

FEATURES

ALS130H Linear Stage

Latest Software Releases

Motion Control and Positioning Library

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ALS130H — Big Linear Motion Performance in a Little Package

The ALS130H, with its sub-nanometer resolution, superior bi-directional repeatability, and exceptional low-velocity performance, is the unparalleled solution for high performance test, measurement, inspection, and other demanding applications.

Unlike many stages that utilize a side-drive lead screw, the ALS130H employs a center-driven, non-cogging linear motor as the driving element. Since the linear motor is a direct-drive device, there is no backlash, windup, or "stiction" that is normally associated with a lead screw or ball-screw drive.

The linear motor drive also offers the advantage of higher speeds and accelerations. The compact yet powerful linear motor drives the ALS130H to a peak unloaded acceleration of 1 g and a maximum velocity of 300 mm/s. The result is a high-performance stage with outstanding throughput that significantly outperforms comparable high-accuracy screw-driven stages.



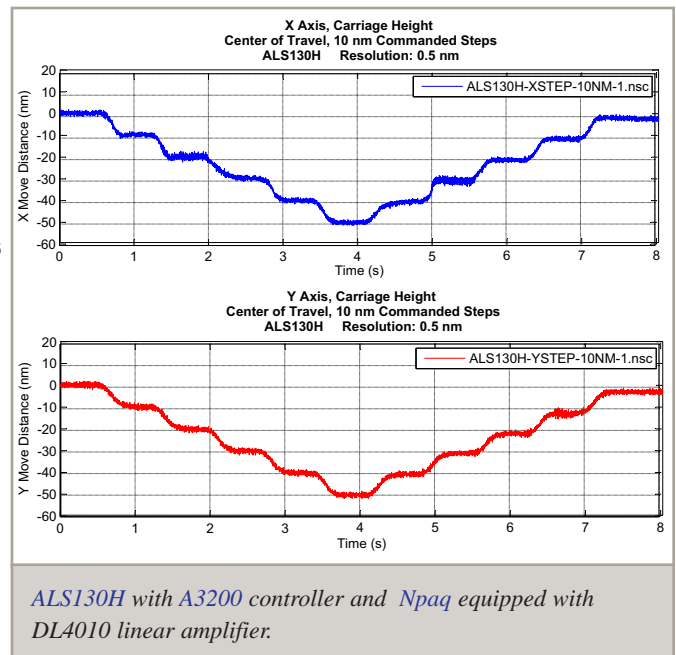
The Aerotech ALS130H linear stage.

Exceptional Resolution

For alignment applications, outstanding step-to-step resolution is critical. The ALS130H meets this demand with a resolution of 0.5 nm when coupled with Aerotech controls.

The direct-drive linear motor allows the ALS130H to make precise, small resolution steps. This is particularly important in alignment

applications where step accuracy is critical. Furthermore, the linear motor and high resolution encoder system also provide excellent in-position stability.



ALS130H with A3200 controller and Npaq equipped with DLA010 linear amplifier.

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Superior Geometry

Aerotech's ultra-stiff construction and compact two-piece design result in a stage with unmatched geometrical tolerances. As a result, straightness and flatness for the standard stage is $< \pm 2 \mu\text{m}$ over the entire travel.

Smooth Travel

Designed for smooth, vibration-free motion, the ALS130H utilizes precision anti-cage creep cross-roller bearings for outstanding smoothness of motion. Since neither the bearing system nor the drive system utilize any recirculating elements, the ALS130H exhibits the outstanding ripple-free motion required for scanning and inspection applications.

Precision Alignment

ALS130H series stages are easily configured as XY assemblies. Options include precision orthogonality alignment to 5 arc seconds and available vertical axis solutions.

Please go [HERE](#) to discuss your motion application with an Aerotech Application Engineer.

Latest Software Releases

This section lists the latest revisions of Aerotech software, providing a handy method of checking to see that your Aerotech software, and hence your Aerotech system, is working at peak efficiency. All Aerotech software is available for instant download from our website — just click the software title! An entry in **red** means the software has been updated since our last newsletter.

Software	Version	Description
A3200 Digital Automation Platform	Version 2.21.002	Nmotion [®] SMC Libraries and Utilities, Ncontrol [®] Software Developers Kit, Nview [®] HMI, Windows Help Files
Soloist Single-Axis Controller	Version 2.09.002	Development Tools, Libraries, Help Files, and Manuals
Ensemble Multi-Axis Controller	Version 2.00.002	Development Tools, Libraries, Help Files, and Manuals
U600 HMI	Version 6.00.136	Windows [®] HMI
U600 SDK	Version 6.00.136	U600 Software Developers Kit
U600 LIB	Version 6.00.136	Windows [®] Help File, U600 Libraries and Utilities
U500 PC-Bus-Based Controller	Version 5.22	Windows [®] HMI and Windows [®] Help File
U511 Stand-Alone Controller	Version 5.22	Interface Software and Windows [®] Help File

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Motion Control and Positioning Library

This resource provides a short summary and a link to articles, tutorials, white papers, and other materials that discuss problems and solutions involving motion control and positioning equipment and systems.

Articles

Linear Motor Basics

Linear motors continue to increase in industrial applications. This article provides an overview of the linear motor types available. Read the full article [HERE](#).

How to Select and Install Air Bearing Stages

High-precision test, measurement, and manufacturing operations often require smooth, frictionless, low-maintenance motion control systems. An excellent choice for a complete motion subsystem is a linear or rotary stage that uses an air bearing for guidance, coupled to a direct-drive motor, a high-resolution position encoder, and a digital controller. Read the full article [HERE](#).

Micropositioning Meets Mechatronics

Compared to traditional methods, the mechatronic design approach is more of a holistic approach to product design, where the tradeoffs between different functional components (software, hardware, user interface, etc.) are carefully considered for their impact on overall performance. Read the full article [HERE](#).

Motion Control Requirements for Hermetic Seam Welding

A discussion of the motion control platform in regard to hermetic seam welding of sophisticated electronic devices implanted in the human body. Read the full article [HERE](#).

Digitizing a Century of Astronomical Images

Aerotech's ABL9000 air-bearing stage is put to use to efficiently digitize more than 500,000 photonegatives. For more information on this article, click [HERE](#).

Two-Photon Polymerization: A New Approach to Micromachining

Femtosecond lasers enable microfabrication with resolution beyond the diffraction limit. Read the full article [HERE](#).

Aerotech Pushes Mechatronics Envelope with Motion Systems

An interview with Dr. Robert Novotnak discussing how mechatronics is employed in high-precision motion control. Read the full interview [HERE](#).

Precise Triggering of External Events Based on Axis Position

An axis-based trigger in the controller can significantly improve part quality, reduce cycle time, and eliminate processing problems. This article discusses Aerotech's unique PSO (Position Synchronized Output) option. Read the full article [HERE](#).

Linear Motors Application Guide

A tutorial guide to the history, design, and application of linear motors. Get the PDF [HERE](#).

Applications Dictate Gimbal Selection

The choice between [direct-drive](#) and [gear-driven](#) gimbals and optical mounts presents an opportunity for a comparison of the pros and cons for each. Read the full article [HERE](#).

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<http://www.isa.org>

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<http://www.iec.ch>

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