

D1378-G50-12

High Power AO Modulator/Deflector

(Preliminary)



1117

APPLICATIONS

- Material Processing
- Drilling
- Surface texturing

FEATURES

- Low loss
- High Optical Power Capability
- Large Aperture

The D1378 is a large aperture industrial IR Modulator / Deflector designed for duty cycled applications using high power pulsed lasers.

SPECIFICATIONS (TYPICAL)

Operating Wavelength *	A/R @ 9.1-9.6 μ m or 10.2-10.8 μ m
Interaction Material:	Germanium
Clear Aperture:	16mmH x 50mmW
Active Aperture:	12mmH x 30mmW
Centre Frequency (fc):	50MHz
FM Bandwidth:	20MHz
Diffraction Efficiency:	> 85% at fc, 90% typical
Design duty cycle	30%,
Maximum duty cycle	100% with caution
RF Power for Max. D/E	< 240 Watts total at 9.4 μ m
Static Insertion Loss:	< 5%
Maximum CW Optical Power:	700 Watts, 10mm dia. Gaussian beam
Bragg Angle	<u>9.4μm</u> 42.7 mrad
Mid-scan Separation Angle	85.4 mrad
Scan angle 40 – 60MHz	34.1 mrad
Modulation, Optical Rise Time	118nsec/mm
Beam dia. = 6mm	0.7usec
=12mm	1.4usec
Laser Polarization:	Linear, Horizontal w.r.t. mounting surface
Water Cooling (Minimum):	> 2 litre/minute, @ < 20°C
Modulator Drive Electronics:	RFA450-2 (50MHz)
Deflector Drive Electronics:	iMS4-P + RFA400-2 (40-60MHz)

Cooling

Due to RF drive power dissipation, the D1378 requires water-cooling to prevent thermal runaway. The integral NC thermal interlock switch opens at 32degC. The water cooled case parts are aluminium. It is recommended that a corrosion inhibitor is added to the cooling system.

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

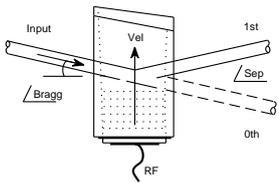
ISOMET CORP, 5263 Port Royal Rd, Springfield, VA 22151, USA.

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**



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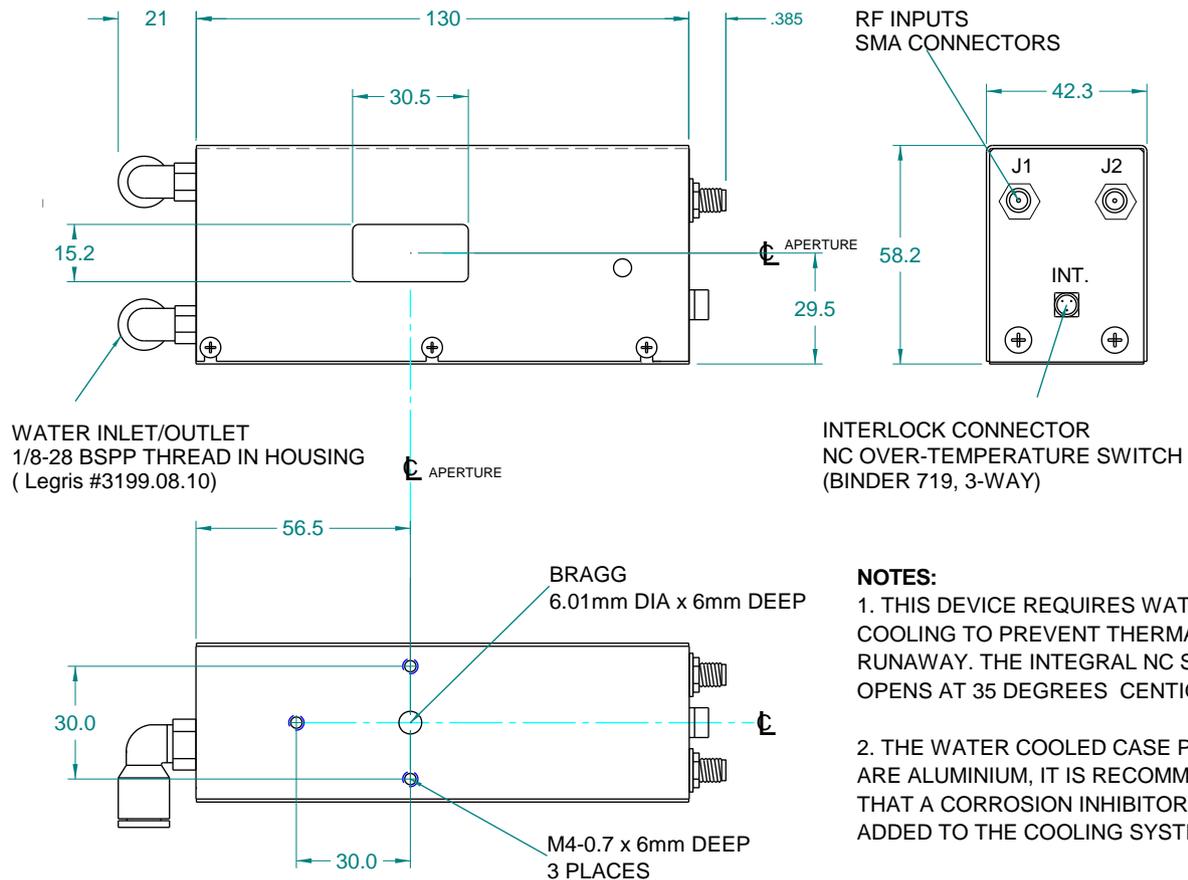
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OUTLINE DRAWING



Refer application note AN1206 regarding Coolant Specification

All case parts in contact with coolant are fabricated in Anodized Aluminium

Options: Brass Water Cooled Case parts: -BR

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