

# LINEAX-6

Linear Motor Driven Stage



Lineax®-6 A linear motor driven stage suitable for applications where reliable 24/7 operation, precision positioning and ease of use are desirable characteristics. The versatile 150 mm x 46mm envelope is well suited for many instrument type machines and robotic devices.

## Features and Benefits

Direct drive linear motors for stage positioning exhibit advantages over conventional screw driven stages. Lacking the elastic deformation seen in screw drive systems allows direct drive systems to produce more compliant positioning trajectories, faster settling times, higher repeatability and faster servo response. Free of rotating inertia, much faster acceleration and higher velocities are achievable. Wear of rotating components is eliminated increasing reliability, uptime, and extending servicing intervals each of these contributes to reducing cost of ownership. The direct drive linear motor with the high-resolution encoder allows precise velocity regulation.

- Environmentally hardened.
- Precision guide system provides stable trajectory across long travel and at high speeds.
- Powerful linear motors are used in the Lineax series.
- High-resolution linear encoders are incorporated to allow precise position feedback and closed

## Superior Mechanical Design

all structural materials are high-strength aluminum alloys, all surfaces are precision machined, hard coat-anodize finished. Two precision re-circulating linear ball bearings are guided by 2 integrally pre-loaded ball tracks on each rail. The guide system has extended 5 year intervals only for lubrication service.

## Compact Envelope

Stages have a compact envelope with no motor overhang. Motor and encoder cables are routed in an external cable loop for long life and serviceability. The connection port is at the stage end with axial bulkhead exit.

## Precision Positioning

is an outstanding precision linear motor positioning stage. Well suited for applications in the semiconductor, instrumentation, fiber-optic, biomedical, laser and micro-machining industries. Special finishes like Teflon impregnated hard-coat, non-anodized, and electro less Nickel can be furnished to accommodate specific application environments. Stainless steel components are made from polished material.

## LINEAX-6 Specifications

	LX-6 SP
Travel Length	50-600 mm
Drive System	Brushless Linear Servo Motor
Maximum Acceleration	Payload Dependent
Maximum Speed	Unladen 2 m/s
Maximum Peak Force	202 N
Maximum Continuous Force	45 N
Recommended payload limit	10 kg / 25 lbs

	LX-6050	LX-6100	LX-6200	LX-6300	LX-6450	LX-6600
Travel Length	50 mm	100 mm	200 mm	300 mm	450 mm	600 mm
<b>Trajectory Control</b>						
Accuracy						
Standard SP	± 5 µm	± 10 µm	± 20 µm	± 25 µm	± 30 µm	± 35 µm
High Precision HP	± 2 µm	± 4 µm	± 8 µm	± 10 µm	± 12 µm	± 15 µm
Straightness/Flatness						
Standard SP	± 4 µm	± 8 µm	± 10 µm	± 12 µm	± 15 µm	± 20 µm
High Precision HP	± 2 µm	± 4 µm	± 5 µm	± 5 µm	± 5 µm	± 5 µm
<b>Yaw/Pitch/Roll</b>						
Standard SP	10 arc-sec	15 arc-sec	20 arc-sec	30 arc-sec	40 arc-sec	50 arc-sec
High Precision HP	5 arc-sec	7.5 arc-sec	10 arc-sec	15 arc-sec	20 arc-sec	25 arc-sec
<b>2 Axis System</b>						
Orthogonality X-Y						
Standard Precision SP	10 arc-sec	10 arc-sec	10 arc-sec	10 arc-sec	10 arc-sec	10 arc-sec
High Precision HP	5 arc-sec	5 arc-sec	5 arc-sec	5 arc-sec	5 arc-sec	5 arc-sec
Extra High Precision XHP	3 arc-sec	3 arc-sec	3 arc-sec	3 arc-sec	3 arc-sec	3 arc-sec

- All trajectory data based on axis uniformly supported over full length on precision mounting surface with vibration isolation.
- Payload capacities are recommended values to achieve maximum lifetime in the worst-case scenario featuring maximum dynamic operation and off-center loading.
- Force, acceleration and speed performance are based on operations with NUTEC ELECTRONIC controls.

LINEAX-6 Dimensions

