

# MT80

# AO Modulator/Shifter

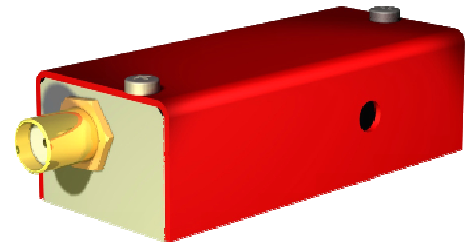
## TeO2 modulator for 450-1100 nm lasers

- Wide spectral range
- Linear or random Polar

These modulators have been specially designed for general purpose low speed applications. They are proposed with various wavelength ranges or with V-coating.

They can also be used as fixed frequency shifters @80 MHz, as well as variable frequency shifters with a frequency range up to 80 +/- 15 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 IR: 700-1100 nm 1064 nm: 980-1100 nm
<b>Transmission</b>	VIS/IR: > 95 % 1064 nm: 98% @1064nm
<b>Optical Input / Output polarizations</b>	Linear
<b>Aperture</b>	1 x 2 mm <sup>2</sup> or 1.5 x 2 mm <sup>2</sup>
<b>Carrier frequency / Frequency shift</b>	80 MHz
<b>Separation angle</b>	10.1 mrd @532 nm 20.3 mrd @1064 nm
<b>Diffraction efficiency (with TEM00 beam, M<sup>2</sup> ≤ 1.1)</b>	85 %
<b>Rise time</b>	160 ns/mm (min 24 ns)
<b>Amplitude modulation bandwidth</b>	> 20 MHz (-3 dB, @150μm)
<b>Static extinction ratio</b>	> 2000/1
<b>Max optical power density</b>	VIS : 5 W / mm <sup>2</sup> @532 nm, IR : > 10 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>	VIS: ≤ 1 Watts IR/1064 nm: ≤ 2 Watts
<b>Connector</b>	SMA
<b>Size / Weight</b>	(LxH) 50.9 x 22.4 x 15.8 mm <sup>3</sup> / 50 g
<b>Operating Temperature</b>	10 to 40 °C

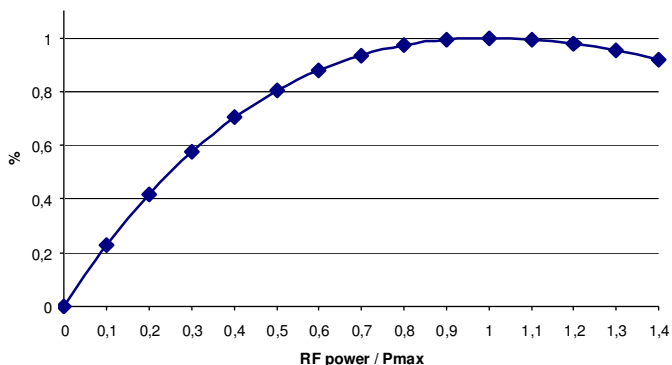
Relative Diffraction Efficiency vs RF Power

→ 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 80+/-15MHz  
Nominal efficiency over 80+/-15MHz > 70%

MT80-Ax-zz

X (aperture, mm) = 1 or 1.5  
Y = frequency range (MHz) if any  
ZZ = VIS (450-700 nm), IR (700-1100 nm), @1064nm

Outline Drawing

(sizes in mm)

