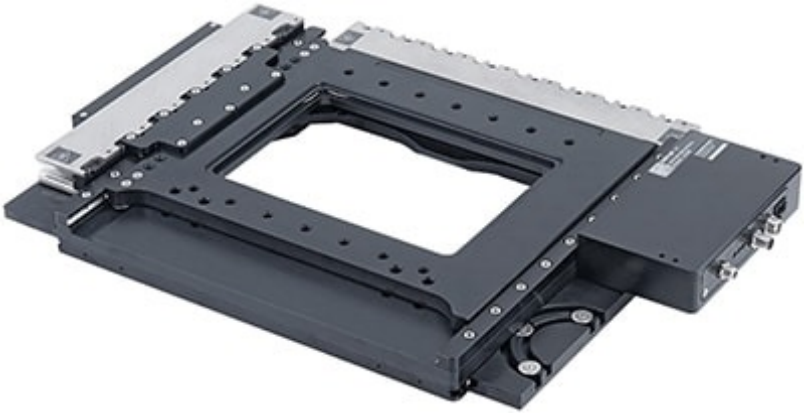
X-ADR-AE Series Datasheet



- 130 x 100 mm or 250 x 100 mm travel options
- 1 nm resolution linear encoders provide 5 µm accuracy, 500 nm repeatability, and 50 nm minimum incremental move
- Ultra quiet linear motors provide 750 mm/s top speed and are maintenance free
- Built-in controller saves space and simplifies cable management. Easily connect via USB and daisy chain to other Zaber products
- Simple standalone control with X-JOY joysticks
- A Nucleus microscopy platform module
- Digital IO for triggering external systems

X-ADR-AE Series Overview

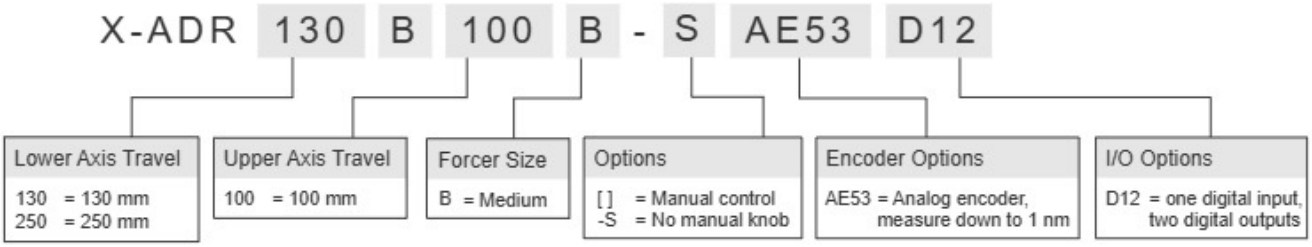
Zaber's X-ADR-AE series microscope stages are designed as replacements for manual stages on inverted microscopes or for stand-alone operation as scanning stages. Featuring non-contact linear motors and optical linear encoders, these stages offer a leap in performance over conventional screw-driven stages, making them suitable for demanding applications where speed, accuracy and reliability are of utmost importance.

Compact controllers are built directly into the stage, saving bench space and allowing the stages to be powered and controlled through a single flex rated cable. X-ADR-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.

Mounting adaptors are available for breadboards and most common microscopes. Custom adaptors and plates are available upon request.

For more information visit: https://www.zaber.com/products/scanning-microscope-stages/X-ADR-AE

X-ADR-AE Series Part Numbering & Options



X-ADR-AE Series Drawings

- X-ADR130B100B-SAE53D12.pdf (Drawing for the X-ADR130B100B-SAE53D12 DWG 3538 R01D)
- X-ADR250B100B-SAE53D12.pdf (Drawing for X-ADR250B100B-SAE53D12 DWG 3272 R02D)

X-ADR-AE Series Specifications

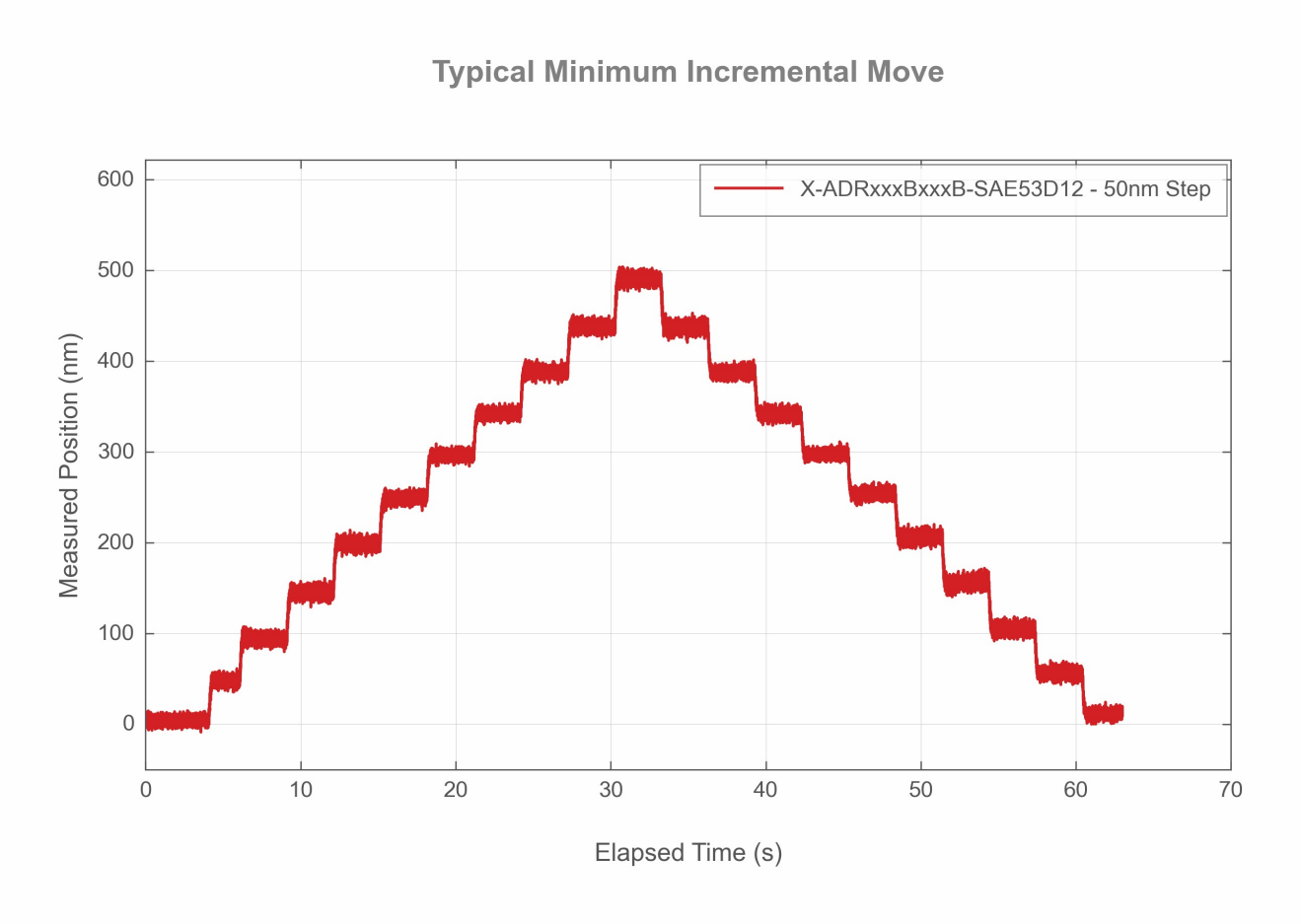
Built-in Controller	
Accuracy (unidirectional)	5 µm (0.000197")
Repeatability	< 0.5 µm (< 0.000020")
Minimum Incremental Move	50 nm
Maximum Speed	750 mm/s (29.528"/s)
Minimum Speed	0.61 nm/s
Speed Resolution	0.61 nm/s
Encoder Type	Linear analog encoder
Encoder Count Size	1 nm
Peak Thrust	35 N (7.8 lb)
Maximum Continuous Thrust	13 N (2.9 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)
Typical Velocity Stability	± 0.12% at 100 mm/s with a 0.55 kg payload
Pitch	0.025° (0.436 mrad)
Yaw	0.01° (0.174 mrad)
Power Supply	24-48 VDC
Maximum Current Draw	2300 mA
Motor Type	Moving Magnet Track Linear Motor
Force Constant	5.5 N/A (1.2 lbs/A)
Guide Type	Crossed-Roller Bearing
Limit or Home Sensing	Optical Index Mark
Axes of Motion	2
LED Indicators	Yes
Mounting Interface	Separate mounting adaptors available
Digital Input	1
Digital Output	2

Built-in Controller	
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

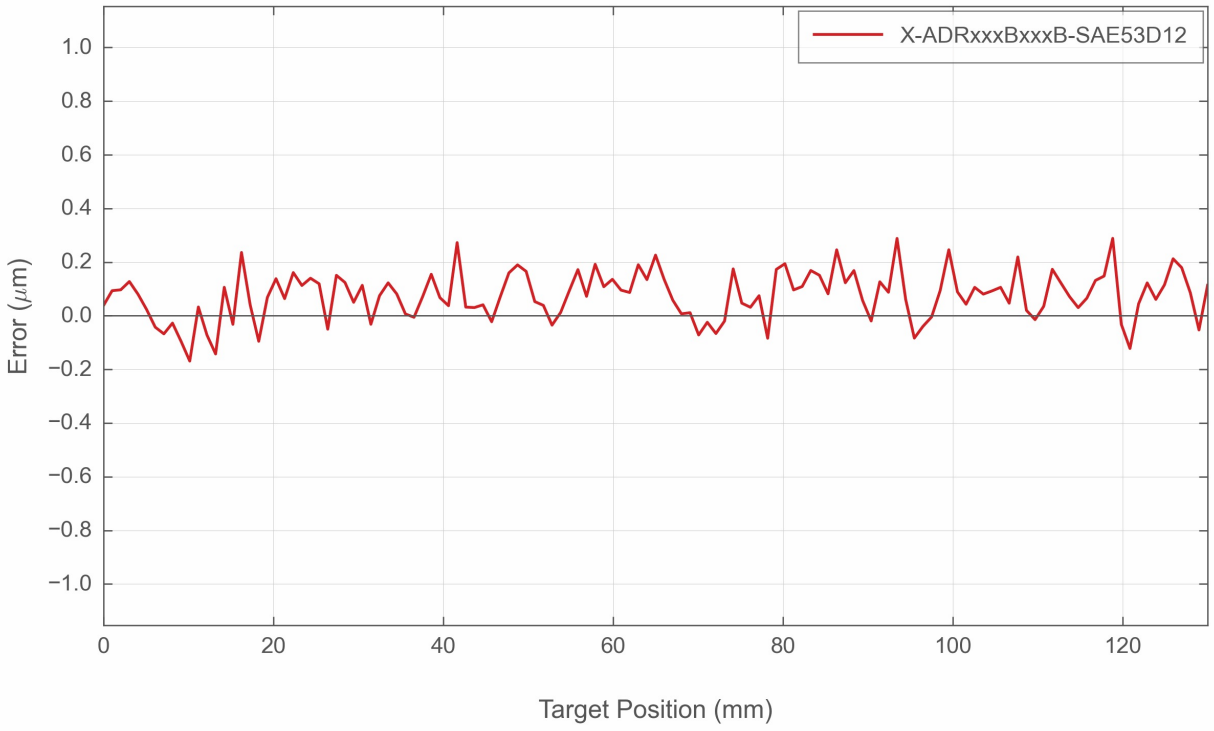
Part Number	Lower Travel Range	Upper Travel Range	Maximum Centered Load	Roll
X-ADR130B100B-SAE53D12	130 mm (5.118")	100 mm (3.937")	50 N (11.2 lb)	0.006° (0.105 mrad)
X-ADR250B100B-SAE53D12	250 mm (9.843")	100 mm (3.937")	30 N (6.7 lb)	0.01° (0.174 mrad)

Part Number	Lower Moving Mass	Upper Moving Mass	Weight
X-ADR130B100B-SAE53D12	3.3 kg (7.260 lbs)	1.3 kg (2.860 lbs)	4.9 kg (10.803 lb)
X-ADR250B100B-SAE53D12	3.9 kg (8.580 lbs)	1.5 kg (3.300 lbs)	6.2 kg (13.669 lb)

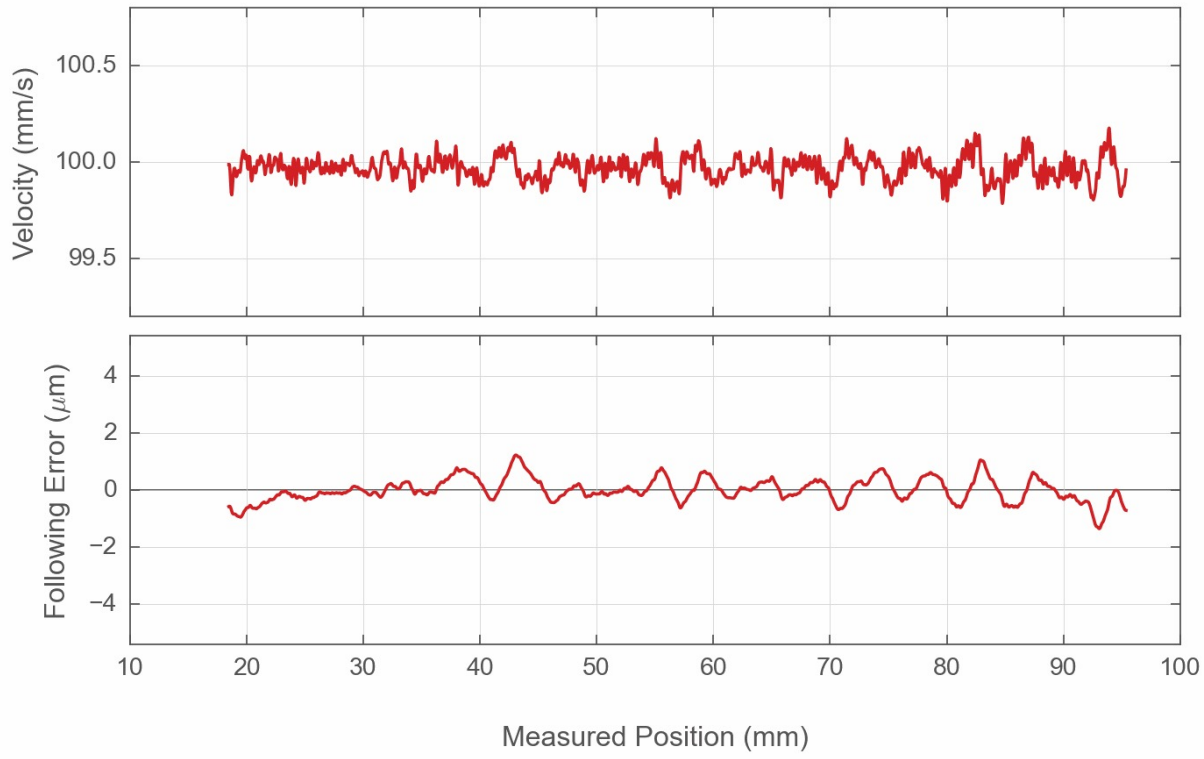
X-ADR-AE Series Charts



Typical Accuracy



Typical Velocity Stability and Following Error



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