

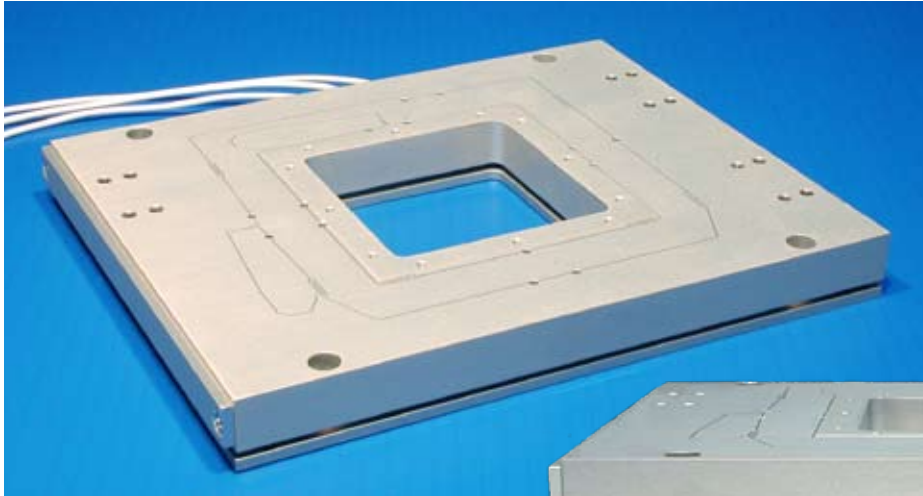
# Nano-LP Series

## Features

- ▶ Lowest profile 3-axis nanopositioner available
- ▶ Large aperture
- ▶ 100  $\mu\text{m}$ , 200  $\mu\text{m}$ , and 300  $\mu\text{m}$  ranges of motion (XYZ)
- ▶ **pico** sensor technology
- ▶ Closed loop control
- ▶ High stability

## Typical Applications

- ▶ Optical microscopy, easy to retrofit
- ▶ Optical trapping experiments
- ▶ Fluorescence imaging
- ▶ Alignment
- ▶ Single molecule spectroscopy
- ▶ Super resolution microscopy



Nano-LP100 (3-axis) constructed from aluminum.



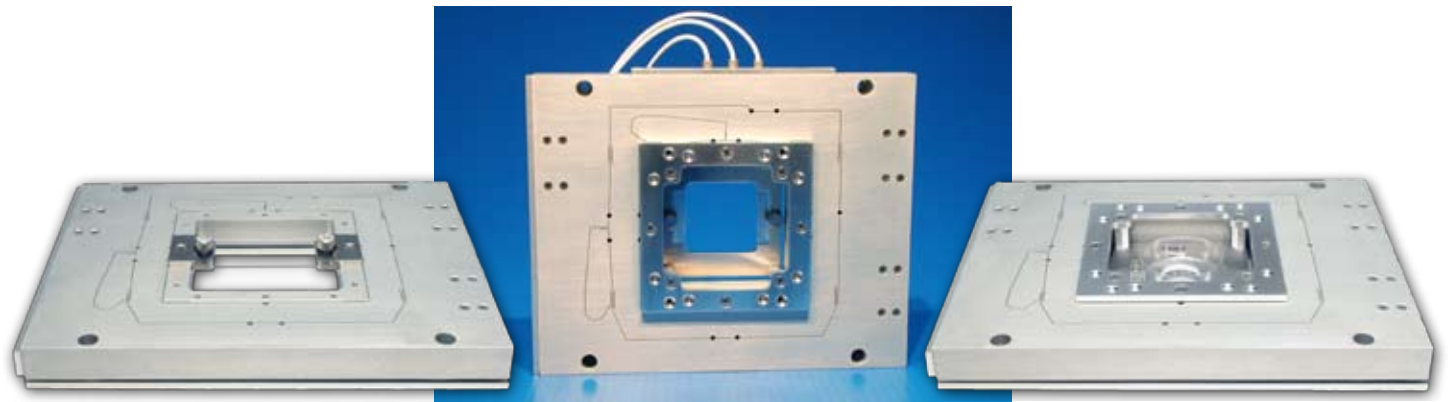
Low profile (0.8") of the Nano-LP Series.

## Compatible Software Packages



USB and analog motion control

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



Nano-LP100 with top surface slide holder (left), re-entrant slide holder (center), and petri dish holder (right).

## Product Description

The Nano-LP Series are ultra-low profile, three axis nanopositioning systems with 100, 200, and 300 micron ranges of motion in all three axes. The low height of the Nano-LP Series allows it to be easily integrated into existing inverted optical microscopes. With its extended ranges of motion, the Nano-LP Series is ideal for demanding microscopy applications which require long range

travel, fast scan rates, and three axes of motion. The Nano-LP Series' internal position sensors utilize proprietary **pico** technology to provide absolute, repeatable position measurement with picometer accuracy under closed loop control. Another stage to consider, the Nano-LPS, has similar positioning performance and a rectangular aperture sized for 3 inch slides.

## Technical Specifications

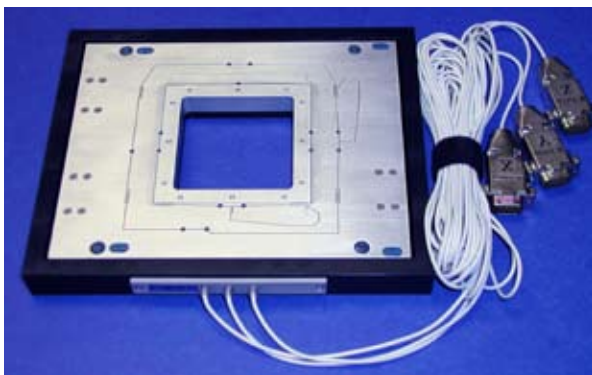
Range of motion (Nano-LP100) .....100 x 100 x 100  $\mu\text{m}$   
 Range of motion (Nano-LP200) .....200 x 200 x 200  $\mu\text{m}$   
 Range of motion (Nano-LP300) .....300 x 300 x 300  $\mu\text{m}$   
 Resolution (100/200/300  $\mu\text{m}$ ) ..... 0.2/0.4/0.6 nm  
 Resonant Frequencies  
 X axis (100/200/300  $\mu\text{m}$ ) .....450/400/350 Hz  $\pm 20\%$   
 Y axis (100/200/300  $\mu\text{m}$ ) .....350/300/250 Hz  $\pm 20\%$   
 Z axis (100/200/300  $\mu\text{m}$ ) .....450/350/250 Hz  $\pm 20\%$   
 Stiffness .....1.0 N/ $\mu\text{m}$

$\theta_{\text{roll}}, \theta_{\text{pitch}}$  (typical) .....  $\leq 1 \mu\text{rad}$   
 $\theta_{\text{yaw}}$  (typical) .....  $\leq 3 \mu\text{rad}$   
 Recommended max. load (horizontal)\* .....0.5 kg  
 Recommended max. load (vertical)\* .....0.2 kg  
 Body Material\*\* .....Al, Invar or Titanium  
 Controller ..... Nano-Drive<sup>®</sup>

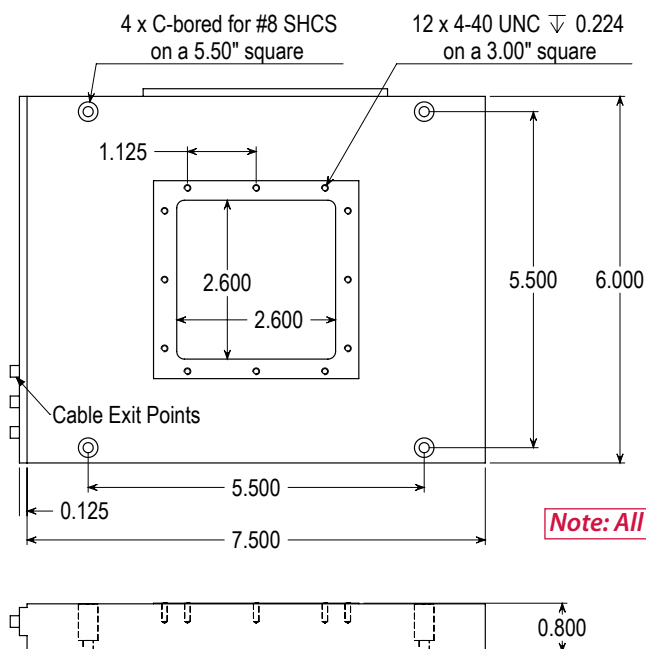
\* Larger load requirements should be discussed with our engineering staff.

\*\* Material is aluminum for Nano-LP300.

## Custom Nano-LP Series



Nano-LP100 with custom frame for vertical mounting.



Note: All Dimensions in Inches

## Low Position Noise

