



CRS Series

Resonant Scanners



Product Highlights

Our CRS Series of novel resonant scanners are ideally suited for high-speed imaging in real time. The CRS oscillates at a fixed, resonant frequency with a sinusoidal waveform; this unique scanner design enables a rapid scanning rate. The mirror is engineered out of lightweight beryllium, and broadband coatings reflect a wide range of laser wavelengths. When paired with a galvanometer, the CRS enables high-speed raster scanning over a two-dimensional field and is well-suited for microscopy and scanning laser ophthalmology applications.

Unique technology ideal for high-speed imaging applications

- Resonant scanners deliver fast scanning over large scan angles
- Reliable technology with extremely long lifetimes in a variety of environments
- Straight-forward integration: stator-based design for simple mounting
- Driver board electronics included

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Product Specifications	CRS 4 KHz	CRS 8 KHz	CRS 12 KHz
Mirror Size (mm)	Ø 12.7	7.8 x 5.5 ellipse	7.8 x 5.5 ellipse
Clear Aperture (mm)	12 x 9.25	7.2 x 5.0 ellipse	7.2 x 5.0 ellipse
Resonant Frequency (Hz, at 25°C)	3,938	7,910	12,000
Frequency Tolerance (Hz, at 25°C)	± 50	± 15	± 50
Maximum Scan Angle (degrees, peak-to-peak)	26°	26°	10°
Trace to Retrace Wobble Repeatable (µrad, typical at maximum scan angle)	< 250	< 250	< 175
Typical Power Consumption (W)	1.0	1.0	1.5

Shared Specifications	
Wavelength Options	Broadband Coatings: Protected Aluminum or Protected Silver
Frequency Thermal Stability	110 ppm/°C
Velocity Feedback	Yes

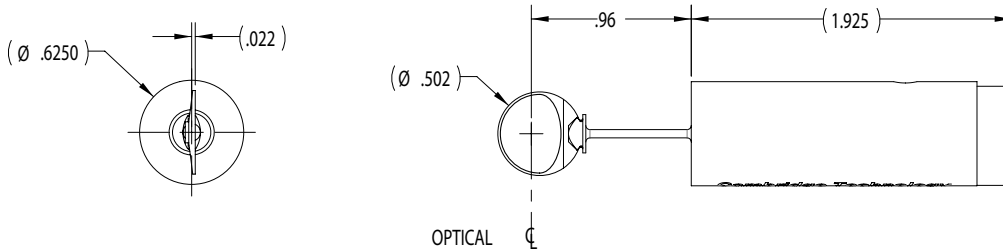
Driver Specifications			
Power Supply	Single rail, 12VDC		
Command Voltage	0-5V		
Angle Control	Yes		
Sync Signal	Yes, occurs at each change in direction		
Driver Dimensions	30.5 mm x 43 mm	30.5 mm x 43 mm	30.5 mm x 43 mm

Notes:
All dimensions are in optical degrees, unless otherwise noted. All specifications are subject to change without notice.

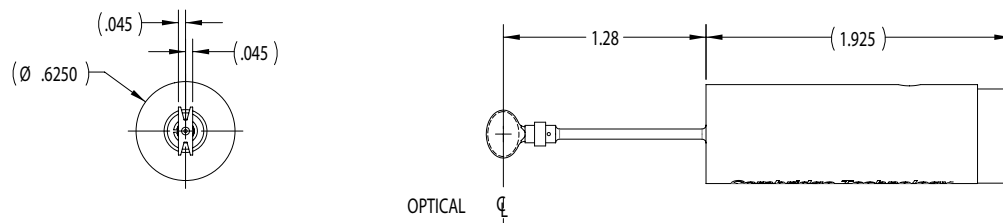
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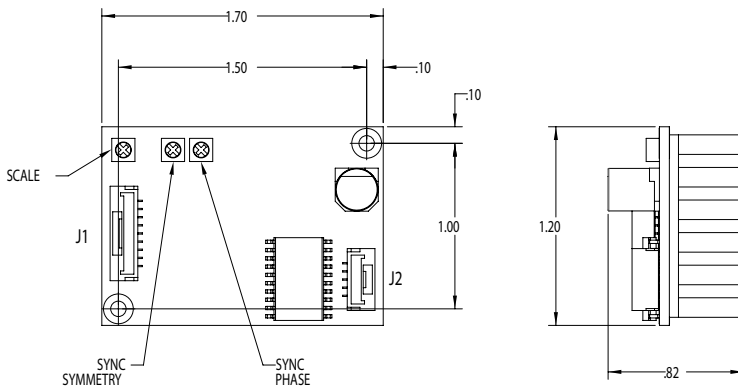
CRS 4 KHz



CRS 8 KHz and CRS 12 KHz



CRS Driver board



Pin	Signal	Comments
1	GND	
2	Velocity	Unscaled; for safety verification only
3	Sync	At each change in direction
4	Fault	Not in regulation
5	Disable	Pull down to disable servo
6	Power	12V DC
7	GND	
8	GND	
9	Ext. Amplitude Control	0-5V DC for zero to full scan angle

Notes:
All dimensions are in inches, unless otherwise noted. All specifications are subject to change without notice.

About Cambridge Technology

With close to 50 years of expertise, Cambridge Technology designs, develops, and manufactures innovative beam steering solutions including polygon- and galvanometer-based optical scanning components, 2-axis and 3-axis scan heads, scanning subsystems, high power scanning heads, and controlling hardware and software. We excel in collaborating with our key OEM partners to engineer products that meet their needs from the largest engineering solution to the smallest component. Key market applications include advanced industrial processes like additive manufacturing, laser converting, laser marking, and via-hole drilling, and medical applications such as laser treatment and optical coherence tomography. Cambridge Technology is a Novanta company.

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