

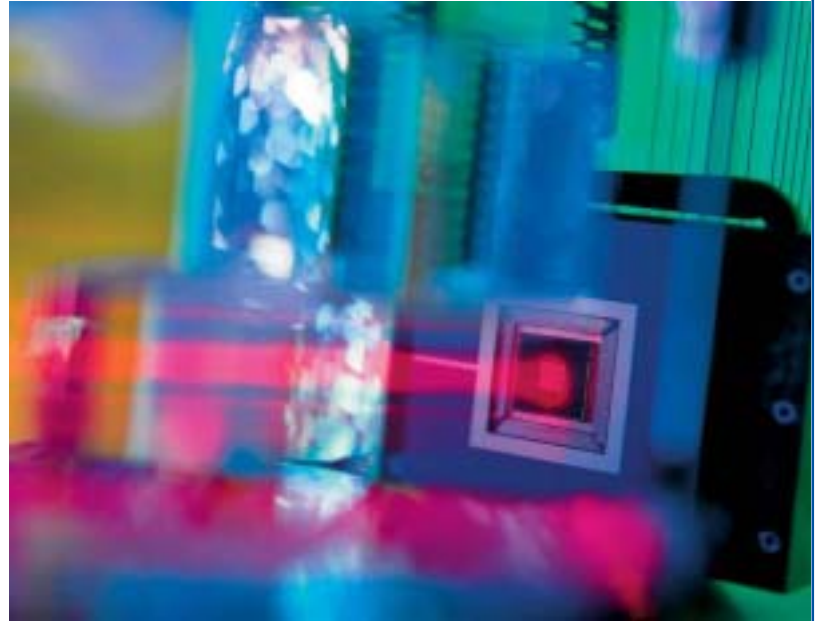


# μDM

Micro Deformable Mirrors

bmc

Boston Micromachines Corporation is a world leader in the development of micro-mirror devices for biomedical, telecommunication and laser applications. BMC's pioneering technology has led to breakthrough products that enhance systems for retinal imaging, LASIK cornea surgery, optical recognition/identification, and long-range laser communication.



technology

Fabricated using MEMS technology, the BMC μDM is a compact and reliable product. It comprises a continuous membrane mirror supported by an underlying actuator array. Devices are surface micro-machined using silicon as a structural material. Mirror deformation is achieved by electrostatic actuation. The device is mounted on a 140-pin ceramic package.

## FEATURES

### Excellent Optical Quality

30 nm RMS, Highly reflective coating in aluminum or gold

### Precise Mechanics

No hysteresis, 15% influence, 2 μm stroke, 2 nm repeatability, 7 kHz bandwidth

### Reliable Electronics

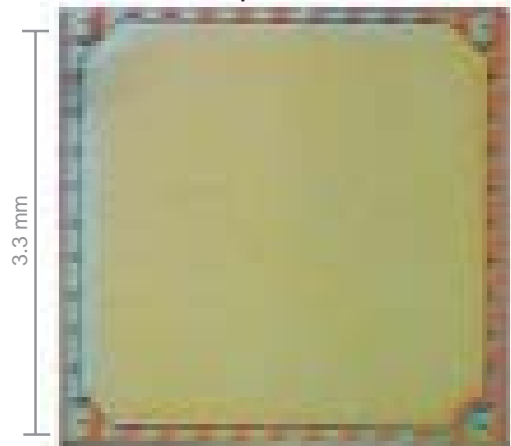
100-1024 actuators, Low power consumption, PC based controller

## PRODUCTS

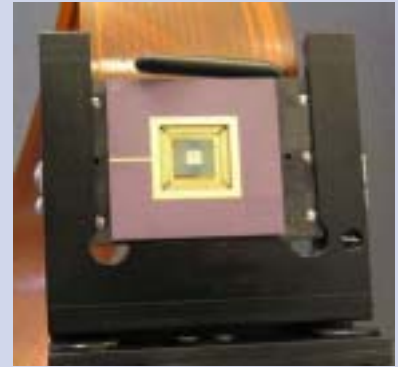
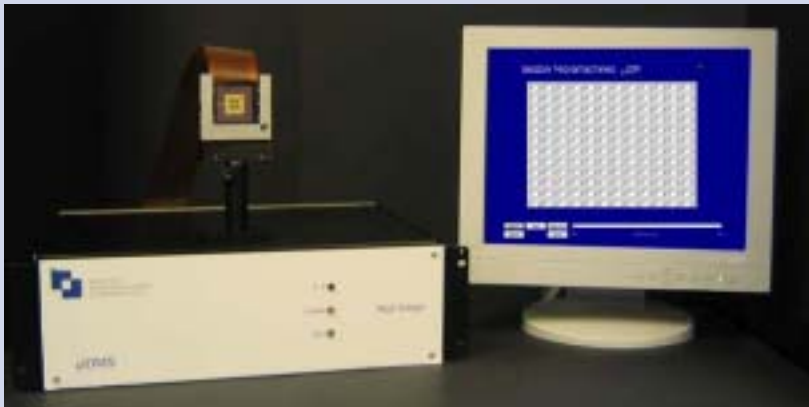
μ D M32 32 actuators, 1.8 mm round aperture

μDM100	100 actuators, 3.3 mm round aperture
μDM140	140 actuators, 3.3 mm square aperture
μDM1024	1024 actuators, 10.5 mm square aperture

μDM140



# SYSTEM SPECIFICATIONS



The BMC  $\mu$ DM System consists of a 140 channel HV Driver, PC controller,  $\mu$ Drive™ software, custom gimbal mirror mount, and  $\mu$ DM.

## HV DRIVER

Modular 19" Rack mountable chassis  
140 Channels per box  
200 V, 60 Hz, 3 Amp

## PC CONTROLLER

Windows® NT compatible  
Integrated array driver and test software  
( $\mu$ Drive™)

## MIRROR ASSEMBLY

Pin grid array packaged  
Zif socket mounted on a Flex PCB

## APPLICATIONS

### Adaptive Optics

Astronomical imaging  
Microscopy  
Tracking

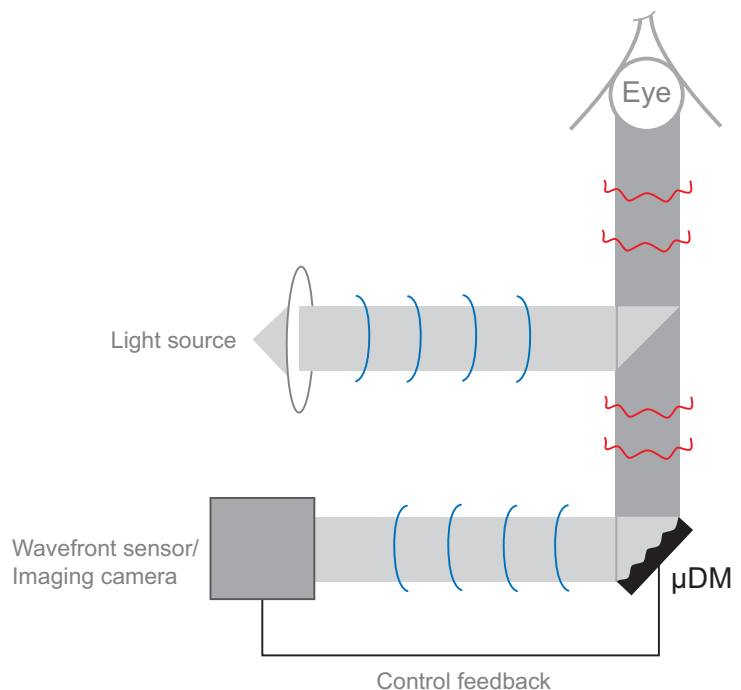
### Beam Forming

Laser cutting/welding  
Laser communication

### Laser Cavity Compensation

### Ophthalmic Systems

Lasik surgery diagnostic  
Phoropter  
Retinal imaging



Schematic of high-resolution ophthalmic imaging system:  
 $\mu$ DM compensates for aberrations in the eye.