

BLQ-E Series Datasheet



- 70 to 3000 mm travel
- Up to 2.0 m/s speed, 55 N thrust, and 20 kg load capacity
- Integrated recirculating ball bearing guide provides exceptional lifetime
- Integrated, 500 CPR, motor mounted encoder provides slip/stall detection and recovery
- Designed for use with an X-MCC Series stepper motor controller or any 2-phase stepper motor controller
- With AutoDetect, the X-MCC controller configures its settings automatically for the connected peripheral

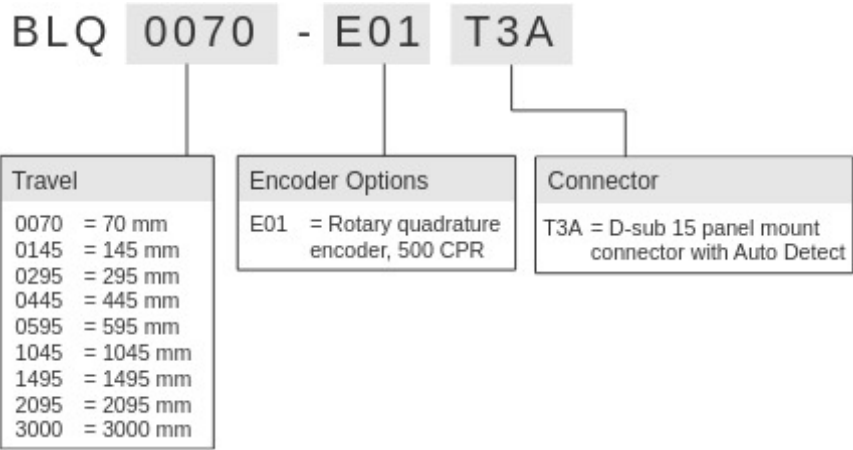
BLQ-E Series Overview

Zaber's BLQ-E Series products are computer-controlled, motorized linear stages with integrated stepper motors and motor encoders. These stages are capable of speeds up to 2.0 m/s and can easily be mounted in XY configuration without additional hardware. Some multi-axis configurations may require additional accessories; please contact Zaber Technical Support to ensure the correct ones are selected.

The built-in motor encoder allows for closed-loop operation and slip/stall recovery features. The stages are designed to connect directly to our X-MCC Series universal motor controllers, or they can be used with any 2-phase stepper motor controller through the panel mount DB15 connector. Set up is easy with AutoDetect. Once connected, the X-MCC controller will automatically detect and configure the BLQ-E.

For more information visit: <https://www.zaber.com/products/linear-stages/BLQ-E>

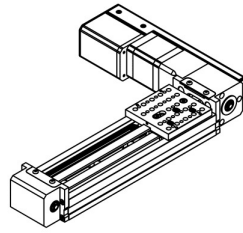
BLQ-E Series Part Numbering



BLQ-E Series Drawings

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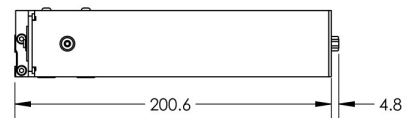
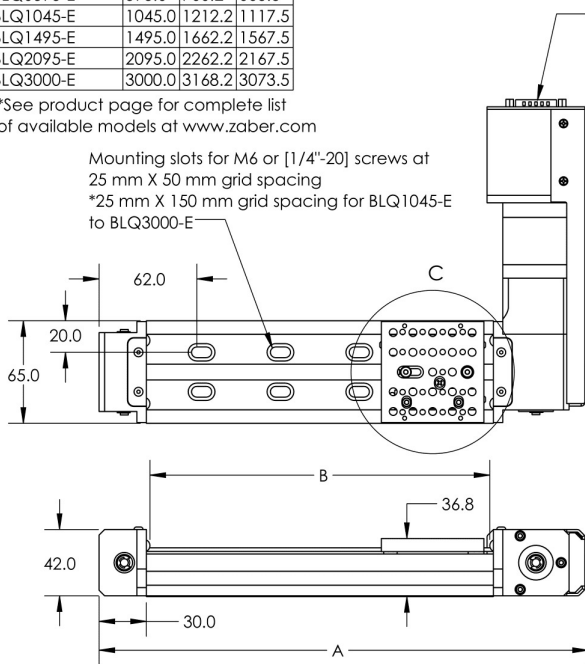
BLQ-E Motorized Linear Stage
 dimensions in mm



Model Number*	Travel	A	B
BLQ0070-E	70.0	235.2	140.5
BLQ0145-E	145.0	310.2	215.5
BLQ0295-E	295.0	460.2	365.5
BLQ0445-E	445.0	610.2	515.5
BLQ0595-E	595.0	760.2	665.5
BLQ1045-E	1045.0	1212.2	1117.5
BLQ1495-E	1495.0	1662.2	1567.5
BLQ2095-E	2095.0	2262.2	2167.5
BLQ3000-E	3000.0	3168.2	3073.5

*See product page for complete list of available models at www.zaber.com

Mounting slots for M6 or [1/4"-20] screws at 25 mm X 50 mm grid spacing
 *25 mm X 150 mm grid spacing for BLQ1045-E to BLQ3000-E



BLQ-E Series Specifications

Specification	Value	Alternate Unit
Microstep Size (Default Resolution)	4.21875 μm	
Built-in Controller	No	
Recommended Controller	X-MCC (48 V) Recommended	
AutoDetect	Yes	
Repeatability	< 20 μm	< 0.000787"
Backlash	< 75 μm	< 0.002953"
Minimum Speed	0.002576 mm/s	0.000101"/s
Speed Resolution	0.002576 mm/s	0.000101"/s
Encoder Resolution	500 CPR	2000 states/rev
Encoder Type	Rotary quadrature encoder	
Peak Thrust	55 N	12.3 lb
Maximum Continuous Thrust	20 N	4.5 lb
Maximum Centered Load	200 N	44.9 lb
Maximum Cantilever Load	1500 N-cm	2124.2 oz-in
Guide Type	Recirculating Ball Linear Guide	
Vertical Runout	< 30 μm	< 0.001181"
Linear Motion Per Motor Rev	54 mm	2.126"
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Rated Current	2300 mA/phase	
Motor Winding Resistance	1 ohms/phase	
Inductance	2.2 mH/phase	
Motor Connection	D-sub 15	
Default Resolution	1/64 of a step	
Mechanical Drive System	Synchronous belt	
Limit or Home Sensing	Magnetic home sensor	
Axes of Motion	1	
Mounting Interface	M6 threaded holes and 8-32 threaded holes	
Operating Temperature Range	0 to 50 °C	
Vacuum Compatible	No	

Specification	Value	Alternate Unit
RoHS Compliant	Yes	
Stage Parallelism	< 100 μm	< 0.003937"
CE Compliant	Yes	

Part Number	Travel Range	Accuracy (unidirectional)	Maximum Speed	Horizontal Runout
BLQ0070-E01T3A	70 mm (2.756")	200 μm (0.007874")	1100 mm/s (43.307"/s)	< 20 μm (< 0.000787")
BLQ0145-E01T3A	145 mm (5.709")	200 μm (0.007874")	1600 mm/s (62.992"/s)	< 30 μm (< 0.001181")
BLQ0295-E01T3A	295 mm (11.614")	300 μm (0.011811")	2000 mm/s (78.740"/s)	< 35 μm (< 0.001378")
BLQ0445-E01T3A	445 mm (17.520")	400 μm (0.015748")	2000 mm/s (78.740"/s)	< 40 μm (< 0.001575")
BLQ0595-E01T3A	595 mm (23.425")	500 μm (0.019685")	2000 mm/s (78.740"/s)	< 60 μm (< 0.002362")
BLQ1045-E01T3A	1045 mm (41.142")	700 μm (0.027559")	2000 mm/s (78.740"/s)	< 60 μm (< 0.002362")
BLQ1495-E01T3A	1495 mm (58.858")	1100 μm (0.043307")	2000 mm/s (78.740"/s)	
BLQ2095-E01T3A	2095 mm (82.480")	1500 μm (0.059055")	2000 mm/s (78.740"/s)	
BLQ3000-E01T3A	3000 mm (118.110")	2200 μm (0.086614")	2000 mm/s (78.740"/s)	

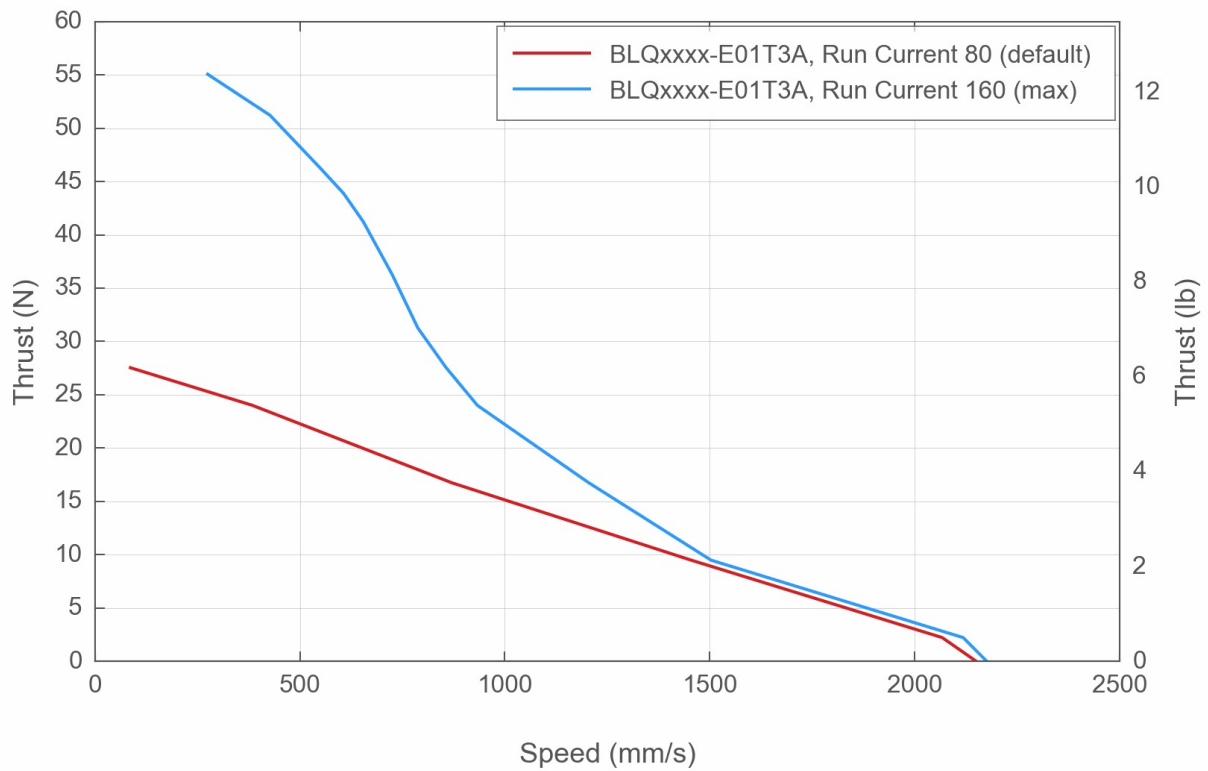
Part Number	Pitch	Roll	Yaw	Weight
BLQ0070-E01T3A	0.06° (1.047 mrad)	0.03° (0.523 mrad)	0.03° (0.523 mrad)	1.7 kg (3.748 lb)
BLQ0145-E01T3A	0.06° (1.047 mrad)	0.03° (0.523 mrad)	0.03° (0.523 mrad)	1.85 kg (4.079 lb)
BLQ0295-E01T3A	0.06° (1.047 mrad)	0.03° (0.523 mrad)	0.03° (0.523 mrad)	2.15 kg (4.740 lb)
BLQ0445-E01T3A	0.06° (1.047 mrad)	0.03° (0.523 mrad)	0.03° (0.523 mrad)	2.5 kg (5.512 lb)
BLQ0595-E01T3A	0.06° (1.047 mrad)	0.03° (0.523 mrad)	0.03° (0.523 mrad)	2.75 kg (6.063 lb)
BLQ1045-E01T3A	0.075° (1.309 mrad)	0.06° (1.047 mrad)	0.06° (1.047 mrad)	3.75 kg (8.267 lb)
BLQ1495-E01T3A				4.7 kg (10.362 lb)

Part Number	Pitch	Roll	Yaw	Weight
BLQ2095-E01T3A				6 kg (13.228 lb)
BLQ3000-E01T3A				7.8 kg (17.196 lb)

BLQ-E Series Charts

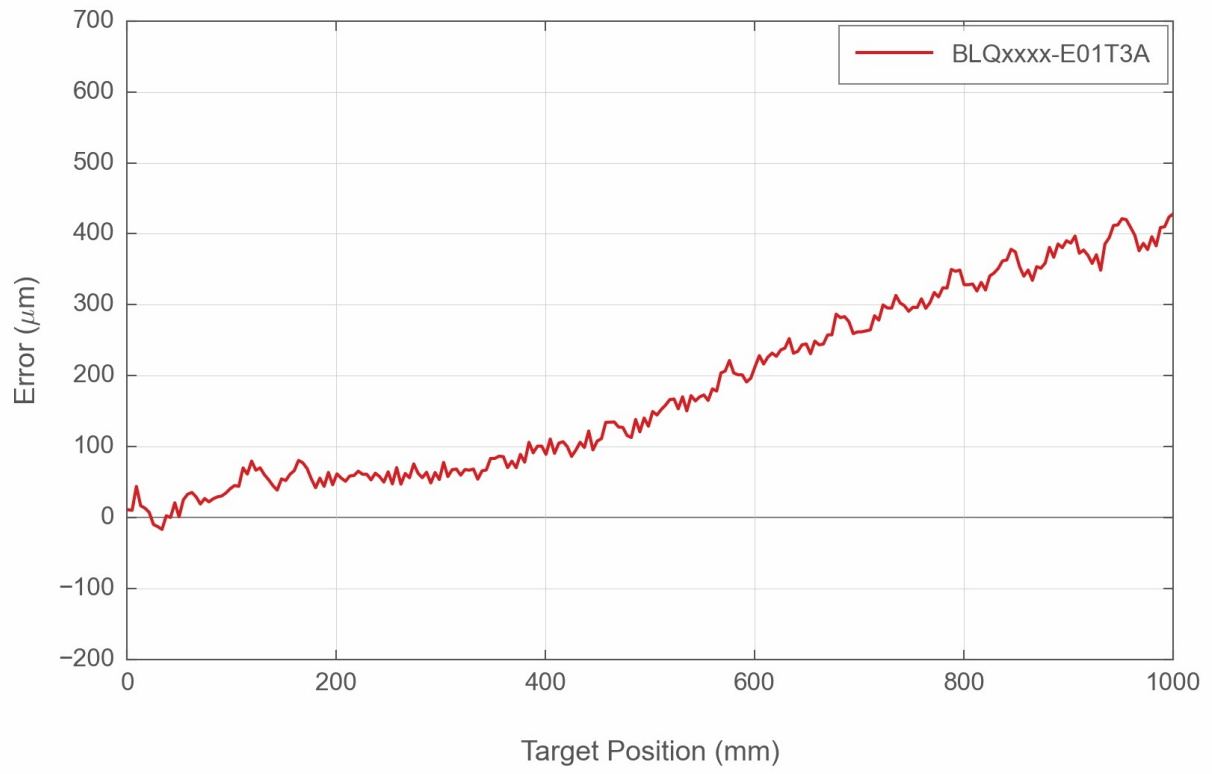
Thrust Speed Performance

with X-MCCx 48V



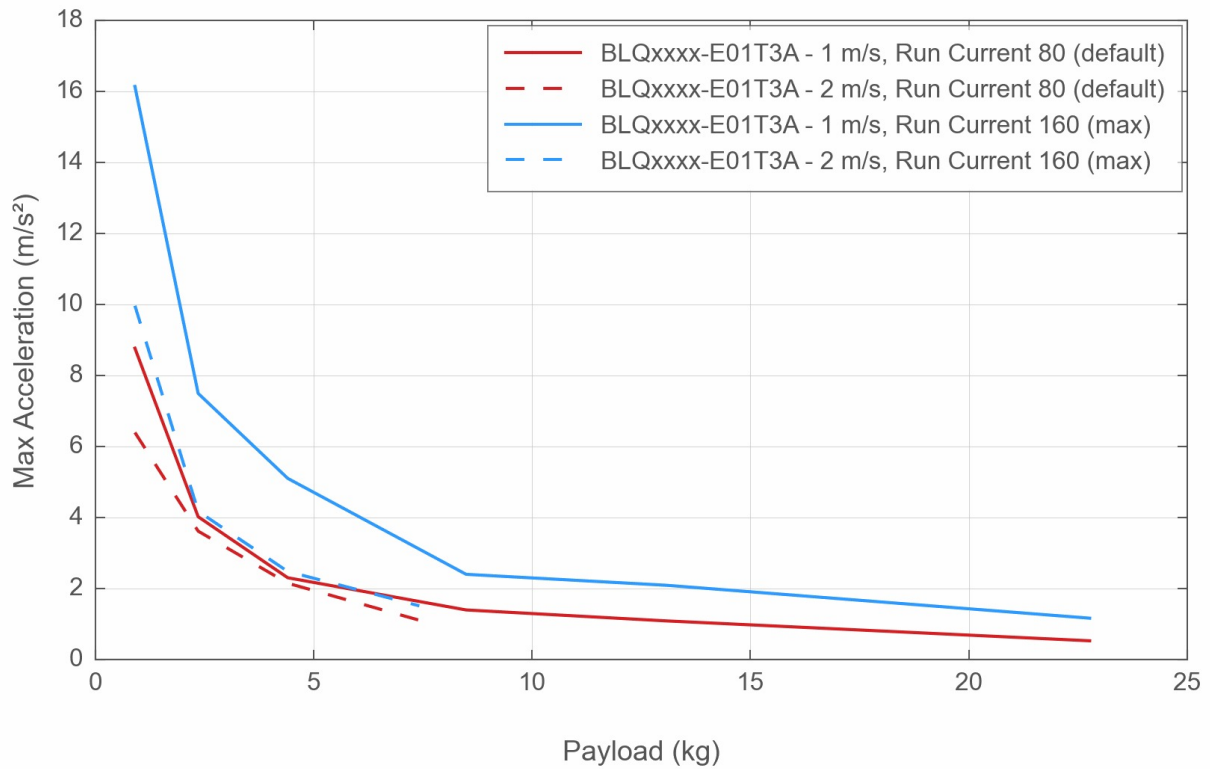
Typical Accuracy

with X-MCCx 48V



Horizontal Acceleration

with X-MCCx 48V



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