

M1378-G40-12

High Power AO Modulator



2322

APPLICATIONS

- Material Processing
- Drilling
- Surface texturing

FEATURES

- Low loss
- High Optical Power Capability
- Large Aperture

The M1378 is a large aperture industrial modulator 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:	15mmH x 30mmW	
Active Aperture:	12mmH x 24mmW	
Centre Frequency (fc):	40MHz	
FM Bandwidth:	20MHz	
Diffraction Efficiency:	> 85%, 90% typical	
Recommended duty cycle	up to 50%,	
Maximum duty cycle	100% with caution	
Static Insertion Loss:	< 5%	
Maximum CW Optical Power:	700 Watts, 10mm dia. Gaussian beam	
Bragg Angle:	<u>9.4μm</u>	<u>10.6μm</u>
Separation Angle:	34.2mrad	38.6mrad
RF Power for Max. D/E	68.4mrad	77.1mrad
	~210W	~260W
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):	> 2.5 litre/minute, @ < 20°C	
Modulator Drive Electronics:	RFA841-x	

Cooling

Due to RF drive power dissipation, the M1378 requires water-cooling to prevent thermal runaway.

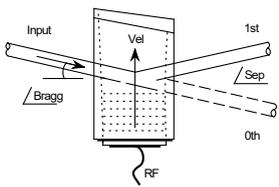
The integral NC thermal interlock switch opens at 32degC.

The water-cooled case parts are aluminium.

It is recommended that a corrosion inhibitor is added to the cooling system.

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



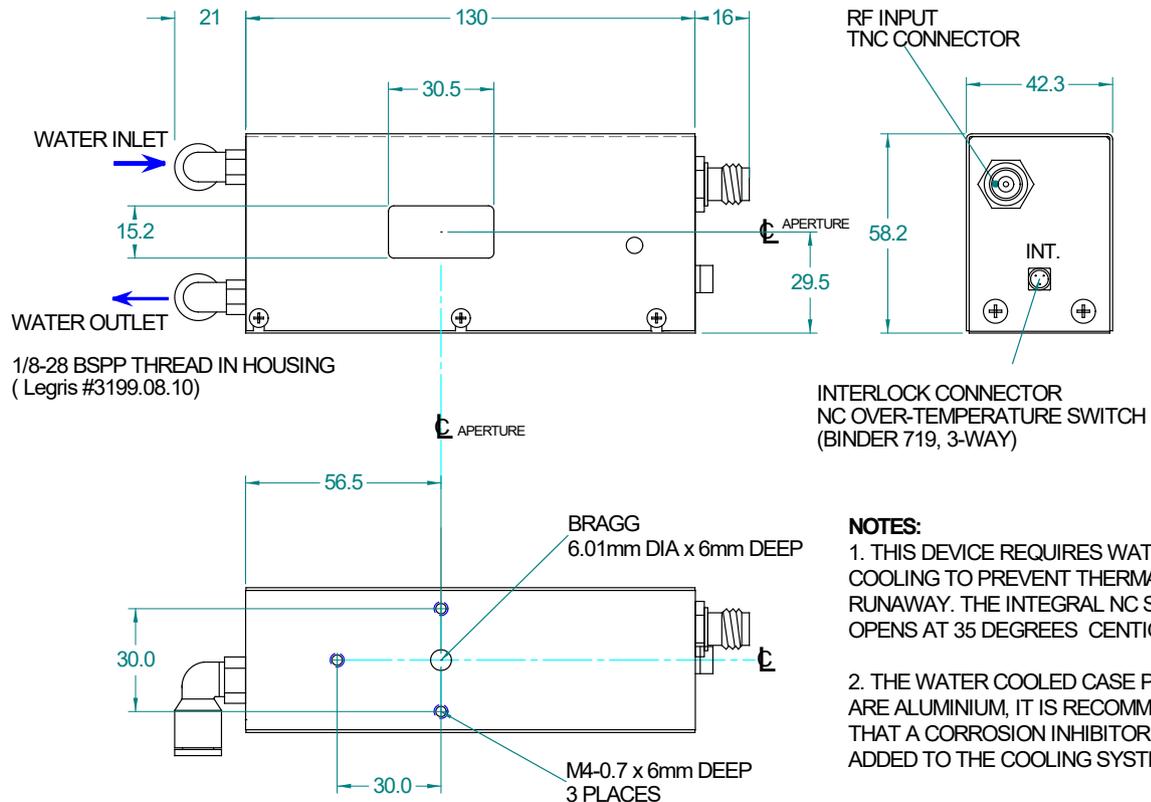
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OUTLINE DRAWING



Refer application note AN1906 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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