Hybrid Gimbal

AOM-HG

Ultra-precise Pointing & Tracking

The AOM-HG hybrid gimbal features a direct-drive, large-travel azimuth (AZ) axis and screw-driven elevation (EL) axis driven by a directly coupled brushless servo motor. Optimized for high accuracy, it features a low mirror height for maximum compactness and ultra-fine, highly repeatable stepping performance to provide highly capable pointing and tracking motion. Both axes have sub-arcsecond feedback resolution. The AOM-HG is available with 16-, 20-, 24- and 30-inch mirror cell diameters, and the small cell thickness allows for reflections with high angles of incidence. Special environmental preparation options are available for operation in cleanrooms and vacuum chambers.

Key Applications

- Electro-optical device testing & qualification
- Optic positioning & adjustment in lab & production environments
- Multi-axis angular testing & calibration of missile seeker gimbals, satellite sensors, inertial navigation guidance units & more
- Satellite imaging, surveillance & targeting systems testing

KEY FEATURES:

- **OUTSTANDING ACCURACY**, repeatability & minimum incremental motion performance
- **CLEANROOM- & VACUUM-RATED** versions available
- Brushless, slotless motors provide **PRECISE, ULTRA-SMOOTH MOTION**
- Excellent **THERMAL STABILITY**
- Accommodates optical payloads up to 30 inches (762 mm) in diameter

AOM-HG SPECIFICATIONS

- Travel range: ±6° (EL) to ± 170° (AZ), configurable
- Calibrated accuracy: ±2 arc sec (AZ), ±3 arc sec (EL)
- Bidirectional repeatability: ± 0.5 arc sec
- In-position stability: 0.005 arc sec (AZ), 0.05 arc sec (EL)
- Minimum incremental motion: 0.2 arc sec (AZ), 0.015 arc sec (EL)
- Axis orthogonality: 5 arc sec
- Axis intersection: 0.005”

AOM-HG ORDERING OPTIONS

Azimuth Axis (Required)

AZ100 ALAR100SP azimuth axis, 6.0 N*m continuous torque

AZ150 ALAR150SP azimuth axis, 10.7 N*m continuous torque

AZ200 ALAR200SP azimuth axis, 19.3 N*m continuous torque

Azimuth Travel (Required)

TR010 Limited travel, +/- 5 degrees

TR020 Limited travel, +/- 10 degrees

TR030 Limited travel, +/- 15 degrees

TR060 Limited travel, +/- 30 degrees

TR090 Limited travel, +/- 45 degrees

TR120 Limited travel, +/- 60 degrees

TR180 Limited travel, +/- 90 degrees

TR240 Limited travel, +/- 120 degrees

TR300 Limited travel, +/- 150 degrees

TR340 Limited travel, +/- 170 degrees

Optic Diameter (Required)

OD16 Accommodates 16 in (406.4 mm) diameter optic

OD20 Accommodates 20 in (508.0 mm) diameter optic

OD24 Accommodates 24 in (609.6 mm) diameter optic

OD30 Accommodates 30 in (762.0 mm) diameter optic

Mirror Cell (Required)

CL0 No cell; hub mounting only

CL1 Front surface reflecting cell; body offset from axis with mirror face on axis; supports counterbalancing on top and bottom of cell

CL2 Standard cell - body on center; mirror face 1/2 thickness forward of axis

Environment (Required)

-	Standard atmospheric environment
-CR0	Standard atmospheric environment; includes bagging of components
-CR1	Base level clean room preparation; includes part cleaning and bagging
-CR2	Mid-level clean room preparation; includes part cleaning, blacklight inspection and bagging
-CR3	Advanced-level clean room preparation; includes ultrasonic cleaning, assembly in clean room, blacklight inspection and bagging
-MV	Medium vacuum preparation to 10e-3 Torr; includes vacuum-rated grease and Teflon coated wiring
-HV	High vacuum preparation to 10e-6 Torr; includes vacuum-rated grease and Teflon coated wiring
-UHV	Ultra-high vacuum preparation to 10e-7 Torr; includes vacuum-rated grease and Teflon coated wiring

Integration (Required)

Aerotech offers both standard and custom integration services to help you get your system fully operational as quickly as possible. The following standard integration options are available for this system. Please consult Aerotech if you are unsure what level of integration is required or if you desire custom integration support with your system.

-TAS **Integration - Test as system**
Testing, integration and documentation of a group of components as a complete system that will be used together (ex: drive, controller and stage). This includes parameter file generation, system tuning and documentation of the system configuration.

-TAC **Integration - Test as components**
Testing and integration of individual items as discrete components. This is typically used for spare parts, replacement parts or items that will not be used or shipped together (ex: stage only). These components may or may not be part of a larger system.