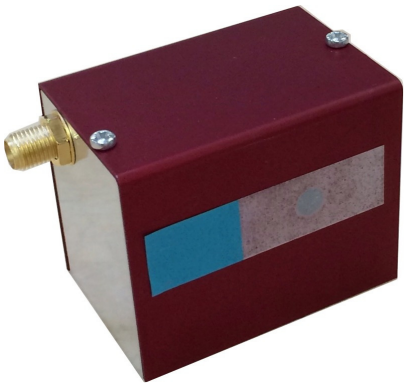
MQ200-A1,5-244.266-B

AO MODULATOR/SHIFTER/PULSE PICKER 244-266 nm

TECHNICAL DATA SHEET 2014

Product Overview

These modulators have been specially designed for applications for which TeO2 cannot be used. They are made of fused silica UV grade with Brewster incidence. They operate between 244 and 266nm.
Applications are Amplitude modulation, Pulse Picking or fixed Frequency shifter 200MHz.

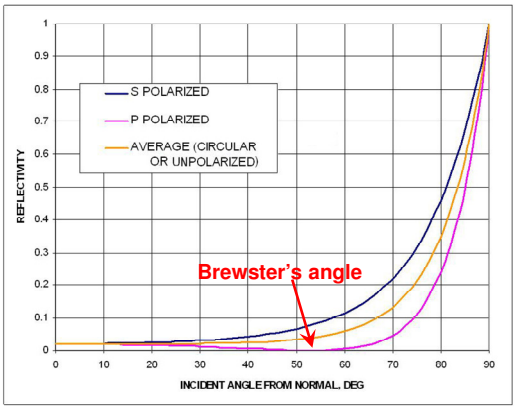


Features

- High laser power
- Linear polarization
- High diffraction efficiency

Brewster incidence

It is the angle of incidence at which light with a particular polarization is perfectly transmitted through the transparent surface, with no reflection.



Access to your operating manual

Technical Specifications

Parameter	Specification
Material-Acoustic mode-Velocity	Fused silica [L] - 5960 m/s
Optical Wavelength range	244 to 266 nm
Optical Transmission	Brewster incidence
Input / Output Polarization	Linear parallel / Linear parallel
Active Aperture	1.5 x 2 mm²
Carrier Frequency / Frequency shift	+/- 200 MHz
Separation Angle (0-1)	> 8 mrd
Static Extinction Ratio	Nom 30 dB
Rise / Fall time	110 ns / mm, min 35 ns
Diffraction Efficiency	85 % with beam diameter ≥ 0.35 mm, TEM00 laser beam
Analog Amplitude modulation bandwidth (-3 dB)	Max 13
Max optical power density	> 5 W/mm²
Input impedance	Nom 50 Ω
V.S.W.R.	Nom < 1.2/1
RF Power / Connector	≤ 4 W / SMA
Size / Weight	(Lxlxh) 59.1 x 33.6 x 42.4 mm³ / 60 g IN PRO 082
Operating Temperature	+10 to +40 Non condensing
Storage Temperature	-40 to +50 Non condensing

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Options / On request

VARIABLE FREQUENCY SHIFT	☑ 200 +/- 15 MHz
ACTIVE APERTURE	☑ 2.5 x 2.5 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:

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

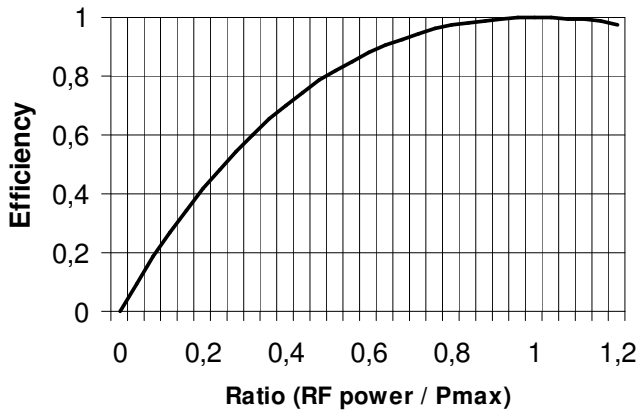
Separation angle (Δθ) is wavelength (λ) sensitive:

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

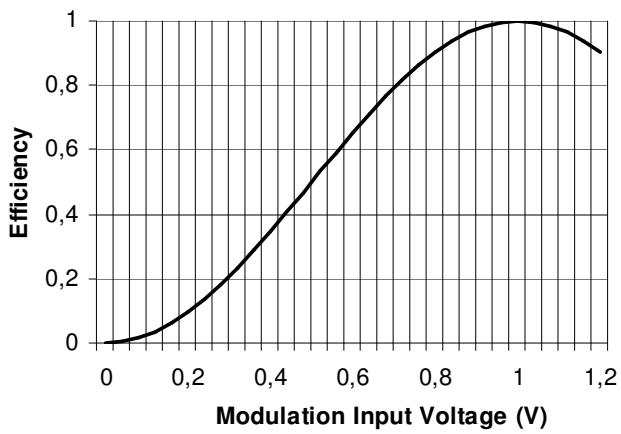
RF power (P) is wavelength (λ) sensitive:

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

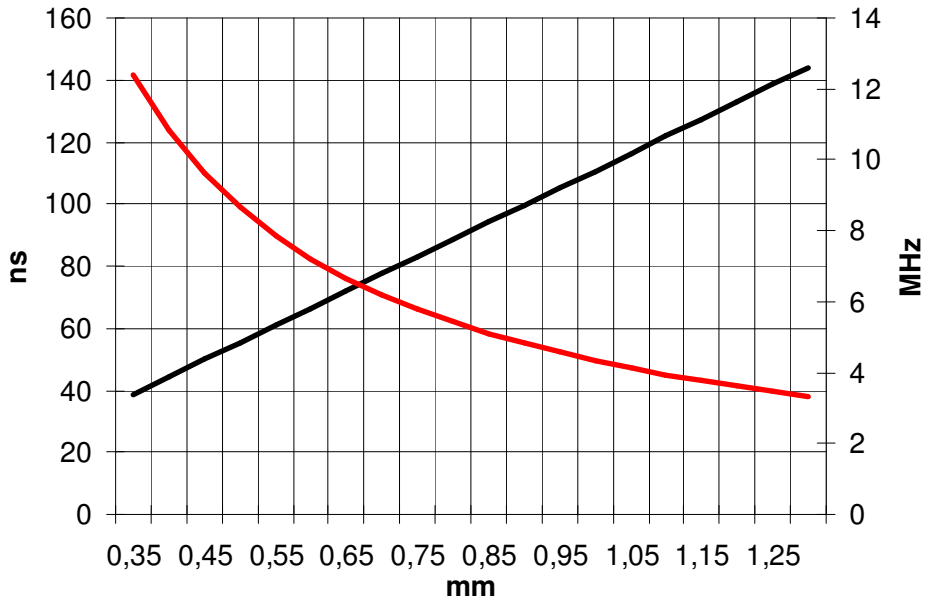
Relative Efficiency versus RF power



AO relative Efficiency vs driver MOD IN



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



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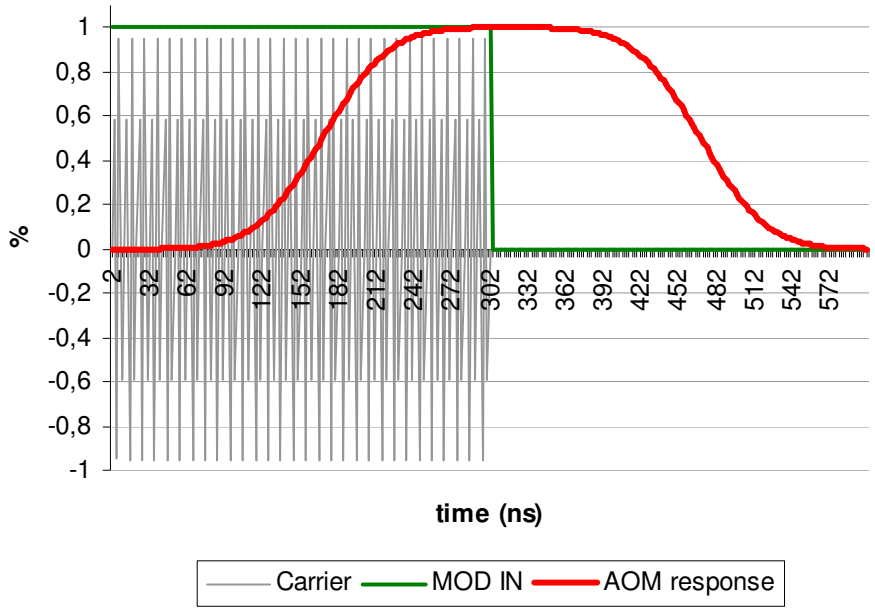
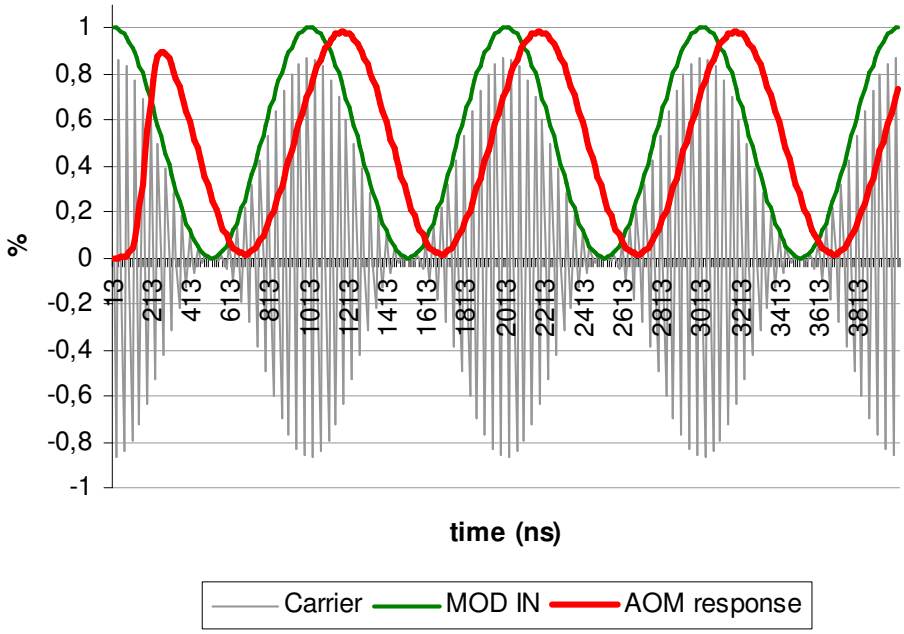
Relative Efficiency / AOM temporal response



Relative Efficiency / AOM temporal response (1MHz)



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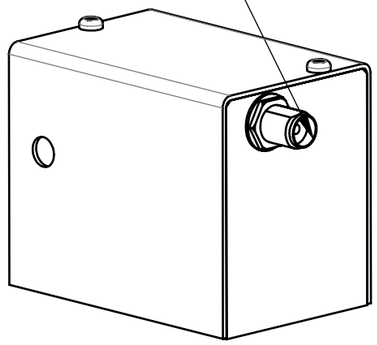
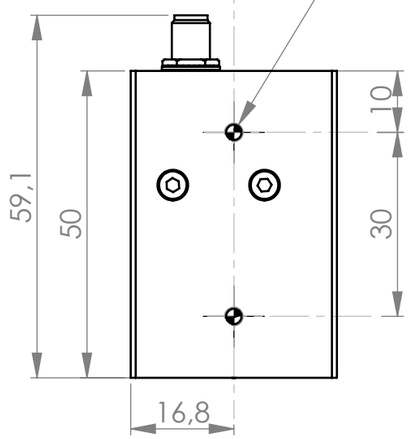
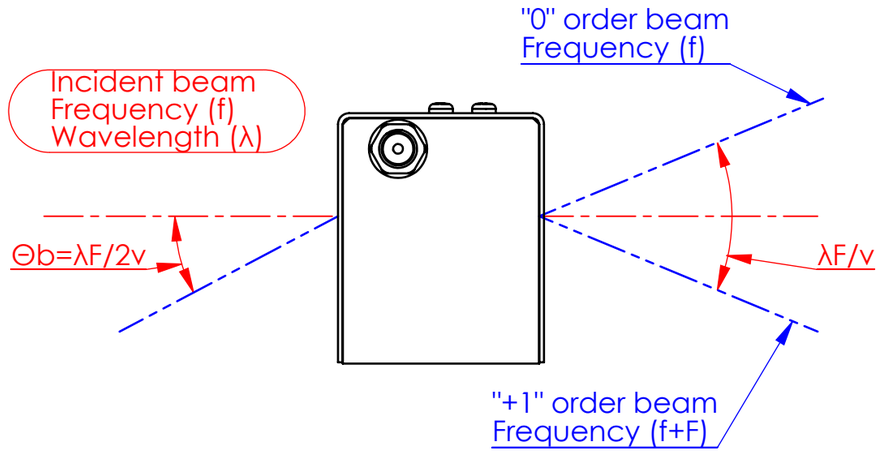
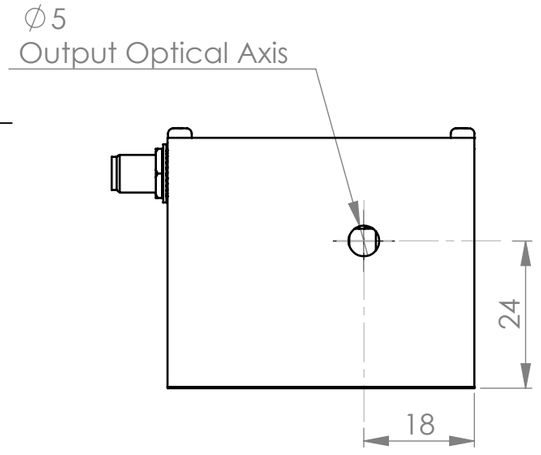
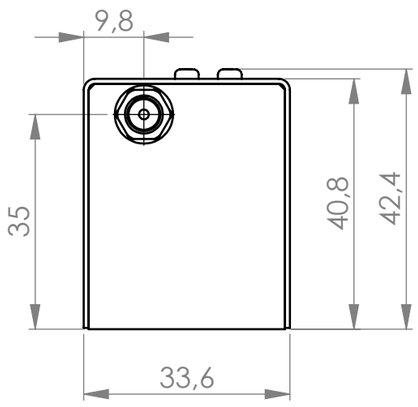
SMA Connector

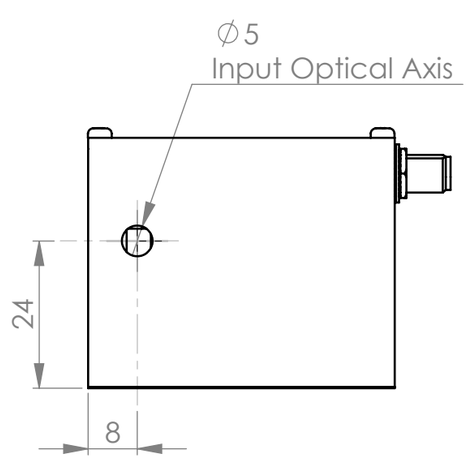


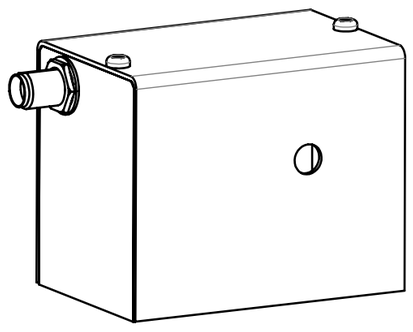












Indice Index	Date	Auteur Author	Modifications
C	26/07/11	G.M	Ajout axe optique.
B	29/01/07	E.D	Mise en page
A	14/01/05	O.G	Plan initial / Initial Drawing

Conception Design	E.D
Vérification Checking	L.F
Tolérance Tolerance	ISO 2768mK
Echelle Scale	1:1
Format	A3

PLAN D'INTERFACE / OUTLINE DRAWING

Référence / Reference

IN-PRO-082

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