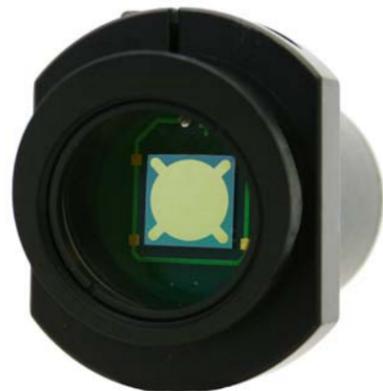


Replace your electro-optic modulator (EOM) or acousto-optic modulator (AOM) in sub-MHz applications

Features:

- High throughput in the VIS to Mid IR
- No polarization effects
- DC to 200kHz operation
- Typical/Potential Applications
 - Scanning microscopy
 - Laser beam intensity modulation

The Broadband Optical Modulator is a reflective diffraction grating with controllable groove depth for operation over a broad range of wavelengths from the visible to the mid-infrared. It is capable of intensity variation by switching between an unpowered flat mirror-state and a powered diffractive-state.

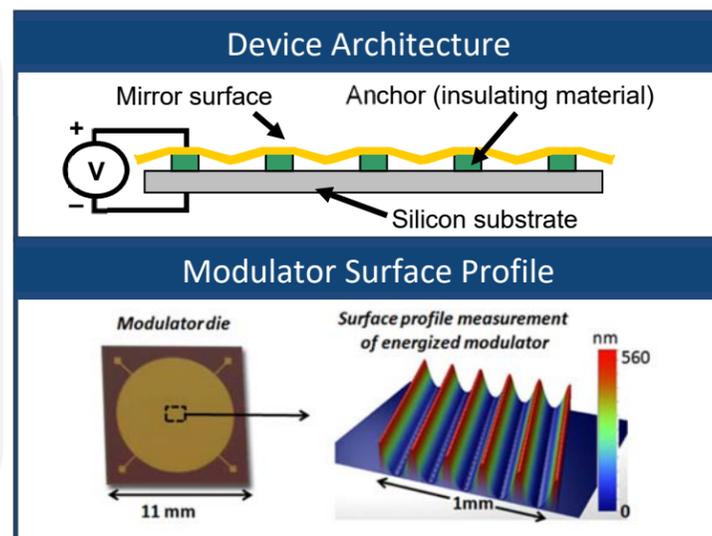


Device Specifications

	BOM-115	BOM-200
Peak Contrast	>90%	>98%
Rise/fall time: 10%-90%	<3μs	<5μs
3dB roll-off	200 kHz	100 kHz
Max. Contrast Frequency Limit	80 kHz	30 kHz
Active Aperture (mm)	8.5*	

*Custom-sized apertures available upon request

Modulator Technology Overview



MEMS Broadband Optical Modulators

The device design is based on BMC's MEMS deformable mirror technology that uses hysteresis-free electrostatic actuators to deform a continuous mirror facesheet. The device microfabrication process is well-suited for the creation of high-precision optical components and is optimal for high volume production using commercial semiconductor batch processing techniques.

Enabling component for asymmetric free-space lasercomm

Features:

- High throughput in the VIS to Mid IR
- No polarization effects
- DC to >200kHz operation
- Typical/Potential Applications
 - Remote Sensing
 - Intelligence, Surveillance, Reconnaissance (ISR)

When mounted as one facet of a hollow corner cube retroreflector, the Broadband Optical Modulator enables modulating the intensity of an interrogating laser source for asymmetric communication. In its unpowered state, the MRR acts as a typical retroreflector, returning a high percentage of the light to the source. In the powered state, most of this light is scattered.

MEMS Modulating RetroReflectors

The MRR system has been demonstrated to provide continuous asymmetric free-space optical communication at data rates up to 200 kbps. The MRR subcomponent is housed in a compact, easy-to-integrate package. This technology can be used out of the box with the MB-200 High Voltage Driver or integrated into a complete setup through the use of custom high voltage drive electronics.

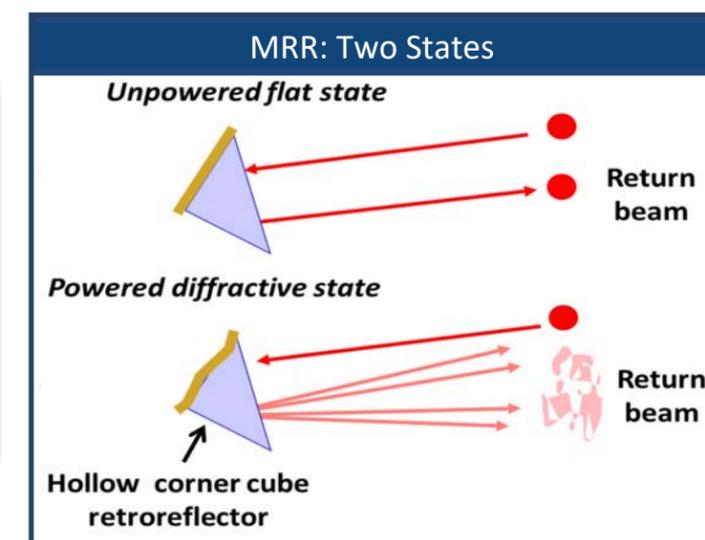


MRR Specifications

- >50% Peak Contrast
- Housing diameter: 1 inch
- Retro Aperture 14 mm*
- Coating: Gold
- Beam deviation: <30 arcsec

*Custom-sized apertures available upon request

Modulating RetroReflector Concept



MB-200 High Voltage Driver

MB-200 Driver: Economical Control of BMC's Optical Modulation Technology

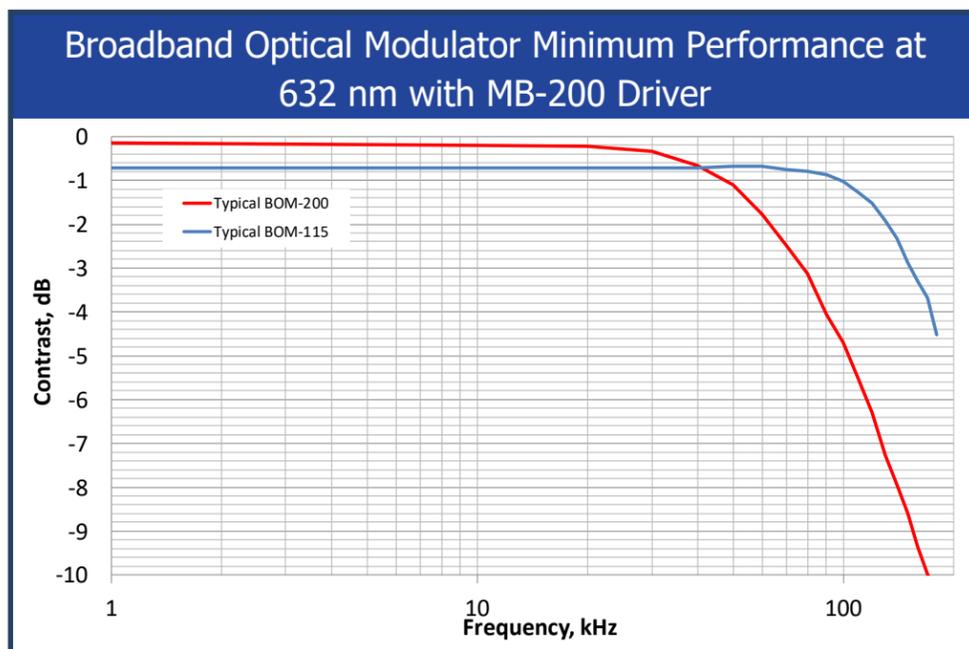
When combined with the Broadband Optical Modulator (BOM) or Modulating RetroReflector (MRR), the MB-200 Driver is an economical solution which enables stable modulation of an incoming beam. When paired with the BOM, it is designed to replace a full acousto-optic modulator (AOM) or electro-optic modulator (EOM) system at a fraction of the cost. When paired with the MRR, it offers a convenient method of demonstrating asymmetric free-space lasercomm.

The MB-200 is operated with the use of a standard 5-volt TTL signal and included external power supply.



Specifications

- Frequency range: 0Hz to 300kHz
- Enclosure dimensions: 5" x 4" x 1"
- Power supply input: 100-240VAC



BROADBAND OPTICAL MODULATOR TECHNOLOGY

