

DESCRIPTION

These modulators have been specially designed for high speed high power modulation, where TeO₂ cannot be used. They cover the deep UV range up to Visible range. Suitable for DPSS 355 nm or 532 nm.

They can also be used as fixed frequency shifters @180 MHz, as well as variable frequency shifters or deflectors with a frequency range up to 180 +/- 25 MHz.

FEATURES

- High laser power
- Linear polarization
- High diffraction efficiency



APPLICATIONS

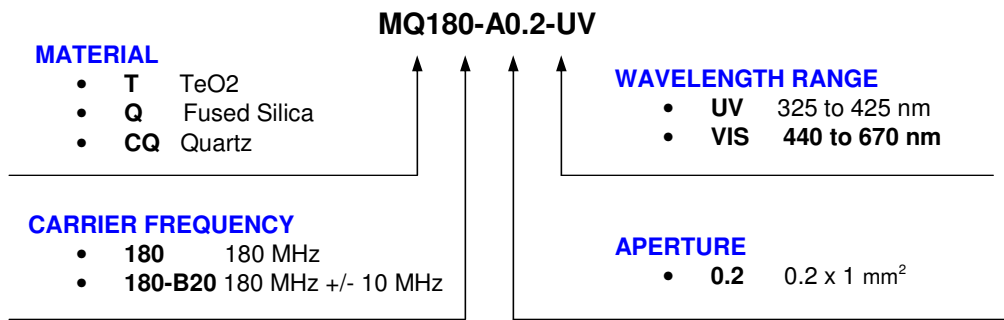
- Amplitude modulation
- Frequency shifter @ 180 MHz +/- 25 MHz

Parameter	Unit	MQ180-A0.2-UV	MQ180-A0.25-VIS
Material-Acoustic mode-Velocity		Fused Silica / V=5960 m/s	Fused Silica / V=5960 m/s
Optical Wavelength range	nm	325-442	440-670
Optical Transmission	%	> 95	> 95
Input / Output Polarization		Linear ⊥	Linear ⊥
Aperture	mm ²	0.2 x 1	0.25 x 1
Carrier frequency / Frequency shift	MHz	180	180
Separation angle	mrd	10.7 @355nm	16 @532nm
Diffraction efficiency	%	> 80	> 70
Rise / Fall time	ns/mm	110 (min 10 ns)	110 (min 10 ns)
Amplitude modulation bandwidth	MHz	> 48 (-3 dB, @90 μm)	> 48 (-3 dB, @90 μm)
Static Extinction Ratio		> 1000 / 1	> 1000 / 1
Maximum optical power density	W / mm ²	> 10 W / mm ² @355nm	> 100 W / mm ² @VIS
Input impedance	Ω	50	50
V.S.W.R.		< 1.5 / 1	< 1.5 / 1
RF Power / Connector	W	≤ 2 / SMA	≤ 4 / SMA
Size / Weight		50.9 x 22.4 x 15.8 / 50 g IN PRO 154	50.9 x 22.4 x 15.8 / 50 g IN PRO 136
Heat Exchange		Conduction through baseplate	
Operating Temperature	°C	10 to 40	

Options / On request

RF BANDWIDTH 50 MHz
Diffraction efficiency typ > 50 %

HOW TO DETERMINE THE REFERENCE OF YOUR MODEL:



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

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

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

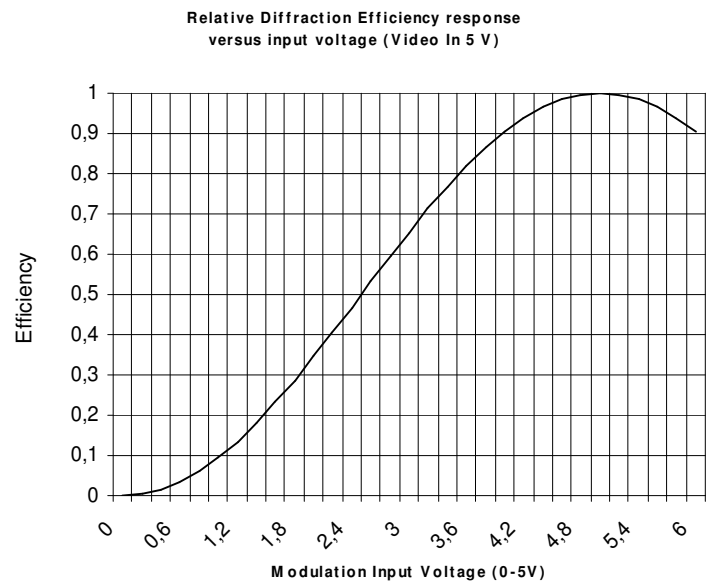
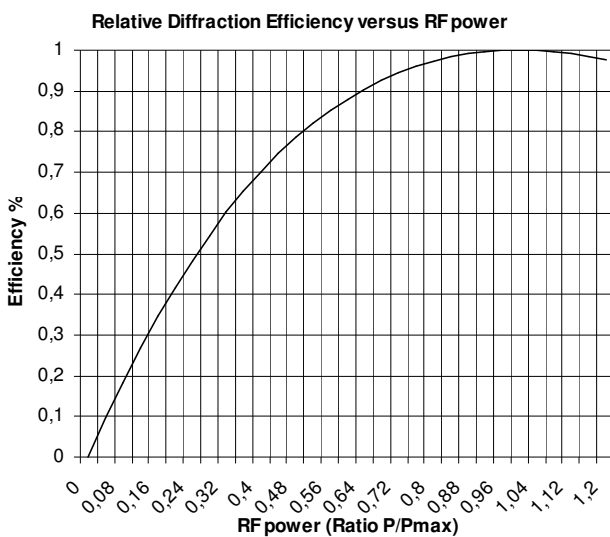
$$F_{-3dB} = \frac{0.48}{Tr}$$

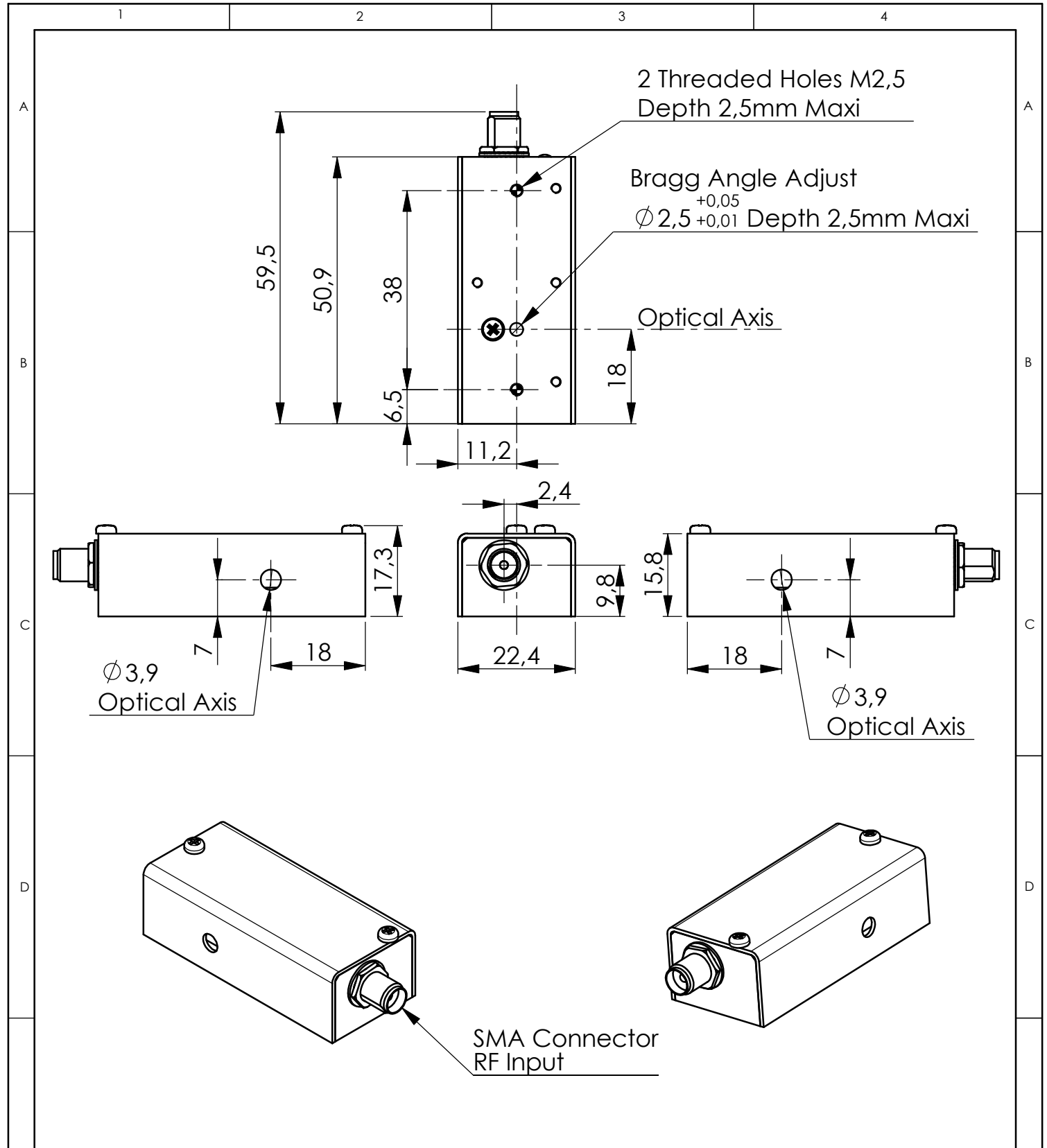
Separation angle (Δθ) is wavelength (λ) sensitive:


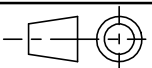
$$\Delta\theta = \frac{\lambda F}{V}$$

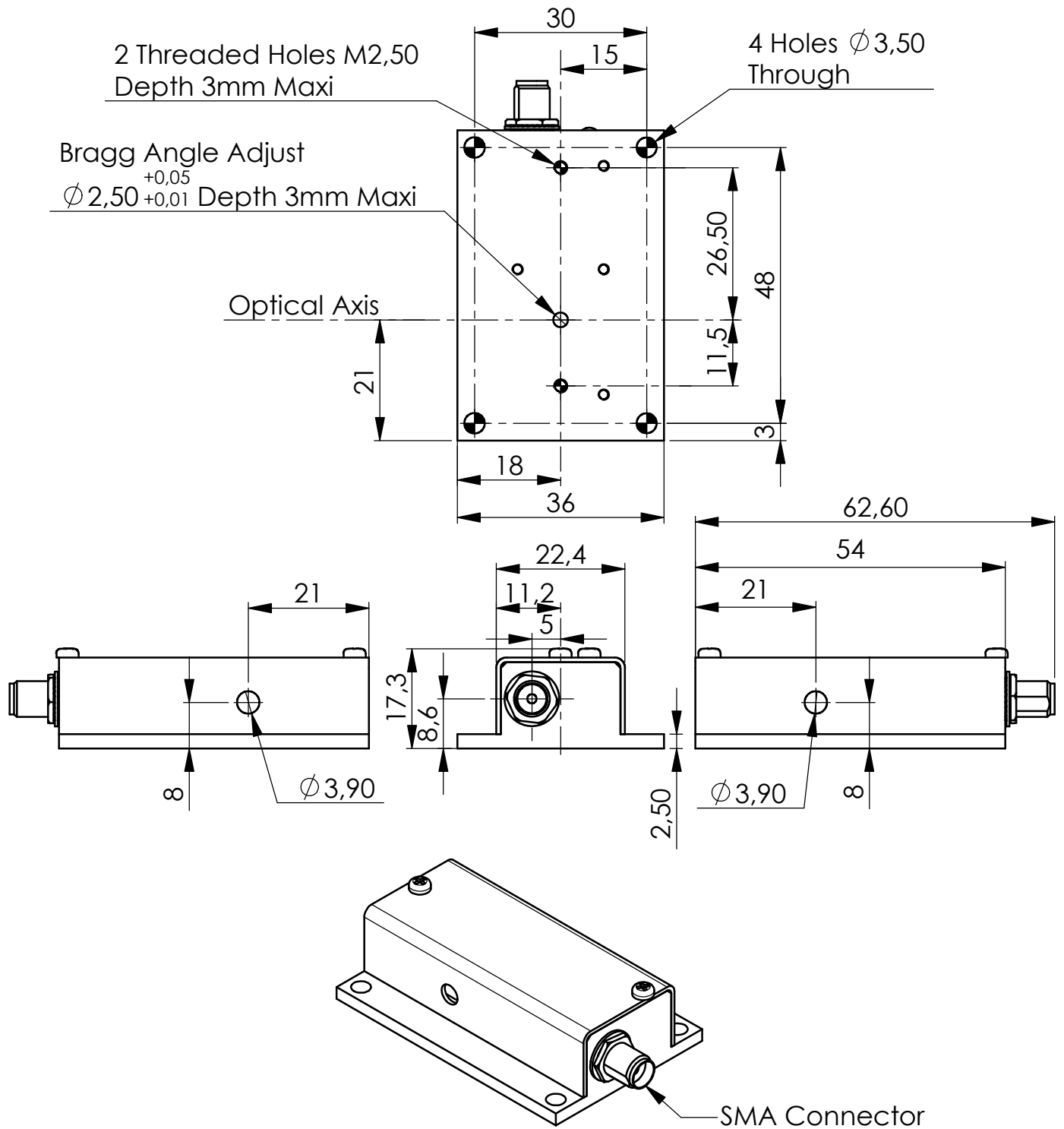
RF power (P) is wavelength (λ) sensitive:

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





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		 <p>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</p>
Vérification Checking	L.F			
Tolérance Tolerance	ISO 2768mK	Référence / Reference		
Echelle Scale	1:1	IN-PRO-154		
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				Indice / Index A



A	18/12/06	E.D	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-136	
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				Indice / Index A



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