

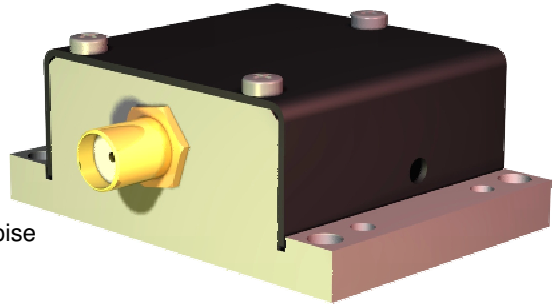
# MT350

# Fast AO Modulator/Shifter

## TeO2 modulator for 450-700 nm lasers

- High speed
- Linear or random Polar
- Printing

These modulators have been specially designed for high speed printing and facsimile applications, for which high accuracy, stability, repeatability, high extinction ratio and low noise are the key factors.



They can also be used as fixed frequency shifters @350 Mhz, as well as variable frequency shifters with a frequency range up to 350 +/- 50 MHz.

With an adapted frequency range, user will be able to operate this device as a high speed low resolution deflector.

### Specifications

<b>Material-Acoustic mode</b>	TeO2 [L]
<b>Acoustic Velocity</b>	V=4200 m/s
<b>Optical Wavelength range</b>	VIS: 450-700 nm
<b>Transmission</b>	> 95 %
<b>Optical Input / Output polarizations</b>	Linear
<b>Aperture</b>	0.12 x 2 mm <sup>2</sup> (option for 1064 nm 0.2 x 1 mm <sup>2</sup> )
<b>Carrier frequency / Frequency shift</b>	350 MHz
<b>Separation angle</b>	44.3 mrd @532 nm
<b>Diffraction efficiency (with TEM00 beam, M<sup>2</sup> ≤ 1.1)</b>	80 % @70 μm, 70 % @30 μm (Ellipticity nom 80% @30μm)
<b>Rise time</b>	160 ns/mm (min 5 ns)
<b>Amplitude modulation bandwidth</b>	> 96 MHz (-3 dB, @30μm)
<b>Static extinction ratio</b>	> 2000/1
<b>Max optical power density</b>	VIS : 5 W / mm <sup>2</sup>
<b>Input impedance</b>	Nom 50 Ω
<b>V.S.W.R.</b>	Nom < 1.5/1
<b>RF Power</b>	≤ 2 Watts
<b>Connector</b>	SMA
<b>Size / Weight</b>	(Lxhx) 47x 33 x 17.8 mm <sup>3</sup> / 50 g
<b>Operating Temperature</b>	10 to 40 °C



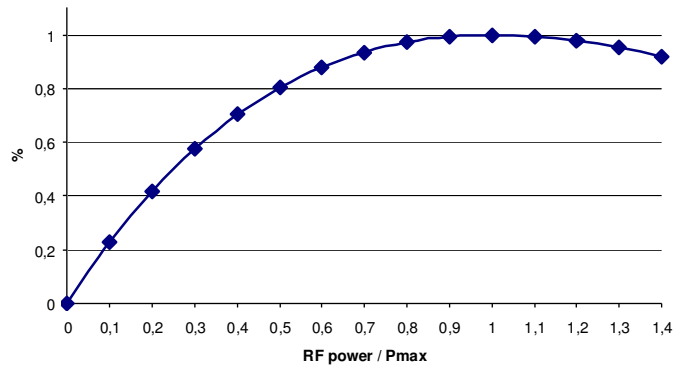
Relative Diffraction Efficiency vs RF Power

→ Separation angle ( $\Delta\theta$ ) is wavelength ( $\lambda$ ) sensitive:

$$\Delta\theta = \frac{\lambda F}{V}$$

→ RF power (P) is wavelength ( $\lambda$ ) sensitive:

$$\frac{P_1}{P_2} = \frac{\lambda_1^2}{\lambda_2^2}$$



OPTION

**Frequency range** 350+/-50MHz  
 Nominal efficiency over 350+/-50MHz > 50% (VIS, @800nm)

MT350-Ax-zz

**X = 0.12** (aperture, mm)  
**Y = frequency range** (MHz) if any  
**ZZ = VIS** (450-700 nm)

Outline Drawing

sizes in mm

