

LSA Series Datasheet



- 10 or 25 mm travel
- < 25 nm microstep size
- Up to 10 mm/s speed and up to 3.5 kg thrust
- Fits into the most restrictive spaces
- Mounts directly in XY (requires AB106 angle bracket for Z axis/vertical mounting)
- Designed for use with a X-MCB1 Series stepper motor controller or any 2-phase stepper motor controller

Zaber's LSA series stages are designed to fit into the smallest spaces, without sacrificing performance or features. Small but powerful, these stages have up to 10 mm/s speed and up to 3.5 kg thrust. With a microstep size of less than 25 nm and < 1 um repeatability, they allow for reliable ultra-fine positioning.

The LSA stages are wired with a male D-sub 15 connector for plug-and-play use with our X-MCB1 Series stepper motor controllers. Our handy kits include free software, and all of the accessories that you will need to get the stage running right out of the box.

Drawings

Specifications

Specification	Value	Alternate Unit
Microstep Size (Default Resolution)	0.0238125 μm	
Built-in Controller	No	
Recommended Controller	X-MCB1 (48 V) Recommended	
Repeatability	< 1 μm	< 0.000039 "
Backlash	< 5 μm	< 0.000197 "
Maximum Speed	10 mm/s	0.394 "/s
Minimum Speed	0.0000145 mm/s	0.000001 "/s
Speed Resolution	0.0000145 mm/s	0.000001 "/s
Encoder Type	None	
Peak Thrust	35 N	7.8 lb
Maximum Continuous Thrust	25 N	5.6 lb
Guide Type	Ball bearing	
Vertical Runout	< 4 μm	< 0.000157 "
Horizontal Runout	< 13 μm	< 0.000512 "
Linear Motion Per Motor Rev	0.3048 mm	0.012 "
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Rated Current	240 mA/phase	
Motor Winding Resistance	20.4 ohms/phase	
Inductance	5 mH/phase	
Motor Rated Power	2.35 Watts	
Motor Connection	D-sub 15	
Motor Frame Size	NEMA 08	
Mechanical Drive System	Precision lead screw	
Limit or Home Sensing	Magnetic hall sensor	
Axes of Motion	1	
Mounting Interface	M2 and M3 threaded holes and M4 threaded centre hole	
Vacuum Compatible	No	
Operating Temperature Range	0 to 50 °C	

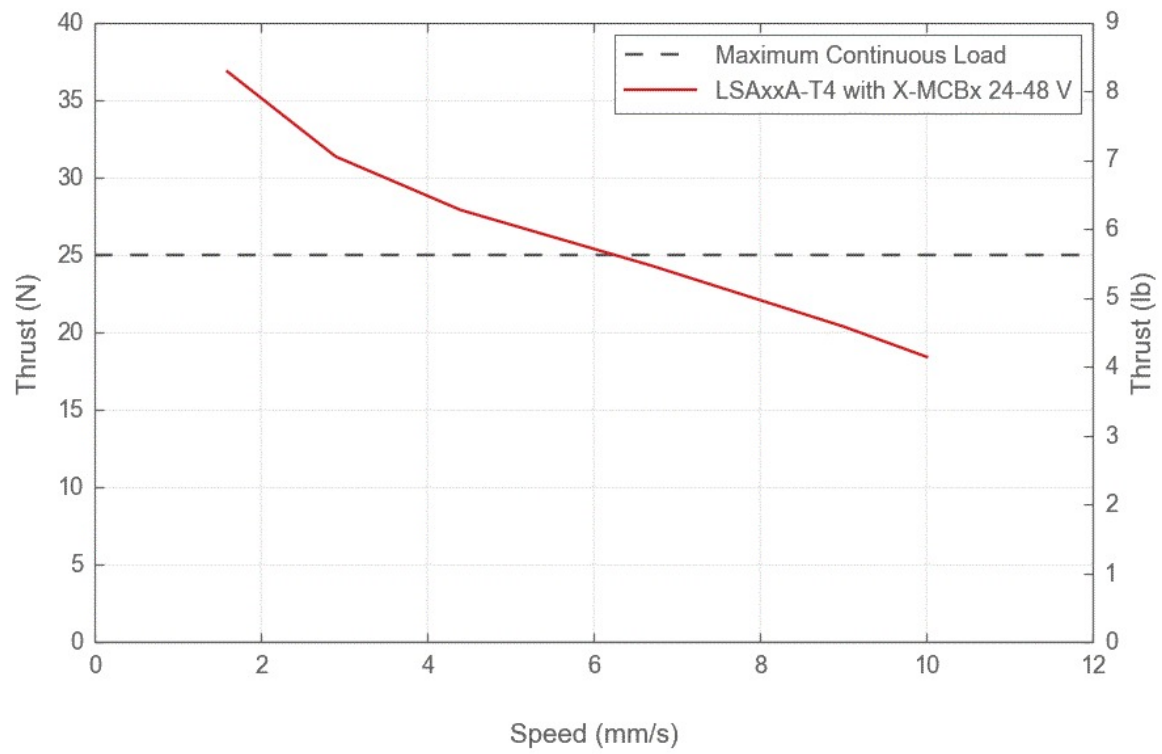
Specification	Value	Alternate Unit
RoHS Compliant	Yes	
CE Compliant	Yes	

Part Number	Travel Range	Accuracy (unidirectional)	Maximum Centered Load	Maximum Cantilever Load
LSA10A-T4	10 mm (0.394 ")	18 μ m (0.000709 ")	25 N (5.6 lb)	100 N-cm (141.6 oz-in)
LSA25A-T4	25 mm (0.984 ")	24 μ m (0.000945 ")	30 N (6.7 lb)	125 N-cm (177.0 oz-in)

Part Number	Pitch	Roll	Yaw	Weight
LSA10A-T4	0.09 ° (1.570 mrad)	0.03 ° (0.523 mrad)	0.04 ° (0.698 mrad)	0.115 kg (0.254 lb)
LSA25A-T4	0.14 ° (2.443 mrad)	0.05 ° (0.873 mrad)	0.12 ° (2.094 mrad)	0.132 kg (0.291 lb)

Charts

Thrust Speed Performance



Typical Microstepping Accuracy

