

1206C

Acousto-Optic Modulator

APPLICATIONS

- Modulator
- Low Resolution Deflector
- Frequency Shifter

FEATURES

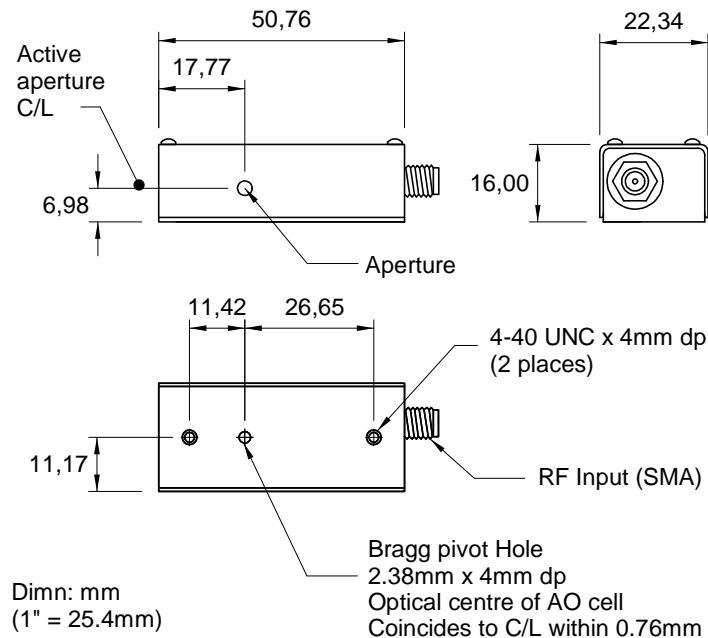
- Low Drive Power
- Small Size
- Good Temperature Stability

DRIVERS

523C-L or -2 (Digital Modulation)
533C-L or -2 (Analog Modulation)

620C-110 (Variable Frequency & Digital Modulation)
630C-110 (Variable Frequency & Analog Modulation)

OUTLINE DRAWING



ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

ISOMET CORP, 5263 Port Royal Rd, Springfield, VA 22151, USA.

Tel: (703) 321 8301 Fax: (703) 321 8546

E-mail: ISOMET@ISOMET.COM Web Page: WWW.ISOMET.COM

Quality Assured.
In-house: Crystal Growth,
Optical Polishing,
A/R coating, Vacuum Bonding



1206C

Acousto-Optic Modulator



1106

SPECIFICATIONS

Spectral Range:	.442-> 1.5µm*
Standard Operating Wavelengths:	442nm, 488-633nm
Interaction Medium:	Lead Molybdate (PbMoO4)
Acoustic Velocity:	3.63mm/µs
Active Aperture:	1mm
Centre Frequency (CF):	110MHz
RF Bandwidth:	50MHz
Input Impedance:	50Ω
VSWR:	<1.5:1 @ 110MHz
DC Contrast Ratio:	>1000:1 min (2000:1 typical)

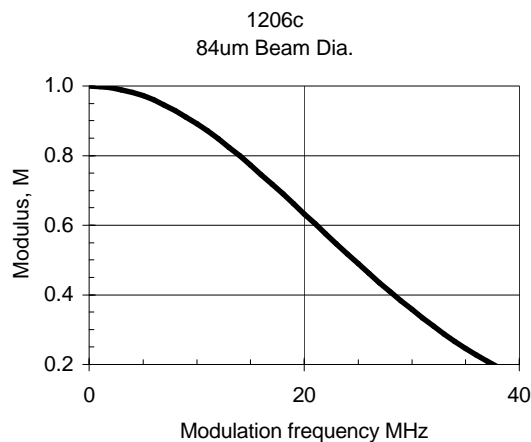
PERFORMANCE vs. WAVELENGTH

Wavelength (nm):	442	488	515	633
RF Drive Power	<0.4	<0.5	<0.5	<1.0
Bragg angle (mr):	6.7	7.4	7.8	9.6
Beam Separation (mr)	13.4	14.8	15.6	19.2
Static Insertion Loss:	<10	<5	<3	<3

PERFORMANCE vs. BEAM DIAMETER

Beam Diameter (mm):	1.0	0.34	0.2	0.084
Rise Time (ns):	180	60	35	15
Video Bandwidth (MHz):	2	6	10	25
Deflection Efficiency (%):	>85	>85	>80	>60
T Δf Product:	16	N/A	N/A	N/A

*Operation at near IR wavelengths with reduced efficiency and modulation bandwidth.
Special A/R coatings to 1.5µm available.



The typical MTF (depth of modulation) curve for the 1206C modulator assuming a 84µm beam diameter is shown at the left. For larger beam diameters the abscissa scales linearly. The curve is closely approximated by the function.

$$M \cong \exp - (f/f_0)^2$$

where: f = modulating frequency in MHz
f₀ = parameter of modulator related to beam waist diameter = 30MHz (from experimental data)

The value of M from the curve may be used to the sine wave contrast ratio at a particular modulating according to the relation:

$$CR = 1+M/1-M$$

For digital on-off modulation, the contrast ratio will be greater than the value calculated from the above equation

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