Linear Piezo Nanopositioners are Ideal for Applications Ranging from Microscopy to Optics Alignment

Travel ranges from 100 µm to 600 µm available

Long device lifetime

High-precision, frictionless flexure guidance system

Superior positioning resolution and linearity to 0.007% with direct-metrology capacitive sensor options

Mounting compatibility with other QNP-series piezo nanopositioners

Open-loop and vacuum versions



Aerotech's QNP-L series linear piezo nanopositioning stages give nanometer-level performance in a compact, high-stiffness package. A variety of travel and feedback options make these stages ideal for applications ranging from microscopy to optics alignment.

High Quality in a Compact Package

The QNP-L linear piezo stages are guided by precision flexures optimized using finite element analysis to ensure high-stiffness and long life. This design offers best-in-class stiffness and resonant frequency for high process throughput and fast closed-loop response. The design also provides unparalleled geometric performance (straightness and angular errors) while minimizing overall stage package size.

High-Resolution and Positioning Accuracy

All QNP-L piezo stages offer closed-loop feedback using a unique capacitive sensor design that yields sub-nanometer positioning resolution and high-positioning accuracy (linearity). The capacitive sensors directly measure the output of the positioning carriage, enabling superior linearity and positioning repeatability when compared to indirect feedback metrology techniques such as strain-gage feedback.

Ultra-Precision Control

When coupled with Aerotech's Q-series controllers and drives, QNP-L piezo nanopositioning stages demonstrate sub-nanometer positioning resolution and in-position stability (jitter), and high-positioning bandwidth. Aerotech's Dynamic Controls Toolbox and Motion Designer software packages provide a host of advanced yet easy-to-use tools such as Learning Control, Harmonic Cancellation, and Command Shaping, providing improved tracking errors and faster step-and-settle times.

Automatic parameter and calibration identification is accomplished with Aerotech's FlashConfig feature. The stage is automatically identified and all operational parameters including axis calibration data are uploaded into the controller ensuring safe, accurate, and true "plug-and-play" operation.

Design Flexibility

Aerotech's QNP-L piezo stages are available with capacitive sensor feedback or without feedback (open-loop). An optional mounting plate provides direct mounting to English or metric breadboard optical tables. Common travels of the X, XY, and Z stages mount together without adapter plates. All QNP piezo stages are available in vacuum-prepared versions upon request.

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The QNP-L series data sheet is available at: http://www.aerotech.com/product-catalog/piezo-nanopositioners/qnp-l-series.aspx

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