

High-Performance Scanning and Metrology



A-323 Planar Air Bearing Scanner for Highly Dynamic XY Motion and Flexible Axis Integration

The A-323 air bearing planar XY scanner is the next evolution of the A-322 platform. Providing 500 x 500 mm travel in its basic configuration, the new architecture is designed to improve precision and repeatability while enabling significantly higher acceleration, faster step-and-settle performance, and greater flexibility for integrating additional motion axes.

Key Improvements

✓ Split-Beam Cross-Axis Design

Reduces the load's center of gravity and Abbe errors while improving yaw control and repeatability.

✓ Reaction-Force Transfer Architecture

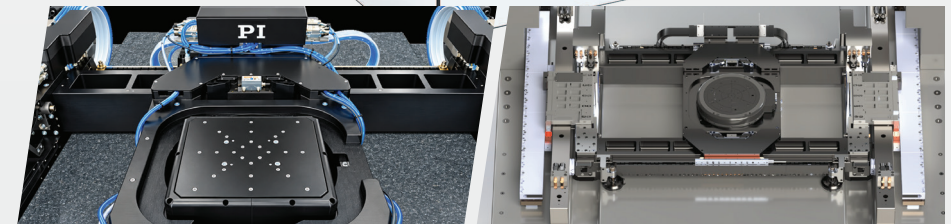
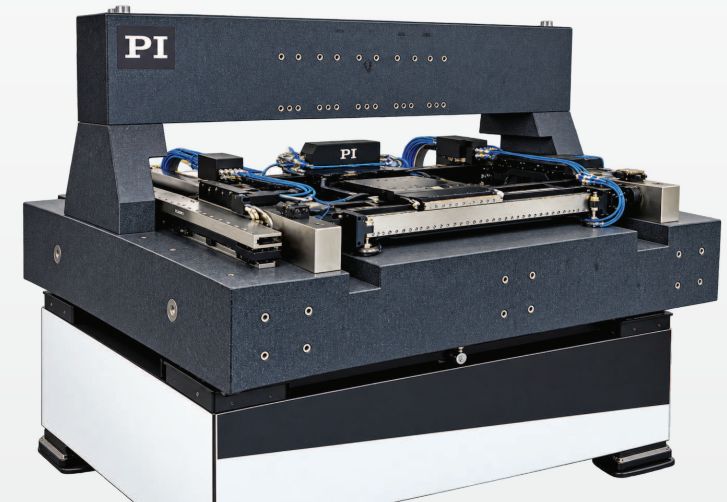
Reduces vibration and enables faster acceleration and settling.

✓ Improved Cable Routing

Simplifies installation and integration of customer-provided equipment.

✓ Flexible Central Pocket

Accommodates additional motion modules for Z, tip/tilt, and rotation.



Travel / Speed / Accuracy

Travel Range: 500x500mm
Max Velocity: 2m/s
Accuracy: 0.1 μ m
Pitch/Yaw: 10/2 μ rad



Acceleration

Approximately 2 g



Potential Applications

Semiconductor metrology and inspection
Photonics
Precision measurement

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Engineering for More Dynamic Performance

The A-323 introduces a new system architecture designed to improve precision and repeatability while enabling higher acceleration, faster step-and-settle performance, and flexible integration of additional motion axes.

Split-Beam Cross-Axis Design

The split-beam design allows the payload to sit lower and closer to the motor force plane, reducing pitching and rocking during acceleration. It also reduces the Abbe offset between the payload and encoder measurement plane. The gantry configuration provides better yaw control across the working area.

Flexible Central Pocket

The flexible central pocket allows different motion modules to be integrated depending on the application. Options include the A-523 Z-tip/tilt stage, a compact 5 mm Z stage, rotary axis, or rotary/Z/tilt modules. Keeping these additional axes low helps preserve the dynamic advantages of the architecture.

Reaction-Force Transfer Architecture

Motor reaction forces are redirected into the machine frame rather than exciting the precision positioning structure. This reduces disturbances during high-acceleration moves and can significantly improve settling following a step, supporting the more dynamic performance of the A-323.

System Integration

Newly developed air-bearing pucks improve stiffness and stability. Integrated cable tracks, pneumatic routing, and provisions for the cooling system ensure cleaner implementation and help make the platform easier to integrate into larger automation and metrology systems.

LET'S TALK ABOUT YOUR APPLICATION

Discuss your process requirements and the right approach with our experts.

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