KEY FEATURES:
• Exceptional wavelength stability < 0.015 nm
• Coherence length up to 2.0 m
• Output powers up to 500 mW
• Excellent beam quality and stability
• Temperature-stabilized
• Highly cost-efficient

HIGHLY STABILIZED COMPACT LASER SYSTEM
FOR RAMAN SPECTROSCOPY AND HIGH-RESOLUTION APPLICATIONS

Beam specifications

<table>
<thead>
<tr>
<th>Wavelength</th>
<th>Maximum output power</th>
<th>Spectral linewidth</th>
<th>Coherence length</th>
</tr>
</thead>
<tbody>
<tr>
<td>405 nm</td>
<td>10, 35 mW</td>
<td>160 MHz / 0.1 pm</td>
<td>&gt; 1.0 m</td>
</tr>
<tr>
<td>633 nm</td>
<td>40, 70 mW</td>
<td>150 MHz / 0.2 pm</td>
<td>&gt; 0.9 m</td>
</tr>
<tr>
<td>640 nm</td>
<td>10 mW</td>
<td>&lt; 150 MHz / 0.2 pm</td>
<td>&gt; 2.0 m</td>
</tr>
<tr>
<td>640 nm</td>
<td>30 mW</td>
<td>300 MHz / 0.4 pm</td>
<td>&gt; 0.5 m</td>
</tr>
<tr>
<td>660 nm</td>
<td>35 mW</td>
<td>300 MHz / 0.5 pm</td>
<td>&gt; 0.3 m</td>
</tr>
<tr>
<td>685 nm</td>
<td>45 mW</td>
<td>&lt; 50 MHz / 0.1 pm</td>
<td>&gt; 2.0 m</td>
</tr>
<tr>
<td>690 nm</td>
<td>45 mW</td>
<td>&lt; 50 MHz / 0.1 pm</td>
<td>&gt; 2.0 m</td>
</tr>
<tr>
<td>785 nm</td>
<td>75 mW</td>
<td>&lt; 50 MHz / 0.1 pm</td>
<td>&gt; 2.0 m</td>
</tr>
<tr>
<td>785 nm</td>
<td>100 mW</td>
<td>&lt; 50 MHz / 0.1 nm</td>
<td>&gt; 0.6 cm</td>
</tr>
<tr>
<td>785 nm</td>
<td>75 mW</td>
<td>&lt; 50 GHz / 0.1 nm</td>
<td>&gt; 0.6 cm</td>
</tr>
<tr>
<td>785 nm</td>
<td>100 mW</td>
<td>&lt; 50 GHz / 0.1 nm</td>
<td>&gt; 0.6 cm</td>
</tr>
<tr>
<td>808 nm</td>
<td>150 mW</td>
<td>&lt; 50 MHz / 0.1 pm</td>
<td>&gt; 2.0 m</td>
</tr>
<tr>
<td>830 nm</td>
<td>500 mW (optional)</td>
<td>&lt; 66 GHz / 0.15 nm</td>
<td>&gt; 4.5 mm</td>
</tr>
</tbody>
</table>

*1 transversal multi mode  *2 Water cooler recommended  *3 Running the laser continuously at maximum output power

The actual emission wavelength may deviate from the specified wavelength by up to ± 1 nm.

General specifications

<table>
<thead>
<tr>
<th>Warm-up time</th>
<th>Drive mode</th>
<th>Modulation modes*</th>
<th>Control modes</th>
<th>CDRH classification</th>
<th>Dimensions</th>
<th>Weight</th>
<th>Operating temperature</th>
<th>Storage temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>ready for use after 5 s, calibrated operation after 3 min</td>
<td>active current control</td>
<td>constant adjustable power, analog &amp; digital external modulation up to 1.5 MHz</td>
<td>power, temperature and modulation via USB, optional remote control available</td>
<td>3b, 4 (for laser output &gt; 500mW)</td>
<td>63.5 × 31.0 × 32.5 mm (technical drawing available on our website)</td>
<td>94 g (laser head)</td>
<td>0 °C to 45 °C (non-condensing)</td>
<td>-25 °C to 70 °C</td>
</tr>
</tbody>
</table>

* Modulation may decrease beam quality and stability.
The Lambda Beam laser head requires a laser controller to provide power and control all operating parameters. For scientific applications and prototyping we recommend using our PowerController. For industrial integration we also offer the highly compact PowerBox to be directly attached to the laser head or connected via a customized cable.

**PowerController**

- Modulation input: analog and digital 0 – 5 V DC
- Modulation: up to 0.5 MHz
- Digital interface: USB*(RS-232 optional)
- Further control inputs: Interlock, key switch, modulation mode switch
- Cable length: 80 cm (default)
- Power consumption: 12 V DC, up to 2 A (depending on laser output power)
- AC adapter (included): 100 – 240 V AC, 50 – 60 Hz
- Dimensions: 85.0 × 85.0 × 32.5 mm (technical drawing available on our website)
- Weight: 416 g

**PowerBox**

- Modulation input: analog and digital 0 – 5 V DC
- Modulation: up to 1.5 MHz
- Digital interface: USB*(RS-232 optional)
- Further control inputs: Interlock
- Power consumption: 12 – 36 V DC, up to 2 A (depending on laser output power)
- Dimensions: 39.0 × 31.0 × 32.5 mm (technical drawing available on our website)
- Weight: 69 g

For more details, please see the PowerBox data sheet.

* Digital connection is not required for operation.

*2 See separate data sheet for details.

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Options and accessories

- Beam diameter correction
- Polarization > 10 000 : 1
- Opto-mechanical shutter
- Diode wavelength selection
- Water cooling base plate
- Remote control RC-1 for Power Controller
- RS-232 interface
- Fiber coupler*2

**Ltune control software**

All operating parameters can be monitored and controlled from a PC using the Ltune laser control software for Windows. Alternatively, the laser can easily be controlled from your own application software. Please refer to the user manual for a detailed description of the communication protocol.

**Typical Applications**

- Analytical Instrumentation
- Bio-Instrumentation
- Confocal Microscopy
- Holography
- HeNe Replacement
- LIDAR
- Metrology
- Raman
- Speckle Interferometry
- Photodynamic Therapy

**Typical power stability**

![Typical power stability graph](rgb-photonics.com)

Please contact us if your requirements are not matched by these specifications. Custom modifications are available for any quantities. All specifications are subject to change without notice. The latest versions can be found on our website.

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