

Features

- ▶ *Single axis micropositioning*
- ▶ *High stability, precision aligned with built-in right angle mount*
- ▶ *25mm travel with 95nm step*
- ▶ *Low drift, intelligent motor control*
- ▶ *Compatible with Nano-OP30*

Typical Applications

- ▶ *Scanning Probe microscopy*
- ▶ *Nanomanipulation*



SPM-MZ shown in a vertical orientation and with a Nano-OP30 nanopositioner.

LabVIEW Compatible USB Interfaces



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



Product Description

The SPM-MZ is a precision aligned, highly stable single axis micropositioner designed as a Z-axis approach for scanning probe microscopes. The SPM-MZ employs our proprietary intelligent motor control for low drift performance and incorporates a built-in right angle bracket to ensure high stability. The total travel range of the SPM-MZ is 25mm with a minimum step size of 95nm. An optional high resolution linear encoder may be ordered to continuously monitor positions down to 20nm. The USB digital interface provides direct PC control of the micropositioner as well as access to the linear encoder.

The SPM-MZ is compatible with standard optomechanical components, including tables, and Mad City Labs Nano-OP30 nanopositioners. Combining the SPM-MZ with the Nano-OP30 offers the user an integrated Z-axis approach with both long range travel and closed loop sub-nanometer precision making it ideal high resolution probe microscopy.

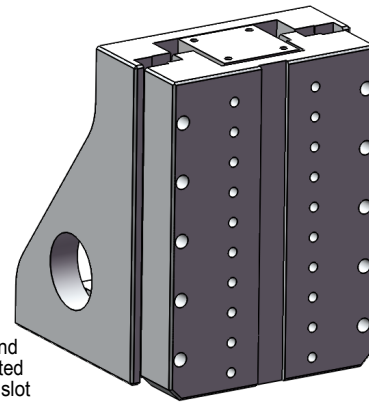
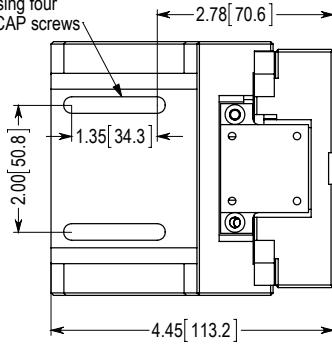
The SPM-MZ is recommended as a high stability automated Z-approach upgrade for our SPM-M kit. For users requiring ± 25 mm motion, we recommend the RM21-MZ.

Technical Specifications

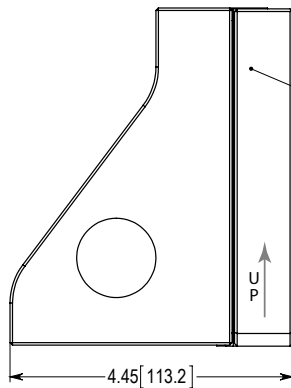
Micropositioner

Range of motion (micropositioner) 25 mm
 Micropositioning step size 95 nm
 Maximum speed..... 2 mm/sec
 Motion Profile
 Motion >500 steps Automatic accel/decel control
 Motion ≤500 steps Constant 1 step/ms
 Linear encoder resolution 20 nm
 Body Material Aluminum
 Controller Micro-Drive™
 Computer interface Bidirectional USB

2 x slots for mounting,
 recommend using four
 1/4" or M6 SHCAP screws



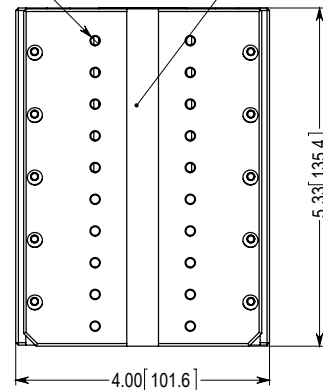
Adapter plates for the Nano-OP and Nano-OP-M can be precisely located at any height using the precision slot and 8-32 [M4] holes.



Translating portion of SPM-MZ.
 Position shown is nominal zero position.

For SPM-MZ:
 The translating portion moves 25 mm up from the zero position.

20 x 8-32 [M4] UNC
 Precision slot for alignment of adapter plates.



Note: All Dimensions in Inches [mm]