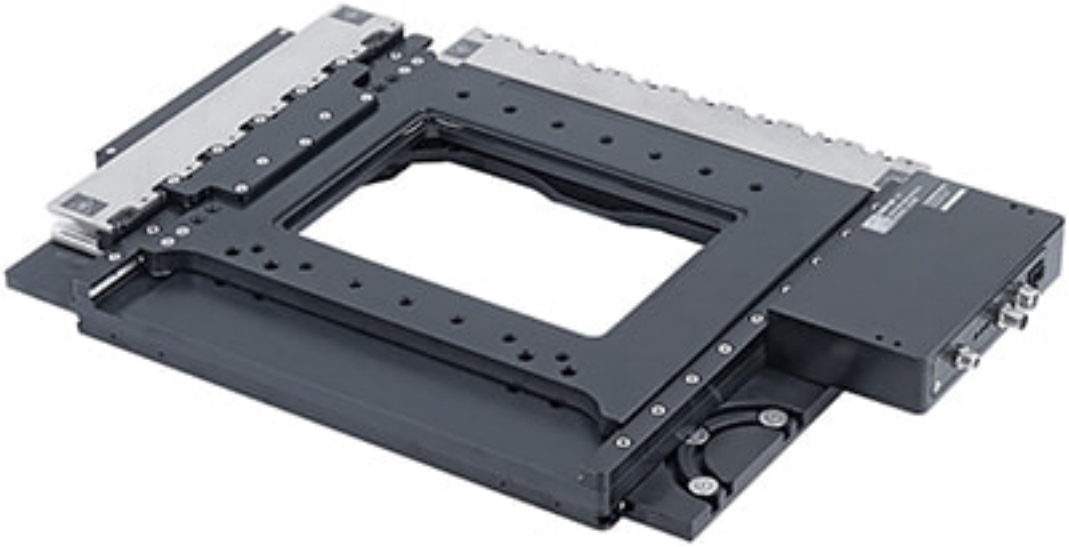
Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
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1-604-648-8033 *Fax*

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

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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 130 B 100 B -S AE53 D12

Lower Axis Travel	Forcer Size	Upper Axis Travel	Forcer Size	Options
130 — 130 mm **250** — 250 mm	**B** — Medium	**100** — 100 mm	**B** — Medium	**-S** — No manual knob

Encoder Options	I/O Options
AE53 — Analog encoder, measure down to 1 nm	**D12** — One digital input, two digital outputs

X-ADR-AE Series Drawings

• View all drawings and documents at zaber.com

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X-ADR-AE Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Axes of Motion	2
LED Indicators	Yes

Positioning Performance

Specification	Value
Accuracy (unidirectional)	5 µm (0.000197 ")
Repeatability	<0.5 µm (<0.00002 ")
Minimum Incremental Move	50 nm
Pitch Error	0.025 ° (0.436 mrad)
Yaw Error	0.01 ° (0.174 mrad)

Load Performance

Specification	Value
Peak Thrust	35 N (7.8 lb)
Maximum Continuous Thrust	13 N (2.9 lb)
Maximum Moment (Pitch)	5 N·m (3.7 lb·ft)
Maximum Moment (Roll)	5 N·m (3.69 lb·ft)
Maximum Moment (Yaw)	5 N·m (3.69 lb·ft)

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Speed

Specification	Value
Maximum Speed	750 mm/s (29.528 "/s)
Minimum Speed	0.61 nm/s
Speed Resolution	0.61 nm/s
Typical Velocity Stability	± 0.12% at 100 mm/s with a 0.55 kg payload

Encoder & Sensing

Specification	Value
Encoder Type	Linear analog encoder
Encoder Count Size	1 nm
Limit or Home Sensing	Optical Index Mark

Motor

Specification	Value
Motor Type	Moving Magnet Track Linear Motor
Force Constant	5.5 N/A (1.2 lbs/A)

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default)
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Maximum Current Draw	2300 mA

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Analog & Digital I/O

Specification	Value
Digital Input	1
Digital Output	2

Mechanical

Specification	Value
Guide Type	Crossed-Roller Bearing
Mounting Interface	Separate mounting adaptors available

Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Lower Travel Range	Upper Travel Range	Weight	Roll Error
X-ADR130B100B-SAE53D12	130 mm (5.118 ")	100.00001 mm (3.937 ")	4.9 kg (10.803 lb)	0.006 ° (0.105 mrad)
X-ADR250B100B-SAE53D12	250 mm (9.843 ")	100.00002 mm (3.937 ")	6.2 kg (13.669 lb)	0.01 ° (0.174 mrad)

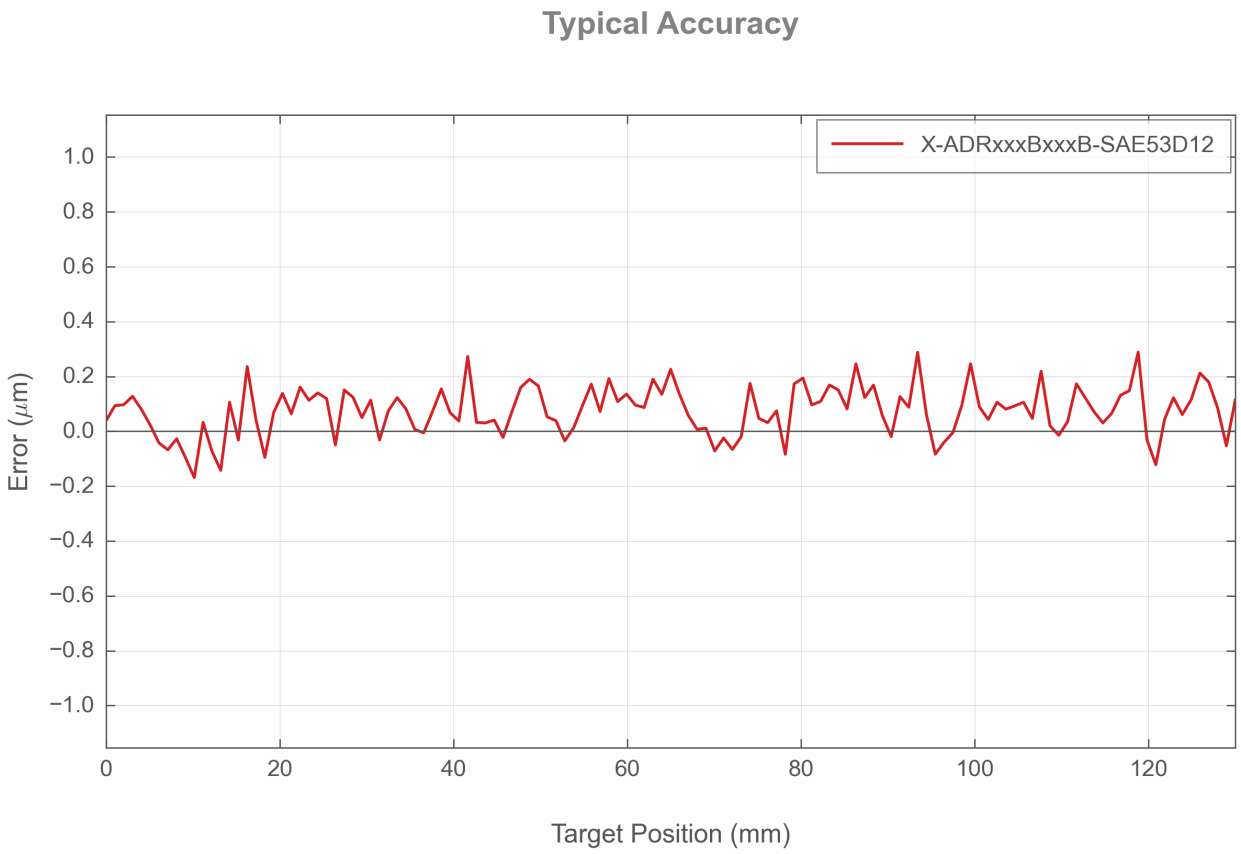
Part Number	Maximum Centered Load	Lower Moving Mass	Upper Moving Mass
X-ADR130B100B-SAE53D12	50 N (11.2 lb)	3.3 kg (7.26 lbs)	1.3 kg (2.86 lbs)
X-ADR250B100B-SAE53D12	30 N (6.7 lb)	3.9 kg (8.58 lbs)	1.5 kg (3.3 lbs)

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X-ADR-AE Series Charts

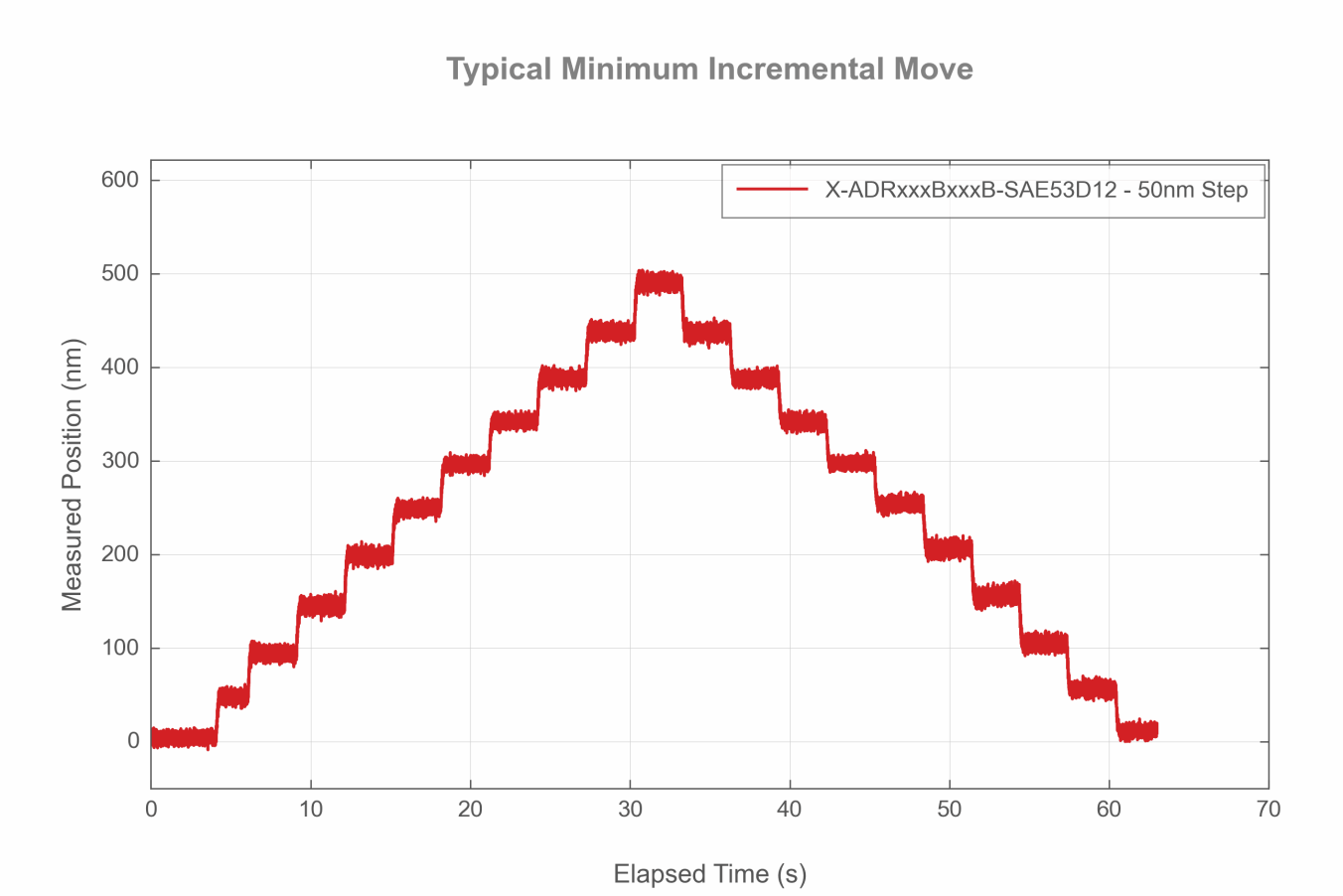
Typical Accuracy



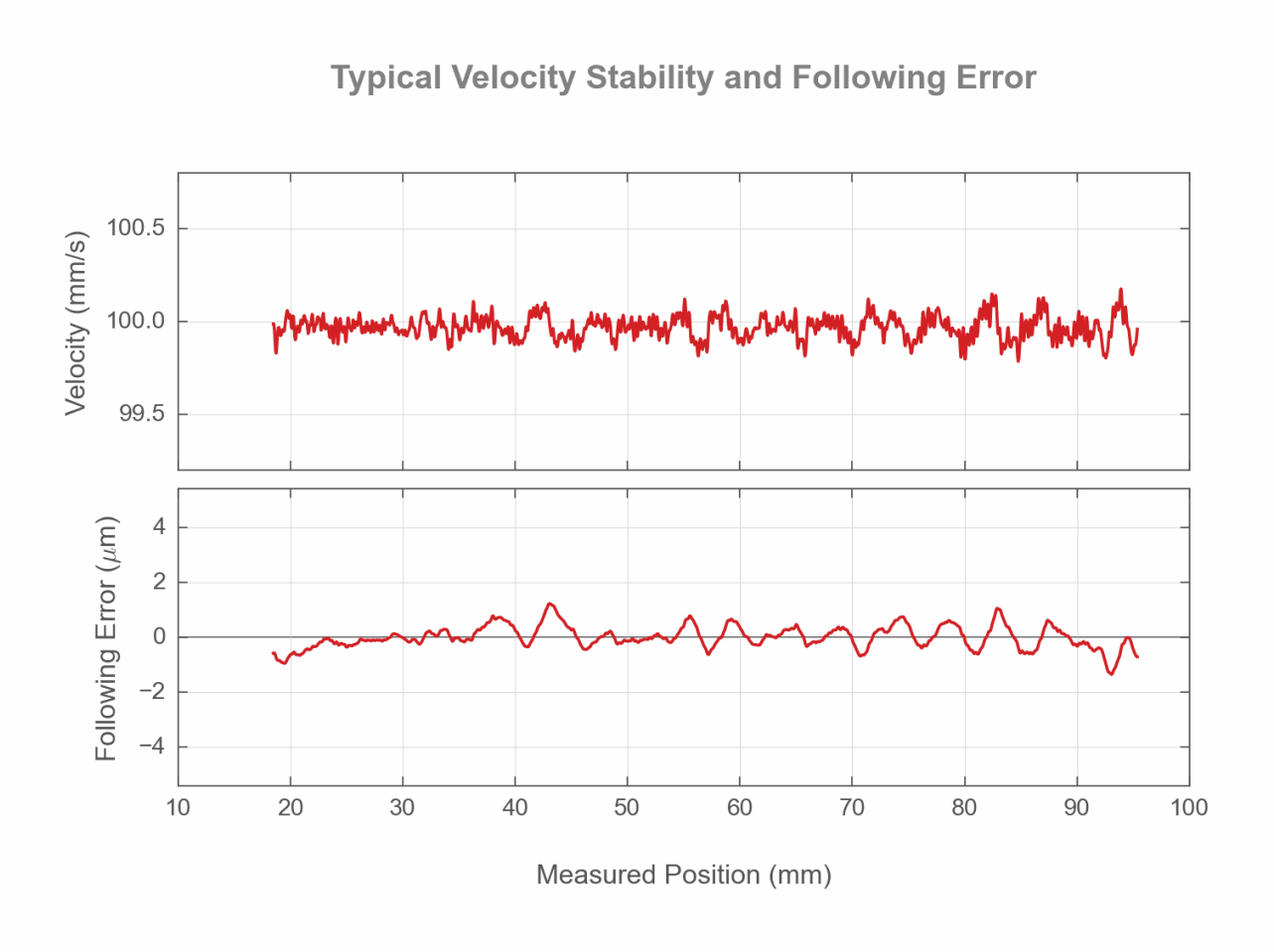
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Typical Minimum Incremental Move 50nm Step



Typical Velocity Stability And Following Error



Contact

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