Quantas
Q2-1064

HIGH ENERGY AIR-COOLED Q-SWITCHED LASER

FEATURES

- Up to **70 mJ** pulse energy
- **Air cooled** (no water)
- **100 Hz** repetition rate
- Built-in sync pulse generator for triggering of user equipment
- Remote monitoring and control via built-in **Ethernet / WiFi** interface
- Optional 2nd, 3rd, 4th or 5th smart harmonic generators
- Optional attenuator for fundamental wavelength
- Guaranteed **> 1 Gshot** lifetime

APPLICATIONS

- Light Induced Breakdown Spectroscopy (LIBS)
- OPO, dye laser, Ti:saphire pumping
- Remote sensing
- Laser ablation
- Time-of-Flight Spectroscopy (TOFS)
- Light Induced Fluorescence (LIF) Spectroscopy
- Flash photolysis
- Matrix Assisted Laser Desorption / Ionization (MALDI)
- Pulsed light deposition (PLD)

Quantas Q2 models set new standard in Q-switched laser market. Q2 series diode pumped, fully air-cooled, Q-switched lasers are designed for wide range of applications that require high peak power pulses. Robust, reliable design is what makes this series ideal tool for applications like Light Induced Breakdown Spectroscopy (LIBS), LCD repair, laser ablation, remote sensing and many others. Broad selection of models are available offering 70 mJ @ 50 Hz or 40 mJ @ 100 Hz pulse energies.

Less than 10 ns pulse duration allows efficient fundamental wavelength conversion to higher harmonics with shortest wavelength available of 213 nm. Wavelenght extensions into infrared range by use of OPO are available by request.

TEC based cooling eliminate risks associated with water cooling (like leaks, circuit shortening etc.) as well as reduce running cost due to no maintenance required.

Low jitter triggering pulses for user equipment are available with up to 300 µs lead in internal triggering mode. If required, laser pulsing can be externally triggered from delay generator.

Laser controlled via built-in Ethernet port trough web-server with option to add Wi-Fi adapter. It allows users to monitor and control laser remotely.

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SPECIFICATIONS [1)]

MODEL	Quantas Q2-1064			
	Q2-20	Q2-50	Q2-50HE	Q2-100
Wavelength	1064 nm			
Pulse energy	50 mJ	40 mJ	70 mJ	40 mJ
Typical pulse duration	<10 ns [2)]			
Pulse to pulse energy stability	<0.5 % RMS [3)]			
Power drift	± 3.0 % [4)]			
Maximum pulse repetition rate [5)]	20 Hz	50 Hz	50 Hz	100 Hz
Beam profile	bell-shaped, >75 % fit to Gaussian			
Beam divergence [6)]	< 2 mrad			
Polarization	linear, horizontal			
Typical beam diameter [7)]	3.5 mm			
Jitter	< 1 ns RMS [8)]			
OPTIONAL HARMONICS GENERATOR MODULE [9)]				
Pulse energy, mJ				
532 nm	25 mJ	20 mJ	35 mJ	20 mJ
355 nm	15 mJ	12 mJ	20 mJ	12 mJ
266 nm	7 mJ	5 mJ	10 mJ	5 mJ
213 nm	2.5 mJ	1.5 mJ	3 mJ	1.5 mJ
OPTIONAL ATTENUATOR [10)]				
Wavelength, nm	1064 nm, 532 nm, 355 nm			
Attenuation range	5 – 95 %			
DIMENSIONS				
Laser head (W×L×H)	190 × 408 × 120 mm³			
Harmonics generator module (W×L×H)	113 × 242 × 112 mm³			
Controller unit (W×L×H)	160 × 104 × 55 mm³			
Power adapter, typical (W×L×H)	100 × 200 × 50 mm³			
OPERATING REQUIREMENTS				
Cooling requirements	air cooled			
Ambient temperature	15 – 30 °C			
Relative humidity	10 – 80 % (non-condensing)			
Mains voltage	90 – 230 V AC, single phase, 47 – 63 Hz [11)]			
Power consumption	100 W		150 W	

[1)] *Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at 1064 nm and maximum pulse repetition rate.*

[2)] *FWHM level at 1064 nm. Shorter pulse duration is available by request. Please inquire for detailed specifications.*

[3)] *Averaged from 30 second time interval.*

[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 max repetition rate shown in the table. Higher repetition rates are available, please inquire for details.*

[6)] *Full angle measured at the $1/e^2$ level.*

[7)] *Beam diameter is measured 20 cm from laser output at the $1/e^2$ level.*

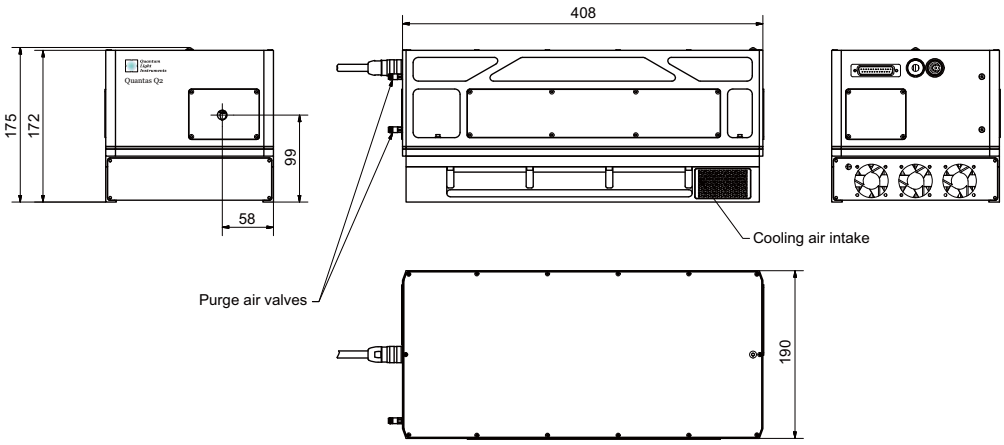
[8)] *In respect to Q-switch triggering edge of pulse.*

[9)] *Harmonics generator module is stand-alone unit optimized for specified output wavelength. Inquire for details if multiple wavelength output is needed.*

[10)] *Attenuator is built-in into harmonics generator module.*

[11)] *Laser can be powered from appropriate 28 V DC power source. Please inquire for details.*

DRAWINGS



Laser head dimensions

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PHOTO TECHNICA www.phototechnica.co.jp フォトテクニカ株式会社
〒336-0017 埼玉県さいたま市南区南浦和 1-2-17
TEL:048-871-0067 FAX:048-871-0068
e-mail:voc@phototechnica.co.jp

Quantum Light Instruments Ltd.
Mokslininku 6A
LT-08412, Vilnius, Lithuania

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

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Quantas
Q2-1053

HIGH ENERGY AIR-COOLED Q-SWITCHED LASER

FEATURES

- Up to **100 mJ** pulse energy
- **Air cooled** (no water)
- **20 Hz** repetition rate
- Built-in sync pulse generator for triggering of user equipment
- Remote monitoring and control via built-in **Ethernet / WiFi** interface
- Optional 2nd, 3rd, 4th or 5th smart harmonic generators
- Optional attenuator for fundamental wavelength
- Guaranteed **> 1 Gshot** lifetime

APPLICATIONS

- Light Induced Breakdown Spectroscopy (LIBS)
- OPO, dye laser, Ti:saphire pumping
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Quantas Q2 models set new standard in Q-switched laser market. Q2 series diode pumped, fully air-cooled, Q-switched lasers are designed for wide range of applications that require high peak power pulses. Robust, reliable design is what makes this series ideal tool for applications like Light Induced Breakdown Spectroscopy (LIBS), LCD repair, laser ablation, remote sensing and many others. Two models are available offering 70 mJ @ 10 Hz or 100 mJ @ 20 Hz pulse energies.

Less than 10 ns pulse duration allows efficient fundamental wavelength conversion to higher harmonics with shortest wavelength available of 211 nm. Wavelenght extensions into infrared range by use of OPO are available by request.

TEC based cooling eliminate risks associated with water cooling (like leaks, circuit shortening etc.) as well as reduce running cost due to no maintenance required.

Low jitter triggering pulses for user equipment are available with up to 450 µs lead in internal triggering mode. If required, laser pulsing can be externally triggered from delay generator.

Laser controlled via built-in Ethernet port trough web-server with option to add Wi-Fi adapter. It allows users to monitor and control laser remotely.

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SPECIFICATIONS [1)]

MODEL	Quantas Q2-1053	
	Q2-10	Q2-20HE
Wavelength	1053 nm	
Pulse energy	70 mJ	100 mJ
Typical pulse duration	<10 ns [2)]	
Pulse to pulse energy stability	<0.5 % RMS [3)]	
Power drift	± 3.0 % [4)]	
Maximum pulse repetition rate [5)]	10 Hz	20 Hz
Beam profile	bell-shaped, >75 % fit to Gaussian	
Beam divergence [6)]	< 4 mrad	
Polarization	linear, horizontal	
Typical beam diameter [7)]	3.5 mm	
Jitter	< 1 ns RMS [8)]	
OPTIONAL HARMONICS GENERATOR MODULE [9)]		
Pulse energy, mJ		
526 nm	35 mJ	50 mJ
351 nm	20 mJ	30 mJ
263 nm	11 mJ	15 mJ
211 nm	3.5 mJ	6 mJ
OPTIONAL ATTENUATOR [10)]		
Wavelength, nm	1053 nm, 526 nm, 351 nm	
Attenuation range	5 – 95 %	
DIMENSIONS		
Laser head (W×L×H)	190 × 408 × 120 mm³	
Harmonics generator module (W×L×H)	113 × 242 × 112 mm³	
Controller unit (W×L×H)	160 × 104 × 55 mm³	
Power adapter, typical (W×L×H)	100 × 200 × 50 mm³	
OPERATING REQUIREMENTS		
Cooling requirements	air cooled	
Ambient temperature	15 – 30 °C	
Relative humidity	10 – 80 % (non-condensing)	
Mains voltage	90 – 230 V AC, single phase, 47 – 63 Hz [11)]	
Power consumption	100 W	

[1)] *Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at 1053 nm and maximum pulse repetition rate.*

[2)] *FWHM level at 1053 nm. Shorter pulse duration is available by request. Inquire for detailed specifications.*

[3)] *Averaged from 30 second time interval.*

[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 $1/e^2$ level.*

[7)] *Beam diameter is measured 20 cm from laser output at the $1/e^2$ level.*

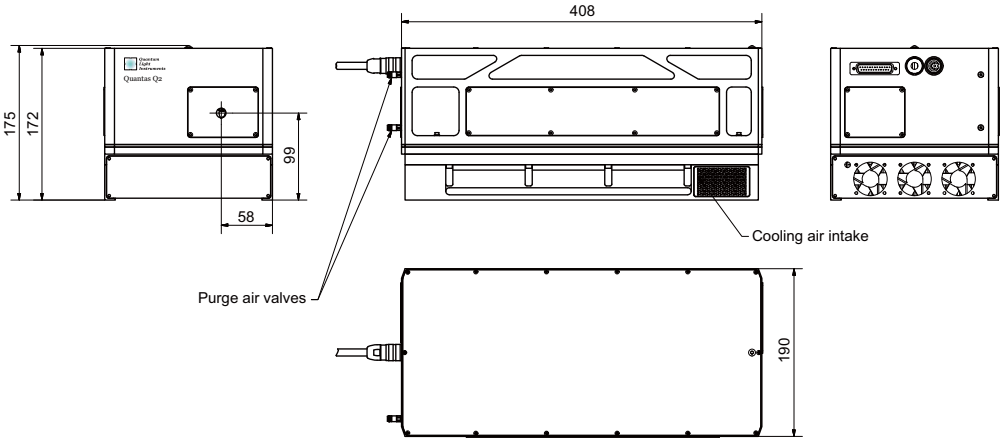
[8)] *In respect to Q-switch triggering edge of pulse.*

[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 28 V DC power source. Inquire for details.*

DRAWINGS



Laser head dimensions

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PHOTO TECHNICA www.phototechnica.co.jp フォトテクニカ株式会社
〒336-0017 埼玉県さいたま市南区南浦和 1-2-17
TEL:048-871-0067 FAX:048-871-0068
e-mail:voc@phototechnica.co.jp

Quantum Light Instruments Ltd.
Mokslininku 6A
LT-08412, Vilnius, Lithuania

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

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