X-LDM060C-AE54D12 Datasheet

- 60, 110, 210 mm travel options
- Up to 1.2 m/s speed and up to 3.5 g acceleration
- High repeatability (80 nm) and accuracy (1 µm), with 25 nm minimum incremental move
- Direct position measurement from 1 nm resolution linear encoder
- One digital input and two digital outputs
- Non-contact ironless linear motor for ultra precision, high dynamic performance and zero backlash
- Built-in controller; daisy-chains with other Zaber products
- Technical Article - Linear Motors: Overview and Selection Process

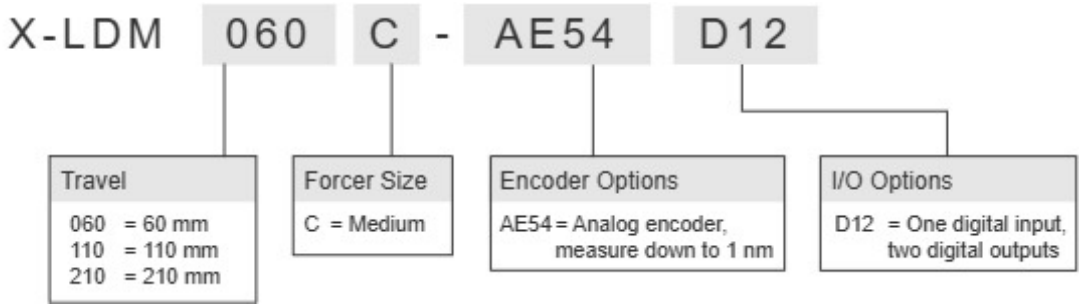
X-LDM-AE Series Overview

Zaber's X-LDM-AE Series devices are computer-controlled, motorized linear stages suited for applications demanding outstanding precision, throughput, and reliability. A centrally mounted linear encoder results in 1 µm position accuracy and consistent movement steps down to 25 nm. X-LDM-AE devices feature high efficiency ironless linear motors, providing high speed and acceleration, while minimizing heat generation to improve repeatability. Both the drive and encoder are non-contact and have no moving cables, resulting in an high lifetime system.

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 they 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-LDM-AE Series is designed to be 'plug and play' and very easy to set up and operate. X-LDM-AE 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/linear-stages/X-LDM-AE

X-LDM-AE Series Part Numbering & Options



X-LDM060C-AE54D12 Drawings

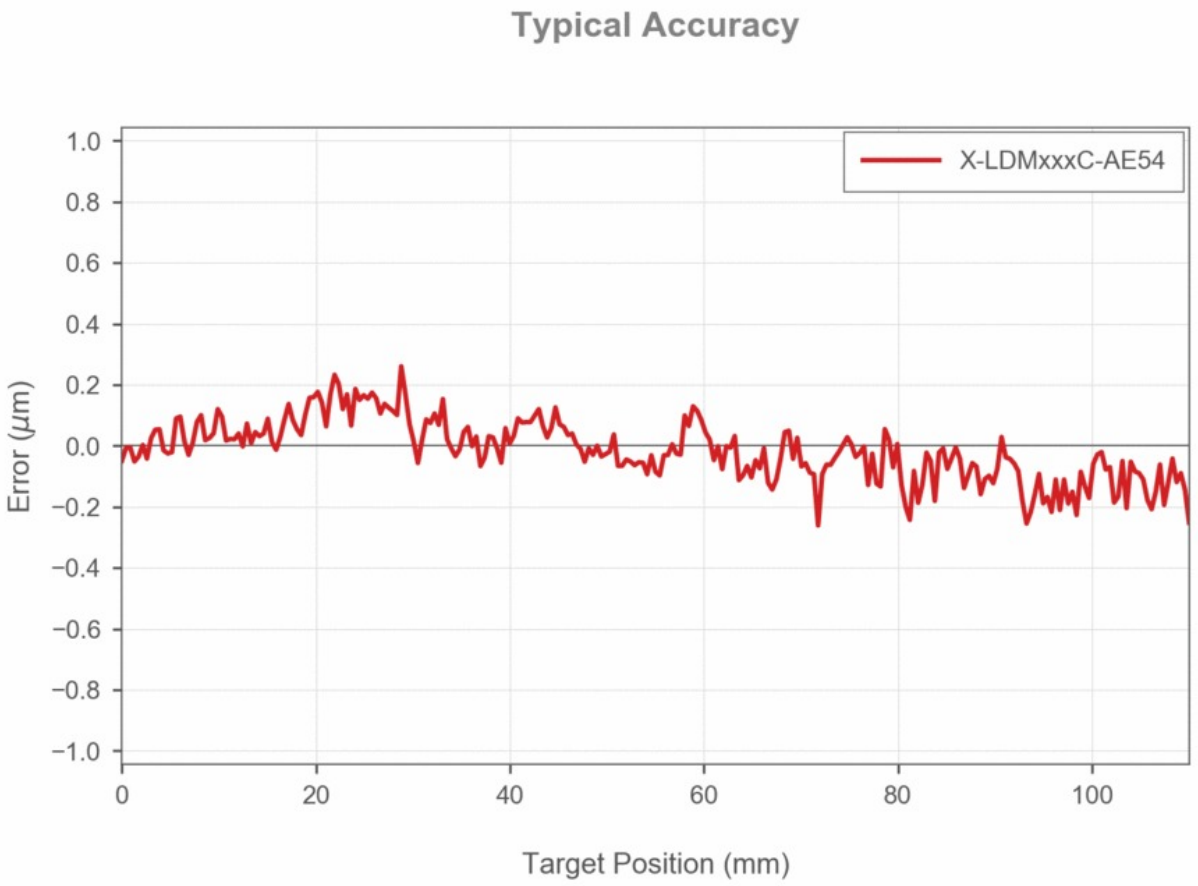
• dimensions_X-LDM-AE (Drawing for the X-LDM_AE)

X-LDM060C-AE54D12 Specifications

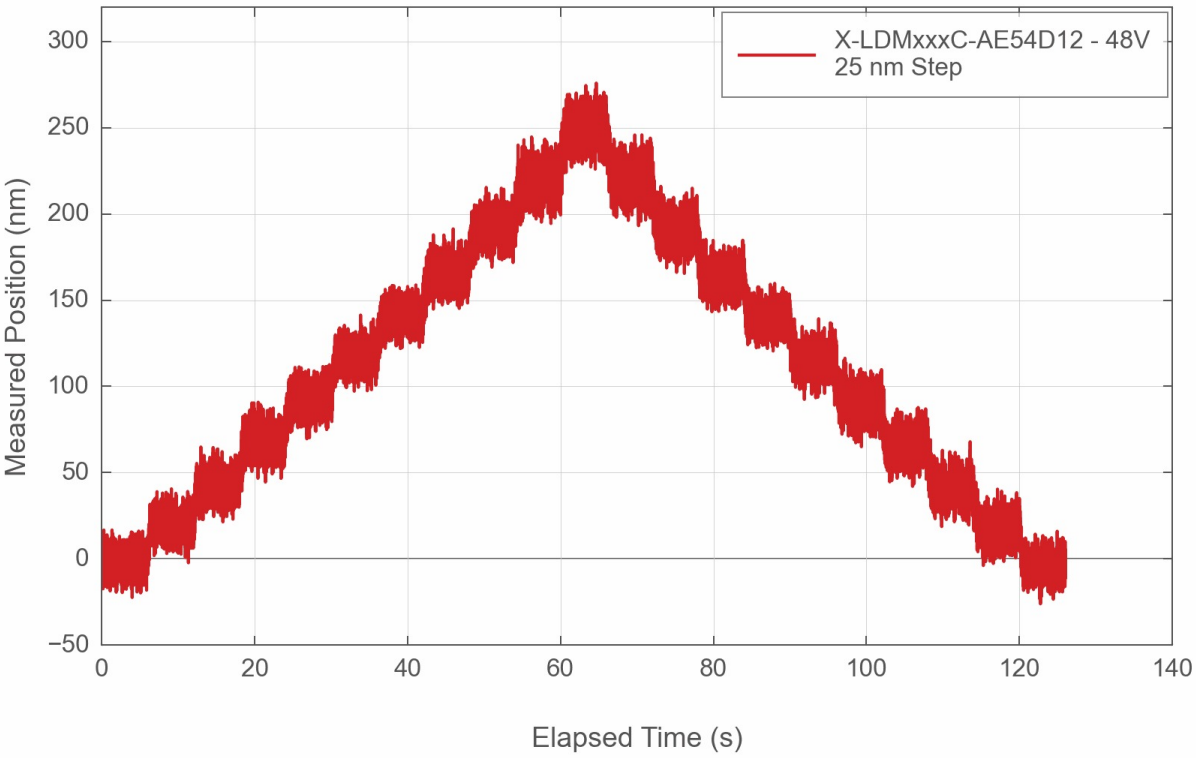
Built-in Controller	
Travel Range	60 mm (2.362")
Accuracy (unidirectional)	1 µm (0.000039")
Repeatability	< 0.08 µm (< 0.000003")
Minimum Incremental Move	25 nm
Maximum Acceleration	34.3 m/s2 (3.50 g)
Maximum Speed	1200 mm/s (47.244"/s)
Minimum Speed	0.61 nm/s
Speed Resolution	0.61 nm/s
Encoder Type	Linear analog encoder
Encoder Count Size	1 nm
Peak Thrust	60 N (13.5 lb)
Maximum Continuous Thrust	35 N (7.8 lb)
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default)
Data Cable Connection	Locking 4-pin M8
Maximum Centered Load	185 N (41.5 lb)
Maximum Moment (Pitch)	1200 N-cm (1699.3 oz-in)
Maximum Moment (Roll)	1200 N-cm (1699.3 oz-in)
Maximum Moment (Yaw)	1200 N-cm (1699.3 oz-in)
Vertical Runout	< 4 µm (< 0.000157")
Horizontal Runout	< 3 µm (< 0.000118")
Typical Velocity Stability	± 0.11% at 100 mm/s with a 1.0 kg payload
Pitch	0.003° (0.052 mrad)
Roll	0.002° (0.035 mrad)
Yaw	0.002° (0.035 mrad)
Power Supply	48 VDC
Power Plug	2-pin screw terminal

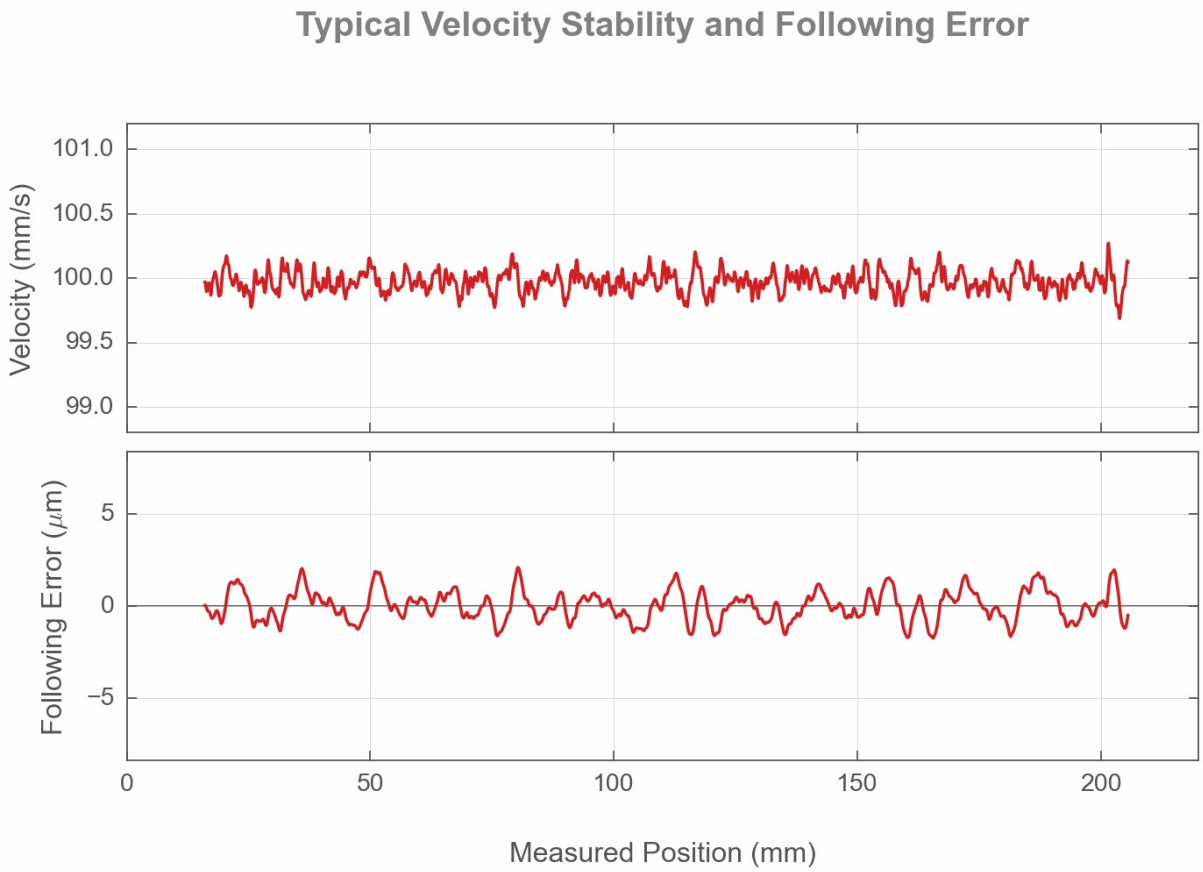
Built-in Controller	
Maximum Current Draw	3000 mA
Motor Type	Moving Magnet Track Linear Motor
Force Constant	15.8 N/A (3.5 lbs/A)
Guide Type	Crossed-Roller Bearing
Limit or Home Sensing	Optical Index Mark
Manual Control	Indexed knob with push switch
Axes of Motion	1
LED Indicators	Yes
Mounting Interface	M6 threaded holes
Moving Mass	1.74 kg (3.828 lbs)
Digital Input	1
Digital Output	2
Operating Temperature Range	10 to 40 °C
CE Compliant	Yes
Vacuum Compatible	No
Weight	3.76 kg (8.289 lb)

X-LDM-AE Series Charts



Typical Minimum Incremental Move





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