The Quantel Group
Founded in 1970, the Quantel group has established itself over the last twenty years as one of the world’s leading specialists laser technology for scientific (laboratories and universities), industrial (material processing, process analytics, marking) and medical (ophthalmology) applications.
With design and manufacturing facilities in France and the US, and a strong world-wide sales and service network, the Quantel Group serves a global customer base.

Compact pulsed Nd:YAG lasers

Q-smart 450 & 850
Compact, easy to use, Plug & Play
Complete flexibility
Automatic adjustments, no need to align.

Q-smart series, the ideal lasers for:
- LIBS
- LIDAR
- Flash Photolysis
- Ablation
- PLD
- Spectroscopy
- OPO pumping
- PIV
- Photo acoustic imaging, etc.

Q-smart specifications

<table>
<thead>
<tr>
<th>Wavelength</th>
<th>Q-smart 450</th>
<th>Q-smart 850</th>
</tr>
</thead>
<tbody>
<tr>
<td>1064 nm</td>
<td>450 mJ</td>
<td>850 mJ</td>
</tr>
<tr>
<td>532 nm</td>
<td>220 mJ</td>
<td>430 mJ</td>
</tr>
<tr>
<td>355 nm</td>
<td>130 mJ</td>
<td>230 mJ</td>
</tr>
<tr>
<td>266 nm</td>
<td>60 mJ</td>
<td>100 mJ</td>
</tr>
<tr>
<td>213 nm</td>
<td>10 mJ</td>
<td>20 mJ</td>
</tr>
</tbody>
</table>

Q-smart 450 Q-smart 850

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Q-smart 450</th>
<th>Q-smart 850</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repetition rate (Hz)</td>
<td>10-50 MHz</td>
<td>10-50 MHz</td>
</tr>
<tr>
<td>Pulsed energy (mJ) (1)</td>
<td>450 mJ</td>
<td>850 mJ</td>
</tr>
<tr>
<td>Energy stability (%) (2)</td>
<td>± 2 (0.67)</td>
<td>± 2 (0.67)</td>
</tr>
<tr>
<td>Power drift (%) (3)</td>
<td>± 4 (1.3)</td>
<td>± 4 (1.3)</td>
</tr>
<tr>
<td>Pulse duration (ns) (4)</td>
<td>± 6 (2)</td>
<td>± 6 (2)</td>
</tr>
<tr>
<td>Pointing stability (µrad) (5)</td>
<td>± 8 (2.6)</td>
<td>± 8 (2.6)</td>
</tr>
<tr>
<td>Jitter (ns) (6)</td>
<td>± 12 (4)</td>
<td>± 12 (4)</td>
</tr>
<tr>
<td>Focusability (times Diffraction Limit) (7)</td>
<td>± 3 ± 3</td>
<td>± 5 ± 5</td>
</tr>
<tr>
<td>Linewidth (cm⁻¹) (8)</td>
<td>± 10 ± 10</td>
<td>± 10 ± 10</td>
</tr>
<tr>
<td>Divergence (mrad) (9)</td>
<td>± 14 ± 14</td>
<td>± 14 ± 14</td>
</tr>
<tr>
<td>Beam diameter (mm) (10)</td>
<td>~ 6 ~ 6</td>
<td>~ 5 ~ 5</td>
</tr>
<tr>
<td>Spatial profile @1064 nm (11)</td>
<td>&lt; 40 &lt; 40</td>
<td>&lt; 40 &lt; 40</td>
</tr>
<tr>
<td>Polarization ratio (%)</td>
<td>&gt; 0.90</td>
<td>&gt; 0.90</td>
</tr>
<tr>
<td>Temperature (°C) &amp; Humidity</td>
<td>18 / 28 °C, 10% / 80%</td>
<td>18 / 28 °C, 10% / 80%</td>
</tr>
<tr>
<td>Cable length (m)</td>
<td>3 m (10 feet)</td>
<td>3 m (10 feet)</td>
</tr>
</tbody>
</table>

Notes:
(1) SLM: upgradable on site (2) 532 High Energy version on request (3) Measured with a calibrated energy meter (4) Peak to peak, 100% of the shots (5) RMS, 8 hours, indirect measurement of phase stability, 10°C 7 °C 28 °C 50 °C 75 °C Full angle ±15° and ±0.05° (6) Measured bandpass (≤ 0.01% at 40 MHz), at the focal point of the laser head, at the focussing lens (7) measured at the output of the laser, with 4% reflectivity (8) RMS, 8 hours, indirect measurement of phase stability, 10°C 7 °C 28 °C 50 °C 75 °C Full angle ±15° and ±0.05° (9) Measured beam diameter with a grating spectrometer with a <0.045 cm⁻¹ resolution (10) At focus of the laser, with a beam profiler (11) Measured with a calibrated energy meter (12) Measured with a calibrated energy meter (13) Measured beam diameter with a grating spectrometer with a <0.045 cm⁻¹ resolution (14) Measured with a calibrated energy meter (15) Measured beam diameter with a grating spectrometer with a <0.045 cm⁻¹ resolution (16) Measured beam diameter with a grating spectrometer with a <0.045 cm⁻¹ resolution (17) (80% of energy) or for 2 years, whichever comes first

For more detailed technical drawings, please visit www.quantel-laser.com

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www.quantel-laser.com
### Q-smart Features

- **Light and Compact Laser with Quick Connect Cables**
  - 100% PLD & PLAY HARMONIC GENERATORS
  - INTEGRAL DEIONIZATION OF WATER CARTRIDGE
  - SINGLE ELEMENT FOR HIGHEST ENERGY AT 520 & 355 nm
  - SINGLE LONGITUDINAL MODE (SLM)
  - SINGLE DOUBLER FOR HIGHEST ENERGY AT 532 & 355 nm

- **Basic Beam Quality and Tempered Glass**
  - EXCELLENT BEAM QUALITY AND POINTING STABILITY
  - HIGHEST ENERGY AT BOTH 532 & 355 nm
  - HISTOGRAMAUTOMATION ORLASER RE-ALIGNMENT
  - LAMP CHANGE REQUIRES NO LASER RE-ALIGNMENT
  - INTELLIGENT AUTOTUNING OF HARMONICS

- **Easy Disconnection of the Laser Head**
  - QUICK CONNECT CABLES
  - SMALL, COMPACT AND PORTABLE POWER SUPPLY (27 kg)

- **Basic Beam Quality and Tempered Glass**
  - BASIC BEAM QUALITY AND TEMPERED GLASS
  - 100 MILLION SHOT LAMP LIFETIME GUARANTEE

- **Operating the Q-smart is Easy**
  - INTUITIVE LASER OPERATION
  - TFACTOR DEIONIZATION OF WATER CARTRIDGE

- **Main Features**
  - UNIVERSAL POWER SUPPLY
  - 120/230 VAC, 50/60 Hz, 13 AMPS
  - 1064, 355, 213 nm

- **Technology**
  - MECHANICAL STABILITY
  - THERMAL STABILITY

- **Safety**
  - 2-YEAR FULL WARRANTY

- **Interchangeability of Power Supplies**
  - INTERCHANGEABILITY OF POWER SUPPLIES

- **Compact and Portable**
  - COMPACT AND PORTABLE

### Q-smart Operating Environment

- **Universal Line Voltage**
  - Universal line voltage, 100 to 240 VAC

### Q-smart Specifications

#### Laser Head

- **Dimensions**
  - 1064 nm: 526 mm (20.7'')
  - 355 nm: 283 mm (11.14'')

- **Weight**
  - 1064 nm: 7 kg (15.4 lbs)
  - 355 nm: 2.1 kg (4.63 lbs)

#### Harmonic Generator

- **Dimensions**
  - 1064 nm: 507 mm (19.95'')
  - 355 nm: 43 mm (1.69'')

- **Weight**
  - 1064 nm: 2.1 kg (4.63 lbs)
  - 355 nm: 0.4 kg (0.88 lbs)

- **Power Supply**
  - **Dimensions**
    - 1064 nm: 220 mm (8.66'')
    - 355 nm: 59.8 mm (2.32'')
  - **Weight**
    - 1064 nm: 5.2 kg (11.5 lbs)
    - 355 nm: 2.1 kg (4.63 lbs)

#### For Frequency Tripling

- **Dimensions**
  - 1064 nm: 397 mm (15.6'')
  - 355 nm: 92 mm (3.63'')

- **Weight**
  - 1064 nm: 2.4 kg (5.3 lbs)
  - 355 nm: 0.4 kg (0.88 lbs)

#### For Frequency Quintupling

- **Dimensions**
  - 1064 nm: 575 mm (22.6'')
  - 355 nm: 125 mm (4.92'')

- **Weight**
  - 1064 nm: 4.9 kg (10.8 lbs)
  - 355 nm: 1.4 kg (3.09 lbs)

- **Power Supply**
  - **Dimensions**
    - 1064 nm: 220 mm (8.66'')
    - 355 nm: 59.8 mm (2.32'')
  - **Weight**
    - 1064 nm: 5.2 kg (11.5 lbs)
    - 355 nm: 2.1 kg (4.63 lbs)