ALTAIR produces high average power with ultrashort femtosecond pulses (<160 fs) at high repetition rate (80 MHz standard, others optional) in an ultra compact and robust format. ALTAIR is a fiber laser providing high stability and excellent beam quality.

Integrating state of the art high-power fully packaged fiber amplifiers and pulse management, ALTAIR offers remarkable pulse quality at high average power with no maintenance required.

ALTAIR is ideally suited for multi-photon microscopy applications. The 1 µm wavelengths offers many benefits for bioimaging: lower scattering, deeper penetration.

<160 FS PULSES / QCW / 80 MHz REPETITION RATE

HIGH-POWER, HIGH REPETITION RATE FEMTOSECOND LASER FOR BIOPHOTONICS

CORE SPECIFICATIONS
/ High repetition rate : 80 MHz
/ High power : from 1W to 20W
/ < 160 fs

USABILITY
/ Compact, robust and air-cooled fiber laser
/ Plug’n play : < 5 min set up, sync. out
/ Intuitive user interface

APPLICATIONS
/ Multiphoton / Two-photon microscopy
/ Neuroscience
/ Optogenetics

CUSTOMER CARE
/ 12-month warranty
/ Worldwide technical support
/ Laser customization

Contact : +33 557 977 472 / info@spark-lasers.com
www.spark-lasers.com
# TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>ALTAIR IR-1</th>
<th>ALTAIR IR-5</th>
<th>ALTAIR IR-10</th>
<th>ALTAIR IR-20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AVERAGE POWER</strong></td>
<td>1W</td>
<td>5W</td>
<td>10W</td>
<td>20W</td>
</tr>
<tr>
<td><strong>WAVELENGTH</strong></td>
<td></td>
<td>1040 nm (other optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PULSE DURATION</strong></td>
<td></td>
<td>&lt; 160 fs (other optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>REPETITION RATE</strong></td>
<td></td>
<td>80 MHz (other optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M²</strong></td>
<td></td>
<td>&lt; 1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BEAM WAIST DIAMETER</strong></td>
<td></td>
<td>1 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BEAM POINTINGGB STABILITY</strong></td>
<td></td>
<td>&lt; 25 μrad/°C</td>
<td></td>
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</tr>
<tr>
<td><strong>ELLIPITCITY</strong></td>
<td></td>
<td>&gt; 0.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WARM-UP TIME</strong></td>
<td></td>
<td>&lt; 5 min</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>POWER STABILITY</strong></td>
<td></td>
<td>&lt; 1% RMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RMS NOISE</strong></td>
<td></td>
<td>&lt; 1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>POLARIZATION</strong></td>
<td></td>
<td>linear, &gt; 100:1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## ELECTRICAL

**EXTERNAL INTERFACES**
High speed external synchronisation (Sync. Out), communication through USB, RS 232, TCP/IP

**SOFTWARE INTERFACES**
Intuitive GUI, Serial communication protocol

**POWER CONSUMPTION**
100 to 240 VAC, < 400 W

## MECHANICAL

**LASER HEAD DIMENSIONS & WEIGHT**
397 x 339 x 131 mm³ – 13 kg

**LASER CONTROLLER DIMENSIONS & WEIGHT**
19”/3U rack – 7.5 kg

**STANDARD UMBILICAL LENGTH**
3 m

**TECHNICAL DRAWINGS FOR DOWNLOAD**
ALT AIR

## COOLING
Air cooled

## OPTIONS

**GDD**
Group Delay Dispersion pre-compensation (variable down to -90 000fs²)

**F-SYNC**
Fine-tuning PRF synchronization +/- 1 MHz around a fixed central frequency. Can synchronize with any 3rd party master device. Electronic setting.

**CUSTOM PRIMARY WAVELENGTH**
1030 nm, 1055 nm, 1064 nm

**ADDITIONAL WAVELENGTH**
515 nm, 520 nm, 530 nm

**CUSTOM PULSE REPETITION FREQUENCY**
40 MHz or others

**EXTERNAL AOM**
For power modulation

**CUSTOM PULSE DURATION**
Upon request

## PERFORMANCE

![Beam Profile](chart1.png)

![Autocorrelation Trace](chart2.png)

![Average Power Stability](chart3.png)

* This information is subject to modifications without prior notice.

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