

MTS110-A3-VIS

AO MODULATOR/SHIFTER

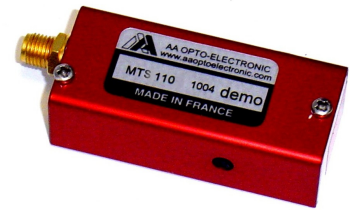


Product Overview

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.

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	458 to 670, AR coated
Optical Transmission	> 95 %, Nom 98%
Input / Output Polarization	Linear / Polarization flip 90°
Active Aperture	3 x 3 mm ²
Carrier Frequency / Frequency shift	110 MHz
Separation Angle (0-1)	90 mrd @532 nm
Static Extinction Ratio	> 30 dB
Rise / Fall time	1 μs / mm,
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	(LxHxh) 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

TECHNICAL DATA SHEET 2014

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:

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

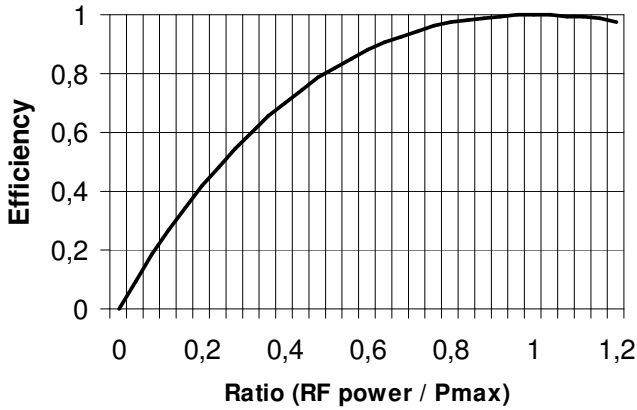
Separation angle ($\Delta\theta$) is wavelength (λ) sensitive:

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

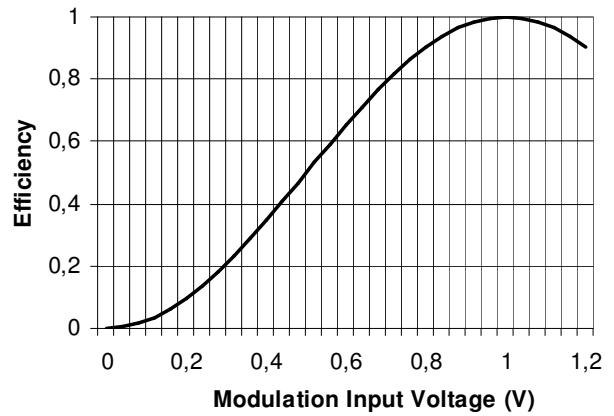
RF power (P) is wavelength (λ) sensitive:

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

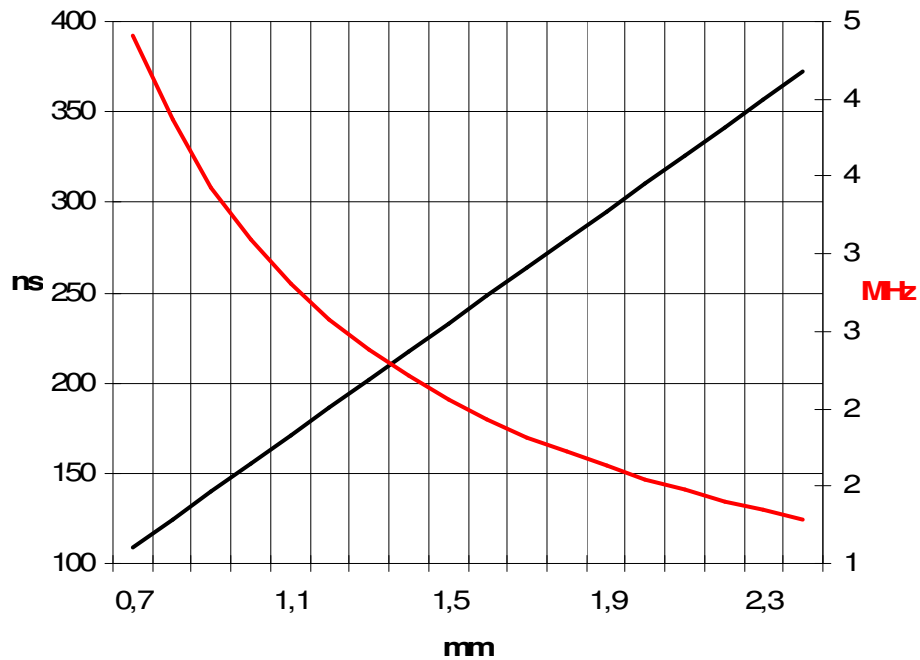
Relative Efficiency versus RF power



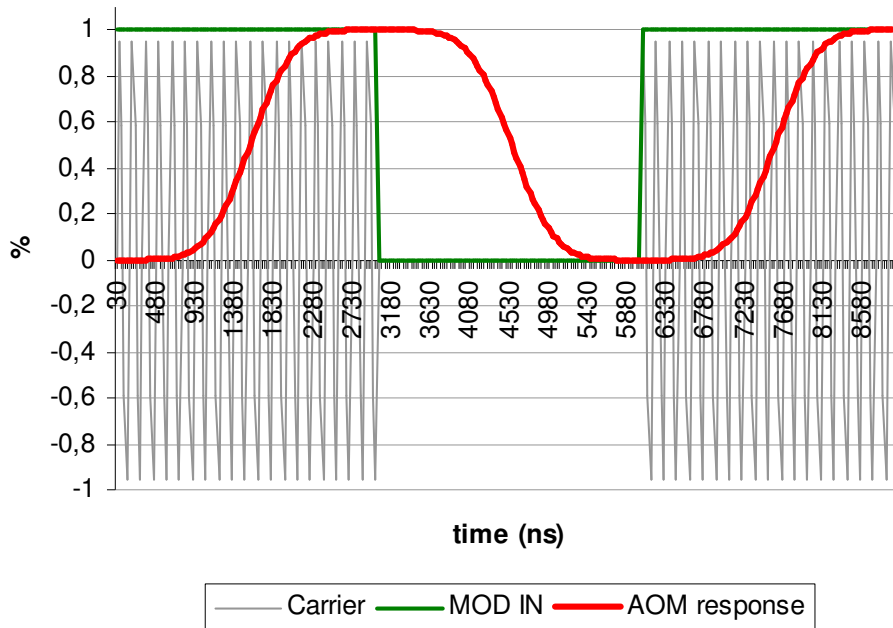
AO relative Efficiency vs driver MOD IN



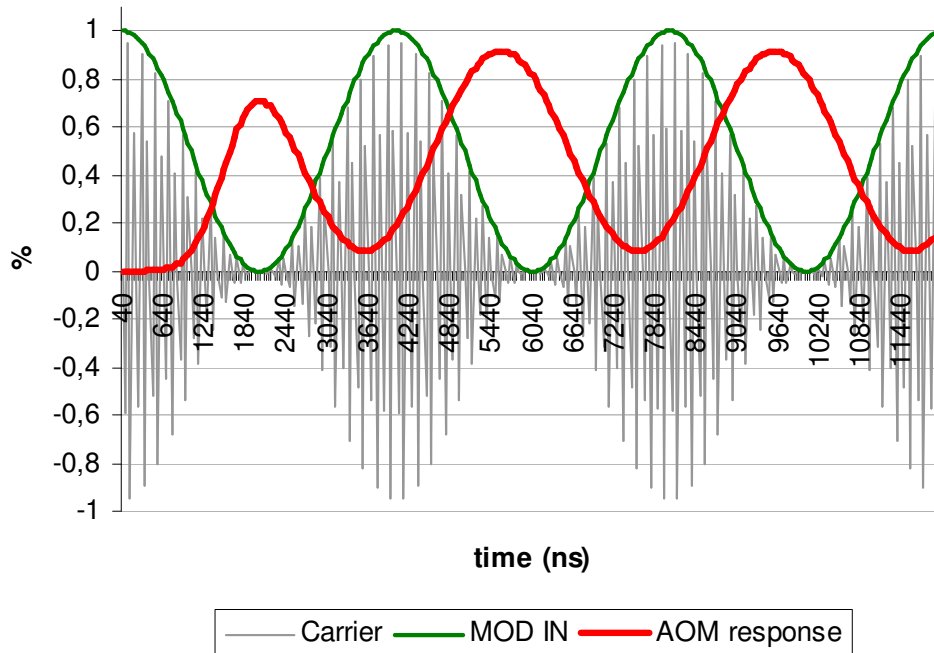
Rise Time (black) / Analog Modulation BW (-3dB) vs Beam diameter

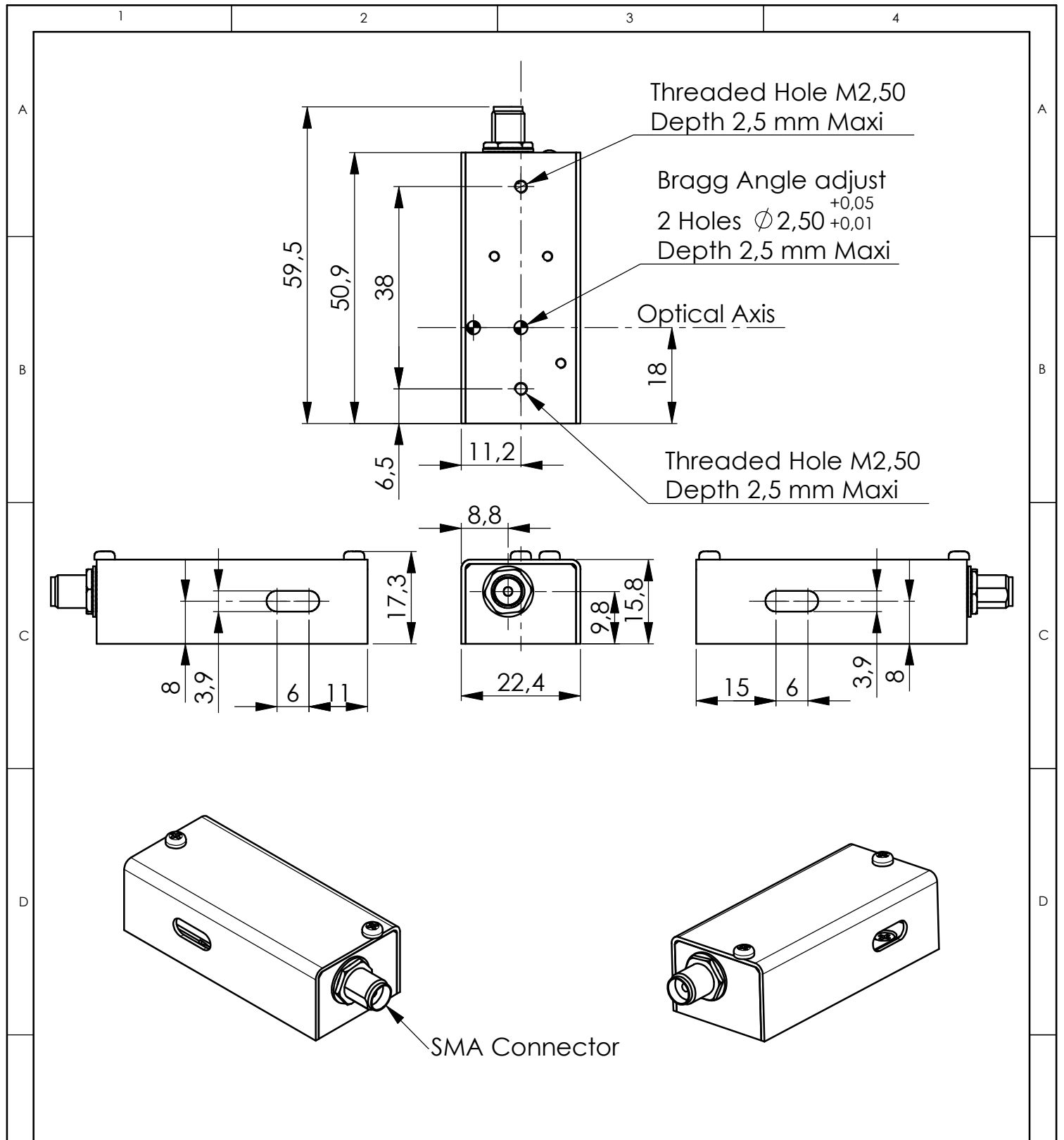



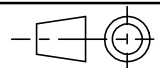
Relative Efficiency / AOM temporal response (1mm)



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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