

BLQ-EC Series 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

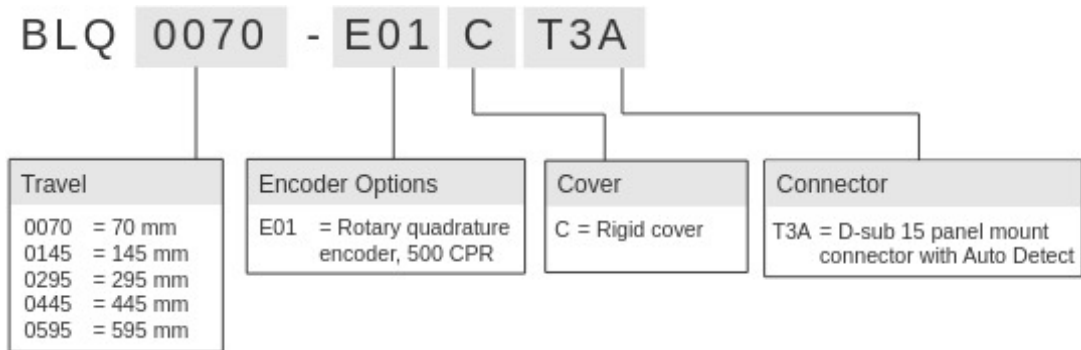
BLQ-EC Series Overview

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>

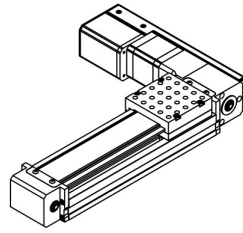
BLQ-EC Series Part Numbering



BLQ-EC Series Drawings

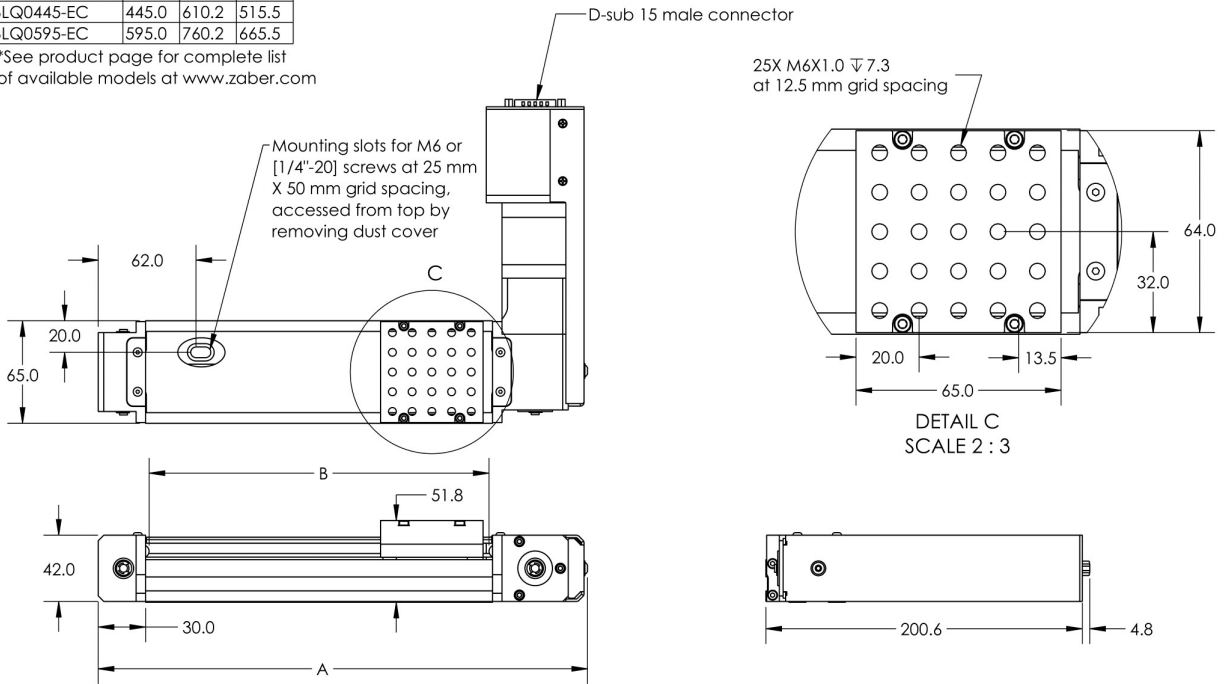
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BLQ-EC Motorized Linear Stage
 dimensions in mm



Model Number*	Travel	A	B
BLQ0070-EC	70.0	235.2	140.5
BLQ0145-EC	145.0	310.2	215.5
BLQ0295-EC	295.0	460.2	365.5
BLQ0445-EC	445.0	610.2	515.5
BLQ0595-EC	595.0	760.2	665.5

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



DWG 3874 R01

BLQ-EC 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	
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	

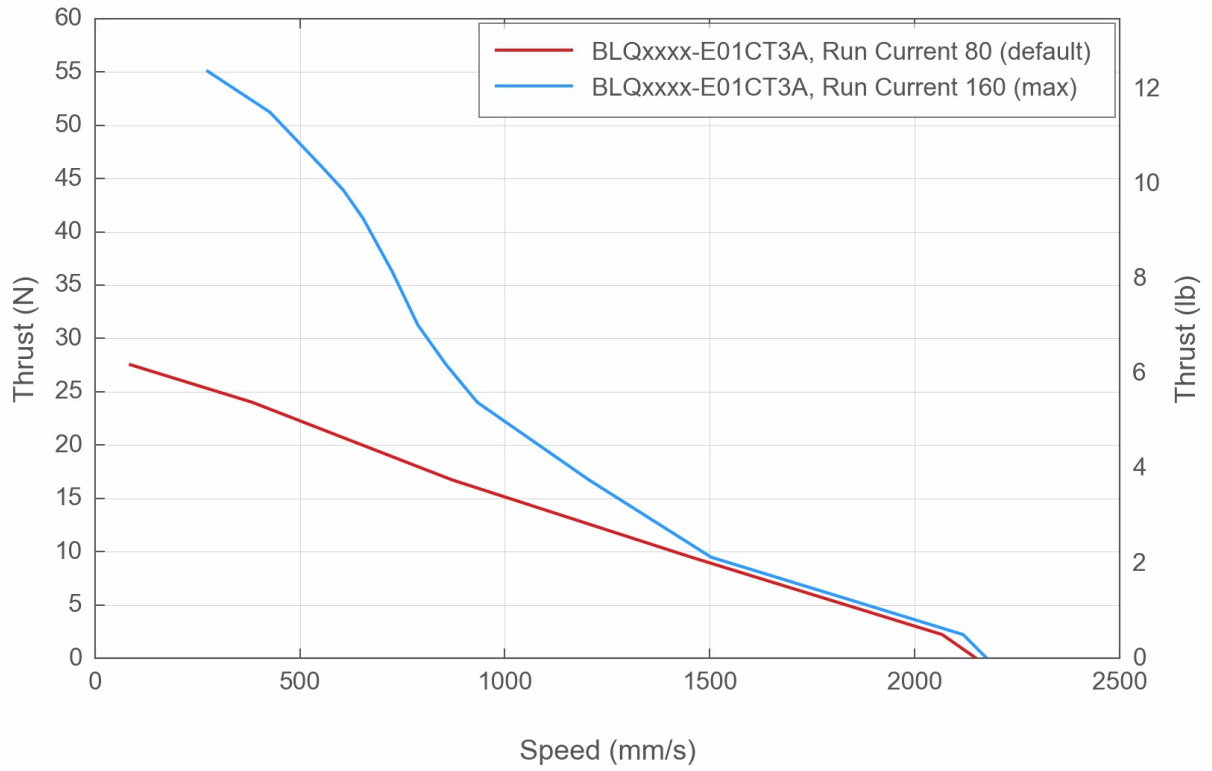
Part Number	Travel Range	Accuracy (unidirectional)	Maximum Speed	Horizontal Runout
BLQ0070-E01CT3A	70 mm (2.756")	200 µm (0.007874")	1100 mm/s (43.307"/s)	< 20 µm (< 0.000787")
BLQ0145-E01CT3A	145 mm (5.709")	200 µm (0.007874")	1600 mm/s (62.992"/s)	< 30 µm (< 0.001181")
BLQ0295-E01CT3A	295 mm (11.614")	300 µm (0.011811")	2000 mm/s (78.740"/s)	< 35 µm (< 0.001378")
BLQ0445-E01CT3A	445 mm (17.520")	400 µm (0.015748")	2000 mm/s (78.740"/s)	< 40 µm (< 0.001575")
BLQ0595-E01CT3A	595 mm (23.425")	500 µm (0.019685")	2000 mm/s (78.740"/s)	< 60 µm (< 0.002362")

Part Number	Weight
BLQ0070-E01CT3A	1.86 kg (4.101 lb)
BLQ0145-E01CT3A	2.05 kg (4.519 lb)
BLQ0295-E01CT3A	2.4 kg (5.291 lb)
BLQ0445-E01CT3A	2.8 kg (6.173 lb)
BLQ0595-E01CT3A	3.12 kg (6.878 lb)

BLQ-EC Series Charts

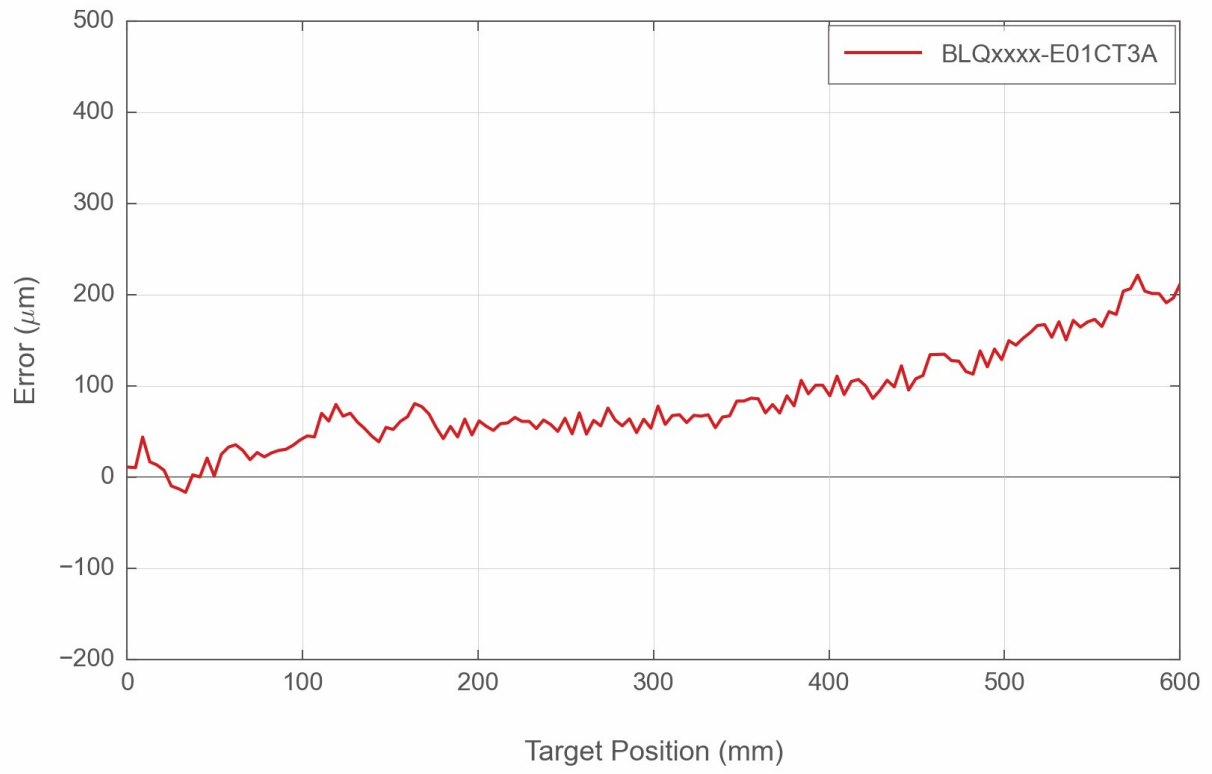
Thrust Speed Performance

with X-MCCx 48V



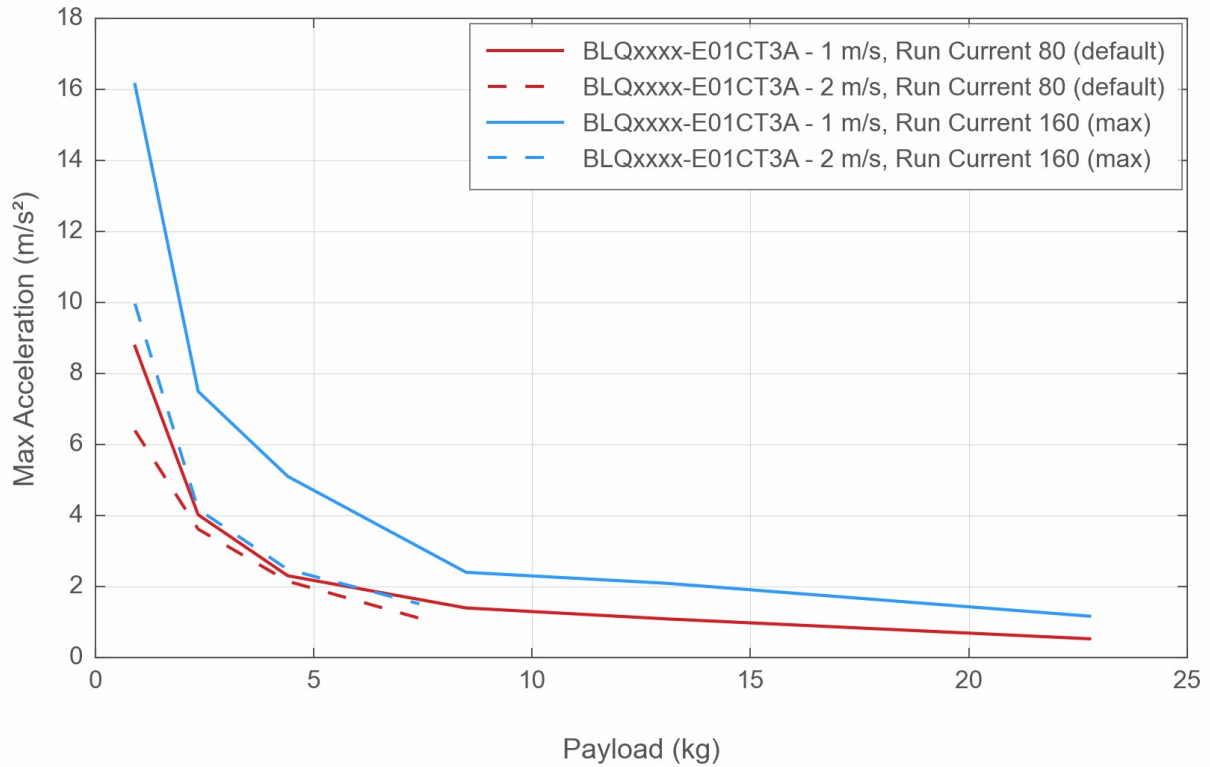
Typical Accuracy

with X-MCCx 48V



Horizontal Acceleration

with X-MCCx 48V



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