X-LDA-AEZ Series Datasheet

- 20 mm or 25 mm travel
- Passive, user adjustable magnetic counterbalance for payloads up to 16 N
- High repeatability (200 nm) and accuracy (1.5 µm), with 20 nm minimum incremental move
- Direct position measurement from 1 nm resolution linear encoder
- Up to 0.7 m/s speed and up to 2.5 g acceleration
- Non-contact ironless linear motor for high precision, high dynamic performance & reliability
- Built-in controller; daisy-chains with other Zaber products
- One digital input and two digital outputs
- Learn more: Magnetic Counterbalances for High Performance Vertical Stages

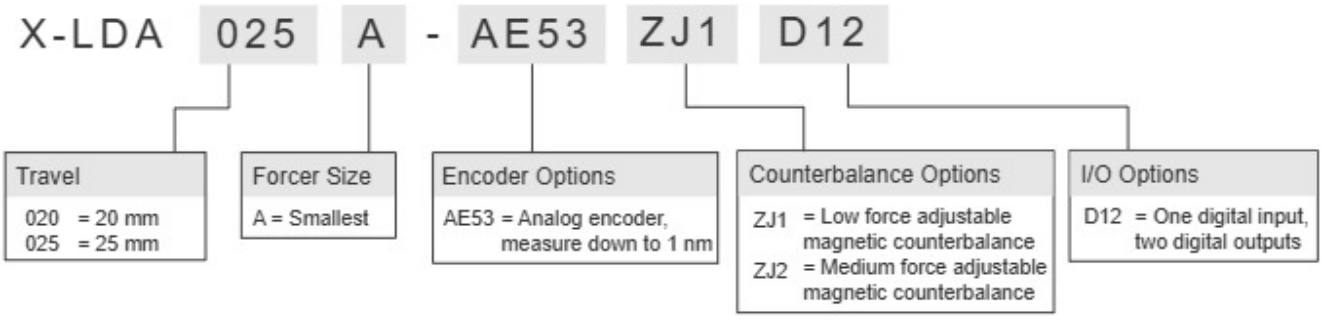
X-LDA-AEZ Series Overview

Zaber's X-LDA-AEZ Series devices are computer-controlled, motorized stages delivering the high precision, reliability, and speed of X-LDA-AE linear motor stages in a package for vertical applications. A passive magnetic counterbalance compensates for payloads up to 16N, preventing unwanted motion during power loss. The counterbalance's force can be finely adjusted in seconds with a single screw.

These stages are stand-alone units requiring only a standard 48 V power supply. They connect to the RS-232 port or USB port of any computer and can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply. Like all of Zaber's products, the X-LDA-AEZ Series is designed to be 'plug and play' and very easy to set up and operate. X-LDA-AEZ devices also include a digital input and two digital outputs for interfacing with external systems. An event-driven trigger system allows devices to be programmed for stand-alone operation based on I/O, time, or movement stimuli.

For more information visit: https://www.zaber.com/products/vertical-stages/X-LDA-AEZ

X-LDA-AEZ Series Part Numbering & Options



X-LDA-AEZ Series Drawings

- dimensions_X-LDA-AEZ (Drawing for the X-LDA-AEZ)

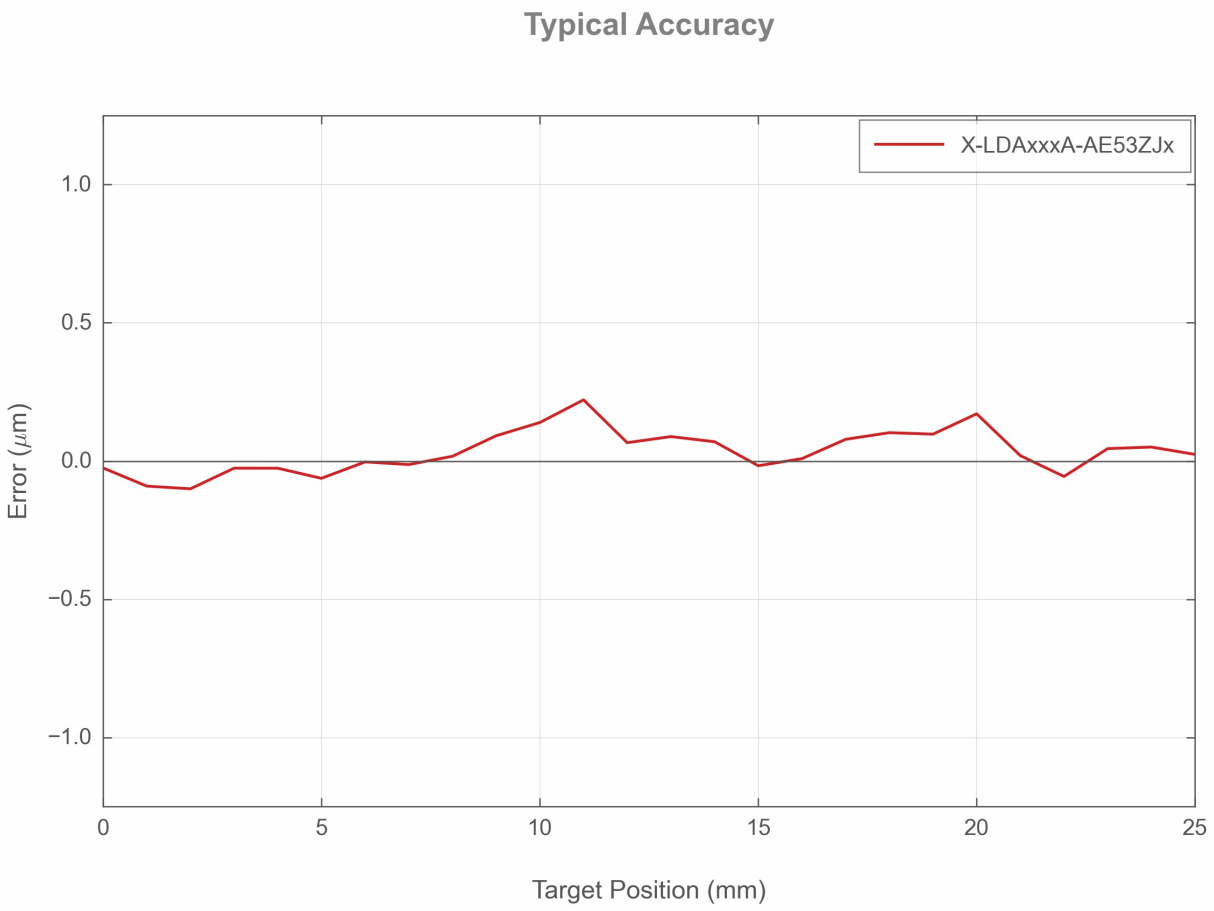
X-LDA-AEZ Series Specifications

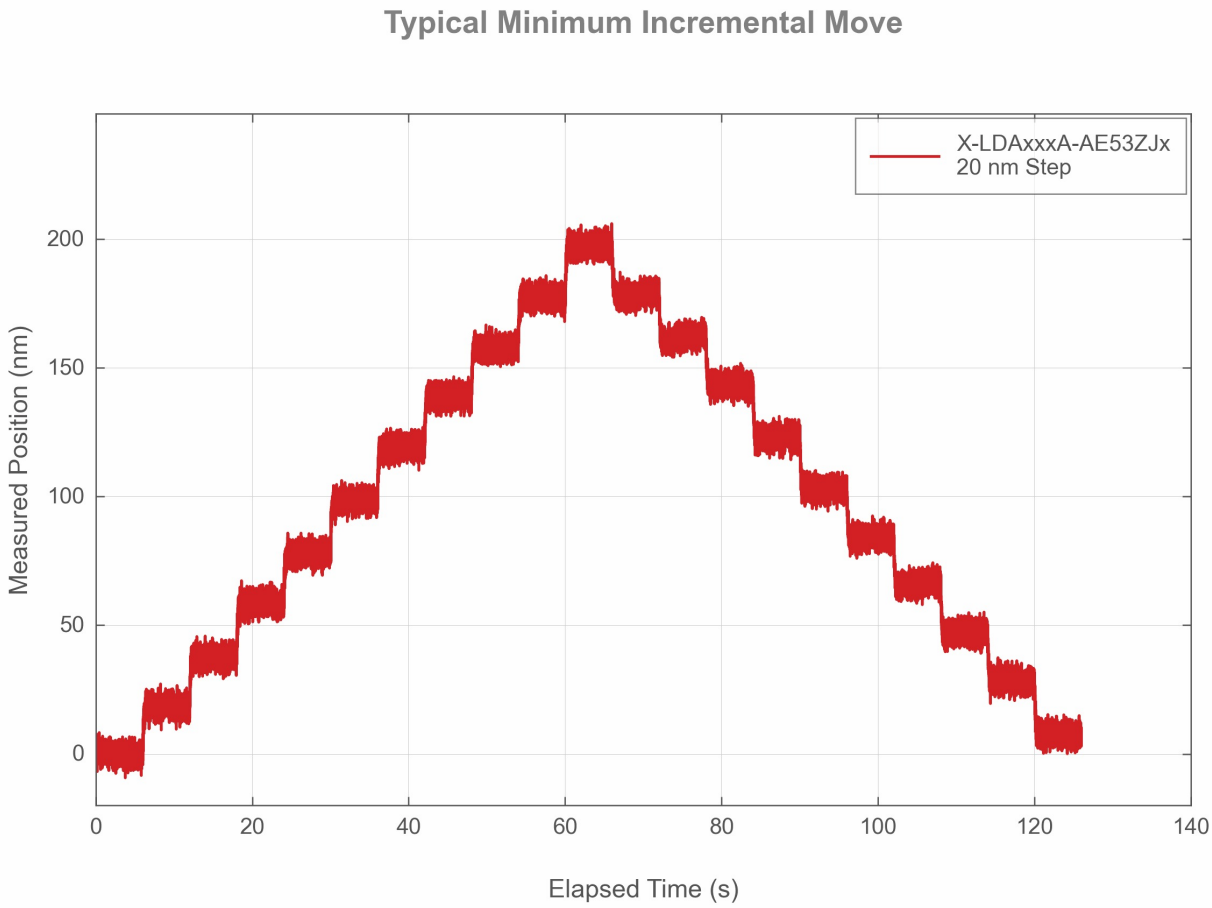
Built-in Controller	
Accuracy (unidirectional)	1.5 µm (0.000059")
Repeatability	< 0.2 µm (< 0.000008")
Minimum Incremental Move	20 nm
Minimum Speed	0.61 nm/s
Speed Resolution	0.61 nm/s
Encoder Type	Linear analog encoder
Encoder Count Size	1 nm
Peak Thrust	16 N (3.6 lb)
Maximum Continuous Thrust	6 N (1.3 lb)
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default)
Data Cable Connection	Locking 4-pin M8
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)
Horizontal Runout	< 4 µm (< 0.000157")
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)
Counterbalance Type	Adjustable Magnetic
Power Supply	48 VDC
Power Plug	2-pin screw terminal
Maximum Current Draw	3000 mA
Motor Type	Moving Magnet Track Linear Motor
Guide Type	Crossed-Roller Bearing
Limit or Home Sensing	Optical Index Mark
Manual Control	Indexed knob with push switch

Built-in Controller	
Axes of Motion	1
LED Indicators	Yes
Mounting Interface	M6 threaded holes
Moving Mass	0.43 kg (0.946 lbs)
Digital Input	1
Digital Output	2
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No
Weight	1.29 kg (2.844 lb)

Part Number	Travel Range	Maximum Acceleration	Maximum Speed	Counterbalance Payload Range
X-LDA020A-AE53ZJ2D12	20 mm (0.787")	10 m/s2 (1.02 g)	400 mm/s (15.748"/s)	8-16 N (1.8-3.6 lb)
X-LDA025A-AE53ZJ1D12	25 mm (0.984")	25 m/s2 (2.55 g)	700 mm/s (27.559"/s)	0-7 N (0.0-1.6 lb)

X-LDA-AEZ Series Charts





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