F-206.S Hexapod Platform for Fiber Alignment
Automated Photonics Alignment System with 6D Controller and Software

The F-206.S Hexapod comes with a digital 6D controller and comprehensive software.

Technical Data

<table>
<thead>
<tr>
<th>Model</th>
<th>F-206.S0 / F-206.SD</th>
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</thead>
<tbody>
<tr>
<td>Travel range X*</td>
<td>-8 to +5.7 mm</td>
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<tr>
<td>Travel range Y*</td>
<td>±5.7 mm</td>
</tr>
<tr>
<td>Travel range Z*</td>
<td>±6.7 mm</td>
</tr>
<tr>
<td>Travel range θx*</td>
<td>±5.7°</td>
</tr>
<tr>
<td>Travel range θy*</td>
<td>±6.6°</td>
</tr>
<tr>
<td>Travel range θz*</td>
<td>±5.5°</td>
</tr>
<tr>
<td>Actuator resolution</td>
<td>33 nm</td>
</tr>
<tr>
<td>Minimum incremental motion X, Y, Z**</td>
<td>0.1 μm (6-axis move!)</td>
</tr>
<tr>
<td>Minimum incremental motion θx, θy, θz**</td>
<td>2 μrad (0.4°) (6-axis move!)</td>
</tr>
<tr>
<td>Bidirectional repeatability X, Y, Z</td>
<td>0.3 μm</td>
</tr>
<tr>
<td>Bidirectional repeatability θx, θy, θz</td>
<td>3.6 μrad</td>
</tr>
<tr>
<td>Speed X, Y, Z</td>
<td>0.01 to 10 mm/s</td>
</tr>
<tr>
<td>Maximum load in Z</td>
<td>2 kg (centered on platform)</td>
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<tr>
<td>Mass</td>
<td>5.8 kg</td>
</tr>
<tr>
<td>Controller</td>
<td>Digital Hexapod controller with optional photometer card and integrated scan and align routines</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>100–240 VAC, 50/60 Hz</td>
</tr>
<tr>
<td>Software</td>
<td>LabVIEW drivers, software for alignment of arrays, DLL libraries, scan and align software, terminal software</td>
</tr>
</tbody>
</table>

*Travel ranges in the coordinate directions (X, Y, Z θx, θy, θz) are interdependent. The data given shows maximum travel range of the axis in question (i.e. its travel when all other axes are at their zero positions). If this is not the case, the available travel may be less.

**Six-axis move. No moving cables (unlike serial-kinematic stacked systems) to introduce bending forces, torque and friction which degrade positioning accuracy.

Parallel Kinematics with 6 Degrees of Freedom
- 0.033 μm Actuator Resolution
- Repeatability 0.3 μm in Space
- No Moving Cables for Improved Reliability, Reduced Friction
- Better Dynamics, More Compact than Serial Kinematics Systems
- For Scanning and Alignment
- Cartesian Coordinate Control with Virtualized Pivot Point
- Powerful Digital Controller with Open Source LabVIEW Drivers, DLL Libraries...
- Integrated Fiber Alignment Routines

Interferometer test of an F-206.S system shows the excellent repeatability of small steps, here 0.5 μm spaced at 100 ms.

F-206 provides ultra precise motion in all six degrees of freedom with rotation about any point in space. The pivot point is set by the user with a simple software command.