

Quantas Q-PICO

DPSS PICOSECOND LASER

FEATURES

More than **1 mJ** pulse energy from

Air cooled (no water)

Short pulse duration **700 ps**

Variable pulse repetition rate

Up to **20 Hz** repetition rate

Remote control via built-in **Ethernet** interface

1064 / 532 / 355 / 266 nm harmonic outputs

OEM design

Guaranteed **> 1 Gshot** lifetime

APPLICATIONS

Seeding picosecond amplifiers

Medical

Spectroscopy

Metrology

Supercontinuum generation

Pollution monitoring

Biophotonics



The newly developed Quantas Picosecond laser system is a perfect choice for OEMs and system integrators who produce picosecond laser systems for medical and aesthetic use. It combines innovative pulse compression technique with robust master oscillator. System consist of diode pumped actively Q-switched short pulse nano-second laser and non-linear solid state compressor. Master oscillator is designed to produce short pulses with high output energy. Optical components of master oscillator are sealed from environment in order to avoid contamination and ensure long-term reliable operation of the laser.

Master oscillator and pulse compressor are mounted on common plate that is temperature controlled using TEC coolers with good temperature stability. Laser controller has Ethernet interface for convenient monitoring and control from personal computer. The compact design is easy to integrate into amplifier system. Sub-nanosecond pulse duration, high pulse energy, stable long term output specs, makes Quantas PICO lasers ideal source for system integrators.

SPECIFICATIONS ¹⁾

Model	Quantas-PICO
Wavelength	1064 nm
Pulse energy	> 1 mJ
Typical pulse duration	700 ± 100 ps ²⁾
Pulse to pulse energy stability	< 3.0% RMS ³⁾
Power drift	±3% over 8 hours ⁴⁾
Pulse repetition rate	0 – 20 Hz (variable) ⁵⁾
Beam profile	bell-shaped, > 90 % fit to Gaussian
Beam divergence	< 4 mrad ⁶⁾
Beam pointing stability	< 30 µrad RMS
Polarization	linear, > 95%
Typical beam diameter	0.8 mm ⁷⁾
Jitter	< 1 ns RMS ⁸⁾

OPTIONAL HARMONICS GENERATOR MODULE

Pulse energy	
532 nm	0.5 mJ
355 nm	0.2 mJ
266 nm	0.1 mJ

OPTIONAL ATTENUATOR

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

DIMENSIONS

Laser head (W×L×H)	150 × 275 × 135 mm ³
Harmonics generator module (W×L×H)	113 × 242 × 112 mm ³
Controller unit (W×L×H)	104 × 165 × 55 mm ³
Power adapter, typical (W×L×H)	50 × 125 × 32 mm ³

OPERATING REQUIREMENTS

Cooling requirements	air cooled
Ambient temperature	20 – 35 °C
Cooling system	forced air (cold plate is optional)
Max separation of laser head and controller	1 m (limited by interconnection cable length); 3 m is optional
Relative humidity	10 – 80 % (non-condensing)
Mains voltage	90 – 230 V AC, single phase, 47 – 63 Hz ⁹⁾
Power consumption	< 50 W peak

¹⁾ Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at 1064 nm and max pulse repetition rate depending on model.

²⁾ FWHM level at 1064 nm. Expected.

³⁾ Averaged from 30 second time interval.

⁴⁾ Over 8 hour period when ambient temperature variation is less than ±2 °C.

⁵⁾ Factory-set pulse repetition rate is 20 Hz. Variable pulse repetition rate is possible when laser is externally triggered.

⁶⁾ Full angle measured at 1/e² level.

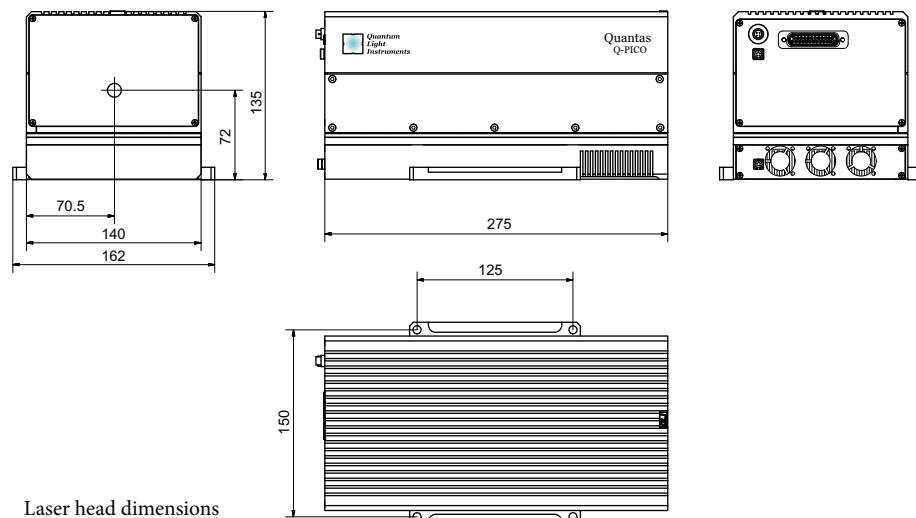
⁷⁾ Beam diameter is measured 20 cm from laser output at 1/e² level.

⁸⁾ In respect to pump diode triggering pulse.

⁹⁾ Powering from +12 V DC, 5 A power supply is possible.



DRAWINGS



Laser head dimensions