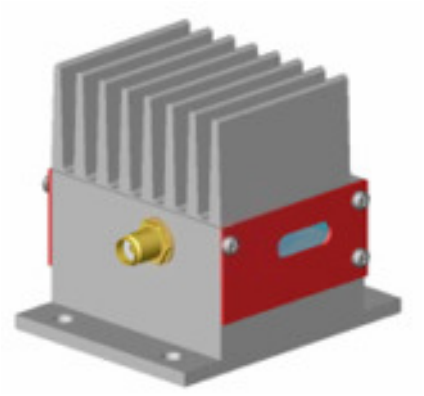
MQ110 AO Modulator/Shifter

High power 355 nm modulator



• High power • Linear Polar • Large aperture

These modulators have been specially designed for applications for which TeO2 cannot be used. Their large aperture allows user to combine the laser beam without additional optics.
They cover the UV range up to Visible range. Suitable for DPSS 355 nm or UV AR+ lasers.

They can also be used as fixed frequency shifters @110 MHz, as well as variable frequency shifters or deflectors with a frequency range up to 110 +/- 15 MHz.

Specifications

Material-Acoustic mode	Fused silica UV grade
Acoustic Velocity	V=5960 m/s
Optical Wavelength range	325-442 nm
Transmission	> 95 %
Optical Input / Output polarizations	Linear ⊥
Aperture	3 x 3 mm²
Carrier frequency / Frequency shift	110 MHz
Separation angle	> 6 mrd *(Scan angle over 30 MHz: 1.8 mrd @355nm)*
Diffraction efficiency (with TEM00 beam, $M^2 \leq 1.1$)	Nom 90 % @355 nm, @1 mm beam dia *(≥ 75% over 30 MHz)* 70 % @355 nm, @250 µm beam dia
Rise time	110 ns /mm (min 10 ns)
Amplitude modulation bandwidth	> 4 MHz (-3 dB, @1 mm)
Static extinction ratio	> 1000/1
Max optical power density	> 10 W / mm² @355 nm
Input impedance	Nom 50 Ω
V.S.W.R.	Nom < 1.5/1
RF Power	< 4 Watts
Connector	SMA
Size / Weight	(LxlxH) 57 x 60 x 52.9 mm^3 / 250 g
Operating Temperature	10 to 40 °C

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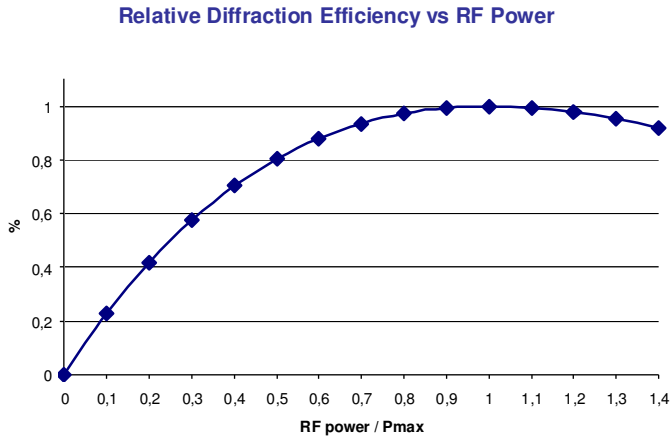
→ Separation angle (Δθ) is wavelength (λ) sensitive:

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

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

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

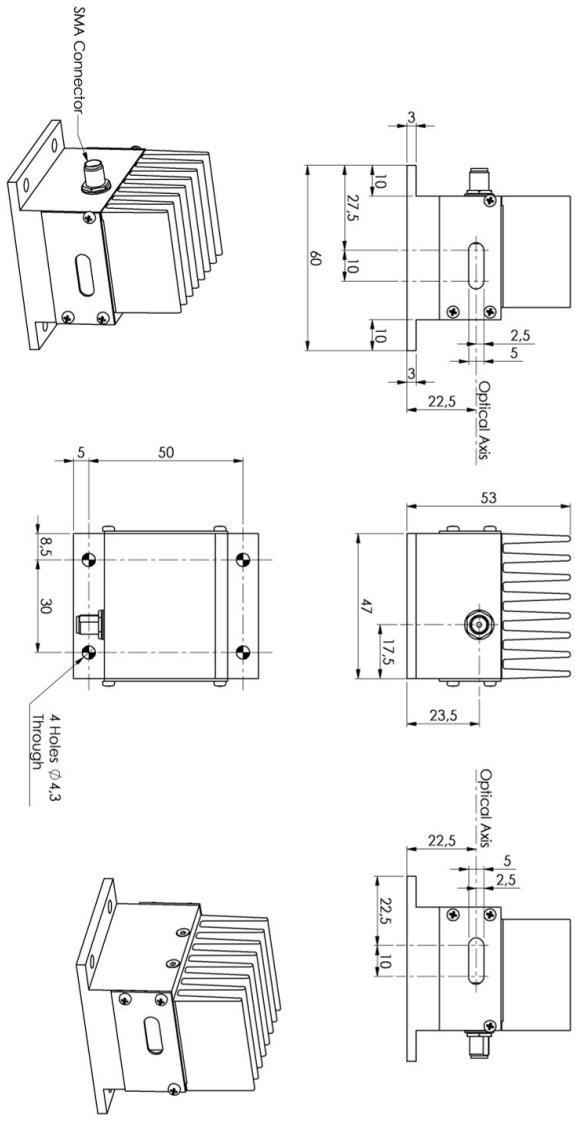


OPTIONS

Aperture : 1 x 1, 1.5 x 1.5 , 2 x 2 mm²
Frequency range 110+/-15MHz
Nominal efficiency over 80+/-15MHz > 70%

Outline Drawing

sizes in mm



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