Photoelastic modulator is applied for changing the polarization state of light, and make the transmitted light have a dynamic phase retardation. The light-passing part of the device is made of isotropic material, which periodically vibrates at an inherent resonant frequency. The refractive index of the optical material will change periodically due to the photoelastic effect, which changes the phase retardation of the incident light. CASTECH's photoelastic modulator has the advantages of wide receiving angle, large clear aperture, wide wavelength range, high modulation frequency and high precision.

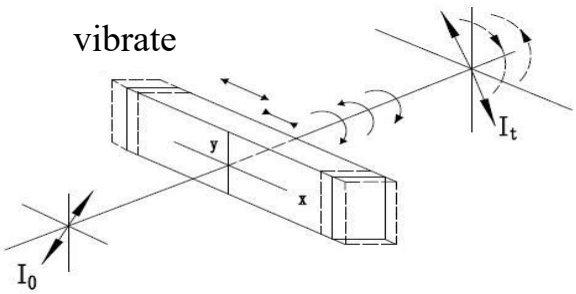
According to the working mode, photoelastic modulators can be divided into two categories: one-dimensional and two-dimensional.

The one-dimensional photoelastic modulator has only one vibration dimension and is applicable for ultraviolet, visible and near-infrared wavebands.

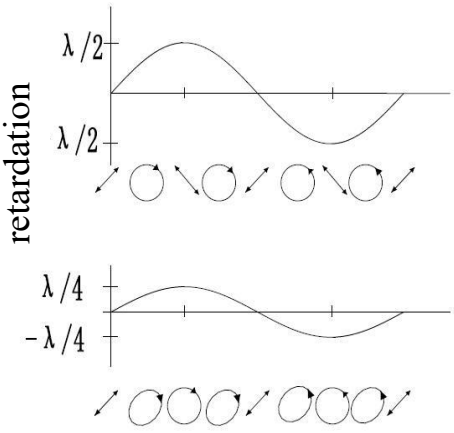
The two-dimensional photoelastic modulator has two vibration dimensions, can achieve a larger range of phase modulation, and is mainly used in visible and infrared wavebands.

Applications

- **Polarization measurement**
- **Quantum sensing**
- **Spectrometer**
- **Astronomical observation**
- **Magnetometer**



Photoelastic principle



Phase retardation

Model Number：CPEM-f-a-m-t-h

Frequency (f)	Clear aperture (a)	Material (m)	Type (t)	Housing (h)
50(50kHz) 60(60kHz) 84(84kHz) ...	13(13mm) 14(14mm) 16(16mm) 22(22mm) ...	FS (fused silica) CF (calcium fluoride) ZS (zinc selenide) ...	1 (One-dimensional) 2 (Two-dimensional)	A01 A02 A03 A04 ...

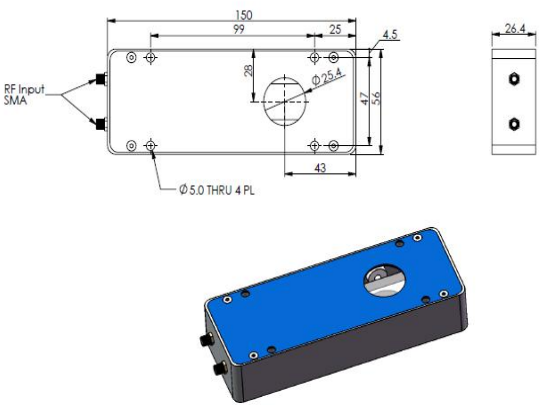
Typical Specifications*

Frequency	Type	Maximum Clear Aperture	Transmission	Acceptance Angle
50kHz	One-dimensional	16mm	≥98%	20°
60kHz	One-dimensional	13mm	≥98%	20°
50kHz	Two-dimensional	22mm	≥98%	20°
60kHz	Two-dimensional	13mm	≥98%	20°

***Wavelengths range 532-1100nm**

Housing dimensions(mm)：

A01



A02