ULTIMA® Gimbal Optical Mounts

have a radically simple way of tilting an optic without translating its surface. Conventional gimbal mounts tend to be large and complex to allow high precision true gimbal motion at the optic surface. As a result, they are usually expensive. The ULTIMA-G has a simple patented design, allowing cost-effective, true gimbal mounts without the usual complexity.

What makes the ULTIMA-G unique?
The optic surface is mounted at the center of a sphere. Rotation of the sphere results in pure tilt at the center, without the translation found in all kinematic optical mounts. That means your beam will go exactly where you expected, without having to make iterative adjustments of the axes. The optic mounts from the rear so that the optical surface is at the plane of rotation, regardless of the optic thickness.

Like all ULTIMA mounts, thick front and rear plates and optimized, stiff springs improve the long-term stability and provide greater protection against vibrations. 1 and 2 in. (25.4 and 50.8 mm) mounts are provided with high precision, 100 TPI adjustment screws (HPS-100), or you can use the base model and select the actuators of your choice separately (see ULTIMA Actuators). The actuators can be quickly changed to accommodate a broad selection of adjustment screws, micrometers, and motorized or electrostrictive actuators.

The U50-G optical mounts for 0.5 in. (12.7 mm) diameter optics have integral, hex head adjustment screws with optional patented locking mechanisms. The optional KD 37 knobs have two slots for an Allen wrench to increase the adjustment sensitivity.

Slotted mounting holes on two sides are compatible with either 8-32 or M4 screws for convenient mounting.

Key Features

- Pure tilt, without translation
- Patented, spherical gimbal design
- Thick plates and extra-stiff springs for long-term stability
- Precision 80, 100, or 127 TPI adjustment screws
- Quick-change actuators
- Large choice of precision actuators
- English or metric compatible
- Mounts for 0.5, 1, and 2 in. (12.7, 25.4, and 50.8 mm) optics
## Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Optic Diameter [in. (mm)]</th>
<th>Adjustment Screw Thread</th>
<th>Drive Type</th>
<th>Angular Range (°)</th>
<th>Sensitivity(^{1}) (arc sec)</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>U50-G</td>
<td>0.5 in. Aperture with (2) Actuators, 80 TPI, Lockable</td>
<td>0.5 (12.7)</td>
<td>80 TPI</td>
<td>Hex</td>
<td>±5</td>
<td>8.2</td>
<td>$94</td>
</tr>
<tr>
<td>U50-G21</td>
<td>0.5 in. Aperture with (2) Actuators, 100 TPI, Lockable</td>
<td>0.5 (12.7)</td>
<td>100 TPI</td>
<td>Hex</td>
<td>±5</td>
<td>6.6</td>
<td>$99</td>
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<tr>
<td>U100-G</td>
<td>1 in. Aperture Base</td>
<td>1.0 (25.4)</td>
<td></td>
<td></td>
<td>±5</td>
<td>4.2</td>
<td>$72</td>
</tr>
<tr>
<td>U100-G21</td>
<td>1 in. Aperture with (2) HPS-100 Actuators</td>
<td>1.0 (25.4)</td>
<td>100 TPI</td>
<td>Knob</td>
<td>±5</td>
<td>2.3</td>
<td>$244</td>
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<tr>
<td>U200-G</td>
<td>2 in. Aperture Base</td>
<td>2.0 (50.8)</td>
<td></td>
<td></td>
<td>±4</td>
<td>2.3</td>
<td>$244</td>
</tr>
<tr>
<td>U200-G21</td>
<td>2 in. Aperture with (2) HPS-100 Actuators</td>
<td>2.0 (50.8)</td>
<td>100 TPI</td>
<td>Knob</td>
<td>±4</td>
<td>2.3</td>
<td>$244</td>
</tr>
</tbody>
</table>

\(^{1}\) Typical, based on 1° rotation of actuator screw.

U.S. Patents 6,189,580 and 6,016,230

This product was conceived by Armen Yu Dallakian, Moscow, Russia.

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**Model U100-G**

**Model U50-G**

**Model U200-G**

See our website for CAD files.