Ultrashort femtosecond fiber lasers

VALO Series

- <50 fs pulse duration
- Power level up to 200 mW & 2 W
- Very low noise performance
- Integrated precompensation dispersion module

The VALO Series of ultrafast fiber lasers are unique in their design offering amongst the shortest femtosecond pulses and highest peak powers which can be obtained from a compact turn-key solution. Pulse durations of <50 fs are achieved using novel fiber laser based technology.

The ultrashort pulse durations combined with computer controlled group velocity dispersion pre-compensation, allow users of the VALO fs fiber lasers to achieve the highest peak power exactly where its needed, which makes the lasers ideal for use in multiphoton imaging, advanced spectroscopy and many other applications.

Applications
- Multiphoton microscopy
- Optogenetics
- Two-photon polymerization
- Terahertz generation
- ...

Optical spectrum

Temporal profile

Typical beam profile

HÜBNER Photonics
# VALO Series

## Specifications

<table>
<thead>
<tr>
<th></th>
<th>VALO Aalto</th>
<th>VALO Tidal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse duration (FWHM)</td>
<td>&lt; 50 fs</td>
<td>&lt; 50 fs</td>
</tr>
<tr>
<td>Center wavelength</td>
<td>1045 ± 10 nm</td>
<td>1050 ± 10 nm</td>
</tr>
<tr>
<td>Average power</td>
<td>&gt; 200 mW</td>
<td>&gt; 2 W</td>
</tr>
<tr>
<td>Repitition rate</td>
<td>30 ± 1 MHz (Other repetition rates upon request)</td>
<td>30 ± 1 MHz (Other repetition rates upon request)</td>
</tr>
<tr>
<td>Pulse energy</td>
<td>&gt; 6.5 nJ</td>
<td>&gt; 66 nJ</td>
</tr>
<tr>
<td>Polarization</td>
<td>Linear</td>
<td>Linear</td>
</tr>
<tr>
<td>Spectral bandwidth</td>
<td>&gt; 90 nm (@ -10 dB)</td>
<td>&gt; 90 nm (@ -10 dB)</td>
</tr>
<tr>
<td>M²</td>
<td>&lt; 1.2 (typ. &lt; 1.1)</td>
<td>&lt; 1.25</td>
</tr>
<tr>
<td>Warm up time</td>
<td>&lt; 1 min</td>
<td>&lt; 1 min</td>
</tr>
</tbody>
</table>

### Mechanical Specifications

![Mechanical Diagram]

**WARNING**

VISABLE AND INVISIBLE LASER RADIATION

This device contains components that might be sensitive to Electrostatic Discharge (ESD). ESD Protection can be achieved with proper electrical grounding

**VALO Tidal**

Invisible Laser Radiation
Avoid eye or skin exposure to direct or scattered radiation
Class 4 Laser Product
Classified by DIN EN 60825-1:2015-07

**VALO Aalto**

Invisible laser radiation
Avoid exposure to beam
Class 3B Laser Product
Classified by IEC 60825-1:2014-05

Specifications and technical data are subjects to change without notice due to technical developments.
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