

# LINEAX-10

Linear Motor Driven Stage



Lineax®-10 A powerful precision stage integrating modern positioning technology with robust payload capability, expanding the high precision performance envelope to include high payload and long travel applications.

## Linear Motor Stages

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. The linear motor and other components in Lineax can be prepared for vacuum compatibility.

- 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, finished with hard coat-anodize in light gray. Two precision square type guide rails with integrally pre-loaded, re-circulating, linear bearings are guided by 6 ball tracks on each rail. The guide system requires only standard lubrication service.

## Features and Benefits

utilizes a self-managing internal cable loop system featuring ultra-high flex cables for linear motor, encoder's, and sensors, all terminated at a single DB-type connector.

## LINEAX-10 Specifications

	LX-10 SP
Travel Length	300-1250 mm
Drive System	Brushless Linear Servo Motor
Maximum Acceleration	Payload Dependent
Maximum Speed	Unladen 3 m/s
Maximum Peak Force	1,680 N
Maximum Continuous Force	325 N
Recommended payload limit	75 kg / 165 lbs

	LX-10300	LX-10450	LX-10600	LX-10900	LX-101200
Travel Length	300 mm	450 mm	600 mm	900 mm	1200 mm
<b>Trajectory Control</b>					
Accuracy					
Standard SP	± 10 µm	± 15 µm	± 20 µm	± 20 µm	± 30 µm
High Precision HP	± 5 µm	± 7.5 µm	± 10 µm	± 10 µm	± 15 µm
<b>Straightness/Flatness</b>					
Standard SP	± 2.0 µm	± 3.0 µm	± 3.5 µm	± 4.0 µm	± 5.0 µm
High Precision HP	± 1.0 µm	± 1.5 µm	± 2.0 µm	± 2.0 µm	± 2.5 µm
<b>Yaw/Pitch/Roll</b>					
Standard SP	10 arc-sec	10 arc-sec	10 arc-sec	10 arc-sec	10 arc-sec
High Precision HP	4 arc-sec	4 arc-sec	4 arc-sec	4 arc-sec	4 arc-sec
<b>2 Axis System</b>					
Orthogonality					
Standard SP	20 arc-sec	20 arc-sec	20 arc-sec	20 arc-sec	20 arc-sec
High Precision HP	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

- 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-10 Dimensions

