Satsuma

Versatile, full-featured and compact femtosecond laser

The Satsuma family of femtosecond laser offers versatility in the most compact air-cooled laser platform on the market. Satsuma is a cost-efficient solution providing high repetition rate and high energy, up to 150 µJ.

Versatile and full-featured, Satsuma femtosecond lasers are equipped with: FemtoBurst™ (choose number of pulses, rhythms, time between each pulse from 25 to 100 ns) and SuperSync Control for getting more precise synchronization with a high speed scanning system. Satsuma femtosecond laser is available with green, UV and deep UV outputs.

With more than 1 500 Satsuma installed around the world, this laser product range is a best-seller. Our customers highly appreciate the ease of integration, and its unsurpassed engraving quality.

Satsuma is part of Amplitude’s femtosecond laser range, internationally-recognized as reliable and stable. Their very short pulse widths lead to both the lowest heating effect on the market and the best ablation efficiency, reaching an unparalleled process quality.

Applications

Industry:
> Microelectronics
> Micromachining
> Flat Panel Display Repair

Medical:
> Ophthalmology
> Medical Device Manufacturing

Science:
> Multiphoton Imaging
> Optogenetics
> Ultrafast Spectroscopy

Key Features

> Air-cooled up to 20 W
> FemtoBurst™
> SuperSync Control
> Optional green, UV and DUV outputs
> Industrial design for 24/7 operation
## Specifications

<table>
<thead>
<tr>
<th></th>
<th>Satsuma</th>
<th>Satsuma HP</th>
<th>Satsuma HP²</th>
<th>Satsuma HP³</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Power</strong></td>
<td>&gt; 5 W</td>
<td>&gt; 10 W</td>
<td>&gt; 20 W</td>
<td>&gt; 50 W</td>
</tr>
<tr>
<td><strong>Energy Per Pulse</strong></td>
<td>&gt; 10 µJ</td>
<td>&gt; 20 µJ</td>
<td>&gt; 40 µJ / 150 µJ*</td>
<td>&gt; 50 W</td>
</tr>
<tr>
<td><strong>Pulse Width</strong></td>
<td>&lt; 350 fs to &gt; 10 ps</td>
<td>From single shot to 40 MHz</td>
<td>From single shot to 40 MHz</td>
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</tr>
<tr>
<td><strong>Repetition Rate</strong></td>
<td>&lt; 30 min</td>
<td>25 µrad/°C</td>
<td>&lt; 1 % rms over 100 hours</td>
<td>&lt; 1 % rms over 100 hours</td>
</tr>
<tr>
<td><strong>Central Wavelength</strong></td>
<td>1030 +/- 5 nm</td>
<td>1030 +/- 5 nm</td>
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</tr>
<tr>
<td><strong>Beam Quality</strong></td>
<td>M²&lt;1.2</td>
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<td>M²&lt;1.2</td>
</tr>
<tr>
<td><strong>Beam Circularity</strong></td>
<td>&gt; 87 %</td>
<td>&gt; 87 %</td>
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</tr>
<tr>
<td><strong>Beam Pointing Stability</strong></td>
<td>&lt;25 µrad/°C</td>
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<td>&lt;25 µrad/°C</td>
</tr>
<tr>
<td><strong>Long Term Mean Power Stability</strong></td>
<td>&lt; 1 % rms over 100 hours</td>
<td>&lt; 1 % rms over 100 hours</td>
<td>&lt; 1 % rms over 100 hours</td>
<td>&lt; 1 % rms over 100 hours</td>
</tr>
<tr>
<td><strong>Warm-up Time</strong></td>
<td>&lt; 30 min</td>
<td>&lt; 30 min</td>
<td>&lt; 30 min</td>
<td>&lt; 30 min</td>
</tr>
</tbody>
</table>

*High Energy Option

## Dimensions

- **All Models**
  - 52 x 33 x 12 cm

## Weight

- **All Models**
  - 23 kg

## Cooling

- **Satsuma, HP, HP²**
  - Air-cooled
- **Satsuma HP³**
  - Water-cooled

## Options

- **SHG/THG/FHG**
- **Mango**
- **Compress**
- **GLASS**
- **Synchrolock**
- **FIBER**

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**DANGER**

Avoid eye or skin exposure to direct or scattered radiation.