

**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 @110 MHz, as well as variable frequency shifters with a frequency range up to 110 +/- 25 MHz.

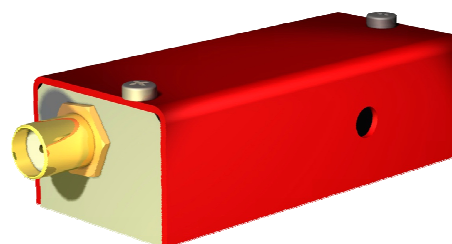
With an adapted frequency range, user will be able to operate this device as a high speed low resolution deflector.

**FEATURES**

- Large active aperture
- Linear or random polarization
- High diffraction efficiency

**APPLICATIONS**

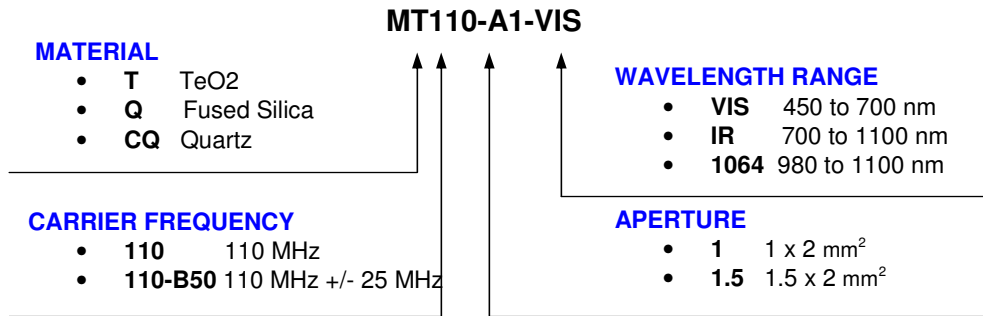
- Amplitude modulation
- Frequency shifter @ 110 MHz +/- 25 MHz



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 <sup>2</sup>	1 x 2 or 1.5 x 2	Height x Length
Carrier frequency / Frequency shift	MHz	110	
Separation angle	mrd	(1) 13.9 (2) 27.9	(1) At 532 nm (2) At 1064 nm
Diffraction efficiency	%	> 85 Nom 90	with TEM00 beam, M <sup>2</sup> ≤ 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 <sup>2</sup>	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 <sup>3</sup>	(LxH) 50.9 x 22.4 x 17.3 / 50 g	IN PRO 004
Operating Temperature	°C	+10 to +40	Non condensing

Options / On request			
APERTURE	WAVELENGTH	RF BANDWIDTH 50 MHz Diffraction efficiency > 60 %	HOUSING

## HOW TO DETERMINE THE REFERENCE OF YOUR MODEL:



Rise Time ( $T_r$ ) is beam diameter ( $\Phi$ ) sensitive:

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

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

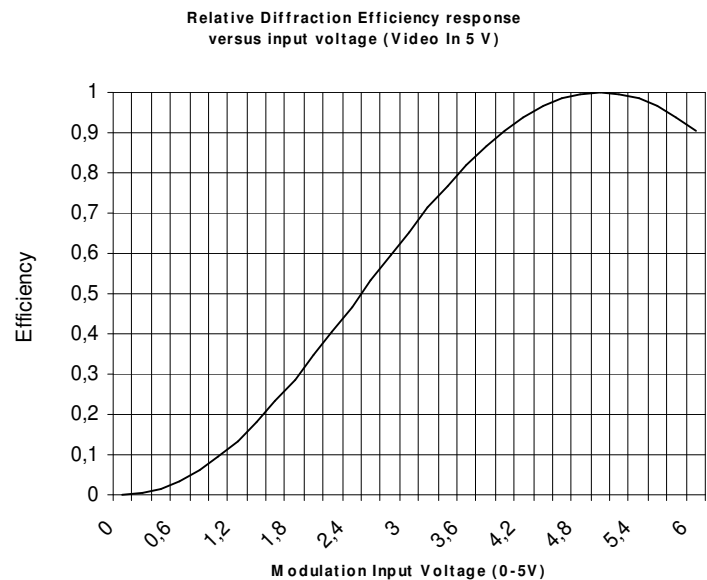
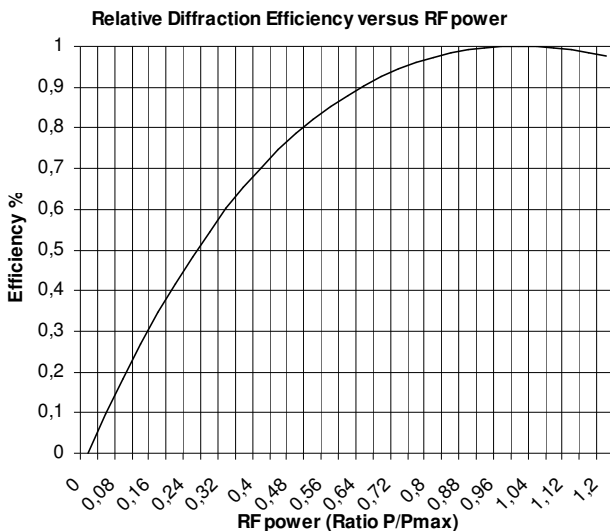
$$F_{-3dB} = \frac{0.48}{T_r}$$

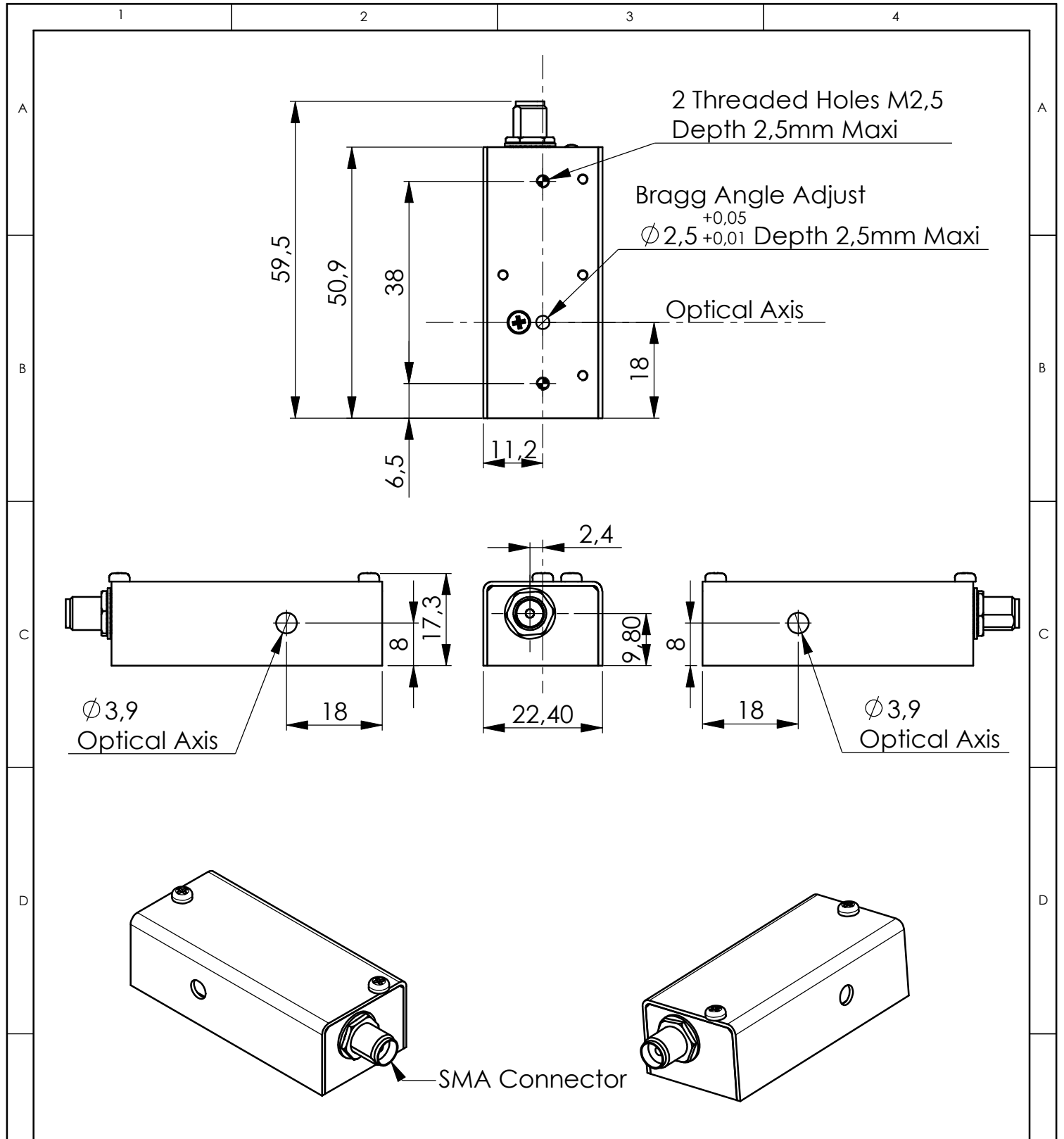
Separation angle ( $\Delta\theta$ ) is wavelength ( $\lambda$ ) sensitive:

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

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

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





B	18/12/06	E.D	Mise en page
A	15/10/03	OGB	Plan initial / Initial Drawing
Index	Date	Auteur Author	Modifications
Conception Design	E.D	<b>PLAN D'INTERFACE / OUTLINE DRAWING</b>	
Vérification Checking	E.D		
Tolérance Tolerance	ISO 2768mK	Référence / Reference	
Echelle Scale	1:1	<b>IN-PRO-004</b>	
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