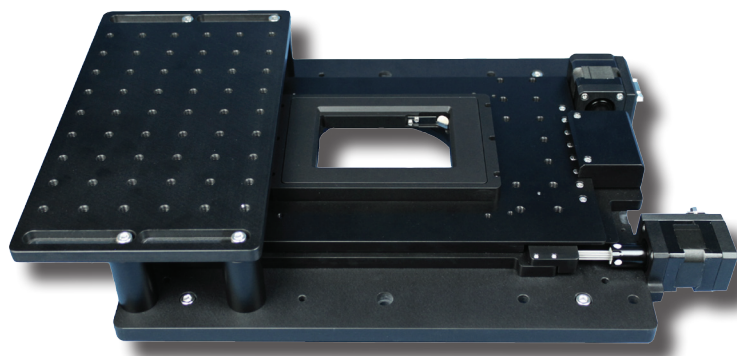


## Features



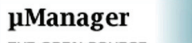


- ▶ Ultra-stable positioning
- ▶ Integrated micro- and nanopositioning
- ▶ 1" (25mm) XY micropositioning
- ▶ Z-axis closed loop nanopositioning
- ▶ Holders for 75mm slides & 35mm petri dishes
- ▶ Fits inverted optical microscopes and optical tables
- ▶ **pico** sensor technology

## Typical Applications

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



**Compatible Software Packages**

 <small>NATIONAL INSTRUMENTS</small> <b>LabVIEW</b> control	 <b>Image-Pro</b> <small>AMS</small> USB and analog motion control	 <b>µManager</b> <small>THE OPEN SOURCE MICROSCOPY SOFTWARE</small> USB motion control
Examples, tutorial, and Nano-Route 3D supplied with Nano-Drive USB interfaces.	 <b>MetaMorph</b> USB and analog motion control	 <b>SLIDEBOOK 5.0</b> Analog motion control, 1 or 2 axes.

Above: Optical table compatible MCL-MOTNZ with an optional breadboard  
 Right: Compact controllers for the MCL-MOTNZ



## Product Description

The MCL-MOTNZ is a value priced positioning system for use with inverted optical microscopes. The MCL-MOTNZ combines a stepper motor XY linear motion stage with a closed loop, high resolution Z-axis nanopositioning system. The micropositioning stage provides 25 mm of travel per axis with a minimum step size of 95 nm. The use of high precision components and our proprietary intelligent control technique results in an ultra-stable microscope platform with excellent native precision without the addition of costly encoders. The MCL-MOTNZ z-axis nanopositioner has a travel range of 200 microns and integrates into the nano-qualified microstage. Internal position sensors utilizing proprietary PicoQ® technology provide absolute, repeatable position measurement with sub-nanometer resolution under closed loop control.

The MCL-MOTNZ system includes our compact series of USB 2.0 enabled Nano-Drive®C and Micro-Drive™C controllers. These controllers are fully compatible with user written LabVIEW software and are provided with a basic LabVIEW motion control routine for positioning in all axes. Optional wireless gamepad control is also available.

The MCL-MOTNZ is the complete nanometer positioning system for single molecule spectroscopy and high resolution microscopy applications. The MCL-MOTNZ is compatible with the Olympus IX Series, Nikon TE/Ti Series, Leica DMI Series, and Zeiss Axiovert/Axio Observer Series. MCL-MOTNZ systems are also compatible with other configurations and direct mounting to optical tables. Available options: sample holders, breadboard (metric or imperial).

# Technical Specifications

## Micropositioner

Axes of motion .....	XY
Range of motion (XY) .....	25mm
Minimum step size .....	95 nm
Repeatability .....	<100 nm
Speed .....	2 mm/sec
Body Material .....	Aluminum
Controller† .....	Micro-Drive™C
Digital Interface .....	USB 2.0

## Nanopositioner

Axis of motion .....	Z
Ranges of motion .....	200 μm
Resolution .....	0.4 nm
Resonant Frequency .....	250 Hz ±20%
Recommended max. load (horizontal)* .....	0.5 kg
Body Material .....	Aluminum
Controller† .....	Nano-Drive®C
Digital Interface.....	USB 2.0
Analog Input .....	0V to 10V

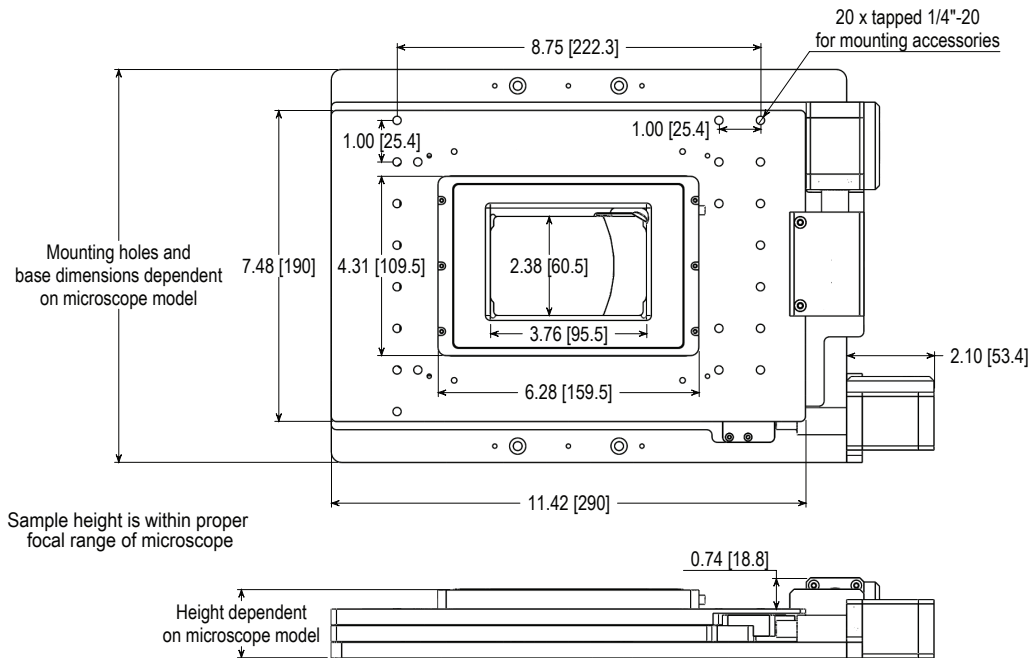
\* Larger load requirements should be discussed with our engineering staff.  
 † Compact series of controllers.



35mm petri dish holder



75mm slide holder



All Dimensions in Inches [mm]