

## 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  $\mu\text{m}$ ), 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](#)

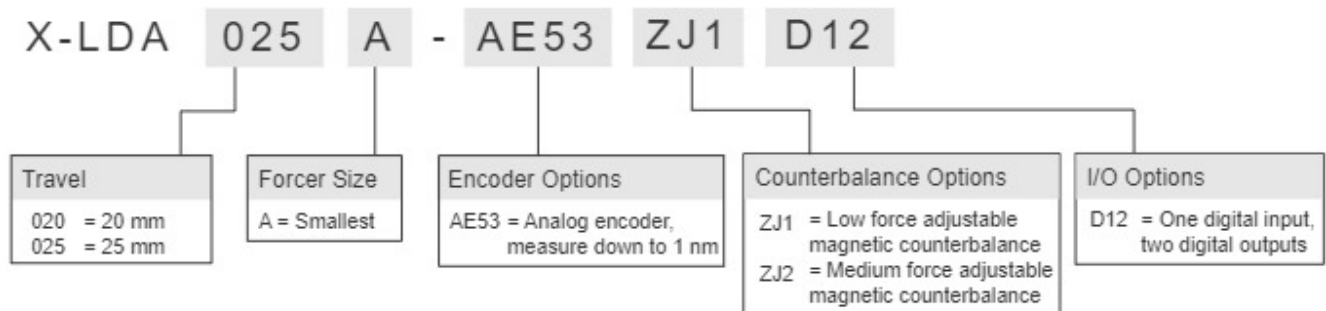
## X-LDA-AEZ Series Overview

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>

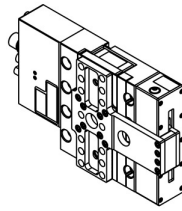
## X-LDA-AEZ Series Part Numbering



# X-LDA-AEZ Series Drawings

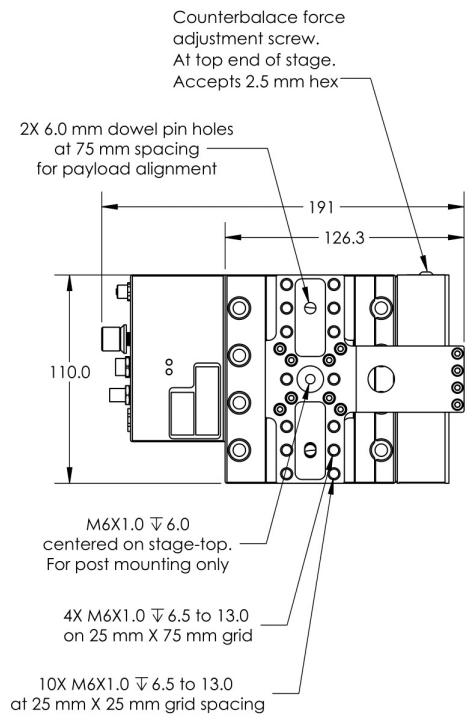
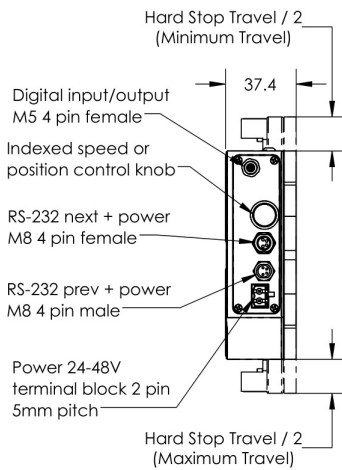
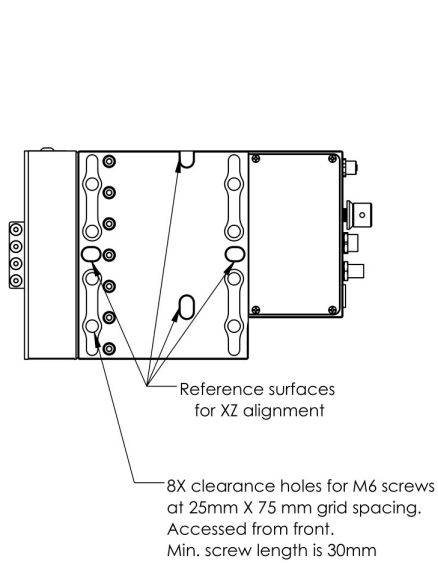
## ZABER

X-LDA-AEZ Direct Drive Vertical Stage  
 dimensions in mm



Model Number*	Nominal Travel	Hard Stop Travel
X-LDA020A-AE53ZJ2D12	20.0	26.0
X-LDA025A-AE53ZJ1D12	25.0	36.0

\*See product page for complete list of available models at [www.zaber.com](http://www.zaber.com)



DWG-3765-801

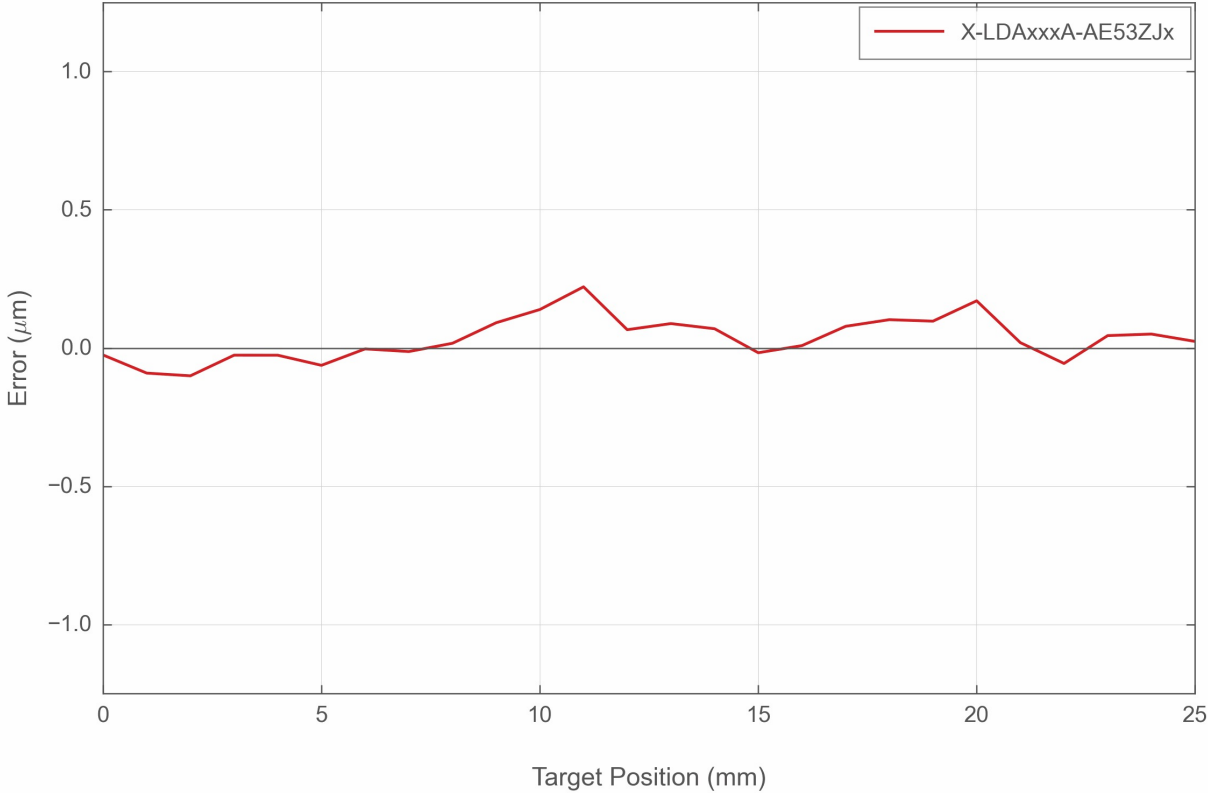
## X-LDA-AEZ Series Specifications

Specification	Value	Alternate Unit
Built-in Controller	Yes	
Travel Range	25 mm	0.984"
Accuracy (unidirectional)	1.5 $\mu\text{m}$	0.000059"
Repeatability	< 0.2 $\mu\text{m}$	< 0.000008"
Minimum Incremental Move	20 nm	
Maximum Acceleration	25 m/s <sup>2</sup>	2.55 g
Maximum Speed	700 mm/s	27.559"/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	13 N	2.9 lb
Maximum Continuous Thrust	6 N	1.3 lb
Communication Interface	RS-232	
Communication Protocol	Zaber ASCII (Default)	
Maximum Cantilever Load	500 N-cm	708.1 oz-in
Guide Type	Crossed-Roller Bearing	
Horizontal Runout	< 4 $\mu\text{m}$	< 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 $\mu\text{rad/N-m}$
Stiffness in Roll	500 N-m/°	35 $\mu\text{rad/N-m}$
Stiffness in Yaw	400 N-m/°	44 $\mu\text{rad/N-m}$
Counterbalance Type	Adjustable Magnetic	
Counterbalance Payload Range	0-7 N	0.0-1.6 lb
Maximum Current Draw	3000 mA	
Power Supply	48 VDC	
Power Plug	2-pin screw terminal	
Motor Type	Moving Magnet Track Linear Motor	

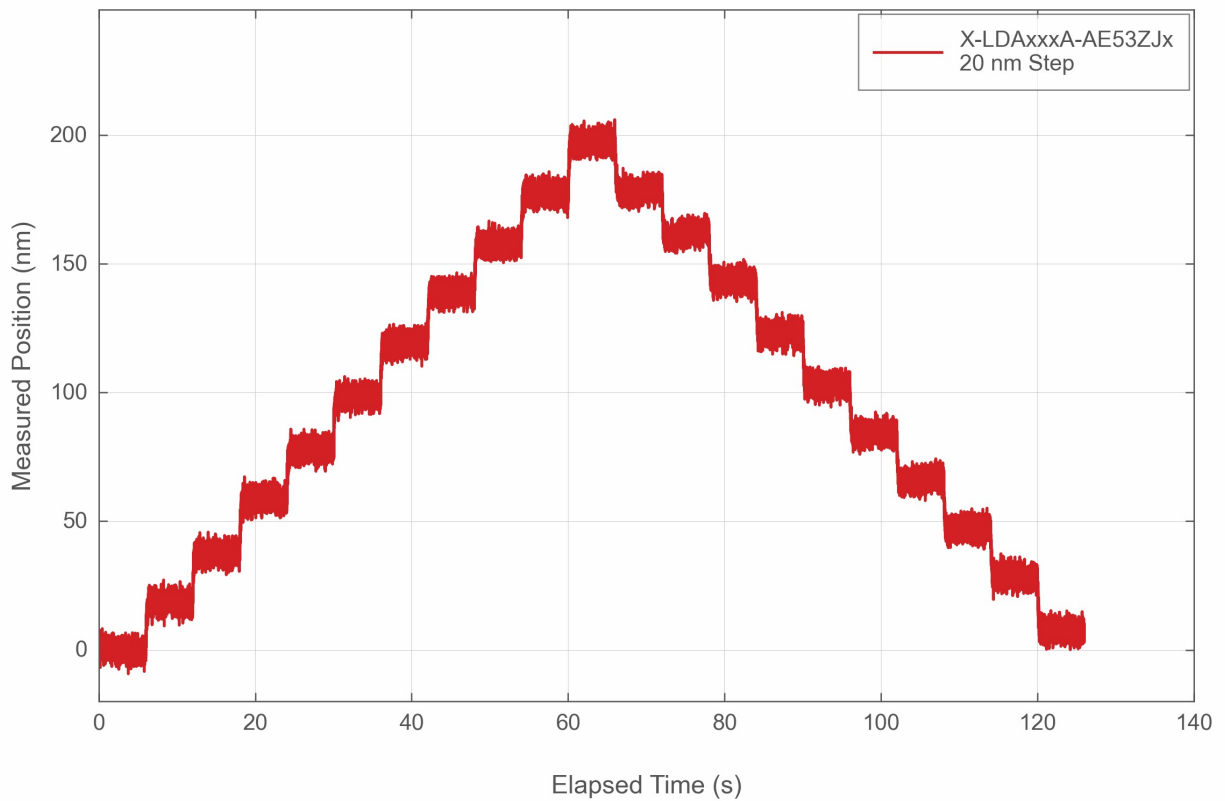
Specification	Value	Alternate Unit
Data Cable Connection	Locking 4-pin M8	
Limit or Home Sensing	Optical Index Mark	
Manual Control	Indexed knob with push switch	
Axes of Motion	1	
LED Indicators	Yes	
Mounting Interface	M6 threaded holes	
Operating Temperature Range	0 to 50 °C	
Vacuum Compatible	No	
RoHS Compliant	Yes	
CE Compliant	Yes	
Moving Mass	0.43 kg	0.946 lbs
Digital Input	1	
Digital Output	2	
Weight	1.29 kg	2.844 lb

# X-LDA-AEZ Series Charts

## Typical Accuracy



## Typical Minimum Incremental Move



## Contact

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