

The *Multi-DM*: A versatile, robust deformable mirror system for advanced wavefront control

The popular *Multi-DM* offers sophisticated aberration compensation in an easy-to use package. With 140 precisely controlled elements and low inter-actuator coupling, this system is ideal for a broad range of applications including microscopy, retinal imaging, and laser beam shaping. The high speed, high precision drive electronics are easily controlled via USB interface. The DM is available in both continuous and segmented surfaces for adaptive optics or spatial light modulator applications. The DMs are capable of up to 5.5 μm stroke, 20 kHz frame rate, have sub-nm step size, and zero hysteresis. Higher speed electronics are available.

DM Specifications

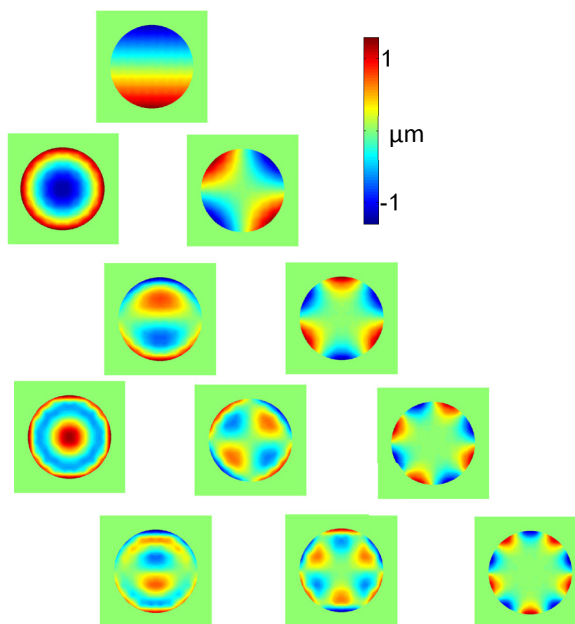
- 140 actuators (12x12 array w/out 4 corners)
- Coating: Aluminum, Gold or Protected Silver
- Protective window with AR coating
- Zero hysteresis
- Sub-nm average step size
- Fill Factor >99% (DM), 98% (SLM)
- Surface Finish: <30nm RMS



Driver Specifications

- USB 2.0 Interface
- 100-240V AC Input
- 14 bit step resolution
- Max. Frame Rate: 8 kHz with 34 kHz burst
- Dimensions: 9" x 7" x 2.5"

Demonstrated High Order Aberration Correction



Measured Zernikes - 140 actuators with low interactuator coupling create high order Zernike modes

DM Selection Chart

	<i>Multi-1.5</i>	<i>Multi-3.5</i>	<i>Multi-5.5</i>	<i>Multi-SLM</i>
Stroke	1.5 μm	3.5 μm	5.5 μm	1.5 μm
Aperture	3.3 mm	4.4 mm	4.95 mm	3.6 mm
Pitch	300 μm	400 μm	450 μm	300 μm
Mechanical Response (10% -90%)	<20 μs	<100 μs	<500 μs	<40 μs
Approx. Interactuator Coupling	15%	13%	22%	0%
Price*	\$15,000	\$17,500	Upon Request	Upon Request

*Includes Mirror, Driver and Operational Software



The *Mini-DM*: An economical solution for wavefront correction.

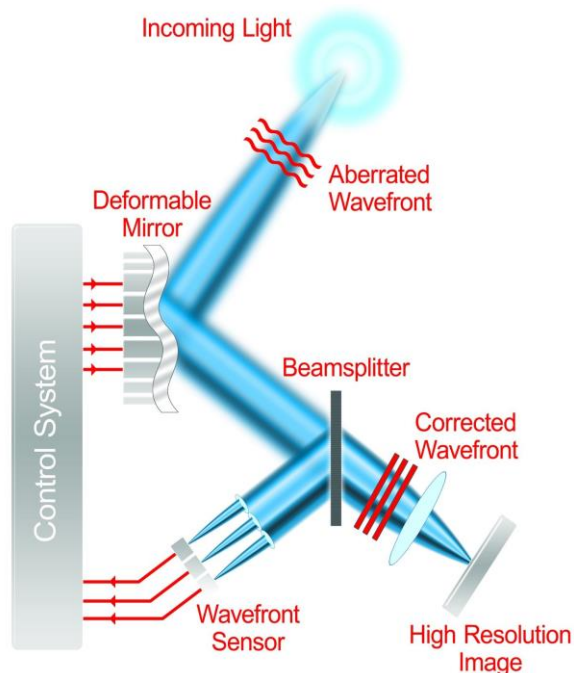
The *Mini-DM* is ideal for laboratory-scale adaptive optics and low order wavefront control. Its mirror surface is controlled by 32 electrostatic actuators which are individually commanded to achieve a desired shape. The DM is available in both continuous and segmented surfaces for adaptive optics or spatial light modulator applications. The DMs are capable of up to 5.5 μm stroke, 20 kHz frame rate, have sub-nm step size, and zero hysteresis.

DM Specifications

- 32 actuators (6x6 array without 4 corners)
- Coating: Aluminum, Gold or Protected Silver
- Protective window with AR coating
- Zero hysteresis
- Sub-nm average step size
- Fill Factor >99% (DM), 98% (SLM)
- Surface Finish: <30nm RMS

Driver Specifications

- Completely Powered & Controlled by USB 2.0 Interface
- 14 bit step resolution
- Frame Rate: 8 kHz with 34 kHz burst
- Dimensions: 4" x 5.25" x 1.25"



DM Selection Chart

	<i>Mini-1.5</i>	<i>Mini-3.5</i>	<i>Mini-5.5</i>
Stroke	1.5 μm	3.5 μm	5.5 μm
Aperture	1.5 mm	2.0 mm	2.25 mm
Pitch	300 μm	400 μm	450 μm
Mechanical Response (10% -90%)	<20 μs	<100 μs	<500 μs
Approx. Interactuator Coupling	15%	13%	22%
Price*	\$5,000	\$7,500	\$12,500

*Includes Mirror, Driver and Operational Software