

# Phase Modulator

## A device that can achieve phase change of a beam passing through a crystal

The **Electro-optical phase modulators (EOPM)** are devices that utilize the electro-optic effect to modulate the phase of a light beam.

Free-space EOPMs can be divided into broadband and resonant types. The operating frequency of broadband EOPMs is determined by the drive frequency, typically ranging from DC to 100 MHz. Resonant EOPMs can place the electro-optic crystal in a resonant circuit or microwave resonant cavity, greatly reducing the drive voltage requirement compared to broadband EOPMs, but can only operate at a single frequency. Devices using resonant circuits typically operate at frequencies less than 200 MHz, while those using microwave resonant cavities typically operate at frequencies greater than 500 MHz. Fujing Technology's microwave resonant cavity phase modulators can achieve modulation frequencies in the GHz range.



### Applications

- Laser frequency stabilization
- Quantum state control
- Atom trapping and laser cooling
- spectroscopy

CASTECH's products are produced independently throughout the entire process and can be customized according to customer needs. Refer to the following list for standard products.

## Model Number: BPMR-md-a-f-λ

Material(m)	Modulation(d)	Aperture(a)	Center frequency(f)	Modulation wavelength (w)
M (MLN)	C (Conventional modulation volume)	1 (1×1 mm <sup>2</sup> )	1500 MHz	532 nm
K (KTP)	H (High modulation volume)	2 (2×2 mm <sup>2</sup> )	1750 MHz	633 nm
...	...	3 (3×3 mm <sup>2</sup> )	...	...

### Typical Specifications

Material	Center frequency*	Aperture	Modulation
MLN	1500 MHz	2×2 mm <sup>2</sup>	π rad
MLN	1750 MHz	1×1 mm <sup>2</sup>	π rad

The center frequency can be adjusted within a certain range

### Housing dimensions(mm):

BPMR-MC2

