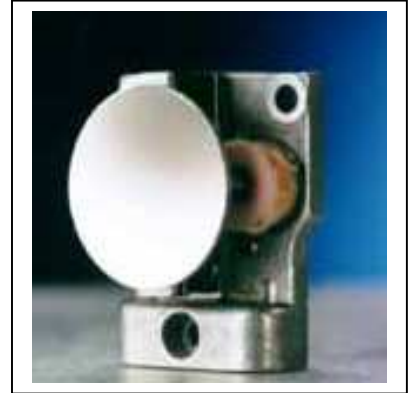


APPLICATIONS

- Inspection systems
- Bar code scanners
- Laser Printers

FEATURES and BENEFITS

- Low cost
- Low acoustic noise
- Sinusoidal scan pattern
- Virtually unlimited service life
- Wide scan angles (up to 90 degrees)
- Frequency offerings beyond 500Hz
- Mirror offerings beyond 30mm round
- Less than 6 microradian cross-axis wobble



GENERAL DESCRIPTION

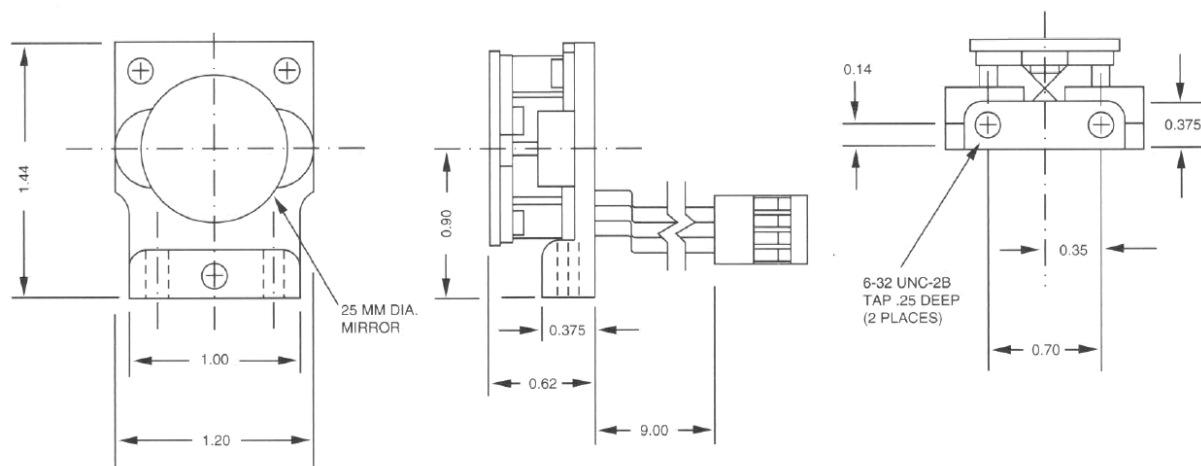
The URS (Universal Resonant Scanner) is a series of resonant-type optical scanners that deliver repeatable, precise, high performance scanning with very low drive power requirements. A mirror is mounted directly to the patented flexure arrangement, and driven by an electro-magnetic coil arrangement. The result is a sinusoidal scan pattern of constant frequency and amplitude.

The URS-series will help you reduce the size of your equipment, improve its performance, and lower the cost of your optical scanning systems. Although the application possibilities are numerous, the URS-series has proven especially well suited for bar code reading systems, laser printers and inspection systems.

Due to the mechanically stiff flexure arrangement that has relatively low resonant Q-factor, the URS scanner is insensitive to typical machine vibrations, ensuring that performance remains consistent and within tolerance. And because there are no wearing parts, the service life is virtually unlimited. The highly repeatable sinusoidal scan pattern ensures the accurate placement of lines and pixels, in both the scan and retrace directions.

Note that the URS-series scanners are not ones that we keep in stock, and instead are ones that we can manufacture on demand for specific customers. Please contact us to discuss your requirements.

OUTLINE DRAWING





COMMON SPECIFICATIONS

The specifications shown below are common to all URS-series scanners. The scan frequency and scan angle varies depending on the model of the scanner.

Parameter	Value	Units
Cross-axis wobble	< 6	μRad
Frequency change with temperature	< -200	PPM / °C
Frequency change with amplitude	< 0.1	% with 2:1 change in amplitude
Operating temperature range	0 to 75	°C

Note that we can customize the design to your requirements, and provide scanners with or without drive electronics.

MORE INFORMATION

More information about optical scanners and actuators, including additional application hints and tips, can be found at www.ScannerMAX.com.

LASER SCANNING BOOK AVAILABLE

Detailed information about galvanometer scanners, servo driver techniques, and scanner applications can be found in the #1 best-selling book *LASER SCANNERS: Technologies and Applications*, written by Pangolin's President William R. Benner, Jr. The book can be found at www.LaserScanningBook.com.

OTHER SCANNERS AND ACTUATORS AVAILABLE FROM SCANNERMAX

- *VRAD 506*: a low-cost, open-loop rotary actuator capable of wide-angle rotation – perfect for shutters
- *Compact 506*: the lowest-cost, lightest-weight, and most versatile galvo scanner for 3mm to 1-inch beams
- *Saturn 1B*: providing the highest-speed vector scanning available, for 1mm to 4mm beams
- *Saturn 2B*: a resonant-scanner substitute for high-frequency sinusoidal scanning of 1mm to 4mm beams
- *Saturn 5B*: for both vector and raster scanning of 5mm and 6mm beams
- *Saturn 9B*: providing the best large-signal vector scanning performance for 8mm to 10mm beams
- *Saturn 9B Plus*: for 10mm raster scanning with 40% less heat generation
- *Beam Brush*: a Z-axis focusing / divergence control device for 3D laser marking and lightshow applications

PATENT AND TRADEMARK INFORMATION

For more information, see US Utility Patent Number: 4,732,440

ScannerMAX is a trademark of Pangolin Laser Systems, Inc.

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