

# Quantas

## Q2-1064

## HIGH ENERGY AIR-COOLED Q-SWITCHED LASER

### FEATURES

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Up to **70 mJ** pulse energy

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**Air cooled** (no water)

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**100 Hz** repetition rate

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Built-in sync pulse generator for triggering of user equipment

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Remote monitoring and control via built-in **Ethernet / WiFi** interface

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Optional 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> or 5<sup>th</sup> smart harmonic generators

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Optional attenuator for fundamental wavelength

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Guaranteed **> 1 Gshot** lifetime

### APPLICATIONS

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Light Induced Breakdown Spectroscopy (LIBS)

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OPO, dye laser, Ti:sapphire pumping

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Remote sensing

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Laser ablation

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Time-of-Flight Spectroscopy (TOFS)

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Light Induced Fluorescence (LIF) Spectroscopy

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Flash photolysis

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Matrix Assisted Laser Desorption / Ionization (MALDI)

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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. Wavelength 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  $\mu$ s lead in internal triggering mode. If required, laser pulsing can be externally triggered from delay generator.

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



Quantum  
Light  
Instruments

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## SPECIFICATIONS <sup>1)</sup>

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 <sup>2)</sup>			
Pulse to pulse energy stability	< 0.5 % RMS <sup>3)</sup>			
Power drift	± 3.0 % <sup>4)</sup>			
Maximum pulse repetition rate <sup>5)</sup>	20 Hz	50 Hz	50 Hz	100 Hz
Beam profile	bell-shaped, >75 % fit to Gaussian			
Beam divergence <sup>6)</sup>	< 2 mrad			
Polarization	linear, horizontal			
Typical beam diameter <sup>7)</sup>	3.5 mm			
Jitter	< 1 ns RMS <sup>8)</sup>			

### OPTIONAL HARMONICS GENERATOR MODULE <sup>9)</sup>

Pulse energy, mJ	Q2-20	Q2-50	Q2-50HE	Q2-100
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 <sup>10)</sup>

Wavelength, nm	1064 nm, 532 nm, 355 nm
Attenuation range	5 – 95 %

### DIMENSIONS

Laser head (W×L×H)	190 × 408 × 120 mm <sup>3</sup>
Harmonics generator module (W×L×H)	113 × 242 × 112 mm <sup>3</sup>
Controller unit (W×L×H)	160 × 104 × 55 mm <sup>3</sup>
Power adapter, typical (W×L×H)	100 × 200 × 50 mm <sup>3</sup>

### 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 <sup>11)</sup>
Power consumption	100 W                      150 W

<sup>1)</sup> 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.

<sup>2)</sup> FWHM level at 1064 nm. Shorter pulse duration is available by request. Please inquire for detailed specifications.

<sup>3)</sup> Averaged from 30 second time interval.

<sup>4)</sup> Over 8 hour period after 20 minutes of warm-up when ambient temperature variation is less than ±2 °C.

<sup>5)</sup> Factory-set pulse repetition rate is fixed at max repetition rate shown in the table. Higher repetition rates are available, please inquire for details.

<sup>6)</sup> Full angle measured at the 1/e<sup>2</sup> level.

<sup>7)</sup> Beam diameter is measured 20 cm from laser output at the 1/e<sup>2</sup> level.

<sup>8)</sup> In respect to Q-switch triggering edge of pulse.

<sup>9)</sup> Harmonics generator module is stand-alone unit optimized for specified output wavelength. Inquire for details if multiple wavelength output is needed.

<sup>10)</sup> Attenuator is built-in into harmonics generator module.

<sup>11)</sup> Laser can be powered from appropriate 28 V DC power source. Please inquire for details.



## DRAWINGS

