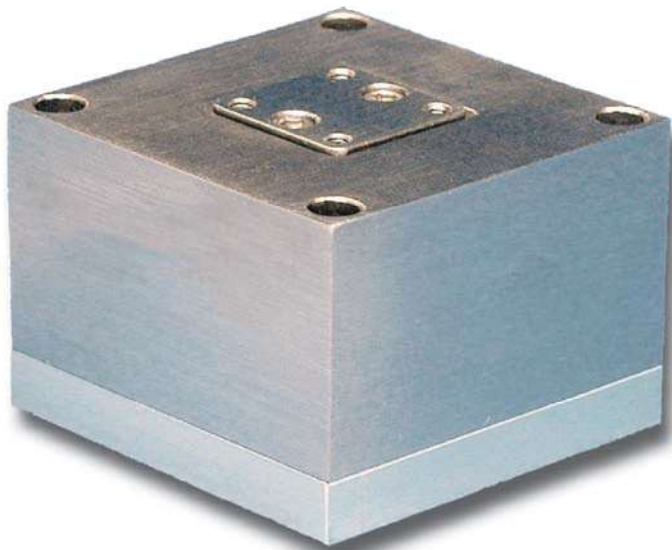


## Features

- ▶ *Single axis (Z) motion*
- ▶ *Step response less than 1 millisecond*
- ▶ *Scans up to 500 Hz*
- ▶ *Closed loop control*
- ▶ *Combine with Nano-OP Series for multi-axis configurations*
- ▶ **pico** sensor technology

## Typical Applications

- ▶ *High speed, high resolution positioning*
- ▶ *Metrology*
- ▶ *Interferometry*



*Nano-HSZ constructed from aluminum.*

### LabVIEW Compatible USB Interfaces



*Examples, tutorial, and Nano-Route® 3D supplied with Nano-Drive® USB interfaces.*



*Nano-HSZ (shown actual size) combined with two Nano-OP Series stages for high speed, high resolution, 3-axis motion (XYZ).*

*The 3-axis Nano-HS3 (pages 36-37) provides similar high speed, high resolution performance in an integrated package.*

## Product Description

The Nano-HSZ is a high speed single axis (Z-axis) precision nanopositioning system. Internal position sensors utilizing proprietary **pico** technology provide absolute, repeatable position measurement with picometer accuracy under closed loop control. The Nano-HSZ offers a compact footprint, ultra low noise characteristics, and a reso-

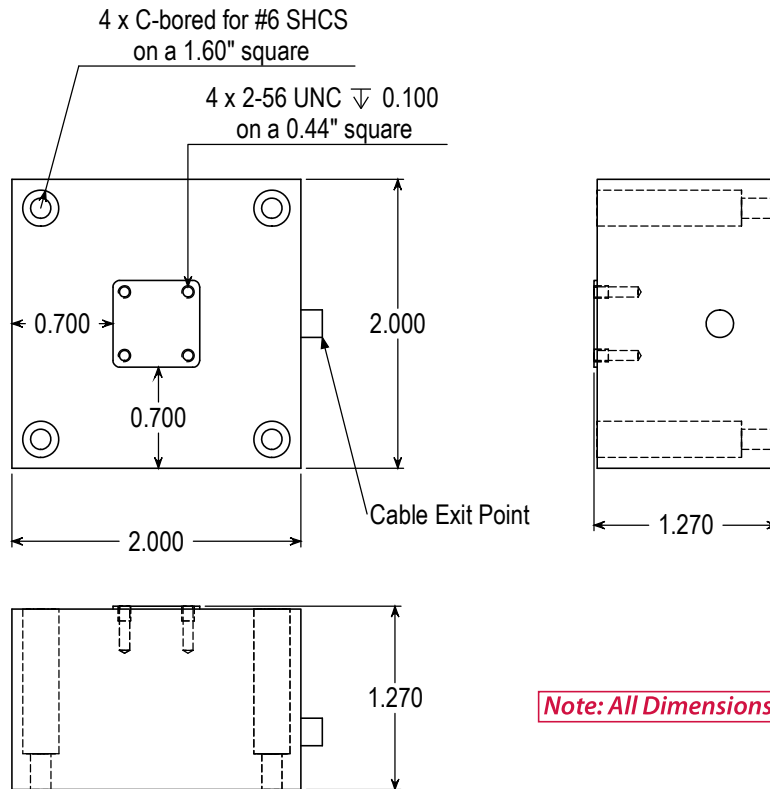
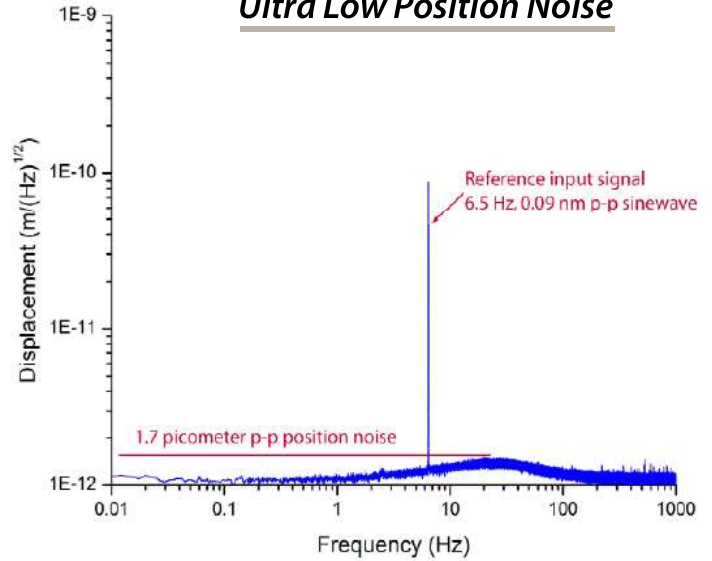
nant frequency greater than 7 kHz. These characteristics make it ideal for applications that require noise floors less than 10 picometers and/or high speed performance. With the step response time of the Nano-HSZ set to less than 1 millisecond for extremely high speed applications, scan frequencies up to 500Hz can be achieved.

## Technical Specifications

Range of motion (Z) .....	10 $\mu\text{m}$
Resolution .....	0.01 nm
Resonant Frequency .....	7.5 kHz $\pm$ 20%
Scanning Speed .....	up to 500 Hz
Stiffness .....	12 N/ $\mu\text{m}$
Recommended max. load (horizontal)* .....	0.1 kg
Recommended max. load (vertical)* .....	0.1 kg
Body Material .....	Al, Invar or Titanium
Controller .....	Nano-Drive <sup>®</sup>

\* Larger load requirements should be discussed with our engineering staff.

### Ultra Low Position Noise



**Note: All Dimensions in Inches**