

MQ200-A1,5-266.300

AO MODULATOR/SHIFTER



TECHNICAL DATA SHEET 2014

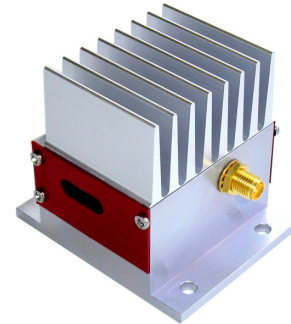
Product Overview

These modulators have been specially designed for applications for which TeO₂ cannot be used. They are made of fused silica UV grade and due to their large aperture, users can operate them without additional optics between 266nm and 300nm.

Applications are Amplitude modulation, Pulse Picking or Frequency shifter.

Features

- High laser power
- Linear polarization
- Large aperture
- 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	266 to 300 nm
Transmission	>95%
Input / Output Polarization	Linear perpendicular to baseplate
Active Aperture	1.5 x 2 mm ²
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 10 ns
Diffraction Efficiency	Nom 90 % @ 266 nm % with, TEM00 laser beam
Analog Amplitude modulation bandwidth (-3 dB)	>4 MHz @ 1mm
Max optical power density	< 1 W/mm ²
Input impedance	Nom 50 Ω
V.S.W.R.	Nom < 1.5/1
RF Power / Connector	≤ 4 W / SMA
Size / Weight	(LxH) 47 x 60x 53 mm ³ / 60 g IN PRO 93
Operating Temperature	+10 to +40 Non condensing
Storage Temperature	-40 to +50 Non condensing

Options / On request

VARIABLE FREQUENCY SHIFT 200 +/- 15 MHz

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

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

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

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

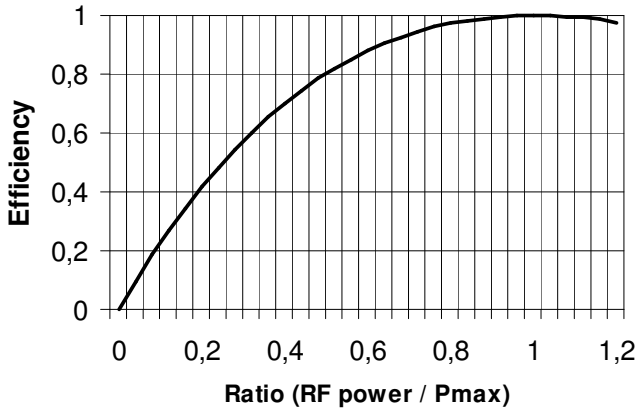
Separation angle ($\Delta\theta$) is wavelength (λ) sensitive:

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

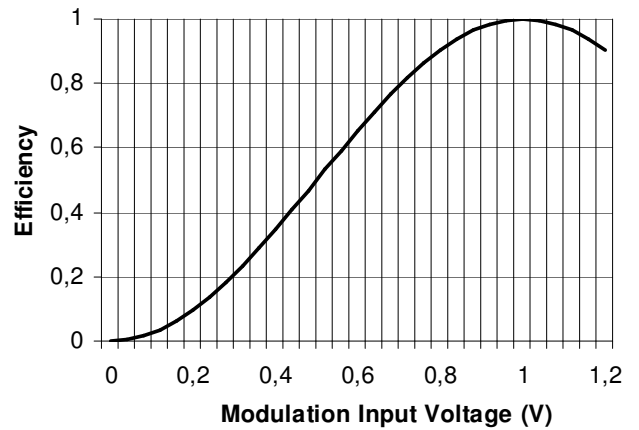
$$\Delta\theta = \frac{\lambda F}{V}$$

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

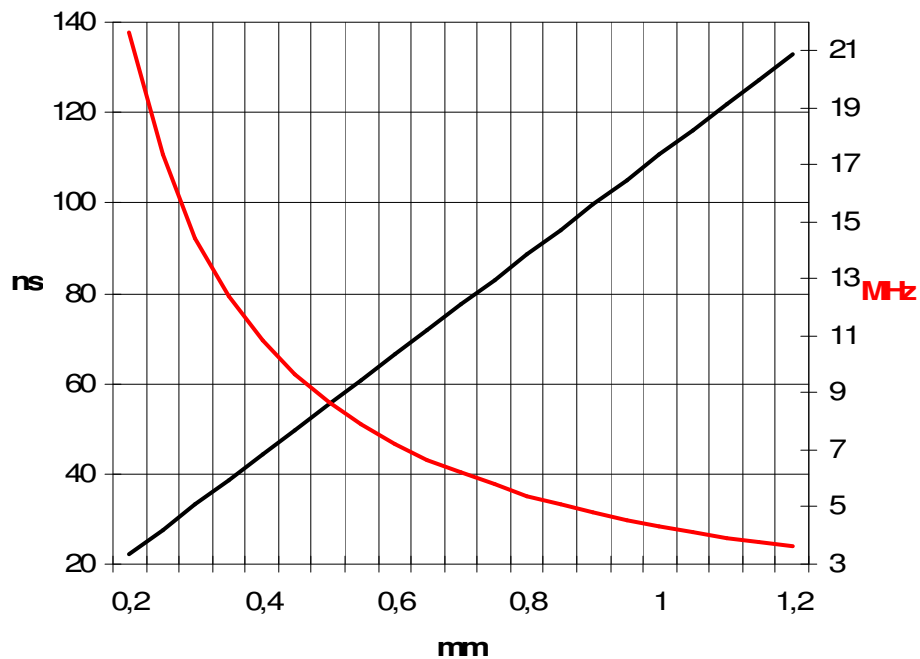
Relative Efficiency versus RF power



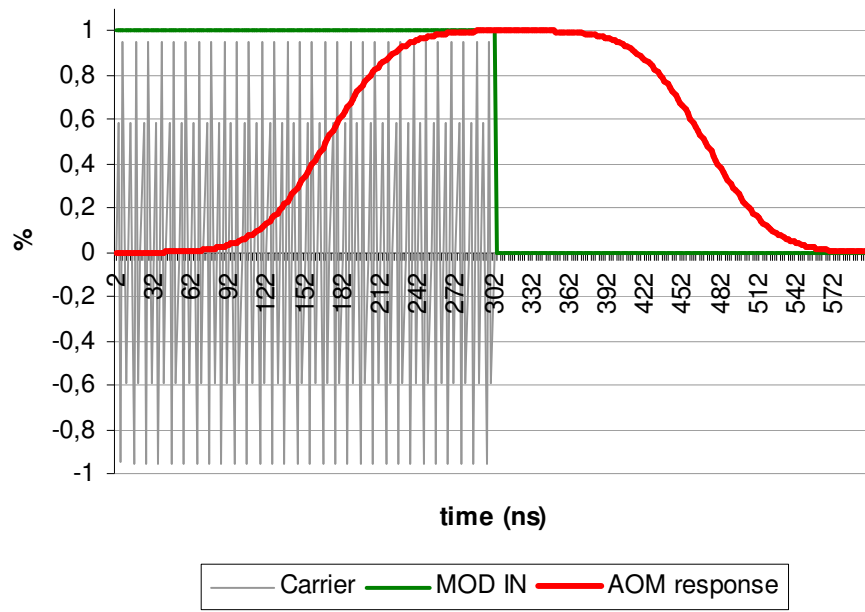
AO relative Efficiency vs driver MOD IN



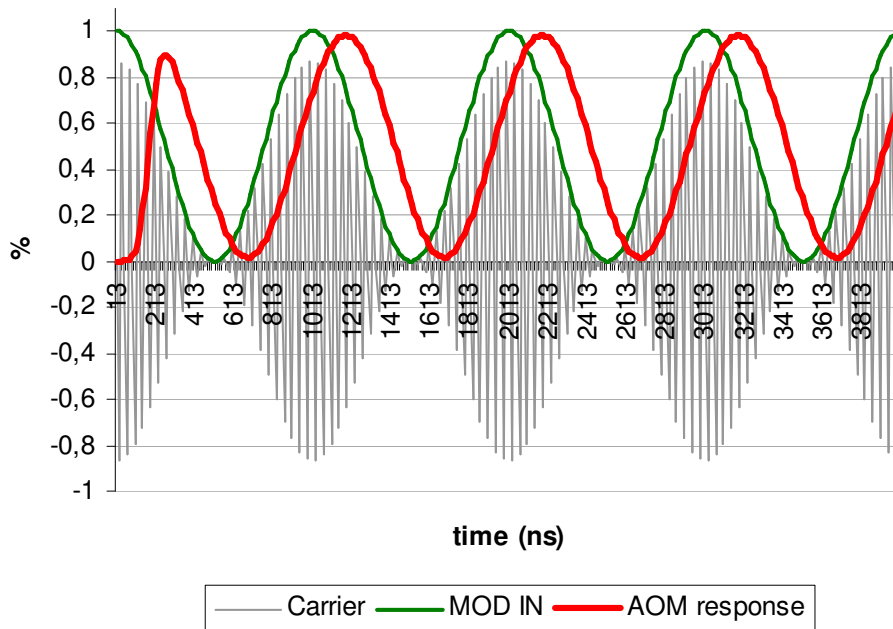
Rise Time (black) / Analog Modulation BW (-3dB) vs Beam diameter

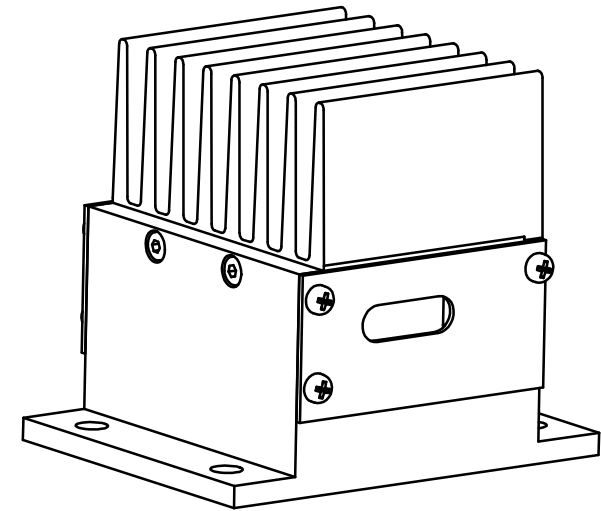
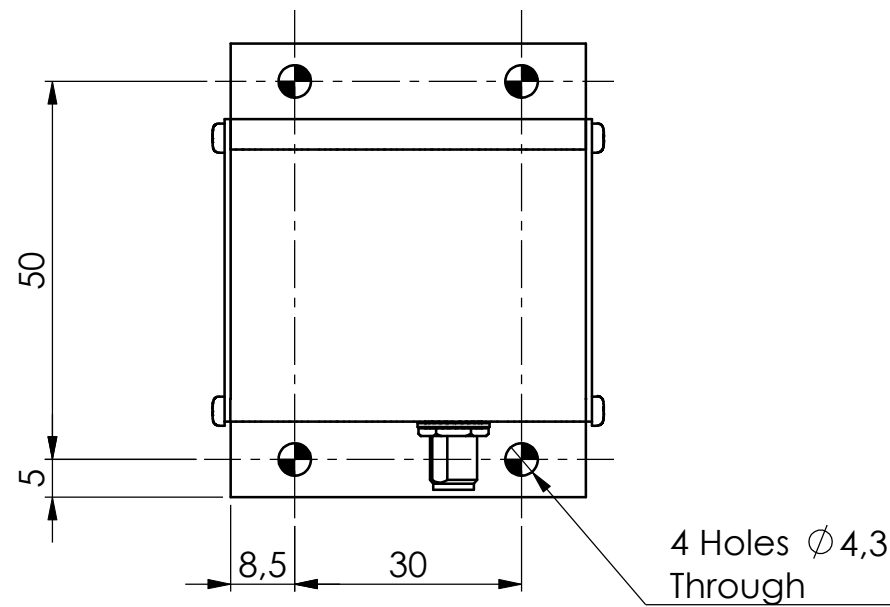
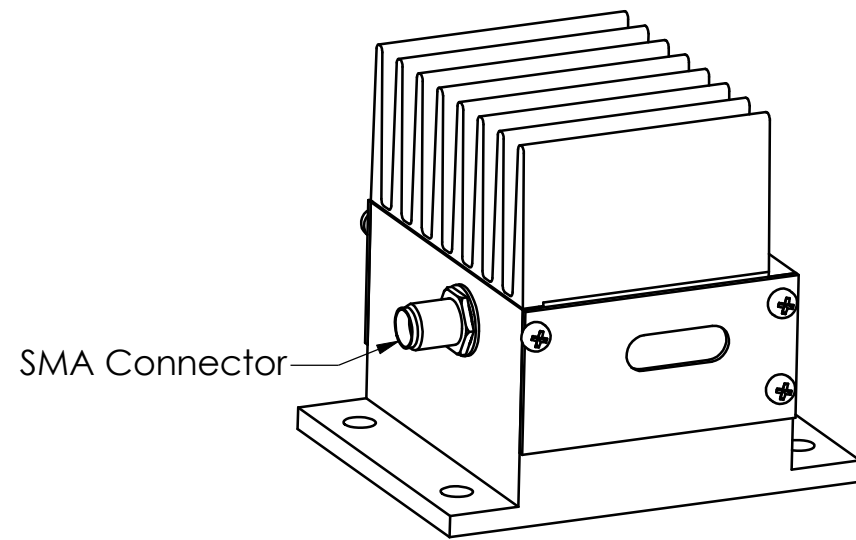
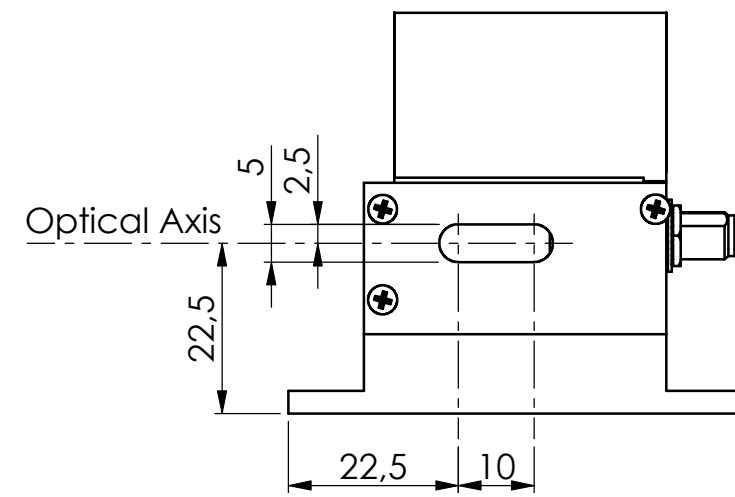
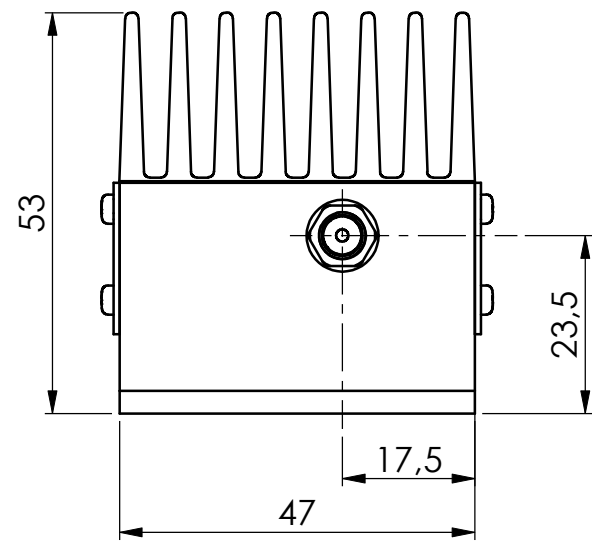
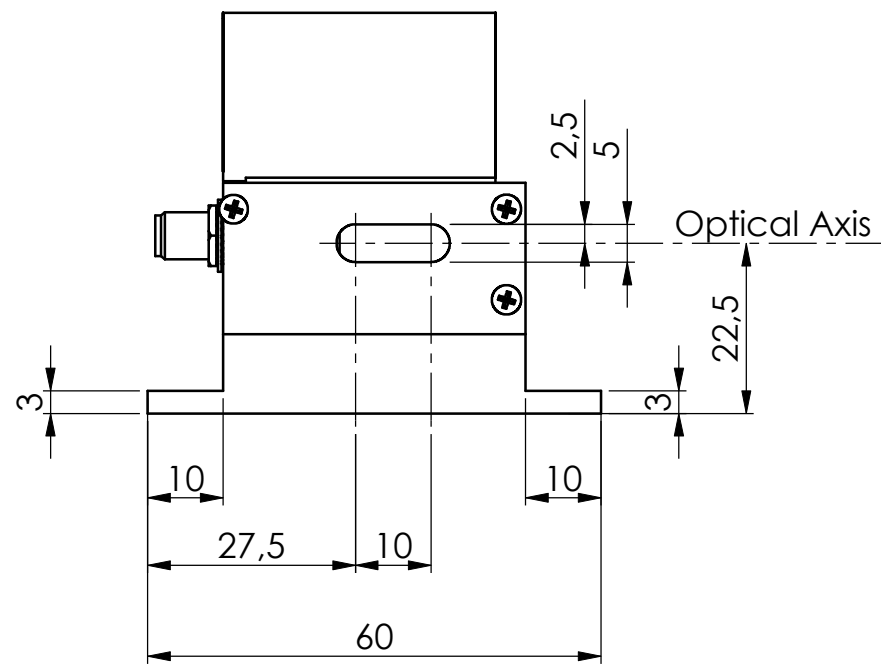


Relative Efficiency / AOM temporal response

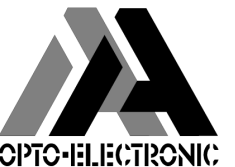


Relative Efficiency / AOM temporal response (1MHz)





B	26/01/07	E.D	Mise en page
A	08/06/05	O.G	Plan initial / Initial Drawing
Indice 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-93	
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Folio / Sheet		Indice / Index	
1/1		B	



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