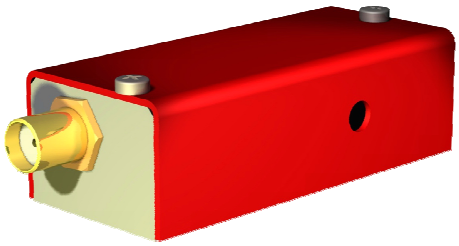
MT110 AO Modulator/Shifter

TeO2 modulator for 400-1100 nm lasers



• Wide spectral range • Linear or random Polar

These modulators have been specially designed for general purpose applications. They are proposed with various wavelength ranges or with V-coating.

They can also be used as fixed frequency shifters @110 MHz, as well as variable frequency shifters with a frequency range up to 110 +/- 25 MHz.
With an adapted frequency range, user will be able to operate this device as a high speed low resolution deflector.

Specifications

Material-Acoustic mode	TeO2 [L]
Acoustic Velocity	V=4200 m/s
Optical Wavelength range	VIS: 450-700 nm IR: 700-1100 nm 1064 nm: 980-1100 nm
Transmission	VIS/IR: > 95 % 1064 nm: 98% @1064nm
Optical Input / Output polarizations	Linear
Aperture	1 x 2 mm² or 1.5 x 2 mm²
Carrier frequency / Frequency shift	110 MHz
Separation angle	13.9 mrd @532 nm 27.9 mrd @1064 nm
Diffraction efficiency (with TEM00 beam, $M^2 \leq 1.1$)	85 %
Rise time	160 ns/mm (min 15 ns)
Amplitude modulation bandwidth	> 32 MHz (-3 dB, @90µm)
Static extinction ratio	> 2000/1
Max optical power density	VIS : 5 W / mm² @532 nm, IR : > 10 W / mm²
Input impedance	Nom 50 Ω
V.S.W.R.	Nom < 1.5/1
RF Power	VIS: ≤ 1 Watts IR/1064 nm: ≤ 2 Watts
Connector	SMA
Size / Weight	(Lxlxh) 50.9 x 22.4 x 15.8 mm^3 / 50 g
Operating Temperature	10 to 40 °C

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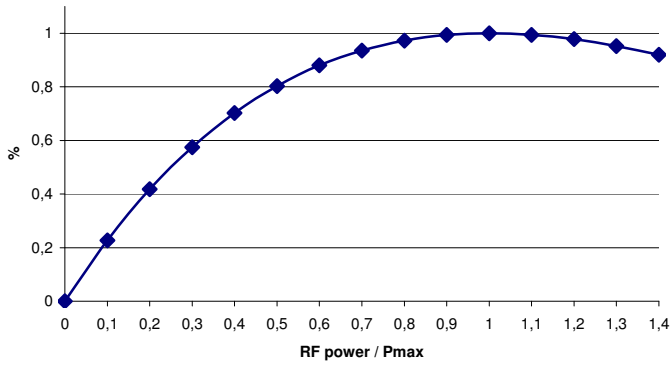
→ Separation angle (Δθ) is wavelength (λ) sensitive:

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

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

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



OPTION

Frequency range 110+/-25MHz
Nominal efficiency over 110+/-25MHz > 70%
Heatsink on crystal for IR A1.5 version : option -Hk

MT110-Ax-zz

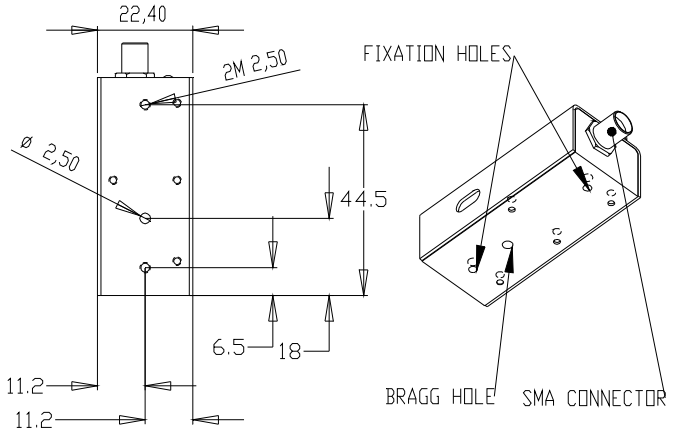
X (aperture, mm) **= 1 or 1.5**

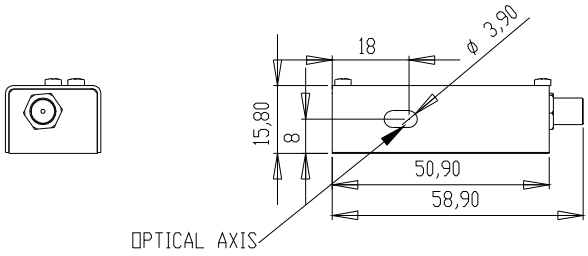
Y = frequency range (MHz) if any

ZZ = VIS (450-700 nm), **IR** (700-1100 nm), **@1064nm**

Outline Drawing

sizes in mm





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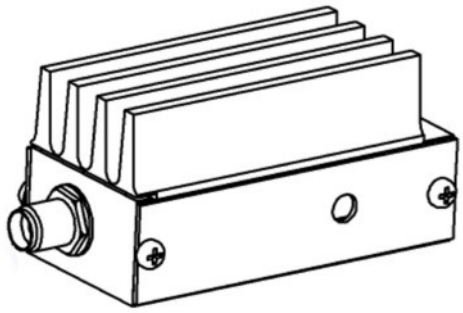
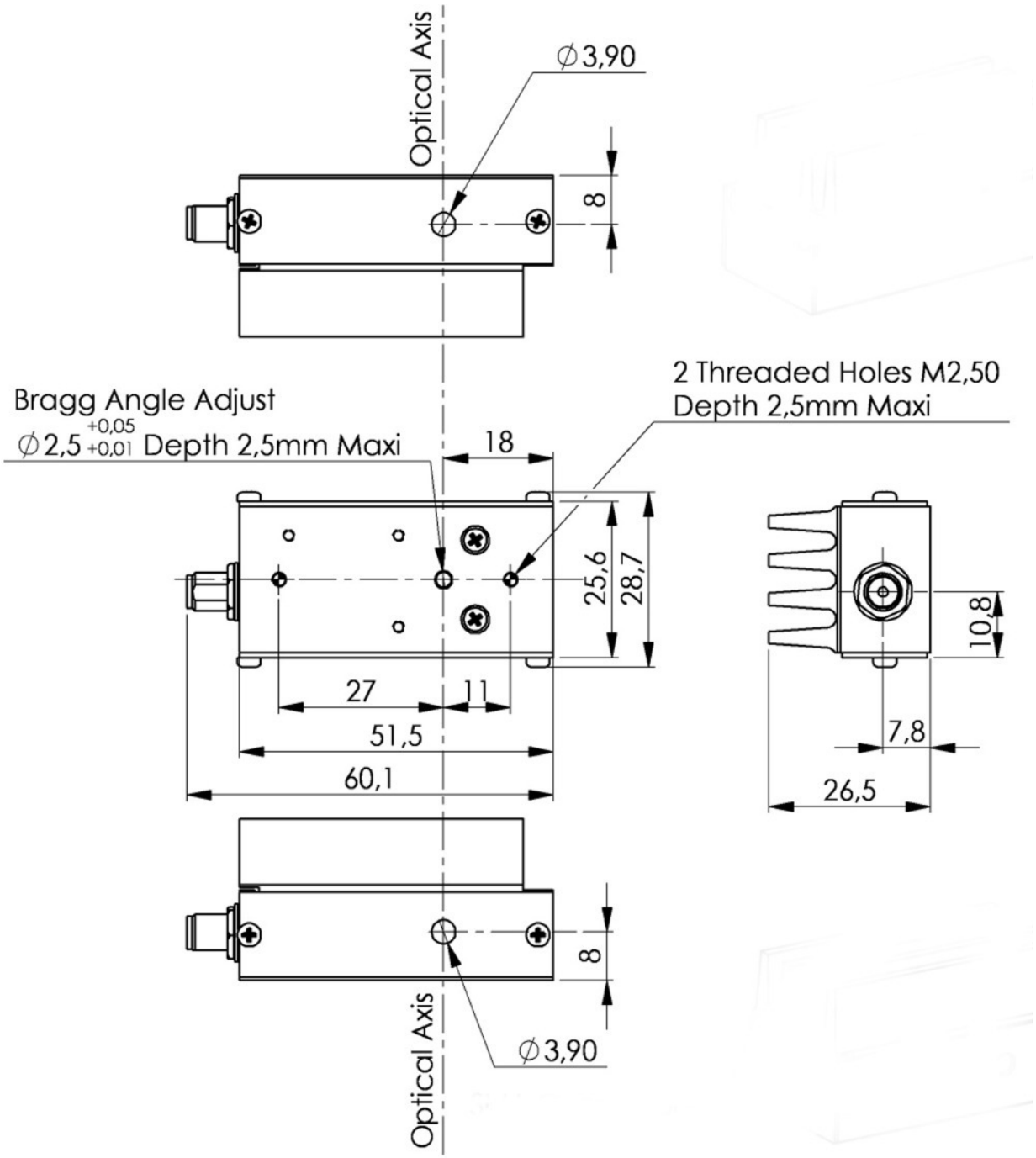
Version with Option –Hk





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