Features
Up to 4mJ pulse energy
4MW peak power
400ps to 3ns pulsewidth
Single shot to 100kHz
@1064 @532 @355 @266nm
MOPA configurations
Monolithic design
Air cooling
Low heat waste

Applications
Micromachining of glass
Specialty marking
Thin film removal
LIDAR and bathymetry
Non-linear spectroscopy
Harmonic and parametric generation
Visible to IR OPO pumping
TeraHertz generation
The Wedge family has been renewed in terms of performances and available models.
Wedge HB and XB feature high pulse energy in the kHz range; they can provide a peak power up to 4 MW at 1064nm and a pulsewidth of about 1 ns.
Wedge HF and Wedge XF models - available in a very compact footprint – can work from single shot to 100 kHz with a Pulse Width between 400 ps and 3 ns.
Wedge is also a flexible platform for realizing customized units where high power amplifiers are added to standard oscillators in order to fit the most demanding industrial and aerospace applications.
Several Wedge based MOPA lasers are currently employed as "engine" in high-demanding field applications, both industrial and Mil-spec.
Based on a proprietary fast active Q-Switching technology, these compact sealed DPSS lasers are insensitive to vibrations and harsh environments and have been designed for OEM applications like micro-machining of hard and soft materials, specialty marking, glass and crystals engraving, LiDAR, LIBS, Spectroscopy and medical diagnostics.
High output peak power, with relatively low energy and heat generation, allows efficient ablation and non-linear interaction with most materials. The compact and lightweight package represents a great benefit in LiDAR and other aerospace applications, while short pulses give extremely precise time-of-flight measurements, also for "eye-safe" applications.
Second, Third and Fourth Harmonic (532, 355 and 266 nm output) and wavelength conversion option (1.5 and 3.3 μm) widen the product application range.
A wide range of customized solutions based on Wedge platform is available under request, e.g. meeting specific time / energy performances, vibration and shock requirements, extreme environmental conditions and compliance to Mil-specifications.

OPTIONS AVAILABLE:

- Beam expanding and collimating optics
- Fiber coupling
- Low jitter option
- Extended operating temperature range
- Pulse energy modulation
- IP68 package
- 28 V DC Input for airborne installation
- Circular polarization
- Monitoring photodiode
- Red aiming beam
- Remote control box and software interface
- AC-DC power supply

*Wedge HF / XF standard footprint
**Wedge**

Short Pulse Q-Switched DPSS Laser

*IP 68 MOPA configuration*

In the following table the main features of standard Wedge models are presented; for a complete description of laser performances at 1064, 532, 355, 266 nm please refer to product datasheets.

<table>
<thead>
<tr>
<th>1064nm Wedge models</th>
<th>High energy</th>
<th>Sub-ns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wedge HB</td>
<td>Wedge XB</td>
</tr>
<tr>
<td><strong>Max pulse energy</strong></td>
<td>2 mJ</td>
<td>4 mJ</td>
</tr>
<tr>
<td><strong>Repetition rate</strong></td>
<td>Single Shot to 2 kHz</td>
<td>Single Shot to 1 kHz</td>
</tr>
<tr>
<td><strong>Harmonics / Wavelength conversion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pulsewidth</strong></td>
<td>&lt; 1.5 ns</td>
<td>&lt; 1.5 ns</td>
</tr>
<tr>
<td><strong>Peak power</strong></td>
<td>up to 2 MW</td>
<td>up to 2 MW</td>
</tr>
<tr>
<td><strong>Polarization</strong></td>
<td>Linear 100 : 1 (option circular polarization)</td>
<td></td>
</tr>
<tr>
<td><strong>Beam quality (M²)</strong></td>
<td>&lt; 2</td>
<td>&lt; 2.5</td>
</tr>
<tr>
<td><strong>Cooling</strong></td>
<td>Air-cooled</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(option: water cooling and contact cooling)</td>
<td></td>
</tr>
<tr>
<td><strong>DC voltage IN</strong></td>
<td>Dual 8 V - 15 V</td>
<td>Dual 12 V - 15 V</td>
</tr>
<tr>
<td><strong>Overall mechanical dimensions</strong></td>
<td>26 x 22 x 8 cm³</td>
<td>26 x 25 x 10 cm³</td>
</tr>
<tr>
<td></td>
<td>(10 x 9 x 3 in³)</td>
<td>(10 x 10 x 4 in³)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>&lt; 10 kg</td>
<td>&lt; 12 kg</td>
</tr>
<tr>
<td></td>
<td>(&lt; 22 lbs)</td>
<td>(&lt; 27 lbs)</td>
</tr>
</tbody>
</table>

*1 mJ – 1.5 μm – 1 kHz Eye-safe*
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