

AI-ABL Series

Linear Air Bearing Series

For Further Information Contact

Heason Technologies Group Ltd

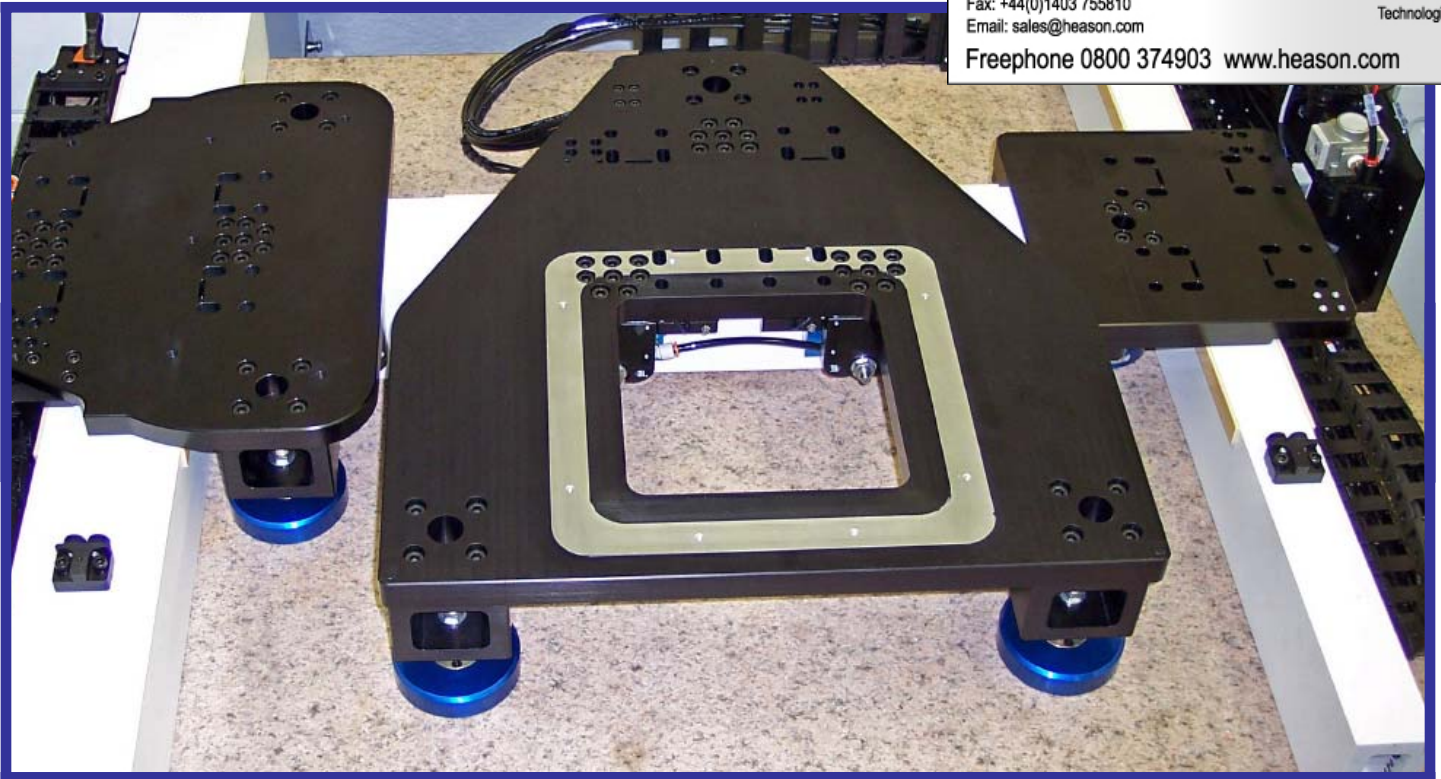
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Heason
Technologies Group



Ultra Precision Linear Air Bearing System

The ALIO Advantage:

- Planar Air Bearing for Superior Flatness (No Beam Sag)
- Advance Ceramic Servo Motors or High Force Linear Motors
- Decoupled Thermal Influences
- Travel Options Over a Meter
- Dual Y Axis Motion Control for Sub Arc Second Yaw Control
- Resolution: 5nm Standard, 38 pico-meter with Laser Interferometer
- No Servo Dither (no oscillation)
- No Hysteresis
- No Backlash
- Fast settling time



AI-ABL Series Specifications

System Travel	300 mm x 300 mm	500 mm x 500 mm	1 meter x 1 meter
Drive System	Advanced Ceramic Servo Motor or Ironless Core Linear Motor		
Feedback System	Non Contact Optical Encoder or Laser Interferometer Feedback		
Resolution – Linear Encoder	5 nanometers with 4096x Interpolation		
Resolution – Laser Interferometer	38 picometers with 4096x Interpolation		
Load	Load Capacity is Sized for the Application (Please Consult the Factory)		
Accuracy – Linear Encoder (XY)	Better Than +/- 0.5 um	Better Than +/- 0.75 um	Better Than +/- 1.0 um
Accuracy – Laser Interferometer (XY)	+/- 10 ppm Standard, +/- 1.5 ppm Compensated		
Repeatability – Linear Encoder (XY)	+/- 50 nm	+/- 60 nm	+/- 80 nm
Repeatability – Laser Interferometer (XY)	+/- 10 nm	+/- 20 nm	+/- 30 nm
Straightness	+/- 0.5 um	+/- 1.0 um	+/- 1.5 um
Flatness (XY, Dependant on the Granite)	< +/- 0.5 um	< +/- 0.5 um	< +/- 1.0 um
Pitch/Roll	< 1 arc-second		
Yaw	1 arc-second		
Orthogonality	1 arc-second		

Performance specifications are dependant on the controller, motor, mapping, loads and require stringent environmental controls over short time periods.

The ALIO Industries Nano Precision Planar Air Bearing System has raised the bar to a new level of performance for air bearing motion. This engineered system was designed to exceed today's demanding requirements in semiconductor wafer, flat panel display, nano-manufacturing and optical inspection.

Air Bearing Design

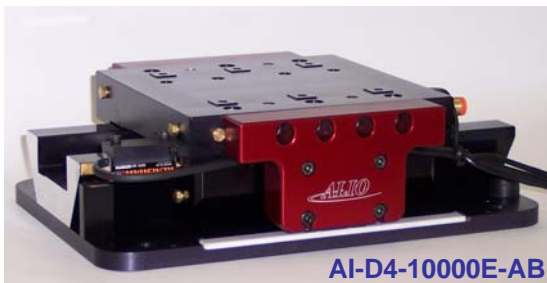
ALIO Industries incorporates simple engineering principals with our planar air bearing system. The three point vacuum preloaded air bearings of the platen ride directly on the granite surface for superior flatness of travel. There is no opportunity for the load to cause sag. This design also decouples any thermal propagation generated by the motors from the platen.

Motor Drive

ALIO Industries offers both advanced ceramic servo motors or ironless core linear motors on our air bearing systems. The ceramic servo motors offer nanometer level motion control while the linear motors offer high force and high speed.

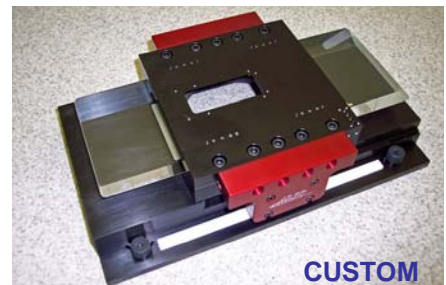
Position Feedback

High resolution linear optical encoders come standard with resolutions down to 5nm. Laser interferometer closed loop motion control feedback is also available for 38 picometer resolution.



AI-D4-10000E-AB

**Other Nano-Precision
Air Bearing Solutions
Offered By
ALIO Industries**



CUSTOM



Made in the U.S.A.

03/02/06

