Nano-HS Series

Features

- *High speed, multi-axis*
- *XY and XYZ configurations*
- *Z-axis step response time down to 2ms*
- *Z-axis scans up to 300 Hz*
- *Closed loop control*
- *Picometer positioning resolution*
- *High stability*
- *picoQ® sensor technology*

Typical Applications

- *High speed, high resolution positioning*
- *Metrology*
- *AFM*
- *SPM*

LabVIEW Compatible USB Interfaces

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

Nano-HS2 (XY motion) constructed from aluminum.

Nano-HS3 (XYZ motion) constructed from aluminum.

Product Description

The Nano-HS Series is a high speed, multi-axis, precision nanopositioning system with picometer positioning resolution. Offering maximum versatility, the Nano-HS can be configured to provide XY or XYZ motion. Internal position sensors utilizing proprietary picoQ® technology provide absolute, repeatable position measurement under closed loop control. The compact footprint, ultra-low noise characteristics, and a Z-axis resonant frequency of 5kHz make it ideal for metrology applications that require noise floors less than 10 picometers and/or high speed performance.

Technical Specifications

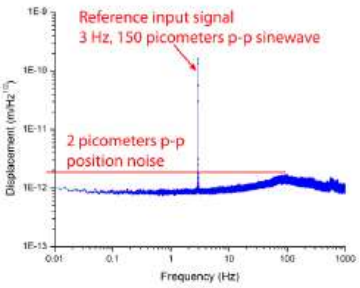
Range of motion (XYZ)	10 µm
Resolution	0.01 nm
XY (HS2) Resonant Frequency	1.5 kHz ±20%
XY (HS3) Resonant Frequency	1.0 kHz ±20%
Z (HS3) Resonant Frequency	5.0 kHz ±20%
Scanning Speed	up to 300 Hz
Stiffness (Z-axis)	8 N/µm
Recommended max. load (horizontal)*	0.1 kg
Recommended max. load (vertical)*	0.1 kg
Body Material	Al, Invar or Titanium
Controller	Nano-Drive®

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

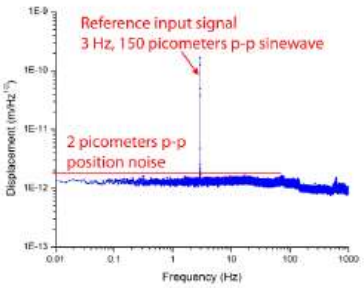
Low Position Noise

Nano-HS3

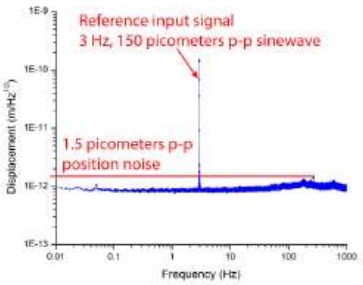
X Axis



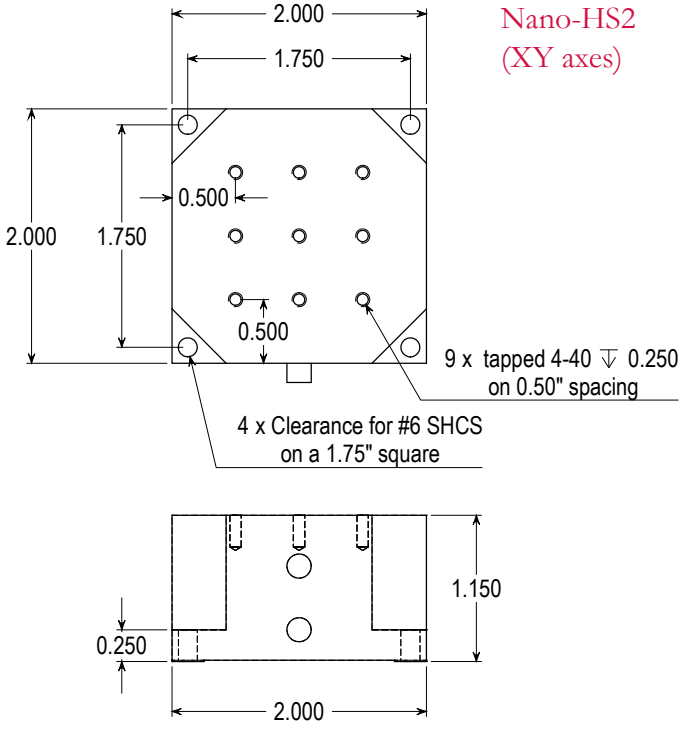
Y Axis



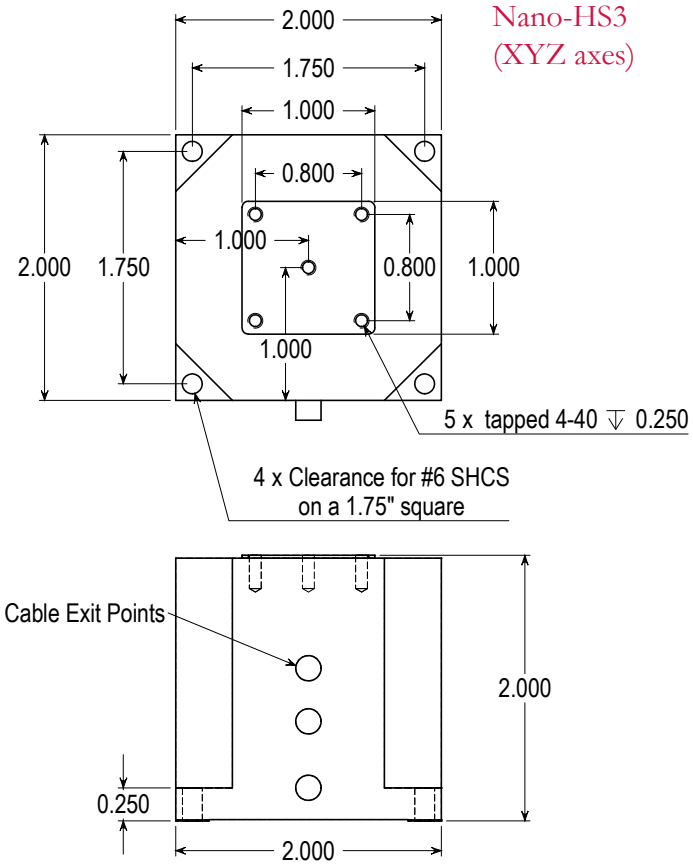
Z Axis



Nano-HS2
(XY axes)



Nano-HS3
(XYZ axes)



Note: All Dimensions in Inches