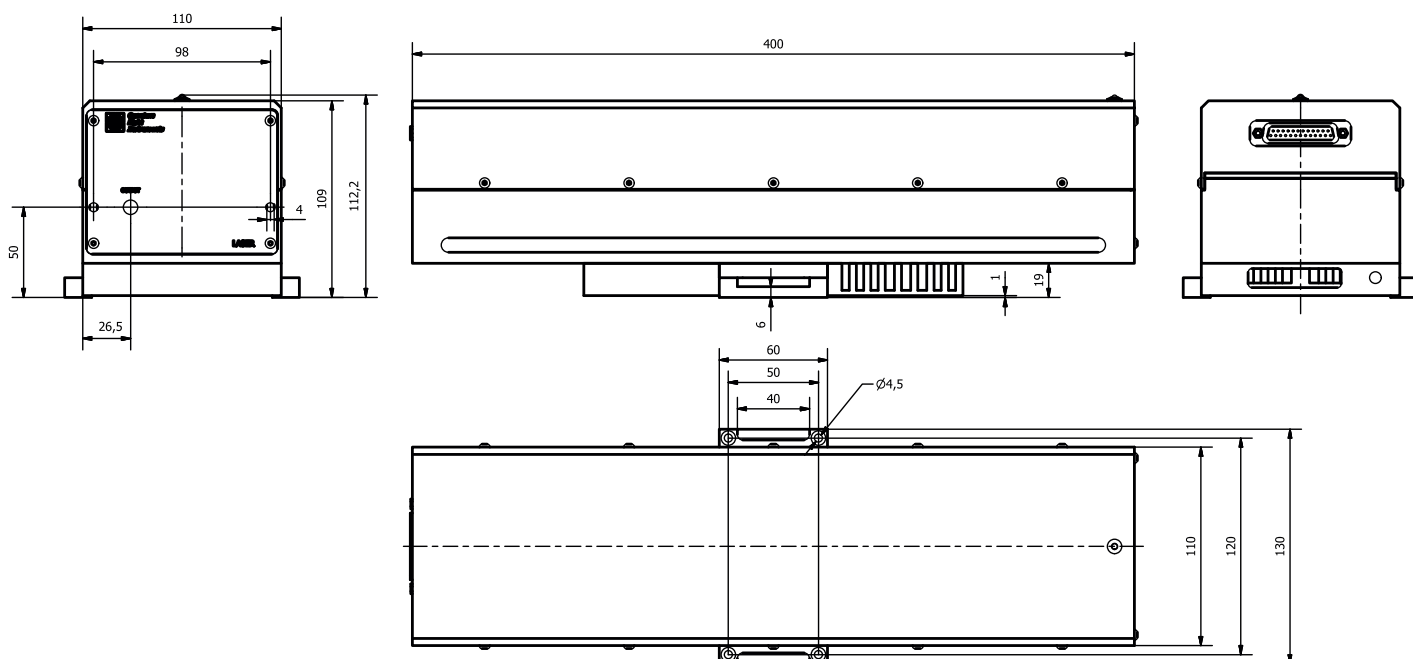


Specifications¹⁾

Model	Quantas Q2	
	Q2-1064	Q2-1053
Wavelength	1064 nm	1053 nm
Pulse energy	50 mJ	70 mJ
Typical pulse duration	<8 ns ²⁾	
Pulse to pulse energy stability	<1 % RMS ³⁾	
Power drift	± 3.0 % ⁴⁾	
Maximum pulse repetition rate ⁵⁾	20 Hz	10 Hz
Beam profile	Bell-shaped, >75 % fit to Gaussian	
Beam divergence ⁶⁾	< 2 mrad	
Polarization	Linear, horizontal	
Typical beam diameter ⁷⁾	3 mm	3.5 mm
Jitter	< 1 ns RMS ⁸⁾	
Optional harmonics generator module ⁹⁾		
Pulse energy, mJ		
2 nd harmonic	25 mJ	35 mJ
3 rd harmonic	15 mJ	20 mJ
4 th harmonic	7 mJ	11 mJ
5 th harmonic	2.5 mJ	3.5 mJ
Optional attenuator ¹⁰⁾		
Wavelength, nm	1064 nm	
Attenuation range	5 - 95 %	
Dimensions		
Laser head (W× L× H)	113 × 400× 112 mm ³	
Harmonics generator module (W× L× H)	113 × 242× 112 mm ³	
Controller unit(W× L × H)	85 × 165 × 50 mm ³	
Power adapter, typical (W× L × H)	50 × 125 × 31 mm	
Operating requirements		
Cooling requirements	Air cooled	
Ambient temperature	15 – 28 °C	
Relative humidity (non-condensing)	10 – 80 %	
Mains voltage	90-230 VAC, single phase, 47-63 Hz. ¹¹⁾	
Power consumption	< 35 W	

1. The parameters marked typical are not specifications. They are indications of typical performance and might vary unit-to-unit. Unless stated otherwise all specifications are measured at 1053 or 1064 nm and maximum pulse repetition rate.
2. FWHM at 1053 or 1064 nm. Shorter pulse duration is available by request. Inquire for detailed specifications.
3. Averaged from 300 pulses.
4. Over 8 hour period after 20 minutes of warm-up when ambient temperature variation is less than ±2 °C.
5. Factory-set pulse repetition rate is fixed at 10 Hz or 20 Hz, depending on model. Variable pulse repetition rate is possible when laser is externally triggered.
6. Full angle measured at the 1/e² level.
7. Beam diameter is measured 20 cm from laser output at the 1/e² level.
8. In respect to Q-switch triggering edge of pulse.
9. Harmonics generator module is stand-alone unit optimized for specified output wavelength. Inquire for details if you need multiple wavelength output.
10. Attenuator is build-in into harmonics generator module.
11. Laser can be powered from appropriate 12 VDC power source. Inquire for details.

Dimensions



Quantum Light Instruments Ltd. (legal name UAB "Kvantiniai šviesos instrumentai")
Mokslininkų 6A-351
LT-08412, Vilnius, Lithuania

Phone: +370 5 250 3717
Fax: +370 5 250 3716
Email: sales@qlinstruments.com