X-LDQ-AE Series Datasheet

- Minimum incremental move of 50 nm
- Integrated linear encoder provides high accuracy closed loop servo positioning
- Up to 1.5 m/s speed and up to 2 g acceleration
- 75, 150, 300, 450, 600 and 1000 mm travel
- Up to 2.5 µm accuracy over 1000 mm travel
- Built-in controller; daisy-chains with other Zaber products
- Zero backlash

Zaber's X-LDQ-AE Series devices are computer-controlled, motorized linear motor stages with high precision and speed capabilities. They are stand-alone units requiring only a standard 48 V power supply. The built-in controller and linear encoder allows pre-tuned closed-loop servo positioning with adjustable tuning parameters. An optional indexed knob provides convenient manual control for versatile operation even without a computer. These stages 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. Convenient locking, 4-pin, M8 connectors on the unit allow for secure connection between units. The X-LDQ-AE's innovative design allows speeds up to 1.5 m/s and minimum incremental move of 50 nm. Like all of Zaber's products, the X-LDQ-AE Series is designed to be 'plug and play' and very easy to set up and operate.

Drawings

Specifications

Specification	Value	Alternate Unit
Built-in Controller	Yes	
Travel Range	75 mm	2.953 "
Accuracy (unidirectional)	2.5 µm	0.000098 "
Repeatability	< 0.3 µm	< 0.000012 "
Minimum Incremental Move	50 nm	
Maximum Speed	1500 mm/s	59.055 "/s
Maximum Acceleration	19.62 m/s2	2.00 g
Encoder Type	Linear analog encoder	
Peak Thrust	40 N	9.0 lb
Maximum Continuous Thrust	35 N	7.8 lb
Communication Interface	RS-232	
Communication Protocol	Zaber ASCII (Default)	
Maximum Centered Load	200 N	44.9 lb
Maximum Cantilever Load	3000 N-cm	4248.4 oz-in
Guide Type	Recirculating Ball Linear Guide	
Stiffness in Pitch	8000 N-m/°	2 µrad/N-m
Stiffness in Roll	3800 N-m/°	5 µrad/N-m
Stiffness in Yaw	4000 N-m/°	4 µrad/N-m
Maximum Current Draw	3000 mA	
Power Supply	24-48 VDC	
Power Plug	2-pin screw terminal	
Motor Type	Moving Coil Linear Motor	
Motor Rated Current	2400 mA/phase	
Inductance	1.24 mH/phase	
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	

Specification	Value	Alternate Unit
Vacuum Compatible	No	
Operating Temperature Range	0 to 50 °C	
RoHS Compliant	Yes	
CE Compliant	Yes	
Weight	6.4 kg	14.110 lb

Charts