

MQ80-Ax-L1030.1064-Z20

AO MODULATOR / SHIFTER / PULSE PICKER

DESCRIPTION

These modulators have been specially designed for applications for which TeO₂ cannot be used. Made of fused silica, they have a very high laser damage threshold. With a low duty cycle, they will be suitable for fast pulse picking applications.

FEATURES

- High laser power
- Linear polarization
- High diffraction efficiency with low duty cycle

APPLICATIONS

- Amplitude modulation
- Pulse Picking
- Frequency shifter



Parameter	Unit	MQ80-A0.3-L1030.1064-Z20	MQ80-A0.7-L1030.1064-Z20
Material-Acoustic mode-Velocity		Fused silica [L] - 5960 m/s	
Optical Wavelength range	nm	1030 to 1064	AR coated
Optical Transmission	%	> 99.5	
Input / Output Polarization		Linear vertical / Linear vertical	
Aperture	mm ²	0.3 x 0.3	0.7 x 0.7
Carrier frequency / Frequency shift	MHz	80	
Separation angle	mrd	13.8 At 1030 nm	
Diffraction efficiency (Total, 1 st order)	%	> 80 (Beam dia ≥ 0.2mm) > 75 (Beam dia = 0.15mm)	> 85 (Beam dia ≥ 0.4mm) > 80 (Beam dia = 0.3mm)
		with TEM ₀₀ beam, M ² ≤ 1.1 Duty cycle < 10%	
Minimum Rise / Fall time	ns	11 (dia 0.1 mm)	33 (dia 0.3 mm)
Analog Amplitude modulation bandwidth (-3 dB)	MHz	Max 40	Max 14
Static Extinction Ratio		> 1000 : 1	
Maximum optical power density	W / mm ²	> 100	
Input impedance	Ω	Nom 50	
V.S.W.R.		Nom < 1.2 : 1	
RF Power / Connector	W	Max 15 / SMA (Duty cycle < 10%)	
Optical length	mm	20	
Size / Weight	mm ³	(LxHxh) 23.5 x 15 x 9 / 50 g	IN PRO 083
Operating Temperature	°C	+10 to +40, Non condensing	

Options / On request

HOUSING

IN PRO 185

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:

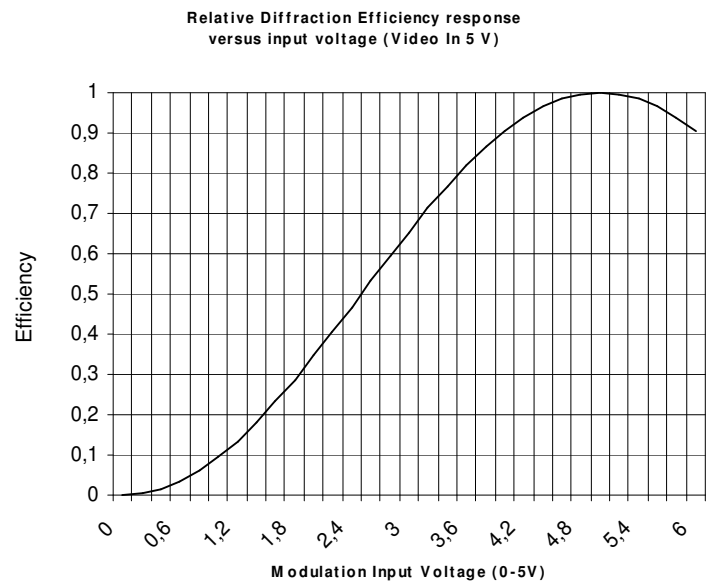
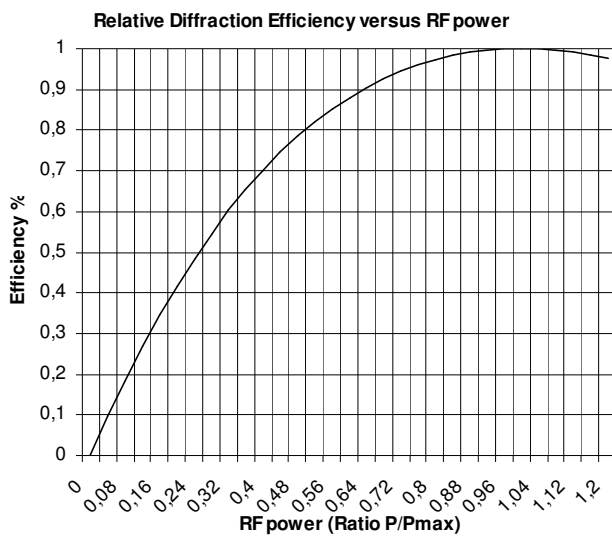
$$\frac{P_1}{P_2} = \frac{\lambda_1^2}{\lambda_2^2}$$

MQ80-A0.7-L1030.1064-Z20 – with duty cycle < 10% -RF power 15W max

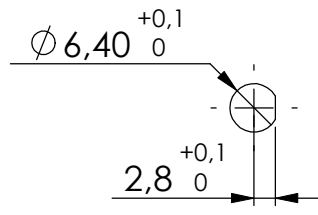
Beam diameter (1/e ²)	mm	0,6	0,55	0,5	0,45	0,4	0,35	0,3	0,25
Rise / Fall time	ns	66	60,5	55	49,5	44	38,5	33	27,5
Modulation Bandwidth	MHz (-3dB)	7,3	7,9	8,7	9,7	10,9	12,5	14,5	17,5
Total Efficiency	%	80	85	> 85	> 85	> 85	> 85	> 80	75
1st order Ellipticity		0.97	0.96	0.95	0.94	0.93	0.91	0.88	0.85

MQ80-A0.3-L1030.1064-Z20– with duty cycle < 10% -RF power 15W max

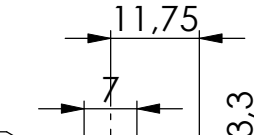
Beam diameter (1/e ²)	mm	0,25	0,2	0,15	0,1
Rise / Fall time	ns	27,5	22	16,5	11
Modulation Bandwidth	MHz (-3dB)	17,5	21,8	29,1	43,6
Total Efficiency	%	> 80	> 80	> 0.75	65
1st order Ellipticity		0.96	0.93	0.88	0.75



RF Input
SMA Bulkhead Jack
Rear mount
Flexible Cable
Thickness panel 3,2 max



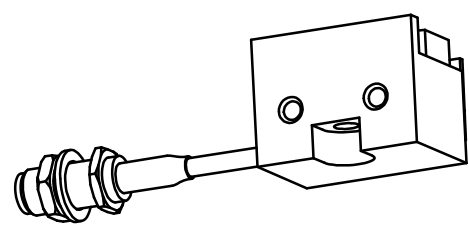
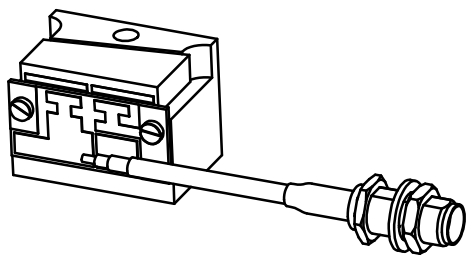
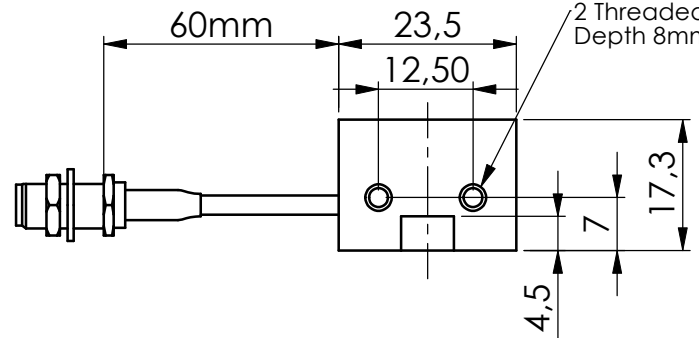
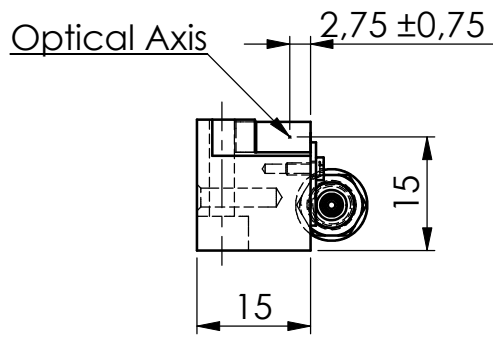
Hole $\phi 3,3$ Through


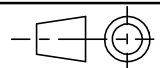


3,3

9 $\pm 0,75$

Optical Axis



C	02/06/08	D.D	Add of 2 holes M3 / Ajout de 2 trous M3
B	14/04/08	E.D	Add of counterbore / Ajout d'un lamage
A	16/04/07	E.D	Plan initial / Initial Drawing
Index	Date	Auteur Author	Modifications
Conception Design	E.D	PLAN D'INTERFACE / OUTLINE DRAWING IN-PRO-083	
Vérification Checking	L.F		
Tolérance Tolerance	ISO 2768mK	Référence / Reference	
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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