



## SLS Sealed Linear Stage

*Clean motion for dirty machines.*

Linear stages in industrial settings often suffer from contamination problems. As manufacturing debris, particulate or liquid contaminants work their way into the stage, they can abrade or gum up the drive mechanism and bearings. Loss of precision and shortened lifecycle follow. Our Light and Medium **SLS Sealed Linear Stages** keep contamination in its proper place—outside the stage housing.

**Integrated Polyurethane Seal.** The SLS features a proprietary linear lip seal design that integrates seamlessly with the stage's anodized aluminum housing. Made from a ruggedized polyurethane elastomer, the seal is:

- Resistant to chemicals, temperature extremes and mechanical wear.
- Field replaceable in minutes without disassembling the stage—or even removing the payload in most cases.

**True Positioning.** Available with linear motor or ballscrew drives, SLS is a precision positioning device at heart.

- In linear motor configurations, the SLS can achieve accuracies of  $\pm 2.0 \mu\text{m}$  and bi-directional repeatability of  $\pm 0.5 \mu\text{m}$ .
- In ballscrew configurations, the SLS can achieve accuracies of  $\pm 4.0 \mu\text{m}$  and bi-directional repeatability of  $\pm 1.0 \mu\text{m}$ .

**Compact, Fast and Strong.** SLS comes in two sizes—Light and Medium. Both models pack a lot of capabilities into a small package measuring just 80-mm high by 120-mm wide for the Light model and 180-mm wide for the Medium:


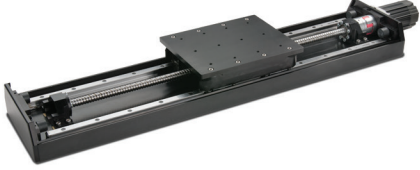
- Available with standard travel lengths from 100 to 1,000 mm and custom lengths to 2,000 mm.
- Speeds to 4 m/sec for linear motor drives and 0.4 m/sec for ballscrew drives.
- Continuous linear force to 300 N for the linear motor drives and 1,400 N for ballscrew drives.

**Demanding Applications.** With its anodized housing and urethane seals, SLS targets applications with harsh operating environments including:

- Laser machining.
- Welding.
- Semiconductor.
- Machining.

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Technical Specifications		Direct Drive Linear <sup>2</sup>		Ball screw Drive Linear <sup>2</sup>	
		SLS-L-LM	SLS-M-LM	SLS-L-B	SLS-M-B
					
Bearing Type		80 x 120	80 x 180	80 x 120	80 x 180
Maximum Travel Length (mm)		810	990 (Iron Core) 1010 (Ironless Core)	830	1000
Motor Type		Iron Core	Iron Core or Ironless Core	3-phase brushless servo	
Lead		N/A		5mm, 10mm	
Accuracy (μm)	Standard	±5.0μm		±26μm per 300mm	
	With error correction <sup>3</sup>	±2.0μm		±4.0μm	
Bi-directional Repeatability (μm)		±0.5μm		±1.0μm	
Pitch, Roll & Yaw (arc-sec)		±15 Pitch, ±10 Yaw, ±20 Roll	±15 Pitch, ±10 Yaw, ±10 Roll	±15 Pitch, ±10 Yaw, ±20 Roll	±15 Pitch, ±10 Yaw, ±10 Roll
Encoder Type and Resolutions		Linear Encoder 1μm, 0.5μm, 0.1μm		"Rotary Encoder 16KCPR Linear Encoder 1μm, 0.5μm, 0.1μm"	
Max Dynamic Payload <sup>1</sup> (kg)		15	30	30	100
Speed (m/sec)		4		0.1 (5mm lead), 0.2 (10mm lead) <sup>5</sup>	0.25 (5mm lead), 0.5 (10mm lead) <sup>5</sup>
Continuous Linear Force (N)		60, 120	"200, 300 (Iron Core) 87, 116 (Ironless Core)"	1400 (5mm lead), 700 (10mm lead)	
Max Load for 10 <sup>6</sup> m Bearing Life at 2m/sec (N-m) <sup>5</sup>		250	1700	N/A	
Max Load for 10 <sup>6</sup> m Bearing Life at 0.5m/sec (N-m) <sup>5</sup>		1040	660	1040	660
Max Cantilever Load for 10 <sup>6</sup> m Bearing Life at 2m/sec (N-m) <sup>5</sup>		N/A	90	N/A	90
Max Cantilever Load for 10 <sup>6</sup> m Bearing Life at 0.5m/sec (N-m) <sup>5</sup>		40	360	40	360
Moving Mass (kg)		1.5, 1.8	"3.5, 4.0 (Iron core) 2.0, 2.1 (Ironless Core)"	1.2	1.7
Friction With / Without Seals, N		16 / 5	20 / 7	16 / 5	20 / 7

- 1 Recommend maximum payload for standard SLS configurations. Contact Bell-Everman engineering for payload maximum at desired velocity.
- 2 Shown without polyurethane seal.
- 3 Controller dependent.
- 4 Requires linear encoder.
- 5 Consult BEI Engineering for additional Load/Life specifications.

Get an instant quote for SLS sealed linear stages at [www.bell-everman.com/sls](http://www.bell-everman.com/sls).

