

EO-Q-YAG

Nd:YAG DIODE-PUMPED Q-SWITCHED LASERS



- Up to 32 mJ pulse energy at 1064 nm
- Air cooled
- Variable pulse repetition rate
- Built-in sync pulse generator for triggering of user equipment
- Remote control via build-in Ethernet interface
- Optional 2nd, 3rd, 4th or 5th harmonic generators
- Optional attenuator for 1053 nm, 527 nm and 351 nm wavelengths
- Optional fiber coupled output
- OEM version available

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

Quantas EO-Q-YAG is compact, air-cooled, Q-switched laser designed for wide range of applications that require low pulse repetition rate and high peak power pulses (EO-Q1D-YAG model produces ~5 MW peak power). Due good thermal properties of Nd:YAG crystal EO-Q-YAG can operate at higher pulse repetition rates in comparison to EO-Q-YLF.

SPECIFICATIONS ¹⁾

| Model | Quantas-1064 Q1A | Quantas-1064 Q1B | Quantas-1064 Q1C | Quantas-1064 Q1D |
|-------------------------------------|-------------------------------|------------------|-------------------------------------|------------------|
| Wavelength | 1064 nm ²⁾ | | | |
| Pulse energy ³⁾ | | | | |
| Fundamental | 4 mJ | 10 mJ | 18 / 16 mJ | 32 / 30 mJ |
| 2 nd harmonic (532 nm) | 1.6 mJ | 5 mJ | 9 / 8 mJ | 16 / 15 mJ |
| 3 rd harmonic (355 nm) | 0.8 mJ | 3 mJ | 5.5 / 5 mJ | 9.5 / 9 mJ |
| 4 th harmonic (266 nm) | 0.4 mJ | 1.5 mJ | 3 / 2.5 mJ | 5 / 4 mJ |
| 5 th harmonic (213 nm) | 0.1 mJ | 0.5 mJ | 1.2 / 1 mJ | 2 / 1.6 mJ |
| Pulse repetition rate ⁴⁾ | | | | |
| Min | Single-shot | | | |
| Max | 10 Hz | 10, 20 or 50 Hz | 10 or 20 Hz | 10 or 20 Hz |
| Pulse duration | < 8 ns ⁵⁾ | | | |
| Pulse-to-pulse energy stability | < 1 % rms ⁶⁾ | | | |
| Power drift | ± 3% ⁷⁾ | | | |
| Beam profile | Nearly TEM ₀₀ | | Bell-shaped, > 75 % fit to Gaussian | |
| Beam divergence ⁸⁾ | < 3 mrad | | < 1.5 mrad | |
| Beam diameter ⁹⁾ | 1.2 mm | 1.5 mm | 2 mm | 2.5 mm |
| Polarization | Linear, horizontal at 1064 nm | | | |
| Optical jitter | N/A | | < 1 ns rms ¹⁰⁾ | |

PHYSICAL CHARACTERISTICS & OPERATING REQUIREMENTS

| | |
|---------------------------------|--|
| Laser head (W × L × H) | 113 × 230 × 112 mm |
| Harmonics generator (W × L × H) | 113 × 242 × 112 mm |
| Controller unit (W × L × H) | 85 × 165 × 50 mm |
| Power adapter (W × L × H) | 50 × 125 × 31 mm |
| Operation environment | 15–30 °C, 10–80 % humidity – non-condensing 90–240 VAC, 30 W, 47–63 Hz ¹¹⁾ |

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 1064 nm at max pulse repetition rate.
²⁾ 1053 nm output wavelength models are available. Check EO-Q-YLF series.
³⁾ First number is for 10 Hz, second – for 20 Hz pulse repetition rate.
⁴⁾ Factory-set pulse repetition rate is fixed at max repetition rate. Single-shot or variable pulse repetition rate is possible when laser is externally triggered. Higher repetition rates are available, please inquire for details.

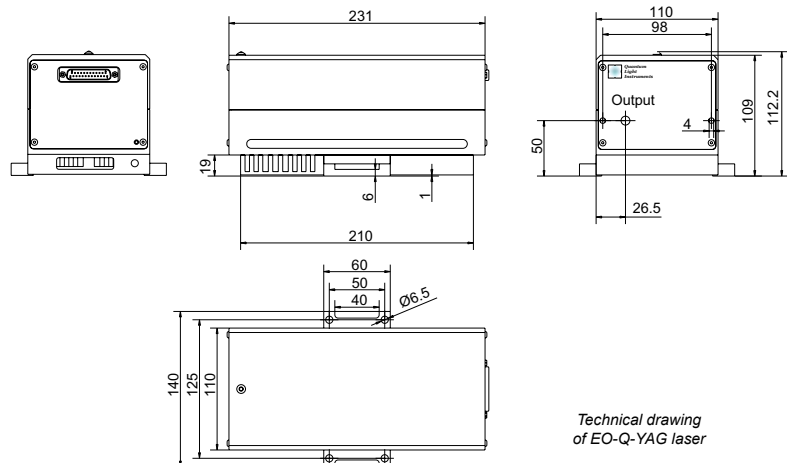
⁵⁾ FWHM at 1053 nm. Shorter pulse durations are available by request.
⁶⁾ Averaged from 500 pulses.
⁷⁾ Over 8 hour period after 20 minutes of warm-up when ambient temperature variation is less than ±2 °C.
⁸⁾ Full angle measured at the 1/e² level.
⁹⁾ Beam diameter is measured 20 cm from laser output at the 1/e² level.
¹⁰⁾ In respect to Q-switch triggering pulse.
¹¹⁾ Laser can be powered from appropriate 12 VDC power source. Inquire for details.

RELATED PRODUCTS

Laser Safety Eyewear
See page 1.16.



Visualizers
See page 1.16



Technical drawing of EO-Q-YAG laser