

M1378-G40L-10 / -12

High Power AO Modulator



2426

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:	-10	10mmH x 24mmW
	-12	12mmH x 24mmW
Centre Frequency (fc):	40MHz	
FM Bandwidth:	20MHz	
Diffraction Efficiency (DE):	> 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 DE, -10	68.4mrad	77.1mrad
-12	~170W	~210W
	~210W	~260W
Modulation, Optical Rise Time:	118nsec/mm	
Beam dia. = 6mm	0.7usec	
= 10mm	1.2usec	
= 12mm	1.4usec	
Laser Polarization:	Linear, Horizontal w.r.t. mounting surface	
Water Cooling (Minimum):	> 2.5 litre/minute, @ < 20°C	
Modulator Drive Electronics:	RV5-40-1-250	
(+ Brass heatsink option):	RV5BR-40-1-250	

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. Standard water-cooled case parts are aluminium. It is recommended a corrosion inhibitor is added to the cooling system.

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

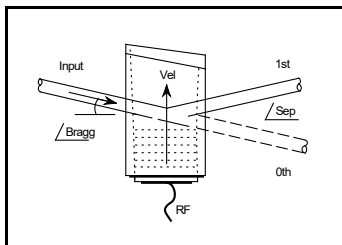
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Quality Assured.

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



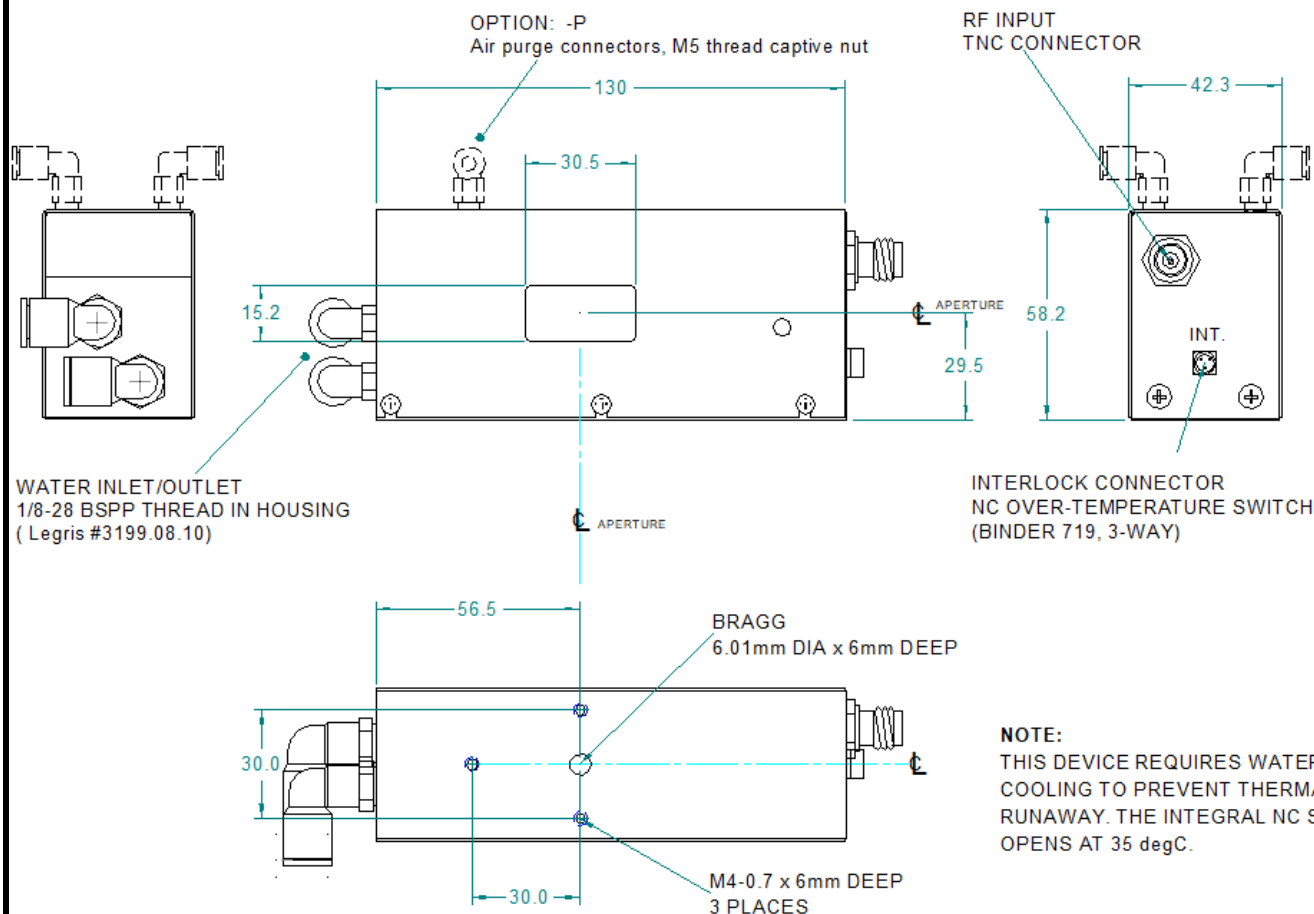
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OUTLINE DRAWING



NOTE:
THIS DEVICE REQUIRES WATER COOLING TO PREVENT THERMAL RUNAWAY. THE INTEGRAL NC SWITCH OPENS AT 35 degC.

Refer application note AN1906 regarding Coolant Specification

Standard case parts in contact with coolant are fabricated in anodized Aluminium

Options:

Brass water-cooled case parts: -BR	M1378BR-G50L-12
Copper water-cooled case parts: -C	M1378C-G50L-12
Air-purge connections -P:	M1378-G50L-12-P

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