

MQ240-A0,2-UV

AO MODULATOR/SHIFTER/PULSE PICKER 325-425 nm



Product Overview

These modulators have been specially designed for high speed high power modulation, where TeO₂ cannot be used. They can also be used as fixed frequency shifters @240 MHz, as well as variable frequency shifters or deflectors with a frequency range up to 240 +/- 20 MHz.

Features

- High laser power
- Linear polarization
- High diffraction efficiency



Access to your operating manual

Technical Specifications

| Parameter | Specification |
|---|---|
| Material-Acoustic mode-Velocity | Fused silica [L] - 5960 m/s |
| Optical Wavelength range | 325 to 425 nm AR coated |
| Optical Transmission | > 95 % |
| Input / Output Polarization | Linear vertical / Linear vertical |
| Active Aperture | 0.2 x 1 mm ² |
| Carrier Frequency / Frequency shift | +/- 240 MHz |
| Separation Angle (0-1) | > 13 mrd |
| Static Extinction Ratio | > 30 dB |
| Rise / Fall time | 110 ns / mm |
| Diffraction Efficiency | 80 % with beam diameter ≥ 0.08 mm, TEM ₀₀ laser beam |
| Analog Amplitude modulation bandwidth (-3 dB) | Max 60 |
| Max optical power density | > 10 W/mm ² |
| Input impedance | Nom 50 Ω |
| V.S.W.R. | Nom < 1.2/1 |
| RF Power / Connector | ≤ 2 W / SMA |
| Size / Weight | (LxH) 59.5 x 22.4 x 15.8 / 50 g IN PRO 154 |
| Operating Temperature | +10 to +40 Non condensing |
| Storage Temperature | -40 to +50 Non condensing |

Options / On request

VARIABLE FREQUENCY SHIFT 240 +/- 20 MHz

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:

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

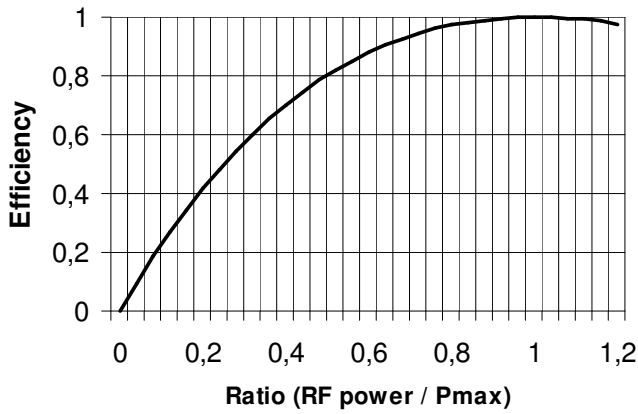
Separation angle ($\Delta\theta$) is wavelength (λ) sensitive:

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

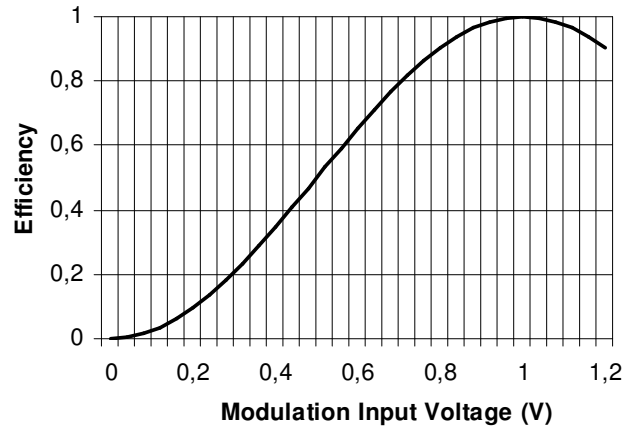
RF power (P) is wavelength (λ) sensitive:

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

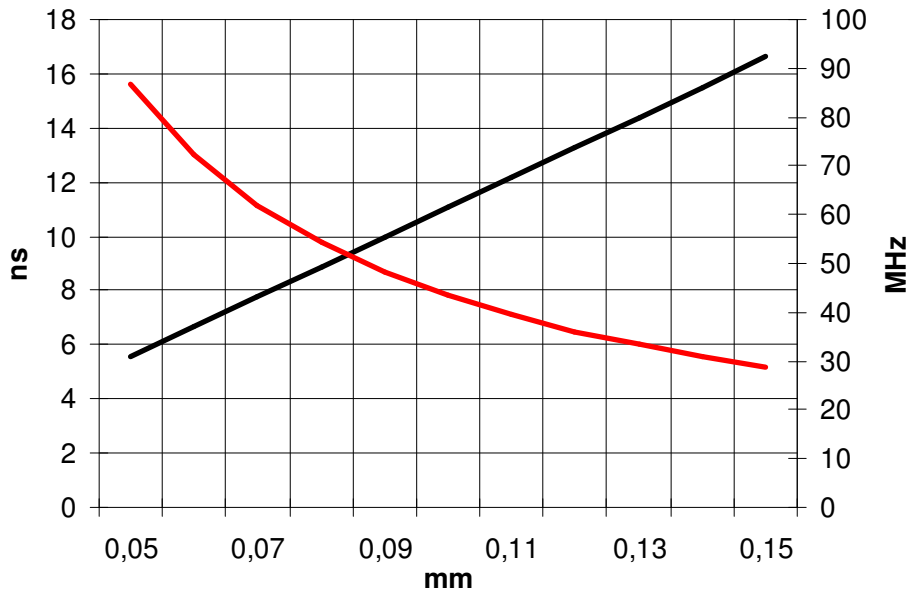
Relative Efficiency versus RF power



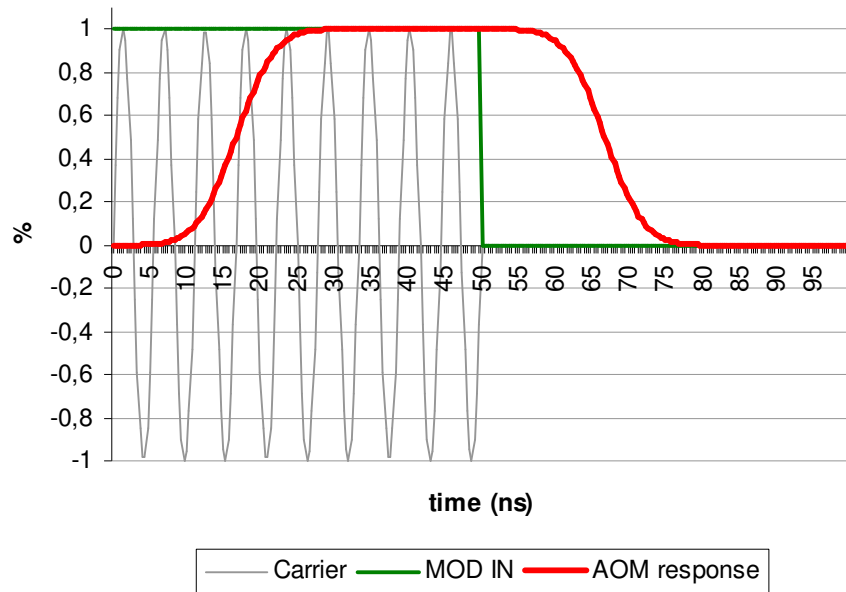
AO relative Efficiency vs driver MOD IN



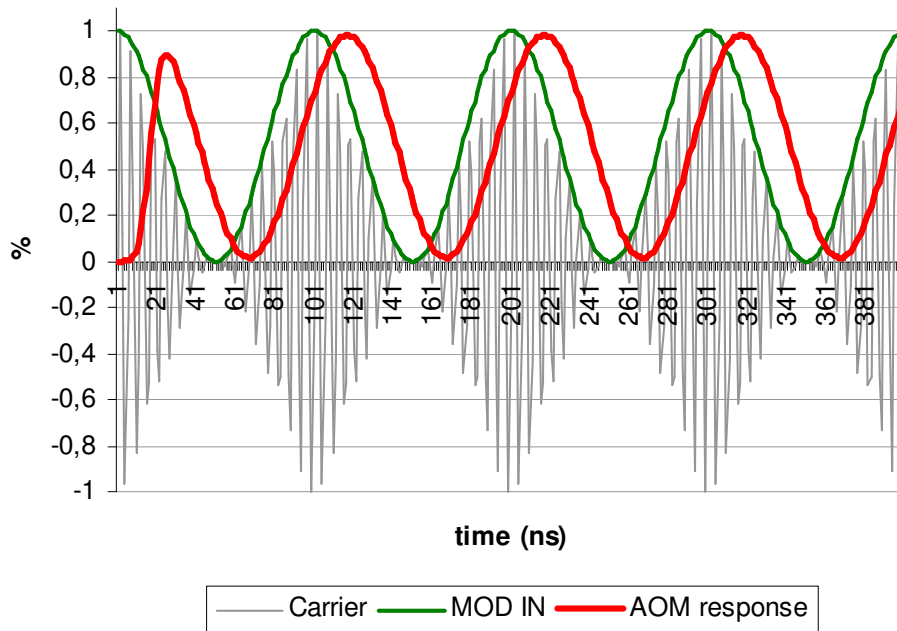
Rise Time (black) / Analog Modulation BW (-3dB) vs Beam diameter

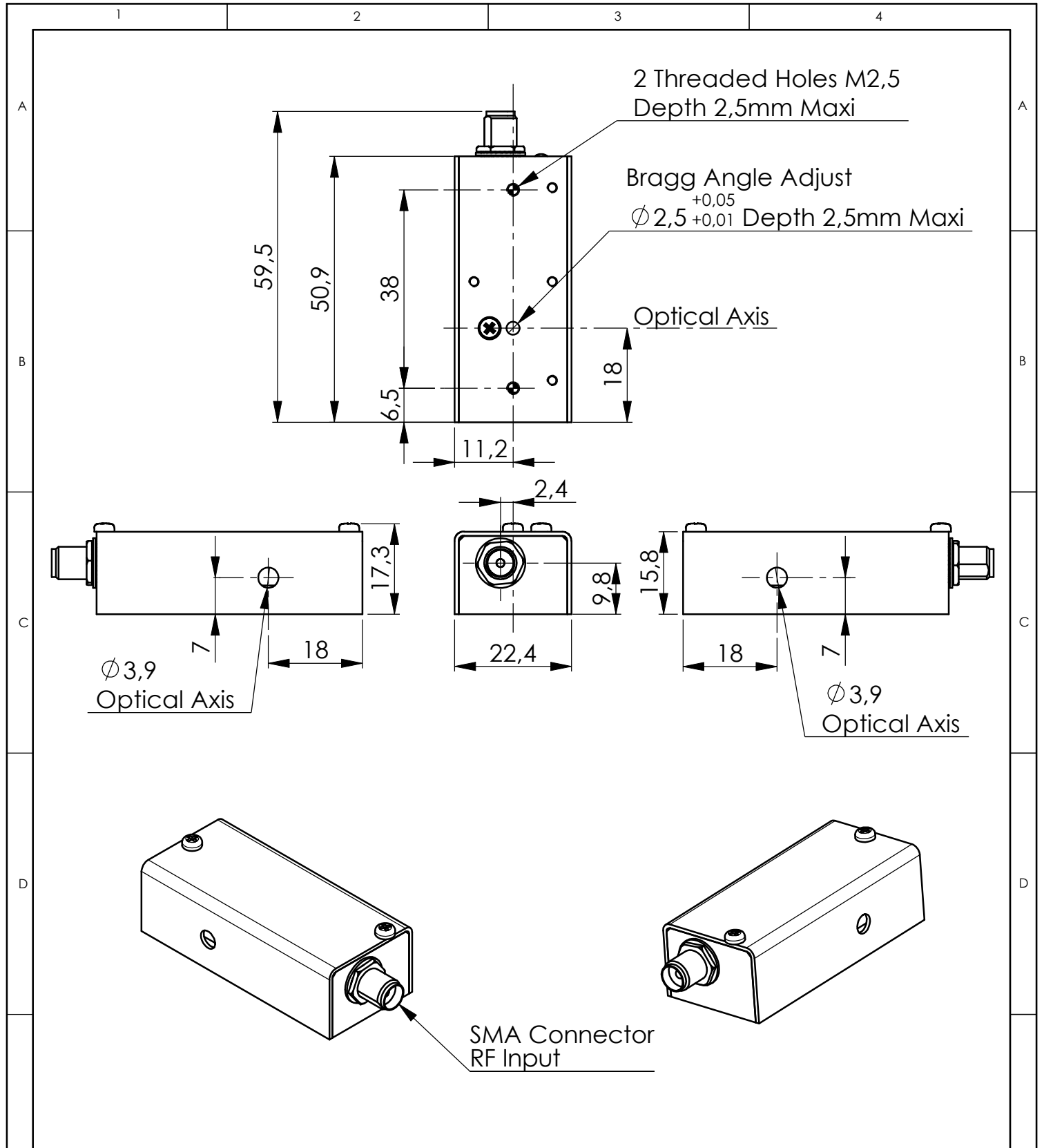



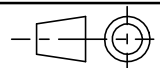
Relative Efficiency / AOM temporal response



Relative Efficiency / AOM temporal response (10MHz)





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|--|--------------|--|--------------------------------|--|
| A | 01/02/07 | E.D | Plan initial / Initial Drawing | |
| Indice Index | Date | Auteur Author | Modifications | |
| Conception Design | E.D | PLAN D'INTERFACE / OUTLINE DRAWING | |  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 |
| Vérification Checking | L.F | | | |
| Tolérance Tolerance | ISO 2768mK | Référence / Reference | | |
| Echelle Scale | 1:1 | IN-PRO-154 | | |
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| | | | | Indice / Index A |