

# AOM6x0-H

## High Power AO Modulator/Deflector



0209

### APPLICATIONS

- Material Processing
- Via Hole Drilling
- Surface texturing
- Hole Perforation

### FEATURES

- Low loss
- High Optical Power Capability
- All Solid-State
- High Optical Power

The AOM6x0 series have been designed to minimize thermal lensing and reduce beam degradation at high optical powers. This device can be used as a high power intensity modulator and/or medium resolution high power AO deflector.

### SPECIFICATIONS (TYPICAL)

Operating Wavelength:	9 - 11 $\mu$ m (standard)
Interaction Material:	Germanium
Active Aperture:	
H=7	7mmH x 30mmW
H=9	9mmH x 30mmW
Centre Frequency (x=fc):	
AOM640-H	40MHz
AOM650-H	50MHz
FM Bandwidth:	20MHz
Diffraction Efficiency:	> 85% at fc, 90% typical
RF Power for Max. D/E	< 100 Watts total
Static Insertion Loss:	< 4%
Maximum Optical Power:	600 Watts, 7mm dia. Gaussian beam
Bragg Angle at 10.6 $\mu$ m:	38.6 mrad (40MHz) or 48.2 mrad (50MHz).
Separation Angle at 10.6 $\mu$ m:	77.1 mrad (40MHz) or 96.4 mrad (50MHz)
Scan Angle:	38.5 mrad.
Laser Polarization:	Linear, Horizontal
Water Cooling (Minimum):	1 Liter/Min. @ < 20°C
<u>Modulator performance</u> : 7 mm beam diameter	
Optical Rise Time	0.83usec
<u>Deflector Performance</u> : 7 x 30mm beam	
Diffraction Efficiency	> 80% across scan
Access Time:	5.5 $\mu$ sec
Resolution:	100
Modulator Drive Electronics:	RFA240/2 (40MHz) or RFA-250/2 (50MHz)
Deflector Drive Electronics: **	iDDS-2U, RFA-200/2 for continuous sweep or RFA4060/2 for dual spot modulation

\* Optional designs are available for other wavelengths in the 2.5 $\mu$ m - 11.2 $\mu$ m range.

\*\* The RFA200/2 exhibits progressive phase shifting across two RF output channels. Used with iDDS-2 programmable frequency source, it is possible to compensate for the variation in efficiency across the scan.

#### ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

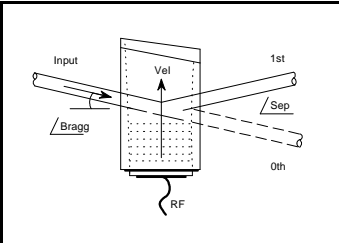
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#### Quality Assured.

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



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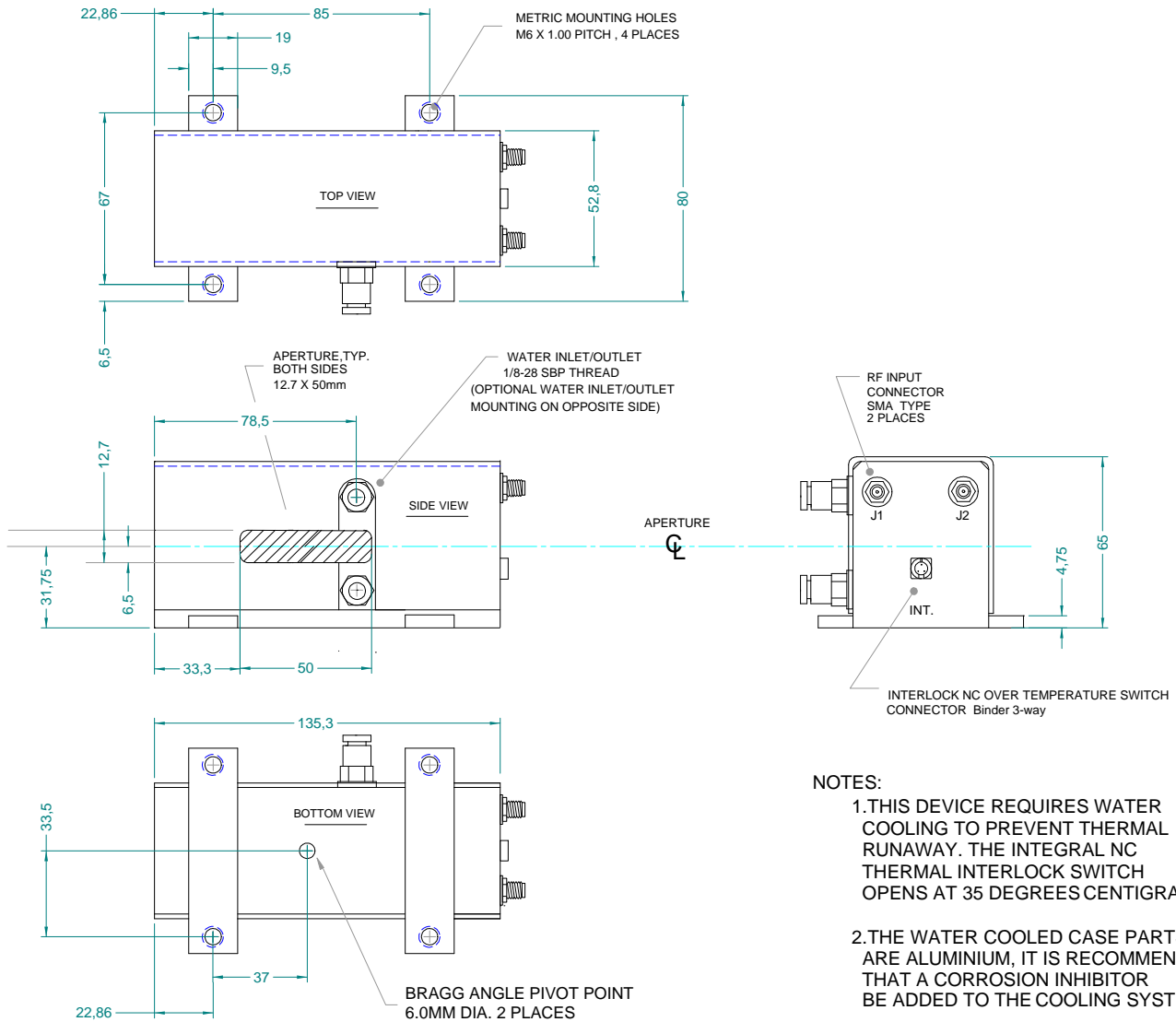
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### OUTLINE DRAWING

Dimensions: mm



#### NOTES:

1. THIS DEVICE REQUIRES WATER COOLING TO PREVENT THERMAL RUNAWAY. THE INTEGRAL NC THERMAL INTERLOCK SWITCH OPENS AT 35 DEGREES CENTIGRADE.
2. THE WATER COOLED CASE PARTS ARE ALUMINIUM, IT IS RECOMMENDED THAT A CORROSION INHIBITOR BE ADDED TO THE COOLING SYSTEM.

Refer application note AN0901 regarding Coolant Specification

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