

Nano-PDQ Series

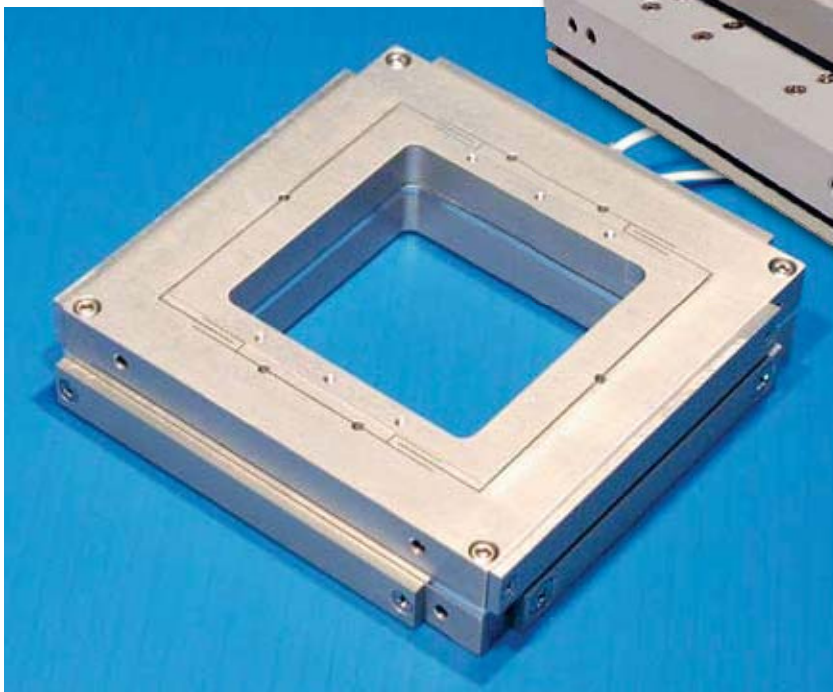
Features

- ▶ High speed, direct drive
- ▶ Two or three axis motion
- ▶ 50 μm or 75 μm ranges of motion
- ▶ Large aperture
- ▶ Large load capacity
- ▶ **pico**™ sensor technology
- ▶ Closed loop control

Typical Applications

- ▶ Fast multi-axis scanning
- ▶ Optical trap calibration
- ▶ Particle tracking

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Nano-PDQ250 (2-axis) constructed from aluminum.



Nano-PDQ350 (3-axis)
constructed from aluminum.

Compatible Software Packages



Examples, tutorial,
and Nano-Route™ 3D
supplied with Nano-
Drive™ USB interfaces.



MetaMorph™
USB and analog
motion control

USB motion control

Product Description

The Nano-PDQ Series are high speed multi-axis precision nanopositioning systems. The Nano-PDQ Series offers a compact footprint with a large center aperture while still offering fast performance and a resonant frequency greater than 2kHz. The Nano-PDQ Series are ideal for applications that demand high scan rates or large load capacities. When used with the Nano-Drive™85 controller (model numbers with the HS suffix) step response times

down to 2 milliseconds are achievable, nearly 10 times the speed of comparable systems! The Nano-PDQ Series features parallel, uncoupled motion in up to three axes and fully integrated position sensors utilizing proprietary **pico**™ technology to provide absolute, repeatable position measurement and picometer accuracy under closed loop control.

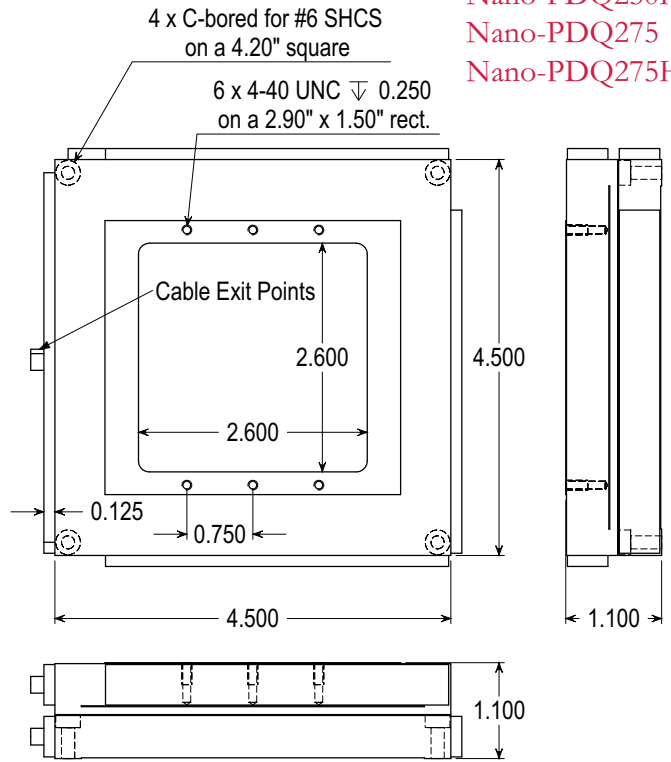
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Technical Specifications

Range of motion (X)	50 μ m/75 μ m
Range of motion (Y)	50 μ m/75 μ m
Range of motion (Z)	50 μ m
Resolution (50/75 μ m).....	0.1/0.15 nm
Resonant Frequency (X)	2.5 kHz \pm 20%
Resonant Frequency (Y)	1.5 kHz \pm 20%
Resonant Frequency (Z)	1.0 kHz \pm 20%
Scanning Speed	up to 400 Hz
Stiffness	3.0 N/ μ m
θ_{roll} , θ_{pitch} (typical)	≤ 1 μ rad
θ_{yaw} (typical)	≤ 3 μ rad
Recommended max. load (horizontal)*	0.5 kg
Recommended max. load (vertical)*	0.2 kg
Body Material	Al, Invar or Titanium
Controller	Nano-Drive™ or Nano-Drive™85

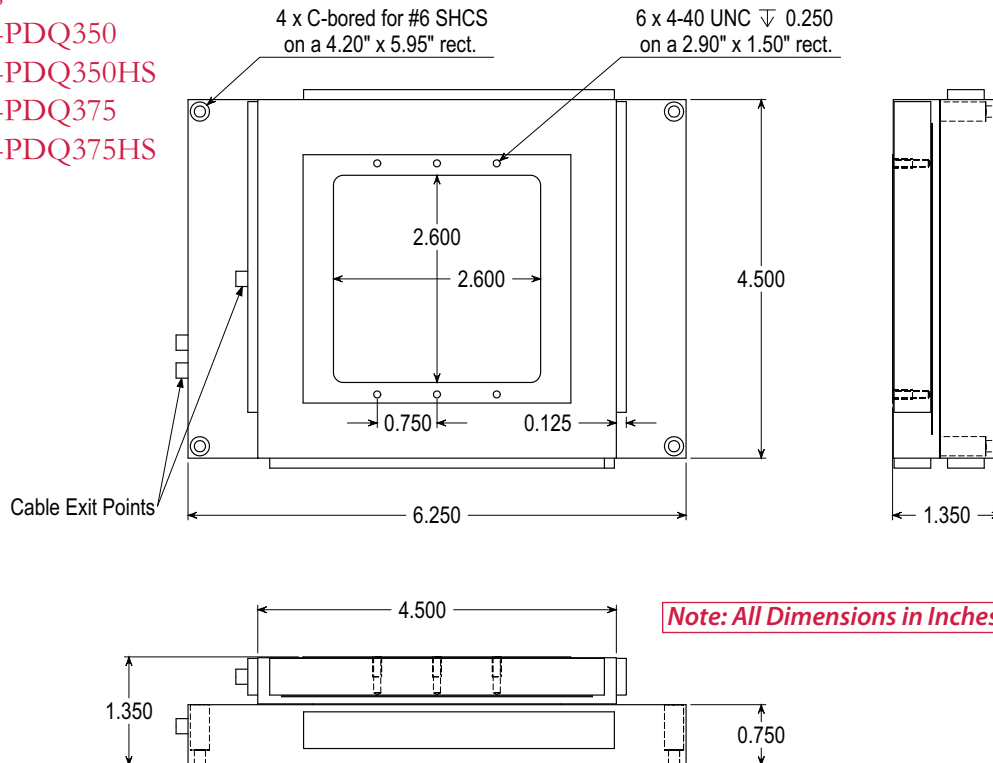
* Larger load requirements should be discussed with our engineering staff.

2-Axis
 Nano-PDQ250
 Nano-PDQ250HS
 Nano-PDQ275
 Nano-PDQ275HS



Note: All Dimensions in Inches

3-Axis
 Nano-PDQ350
 Nano-PDQ350HS
 Nano-PDQ375
 Nano-PDQ375HS



Note: All Dimensions in Inches

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