ACOUSTO-OPTIC DEVICES

MT80

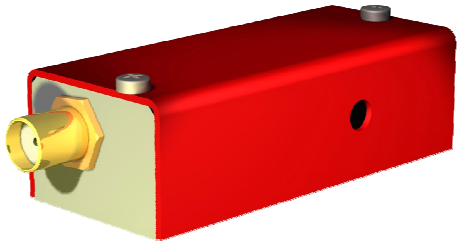
AO MODULATOR / SHIFTER

DESCRIPTION

These modulators have been specially designed for general purpose high 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.

FEATURES

- Large active aperture
- Linear or random polarization
- High diffraction efficiency
- BDO optimization for 1.5mm aperture versions



APPLICATIONS

- Amplitude modulation
- Frequency shifter @ 80 MHz +/- 15 MHz

Parameter	Unit	Rating	Conditions
Material-Acoustic mode-Velocity		TeO2 - [L] - 4200 m/s	
Optical Wavelength range	nm	VIS : 450 to 700 IR: 700 to 1100 1064: 980 to 1100	AR coated
Optical Transmission	%	VIS / IR: > 95 1064: Nom 98	
Input / Output Polarization		Linear / Linear	
Aperture	mm^2	1 x 2 or 1.5 x 2	Height x Length Beam drift Optimization for 1.5mm
Carrier frequency / Frequency shift	MHz	80	
Separation angle	mrd	(1) 10.1 (2) 20.3	(1) At 532 nm (2) At 1064 nm
Diffraction efficiency	%	> 85 Nom 90	with TEM00 beam, M^2 ≤1.1
Rise / Fall time	ns	160	with 1 mm beam diameter
Amplitude modulation bandwidth	MHz	10	-3 dB, 0.3 mm beam dia
Static Extinction Ratio		> 2000 : 1	
Maximum optical power density	W / mm^2	VIS: 5 IR / 1064: > 10	CW
Input impedance	Ω	Nom 50	
V.S.W.R.		Nom < 1.2 : 1	
RF Power / Connector	W	VIS : ≤ 1 / SMA IR / 1064 : ≤ 2 / SMA	
Size / Weight	mm^3	(Lxlxh) 50.9 x22.4 x 17.3 / 50 g	IN PRO 004
Operating Temperature	°C	+10 to +40	Non condensing

Options / On request			
APERTURE	WAVELENGTH	RF BANDWIDTH 30 MHz Diffraction efficiency > 75 %	HOUSING

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HOW TO DETERMINE THE REFERENCE OF YOUR MODEL:

MT80-A1-VIS

MATERIAL
- **T** TeO2
- **Q** Fused Silica
- **CQ** Quartz

CARRIER FREQUENCY
- **80** 80 MHz
- **80-B30** 80 MHz +/- 15 MHz

WAVELENGTH RANGE
- **VIS** 450 to 700 nm
- **IR** 700 to 1100 nm
- **1064** 980 to 1100 nm

APERTURE
- **1** 1 x 2 mm^2
- **1.5** 1.5 x 2 mm^2

Rise Time (Tr) is beam diameter (Φ) sensitive:

$$Tr = 0.66\frac{\Phi}{V}$$

Amplitude modulation bandwidth (F_{-3dB}) is rise time (Tr) sensitive:

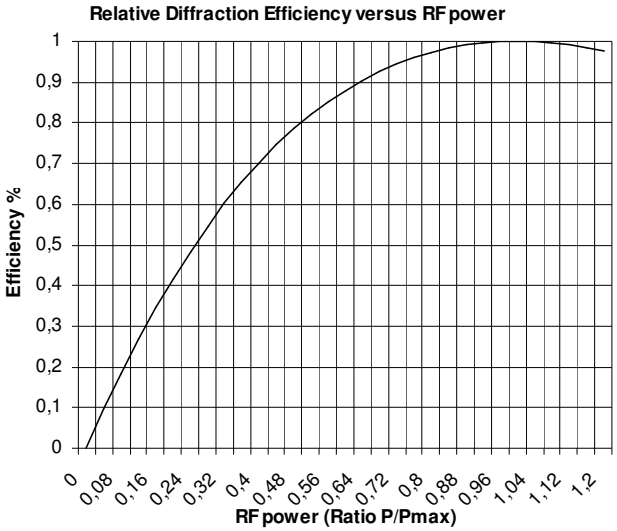
$$F_{-3dB} = \frac{0.48}{Tr}$$

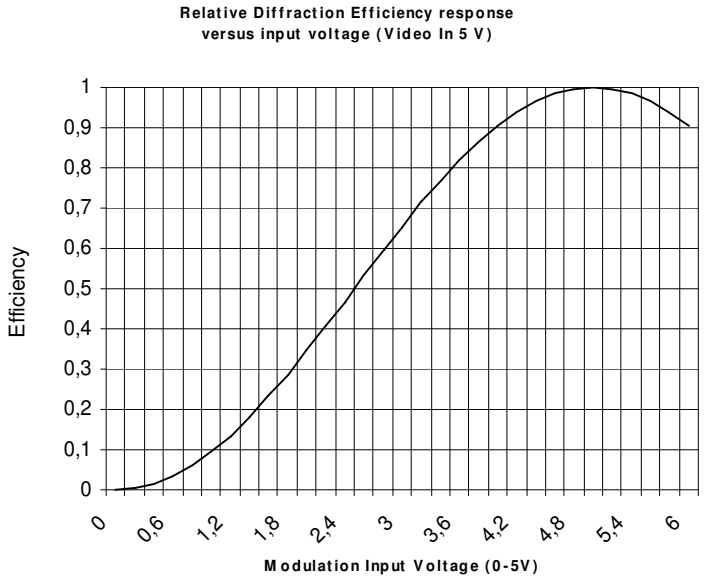
Separation angle ($\Delta\theta$) is wavelength (λ) sensitive:

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

RF power (P) is wavelength (λ) sensitive:

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





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