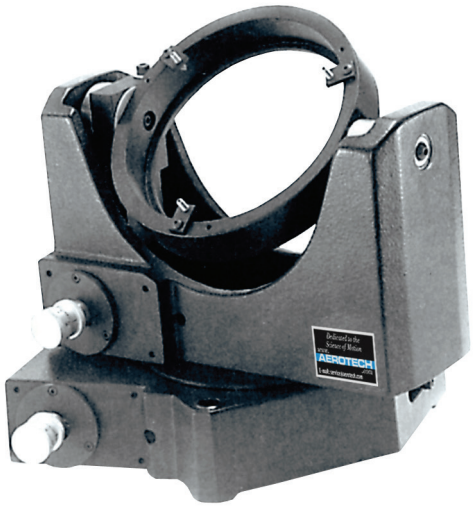
AOM130 Series

Manual Optical Mounts

- 360° rotation in azimuth and elevation
- Excellent thermal and vibration stability
- Standard models 152.4 mm (6 inches) through 609.6 mm (24 inches) optic diameters
- Patented* sub-arc-second resolution drive
- Negligible backlash and creep
- Non-marring set screws on retaining clips
- Custom precision mounting designs are available for centering non-circular payloads on the gimbal



**U.S. Patent No. 3,727,471*

AOM130 series mounts have been designed to position large, heavy optics to 609.6 mm (24 inches) in diameter. These mounts are used in major fusion and high-powered laser research and development projects due to their excellent thermal stability and sub-arc-sec resolution.

AOM130 series optical mounts have 360° rotation capability in both the azimuth and elevation axes. They have ball bearing gimbal pivots to eliminate unwanted motion (cross-talk); movement in azimuth and elevation is orthogonal and decoupled. A unique azimuth bearing system permits operation of a fully-loaded mount in any plane including upside-down. With Aerotech's patented* sub arc second resolution drive, the angular range is quickly achieved while maintaining resolution as fine as 0.026 arc-seconds.

The fine thimble has a 32-division scale for reference. The spring loaded drive mechanism assures smooth, low stiction and backlash-free motion. 360° rotation is obtained by releasing the cell or yoke clamp screws (tool provided). The mount's precision drive mechanism is unaffected when the clamp screws are disengaged. The mount and drive mechanisms feature extremely low backlash and excellent thermal stability (less than two microradians per °C).

Adapters for 5, 8 and 10 inch (127.0, 203.2, and 254.0 mm) optics add versatility and value to the AOM130 series mounts. The optics and/or adapters are held in place with three retaining clips with non-marring set screws. The non-marring set screws permit rigid placement of various optic thicknesses.

AOM130 Series SPECIFICATIONS

Basic Model	AOM130-6	AOM130-9	AOM130-12	AOM130-16	AOM130-20	AOM130-24
Resolution[1]	0.2 µrad (0.041 arc sec)	0.15 µrad (0.031 arc sec)			0.13 µrad (0.026 arc sec)	
Thimble Graduation	4.4 µrad (0.90 arc sec)	3.3 µrad (0.689 arc sec)			2.8 µrad (0.58 arc sec)	
Clear Aperture	144.27 mm (5.68 in)	218.95 mm (8.62 in)	292.1 mm (11.5 in)	393.7 mm (15.5 in)	488.95 mm (19.25 in)	590.55 mm (23.25 in)
Range[2] (rotational freedom)	360° AZ/EL					
Range (Adjustment knob)	± 4° AZ/EL			± 3° AZ/EL		
Component Diameter (max)	152.4 mm (6 in)	228.6 mm (9 in)	304.8 mm (12 in)	406.4 mm (16 in)	508.0 mm (20 in)	609.6 mm (24 in)
Component Thickness (max)	26.92 mm (1.06 in)	41.4 mm (1.63 in)	53.85 mm (2.12 in)	63.5 mm (2.5 in)	88.9 mm (3.5 in)	101.6 mm (4.0 in)
Component Weight	4.5 kg (10 lb)	15 kg (34 lb)	35 kg (77 lb)	73 kg (160 lb)	160 kg (350 lb)	264 kg (500 lb)
Vacuum Capability (optional)	10^{-6} mbar					
Material	Aluminum					
Finish	Black Epoxy Paint					
Weight	8.2 kg (18 lb)	16.4 kg (35 lb)	20.9 kg (46 lb)	24.1 kg (64 lb)	61.8 kg (136 lb)	74.6 kg (164 lb)

Notes:
1. Per 0.5° of the fine adjustment.
2. For 360° rotational freedom, release clamp screws.

AOM130 Series Ordering INFORMATION

Cell Size (Required)

-6	6 in (152.5 mm) diameter optic
-9	9 in (228.6 mm) diameter optic
-12	12 in (304.8 mm) diameter optic
-16	16 in (406.4 mm) diameter optic
-20	20 in (508.0 mm) diameter optic
-24	24 in (609.6 mm) diameter optic

Adapter (Optional)

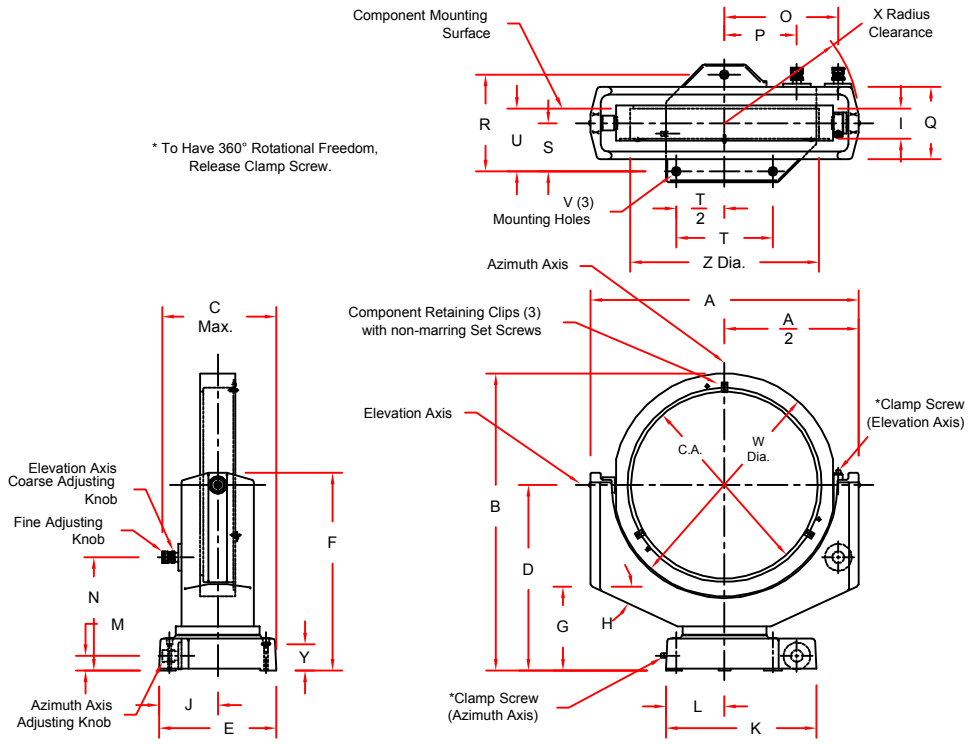
-AOM6T5	6 in (150 mm) dia. cell to 5 in (125 mm) dia. optic
-AOM9T8	9 in (225 mm) dia. cell to 8 in (200 mm) dia. optic
-AOM12T10	12 in (300 mm) dia. cell to 10 in (250 mm) dia. optic

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 that ship together. This is typically used for spare parts, replacement parts, or items that will not be used together. These components may or may not be part of a larger system.

AOM130 Series DIMENSIONS



	Dimensions - Millimeters [Inches]								
Basic Model	A	B	C	D	E	F	G	H	I
AOM130-6	269.7 [10.62]	294.4 [11.59]	211.8 [8.34]	206.3 [8.12]	209.6 [8.25]	231.7 [9.12]	63.5 [2.50]	No Angle	27.0 [1.06]
AOM130-9	368.3 [14.50]	412.8 [16.25]	240.5 [9.47]	279.4 [11.00]	247.7 [9.75]	304.8 [12.00]	95.3 [3.75]	No Angle	41.4 [1.63]
AOM130-12	457.2 [18.00]	500.1 [19.69]	240.5 [9.47]	322.3 [12.69]	247.7 [9.75]	347.7 [13.69]	106.4 [4.19]	5°	53.9 [2.12]
AOM130-16	565.2 [22.25]	625.6 [24.63]	240.5 [9.47]	390.6 [15.38]	247.7 [9.75]	416.0 [16.38]	177.8 [7.00]	25°	63.5 [2.50]
AOM130-20	704.9 [27.75]	787.4 [31.00]	272.3 [10.72]	495.3 [19.50]	340.0 [13.38]	530.3 [20.88]	231.6 [9.12]	30°	88.9 [3.50]
AOM130-24	806.5 [31.75]	906.5 [35.69]	272.3 [10.72]	558.8 [22.00]	340.0 [13.38]	593.8 [23.38]	261.1 [10.28]	30°	101.6 [4.00]

Basic Model	J	K	L	M	N	O	P	Q	R
AOM130-6	95.3 [3.75]	247.7 [9.75]	95.3 [3.75]	31.8 [1.25]	92.0 [3.62]	96.8 [3.81]	114.3 [4.50]	95.3 [3.75]	176.1 [6.94]
AOM130-9	124.0 [4.88]	317.5 [12.50]	124.0 [4.88]	30.7 [1.21]	127.0 [5.00]	141.2 [5.56]	152.4 [6.00]	114.3 [4.50]	201.7 [7.94]
AOM130-12	124.0 [4.88]	317.5 [12.50]	124.0 [4.88]	30.7 [1.21]	169.9 [6.69]	185.7 [7.31]	152.4 [6.00]	114.3 [4.50]	201.7 [7.94]
AOM130-16	124.0 [4.88]	317.5 [12.50]	124.0 [4.88]	30.7 [1.21]	238.2 [9.38]	239.0 [9.41]	152.4 [6.00]	152.4 [6.00]	201.7 [7.94]
AOM130-20	119.1 [4.69]	422.3 [16.63]	193.8 [7.63]	41.2 [1.62]	314.4 [12.38]	301.7 [11.88]	181.4 [7.14]	190.5 [7.50]	302.2 [11.90]
AOM130-24	119.1 [4.69]	422.3 [16.63]	193.7 [7.63]	41.3 [1.62]	377.4 [14.86]	352.5 [13.88]	181.4 [7.14]	203.2 [8.00]	302.2 [11.90]

Basic Model	S	T	U	V	W	X	Y	Z	C.A.
AOM130-6	75.6 [2.98]	151.1 [5.95]	87.1 [3.43]	9.5 [0.38]	176.3 [6.94]	149.9 [5.88]	47.6 [1.88]	153,9 [6.06]	144.3 [5.68]
AOM130-9	100.8 [3.97]	201.7 [7.94]	119.9 [4.72]	9.5 [0.38]	266.7 [10.50]	188.9 [7.44]	54.0 [2.13]	230.9 [9.09]	218.9 [8.62]
AOM130-12	100.8 [3.97]	201.7 [7.94]	125.2 [4.93]	9.5 [0.38]	355.6 [14.00]	233.4 [9.19]	54.0 [2.13]	307.9 [12.12]	292.1 [11.50]
AOM130-16	100.8 [3.97]	201.7 [7.94]	132.6 [5.22]	9.5 [0.38]	469.9 [18.50]	284.2 [11.19]	54.0 [2.13]	409.5 [16.12]	393.7 [15.50]
AOM130-20	100.7 [3.96]	352.8 [13.89]	146.1 [5.75]	14.3 [0.56]	584.2 [23.00]	371.4 [14.62]	74.6 [2.94]	571.1 [20.12]	489.0 [19.25]
AOM130-24	100.7 [3.96]	352.8 [13.89]	152.4 [6.00]	14.3 [0.56]	695.5 [27.38]	419.1 [16.50]	74.6 [2.94]	612.7 [24.12]	590.6 [23.25]