

MTS40-A2-532.700

AO MODULATOR/SHIFTER 532-700 nm



Product Overview

These modulators/shifters have been specially designed for large beam diameters without additional optics. Their high efficiency and low drive power will suit most of the low speed applications in the visible range. They can also be used as variable frequency shifters over 40+/- 1 MHz.

Features

- Large active aperture
- Linear polarization
- High diffraction efficiency
- Low RF power



Access to your operating manual



Technical Specifications

Parameter	Specification
Material-Acoustic mode-Velocity	TeO ₂ - [S] - 650 m/s
Optical Wavelength range	532 to 700, AR coated
Optical Transmission	> 95
Input / Output Polarization	Linear / Polarization flip 90°
Active Aperture	2 x 2 mm ²
Carrier Frequency / Frequency shift	+ 40 MHz (horizontal polar), - 40 MHz (vertical polar)
Separation Angle (0-1)	32.7 mrd @532 nm
Static Extinction Ratio	> 30 dB
Rise / Fall time	1 μs / mm, min 500 ns
Diffraction Efficiency	90 % with beam diameter ≥ 0.5 mm, TEM ₀₀ laser beam
Analog Amplitude modulation bandwidth (-3 dB)	Max 1 MHz
Max optical power density	5 W/mm ²
Input impedance	Nom 50 Ω
V.S.W.R.	Nom < 1.2/1
RF Power / Connector	< 0.5 / SMA
Size / Weight	(LxIxh) 50.9 x22.4 x 17.3 / 50 g IN PRO 050
Operating Temperature	+10 to +40 Non condensing
Storage Temperature	-40 to +50 Non condensing

Options / On request

- VARIABLE FREQUENCY SHIFT 40 +/- 1 MHz
ACTIVE APERTURE 3 x 3 mm²

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

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

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

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

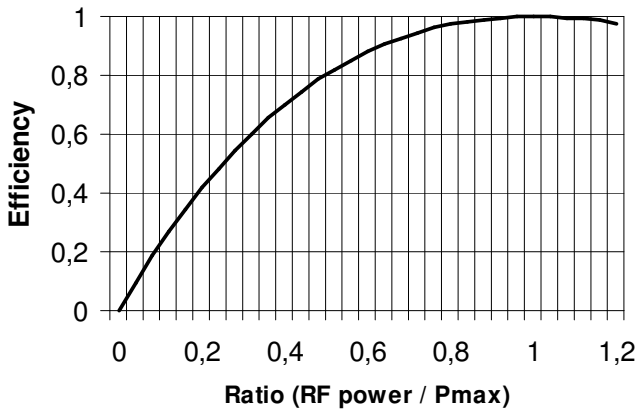
Separation angle ($\Delta\theta$) is wavelength (λ) sensitive:

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

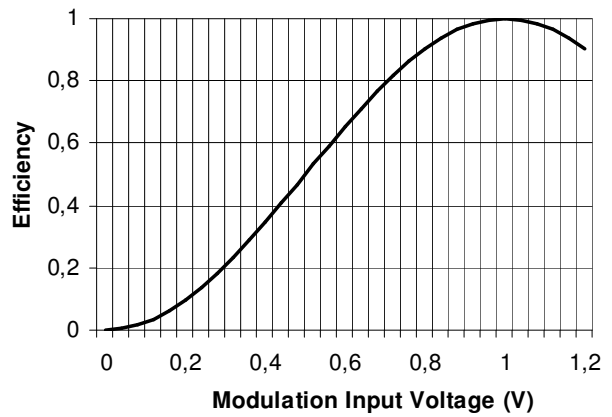
RF power (P) is wavelength (λ) sensitive:

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

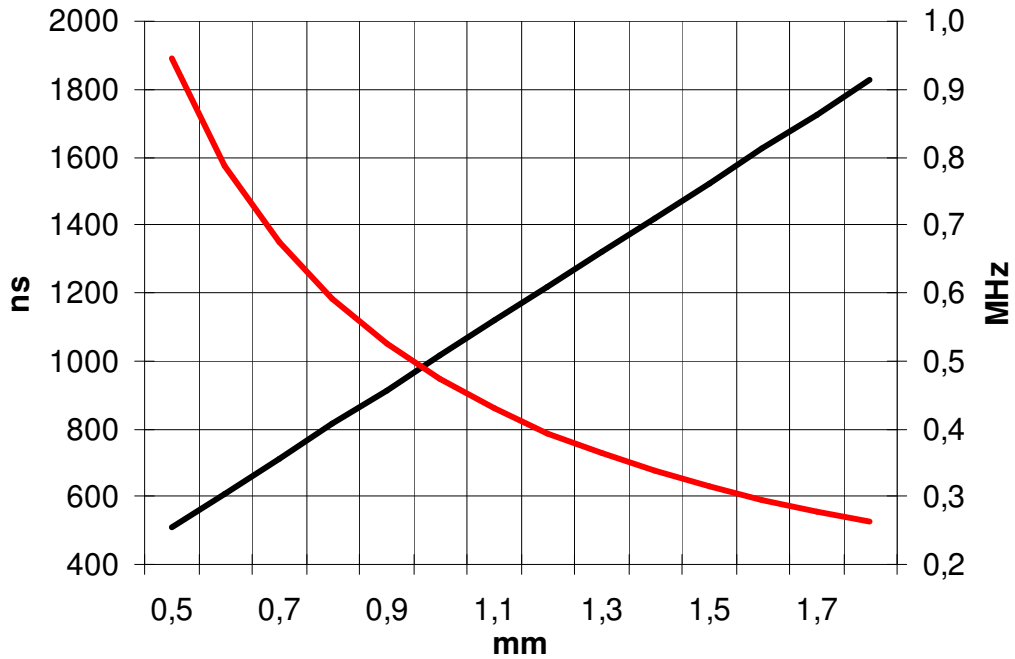
Relative Efficiency versus RF power



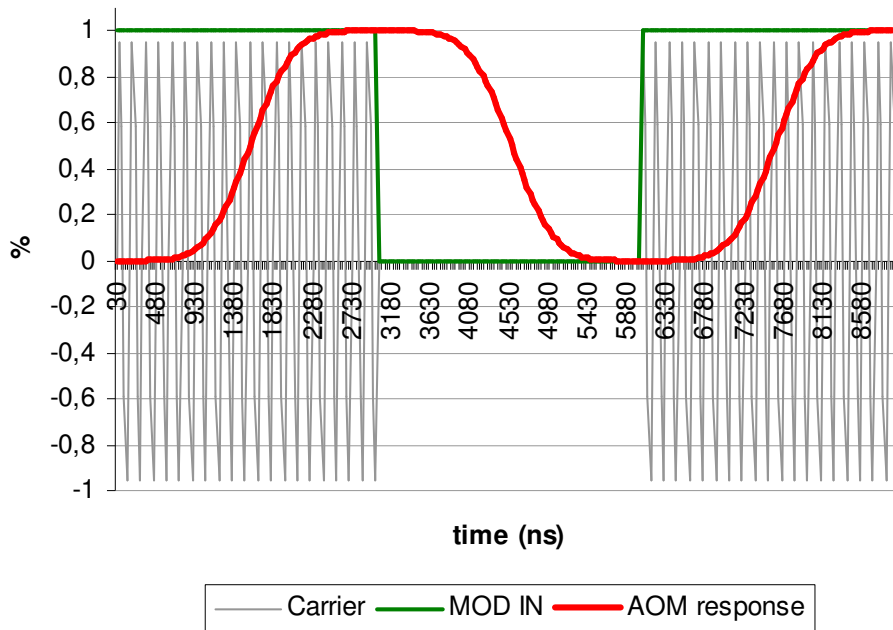
AO relative Efficiency vs driver MOD IN



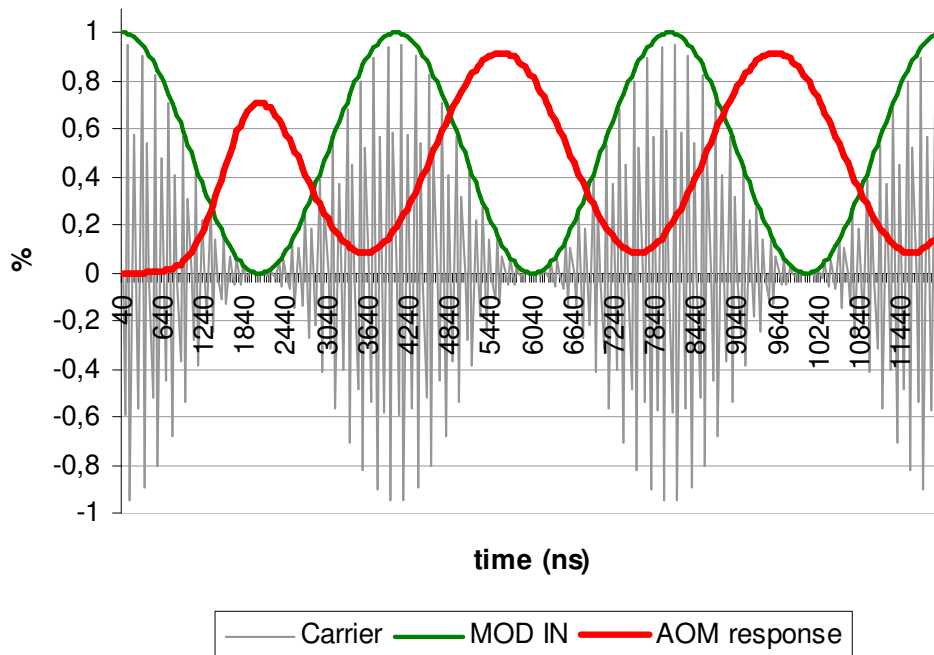
Rise Time (black) / Analog Modulation BW (-3dB) vs Beam diameter

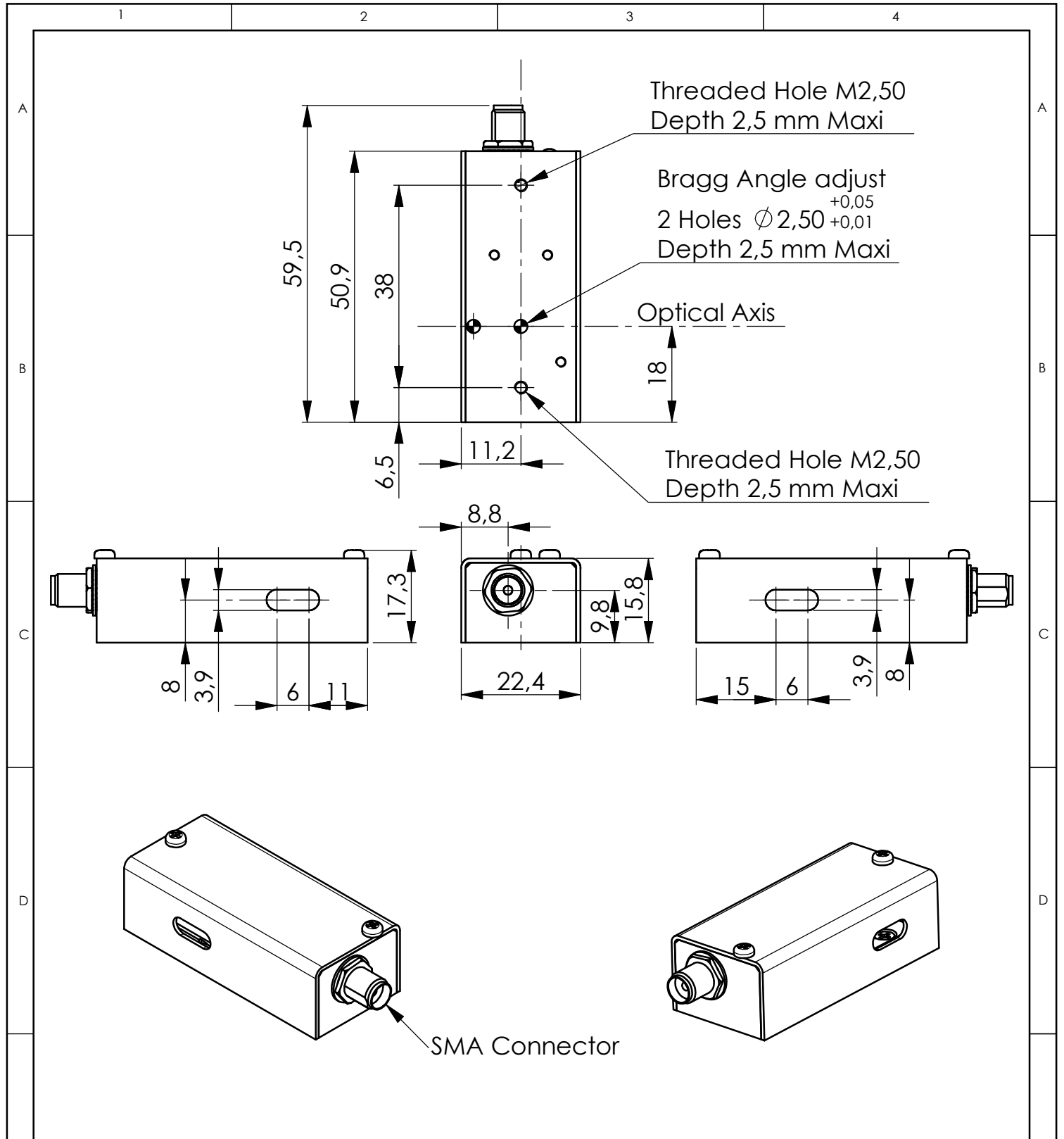



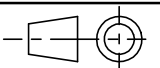
Relative Efficiency / AOM temporal response (1mm)



Relative Efficiency / AOM temporal response (0,25 MHz)





B	31/01/07	E.D	Mise en page
A	28/03/06	A.A	Plan initial / Initial Drawing
Index	Date	Auteur Author	Modifications
Conception Design	E.D	PLAN D'INTERFACE / OUTLINE DRAWING Référence / Reference IN-PRO-050	
Vérification Checking	L.F		
Tolérance Tolerance	ISO 2768mK		
Echelle Scale	1:1	 OPTO-ELECTRONIC A.A. SA OPTO-ELECTRONIQUE DIVISION 18, rue Nicolas Appert F-91898 ORSAY tel : 08 11 09 76 76 fax : 01 76 91 50 31	
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