

D1449-XY-aQ120-4, -6 (1um)



High Power Dual Axis AO Deflector

Preliminary

4925

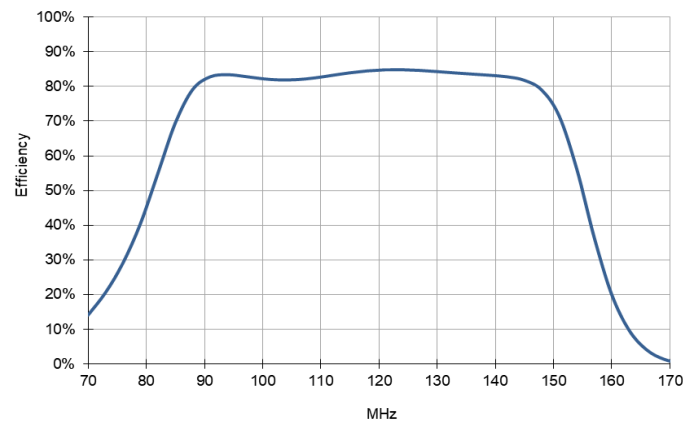
The D1449-XY offers high speed dual axis scanning at 1064nm. This deflector consists of two AO deflectors mounted orthogonally in one assembly, with independent fine thread Bragg angle adjustment. A half wave plate is included to rotate the input polarization between AO deflectors. Larger aperture version is intended for pulsed laser, duty cycled operation. Applications include:

- Material Processing
- Drilling
- Surface texturing
- Micro machining

SPECIFICATIONS

Operating Wavelength:	1064nm
Interaction Material:	Quartz
Active Aperture: H=4	4mm x 4mm (CW operation)
H=6	6mm x 6mm (Duty cycled operation)
Centre Frequency ($x=f_c$):	120MHz (+/- 10% for best scan response)
3dB Sweep Bandwidth:	60MHz.
Diffraction Efficiency (DE) at f_c :	> 85% per axis
Diffraction Efficiency across scan:	> 80%, 85% typical <u>per axis</u>
RF Power dissipation, maximum	< 80 Watts total per axis
Static Insertion Loss:	< 4%
Bragg Angle 1064nm:	11.1 mrad
Separation Angle at f_c :	22.2 mrad
Scan Angle:	11.0 mrad (59MHz sweep).
Input Laser Polarization:	Linear, Vertical w.r.t. to X-axis
Water Cooling (Minimum):	> 2 Liter/Min. @ < 23°C
<u>Deflector Performance:</u>	Using 4 x 4mm beam
Total XY Diffraction Efficiency (DE)	> 55% across 60MHz scan
Access Time:	0.7μsec
Resolution:	40 x 40 <u>resolvable</u> spots
	>1000 x 1000 non-resolvable points
	(driver dependent)

Estimated SCAN RESPONSE per AXIS, (peak value, duty cycled operation)



ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

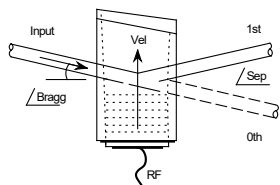
ISOMET CORP, 10342 Battlevue Parkway, Manassas, VA 20109, USA.

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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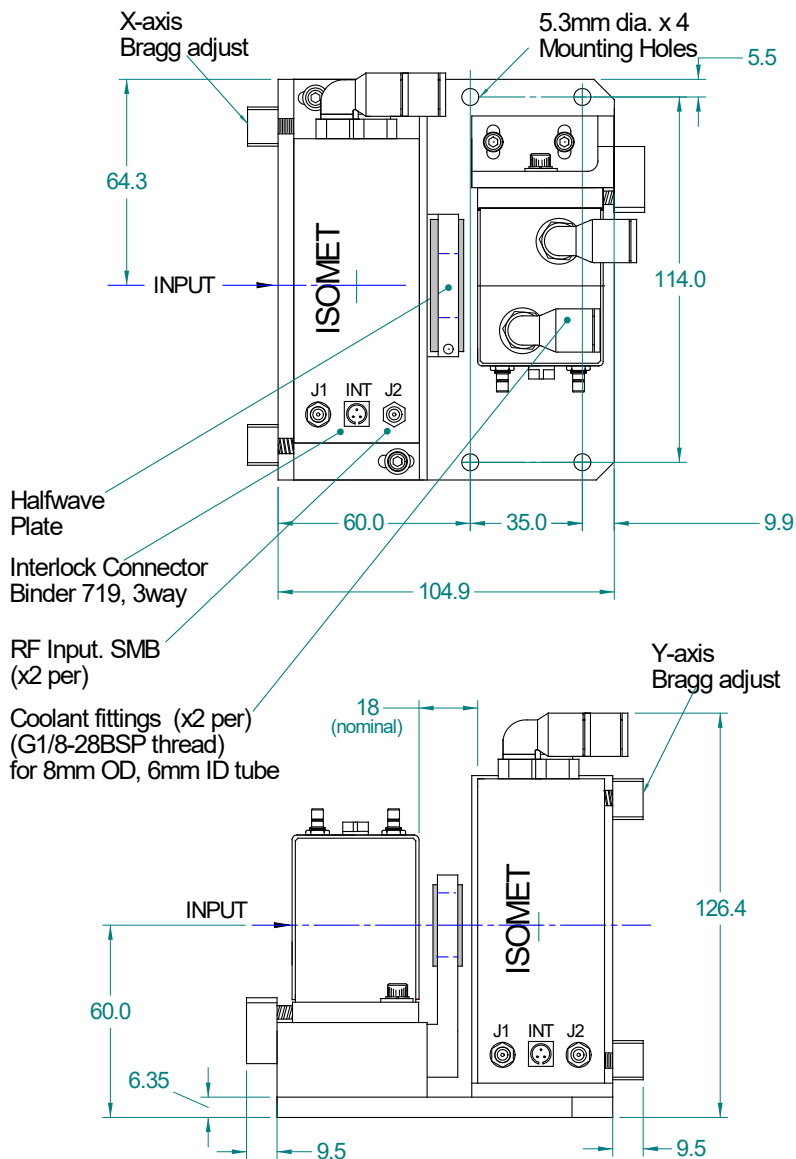
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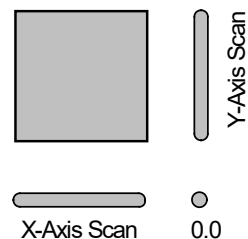
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OUTLINE DRAWING

Dim'n: mm

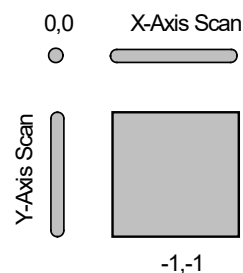


**Output Beams
+1st orientation
+1,+1**



← Mounting plane →

**Output Beams
-1st orientation**



← Mounting plane →

**Refer application note AN1906
regarding Coolant Specification**

DRIVERS

Synthesizer based: iMS4-P-DC programmable synthesizer + (1off) RFA0120-4-50 amplifier.

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