

BLQ0445-E01CT3A Datasheet



- 70 to 595 mm travel
- Up to 2.0 m/s speed, 55 N thrust, and 20 kg load capacity
- Encoder position feedback with slip/stall detection and automatic recovery
- Includes rigid cover
- Integrated recirculating ball bearing guide provides exceptional lifetime
- 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

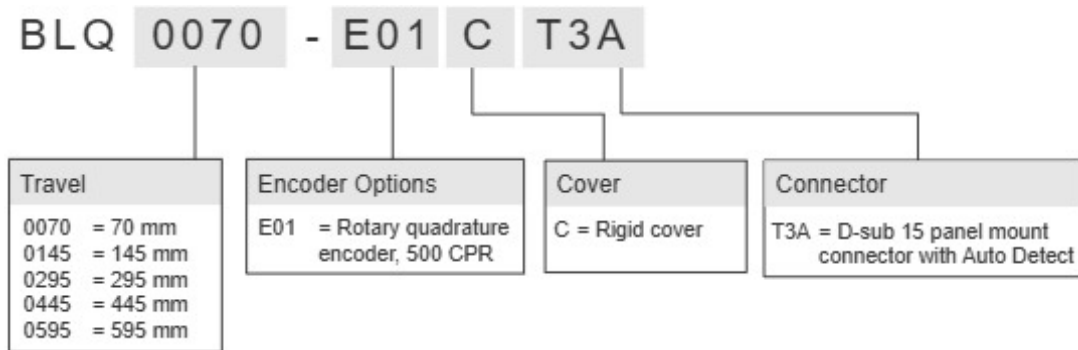
BLQ-EC Series Overview

Zaber's BLQ-EC 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. A rigid non-contact cover prevents the ingress of small objects. 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-EC.

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

BLQ-EC Series Part Numbering & Options



BLQ0445-E01CT3A Drawings

- [BLQ-EC.png \(Drawing for the BLQ-EC\)](#)

BLQ0445-E01CT3A Specifications

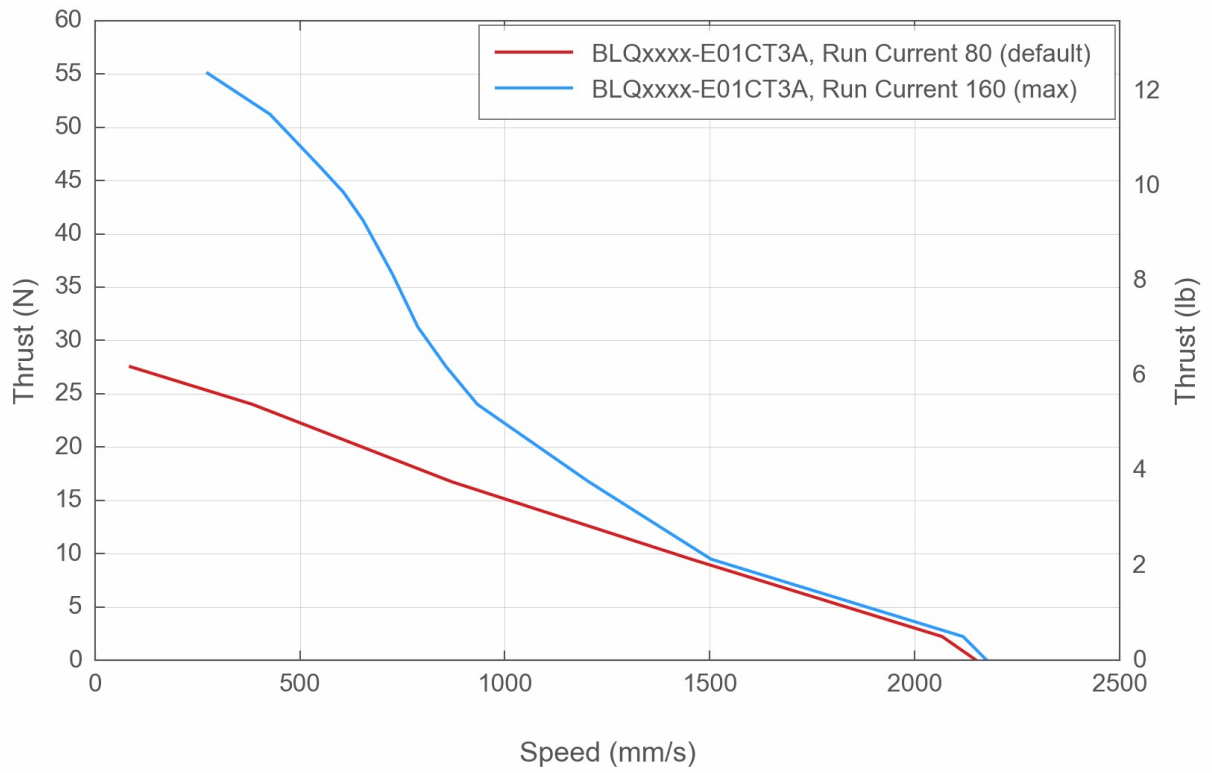
Microstep Size (Default Resolution)	4.21875 μm
Built-in Controller	No
Recommended Controller	X-MCC (48 V) Recommended
AutoDetect	Yes
Travel Range	445 mm (17.520")
Accuracy (unidirectional)	400 μm (0.015748")
Repeatability	< 20 μm (< 0.000787")
Backlash	< 75 μm (< 0.002953")
Maximum Speed	2000 mm/s (78.740"/s)
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 Moment (Pitch)	5 N-m (3.7 ft-lb)
Maximum Moment (Roll)	15 N-m (11.1 ft-lb)
Maximum Moment (Yaw)	5 N-m (3.7 ft-lb)
Vertical Runout	< 30 μm (< 0.001181")
Horizontal Runout	< 40 μm (< 0.001575")
Pitch	0.06° (1.047 mrad)
Roll	0.03° (0.523 mrad)
Yaw	0.03° (0.523 mrad)
Stiffness in Pitch	115 N-m/° (152 $\mu\text{rad/N-m}$)
Stiffness in Roll	145 N-m/° (120 $\mu\text{rad/N-m}$)
Stiffness in Yaw	110 N-m/° (159 $\mu\text{rad/N-m}$)
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

Microstep Size (Default Resolution)	4.21875 μm
Motor Winding Resistance	1 ohms/phase
Inductance	2.2 mH/phase
Motor Connection	D-sub 15
Default Resolution	1/64 of a step
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Synchronous belt
Limit or Home Sensing	Magnetic home sensor
Axes of Motion	1
Mounting Interface	M6 threaded holes
Stage Parallelism	< 100 μm (< 0.003937")
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No
Weight	2.5 kg (5.512 lb)

BLQ-EC Series Charts

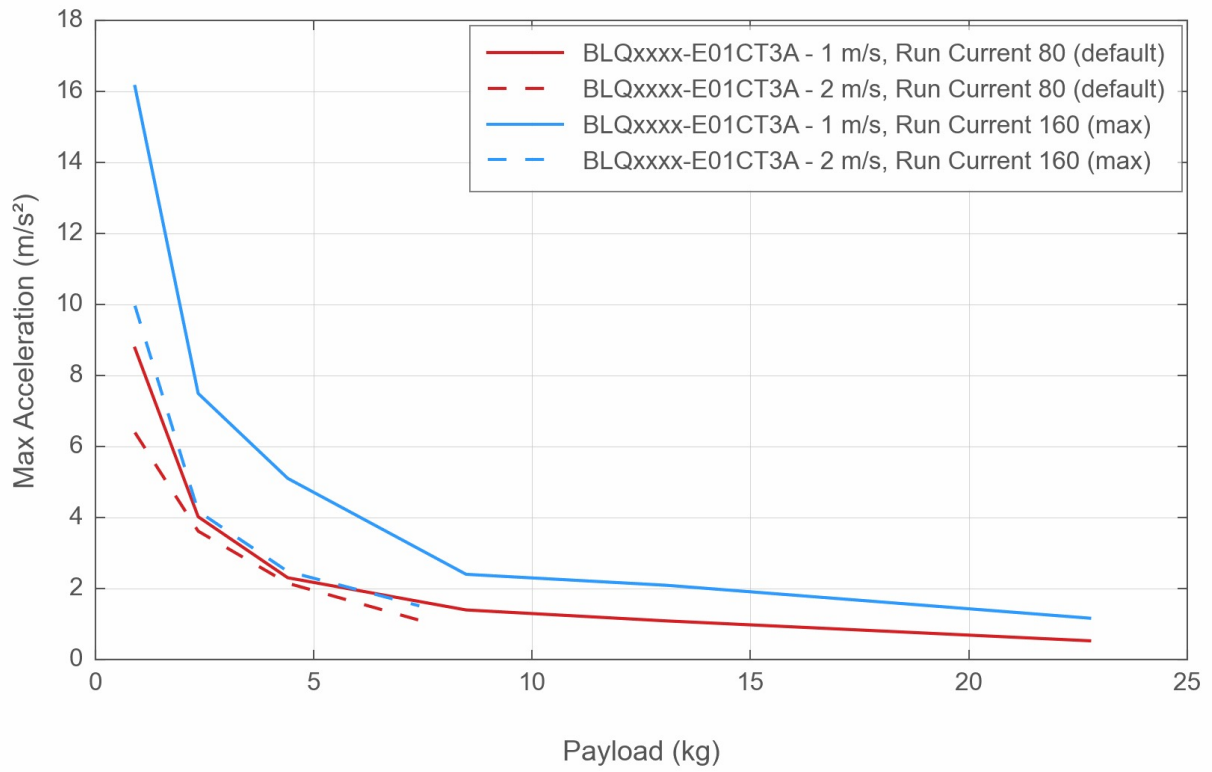
Thrust Speed Performance

with X-MCCx 48V



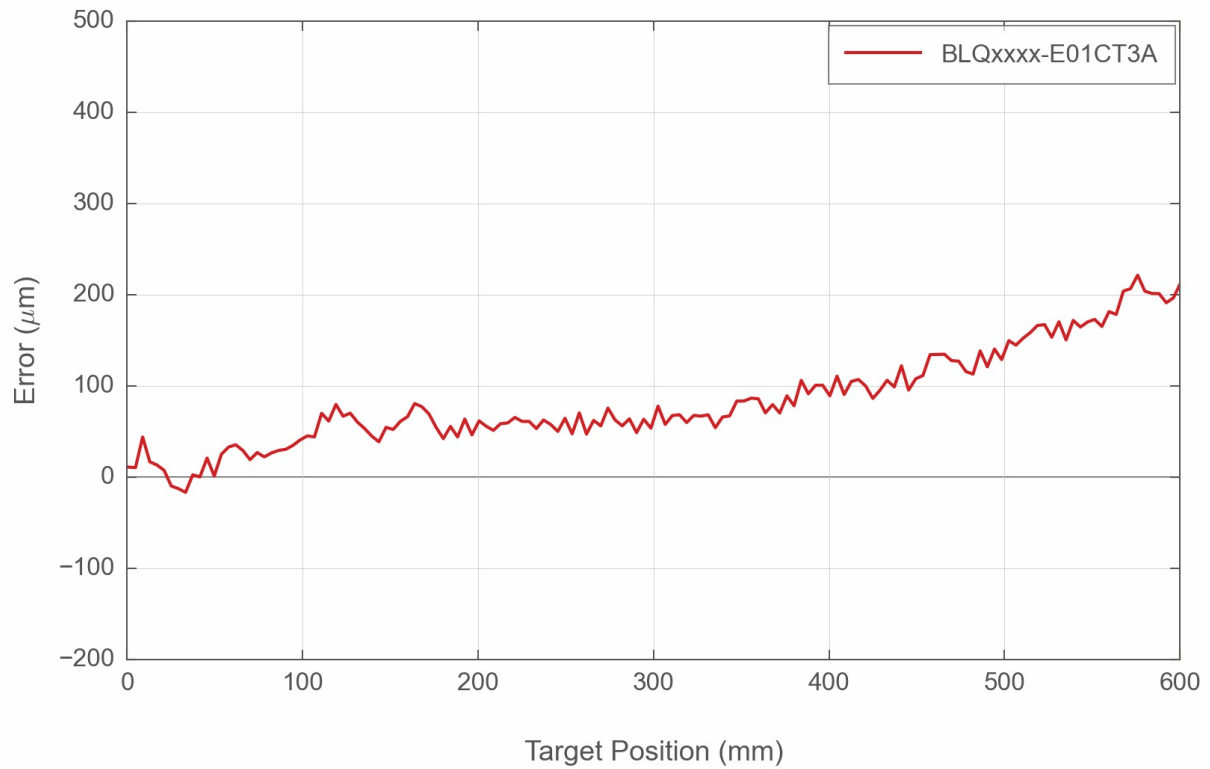
Horizontal Acceleration

with X-MCCx 48V



Typical Accuracy

with X-MCCx 48V



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