

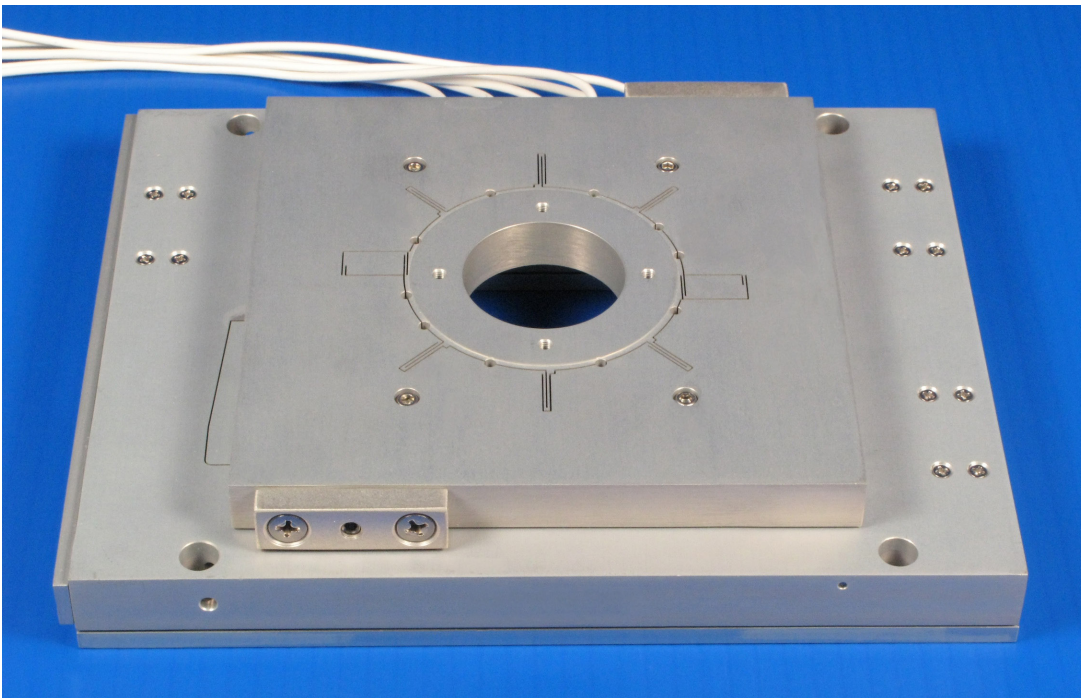
Nano-Align6 Series

Features

- ▶ Low profile
- ▶ Six axis motion ($XYZ \theta_x \theta_y \theta_z$)
- ▶ $100 \mu\text{m} \times 100 \mu\text{m} \times 100 \mu\text{m} \times 1.1 \text{ mrad} \times 1.5 \text{ mrad} \times 5 \text{ mrad}$ ranges of motion
- ▶ $200 \mu\text{m} \times 200 \mu\text{m} \times 200 \mu\text{m} \times 2.3 \text{ mrad} \times 3.0 \text{ mrad} \times 5 \text{ mrad}$ ranges of motion
- ▶ Center aperture: 35mm diameter
- ▶ Closed loop control
- ▶ **pico** sensor technology

Typical Applications

- ▶ Alignment
- ▶ MEMS
- ▶ Nanolithography
- ▶ Metrology



Nano-Align6 constructed from aluminum.

LabVIEW Compatible USB Interfaces



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

Product Description

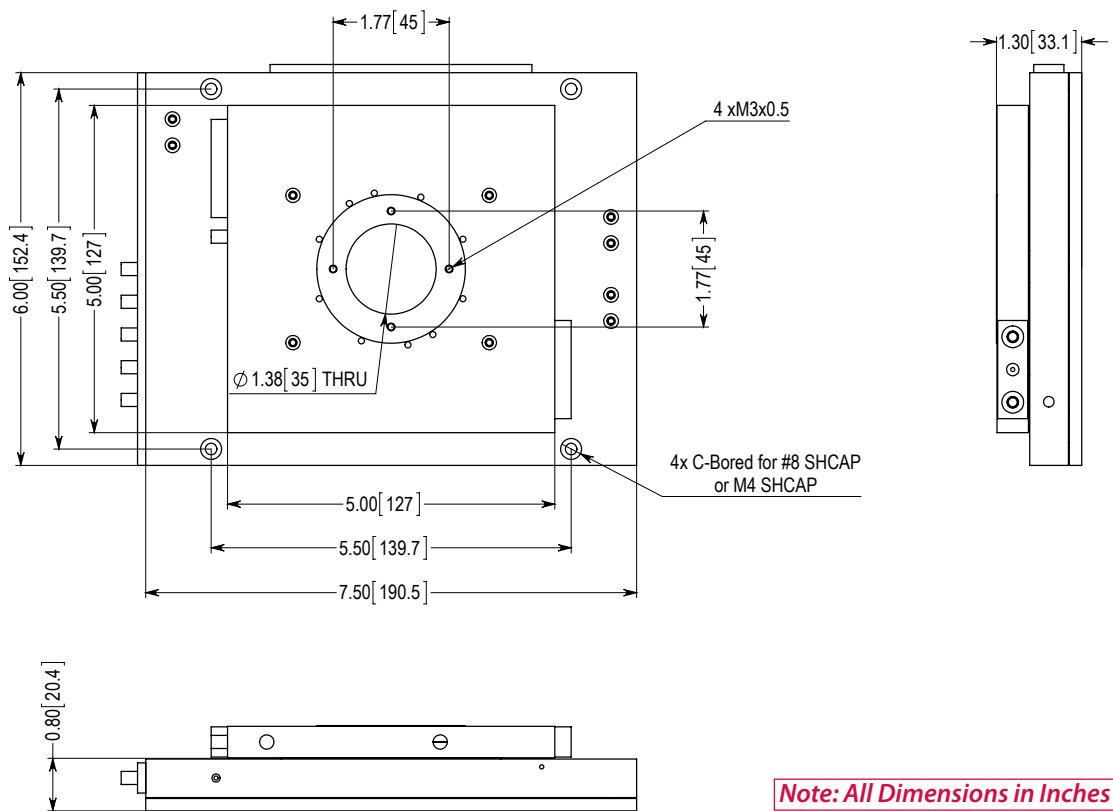
The Nano-Align6 is a six axis ($X, Y, Z, \theta_x, \theta_y, \theta_z$) nanopositioning system with a large center aperture. The Nano-Align6 is ideal for alignment applications which require three linear axes of motion (X, Y, Z) combined with rotational motion about each axis. The large aperture provides excellent access for microscopy optics,

sample holders, and probe placement. The Nano-Align6 includes internal sensors on every axis using Mad City Labs' proprietary **pico** technology for absolute position measurement and picometer/nanoradian accuracy under closed loop control.

Technical Specifications

Ranges of motion (Nano-Align6-100).....	100 x 100 x 100 μm x 1.1 mrad (θ_x) x 1.5 mrad (θ_y) x 5 mrad (θ_z)
Ranges of motion (Nano-Align6-200).....	200 x 200 x 200 μm x 2.3 mrad (θ_x) x 3.0 mrad (θ_y) x 5 mrad (θ_z)
Resolution (Nano-Align6-100).....	0.2 nm (XYZ), 2.2 nrad (θ_x), 3.0 nrad (θ_y), 10 nrad (θ_z)
Resolution (Nano-Align6-200).....	0.4 nm (XYZ), 4.6 nrad (θ_x), 6.0 nrad (θ_y), 10 nrad (θ_z)
Resonant Frequencies	
X axis (Nano-Align6-100/Nano-Align6-200)	450/400 Hz $\pm 20\%$
Y axis (Nano-Align6-100/Nano-Align6-200)	350/300 Hz $\pm 20\%$
Z axis (Nano-Align6-100/Nano-Align6-200)	450/350 Hz $\pm 20\%$
Recommended max. load (horizontal)*	0.5 kg
Recommended max. load (vertical)*	0.2 kg
Body Material	Aluminum, Titanium, or Invar
Controller	Nano-Drive®

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



Note: All Dimensions in Inches [mm]