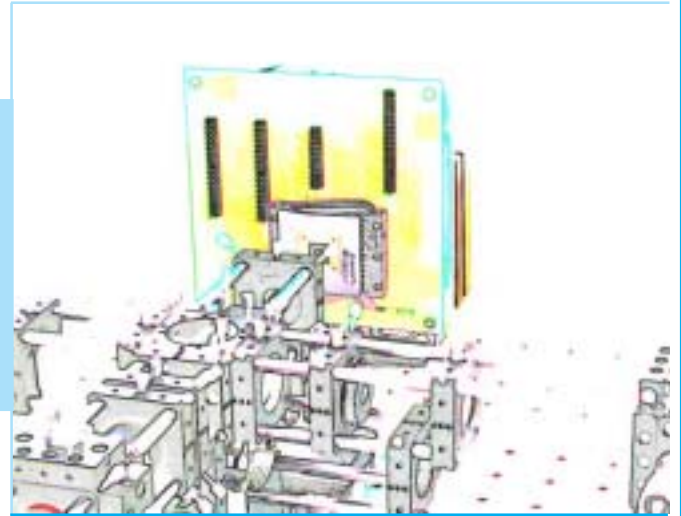


μ SLM

Micro Spatial Light Modulators

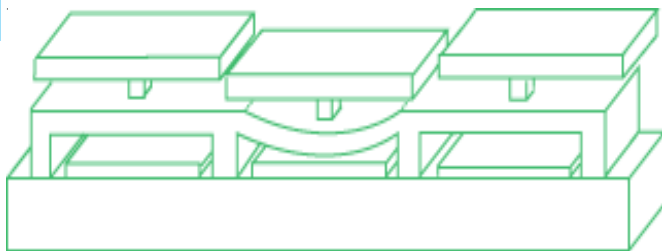
Boston Micromachines supplies and develops fast, compact, low cost, and highly reflective micro spatial light modulators (μ SLM) using MEMS technology. The primary function of an SLM is to alter the phase of reflected light, which can be accomplished by deflecting individual mirror pixels. Applications of SLM include optical information processing, high definition displays and optical correlation.

Our MEMS technology SLMs feature 7kHz frame rates, high fill factor (>98%) and no polarization effects.



STRUCTURE

The BMC μ SLM is a fast, compact and reliable product with excellent optical quality. It consists of an array of electrostatic parallel-plate actuators that are directly coupled with square mirror pixels by mechanical attachment posts. The device is fabricated using a three-layer, polysilicon, surface micro-machining process.



PRODUCTS

- μ SLM140 140 Pixels, 3.6 mm Square Aperture
- μ SLM400 400 Pixels, 6 mm Square Aperture
- μ SLM1024 1024 Pixels, 10.9 mm Square Aperture

ADVANTAGES

Excellent Optical Quality

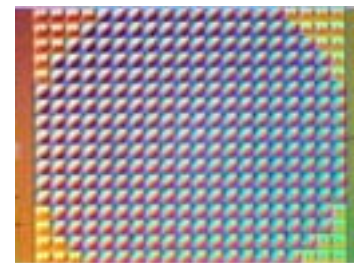
4 nm RMS per pixel
Highly reflective metallic coating in aluminum or gold

Precise Mechanics

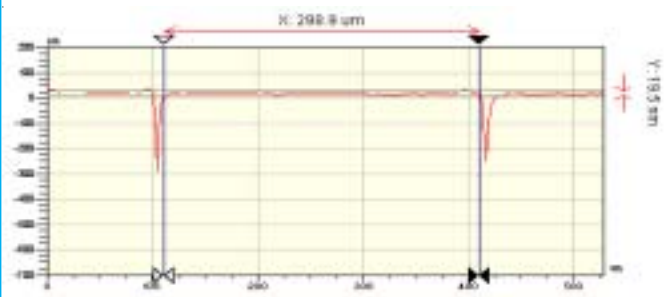
No hysteresis
2 μ m stroke
2 nm repeatability
7 kHz bandwidth

Reliable Electronics

140 – 1024 electrostatic actuators
Device lifetime >500 M cycles at 1/2 full stroke
Low power consumption
PC based



Microscopic view of μ SLM400



4 nm RMS per pixel

SYSTEM SPECIFICATIONS



The BMC μ DM System consists of a 140 channel HV Driver, PC controller, μ Drive™ software, mirror mount and μ DM.

HV DRIVER

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

PC CONTROLLER

Windows® NT compatible
Integrated array driver and test software
(μ Drive™)

MIRROR ASSEMBLY

Pin grid array packaged
Zif socket mounted on a Flex PCB

APPLICATIONS

Maskless Optical Direct Writing

Projection Displays

Active Optics

Optical Correlation

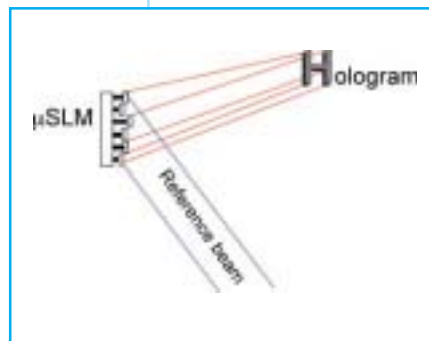
Pattern/Face Recognition

Identification Systems

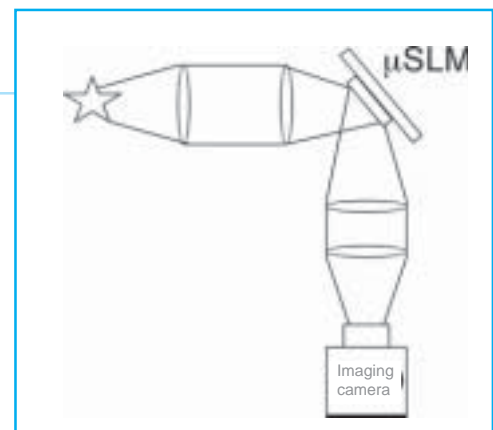
Machine Vision

Long Range Laser Communication

Holographic Encryption



Holographic encryption on a μ SLM regenerates a 3D projection using a previously recorded interference pattern of an image and a reference beam.



Optical correlator: μ SLM used to compare the speckle image of objects.