MicroStage Series

Features

- *Long range 2-axis motion: 25mm*
- *Precision encoders: 5 nm resolution*
- *Less than 5 nm drift*
- *Easily retrofit to inverted microscopes and customize for other optical setups*
- *LabVIEW compatible*
- *"Plug and Play" USB computer interface*

Typical Applications

- *Complex, programmed motion control*
- *Optical microscopy*
- *Micropositioning with high resolution position feedback*

Compatible Software Packages

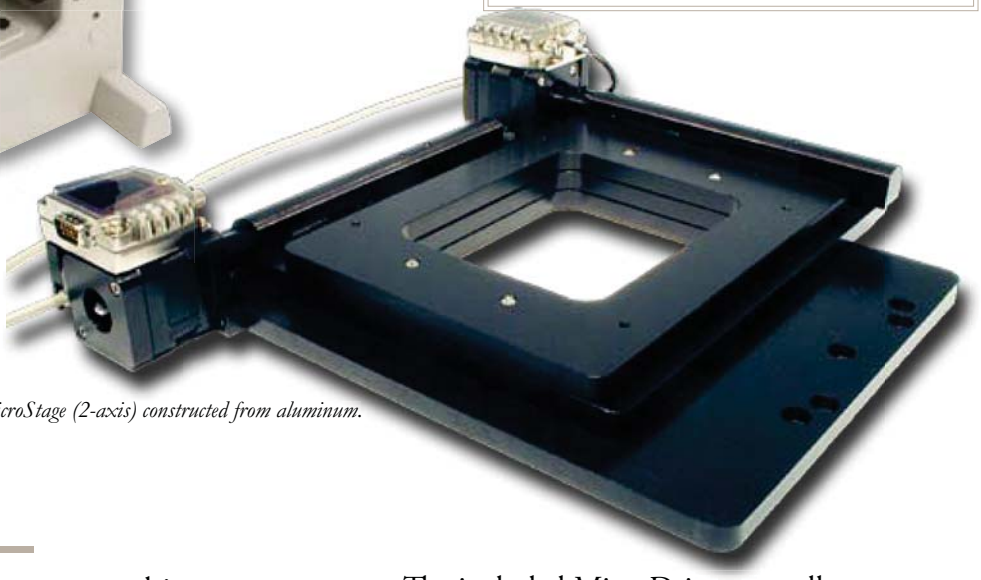
LabVIEW

µManager
THE OPEN SOURCE MICROSCOPY SOFTWARE

USB motion control

Examples supplied for the Micro-Drive controller

MicroStage (2-axis) mounted on a Nikon TE Series inverted microscope.



MicroStage (2-axis) constructed from aluminum.

Product Description

The MicroStage is a precision, stepper motor driven, micropositioning system for inverted optical microscopes or customized for special mounting requirements. Long range linear positioning in two axes (XY) with high resolution and excellent repeatability results from the integrated, interferometric linear encoders located on each axis. The MicroStage also offers high stability with less than 5nm drift after a 150 micron step. The MicroStage-20E model provides 25 mm of travel per axis with an encoder resolution of 20 nm and a minimum step size of 95 nm. The MicroStage-5E model has increased encoder resolution of 5nm and a minimum step size of 25nm over the same 25mm travel range. The included MicroDrive controller connects to a PC via a standard USB port. Motion commands from the PC are translated into the final stepper motor drive signals. Signals from the two linear encoders are conditioned and are available for USB transfer into the PC. The MicroDrive controller is LabVIEW compatible and the system is provided with a basic LabVIEW motion control routine for positioning in XY. Standard MicroStages are offered for the following inverted microscopes: Olympus IX Series, Nikon TE2000 Series, Leica DMI Series, and Zeiss Axiovert Series. MicroStages for other setups may also be requested.

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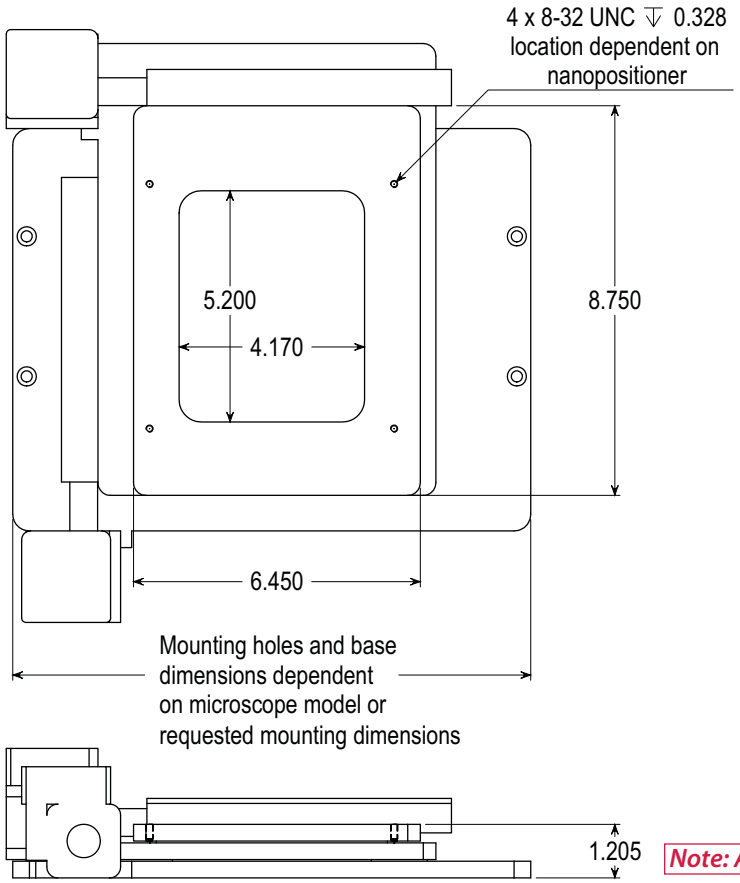
Technical Specifications

Range of motion (X) ..... 25 mm
Range of motion (Y) ..... 25 mm
Resolution (MicroStage-20E) ..... 20 nm
Resolution (MicroStage-5E) ..... 5 nm
Step Size (MicroStage-20E) ..... 95 nm
Step Size (MicroStage-5E) ..... 25 nm
Maximum Speed (MicroStage-20E) ..... 4 mm/sec
Maximum Speed (MicroStage-5E) ..... 2 mm/sec
Motion Profile
Motion ≥100 steps ..... Automatic accel/decel control
Motion <100 steps ..... Constant 5ms/step

Recommended max. load*.....5 kg
Body Material ..... Aluminum
Controller .....Micro-Drive

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

Micro-Drive™ controller used to operate the MicroStage. A standard USB port allows direct connection of the Micro-Drive™ controller to a PC. LabVIEW compatible.



Note: All Dimensions in Inches