

Equipment Solutions

RVC-9025 Rotational Voice Coil Stage



BASIC SPECIFICATIONS	
Frequency	20 Hz - 550 Hz, Fixed at Factory
Maximum Mechanical Angular Swing	$\pm 22.5^\circ$, ± 0.393 mrad (Higher frequencies may limit this capability)
Maximum Mirror Width	1 inch, 25 mm
Mirror or other load Characteristics	Customer Specified
Standard Communications Interface	Full Speed USB v2.0 Compliant or Analog Amplitude Control and TTL level Enable bit.
Optional Mechanical Position Feedback Resolution	<200 urad
Operating Temperature	10 - 40 °C
Storage Temperature	-20 - 70 °C
Humidity	<90% non-condensing
Power	4.5 to 5.5 VDC < 500 mA
Dimensions	0.98 x 2.3 x 0.83 in, 25 x 58 x 21 mm
Mass	9 oz, 25 g

The **RVC-9025 Rotational Voice Coil Stage** provides a means to quickly and accurately set an angular position. The frequency is factory adjusted to customer specifications during the manufacturing process. Amplitude of the resonating mirror can be adjusted through either an analog input voltage or the USB interface. An optional high-resolution position feedback sensor can be monitored by an analog output signal on the User Connector. The RS-25 Resonant Scanner can also be configured with a high-resolution 16-bit Analog to Digital Converter to quickly sample and report the mirror position at any moment if the position sensor is included.

The **RS-25 Resonant Scanner** is designed and optimized for applications that typically require a means to scan an optical beam. Using various patent pending features the RS-25 Resonant Scanner can run 24/7 forever without compromise. At the heart of this product is a pair of carefully designed flexures that mimic the spring in a classical spring-mass harmonic motion system. The mirror or other load acts as the mass and together a natural resonating frequency is borne that provides unparalleled performance and reliability. A small motor is carefully coupled to the system to makeup for small system losses that would otherwise dampen the oscillation.

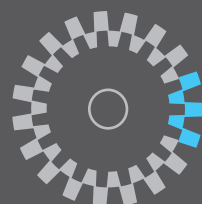
FEATURES

- Broad Frequency Selection
- Adjustable Amplitude
- Fully Integrated Control and Drive Electronics
- Exceptional Reliability, Unlimited Life, Maintenance Free
- Frictionless Guidance system, no wearing parts, lubrication or particulate generation
- Compact, Light Weight
- Very Low Power Drive Electronics, low heat emission.
- Vertical or horizontal mounting
- Shock and vibration tolerant
- High frequency stability (to 0.05%)
- Rotation through optical plane
- Pure Sine Wave Oscillation
- Patent Pending architecture
- High-resolution position feedback sensor option

APPLICATIONS AND MARKETS

- 3D Laser Digitizing, Measurement
- Printing
- Raster Scanners
- Laser Projectors
- Laser Marking
- Laser Range Finding
- Barcode Scanning
- Confocal Microscopy
- FLIR
- Retinal image acquisition
- Semiconductor inspection
- Laser tuning
- Biological and medical research

Direct your laser beam at the mirror and it will be swept across $\pm 45^\circ$ in space at several hundred hertz with low power and forever! Depending on frequency and mirror size the angle may be less. The beam velocity will generally have a sinusoidal profile that is very repeatable and can be linearized to a degree at an increased power input level. Power efficiency, size and reliability are certainly hallmarks of the RS-25 Resonant Scanner but the fully integrated controller also provides great flexibility and functionality to make overall system integration much more convenient.



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