LSA Series Datasheet

- 10 or 25 mm travel
- Up to 14 mm/s speed and up to 35 N thrust
- < 25 nm microstep size
- Fits into the most restrictive spaces
- Designed for use with an X-MCC Series stepper motor controller or any 2-phase stepper motor controller
- With AutoDetect, the X-MCC controller configures its settings automatically for the connected peripheral
- Mounts directly in XY (requires AB106 angle bracket for Z axis/vertical mounting)

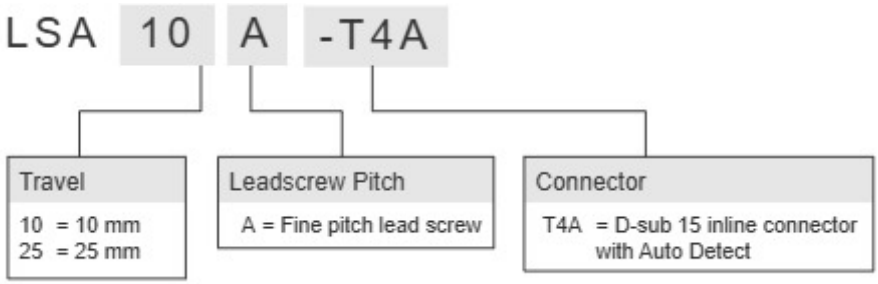
LSA Series Overview

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 14 mm/s speed and up to 35 N 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 designed to interface with our X-MCC Series universal motor controllers, offering high resolution daisy-chainable operation. Set up is easy with AutoDetect. Once connected, the X-MCC controller will automatically detect and configure the LSA. 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.

For more information visit: https://www.zaber.com/products/linear-stages/LSA

LSA Series Part Numbering & Options



LSA Series Drawings

- LSA.png (Drawing for the LSA)

LSA Series Specifications

Microstep Size (Default Resolution)	**0.0238125 µm**
Built-in Controller	No
Recommended Controller	X-MCC (48 V) Recommended
AutoDetect	Yes
Repeatability	< 1 µm (< 0.000039")
Backlash	< 5 µm (< 0.000197")
Maximum Speed	14 mm/s (0.551"/s)
Minimum Speed	0.000015 mm/s (0.000001"/s)
Speed Resolution	0.000015 mm/s (0.000001"/s)
Encoder Type	No
Peak Thrust	35 N (7.8 lb)
Maximum Continuous Thrust	25 N (5.6 lb)
Vertical Runout	< 50 µm (< 0.001968")
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
Default Resolution	1/64 of a step
Motor Frame Size	NEMA 08
Guide Type	Ball bearing
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
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes

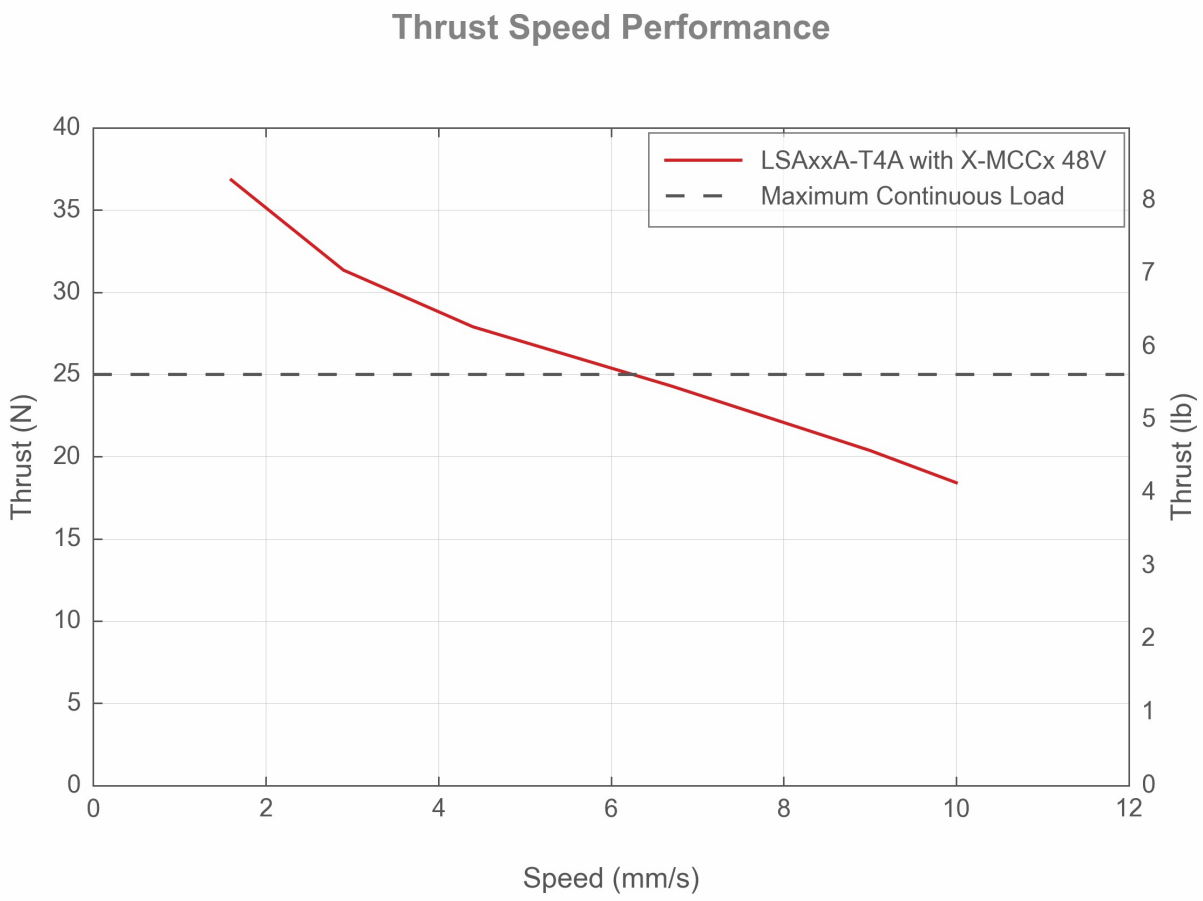
Microstep Size (Default Resolution)	**0.0238125 µm**
Vacuum Compatible	No

Part Number	Travel Range	Accuracy (unidirectional)	Maximum Centered Load	Maximum Moment (Pitch)
LSA10A-T4A	10 mm (0.394")	18 µm (0.000709")	25 N (5.6 lb)	30 N-cm (42.5 oz-in)
LSA25A-T4A	25 mm (0.984")	24 µm (0.000945")	30 N (6.7 lb)	50 N-cm (70.8 oz-in)

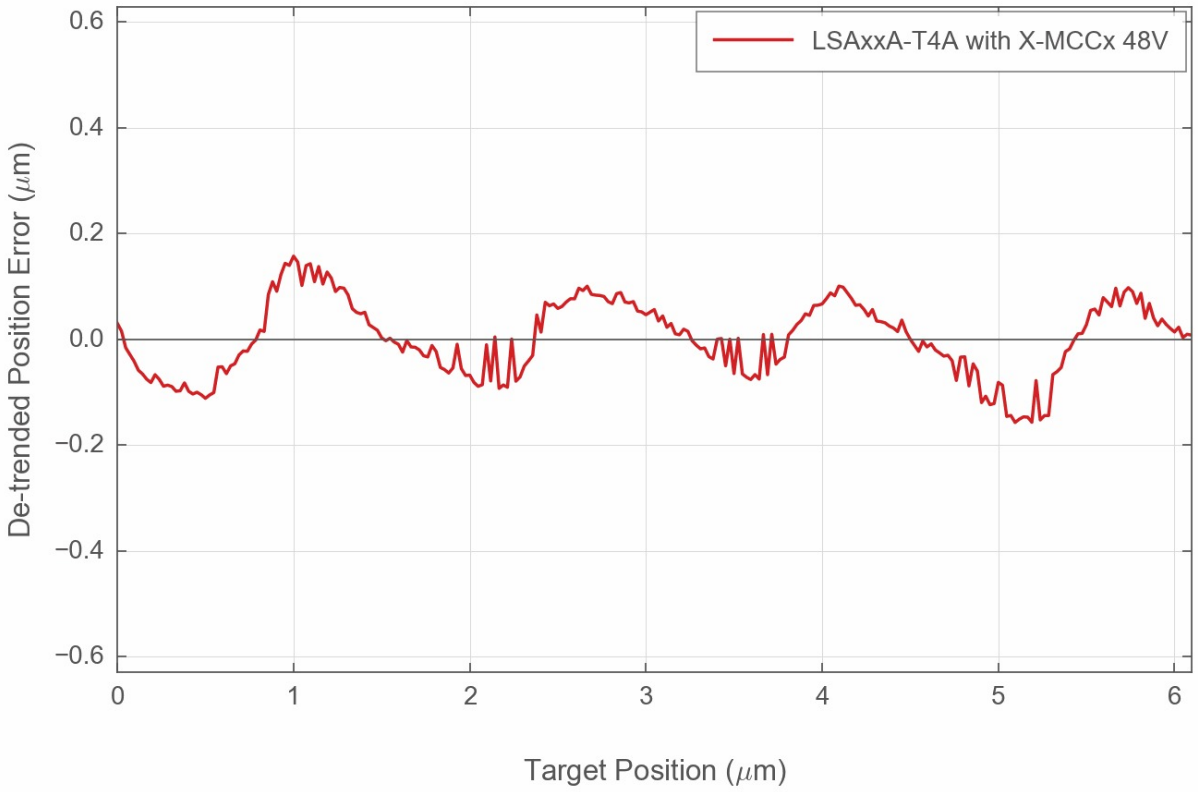
Part Number	Maximum Moment (Roll)	Maximum Moment (Yaw)	Pitch	Roll
LSA10A-T4A	100 N-cm (141.6 oz-in)	30 N-cm (42.5 oz-in)	0.09° (1.570 mrad)	0.03° (0.523 mrad)
LSA25A-T4A	125 N-cm (177.0 oz-in)	50 N-cm (70.8 oz-in)	0.14° (2.443 mrad)	0.05° (0.873 mrad)

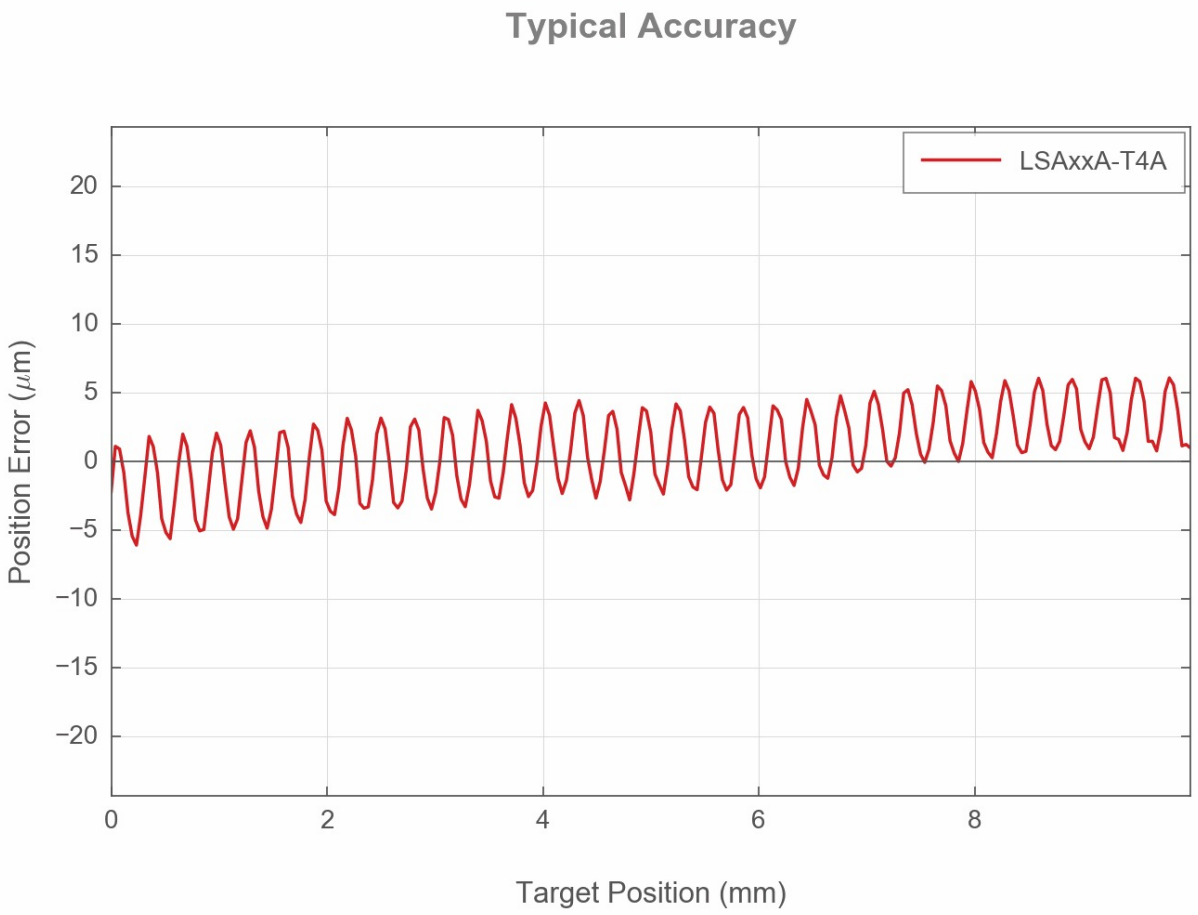
Part Number	Yaw	Weight
LSA10A-T4A	0.04° (0.698 mrad)	0.115 kg (0.254 lb)
LSA25A-T4A	0.12° (2.094 mrad)	0.132 kg (0.291 lb)

LSA Series Charts



Typical Microstepping Accuracy





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