

FEATURES

- High Optical Quality Continuous Surface
- Capable of Receiving Any High Reflectivity Coating
- >3 kHz First Resonance Typical
- Diameters > 25 mm
- Compatible with AOS AO Controllers
- Custom Actuator Patterns Possible
- Typically 4 microns of throw
- Budget Pricing ~\$1k/actuator + NRE
- Patent Pending

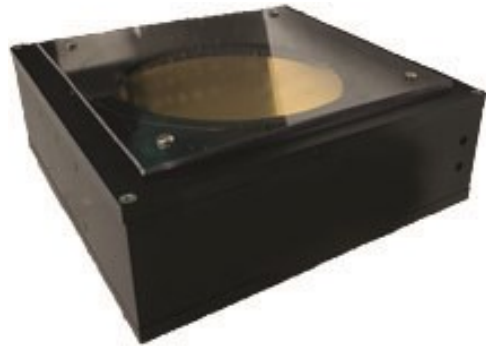
TYPICAL APPLICATIONS

- Laser Beam Shaping
- Astronomical Adaptive Optics
- Laser Machining
- Active Focus Control
- Dynamic and Static Aberration Compensation

DESCRIPTION

Plate-type deformable mirrors have been manufactured for adaptive optics for decades, but AOS recently re-thought the fabrication to enable better performance. These PZT-actuated plate-type deformable mirrors are available in a variety of actuator patterns. We work with customers to manufacture devices that will best meet their needs. We have a few standard products available, but are happy to work with customers on customizing every aspect of the device including packaging and electrical interfaces. Call AOS today to learn more about this exciting new deformable mirror architecture.

1"-8" DMs



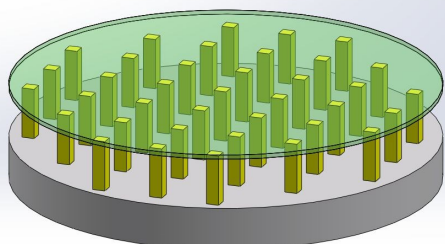
DM-Shaped Intensity Profiles



Specifications

Parameter	Value	Notes
Diameter (mm)	25 to 230	1" to 9"
Actuator Count	6 to 1004	
Actuator Stroke (μm)	2 to 36	
-3dB Bandwidth (kHz)	1 to 20	
Actuator Pitch (mm)	3 to 12	
Actuator Pattern	Any	Hexagonal, Rectangular, Annular, etc.
Angle of Incidence (degrees)	Any (0 to 45 typical)	Typically 10-degrees for High Power Coatings
Laser Power Handling	Tested up to 240kW and $1\text{MW}/\text{cm}^2$	120kW ($20\text{kW}/\text{cm}^2$) for 5s resulted in $<1^\circ\text{C}$ heating
Actuator Lifetime	10^{10} cycles	10 years (8 hours per day every day at 100Hz operation)
Actuator Temperature Range	-40 to 150°C	
DM Switching Time (μs)	10 to 1000	Electronics Dependent
Actuator Capacitance (nF)	30 to 3000	
Vacuum Bake	10 μtorr	Low Outgassing Materials

Architecture



Windows Software for Drive Electronics

