

# D1459-G70L-10

## High Power AO Deflector



2226

### APPLICATIONS

- IR scanning
- Laser radar (ranging, tracking)
- Material processing

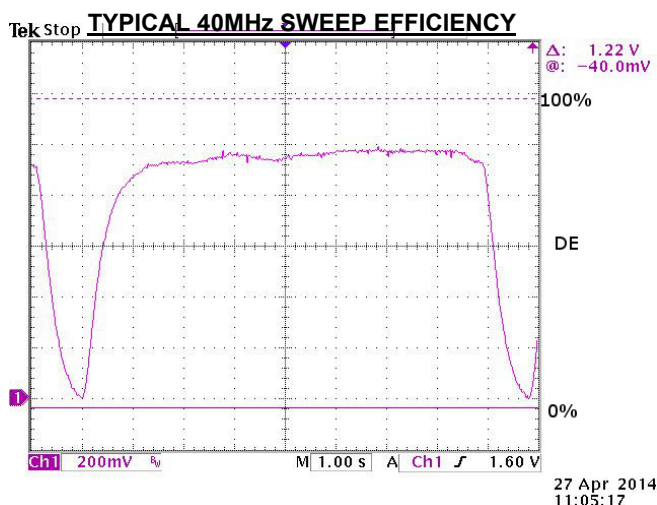
### FEATURES

- High speed, high resolution
- High optical power capability
- Minimal intensity variation

The D1459 and associated RF drive electronics have been designed to maintain the Bragg relationship over a wide sweep bandwidth. This provides minimal variation of diffraction intensity across the scan angle. Diagnostics provide real time temperature measurement and RF power monitoring.

### SPECIFICATIONS

|                                |                                         |               |
|--------------------------------|-----------------------------------------|---------------|
| Operating Wavelength*:         | 9.4 - 9.6 $\mu$ m                       |               |
| Interaction Material:          | Germanium                               |               |
| Centre Frequency (fc):         | 70MHz                                   |               |
| FM Bandwidth:                  | 40MHz                                   |               |
| Diffraction Efficiency:        | > 80%                                   |               |
| D/E Variation vs. Freq.:       | < 5% (with power and phase programming) |               |
| RF Power for Max. D/E:         | < 240Watts total                        |               |
| Static Insertion Loss:         | < 4%                                    |               |
| Optical Power (max):           | 600 Watts (CW full aperture)            |               |
| Bragg Angle:                   | 59.8mrad.                               |               |
| Separation Angle:              | 119.6mrad. (@ fc)                       |               |
| Scan Angle:                    | 68.4mrad.                               |               |
| Active Aperture **:            | 10mmH x 45mmW                           |               |
| Beam size:                     | 10mm circular                           | 10mmHx40mmW   |
| Access Time:                   | 1.8 $\mu$ sec                           | 7.3 $\mu$ sec |
| Resolution - resolvable spots: | 72                                      | 290           |
| non-resolvable points:         | >1000                                   |               |
| Laser Polarization:            | Linear, Horizontal                      |               |
| Water Cooling (Minimum):       | 2Liters/Min. @ < 20°C                   |               |
| Drive Electronics ***:         | iMSA-70-4-90                            |               |



("Soft" corners in this DE sweep response are due to low detector bandwidth)

#### ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

ISOMET CORP, 10342 Battlevue Parkway, Manassas, VA 20109, USA.

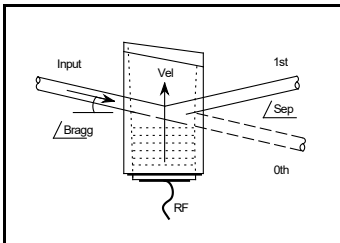
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#### Quality Assured.

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



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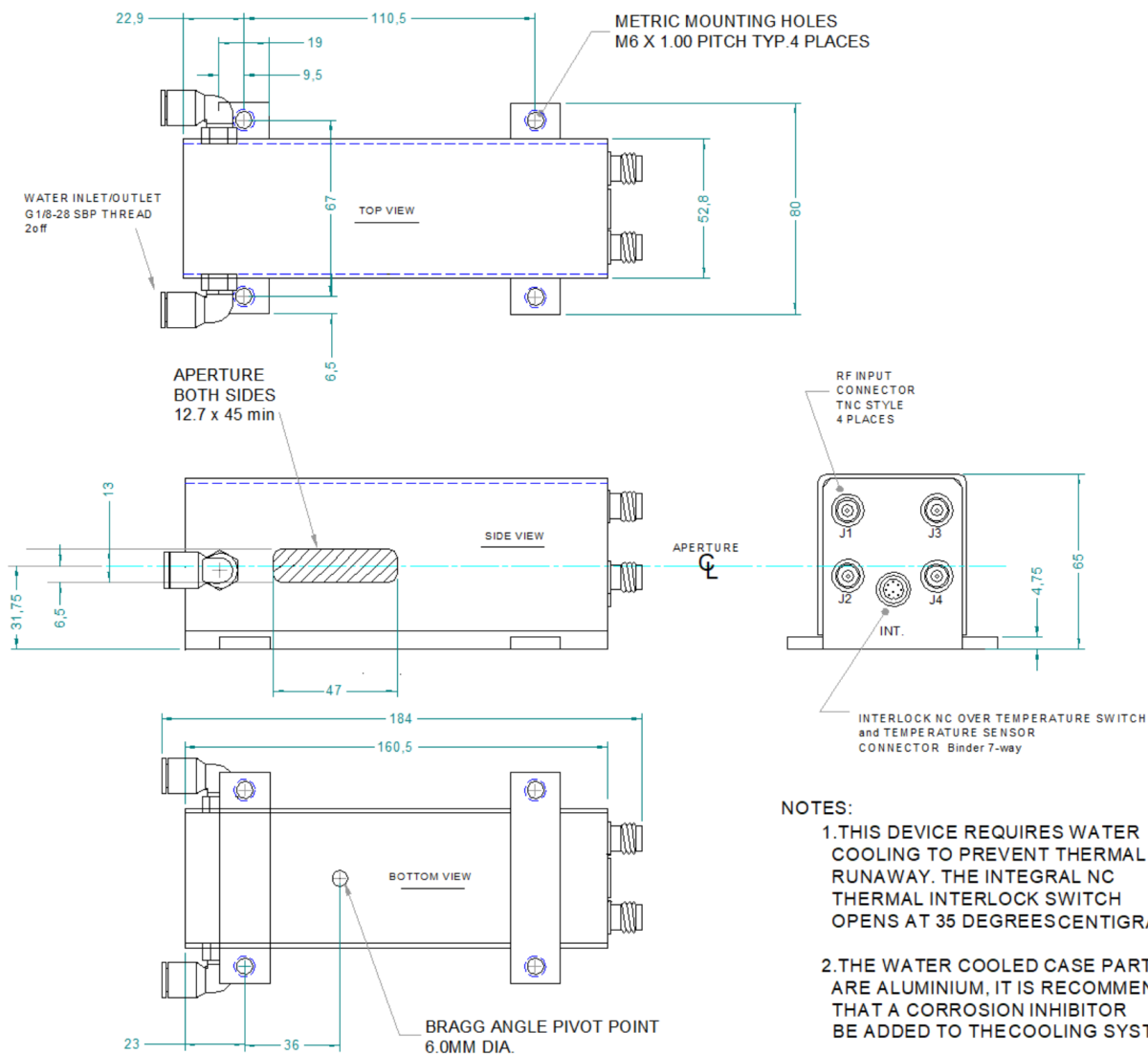
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### OUTLINE DRAWING

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.

- \* Optional designs are available for other wavelengths in the 2.5 $\mu$ m - 12 $\mu$ m range.
- \*\* Custom aperture sizes up to 10mmH x 75mmW are available.
- \*\*\* The iMSA-70-4-90 can provide progressive phase shifting across the four RF channels.  
(Active compensation for Bragg angle error and variation in efficiency across the scan).

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