

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 @250 MHz, as well as variable frequency shifters with a frequency range up to 250 +/- 50 MHz.

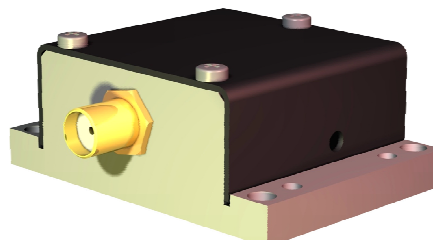
With an adapted frequency range, user will be able to operate this device as a high speed low resolution deflector.

FEATURES

- Fast rise time
- Linear or random polarization
- High diffraction efficiency

APPLICATIONS

- Amplitude modulation
- Frequency shifter @ 250 MHz +/- 50 MHz
- Pulse picker



Parameter	Unit	Rating	Conditions
Material-Acoustic mode-Velocity		TeO ₂ - [L] - 4200 m/s	
Optical Wavelength range	nm	VIS : 450 to 700 800: 700 to 950 1064: 980 to 1100	AR coated
Optical Transmission	%	VIS / 800: > 95 1064: Nom 98	
Input / Output Polarization		Linear / Linear	
Aperture	mm ²	0.5 x 2 or 0.2 x 1 or 0.12 x 1	Height x Length
Carrier frequency / Frequency shift	MHz	250	
Separation angle	mrd	(1) 31.7 (2) 63.3	(1) At 532 nm (2) At 1064 nm
Diffraction efficiency	%	> 80 Nom 85	with TEM ₀₀ beam, M ² ≤ 1.1
Rise / Fall time	ns	(1) 48 (2) 16	(1) with 0.3 mm beam dia (2) with 0.1 mm beam dia
Amplitude modulation bandwidth	MHz	(1) 10 (2) 30	(1) -3 dB, 0.3 mm beam dia (2) -3 dB, 0.1 mm beam dia
Static Extinction Ratio		> 2000 : 1	
Maximum optical power density	W / mm ²	VIS: 5 800 / 1064: > 10	CW
Input impedance	Ω	Nom 50	
V.S.W.R.		Nom < 1.2 : 1	
RF Power / Connector	W	VIS : ≤ 1.3 / SMA 800 / 1064 : ≤ 2.2 / SMA	
Size / Weight	mm ³	(LxIxh) 33 x 47 x 19.3 / 50 g	IN PRO 002
Operating Temperature	°C	+10 to +40	Non condensing

Options / On request			
APERTURE	WAVELENGTH	RF BANDWIDTH 100 MHz Diffraction efficiency > 65 %	HOUSING

HOW TO DETERMINE THE REFERENCE OF YOUR MODEL:

MT250-A0.5-VIS

MATERIAL

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

CARRIER FREQUENCY

- **250** 250 MHz
- **250-B100** 250 MHz +/- 50 MHz

WAVELENGTH RANGE

- **VIS** 450 to 700 nm
- **800** 700 to 950 nm
- **1064** 980 to 1100 nm

APERTURE

- **0.5** 0.5 x 2 mm²
- **0.2** 0.2 x 1 mm²
- **0.12** 0.12 x 1 mm²

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

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

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

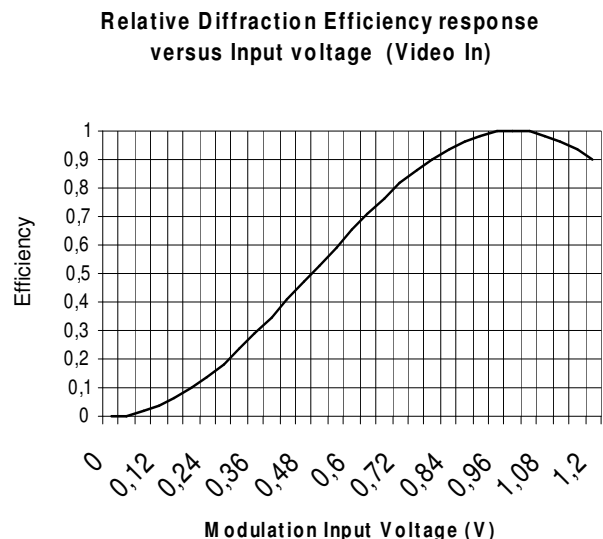
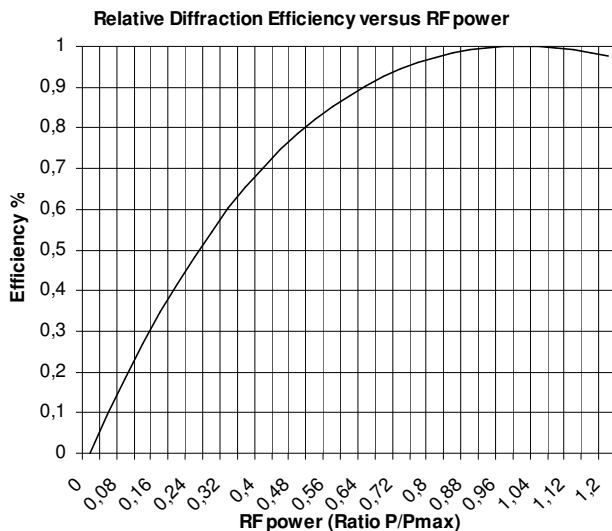
$$F_{-3dB} = \frac{0.48}{Tr}$$

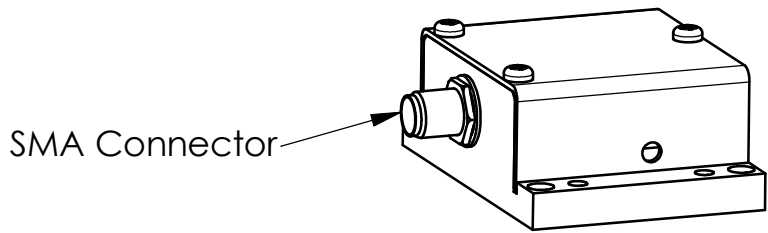
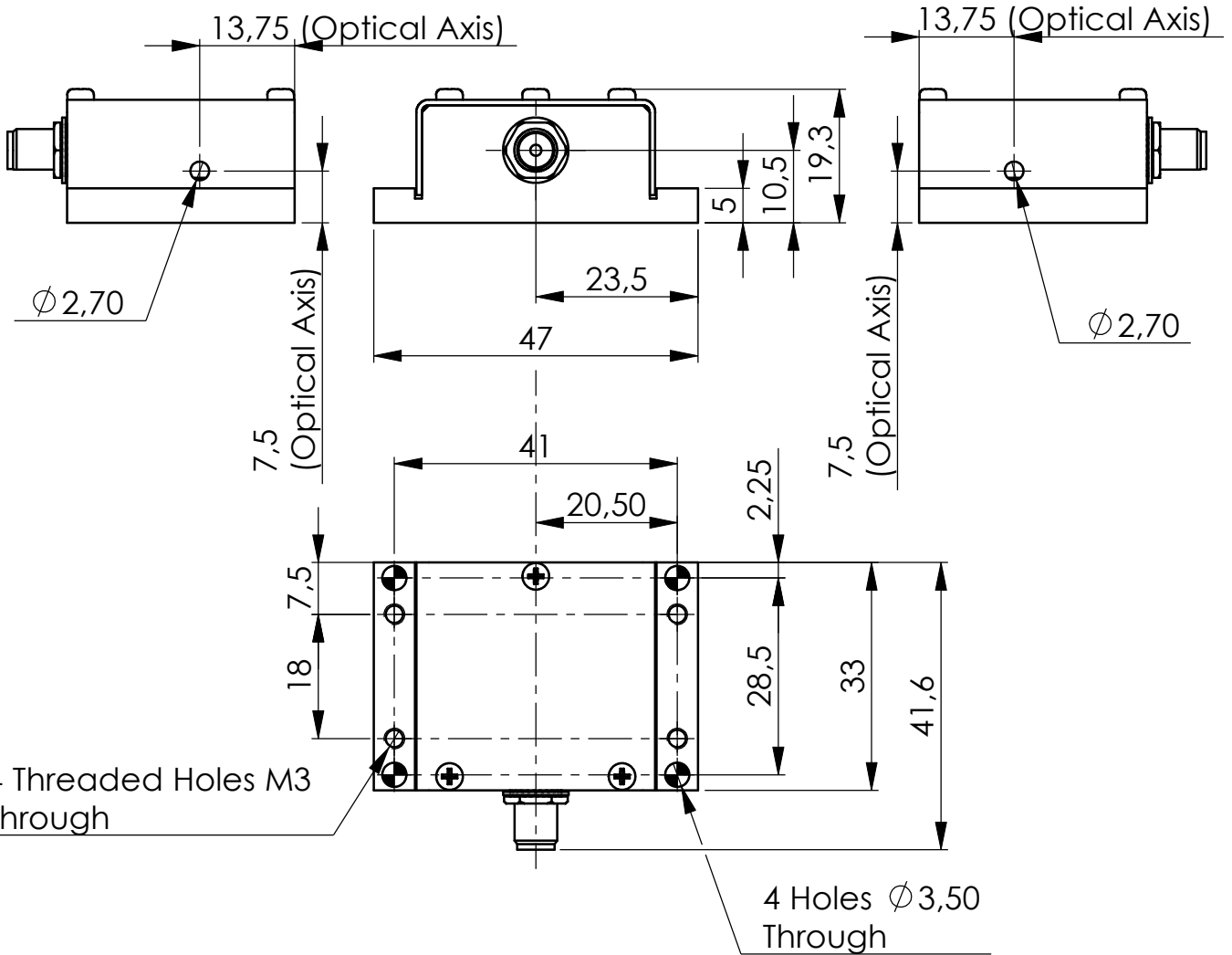
Separation angle (Δθ) is wavelength (λ) sensitive:

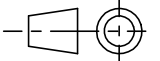
$$\Delta\theta = \frac{\lambda F}{V}$$

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

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





B	15/12/06	E.D	Mise en page
A	25/04/02	F.C	Plan initial / Initial Drawing
Index	Date	Auteur Author	Modifications
Conception Design	E.D	PLAN D'INTERFACE / OUTLINE DRAWING	
Vérification Checking	L.F		
Tolérance Tolerance	ISO 2768mK	Référence / Reference	
Echelle Scale	1:1	IN-PRO-002	
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