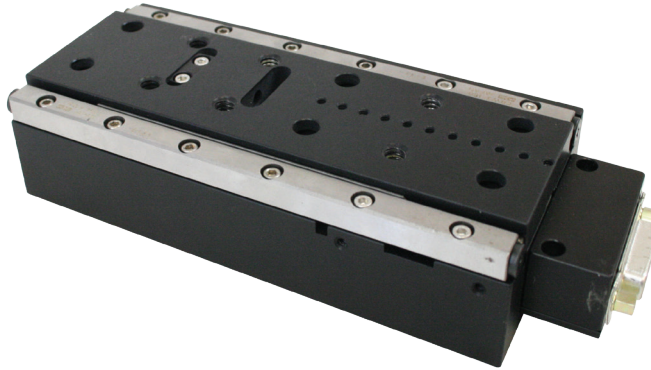


LS-Series Linear Stages



LS-Series Features

LS linear stages provide sub-micron accuracy, deriving their precise control by using closed-loop DC servomotors and employing high-resolution rotary encoders for positioning feedback. An optional linear encoder can be added to the unit to provide even greater positioning accuracy.

The stages utilize crossed-roller slides, precision lead-screws, and zero-backlash miniature geared DC servomotors for smooth and accurate motion. The units offer precise travel from 50 mm to 300 mm (2" to 12"). They can be used singly or stacked, vertically or horizontally, and can carry loads up to 4.5 Kg (10 lbs).

The units have built-in limit switches, and can be configured with a number of lead screw options as outlined in this section. In standard rotary encoder configuration and using ASI's MS-2000 control electronics, resolutions in the 50 nm to 100 nm range can be easily obtained. Repeatability factors of less than 300 nm RMS are also obtainable.

An optional linear encoder provides a scale resolution of 10 nm, and with a scale accuracy of $\pm 3 \mu\text{m}$ per length of scale. The MS-2000 controller provides automatic backlash correction, accepts industry standard commands, and accepts RS-232 or USB communication from a host computer.

Lead Screw Options

Lead Screw Pitch Options	Rotary Encoder Resolution	Maximum Speed
25.40 mm (Ultra-coarse)	88 nm	28 mm/sec
12.70 mm (Super-coarse)	44 nm	14 mm/sec
6.35mm (Standard)	22 nm	7 mm/sec
1.59 mm (Fine)	5.5 nm	1.75 mm/sec
0.653 mm (Extra-Fine)	2.2 nm	0.7 mm/sec

**Shown with rotary encoder and 6.35 mm pitch lead screw*

Specifications

Specifications	LS-25	LS-50	LS-100	LS-200	LS-400
Encoder Resolution*	5.0 nm	5.0 nm	5.0 nm	5.0 nm	5.0 nm (.0055 µm†)
With Linear Encoder	10 nm	10 nm	10 nm	10 nm	10 nm
RMS repeatability (Typical)*	< 0.7 µm	< 0.7 µm	< 0.7 µm	< 0.7 µm	< 0.7 µm (< 8.0 µm†)
With Linear Encoder (Typical)	200 nm	200 nm	200 nm	200 nm	200 nm
Leadscrew Accuracy	0.25 µm/mm	0.25 µm/mm	0.25 µm/mm	0.25 µm/mm	0.25 µm/mm
With Linear Encoder	± 3 µm/length scale	± 3 µm/length scale	± 3 µm/length scale	± 3 µm/length scale	± 3 µm/length scale
Maximum velocity*	1.60 mm/sec	1.75 mm/sec	1.75 mm/sec	1.75 mm/sec	1.75 mm/sec
Range of Travel	25 mm (1")	50 mm (2")	100 mm (4")	200 mm (8")	400 mm (16")
Length	86 mm (3.4")	152.5 mm (6")	203.5 mm (8")	305 mm (12")	594.5 mm (23.4")
With Connector**	137 mm (5.4")	233 mm (9.2")	286 mm (11.3")	369 mm (14.5")	675 mm (26.6")
With RA Connector**	--	195 mm (7.6")	247 mm (9.7")	380 mm (15")	363 mm (25")
Width	68.5 mm (2.7")	68.5 mm (2.7")	68.5 mm (2.7")	68.5 mm (2.7")	150 mm (5.9")
With Connector**	120 mm (4.7")	132.5 mm (5.2")	132.5 mm (5.2")	132.5 mm (5.2")	215 mm (8.5")
With RA Connector**	--	93.5 mm (3.7")	93.5 mm (3.7")	93.5 mm (3.7")	175 mm (6.9")
Height	35.5 mm (1.4")	30 mm (1.2")	30 mm (1.2")	30 mm (1.2")	50 mm (2")
Weight	.5 kg (1 lb)	1.4 kg (3 lbs)	1.9 kg (4 lbs)	2.4 kg (6 lbs)	9 kg (20 lbs)

* With 1.59 mm pitch (16 TPI) Leadscrew

** May vary per available plug dimensions

† with high-speed motor/gearhead configuration