KEY FEATURES

- Payload capacity up to 10 kg
- Linear travel range ± 20 mm
- Angular travel range ± 15°
- Height in middle position 145 mm

APPLICATIONS

- Instrumentation
- Optics
- Testing laboratories
- Synchrotrons
- Aeronautics and spatial
- Metrology
- Semiconductors

This hexapod places a sample at the centre of two large rotation stages. With this installation, hexapod mounting orientation varies between 0° and 90°. Advantages of the hexapod are: high stability, stiffness and repeatability of the sample position with respect to the rotation stages independently of their orientations.

Alignment of a mirror with high precision on a space telescope. When the hexapod has correctly positioned the mirror, the user fixes the mirror and takes the hexapod off the structure.

Two BORA hexapods position Kirkpatrick-Baez (KB) mirrors with high stability and resolution to improve the beam quality on a synchrotron beamline.

Some HV BORA hexapods are positioning the high reflectivity mirrors of a Fabry-Perot cavity in order to optimize their alignment and thereby the cavity finesse.
<table>
<thead>
<tr>
<th><strong>Motion and positioning</strong></th>
<th><strong>BORA</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel range $T_x, T_y$ (mm)</td>
<td>± 20</td>
</tr>
<tr>
<td>Travel range $T_z$ (mm)</td>
<td>± 10</td>
</tr>
<tr>
<td>Travel range $R_x, R_y$ (deg)</td>
<td>± 10</td>
</tr>
<tr>
<td>Travel range $R_z$ (deg)</td>
<td>± 15</td>
</tr>
<tr>
<td>Resolution $T_x, T_y, T_z$ (µm)</td>
<td>0.1</td>
</tr>
<tr>
<td>Resolution $R_x, R_y, R_z$ (µrad)</td>
<td>2</td>
</tr>
<tr>
<td>Repeatability $T_x, T_y, T_z$ (µm)</td>
<td>± 0.4</td>
</tr>
<tr>
<td>Repeatability $R_x, R_y, R_z$ (µrad)</td>
<td>± 3.2</td>
</tr>
<tr>
<td>Speed $T_x, T_y$ (mm/s)</td>
<td>2</td>
</tr>
<tr>
<td>Speed $T_z$ (mm/s)</td>
<td>1</td>
</tr>
<tr>
<td>Speed $R_x, R_y$ (deg/s)</td>
<td>1</td>
</tr>
<tr>
<td>Speed $R_z$ (deg/s)</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Mechanical properties</strong></th>
<th>****</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stiffness $X, Y$ (N/µm)</td>
<td>1</td>
</tr>
<tr>
<td>Stiffness $Z$ (N/µm)</td>
<td>10</td>
</tr>
<tr>
<td>Payload capacity (kg) (vertical orientation / horizontal orientation)</td>
<td>10 / 5</td>
</tr>
<tr>
<td>Motor type</td>
<td>DC motor, gearhead</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Miscellaneous</strong></th>
<th>****</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature range (°C)</td>
<td>0 to + 50</td>
</tr>
<tr>
<td>Materials</td>
<td>Aluminum, steel, stainless steel</td>
</tr>
<tr>
<td>Size mobile platform (mm)</td>
<td>Ø 160</td>
</tr>
<tr>
<td>Central aperture (mm)</td>
<td>Ø 43 for mobile platform ; Ø 36 for fixed platform</td>
</tr>
<tr>
<td>Height in middle position (mm)</td>
<td>145</td>
</tr>
<tr>
<td>Mass (kg)</td>
<td>4.3</td>
</tr>
<tr>
<td>Cable length (m)</td>
<td>3</td>
</tr>
<tr>
<td>Options</td>
<td>Clean room compatibility, Vacuum compatibility, Low temperature compatibility down to -40°C, Virtual homing, Hand-held control unit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Controller</strong></th>
<th>****</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller type</td>
<td>NAOS or ALPHA+ if cable length &gt; 20 m or temperature &lt; 0°C</td>
</tr>
<tr>
<td>Interface</td>
<td>Ethernet</td>
</tr>
<tr>
<td>Power supply</td>
<td>110-240 VAC / 50-60 Hz</td>
</tr>
</tbody>
</table>

The performances are specified for single axis motions, with all other axes at midrange and for a rotation center in the middle of the mobile platform.

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**Hexapod in middle position**

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**Datasheet subject to change without notice. All data are superseded by any new release. R230418**