



## X-BLQ0595-E01 Datasheet



- 70, 145, 295, 445, 595, 1045, 1495, 2095, 3000 mm travel
- Up to 2.0 m/s speed, 20 N thrust, and 20 kg load capacity
- Encoder position feedback with slip/stall detection and automatic recovery
- Built-in controller; daisy-chains with any other Zaber products

### X-BLQ-E Series Overview

Zaber's X-BLQ-E Series products are computer controlled, belt-driven linear stages with integrated stepper motors and controllers. A built-in motor encoder allows closed-loop operation with slip/stall recovery features. They are stand-alone devices requiring only a standard 48 V power supply for operation.

An indexed knob provides convenient manual control for versatile operation even without a computer. The stages connect to the USB 2.0 and RS-232 port of any computer and can be daisy-chained with up to 254 Zaber products per chain. Convenient locking, 4-pin, M8 connectors on the unit allow for secure connection between units. The chain also shares power, so multiple X-Series products can use a single power supply.

With travel lengths up to 3 m, 10  $\mu$ m repeatability, and a maximum speed of 2.0 m/s, X-BLQ-E stages are perfect for rapid positioning over large distances.

## X-BLQ-E Series Part Numbering

X-BLQ 0070 - E01

Travel*	Encoder Options
0070 = 70 mm	E01 = Rotary quadrature encoder, 500 CPR
0145 = 145 mm	
0295 = 295 mm	
0445 = 445 mm	
0595 = 595 mm	
1045 = 1045 mm	
1495 = 1495 mm	
2095 = 2095 mm	
3000 = 3000 mm	

\* Please inquire about other travel lengths

## X-BLQ0595-E01 Bundle Options

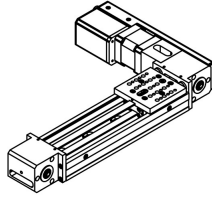
*This device may be purchased stand-alone or bundled with one of the following accessory kits:*

Products	Description
X-BLQ0595-E01	Motorized, belt-driven, linear stage, integrated motor encoder and controller, 595 mm travel
with KX14C-SN2 accessory kit Power supply: North America, 48 V. Powers multiple X-Series devices	<ul style="list-style-type: none"> <li>• 1 x PS14S-48V37: Power Supply, 48 V 3.75 A, Compatible with X-Series Products</li> <li>• 1 x SN2: Frequency Based Tuner for Belt Drive Stages</li> <li>• 1 x X-DC06: Data Cable, 6 ft (2 m), for Use with all X-Series Products</li> <li>• 1 x X-USBDC: USB to Serial Converter Cable with M8 Female Plug for X-Series Products</li> </ul>
with KX13C-SN2 accessory kit Power supply: North America, 48 V. Powers one axis	<ul style="list-style-type: none"> <li>• 1 x PS13S-48V12: Power Supply, 48 V 1.25 A, Compatible with X-Series Products</li> <li>• 1 x SN2: Frequency Based Tuner for Belt Drive Stages</li> <li>• 1 x X-DC06: Data Cable, 6 ft (2 m), for Use with all X-Series Products</li> <li>• 1 x X-USBDC: USB to Serial Converter Cable with M8 Female Plug for X-Series Products</li> </ul>
with PTB2 accessory Power Supply Not Included	<ul style="list-style-type: none"> <li>• 1 x PTB2: Power Terminal Block, 2 Pin, 5 mm Pitch, for Use with X-Series Devices with Custom Power Supply</li> </ul>

# X-BLQ0595-E01 Drawings

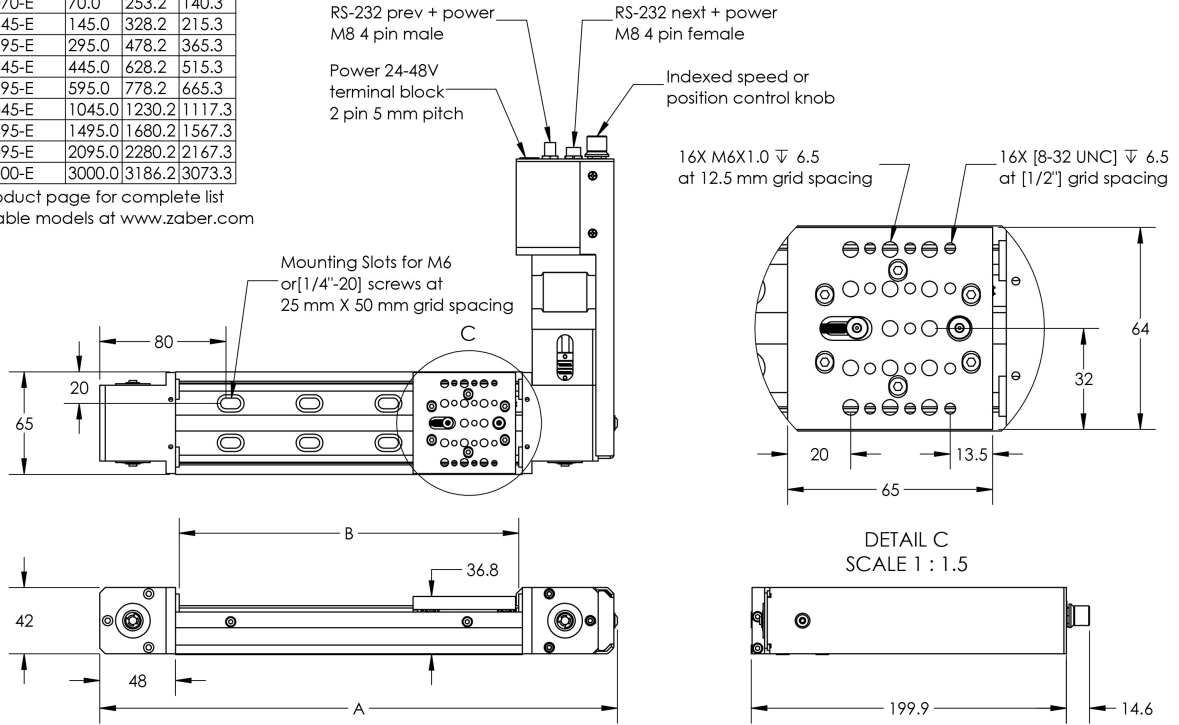
## ZABER

X-BLQ-E Motorized Linear Stage  
dimensions in mm



Model Number*	Travel	A	B
X-BLQ0070-E	70.0	253.2	140.3
X-BLQ0145-E	145.0	328.2	215.3
X-BLQ0295-E	295.0	478.2	365.3
X-BLQ0445-E	445.0	628.2	515.3
X-BLQ0595-E	595.0	778.2	665.3
X-BLQ1045-E	1045.0	1230.2	1117.3
X-BLQ1495-E	1495.0	1680.2	1567.3
X-BLQ2095-E	2095.0	2280.2	2167.3
X-BLQ3000-E	3000.0	3186.2	3073.3

\*See product page for complete list of available models at [www.zaber.com](http://www.zaber.com)



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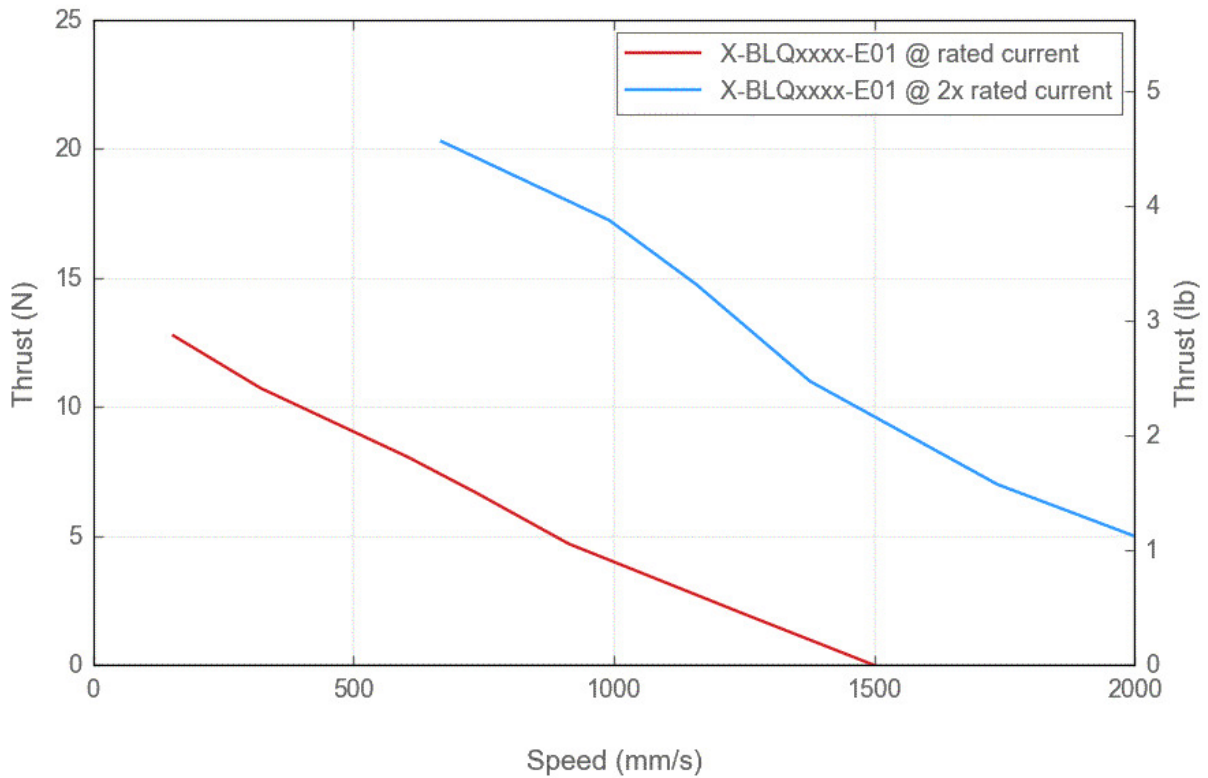
## X-BLQ0595-E01 Specifications

Specification	Value	Alternate Unit
Microstep Size (Default Resolution)	4.21875 $\mu\text{m}$	
Built-in Controller	Yes	
Travel Range	595 mm	23.425"
Accuracy (unidirectional)	700 $\mu\text{m}$	0.027559"
Repeatability	< 10 $\mu\text{m}$	< 0.000394"
Backlash	< 50 $\mu\text{m}$	< 0.001968"
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	20 N	4.5 lb
Maximum Continuous Thrust	20 N	4.5 lb
Communication Interface	RS-232	
Communication Protocol	Zaber ASCII (Default), Zaber Binary	
Maximum Centered Load	200 N	44.9 lb
Maximum Cantilever Load	600 N-cm	849.7 oz-in
Guide Type	Roller bearing	
Vertical Runout	< 60 $\mu\text{m}$	< 0.002362"
Horizontal Runout	< 13 $\mu\text{m}$	< 0.000512"
Maximum Current Draw	1100 mA	
Power Supply	24-48 VDC	
Linear Motion Per Motor Rev	54 mm	2.126"
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Rated Current	1250 mA/phase	
Inductance	2.8 mH/phase	
Default Resolution	1/64 of a step	
Data Cable Connection	Locking 4-pin M8	
Mechanical Drive System	Synchronous belt	

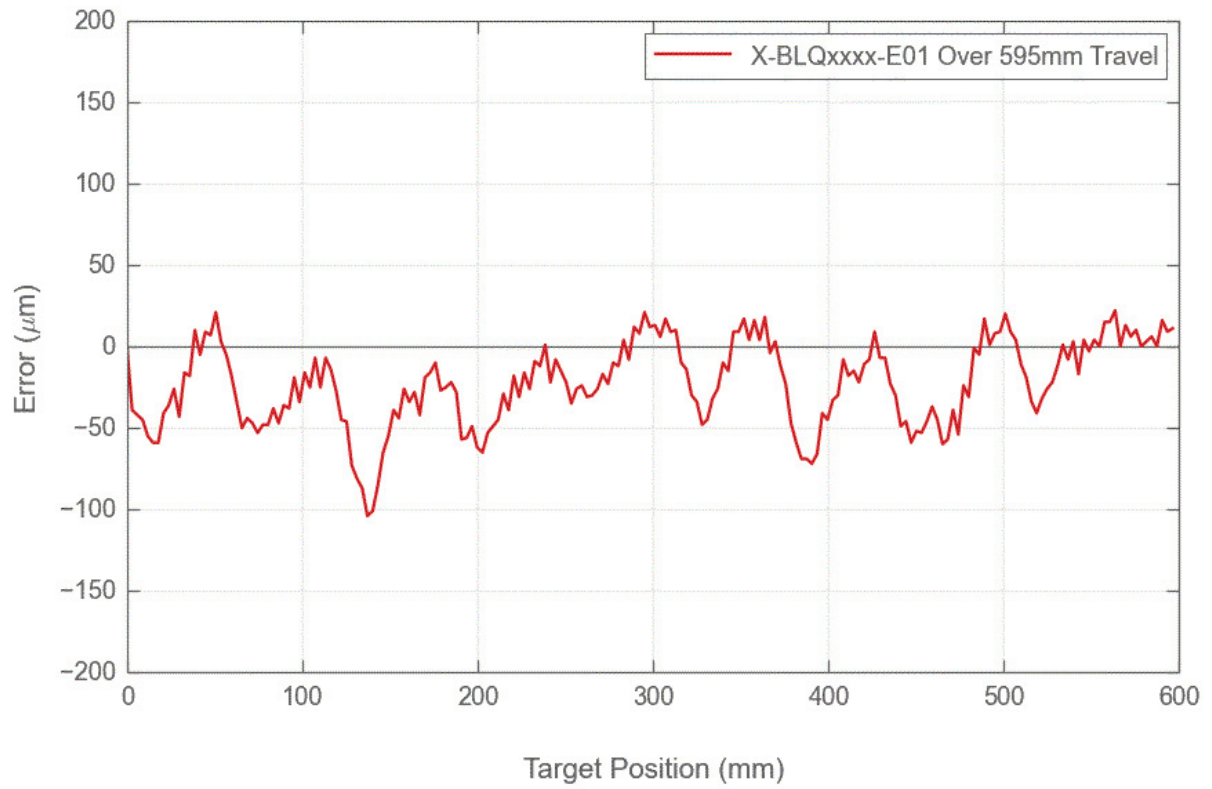
Specification	Value	Alternate Unit
Limit or Home Sensing	Magnetic home sensor	
Manual Control	Indexed knob with push switch	
Axes of Motion	1	
Mounting Interface	M6 threaded holes and 8-32 threaded holes	
Operating Temperature Range	0 to 50 °C	
Vacuum Compatible	No	
RoHS Compliant	Yes	
Stage Parallelism	< 100 µm	< 0.003937"
CE Compliant	Yes	
Weight	2.55 kg	5.622 lb

## X-BLQ-E Series Charts

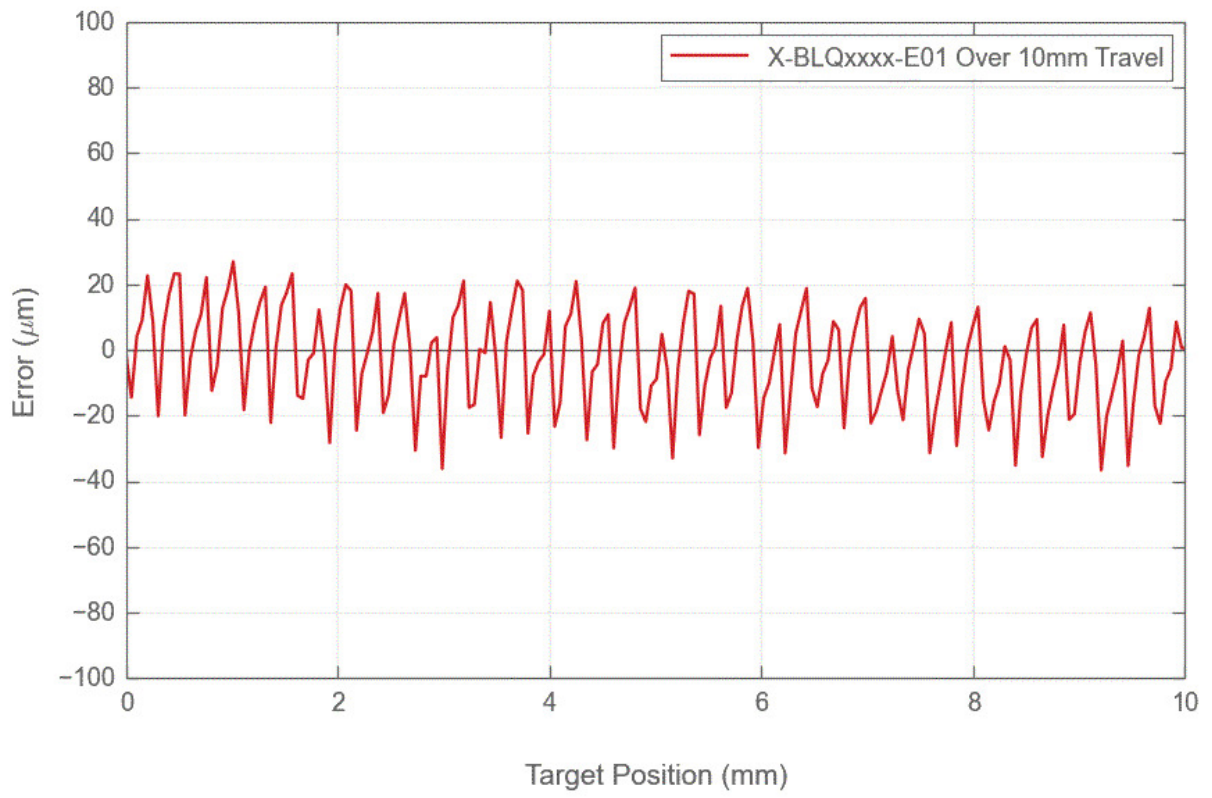
### Thrust Speed Performance



## Typical Accuracy

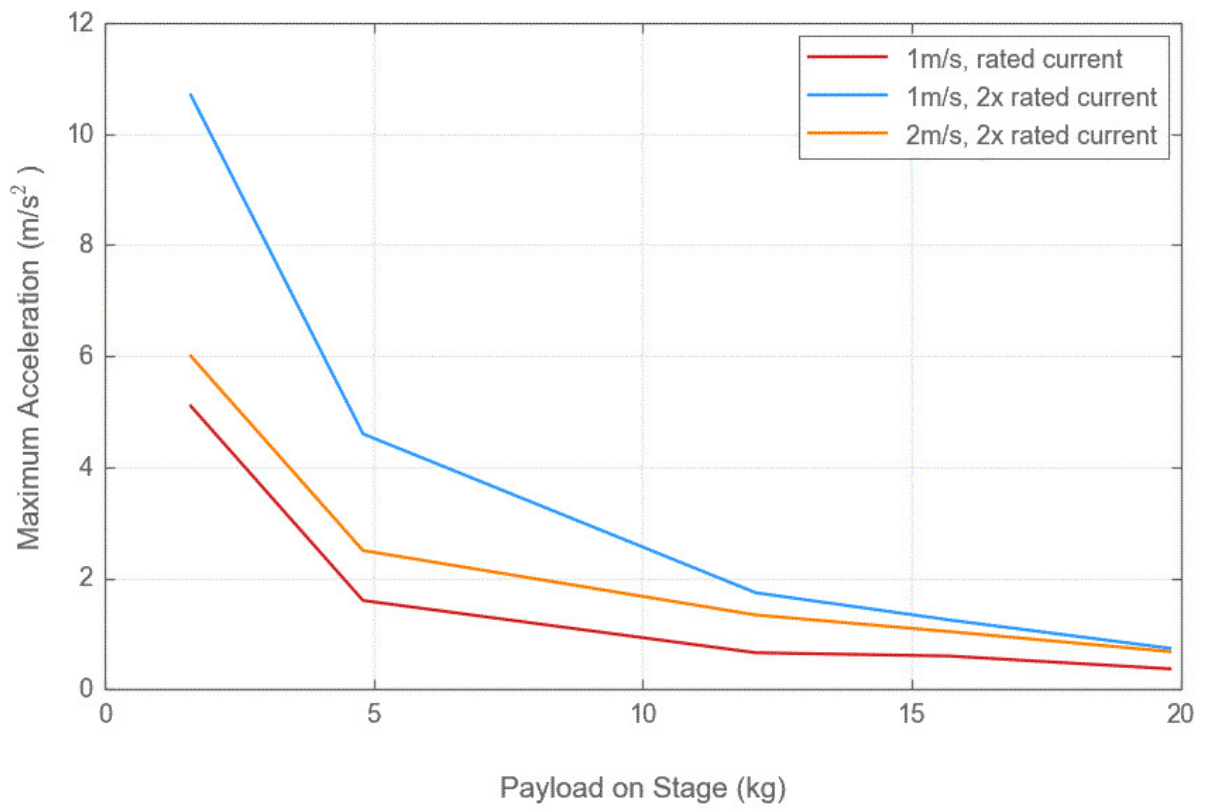


## Typical Accuracy





## Horizontal Acceleration



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