

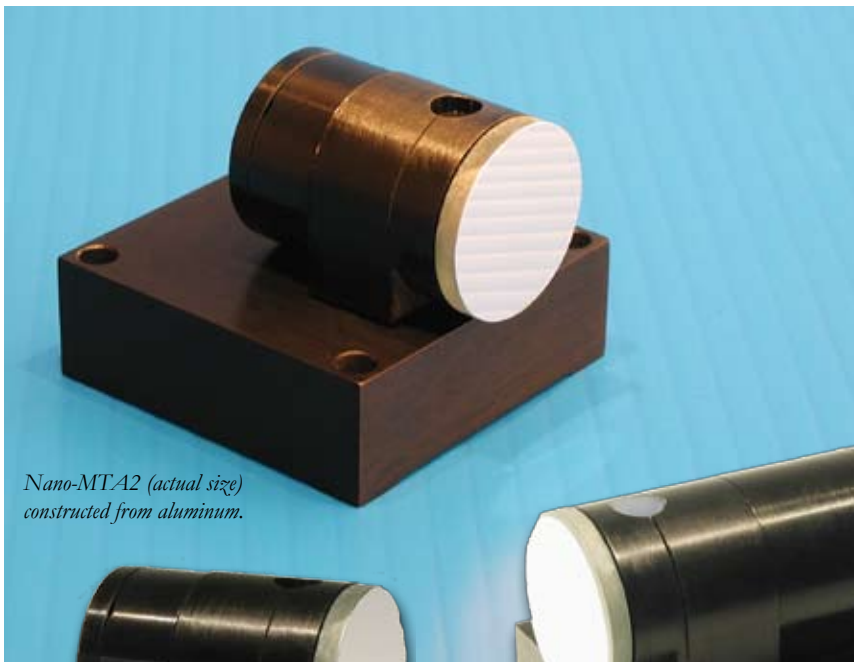
Nano-MTA Series

Features

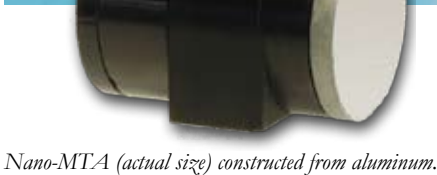
- ▶ 400 Hz high speed scans
- ▶ One or two axis motion
- ▶ 2 mrad or 5 mrad ranges of motion
- ▶ Mount in any orientation
- ▶ **pico** sensor technology
- ▶ Closed loop control
- ▶ High Stability

Typical Applications

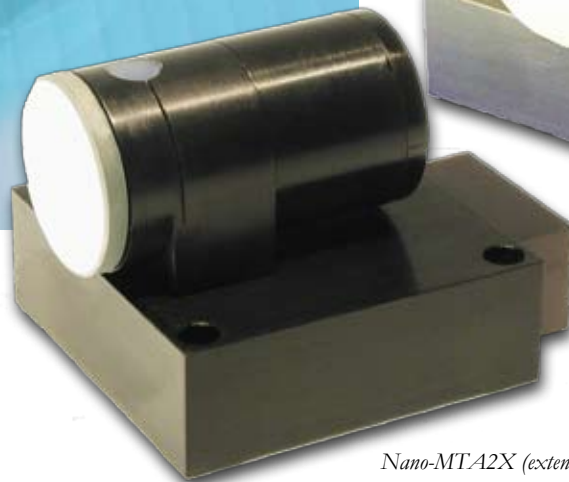
- ▶ High speed laser beam steering
- ▶ Optical trapping
- ▶ Interferometry
- ▶ FBG writing
- ▶ Optical disk manufacturing
- ▶ Astronomy
- ▶ Active optics



Nano-MTA2 (actual size)
constructed from aluminum.



Nano-MTA (actual size) constructed from aluminum.



Nano-MTA2X (extended range)
constructed from aluminum.



Nano-MTA2 (actual size)
constructed from invar and titanium.

LabVIEW Compatible USB Interfaces



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

Product Description

The Nano-MTA Series are single axis and two axis piezoelectric mirror tip/tilt actuators. With nanoradian resolution, the Nano-MTA Series is ideal for applications involving laser beam steering, tracking, and scanning. Internal position sensors utilizing proprietary **pico** technology provide absolute, repeatable position measurement under closed loop control. The Nano-MTA Series is com-

patible with either the Nano-Drive[®] or Nano-Drive[®]85 controllers. Both controllers include sensor electronics, proportional integral feedback control, and 150V amplifiers. When used with the high power Nano-Drive[®]85 controller, the Nano-MTA Series is capable of continuous, high speed scans at 400 Hz and step response times down to 2 milliseconds.

Technical Specifications

Range of motion (per axis) 2.0 mradian
 Resolution 4.0 nradian
 Range of motion (extended) 5.0 mradian
 Resolution 10 nradian
 Resonant Frequency - (with 25mm diameter x 3mm thick glass mirror)

X axis (2mrad/5mrad) 3.2kHz/2.8kHz $\pm 20\%$

Y axis (2mrad/5mrad) 1.25kHz/800Hz $\pm 20\%$

Scanning Speed up to 400 Hz

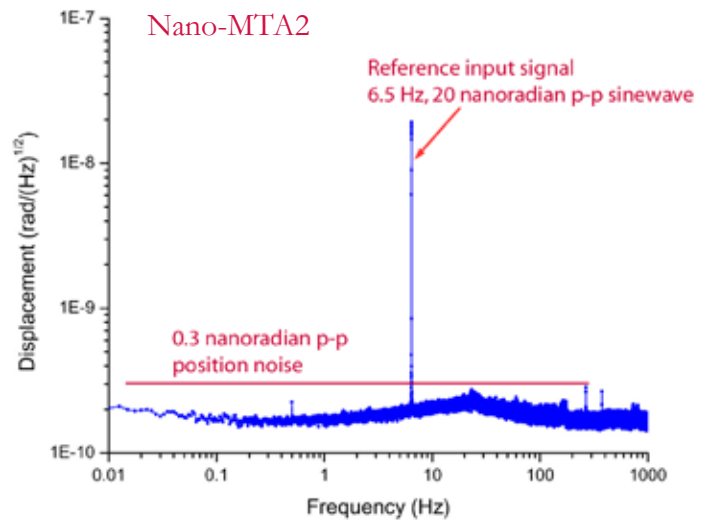
Optics 25mm diameter mirror mounting area*

Body Material Al or Invar and Titanium

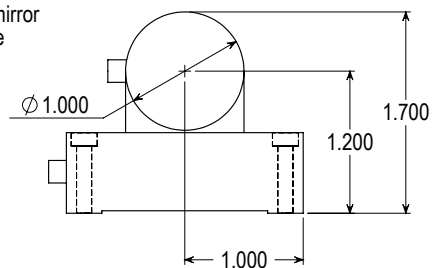
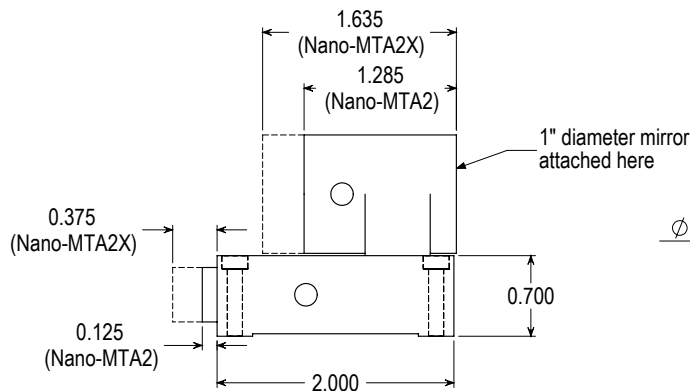
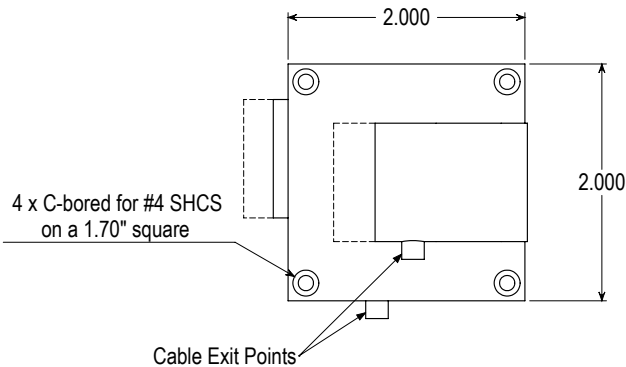
Controller Nano-Drive® or Nano-Drive® 85

* Mirrors can be attached to the Nano-MTA2 using Milbond adhesive available from Edmund Optics - stock number NT53-288.

Ultra Low Position Noise



Measured position noise of the Nano-MTA2 shows the system's exceptional stability.



Note: All Dimensions in Inches