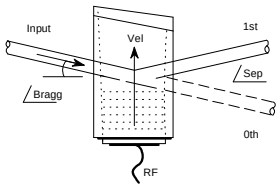


1205C-x

Acousto-Optic Modulator

1006

APPLICATIONS

- **Modulator**
- **Low Resolution Deflector**
- **Frequency Shifter**

FEATURES

- **Low Drive Power**
- **Small Size**
- **Good Temperature Stability**

DRIVERS

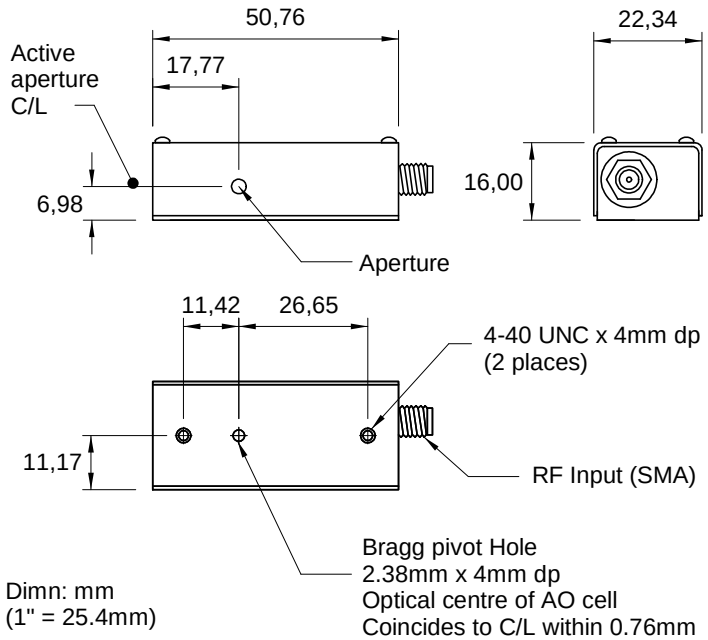
522C-L or -2 (Digital Modulation)
532C-L or -2 (Analog Modulation)

620C-80 (Variable Frequency & Digital Modulation)
630C-80 (Variable Frequency & Analog Modulation)

MODELS

1205C-1	**1mm Active Aperture**
1205C-2	**2mm Active Aperture**
1205C-3	**3mm Active Aperture (488-532nm only)**

OUTLINE DRAWING



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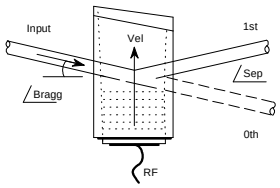
ISOMET CORP, 5263 Port Royal Rd, Springfield, VA 22151, USA.
Tel: (703) 321 8301 Fax: (703) 321 8546
E-mail: ISOMET@ ISOMET.COM ***Web Page: WWW.ISOMET.COM***

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



1205C-x

Acousto-Optic Modulator

ISOMET

1006

SPECIFICATIONS

Spectral Range:	.442-> 1.5µm*
Standard Operating Wavelengths:	442nm, 488-633nm . (Special A/R coatings to 1.5µm).
Interaction Medium:	Lead Molybdate (PbMo04)
Acoustic Velocity:	3.63mm/µs
Active Aperture:	1mm, 2mm and 3mm
Centre Frequency (CF):	80MHz
RF Bandwidth:	30MHz
Input Impedance:	50Ω Nominal
VSWR:	<1.5:1 @ 80MHz
DC Contrast Ratio:	>1000:1 min (>2000:1 typical)

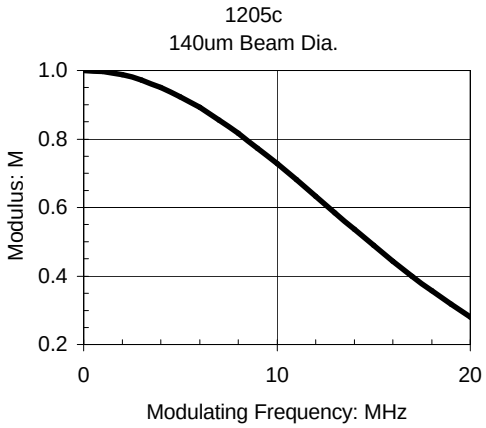
PERFORMANCE vs. WAVELENGTH

Wavelength (nm):	442	488	532	633	830*
RF Drive Power, 1205C-1 (W):	<0.3	<0.3	<0.4	<0.5	<0.9
RF Drive Power, 1205C-2 (W):	<0.5	<0.6	<0.7	<1.0	<1.6
RF Drive Power, 1205C-3 (W):	<0.7	<0.9	<1.1	-	-
Bragg angle (mrad):	4.9	5.4	5.9	7.0	9.1
Beam Separation (mrad):	9.7	10.7	11.7	13.9	18.3
Static Insertion Loss (%) :	<10	<5	<3	<3	<3

PERFORMANCE vs. BEAM DIAMETER

Beam Diameter (mm):	2.0	1.0	0.34	0.2	0.14
Rise Time (ns):	360	180	60	35	25
Modulation Bandwidth (MHz) @ MTF = 0.5:	1.0	1.9	5.8	10	15
Deflection Efficiency (% @ CF):	90	85	85	80	75

*Operation at near IR wavelengths with reduced efficiency and modulation bandwidth.



The typical MTF (depth of modulation) curve for the 1205C modulator assuming a 0.14mm beam diameter is shown at the left. For larger beam diameters the abscissa scales linearly. The curve is closely approximated by the function.

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

where: f = modulating frequency in MHz
f_o = parameter of modulator related to beam waist diameter = 18MHz (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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