

Nano-Align5 Series

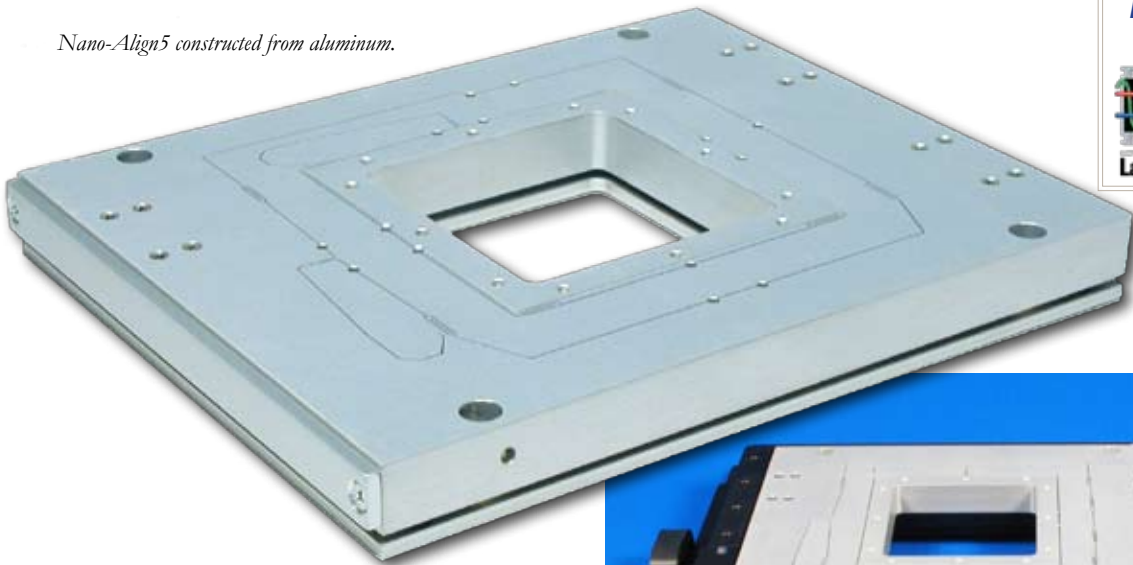
Features

- ▶ Low profile
- ▶ Five axis motion ($XYZ \theta_X \theta_Y$)
- ▶ 100 μm , 200 μm , or 300 μm motion in XYZ
- ▶ Up to 3.3 mrad motion in θ_X , and up to 4.5 mrad motion in θ_Y
- ▶ Center aperture: 2.6" \times 2.6"
- ▶ Closed loop control
- ▶ **pico** sensor technology

Typical Applications

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

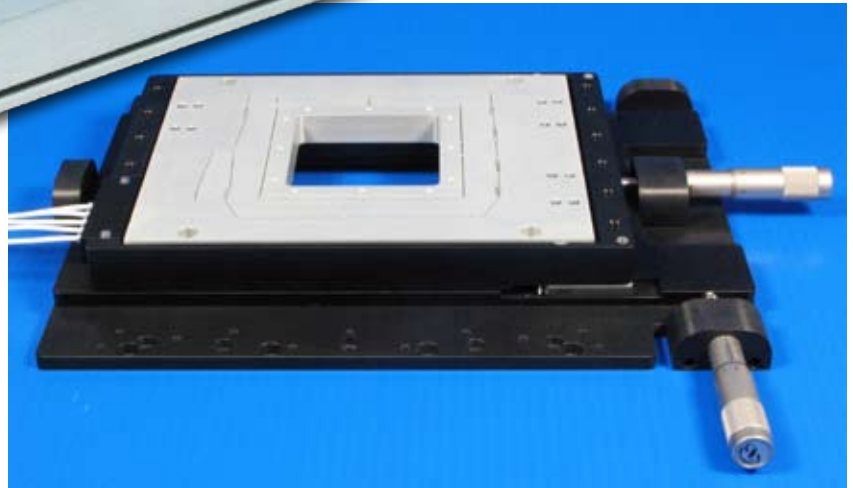
Nano-Align5 constructed from aluminum.



LabVIEW Compatible USB Interfaces



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



Nano-Align5 combined with Manual MicroStage for microscopy work.

Product Description

The Nano-Align5 is a five axis ($X, Y, Z, \theta_X, \theta_Y$) nano-positioning system with a large center aperture. The Nano-Align5 is ideal for alignment applications which require three linear axes of motion (X, Y, Z) combined with "tip" and "tilt" (θ_X, θ_Y). The large center aperture provides excellent access for microscopy optics, sample

holders, and probe placement. The Nano-Align5 includes internal sensors with proprietary **pico** technology for absolute position measurement and picometer/nanoradian accuracy under closed loop control. The Nano-Align5 can be combined with the MicroStage and Manual MicroStage for long range micropositioning.

Technical Specifications

Ranges of motion (Nano-Align5-100)	100 x 100 x 100 μm x 1.1 mrad (θ_x) x 1.5 mrad (θ_y)
Ranges of motion (Nano-Align5-200)	200 x 200 x 200 μm x 2.3 mrad (θ_x) x 3.0 mrad (θ_y)
Ranges of motion (Nano-Align5-300)	300 x 300 x 300 μm x 3.3 mrad (θ_x) x 4.5 mrad (θ_y)
Resolution (Nano-Align5-100)	0.2 nm (XYZ), 2.2 nrad (θ_x), 3.0 nrad (θ_y)
Resolution (Nano-Align5-200)	0.4 nm (XYZ), 4.6 nrad (θ_x), 6.0 nrad (θ_y)
Resolution (Nano-Align5-300)	0.6 nm (XYZ), 6.6 nrad (θ_x), 9.0 nrad (θ_y)
Resonant Frequencies	
X axis (100/200/300 μm)	450/400/350 Hz $\pm 20\%$
Y axis (100/200/300 μm)	350/300/250 Hz $\pm 20\%$
Z axis (100/200/300 μm)	450/350/250 Hz $\pm 20\%$
Stiffness	1.0 N/ μm
Recommended max. load (horizontal)*	0.5 kg
Recommended max. load (vertical)*	0.2 kg
Body Material	Al or Invar
Controller	Nano-Drive [®]

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

