

1206C

Acousto-Optic Modulator

APPLICATIONS

- Modulator
- Low Resolution Deflector
- Frequency Shifter

FEATURES

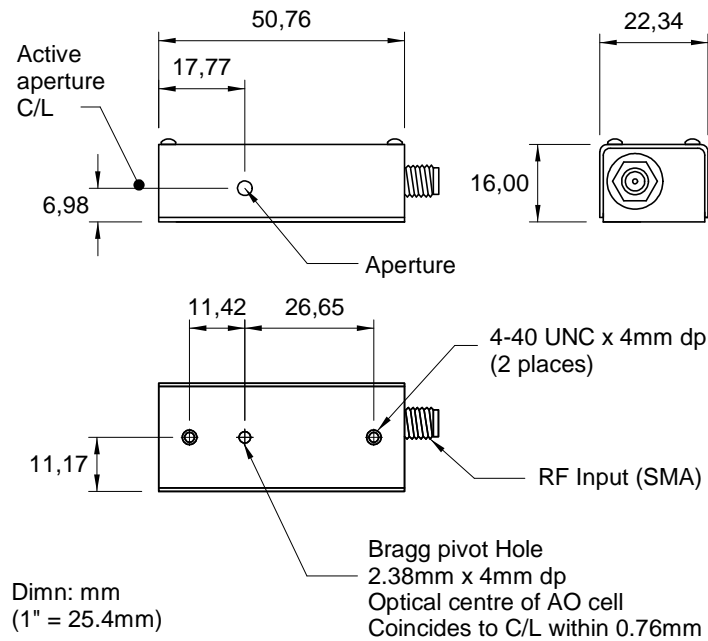
- Low Drive Power
- Small Size
- Good Temperature Stability

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



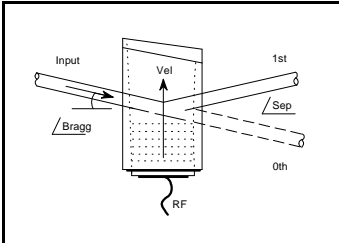
ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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

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)

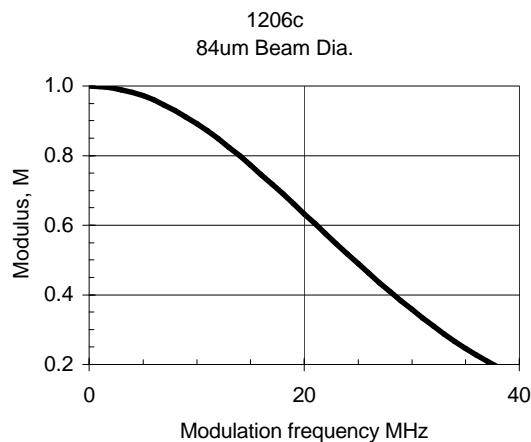
PERFORMANCE vs. WAVELENGTH

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

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