

# MODEL LS110A-NIR-XY

## Dual Axis AO Deflector



1106

The LS110A-NIR-XY provides high speed simultaneous vertical and horizontal axis beam position control at near IR wavelengths. It is comprised of two orthogonally-mounted single axis TeO<sub>2</sub> deflectors which sequentially diffract the input laser beam to generate up to a 375 x 375 spot combined matrix. The LS110-XY may be operated in raster (linear), random access and vector scanning modes from the same RF drive electronics. It is well suited for applications requiring accurate beam placement at high speed, such as laser rangefinding and laser pantography.

### FEATURES

- **UNIFORM SCAN INTENSITY:** The LS110 series have been designed to maintain the Bragg relationship over the specified RF frequency bandwidth. This results in a uniform diffracted beam intensity across the full scan angles of both axes.
- **CIRCULAR INPUT APERTURE:** Complex and costly anamorphic input beam shaping optics are not necessary to produce the high resolution scan. Any required beam shaping may be accomplished with simple spherical optics. There are no intervening refractive optics between the deflector cells
- **HIGH THROUGHPUT EFFICIENCY:** Up to 25% of the incident laser beam is diffracted to the XY image plane.
- **HIGH OPTICAL POWER:** The LS110-XY may be operated with up to 8 Watts CW laser power (6mm or larger input beam diameter).

### RF DRIVE ELECTRONICS

VCO driver/amplifier:	2 off - D321-BS / D331-BS
Fast tuning Synthesizer:	2 off - iDDS-2-SE plus dual amplifier DA104-2
Amplifier only:	2 off - DA134-p-xxx (with Integral Phase shifting)

### SPECIFICATIONS

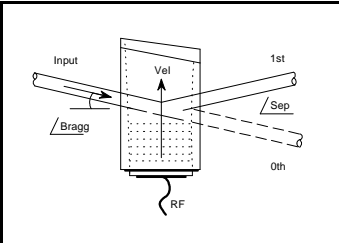
Input Laser Polarization:	Linear
Output Laser Polarization:	Circular (nominal)
Input Impedance:	50Ω (nominal)

**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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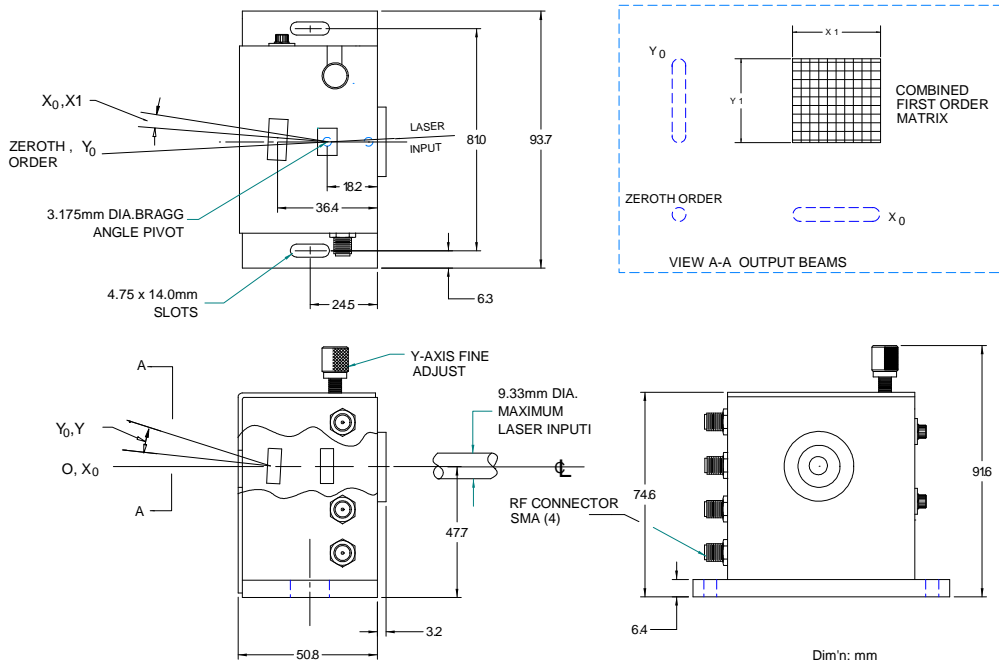


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### SPECIFICATIONS vs. WAVELENGTH

	<u>LS110A-830-XY</u>	<u>LS110A-1064-XY</u>	<u>LS110(HF)-1.06XY</u>	<u>LS110A-1.35-XY</u>	<u>LS110A-1.5-XY</u>
Wavelength **:	830nm	1064nm	1064nm	1.35um	1.55um
Centre Freq. (Nom)	50MHz	50MHz	70MHz	50MHz	50MHz
Bandwidth $\Delta f$ :	25MHz	25MHz	40MHz	25MHz	25MHz
Scan Angle/Axis:	1.9°	2.5°	3.95°	3.1°	3.6°
fc Separation Angle:	3.9°	4.9°	6.91°	6.2°	7.2°
Aperture	9.3mm	9.3mm	9.3mm	6mm	5mm
Access Time $\tau$ :	15 $\mu$ s	15 $\mu$ s	15 $\mu$ s	9.7 $\mu$ s	8.1 $\mu$ s
Resolution	375x375	375x375	600x600	240x240	200x200
Throughput efficiency	25%	25%	25%	16%	8%

### OUTLINE DRAWING



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