LDA025A-AE53T10A Datasheet

- 25, 75, 150 mm travel options
- High repeatability (200 nm) and accuracy (1.5 µm), with 12 nm minimum incremental move
- Direct position measurement from 1 nm resolution linear encoder
- Up to 0.8 m/s speed and up to 4 g acceleration
- Non-contact ironless linear motor for high precision, high dynamic performance & reliability
- Designed for use with MCC controllers for coordinated multi-axis motion
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral

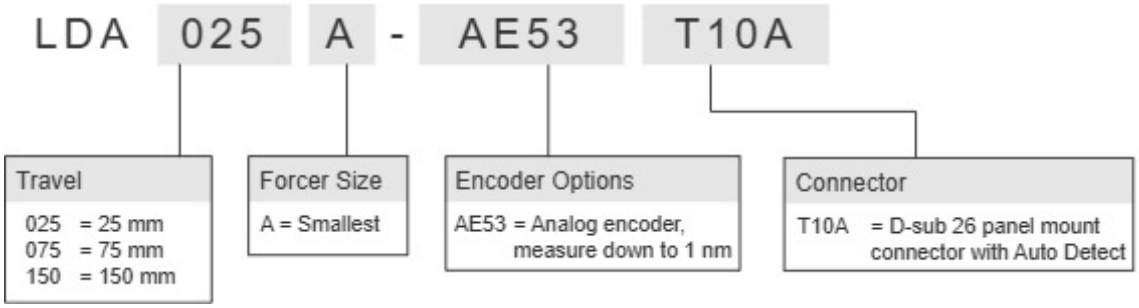
LDA-AE Series Overview

Zaber's LDA-AE Series devices are motorized linear stages delivering high speed, precision, and reliability in a compact package. A centrally mounted linear encoder results in up to 1 µm position accuracy and consistent movement steps down to 12 nm. LDA-AE devices feature non-cogging ironless linear motors, providing high speed and acceleration capabilities. Both the drive and encoder are non-contact and have no moving cables, resulting in an extremely robust system.

The stages are designed to connect directly to our MCC controllers using a single cable. Set-up is easy with AutoDetect. Once connected, the controller will automatically detect and configure the LDA-AE.

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

LDA-AE Series Part Numbering & Options



LDA025A-AE53T10A Drawings

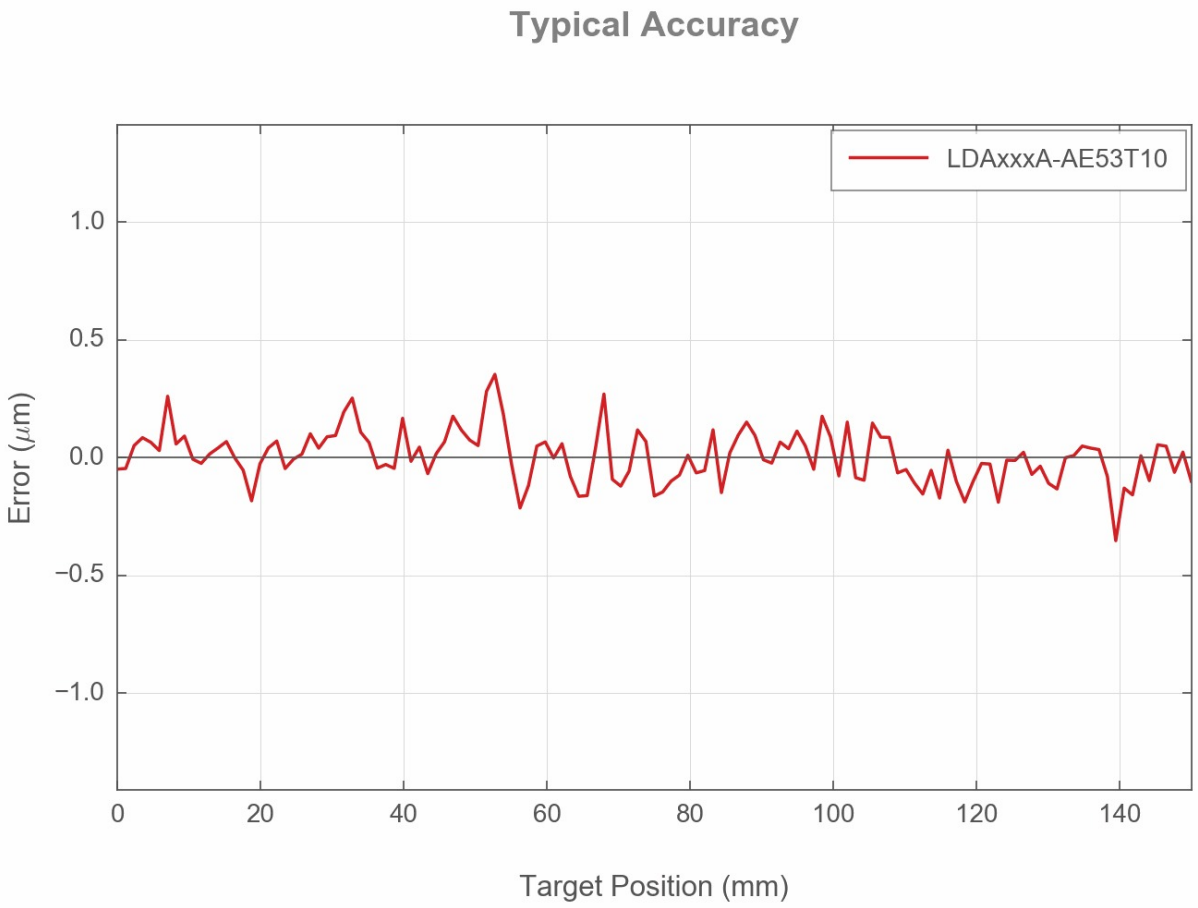
- dimensions_LDA-AE (Drawing for the LDA-AE)

LDA025A-AE53T10A Specifications

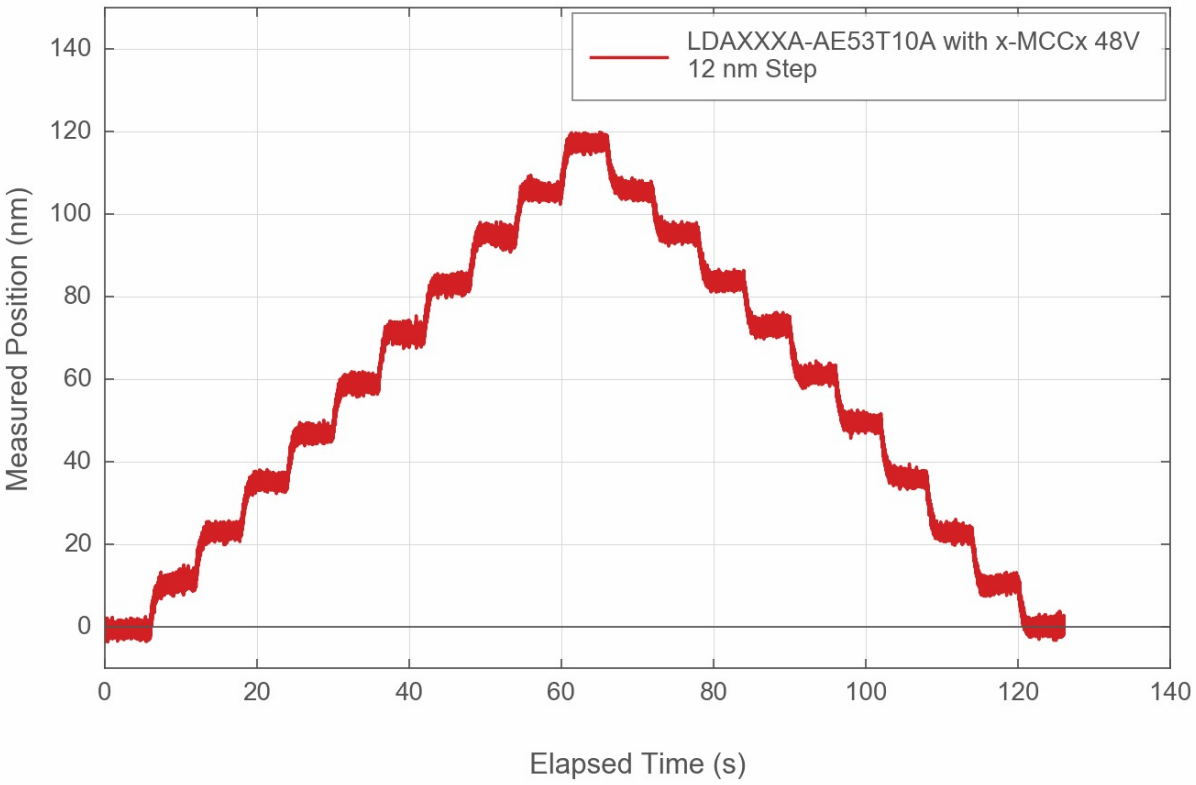
Built-in Controller	
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Travel Range	25 mm (0.984")
Accuracy (unidirectional)	1.5 µm (0.000059")
Repeatability	< 0.2 µm (< 0.000008")
Minimum Incremental Move	12 nm
Maximum Acceleration	78.5 m/s2 (8.00 g)
Maximum Speed	800 mm/s (31.496"/s)
Minimum Speed	0.61 nm/s
Speed Resolution	0.61 nm/s
Encoder Type	Linear analog encoder
Encoder Count Size	1 nm
Peak Thrust	16 N (3.6 lb)
Maximum Continuous Thrust	6 N (1.3 lb)
Maximum Centered Load	100 N (22.4 lb)
Maximum Moment (Pitch)	500 N-cm (708.1 oz-in)
Maximum Moment (Roll)	500 N-cm (708.1 oz-in)
Maximum Moment (Yaw)	500 N-cm (708.1 oz-in)
Vertical Runout	< 4 µm (< 0.000157")
Horizontal Runout	< 4 µm (< 0.000157")
Typical Velocity Stability	± 0.33% at 100 mm/s with a 1.0 kg payload
Pitch	0.006° (0.105 mrad)
Roll	0.005° (0.087 mrad)
Yaw	0.005° (0.087 mrad)
Stiffness in Pitch	500 N-m/° (35 µrad/N-m)
Stiffness in Roll	500 N-m/° (35 µrad/N-m)
Stiffness in Yaw	400 N-m/° (44 µrad/N-m)
Motor Type	Moving Magnet Track Linear Motor
Motor Rated Current	1800 mA/phase
Force Constant	3.7 N/A (0.8 lbs/A)

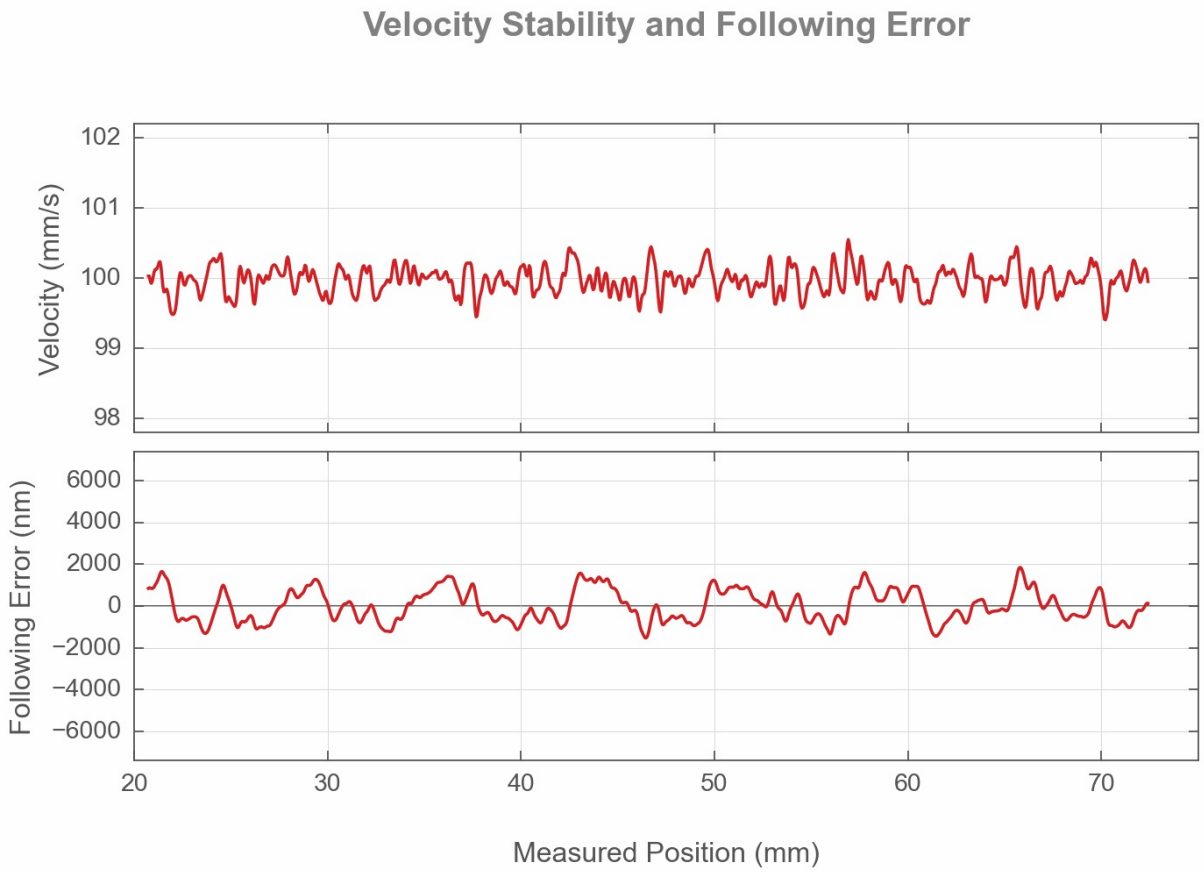
Built-in Controller	
Motor Winding Resistance	2.3 ohms/phase
Inductance	0.09 mH/phase
Motor Connection	D-sub 26
Guide Type	Crossed-Roller Bearing
Limit or Home Sensing	Optical Index Mark
Axes of Motion	1
Mounting Interface	M6 threaded holes
Moving Mass	0.29 kg (0.638 lbs)
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No
Weight	0.88 kg (1.940 lb)

LDA-AE Series Charts



Typical Minimum Incremental Move





Contact

Email: contact@zaber.com
Phone (toll free Canada/USA): 1-888-276-8033
Phone (direct): 1-604-569-3780
Fax: 1-604-648-8033

Zaber Technologies Inc.
#2 - 605 West Kent Ave. N.
Vancouver, British Columbia
Canada, V6P 6T7
https://www.zaber.com