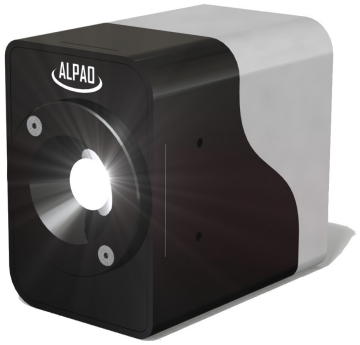
Deformable Mirrors

ALPAO Deformable Mirrors (DM) are based on continuous reflective surface motionned by magnetics actuators. They feature large strokes, linearity and fast settling time to meet and exceed your requirements for fast, accurate wavefront correction.



KEY FEATURES:

• Large deformation:

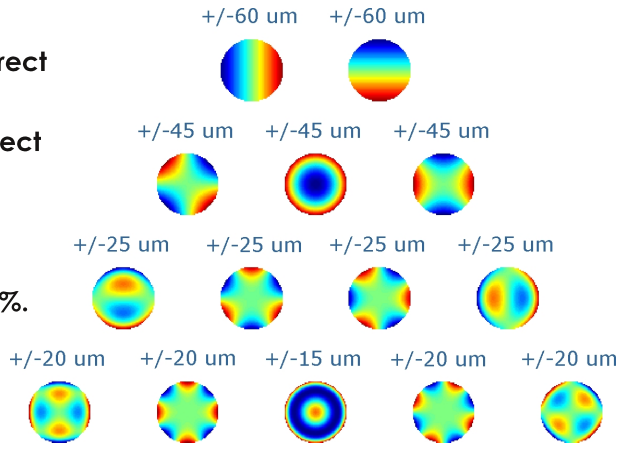
Up to 60 µm (Peak to Valley): to correct large amplitude aberrations.
Up to 3.0 µm (inter actuator): to correct high spatial frequency aberrations.

• High dynamic motion:

Settling time as low as 0.7ms at +/-5%.

• Excellent linearity and low hysteresis:

Highly suitable for open loop application.



Zernike amplitude achievable (wavefront, peak to valley) with the Hi-Speed DM97-15.
More actuators lead to increased accuracy.

CUSTOM DM AVAILABLE ON REQUEST.

ALPAO DM PERFORMANCES:

	DM69	DM88	DM97-08	DM97-15	DM241	DM277	DM468*	DM820*
Number of actuators	69	88	97	97	241	277	468	820
Pupil diameter	10.5 mm	20.0 mm	7.2 mm	13.5 mm	37.5 mm	24.5 mm	33.0 mm	45.0 mm
Pitch	1.5 mm	2,5 mm	0.8 mm	1.5 mm	2,5 mm	1.5 mm		
Mirror best flat (1)	7.0 nm RMS							
Wavefront tip/tilt stroke (PtV)	60 µm	35 µm	80 µm	60 µm	25 µm	15 µm		
Wavefront inter-actuator stroke	> 3.0 µm PtV							
Wavefront 3x3 stroke (PtV)	> 25 µm	> 15 µm	> 25 µm			> 10 µm		
Settling time (at +/-5%)	1.0 ms	2.0 ms		1.0 ms	2.0 ms	0.7 ms		
Bandwidth (2)	> 750 Hz	> 400 Hz		> 750 Hz	> 400 Hz	> 2 000 Hz		
Typical AO loop frame rate	< 7.5 kHz	< 4.0 kHz		< 7.5 kHz	< 4.0 kHz	< 10.0 kHz		
Hysteresis error	< 1%							
Non-linearity error	< 3%							
Coating (3)	Protected Silver							
Operating temperature (4)	10 to 35 °C							

* Preliminary specifications
(1) in closed loop
(2) first resonance of the membrane (higher bandwith available upon request)
(3) other coatings available
(4) for CE marking ; compatible with cryogenics environment

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MIRROR SOFTWARE SENSOR

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