Nano-View® Series

Features

- *Integrated micropositioning and nanopositioning*
- *1" (25mm) 2-axis micropositioning with encoders*
- *2-axis or 3-axis nanopositioning up to 300 µm*
- *Large aperture - fits 3 inch slides*
- *Retrofit to inverted microscopes*
- *picoQ® sensor technology*
- *Closed loop control*

Typical Applications

- *Optical microscopy, easy to retrofit*
- *Confocal imaging*
- *Fluorescence imaging*
- *Single molecule spectroscopy*
- *Nanomanipulation*
- *STORM and PALM imaging*

Nano-View® 300-3 (2-axis (XY) micropositioning plus 3-axis (XYZ) nanopositioning) mounted on a Nikon inverted microscope.

Compatible Software Packages

LabVIEW — *USB and analog motion control*

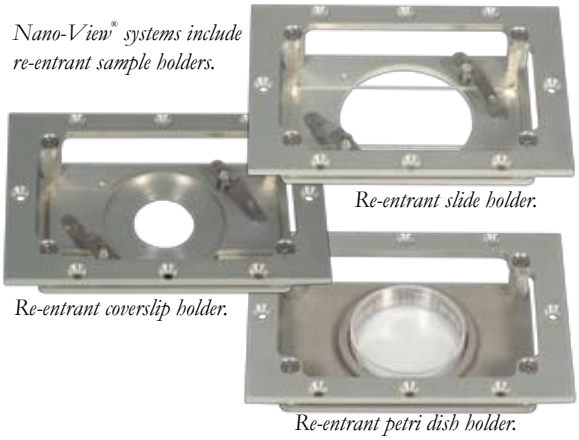
Image-Pro AMS — *Examples, tutorial, and Nano-Route® 3D supplied with Nano-Drive® USB interfaces.*

µManager (THE OPEN SOURCE MICROSCOPY SOFTWARE) — *USB motion control*

MetaMorph® — *USB and analog motion control*

SLIDEBOOK 5.0 — *Analog motion control, 1 or 2 axes.*

Nano-View® systems include re-entrant sample holders.



Re-entrant slide holder.

Re-entrant coverslip holder.

Re-entrant petri dish holder.

Product Description

The Nano-View® is a fully integrated positioning system for use with inverted optical microscopes. The Nano-View® combines a long range, motor driven, two axis, linear motion stage with an ultra-low profile, high resolution nanopositioning system. The micropositioning stage has integrated linear encoders and provides 25 mm of travel per axis with an encoder resolution of 20 nm. The minimum step size is 95 nm with a step repeatability of 50 nm. The nanopositioning systems built into the Nano-View® have the lowest profile available and have ranges of motion extending up to 300 microns per axis (X,Y and Z). Internal position sensors utilizing proprietary picoQ® technology provide absolute, repeatable position measurement with sub-nanometer resolution under closed loop control. A Nano-View® system includes the Nano-Drive® controller and the Micro-Drive™ controller which connects to a PC using a standard USB computer interface. The MicroDrive™ is fully compatible with user written LabVIEW software and the system is provided with a basic LabVIEW motion control routine for positioning in XY. The Nano-View® is the complete picometer scale positioning system for single molecule spectroscopy and high resolution microscopy applications. Standard Nano-View® systems are offered for the following inverted microscopes: Olympus IX/IX2 Series, Nikon TE2000/Ti Series, Leica DMI Series, and Zeiss Axiovert/Axio Observer Series. Nano-View® systems designed to fit other setups, including direct mounting to optical tables, may also be requested.

Technical Specifications

Nanopositioners

Axes of motion ..... XY or XYZ
Ranges of motion (XY or XYZ) ..... 100/200/300 µm
Resolution (100/200/300 µm) ..... 0.2/0.4/0.6 nm
Resonant Frequencies
X axis (100/200/300 µm) ..... 400/350/300 Hz ±20%
Y axis (100/200/300 µm) ..... 400/350/300 Hz ±20%
Z axis (100/200/300 µm) ..... 400/300/200 Hz ±20%
Stiffness ..... 1.0 N/µm
θ_{roll} , θ_{pitch} (typical) ..... ≤1 µrad
θ_{yaw} (typical) ..... ≤3 µrad
Recommended max. load (horizontal)* ..... 0.5 kg
Body Material ..... Al, Invar or Titanium
Controller ..... Nano-Drive®

High Speed Nanopositioner

Axes of motion ..... XYZ
Ranges of motion (XY) ..... 75 µm
Range of motion (Z) ..... 50 µm
Resolution (50/75 µm) ..... 0.1/0.15 nm
Resonant Frequency (XYZ) ..... 1000 Hz ±20%
Stiffness ..... 1.0 N/µm
θ_{roll} , θ_{pitch} (typical) ..... ≤1 µrad
θ_{yaw} (typical) ..... ≤3 µrad
Recommended max. load (horizontal)* ..... 100 g
Body Material ..... Aluminum
Controller ..... Nano-Drive®85

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

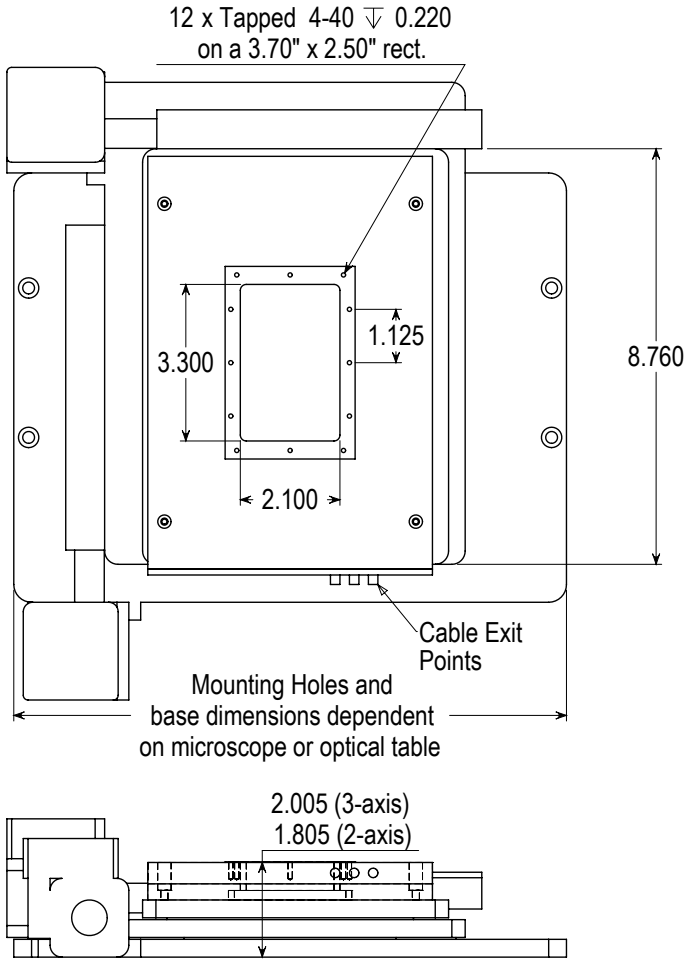
Micro-Drive™ controller used to operate the micropositioning portion of the Nano-View® system. A standard USB port allows direct connection of the Micro-Drive controller to a PC. The Nano-Drive® controller (see Nano-Drive® section of catalog) operates the nanopositioning portion of the Nano-View® system. Both controllers are LabVIEW compatible.

Note: Additional information regarding the built-in nanopositioning systems can be found on the catalog pages which describe the Nano-LPS Series, the Nano-BioS Series, and the Nano-LPQ.

Micropositioner

MicroStage-20E

Step size ..... 95 nm
Encoder resolution ..... 20 nm
Axes of motion ..... XY
Range of motion (XY) 25mm
Step repeatability ..... 50 nm
Body Material ..... Aluminum
Controller ..... Micro-Drive™



Note: All Dimensions in Inches