Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-LSQ-E Series Datasheet



- 75, 150, 300, 450 and 600 mm travel
- 50 kg load capacity
- Up to 1 m/s speed and up to 100 N thrust
- Integrated recirculating ball bearing guide provides exceptional lifetime
- Encoder position feedback with slip/stall detection and automatic recovery
- Built-in controller; daisy-chains with any other Zaber products
- Custom versions available

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X-LSQ-E Series Overview

Zaber's X-LSQ-E Series products are computer controlled, motorized linear stages with a variety of lead screw pitches and travels. The built-in motor encoder allows closed-loop operation and slip/stall recovery features. They are stand-alone units requiring only a 48 V power supply, included with the kit version. An indexed knob provides convenient manual control for versatile operation even without a computer - press and hold to switch between velocity mode and position mode and push to stop.

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 devices.

For more information visit: https://www.zaber.com/products/linear-stages/X-LSQ-E

X-LSQ-E Series Part Numbering & Options

X-LSQ 075 A - E01

Travel
- **075** — 75 mm
- **150** — 150 mm
- **300** — 300 mm
- **450** — 450 mm
- **600** — 600 mm

Lead Screw Options
- **A** — Fine pitch lead screw
- **B** — Medium pitch lead screw
- **D** — Coarse pitch lead screw

Encoder Options
- **E01** — Motor Encoder, 500 CPR

X-LSQ-E Series Drawings

- X-LSQ-E (Drawing for the X-LSQ-E R01B)
- View all drawings and documents at zaber.com

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X-LSQ-E Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Manual Control	Indexed knob with push switch
Axes of Motion	1
LED Indicators	Yes

Positioning Performance

Specification	Value
Flatness of Travel	<30 µm (<0.001181 ")
Pitch Error	0.06 ° (1.047 mrad)
Roll Error	0.03 ° (0.523 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step
Stage Parallelism	<100 µm (<0.003937 ")

Load Performance

Specification	Value
Maximum Centered Load	500 N (112.1 lb)
Maximum Moment (Pitch)	6 N·m (4.4 lb·ft)
Maximum Moment (Roll)	20 N·m (14.76 lb·ft)
Maximum Moment (Yaw)	6 N·m (4.428 lb·ft)
Stiffness (Pitch)	150 N·m/°

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Stiffness (Roll)	225 N·m/°
Stiffness (Yaw)	150 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Encoder Resolution	500 CPR (2 states/rev)
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	2300 mA/phase
Motor Winding Inductance	2.2 mH/phase

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin Screw Terminal
Maximum Current Draw	1450 mA

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Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Precision lead screw
Mounting Interface	M6 threaded holes and 8-32 threaded holes

Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Travel Range	Weight	Accuracy (unidirectional)	Repeatability
X-LSQ075A-E01	75 mm (2.953 ")	1.2 kg (2.646 lb)	35 µm (0.001378 ")	<2 µm (<0.000079 ")
X-LSQ075B-E01	75 mm (2.953 ")	1.2 kg (2.646 lb)	45 µm (0.001772 ")	<3 µm (<0.000118 ")
X-LSQ075D-E01	75 mm (2.953 ")	1.2 kg (2.646 lb)	80 µm (0.00315 ")	<10 µm (<0.000394 ")
X-LSQ150A-E01	150 mm (5.905 ")	1.4 kg (3.086 lb)	45 µm (0.001772 ")	<2 µm (<0.000079 ")
X-LSQ150B-E01	150 mm (5.905 ")	1.4 kg (3.086 lb)	50 µm (0.001968 ")	<3 µm (<0.000118 ")
X-LSQ150D-E01	150 mm (5.905 ")	1.4 kg (3.086 lb)	100 µm (0.003937 ")	<10 µm (<0.000394 ")
X-LSQ300A-E01	300 mm (11.811 ")	1.8 kg (3.968 lb)	90 µm (0.003543 ")	<2 µm (<0.000079 ")
X-LSQ300B-E01	300 mm (11.811 ")	1.8 kg (3.968 lb)	65 µm (0.002559 ")	<3 µm (<0.000118 ")
X-LSQ300D-E01	300 mm (11.811 ")	1.8 kg (3.968 lb)	145 µm (0.005709 ")	<10 µm (<0.000394 ")

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X-LSQ450A-E01	450 mm (17.716 ")	2.3 kg (5.071 lb)	135 µm (0.005315 ")	<2 µm (<0.000079 ")
X-LSQ450B-E01	450 mm (17.716 ")	2.3 kg (5.071 lb)	75 µm (0.002953 ")	<3 µm (<0.000118 ")
X-LSQ450D-E01	450 mm (17.716 ")	2.3 kg (5.071 lb)	185 µm (0.007283 ")	<10 µm (<0.000394 ")
X-LSQ600A-E01	600 mm (23.622 ")	2.9 kg (6.393 lb)	180 µm (0.007087 ")	<2 µm (<0.000079 ")
X-LSQ600B-E01	600 mm (23.622 ")	2.9 kg (6.393 lb)	100 µm (0.003937 ")	<3 µm (<0.000118 ")
X-LSQ600D-E01	600 mm (23.622 ")	2.9 kg (6.393 lb)	230 µm (0.009055 ")	<10 µm (<0.000394 ")

Part Number	Backlash	Straightness of Travel	Microstep Size (Default Resolution)	Peak Thrust
X-LSQ075A-E01	<15 µm (<0.000591 ")	<20 µm (<0.000787 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ075B-E01	<18 µm (<0.000709 ")	<20 µm (<0.000787 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ075D-E01	<75 µm (<0.002953 ")	<20 µm (<0.000787 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ150A-E01	<15 µm (<0.000591 ")	<30 µm (<0.001181 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ150B-E01	<18 µm (<0.000709 ")	<30 µm (<0.001181 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ150D-E01	<75 µm (<0.002953 ")	<30 µm (<0.001181 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ300A-E01	<15 µm (<0.000591 ")	<35 µm (<0.001378 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ300B-E01	<18 µm (<0.000709 ")	<35 µm (<0.001378 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ300D-E01	<75 µm (<0.002953 ")	<35 µm (<0.001378 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ450A-E01	<15 µm (<0.000591 ")	<40 µm (<0.001575 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ450B-E01	<18 µm (<0.000709 ")	<40 µm (<0.001575 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ450D-E01	<75 µm (<0.002953 ")	<40 µm (<0.001575 ")	1.984375 µm	35 N (7.8 lb)

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X-LSQ600A-E01	<15 µm (<0.000591 ")	<60 µm (<0.002362 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ600B-E01	<18 µm (<0.000709 ")	<60 µm (<0.002362 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ600D-E01	<75 µm (<0.002953 ")	<60 µm (<0.002362 ")	1.984375 µm	35 N (7.8 lb)

Part Number	Maximum Continuous Thrust	Back-driving Force*	Maximum Speed	Minimum Speed
X-LSQ075A-E01	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ075B-E01	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ075D-E01	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ150A-E01	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ150B-E01	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ150D-E01	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ300A-E01	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ300B-E01	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ300D-E01	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ450A-E01	100 N (22.4 lb)	Non-back-driving	46 mm/s (1.811 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ450B-E01	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	240 mm/s (9.449 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ450D-E01	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ600A-E01	100 N (22.4 lb)	Non-back-driving	28 mm/s (1.102 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ600B-E01	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	144 mm/s (5.669 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ600D-E01	18 N (4 lb)	12 (± 30%) N (2.7 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)

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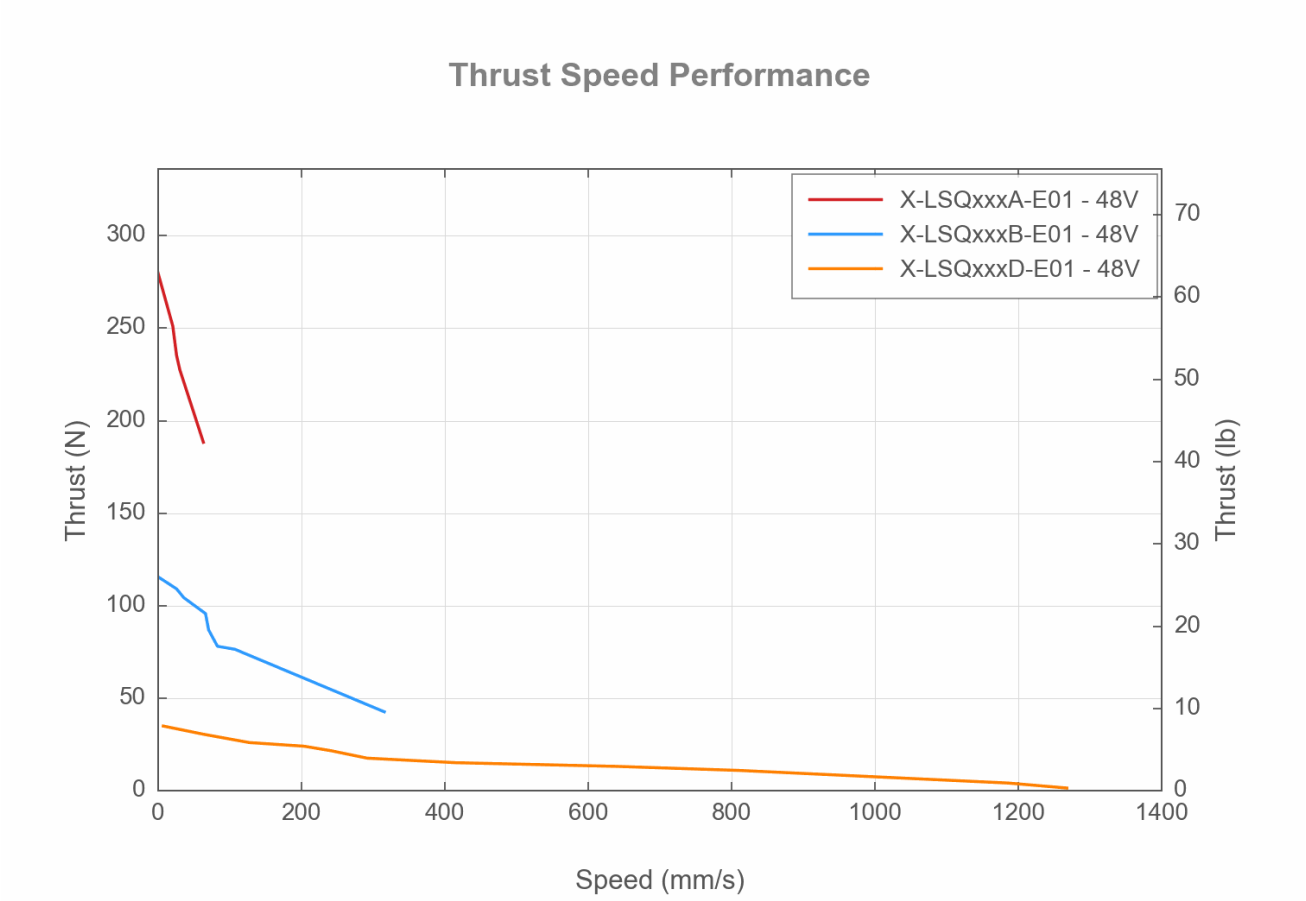
Part Number	Speed Resolution	Linear Motion Per Motor Rev
X-LSQ075A-E01	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ075B-E01	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ075D-E01	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ150A-E01	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ150B-E01	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ150D-E01	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ300A-E01	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ300B-E01	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ300D-E01	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ450A-E01	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ450B-E01	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ450D-E01	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ600A-E01	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ600B-E01	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ600D-E01	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")

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X-LSQ-E Series Charts

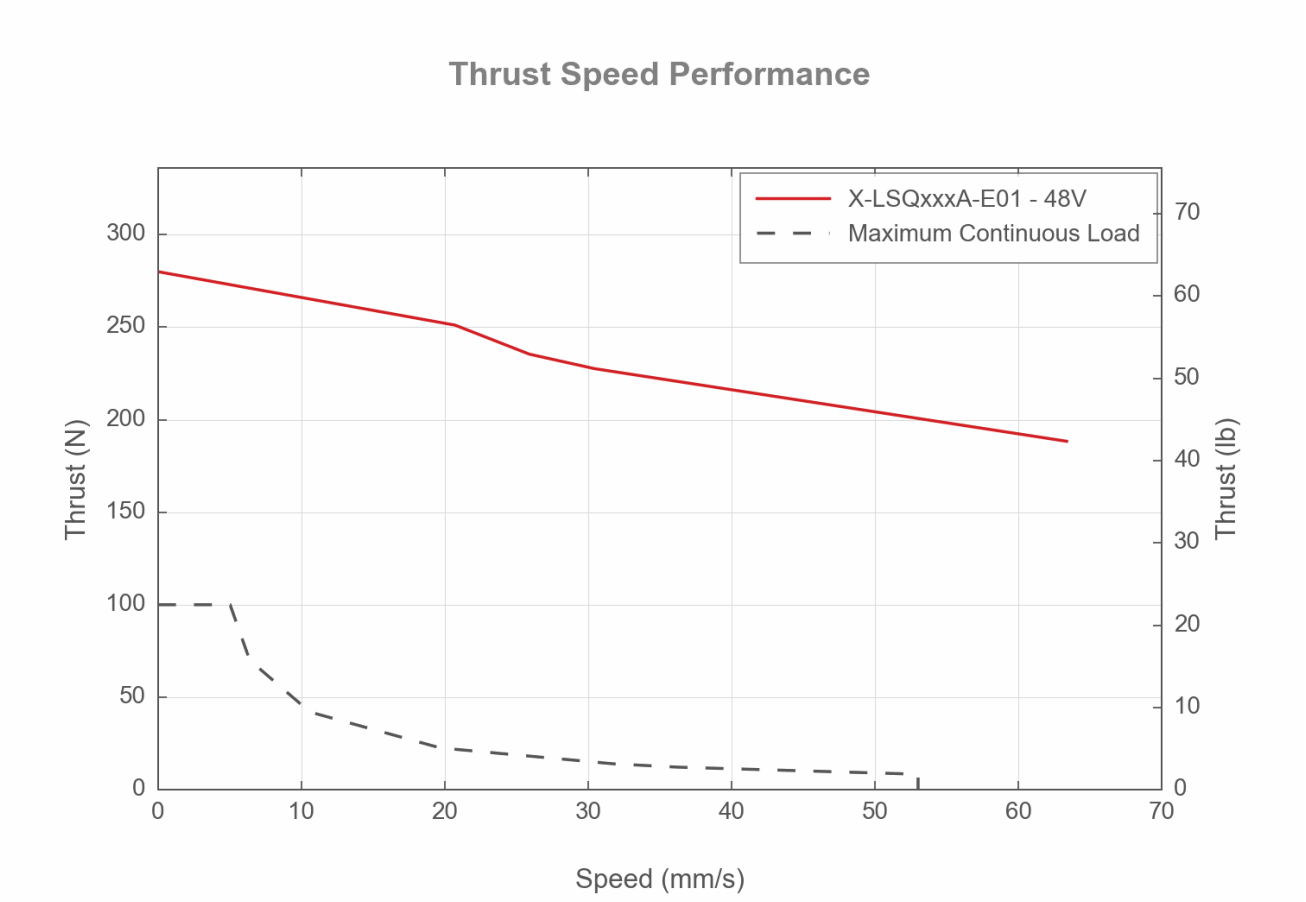
THRUST SPEED



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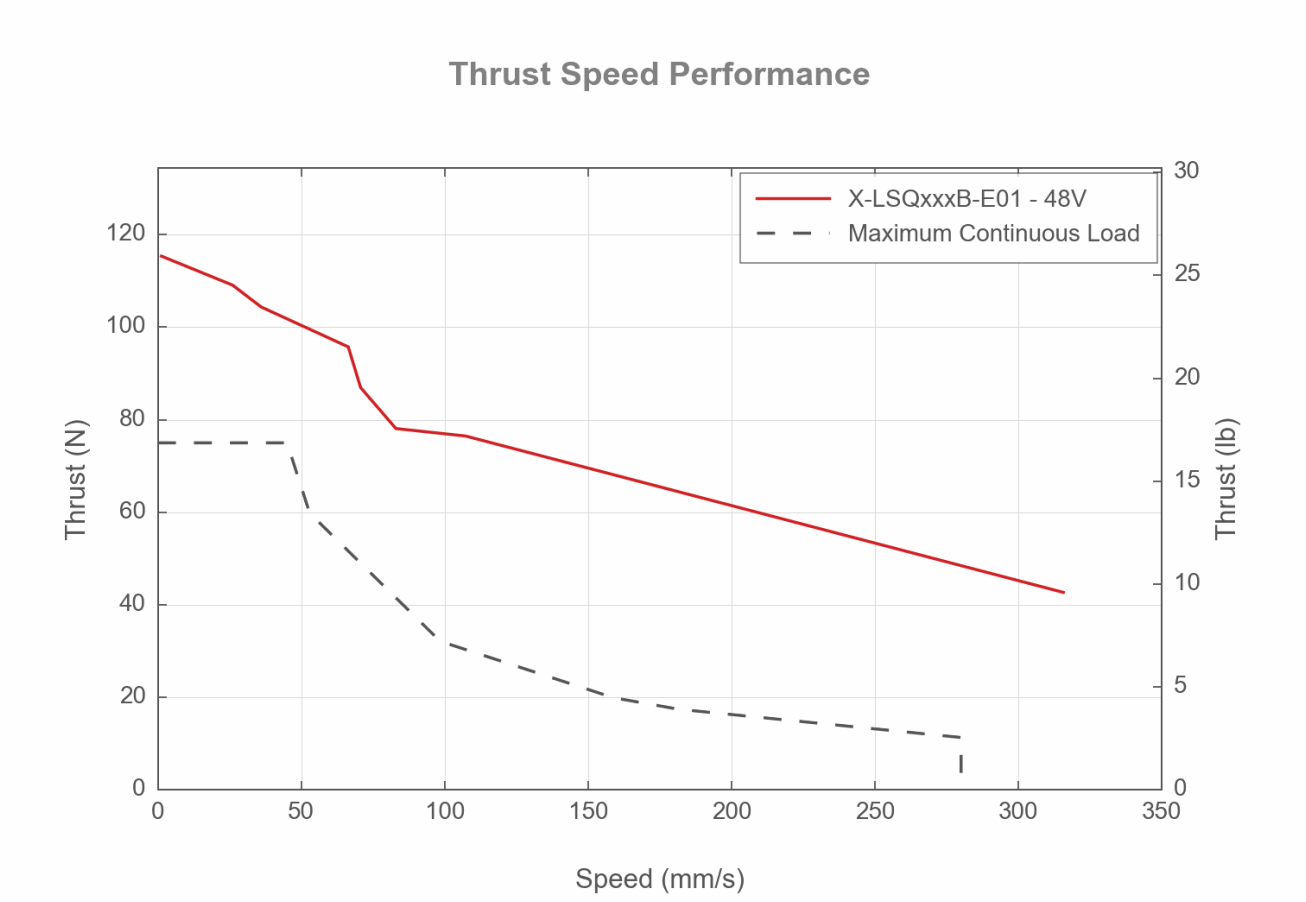
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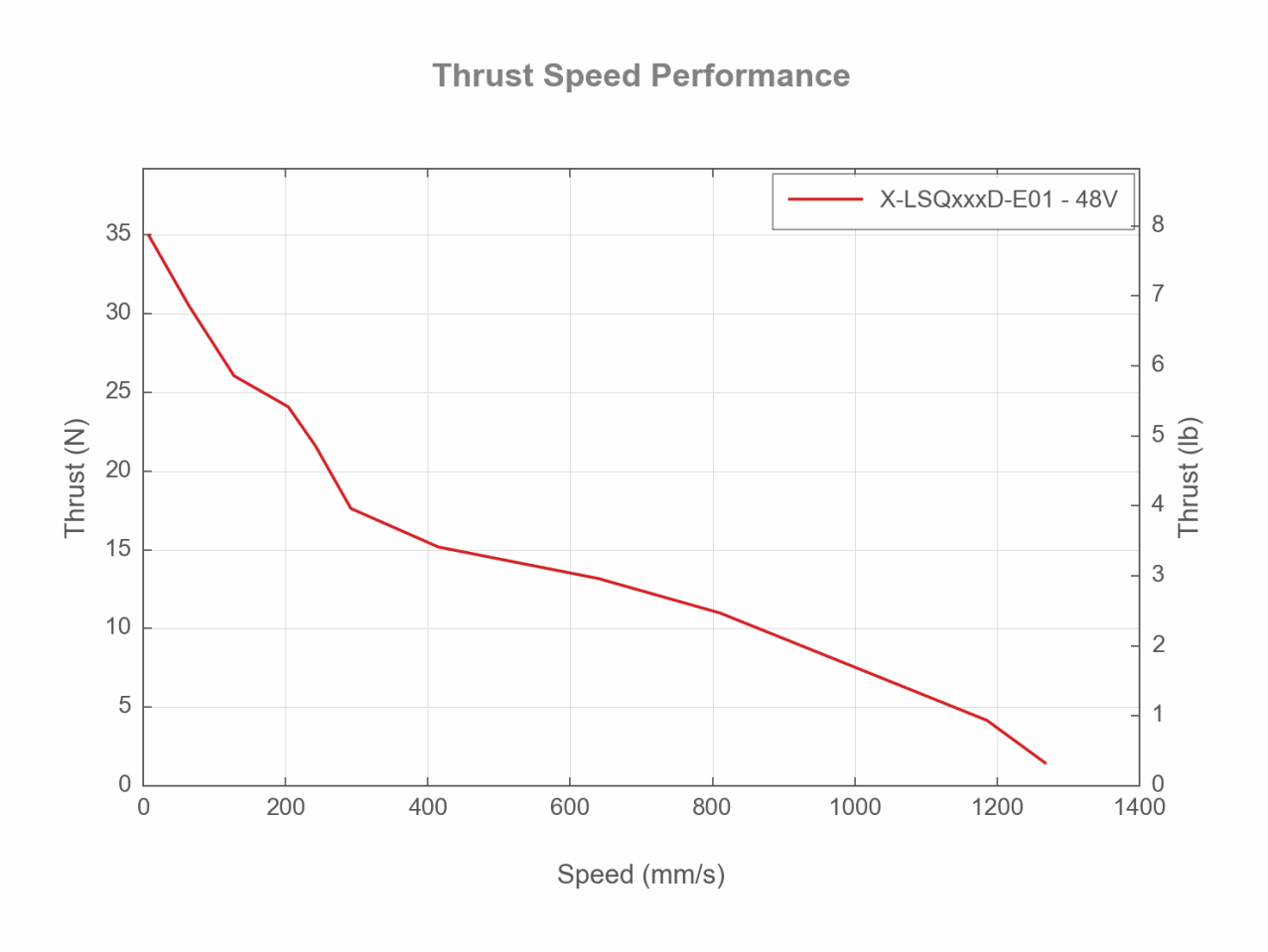
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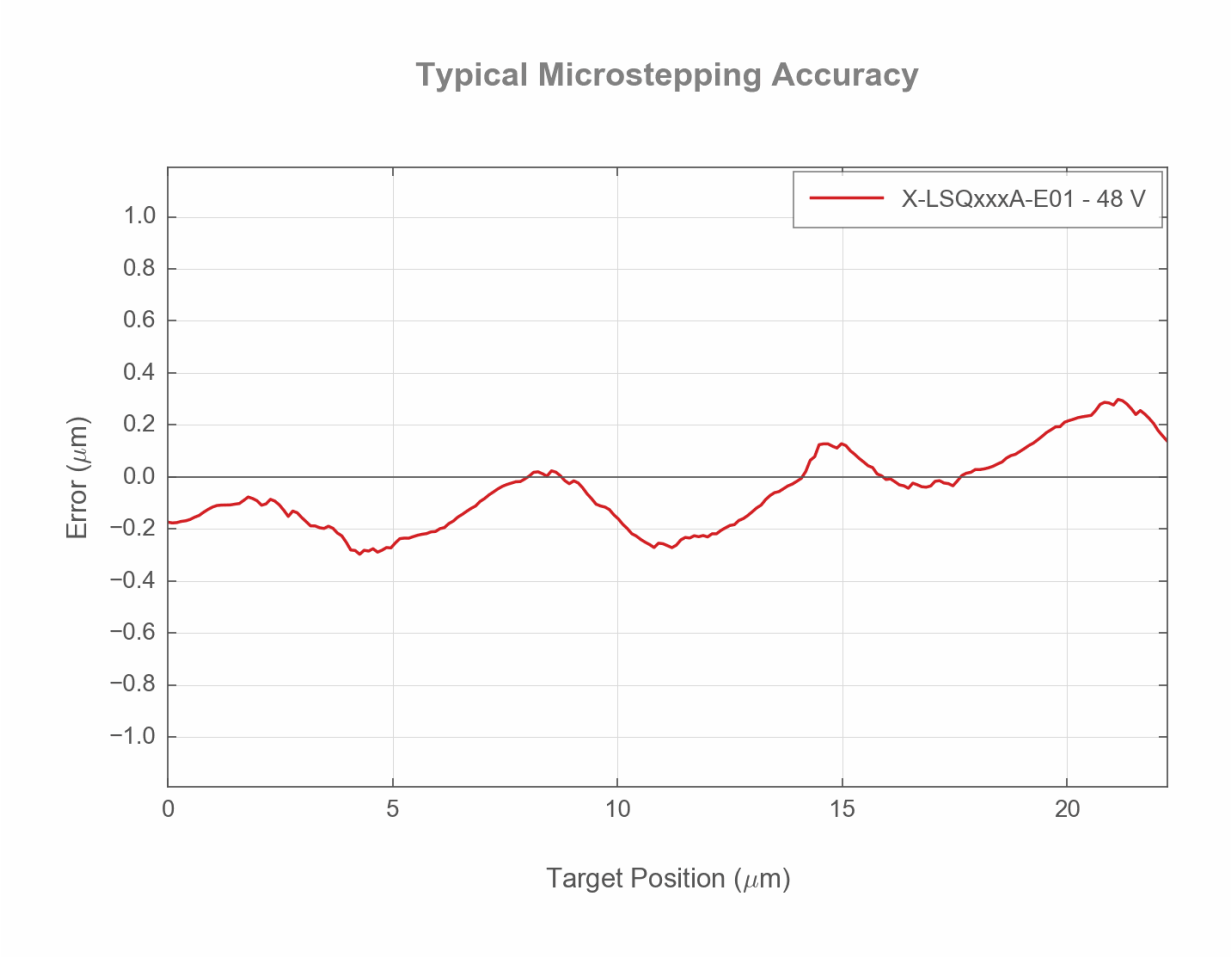
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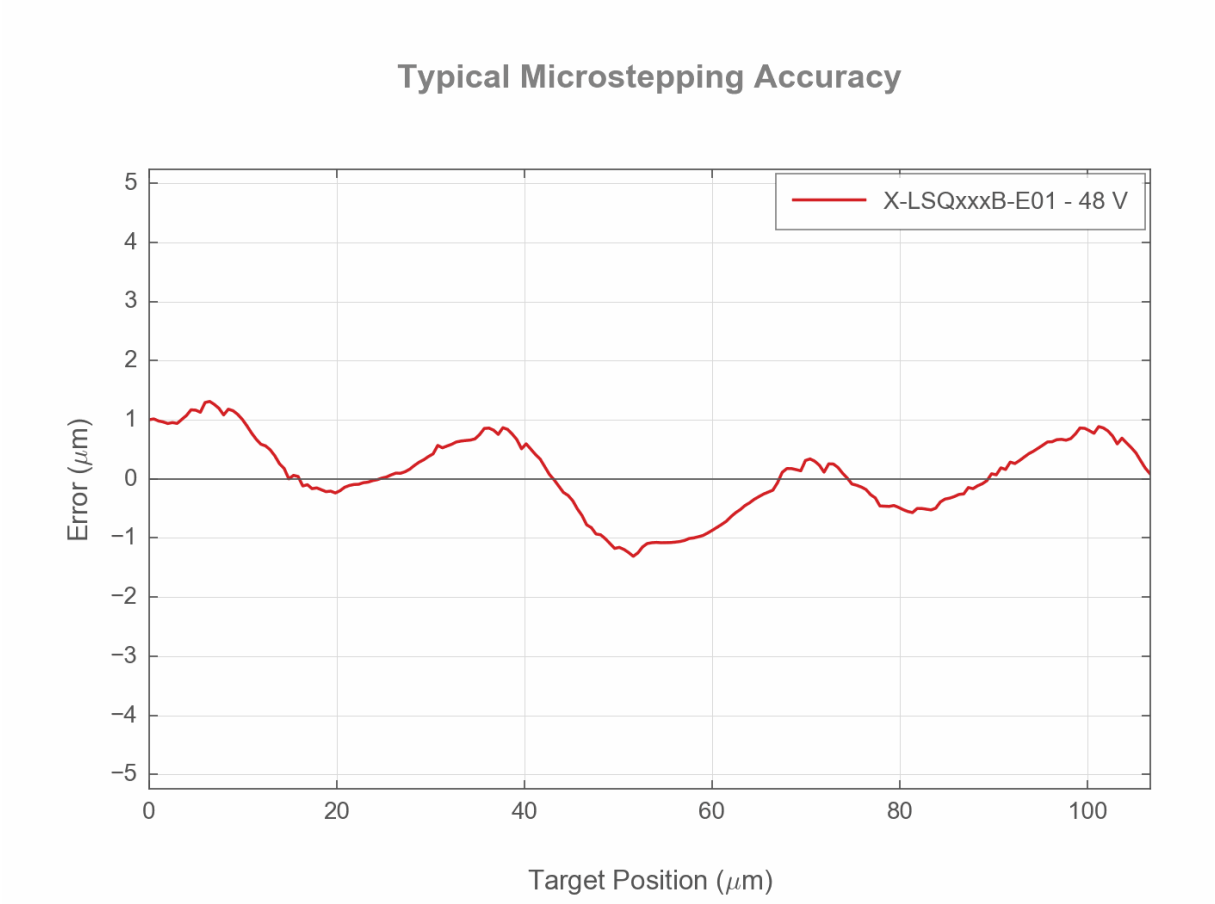
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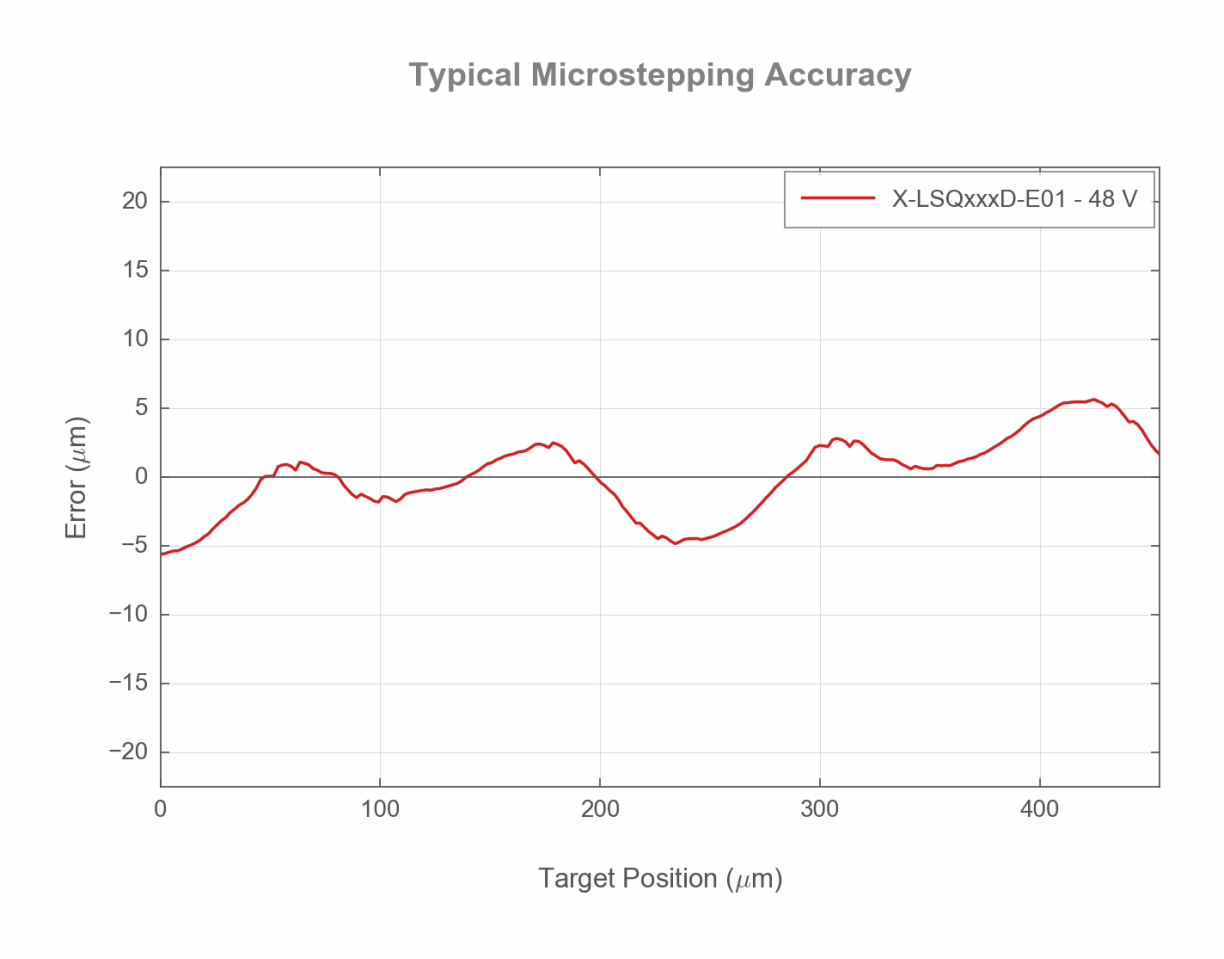
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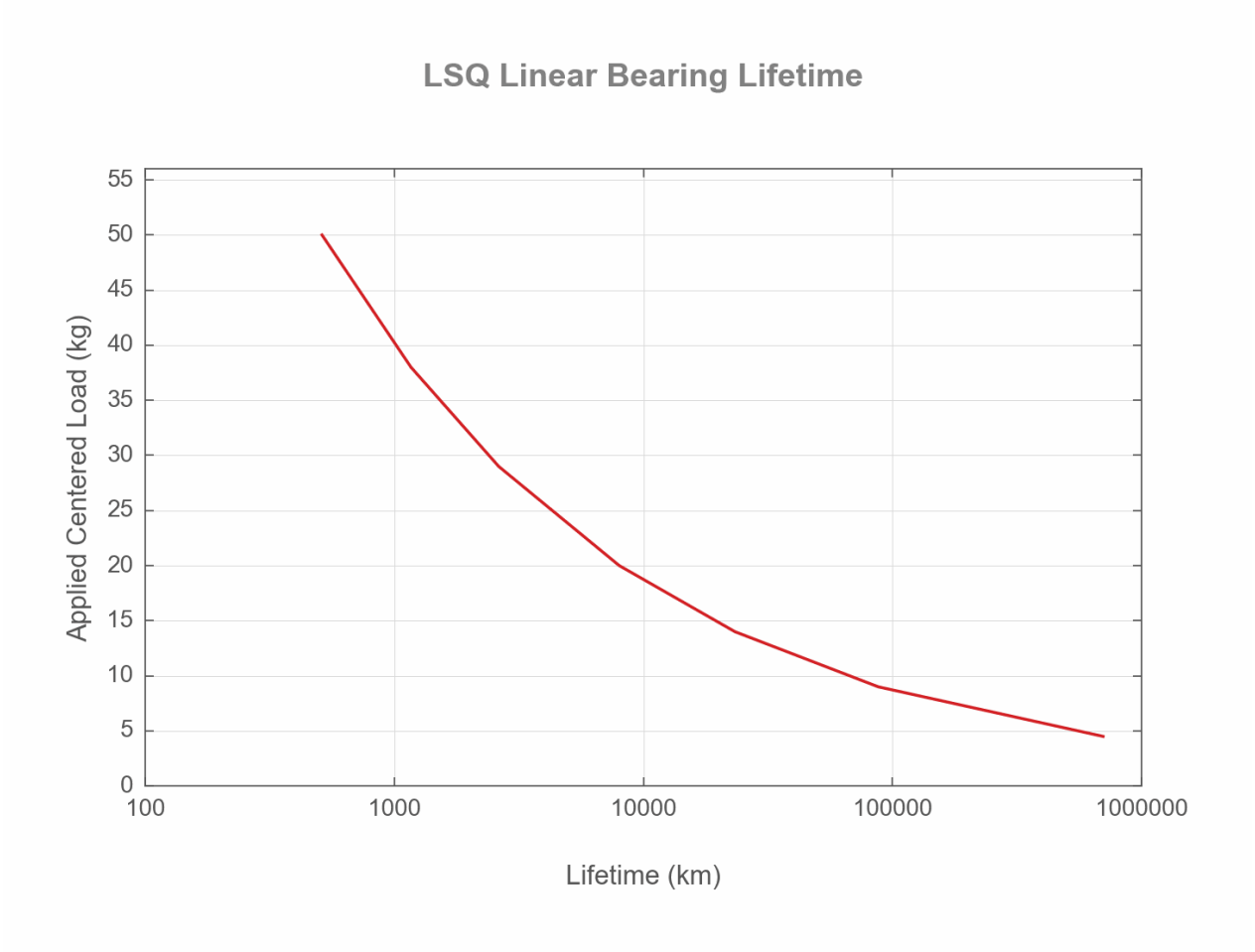
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LSQxxxxx LIFETIME RECIRCULATING BEARING



Contact

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X-LSQ-EC Series Datasheet



- 75, 150, 300, 450 and 600 mm travel
- 50 kg load capacity
- Up to 1 m/s speed and up to 100 N thrust
- Includes rigid cover
- Integrated recirculating ball bearing guide provides exceptional lifetime
- Encoder position feedback with slip/stall detection and automatic recovery
- Built-in controller; daisy-chains with any other Zaber products
- Custom versions available

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X-LSQ-EC Series Overview

Zaber's X-LSQ-EC Series products are computer controlled, motorized linear stages with a variety of lead screw pitches and travels. The built-in motor encoder allows closed-loop operation and slip/stall recovery features. A rigid non-contact cover prevents the ingress of small objects. They are stand-alone units requiring only a 48 V power supply, included with the kit version. An indexed knob provides convenient manual control for versatile operation even without a computer - press and hold to switch between velocity mode and position mode and push to stop.

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 devices.

For more information visit: https://www.zaber.com/products/linear-stages/X-LSQ-EC

X-LSQ-EC Series Part Numbering & Options

X-LSQ 075 A - E01 C

Travel	Lead Screw Options	Encoder Options	Cover
075 — 75 mm	**A** — Fine pitch lead screw	**E01** — Motor Encoder, 500 CPR	**C** — Rigid Cover
150 — 150 mm	**B** — Medium pitch lead screw		
300 — 300 mm	**D** — Coarse pitch lead screw		
450 — 450 mm			
600 — 600 mm			

X-LSQ-EC Series Drawings

- X-LSQ-EC (Drawing for the X-LSQ-EC R01B)
- View all drawings and documents at zaber.com

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X-LSQ-EC Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Manual Control	Indexed knob with push switch
Axes of Motion	1
LED Indicators	Yes

Positioning Performance

Specification	Value
Flatness of Travel	<30 µm (<0.001181 ")
Pitch Error	0.06 ° (1.047 mrad)
Roll Error	0.03 ° (0.523 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step
Stage Parallelism	<100 µm (<0.003937 ")

Load Performance

Specification	Value
Maximum Centered Load	500 N (112.1 lb)
Maximum Moment (Pitch)	6 N·m (4.4 lb·ft)
Maximum Moment (Roll)	20 N·m (14.76 lb·ft)
Maximum Moment (Yaw)	6 N·m (4.428 lb·ft)
Stiffness (Pitch)	150 N·m/°

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Stiffness (Roll)	225 N·m/°
Stiffness (Yaw)	150 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Encoder Resolution	500 CPR (2 states/rev)
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	2300 mA/phase
Motor Winding Inductance	2.2 mH/phase

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin Screw Terminal
Maximum Current Draw	1450 mA

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Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Precision lead screw
Mounting Interface	M6 threaded holes

Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Travel Range	Weight	Accuracy (unidirectional)	Repeatability
X-LSQ075A-E01C	75 mm (2.953 ")	1.36 kg (2.998 lb)	35 µm (0.001378 ")	<2 µm (<0.000079 ")
X-LSQ075B-E01C	75 mm (2.953 ")	1.36 kg (2.998 lb)	45 µm (0.001772 ")	<3 µm (<0.000118 ")
X-LSQ075D-E01C	75 mm (2.953 ")	1.36 kg (2.998 lb)	80 µm (0.00315 ")	<10 µm (<0.000394 ")
X-LSQ150A-E01C	150 mm (5.905 ")	1.6 kg (3.527 lb)	45 µm (0.001772 ")	<2 µm (<0.000079 ")
X-LSQ150B-E01C	150 mm (5.905 ")	1.6 kg (3.527 lb)	50 µm (0.001968 ")	<3 µm (<0.000118 ")
X-LSQ150D-E01C	150 mm (5.905 ")	1.6 kg (3.527 lb)	100 µm (0.003937 ")	<10 µm (<0.000394 ")
X-LSQ300A-E01C	300 mm (11.811 ")	2.05 kg (4.519 lb)	90 µm (0.003543 ")	<2 µm (<0.000079 ")
X-LSQ300B-E01C	300 mm (11.811 ")	2.05 kg (4.519 lb)	65 µm (0.002559 ")	<3 µm (<0.000118 ")
X-LSQ300D-E01C	300 mm (11.811 ")	2.05 kg (4.519 lb)	145 µm (0.005709 ")	<10 µm (<0.000394 ")
X-LSQ450A-E01C	450 mm (17.716 ")	2.6 kg (5.732 lb)	135 µm (0.005315 ")	<2 µm (<0.000079 ")

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X-LSQ450B-E01C	450 mm (17.716 ")	2.6 kg (5.732 lb)	75 µm (0.002953 ")	<3 µm (<0.000118 ")
X-LSQ450D-E01C	450 mm (17.716 ")	2.6 kg (5.732 lb)	185 µm (0.007283 ")	<10 µm (<0.000394 ")
X-LSQ600A-E01C	600 mm (23.622 ")	3.25 kg (7.165 lb)	180 µm (0.007087 ")	<2 µm (<0.000079 ")
X-LSQ600B-E01C	600 mm (23.622 ")	3.25 kg (7.165 lb)	100 µm (0.003937 ")	<3 µm (<0.000118 ")
X-LSQ600D-E01C	600 mm (23.622 ")	3.25 kg (7.165 lb)	230 µm (0.009055 ")	<10 µm (<0.000394 ")

Part Number	Backlash	Straightness of Travel	Microstep Size (Default Resolution)	Peak Thrust
X-LSQ075A-E01C	<15 µm (<0.000591 ")	<20 µm (<0.000787 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ075B-E01C	<18 µm (<0.000709 ")	<20 µm (<0.000787 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ075D-E01C	<75 µm (<0.002953 ")	<20 µm (<0.000787 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ150A-E01C	<15 µm (<0.000591 ")	<30 µm (<0.001181 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ150B-E01C	<18 µm (<0.000709 ")	<30 µm (<0.001181 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ150D-E01C	<75 µm (<0.002953 ")	<30 µm (<0.001181 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ300A-E01C	<15 µm (<0.000591 ")	<35 µm (<0.001378 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ300B-E01C	<18 µm (<0.000709 ")	<35 µm (<0.001378 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ300D-E01C	<75 µm (<0.002953 ")	<35 µm (<0.001378 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ450A-E01C	<15 µm (<0.000591 ")	<40 µm (<0.001575 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ450B-E01C	<18 µm (<0.000709 ")	<40 µm (<0.001575 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ450D-E01C	<75 µm (<0.002953 ")	<40 µm (<0.001575 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ600A-E01C	<15 µm (<0.000591 ")	<60 µm (<0.002362 ")	0.09921875 µm	275 N (61.7 lb)

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X-LSQ600B-E01C	<18 µm (<0.000709 ")	<60 µm (<0.002362 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ600D-E01C	<75 µm (<0.002953 ")	<60 µm (<0.002362 ")	1.984375 µm	35 N (7.8 lb)

Part Number	Maximum Continuous Thrust	Back-driving Force*	Maximum Speed	Minimum Speed
X-LSQ075A-E01C	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ075B-E01C	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ075D-E01C	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ150A-E01C	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ150B-E01C	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ150D-E01C	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ300A-E01C	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ300B-E01C	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ300D-E01C	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ450A-E01C	100 N (22.4 lb)	Non-back-driving	46 mm/s (1.811 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ450B-E01C	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	240 mm/s (9.449 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ450D-E01C	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ600A-E01C	100 N (22.4 lb)	Non-back-driving	28 mm/s (1.102 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ600B-E01C	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	144 mm/s (5.669 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ600D-E01C	18 N (4 lb)	12 (± 30%) N (2.7 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)

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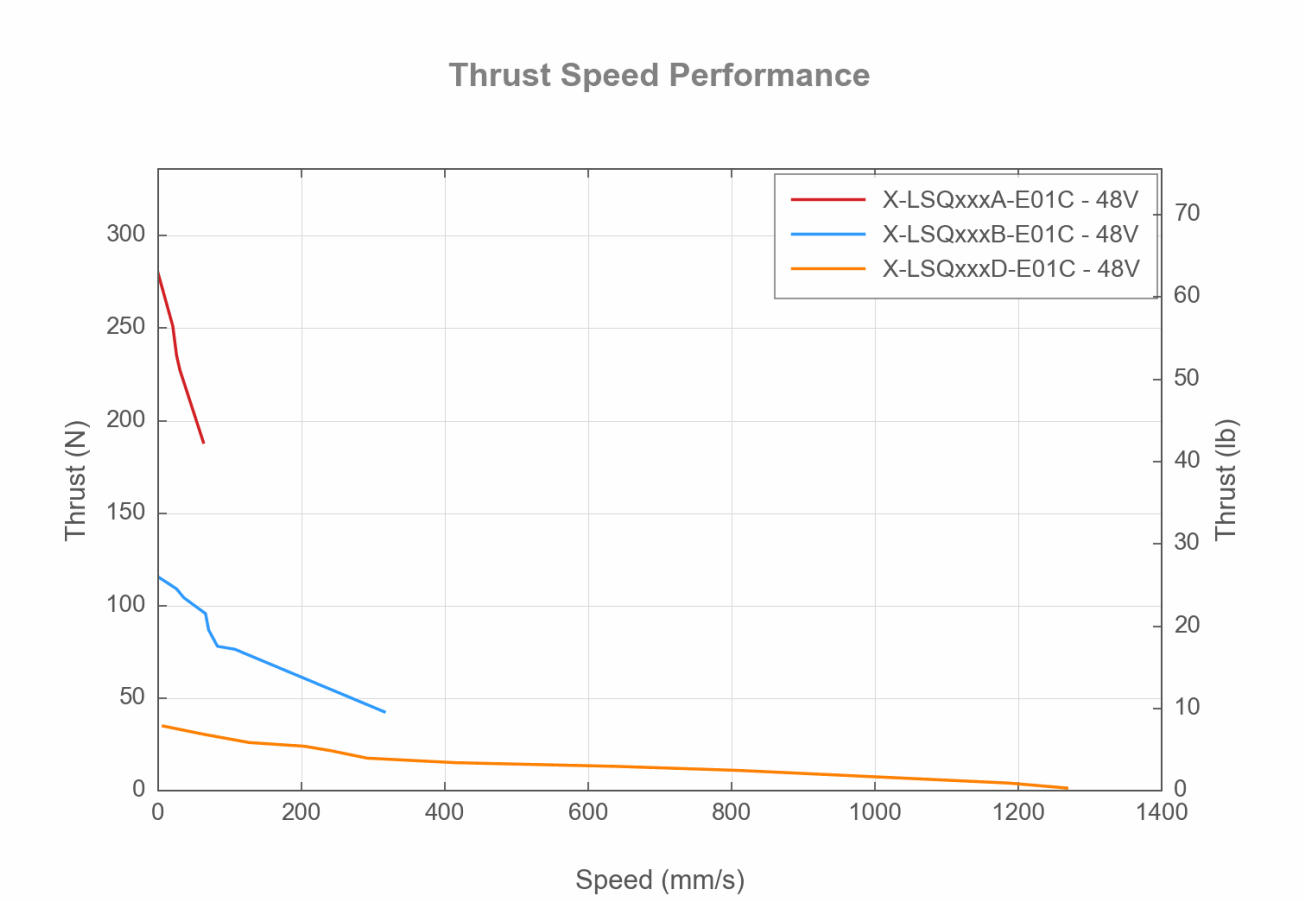
Part Number	Speed Resolution	Linear Motion Per Motor Rev
X-LSQ075A-E01C	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ075B-E01C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ075D-E01C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ150A-E01C	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ150B-E01C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ150D-E01C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ300A-E01C	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ300B-E01C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ300D-E01C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ450A-E01C	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ450B-E01C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ450D-E01C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ600A-E01C	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ600B-E01C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ600D-E01C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")

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X-LSQ-EC Series Charts

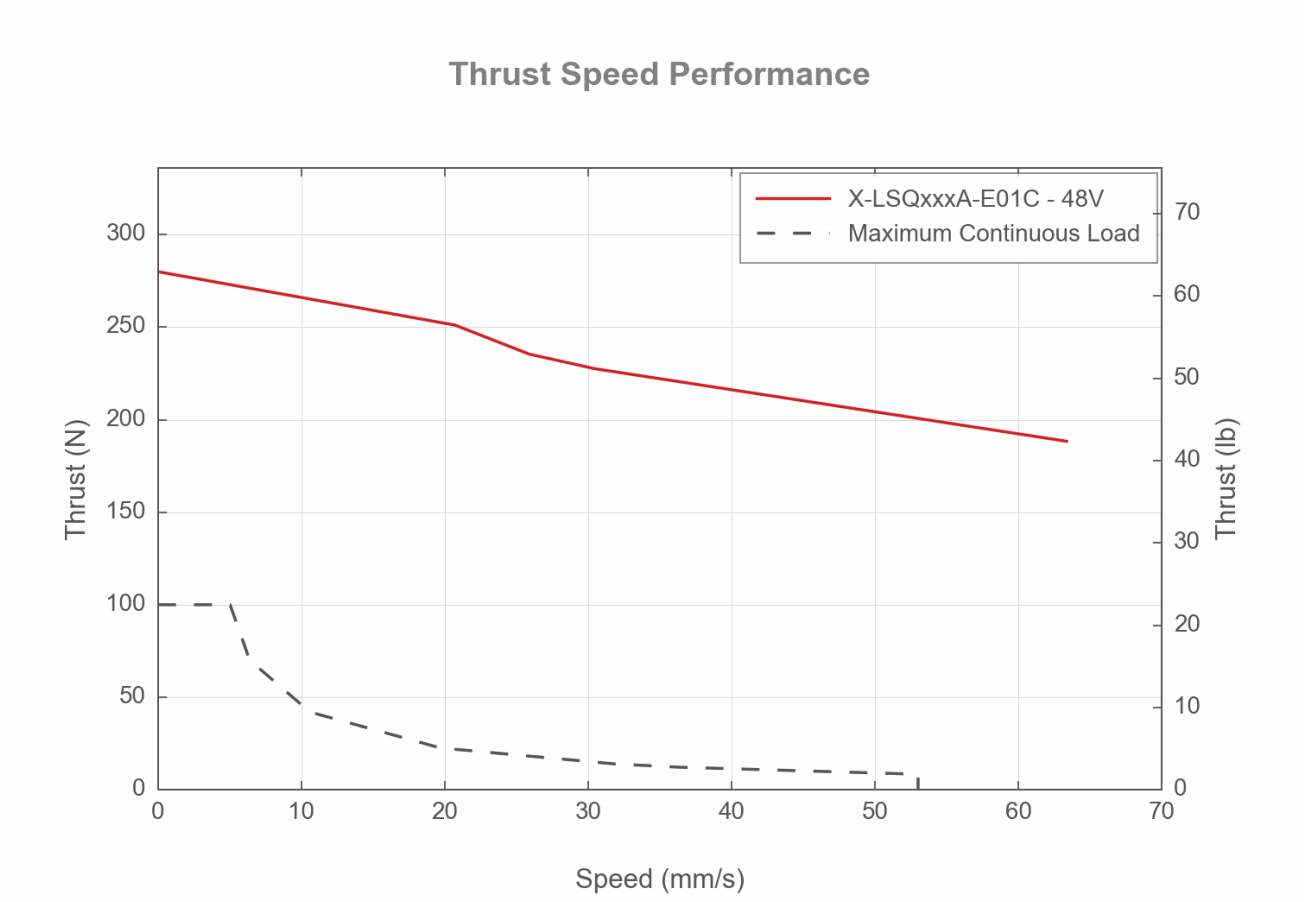
Thrust Speed



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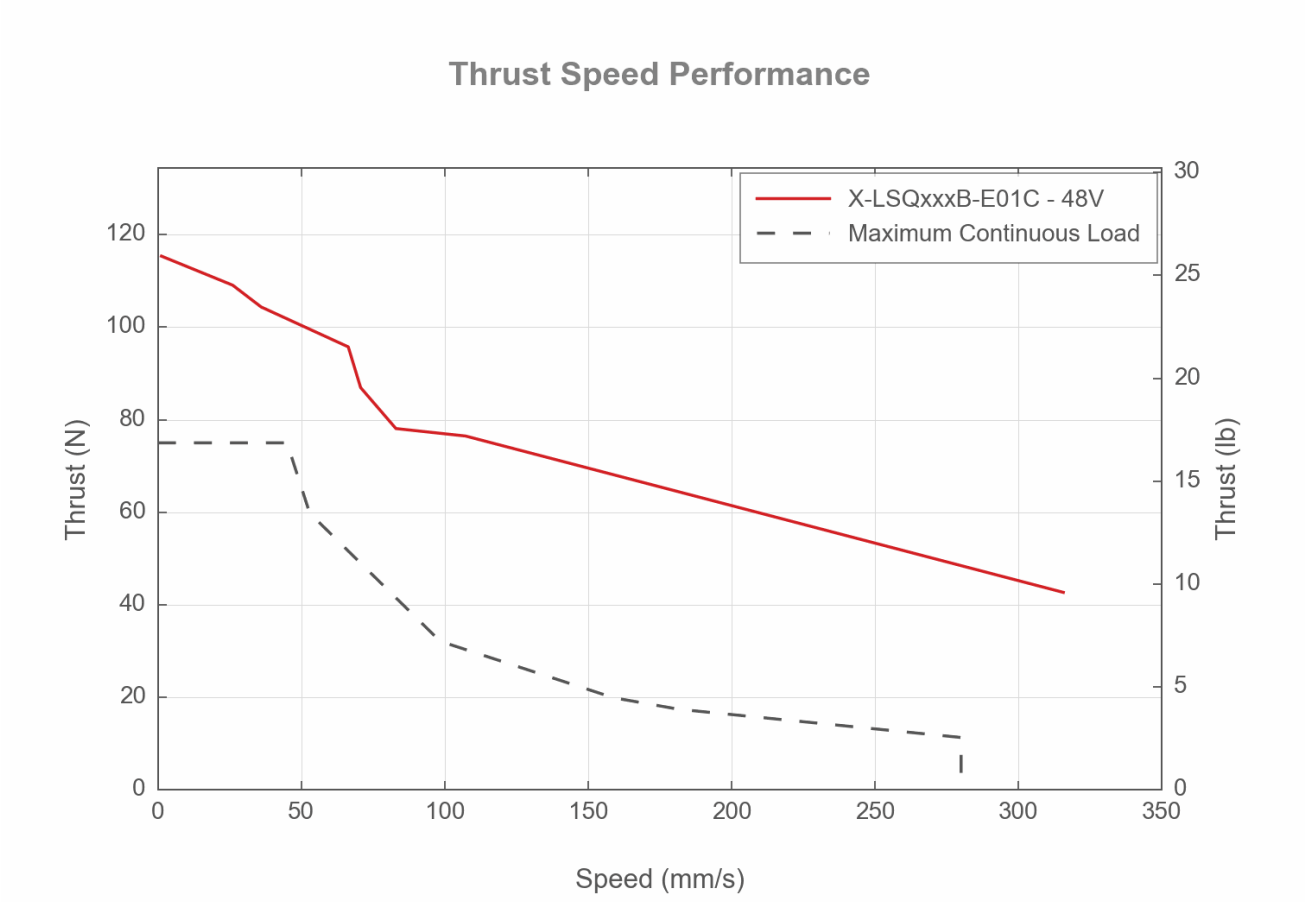
Thrust Speed



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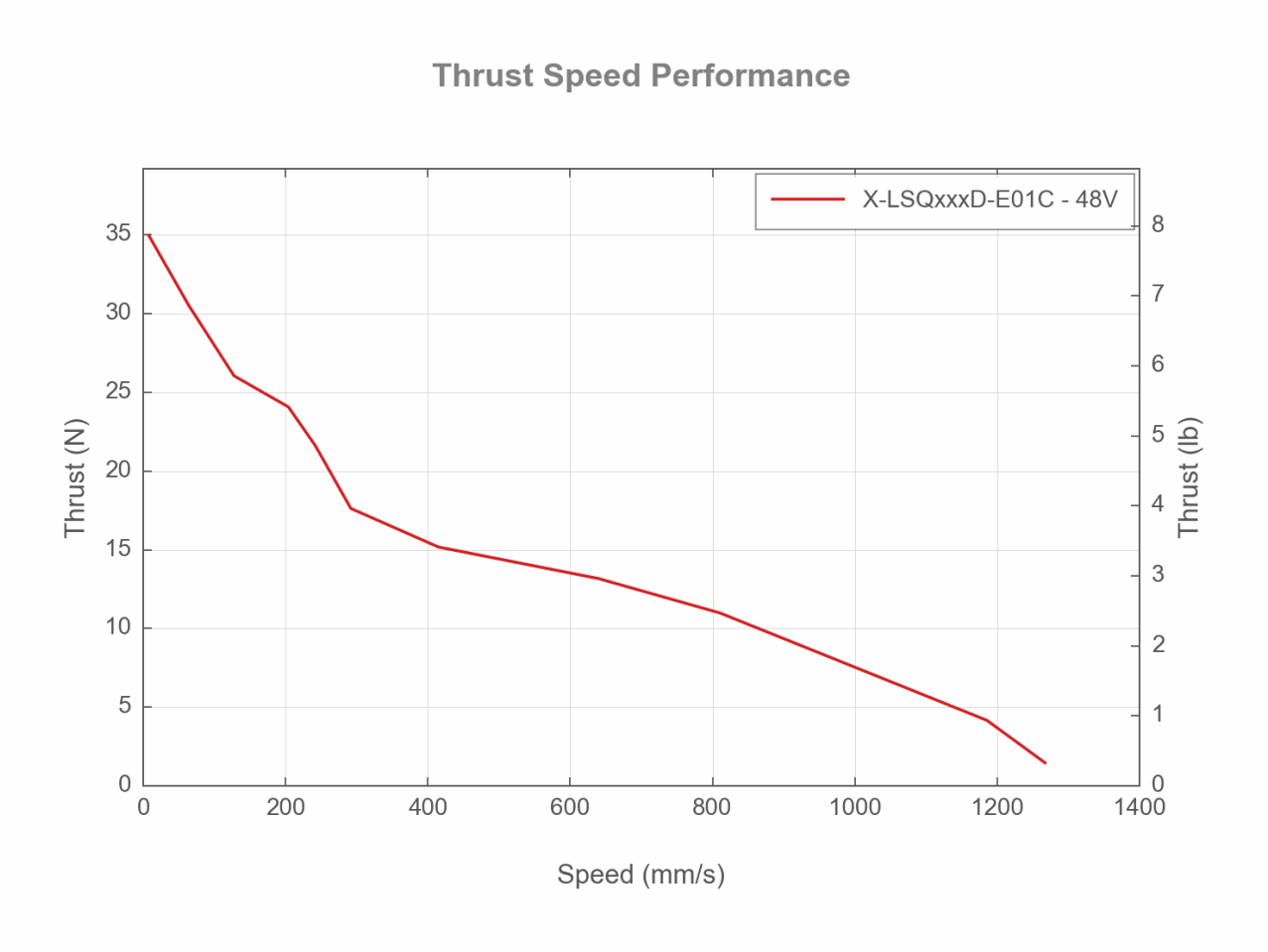
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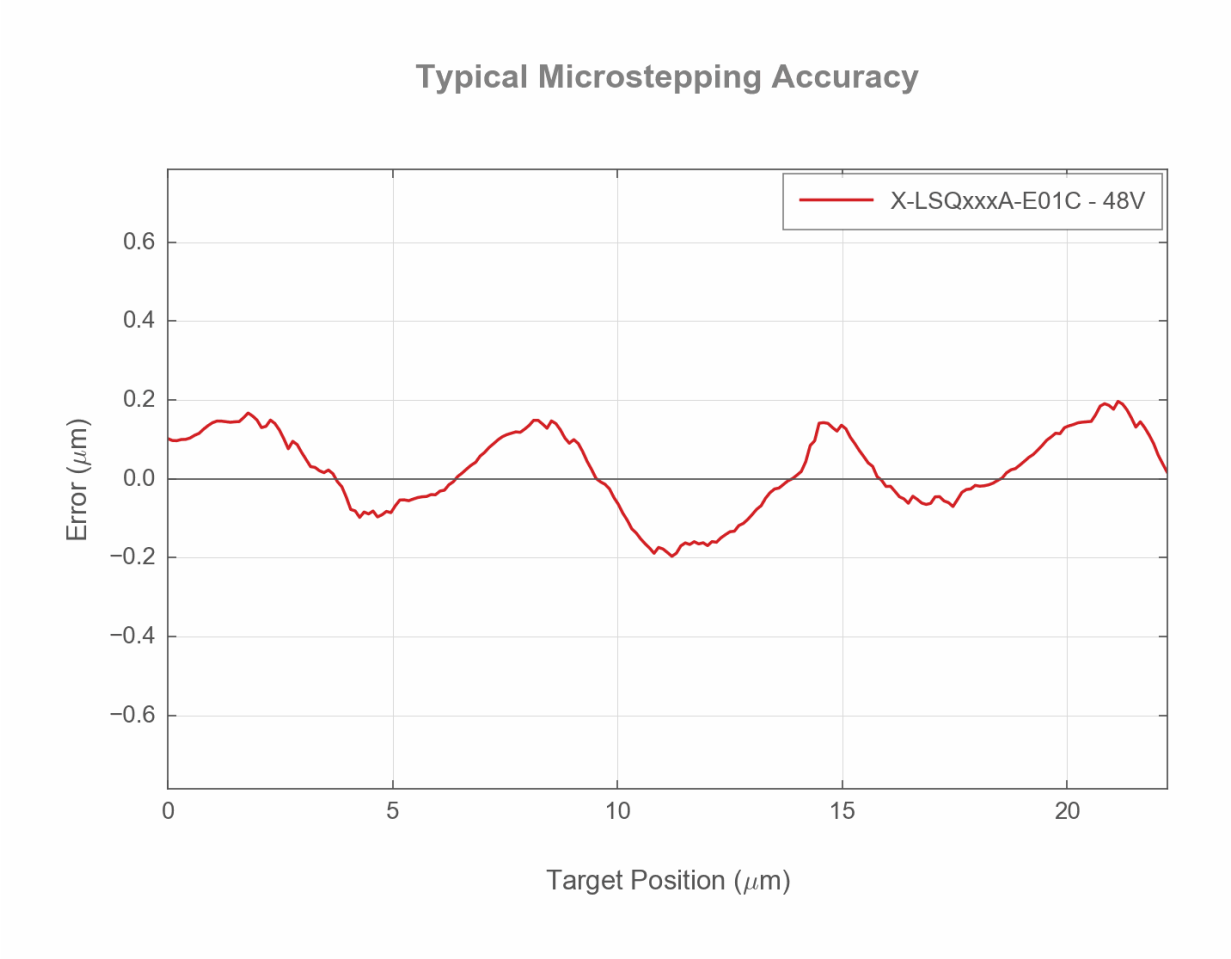
Thrust Speed



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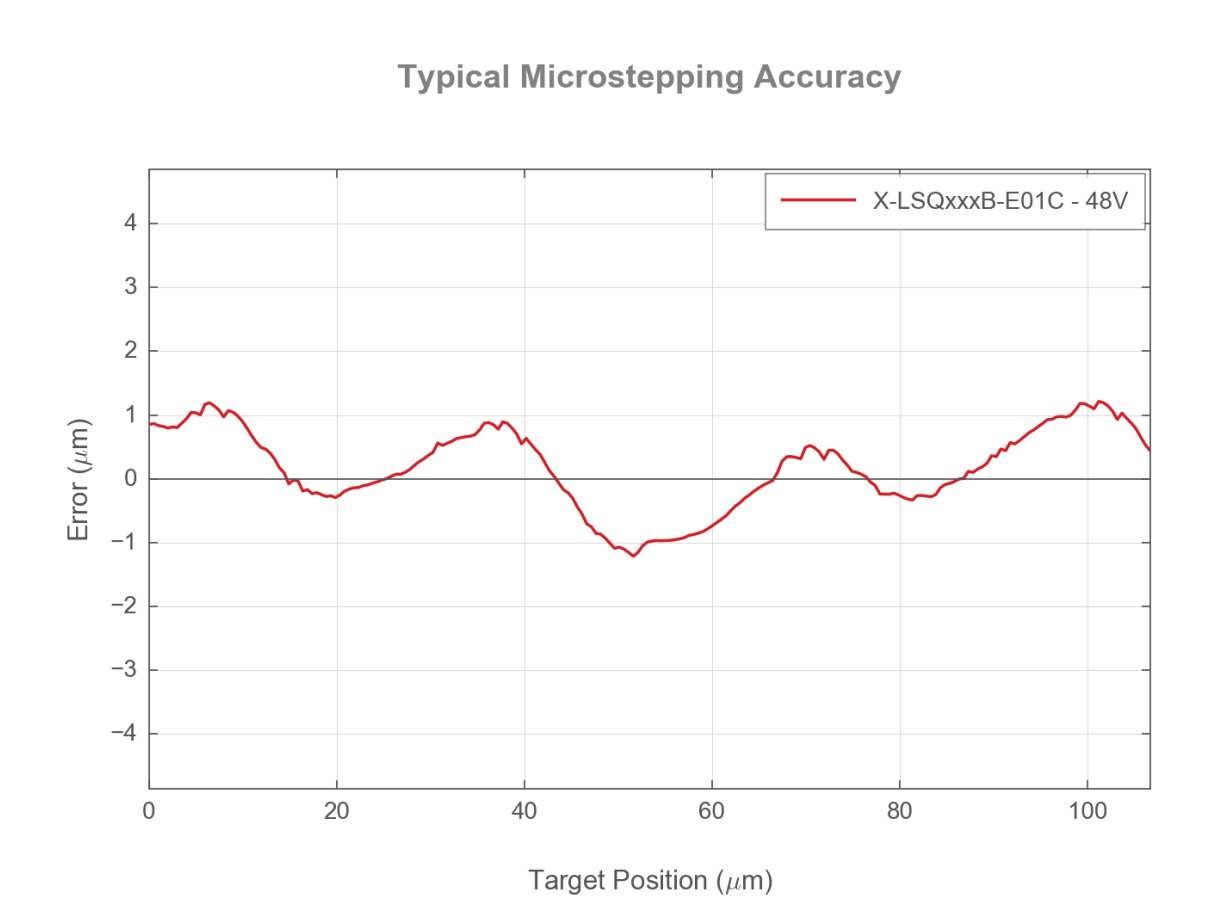
UStep Accuracy



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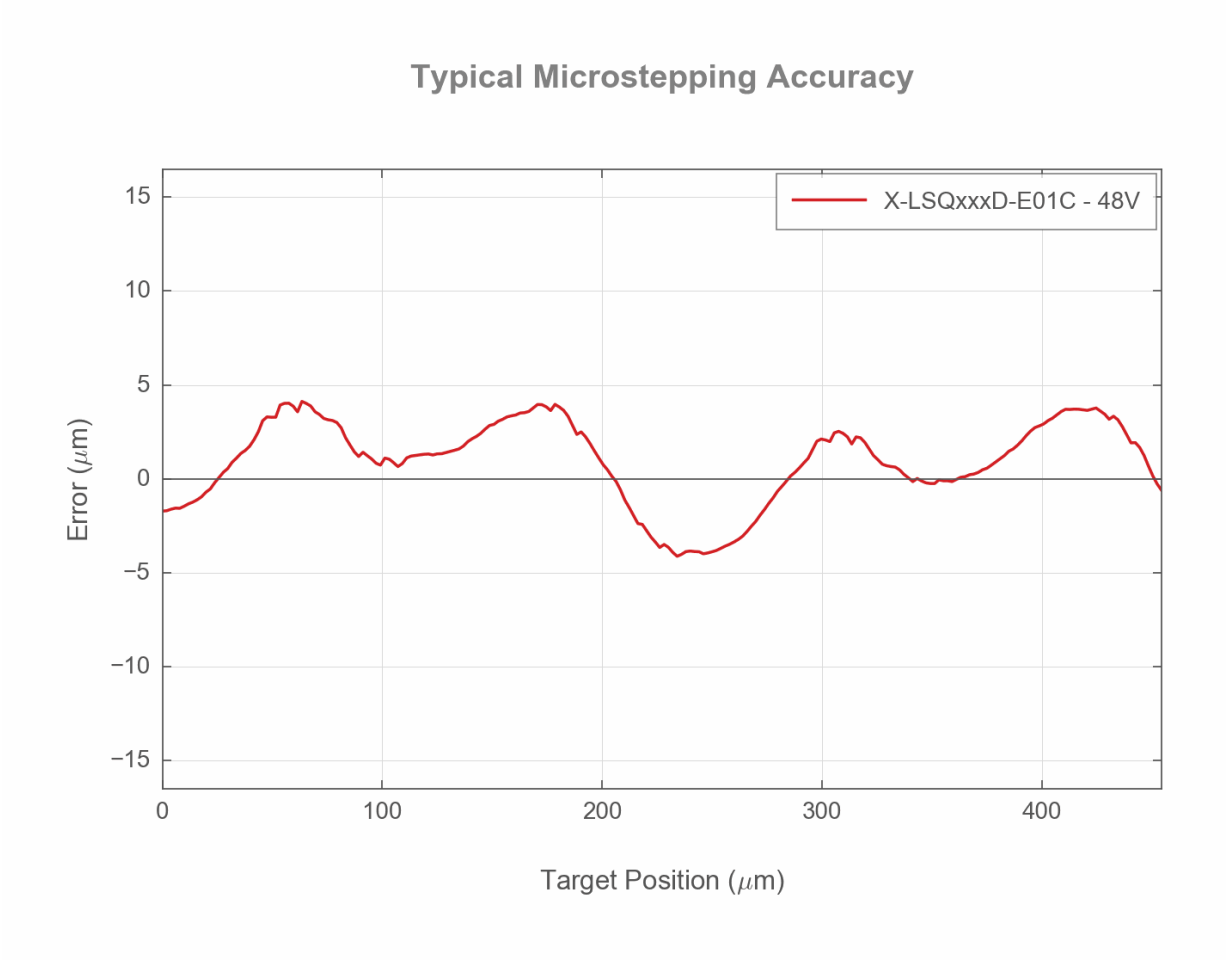
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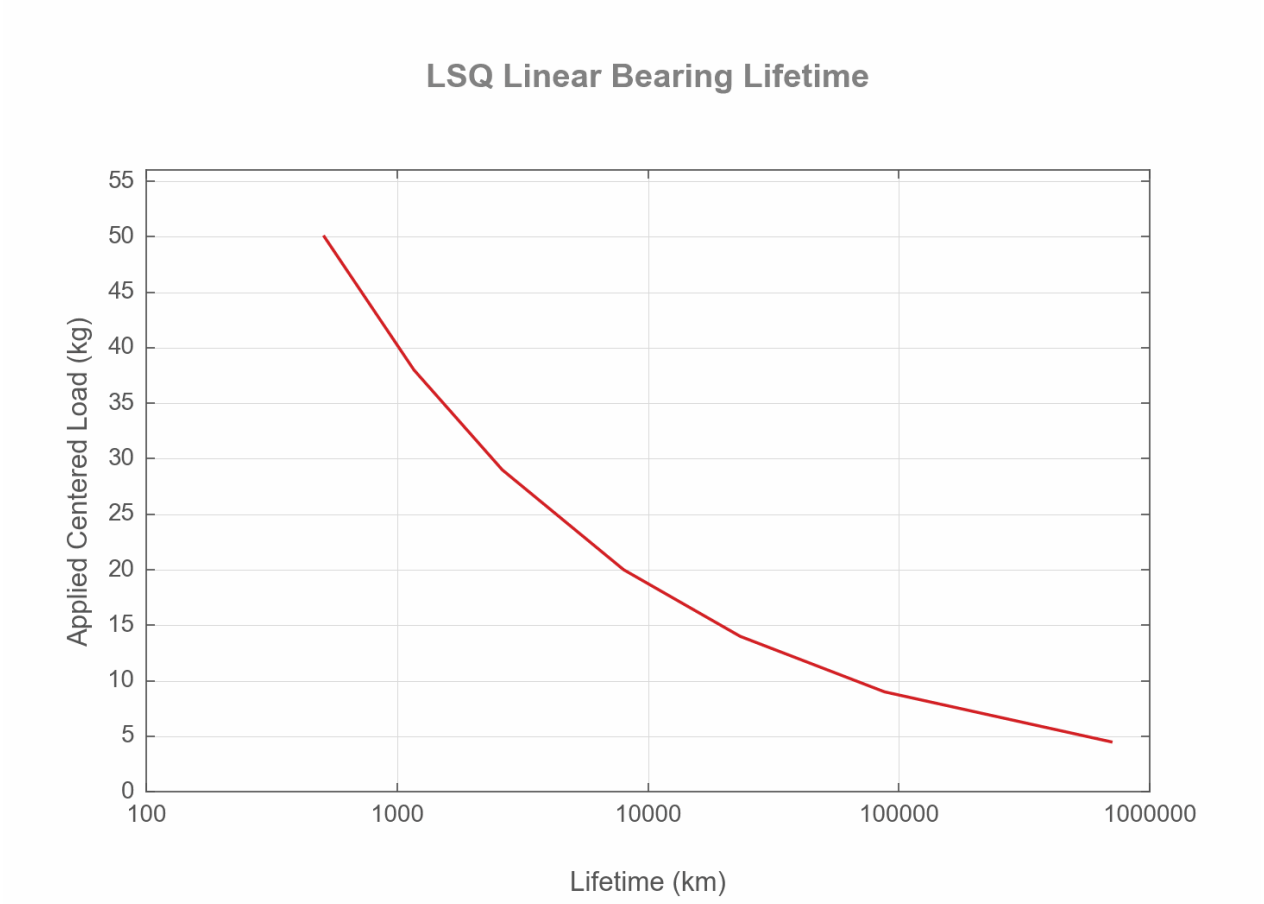
UStep Accuracy



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LSQxxxxx Lifetime Recirculating Bearing



Contact

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X-LSQ Series Datasheet



- 75, 150, 300, 450 and 600 mm travel
- 50 kg load capacity
- Up to 1 m/s speed and up to 100 N thrust
- Integrated recirculating ball bearing guide provides exceptional lifetime
- Built-in controller; daisy-chains with other Zaber products
- Custom versions available

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X-LSQ Series Overview

Zaber's X-LSQ Series products are computer controlled, motorized linear stages with a variety of lead screw pitches and travels. They are stand-alone units requiring only a 48 V power supply, included with the kit version. An indexed knob provides convenient manual control for versatile operation even without a computer - press and hold to switch between velocity mode and position mode and push to stop.

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 devices.

For more information visit: https://www.zaber.com/products/linear-stages/X-LSQ

X-LSQ Series Part Numbering & Options

X-LSQ 075 A

Travel

- **075** — 75 mm
- **150** — 150 mm
- **300** — 300 mm
- **450** — 450 mm
- **600** — 600 mm

Lead Screw Options

- **A** — Fine pitch lead screw
- **B** — Medium pitch lead screw
- **D** — Coarse pitch lead screw

X-LSQ Series Drawings

- X-LSQ (Drawing for the X-LSQ R01B)
- View all drawings and documents at zaber.com

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X-LSQ Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Manual Control	Indexed knob with push switch
Axes of Motion	1
LED Indicators	Yes

Positioning Performance

Specification	Value
Flatness of Travel	<30 µm (<0.001181 ")
Pitch Error	0.06 ° (1.047 mrad)
Roll Error	0.03 ° (0.523 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step
Stage Parallelism	<100 µm (<0.003937 ")

Load Performance

Specification	Value
Maximum Centered Load	500 N (112.1 lb)
Maximum Moment (Pitch)	6 N·m (4.4 lb·ft)
Maximum Moment (Roll)	20 N·m (14.76 lb·ft)
Maximum Moment (Yaw)	6 N·m (4.428 lb·ft)
Stiffness (Pitch)	150 N·m/°

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Stiffness (Roll)	225 N·m/°
Stiffness (Yaw)	150 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	2300 mA/phase
Motor Winding Inductance	2.2 mH/phase

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin Screw Terminal
Maximum Current Draw	1450 mA

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Precision lead screw
Mounting Interface	M6 threaded holes and 8-32 threaded holes

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Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Travel Range	Weight	Accuracy (unidirectional)	Repeatability
X-LSQ075A	75 mm (2.953 ")	1.2 kg (2.646 lb)	35 µm (0.001378 ")	<2 µm (<0.000079 ")
X-LSQ075B	75 mm (2.953 ")	1.2 kg (2.646 lb)	45 µm (0.001772 ")	<3 µm (<0.000118 ")
X-LSQ075D	75 mm (2.953 ")	1.2 kg (2.646 lb)	80 µm (0.00315 ")	<10 µm (<0.000394 ")
X-LSQ150A	150 mm (5.905 ")	1.4 kg (3.086 lb)	45 µm (0.001772 ")	<2 µm (<0.000079 ")
X-LSQ150B	150 mm (5.905 ")	1.4 kg (3.086 lb)	50 µm (0.001968 ")	<3 µm (<0.000118 ")
X-LSQ150D	150 mm (5.905 ")	1.4 kg (3.086 lb)	100 µm (0.003937 ")	<10 µm (<0.000394 ")
X-LSQ300A	300 mm (11.811 ")	1.8 kg (3.968 lb)	90 µm (0.003543 ")	<2 µm (<0.000079 ")
X-LSQ300B	300 mm (11.811 ")	1.8 kg (3.968 lb)	65 µm (0.002559 ")	<3 µm (<0.000118 ")
X-LSQ300D	300 mm (11.811 ")	1.8 kg (3.968 lb)	145 µm (0.005709 ")	<10 µm (<0.000394 ")
X-LSQ450A	450 mm (17.716 ")	2.3 kg (5.071 lb)	135 µm (0.005315 ")	<2 µm (<0.000079 ")
X-LSQ450B	450 mm (17.716 ")	2.3 kg (5.071 lb)	75 µm (0.002953 ")	<3 µm (<0.000118 ")
X-LSQ450D	450 mm (17.716 ")	2.3 kg (5.071 lb)	185 µm (0.007283 ")	<10 µm (<0.000394 ")
X-LSQ600A	600 mm (23.622 ")	2.9 kg (6.393 lb)	180 µm (0.007087 ")	<2 µm (<0.000079 ")
X-LSQ600B	600 mm (23.622 ")	2.9 kg (6.393 lb)	100 µm (0.003937 ")	<3 µm (<0.000118 ")

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X-LSQ600D	600 mm (23.622 ")	2.9 kg (6.393 lb)	230 µm (0.009055 ")	<10 µm (<0.000394 ")

Part Number	Backlash	Straightness of Travel	Microstep Size (Default Resolution)	Peak Thrust
X-LSQ075A	<15 µm (<0.000591 ")	<20 µm (<0.000787 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ075B	<18 µm (<0.000709 ")	<20 µm (<0.000787 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ075D	<75 µm (<0.002953 ")	<20 µm (<0.000787 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ150A	<15 µm (<0.000591 ")	<30 µm (<0.001181 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ150B	<18 µm (<0.000709 ")	<30 µm (<0.001181 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ150D	<75 µm (<0.002953 ")	<30 µm (<0.001181 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ300A	<15 µm (<0.000591 ")	<35 µm (<0.001378 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ300B	<18 µm (<0.000709 ")	<35 µm (<0.001378 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ300D	<75 µm (<0.002953 ")	<35 µm (<0.001378 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ450A	<15 µm (<0.000591 ")	<40 µm (<0.001575 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ450B	<18 µm (<0.000709 ")	<40 µm (<0.001575 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ450D	<75 µm (<0.002953 ")	<40 µm (<0.001575 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ600A	<15 µm (<0.000591 ")	<60 µm (<0.002362 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ600B	<18 µm (<0.000709 ")	<60 µm (<0.002362 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ600D	<75 µm (<0.002953 ")	<60 µm (<0.002362 ")	1.984375 µm	35 N (7.8 lb)

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Part Number	Maximum Continuous Thrust	Back-driving Force*	Maximum Speed	Minimum Speed
X-LSQ075A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ075B	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ075D	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ150A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ150B	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ150D	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ300A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ300B	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ300D	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ450A	100 N (22.4 lb)	Non-back-driving	46 mm/s (1.811 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ450B	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	240 mm/s (9.449 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ450D	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ600A	100 N (22.4 lb)	Non-back-driving	28 mm/s (1.102 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ600B	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	144 mm/s (5.669 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ600D	18 N (4 lb)	12 (± 30%) N (2.7 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)

Part Number	Speed Resolution	Linear Motion Per Motor Rev
X-LSQ075A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ075B	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")

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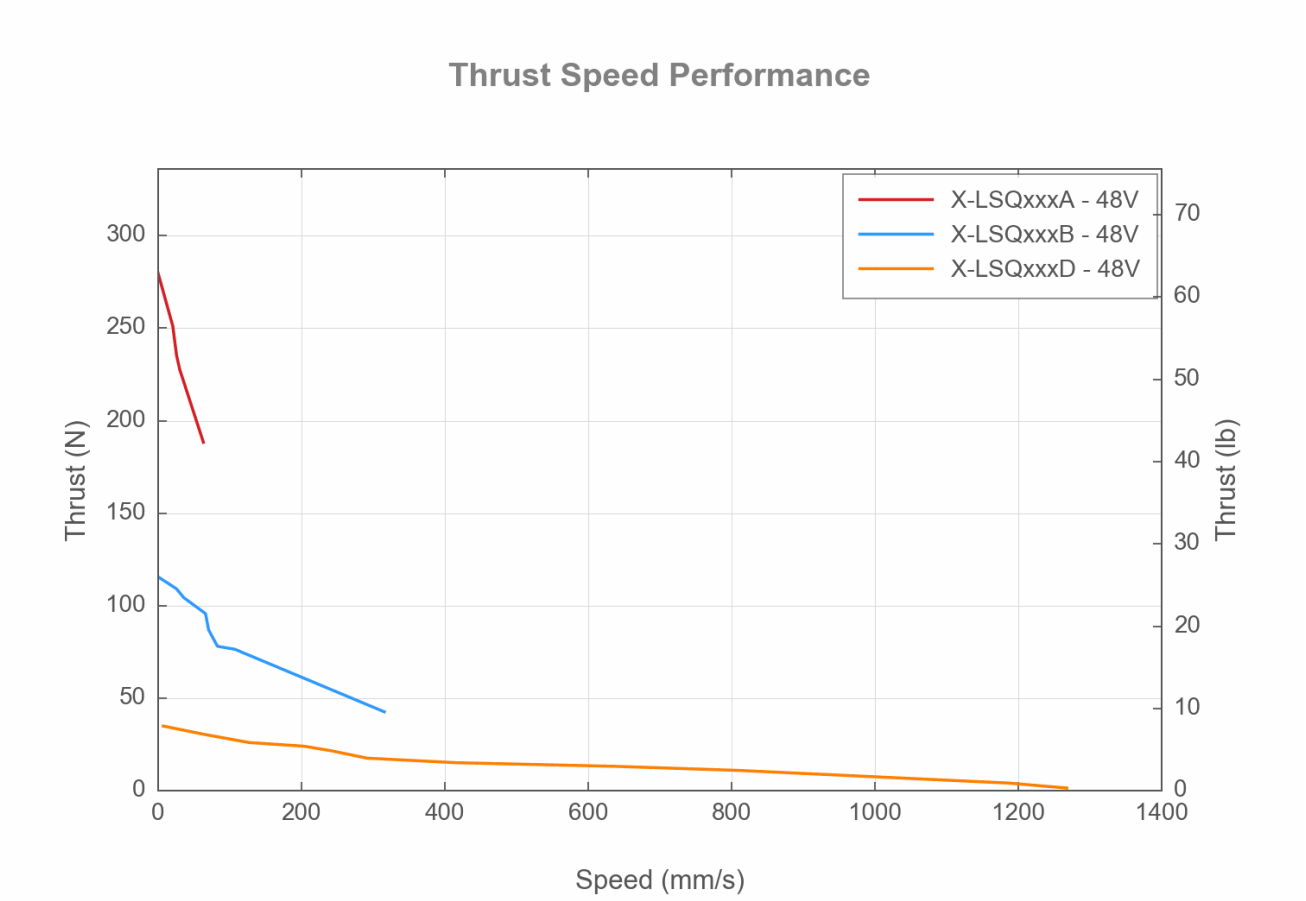
X-LSQ075D	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ150A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ150B	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ150D	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ300A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ300B	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ300D	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ450A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
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X-LSQ450D	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ600A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ600B	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ600D	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")

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X-LSQ Series Charts

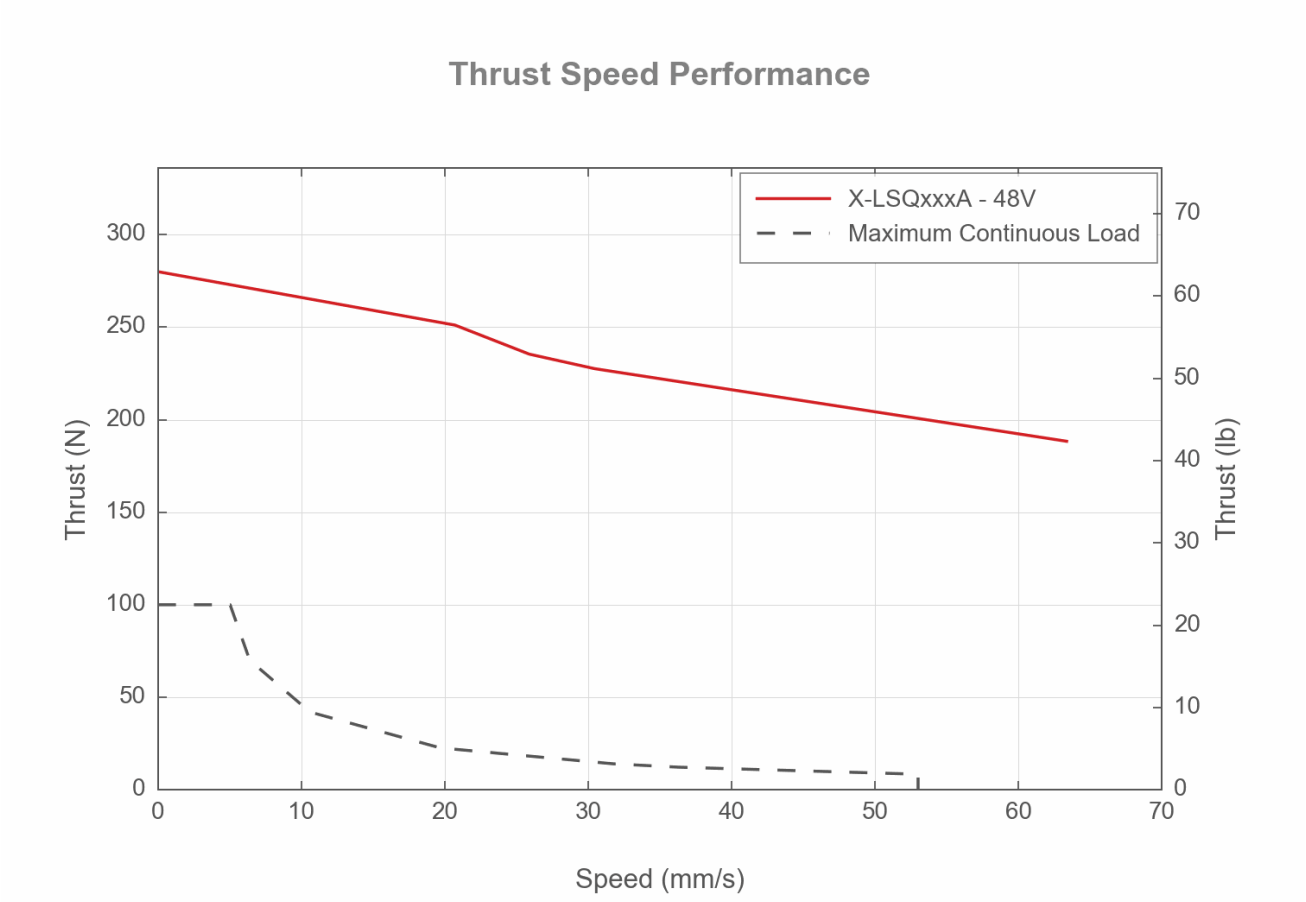
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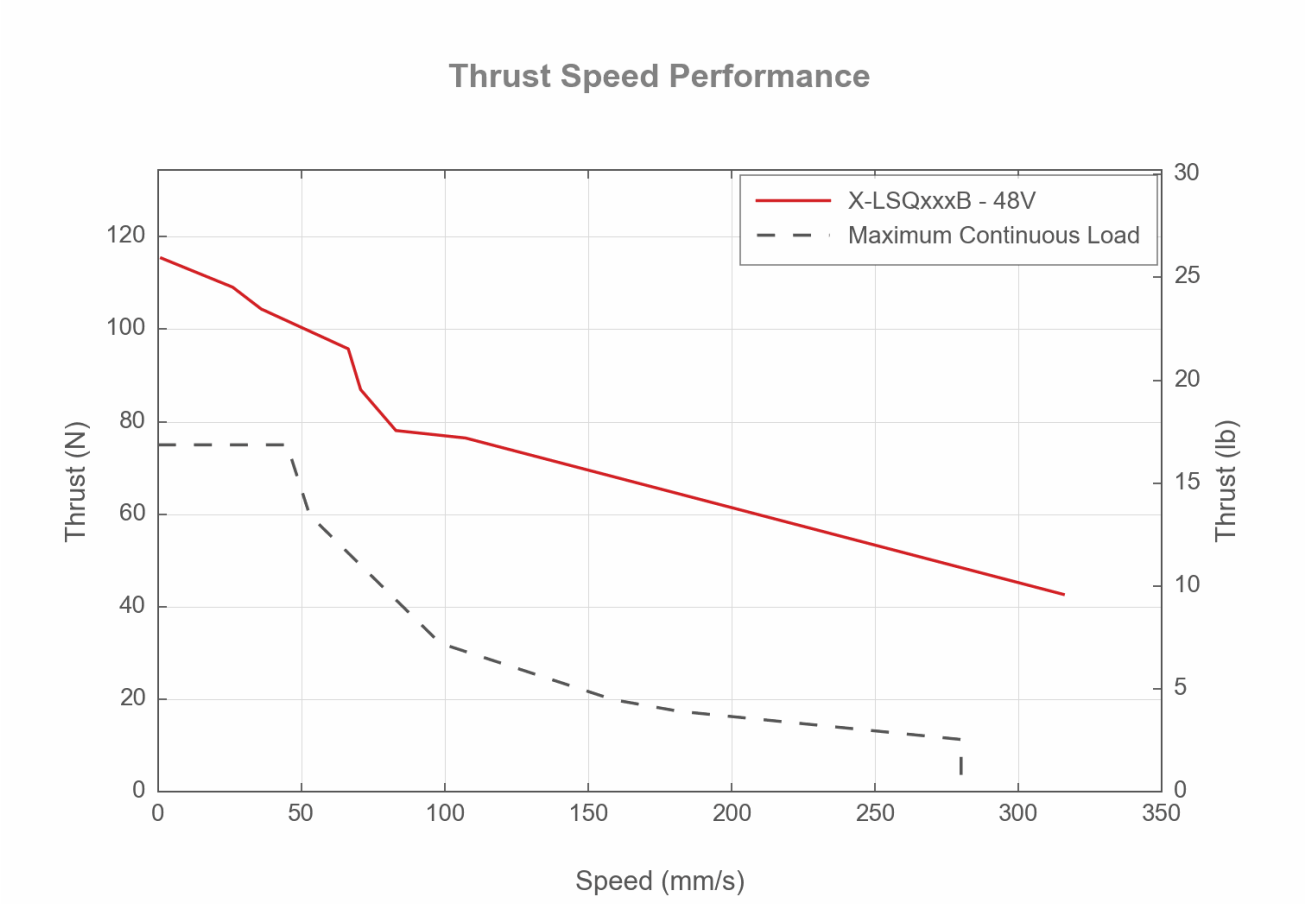
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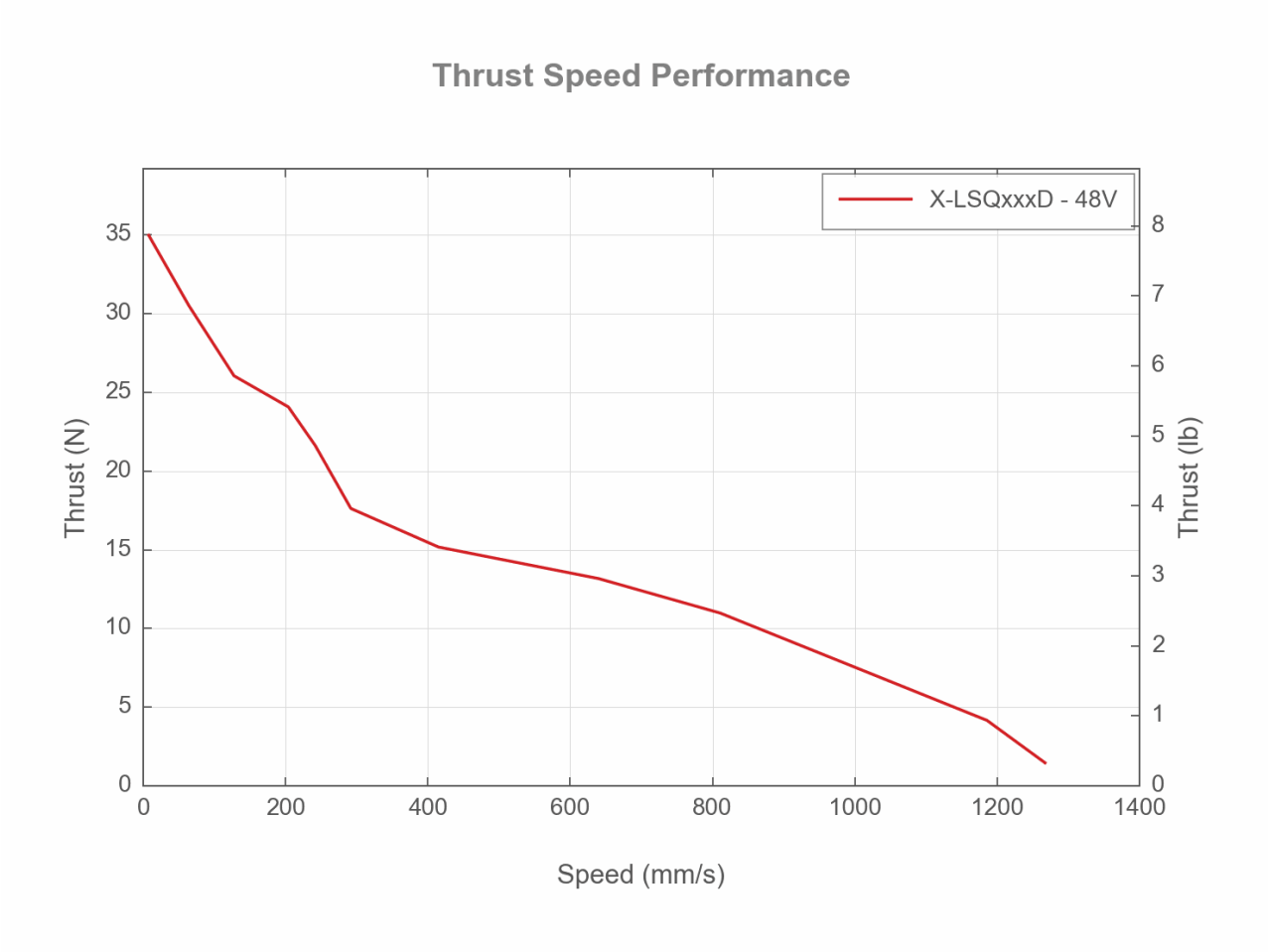
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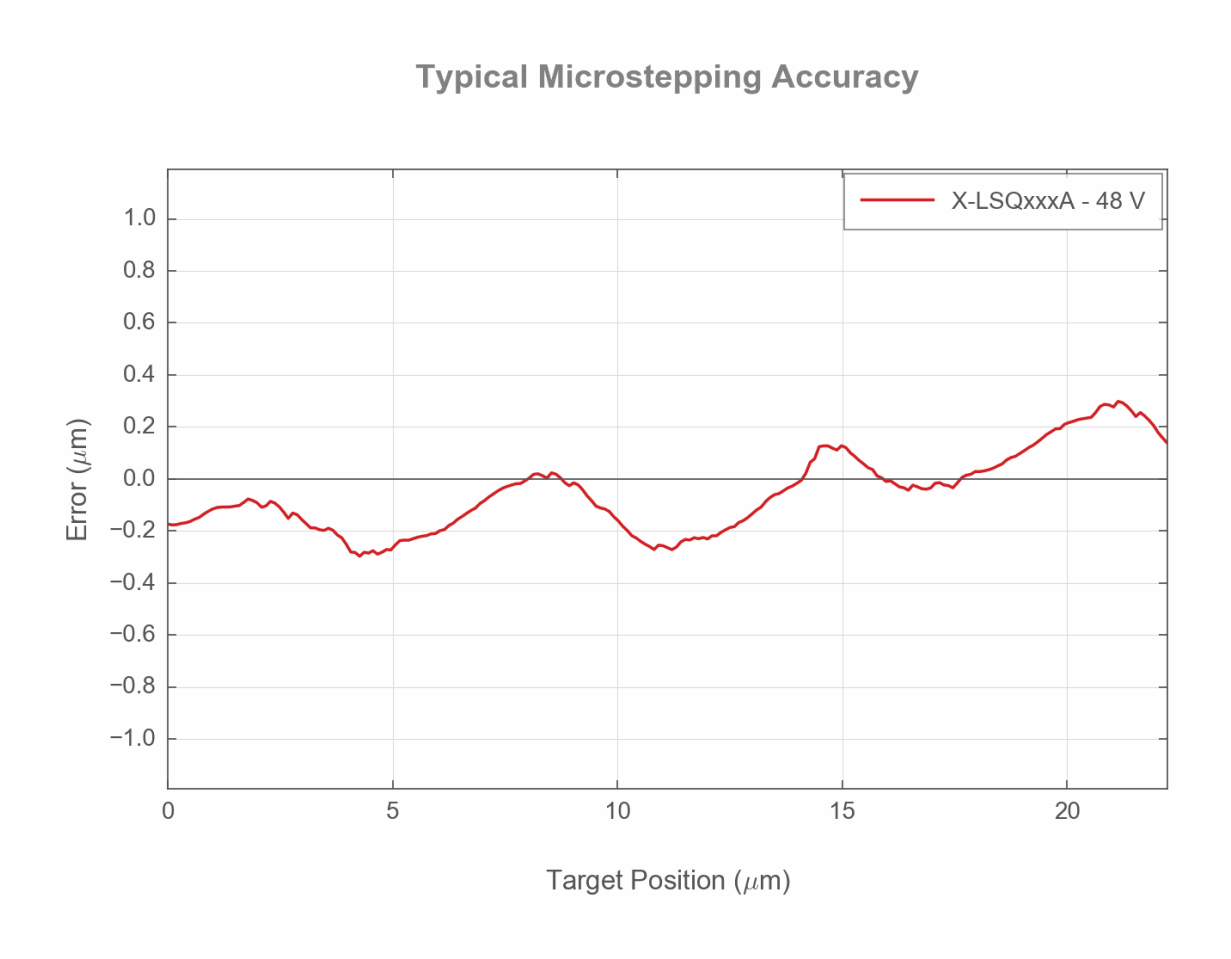
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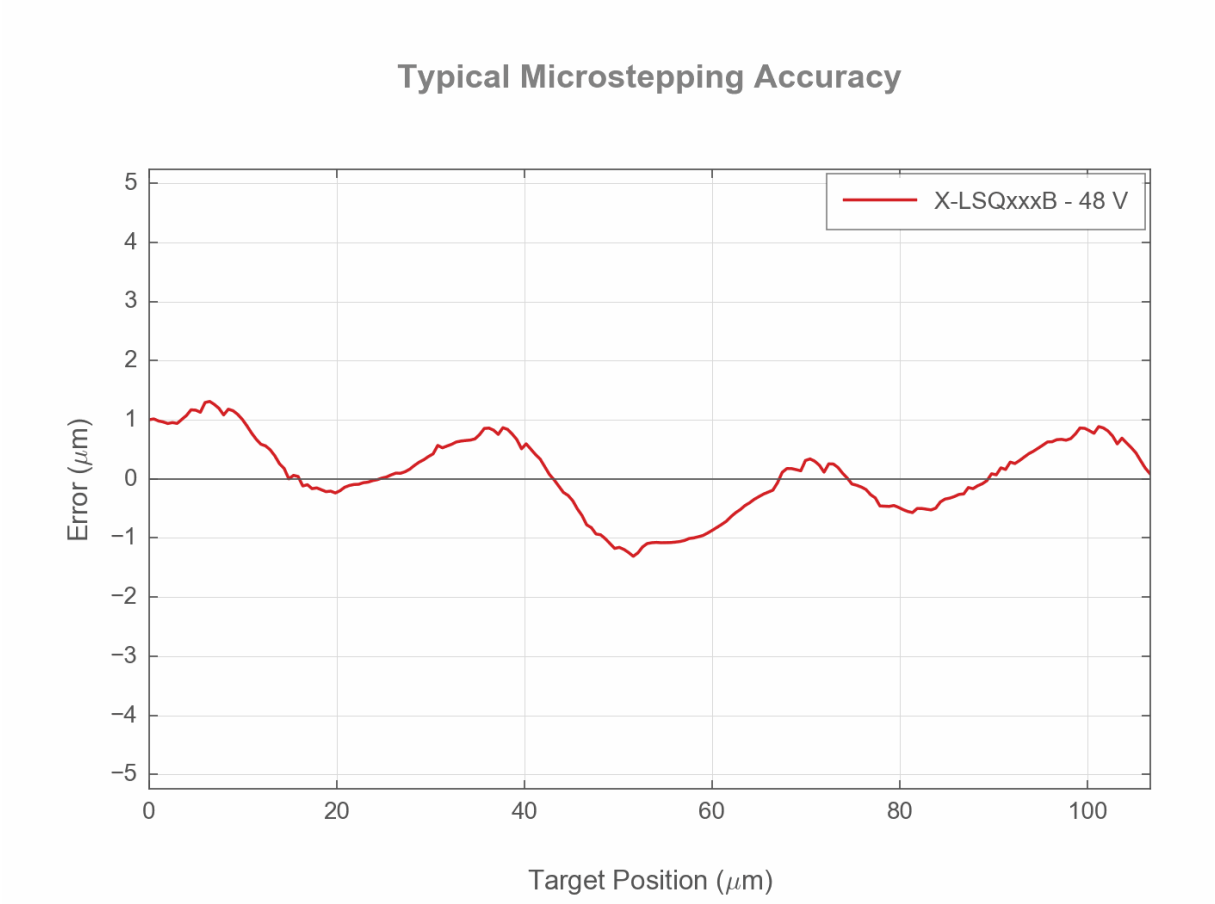
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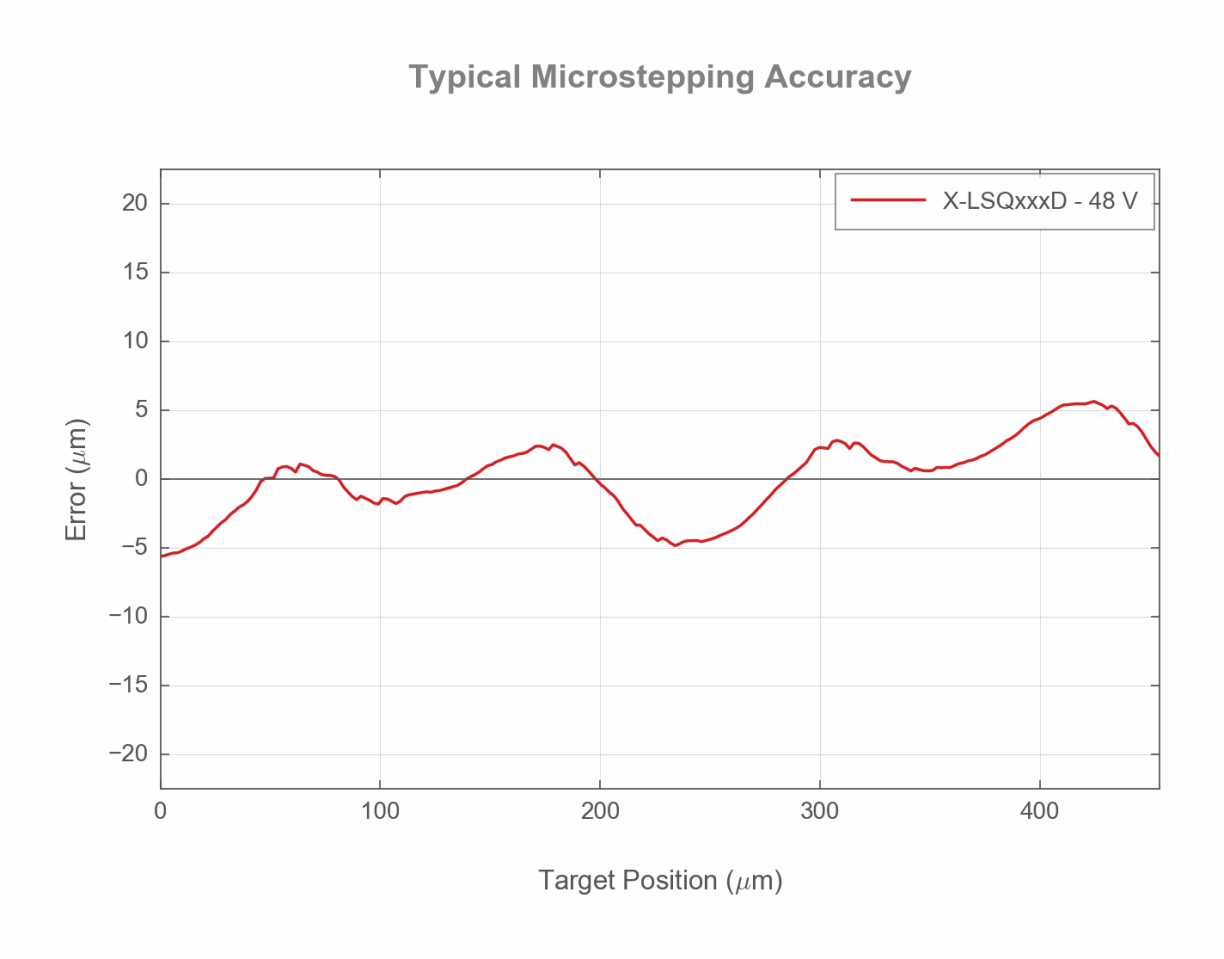
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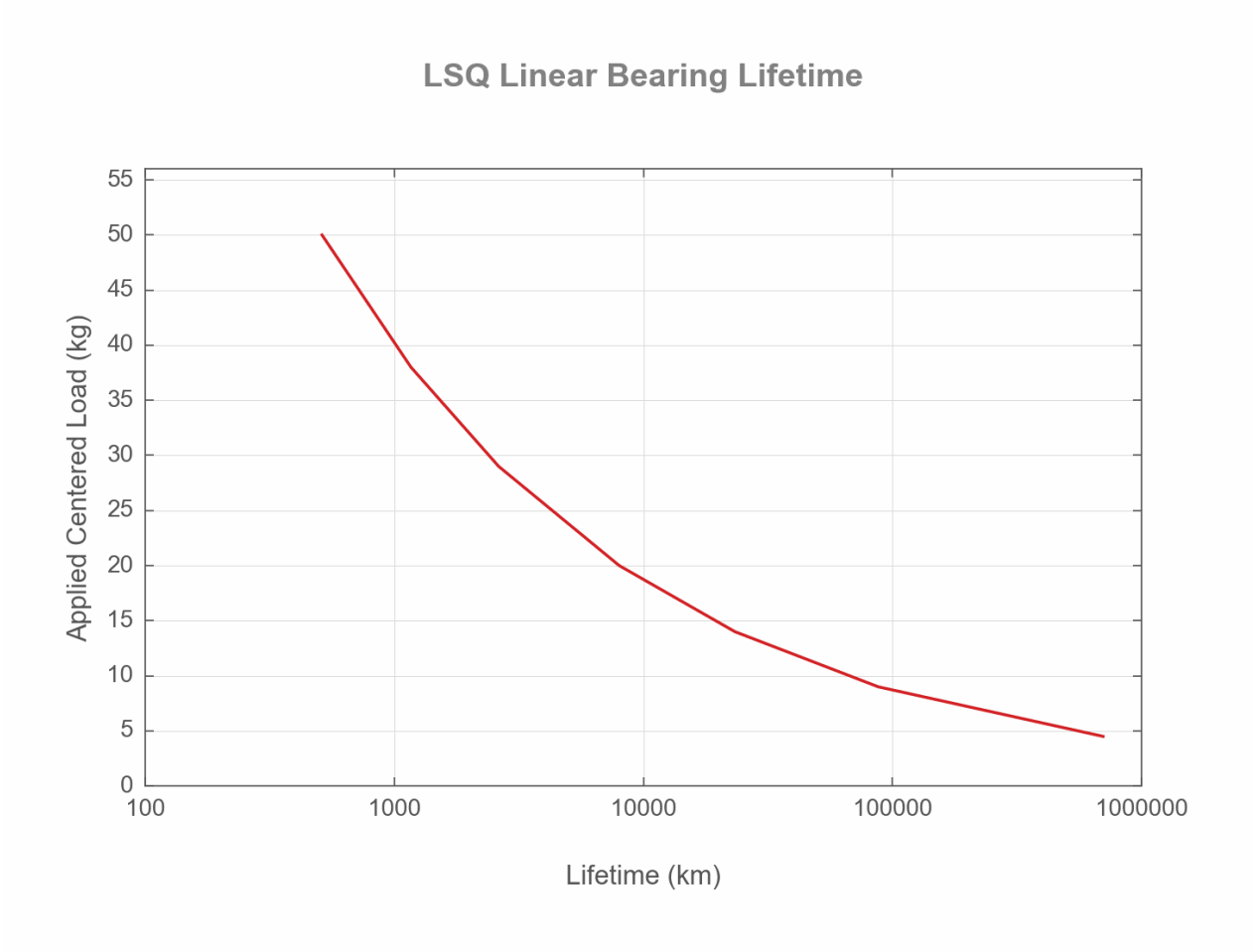
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LSQxxxxx LIFETIME RECIRCULATING BEARING



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X-LSQ-C Series Datasheet



- 75, 150, 300, 450 and 600 mm travel
- 50 kg load capacity
- Up to 1 m/s speed and up to 100 N thrust
- Includes rigid cover
- Integrated recirculating ball bearing guide provides exceptional lifetime
- Built-in controller; daisy-chains with other Zaber products
- Custom versions available

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X-LSQ-C Series Overview

Zaber's X-LSQ-C Series products are computer controlled, motorized linear stages with a variety of lead screw pitches and travels. A rigid non-contact cover prevents the ingress of small objects. They are stand-alone units requiring only a 48 V power supply, included with the kit version. An indexed knob provides convenient manual control for versatile operation even without a computer - press and hold to switch between velocity mode and position mode and push to stop.

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 devices.

For more information visit: https://www.zaber.com/products/linear-stages/X-LSQ-C

X-LSQ-C Series Part Numbering & Options

X-LSQ 075 A - C

Travel	Lead Screw Options	Cover
075 — 75 mm	**A** — Fine pitch lead screw	**C** — Rigid Cover
150 — 150 mm	**B** — Medium pitch lead screw	
300 — 300 mm	**D** — Coarse pitch lead screw	
450 — 450 mm		
600 — 600 mm		

X-LSQ-C Series Drawings

- X-LSQ-C (Drawing for the X-LSQ-C R01B)
- View all drawings and documents at zaber.com

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X-LSQ-C Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Manual Control	Indexed knob with push switch
Axes of Motion	1
LED Indicators	Yes

Positioning Performance

Specification	Value
Flatness of Travel	<30 µm (<0.001181 ")
Pitch Error	0.06 ° (1.047 mrad)
Roll Error	0.03 ° (0.523 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step
Stage Parallelism	<100 µm (<0.003937 ")

Load Performance

Specification	Value
Maximum Centered Load	500 N (112.1 lb)
Maximum Moment (Pitch)	6 N·m (4.4 lb·ft)
Maximum Moment (Roll)	20 N·m (14.76 lb·ft)
Maximum Moment (Yaw)	6 N·m (4.428 lb·ft)
Stiffness (Pitch)	150 N·m/°

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Stiffness (Roll)	225 N·m/°
Stiffness (Yaw)	150 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	2300 mA/phase
Motor Winding Inductance	2.2 mH/phase

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin Screw Terminal
Maximum Current Draw	1450 mA

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Precision lead screw
Mounting Interface	M6 threaded holes

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Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Travel Range	Weight	Accuracy (unidirectional)	Repeatability
X-LSQ075A-C	75 mm (2.953 ")	1.36 kg (2.998 lb)	35 µm (0.001378 ")	<2 µm (<0.000079 ")
X-LSQ075B-C	75 mm (2.953 ")	1.36 kg (2.998 lb)	45 µm (0.001772 ")	<3 µm (<0.000118 ")
X-LSQ075D-C	75 mm (2.953 ")	1.36 kg (2.998 lb)	80 µm (0.00315 ")	<10 µm (<0.000394 ")
X-LSQ150A-C	150 mm (5.905 ")	1.6 kg (3.527 lb)	45 µm (0.001772 ")	<2 µm (<0.000079 ")
X-LSQ150B-C	150 mm (5.905 ")	1.6 kg (3.527 lb)	50 µm (0.001968 ")	<3 µm (<0.000118 ")
X-LSQ150D-C	150 mm (5.905 ")	1.6 kg (3.527 lb)	100 µm (0.003937 ")	<10 µm (<0.000394 ")
X-LSQ300A-C	300 mm (11.811 ")	2.05 kg (4.519 lb)	90 µm (0.003543 ")	<2 µm (<0.000079 ")
X-LSQ300B-C	300 mm (11.811 ")	2.05 kg (4.519 lb)	65 µm (0.002559 ")	<3 µm (<0.000118 ")
X-LSQ300D-C	300 mm (11.811 ")	2.05 kg (4.519 lb)	145 µm (0.005709 ")	<10 µm (<0.000394 ")
X-LSQ450A-C	450 mm (17.716 ")	2.6 kg (5.732 lb)	135 µm (0.005315 ")	<2 µm (<0.000079 ")
X-LSQ450B-C	450 mm (17.716 ")	2.6 kg (5.732 lb)	75 µm (0.002953 ")	<3 µm (<0.000118 ")
X-LSQ450D-C	450 mm (17.716 ")	2.6 kg (5.732 lb)	185 µm (0.007283 ")	<10 µm (<0.000394 ")
X-LSQ600A-C	600 mm (23.622 ")	3.25 kg (7.165 lb)	180 µm (0.007087 ")	<2 µm (<0.000079 ")
X-LSQ600B-C	600 mm (23.622 ")	3.25 kg (7.165 lb)	100 µm (0.003937 ")	<3 µm (<0.000118 ")

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X-LSQ600D-C	600 mm (23.622 ")	3.25 kg (7.165 lb)	230 µm (0.009055 ")	<10 µm (<0.000394 ")

Part Number	Backlash	Straightness of Travel	Microstep Size (Default Resolution)	Peak Thrust
X-LSQ075A-C	<15 µm (<0.000591 ")	<20 µm (<0.000787 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ075B-C	<18 µm (<0.000709 ")	<20 µm (<0.000787 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ075D-C	<75 µm (<0.002953 ")	<20 µm (<0.000787 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ150A-C	<15 µm (<0.000591 ")	<30 µm (<0.001181 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ150B-C	<18 µm (<0.000709 ")	<30 µm (<0.001181 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ150D-C	<75 µm (<0.002953 ")	<30 µm (<0.001181 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ300A-C	<15 µm (<0.000591 ")	<35 µm (<0.001378 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ300B-C	<18 µm (<0.000709 ")	<35 µm (<0.001378 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ300D-C	<75 µm (<0.002953 ")	<35 µm (<0.001378 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ450A-C	<15 µm (<0.000591 ")	<40 µm (<0.001575 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ450B-C	<18 µm (<0.000709 ")	<40 µm (<0.001575 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ450D-C	<75 µm (<0.002953 ")	<40 µm (<0.001575 ")	1.984375 µm	35 N (7.8 lb)
X-LSQ600A-C	<15 µm (<0.000591 ")	<60 µm (<0.002362 ")	0.09921875 µm	275 N (61.7 lb)
X-LSQ600B-C	<18 µm (<0.000709 ")	<60 µm (<0.002362 ")	0.49609375 µm	120 N (26.9 lb)
X-LSQ600D-C	<75 µm (<0.002953 ")	<60 µm (<0.002362 ")	1.984375 µm	35 N (7.8 lb)

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Part Number	Maximum Continuous Thrust	Back-driving Force*	Maximum Speed	Minimum Speed
X-LSQ075A-C	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ075B-C	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ075D-C	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ150A-C	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ150B-C	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ150D-C	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ300A-C	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ300B-C	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ300D-C	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ450A-C	100 N (22.4 lb)	Non-back-driving	46 mm/s (1.811 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ450B-C	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	240 mm/s (9.449 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ450D-C	18 N (4 lb)	12 (± 30%) N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
X-LSQ600A-C	100 N (22.4 lb)	Non-back-driving	28 mm/s (1.102 "/s)	0.000061 mm/s (0.000002 "/s)
X-LSQ600B-C	75 N (16.8 lb)	44 (± 30%) N (9.9 lb)	144 mm/s (5.669 "/s)	0.000303 mm/s (0.000012 "/s)
X-LSQ600D-C	18 N (4 lb)	12 (± 30%) N (2.7 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)

Part Number	Speed Resolution	Linear Motion Per Motor Rev
X-LSQ075A-C	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ075B-C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")

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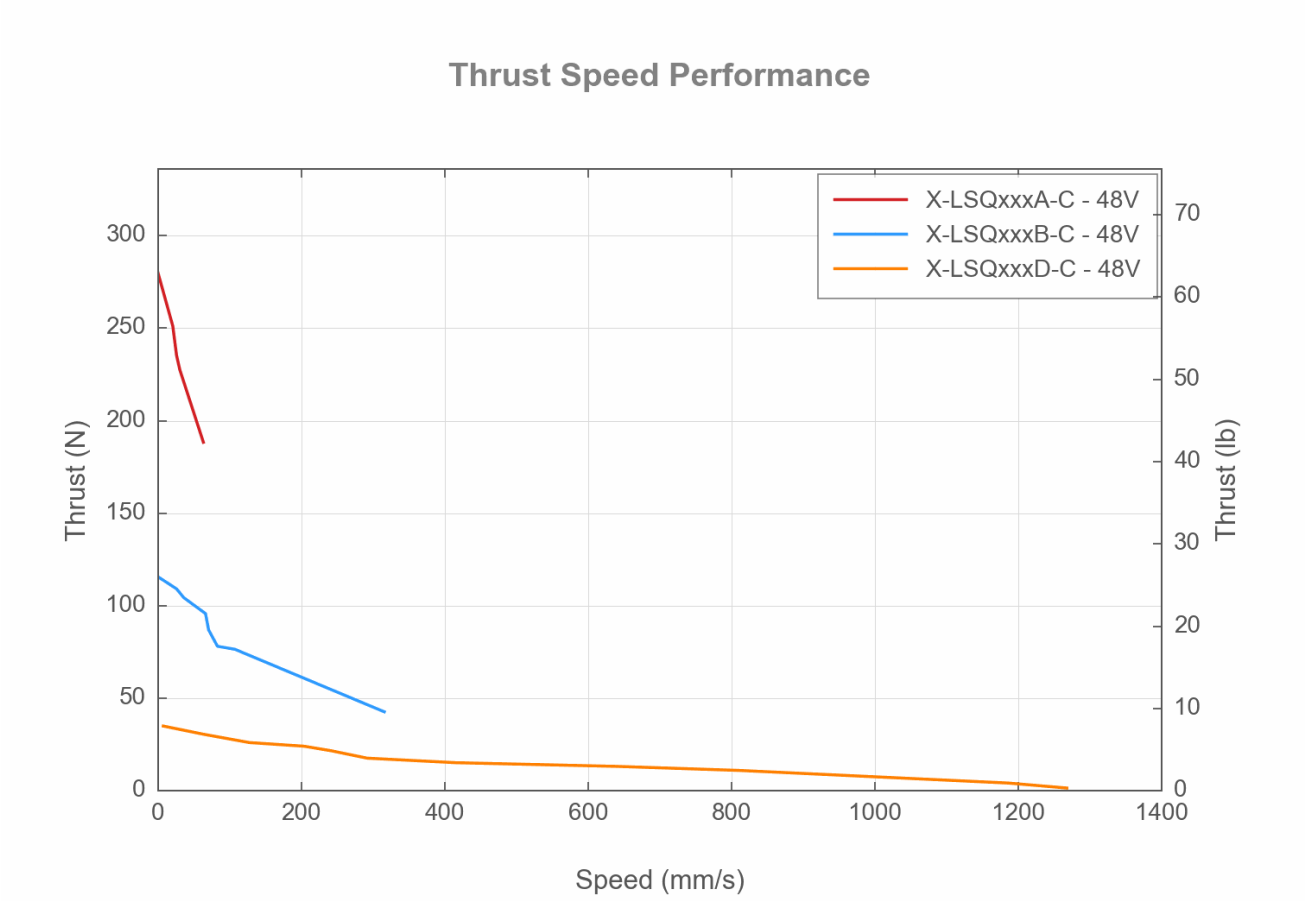
X-LSQ075D-C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ150A-C	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ150B-C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ150D-C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ300A-C	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
X-LSQ300B-C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
X-LSQ300D-C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
X-LSQ450A-C	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
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X-LSQ-C Series Charts

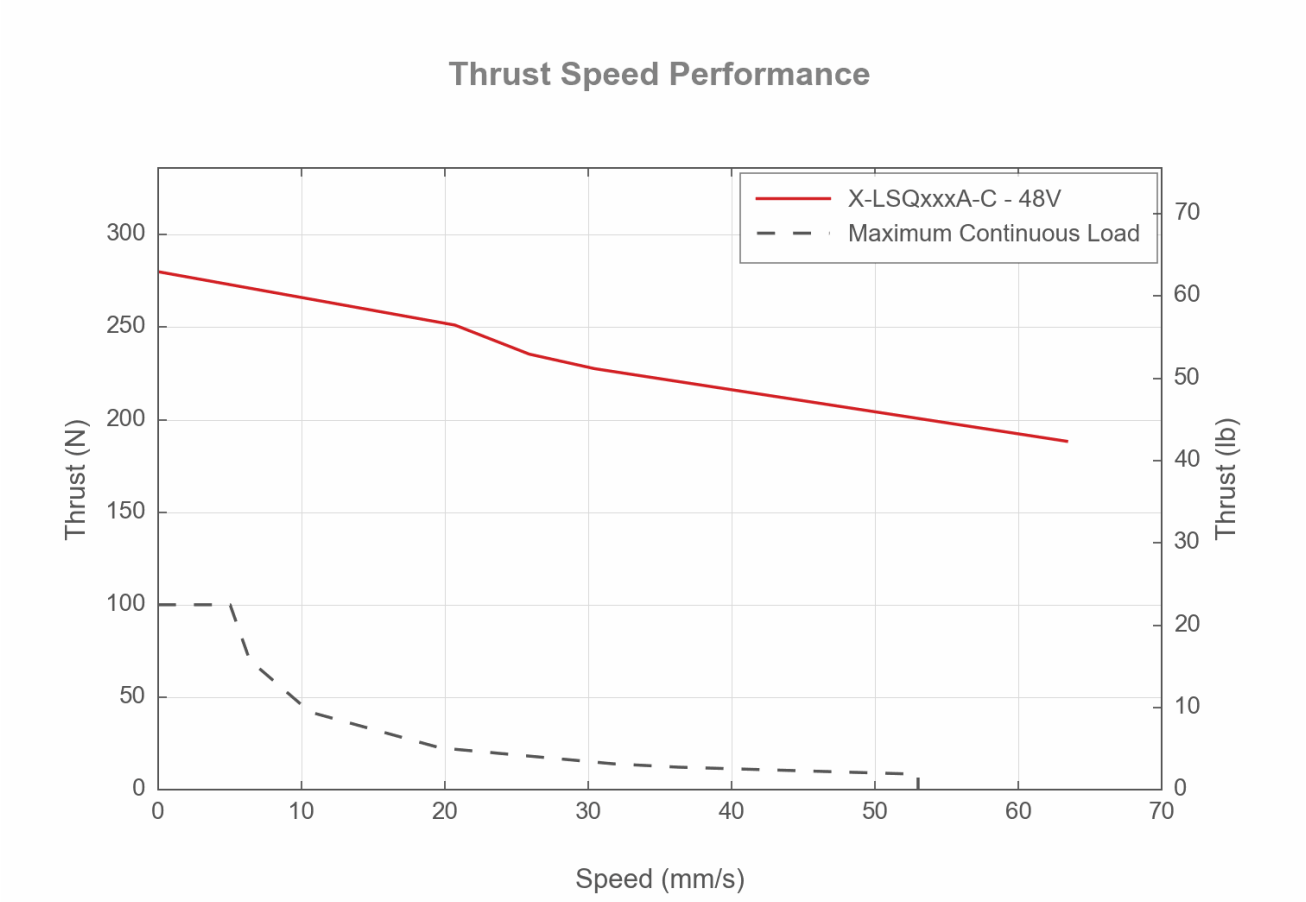
Thrust Speed



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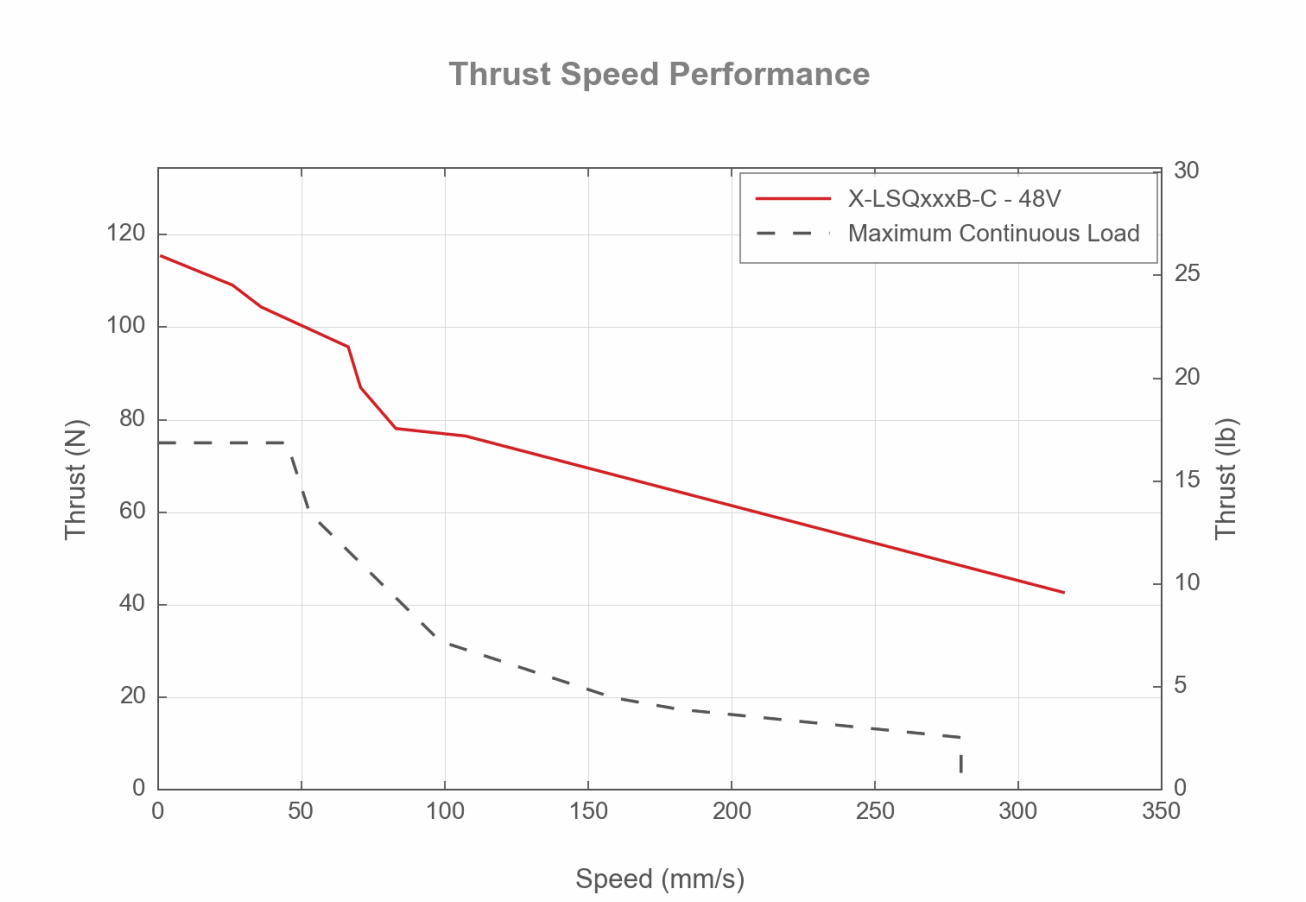
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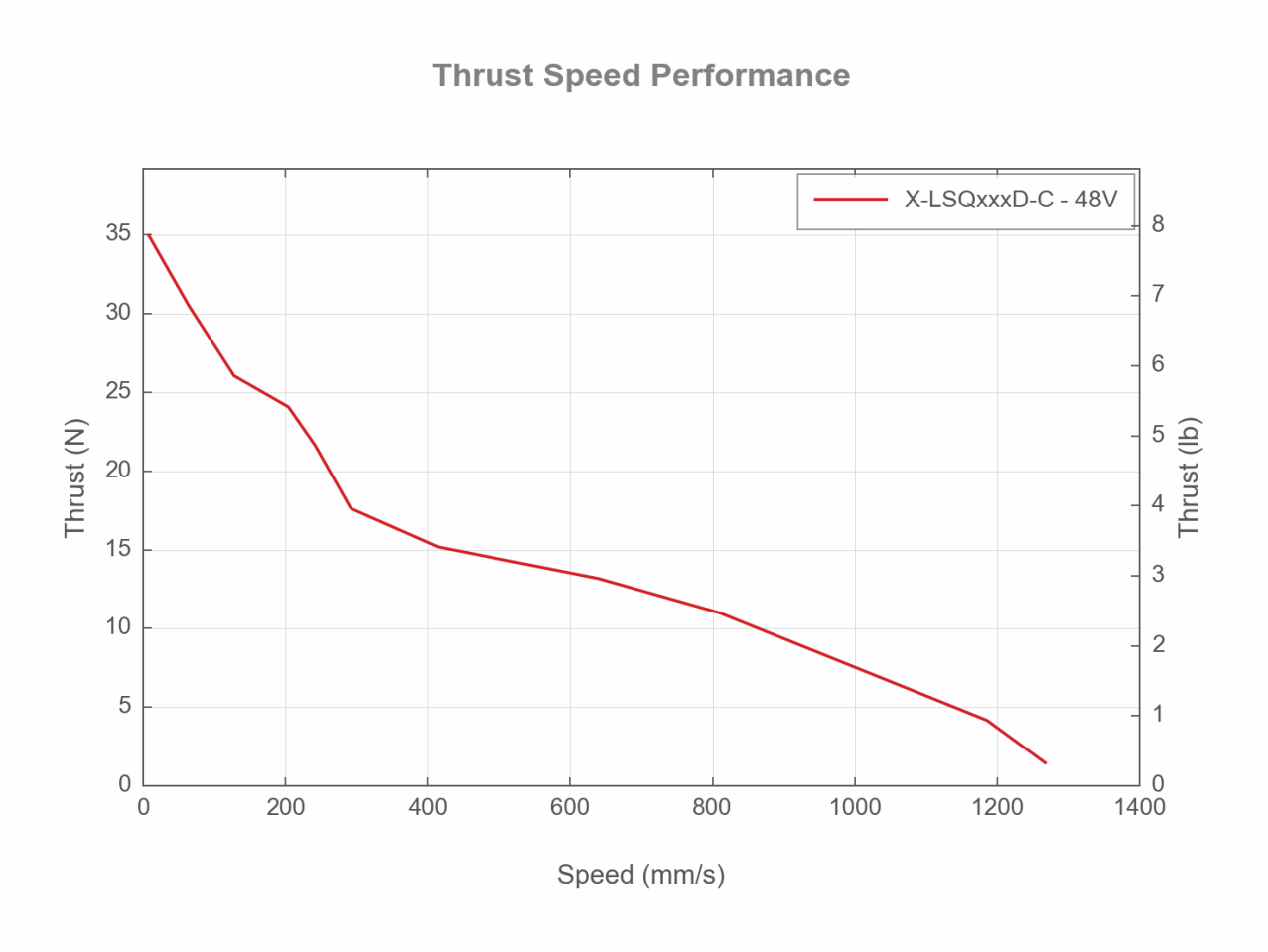
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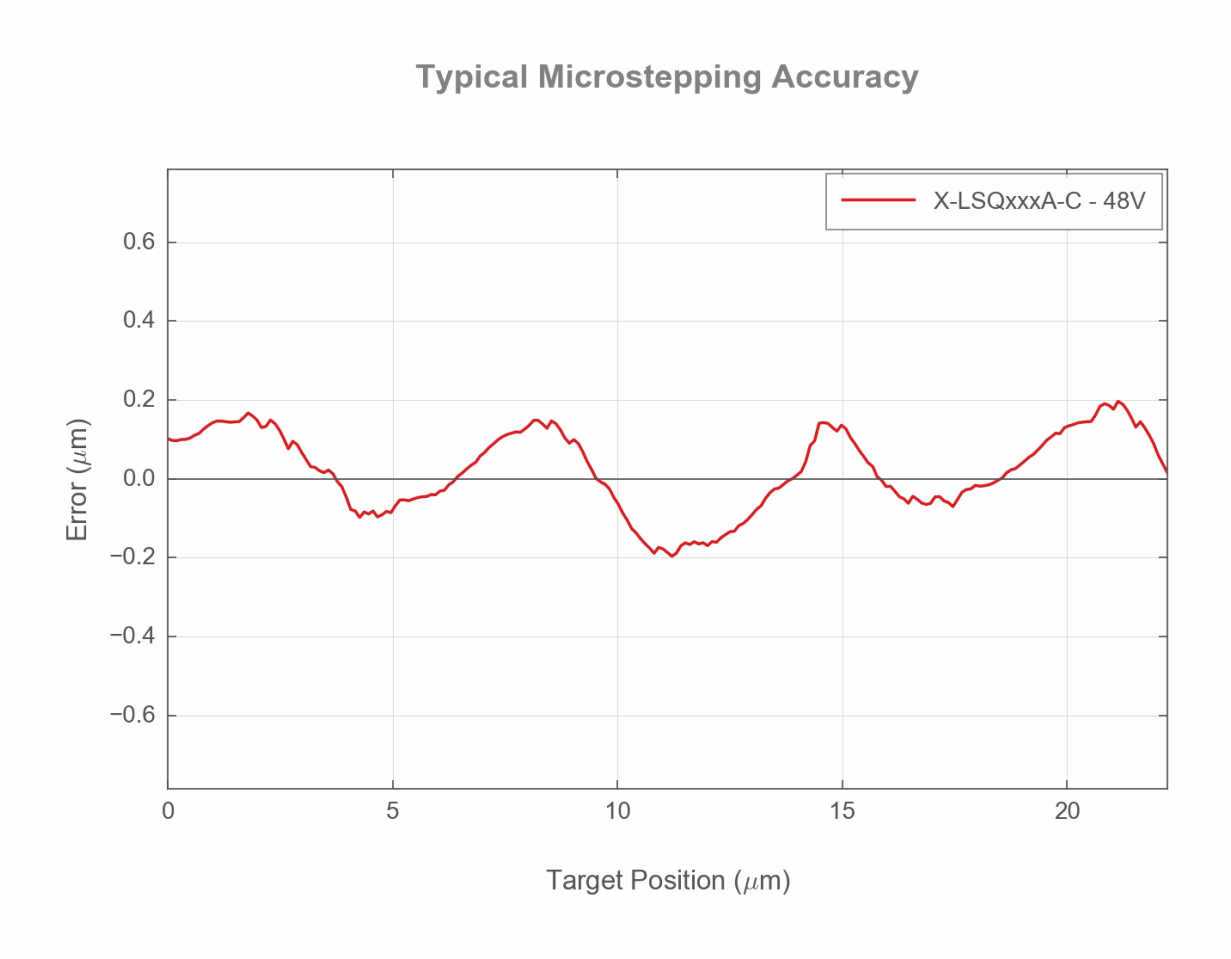
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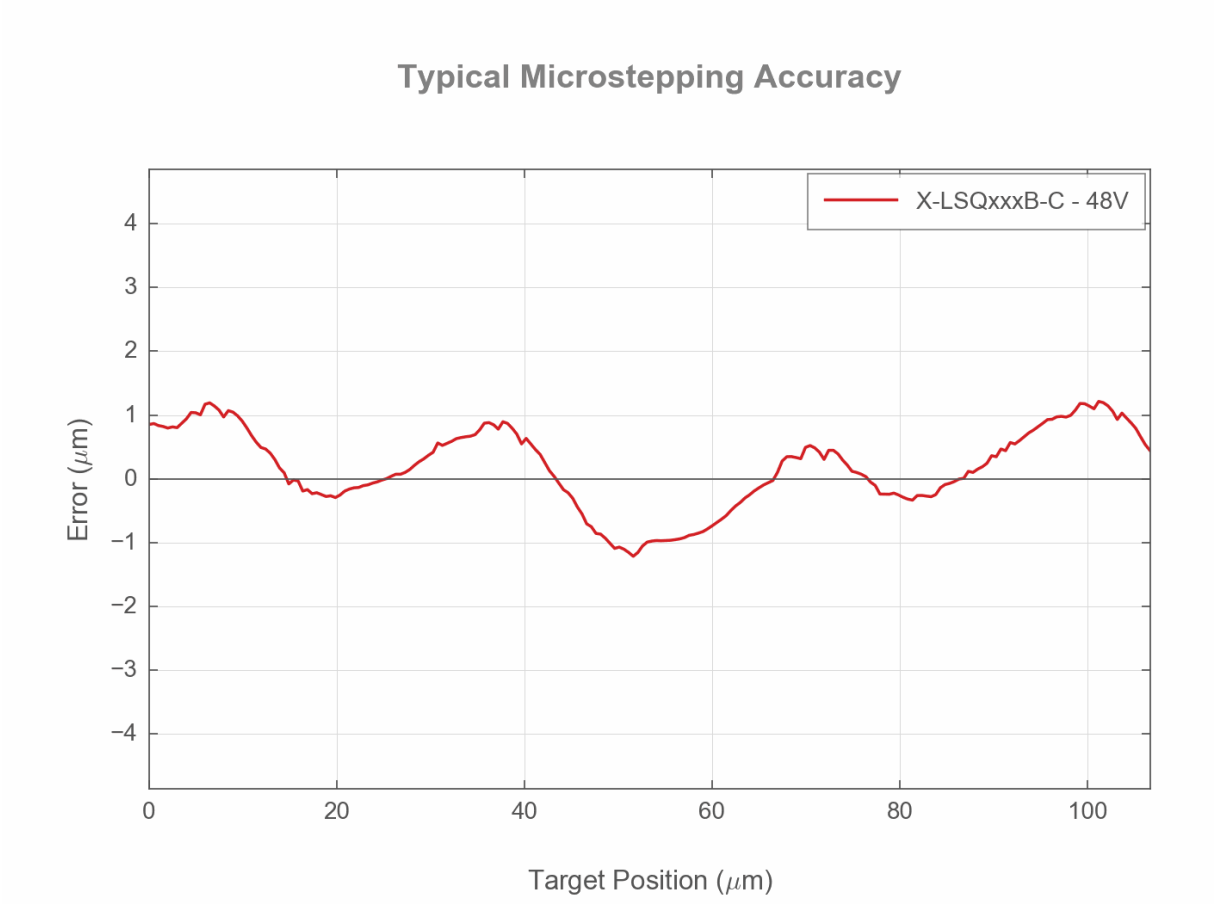
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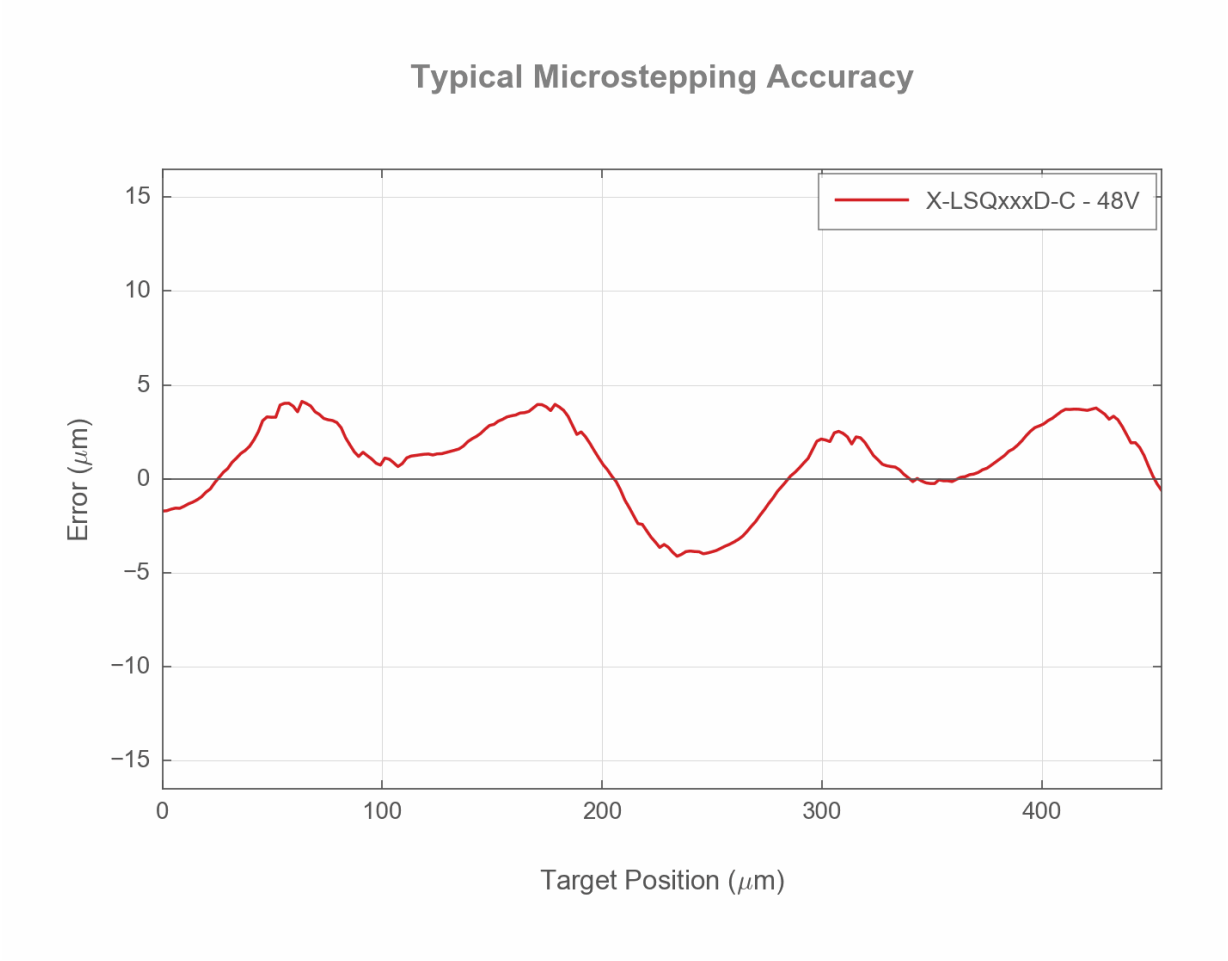
UStep Accuracy



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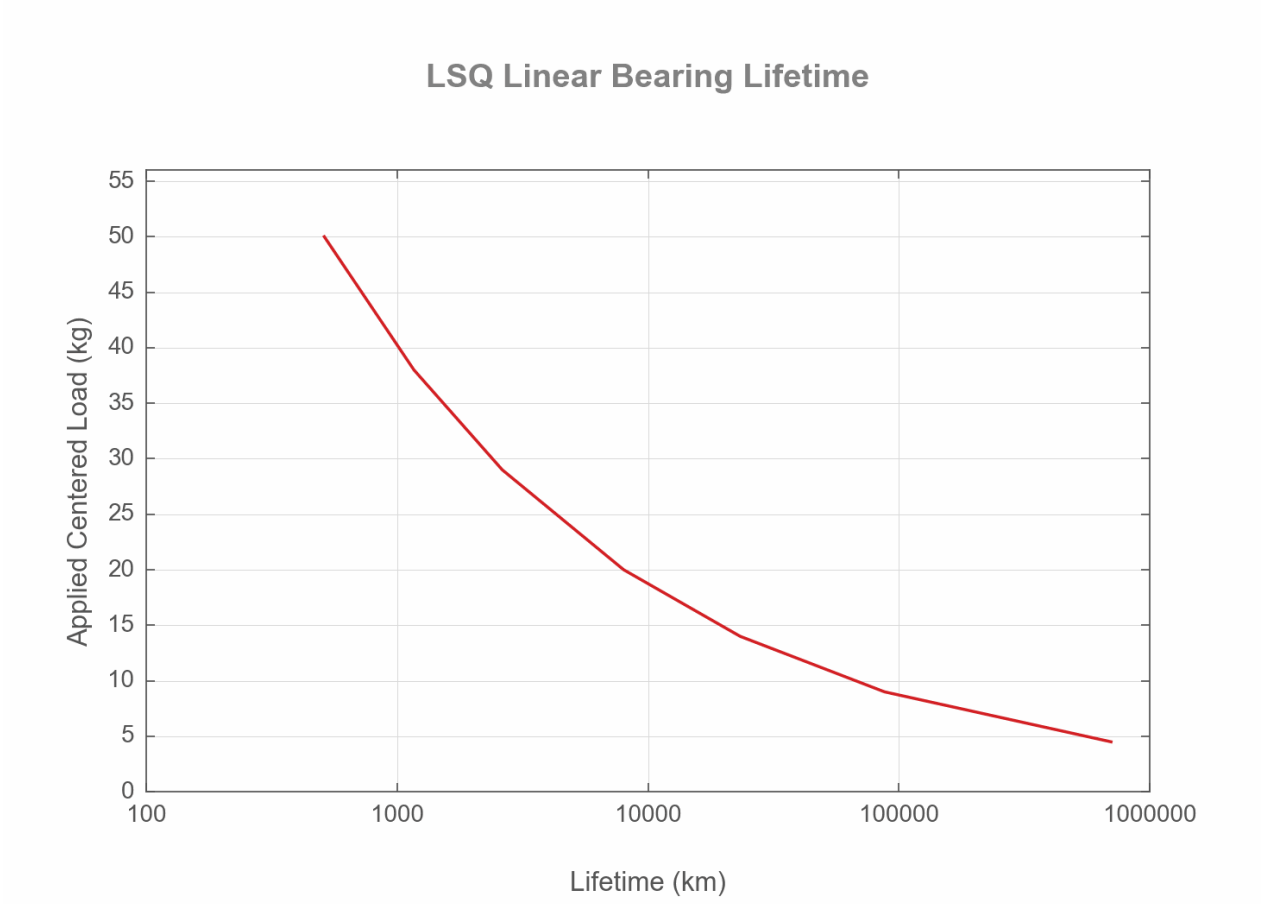
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LSQ-E Series Datasheet



- 75, 150, 300, 450 and 600 mm travel
- Up to 1 m/s speed and up to 100 N thrust
- 50 kg load capacity
- Encoder position feedback with slip/stall detection and automatic recovery
- Integrated recirculating ball bearing guide provides exceptional lifetime
- Designed for use with MCC Family controllers or any 2-phase stepper motor controller
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral
- Custom versions available

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LSQ-E Series Overview

Zaber's LSQ-E Series products are computer-controlled, motorized linear stages with integrated stepper motors and motor encoders. These stages are capable of speeds up to 1 m/s and can easily be mounted in XY or XYZ configuration without additional hardware. The built-in motor encoder allows for closed-loop operation and slip/stall recovery features. The stages are designed to connect directly to our MCC Family 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 controller will automatically detect and configure the LSQ-E.

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

LSQ-E Series Part Numbering & Options

LSQ 075 A - E01 T3A

Travel

- **075** — 75 mm
- **150** — 150 mm
- **300** — 300 mm
- **450** — 450 mm
- **600** — 600 mm

Lead Screw Options

- **A** — Fine pitch lead screw
- **B** — Medium pitch lead screw
- **D** — Coarse pitch lead screw

Encoder Options

- **E01** — Motor Encoder, 500 CPR

Connector

- **T3A** — D-sub 15 panel mount connector with Auto Detect

LSQ-E Series Drawings

- LSQ-E (Drawing for the LSQ-E)
- View all drawings and documents at zaber.com

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LSQ-E Series Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Axes of Motion	1

Positioning Performance

Specification	Value
Flatness of Travel	<30 µm (<0.001181 ")
Pitch Error	0.06 ° (1.047 mrad)
Roll Error	0.03 ° (0.523 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step
Stage Parallelism	<100 µm (<0.003937 ")

Load Performance

Specification	Value
Maximum Centered Load	500 N (112.1 lb)
Maximum Moment (Pitch)	6 N·m (4.4 lb·ft)
Maximum Moment (Roll)	20 N·m (14.76 lb·ft)
Maximum Moment (Yaw)	6 N·m (4.428 lb·ft)
Stiffness (Pitch)	150 N·m/°

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Stiffness (Roll)	225 N·m/°
Stiffness (Yaw)	150 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Encoder Resolution	500 CPR (2 states/rev)
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	2300 mA/phase
Motor Winding Resistance	1 ohms/phase
Motor Winding Inductance	2.2 mH/phase
Motor Connection	D-sub 15
Motor Rotor Inertia	0.0000073 kg·m2

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Precision lead screw
Mounting Interface	M6 threaded holes and 8-32 threaded holes

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Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Travel Range	Weight	Accuracy (unidirectional)	Repeatability
LSQ075A-E01T3A	75 mm (2.953 ")	1.2 kg (2.646 lb)	35 µm (0.001378 ")	<2 µm (<0.000079 ")
LSQ075B-E01T3A	75 mm (2.953 ")	1.2 kg (2.646 lb)	45 µm (0.001772 ")	<3 µm (<0.000118 ")
LSQ075D-E01T3A	75 mm (2.953 ")	1.2 kg (2.646 lb)	80 µm (0.00315 ")	<10 µm (<0.000394 ")
LSQ150A-E01T3A	150 mm (5.905 ")	1.4 kg (3.086 lb)	45 µm (0.001772 ")	<2 µm (<0.000079 ")
LSQ150B-E01T3A	150 mm (5.905 ")	1.4 kg (3.086 lb)	50 µm (0.001968 ")	<3 µm (<0.000118 ")
LSQ150D-E01T3A	150 mm (5.905 ")	1.4 kg (3.086 lb)	100 µm (0.003937 ")	<10 µm (<0.000394 ")
LSQ300A-E01T3A	300 mm (11.811 ")	1.8 kg (3.968 lb)	90 µm (0.003543 ")	<2 µm (<0.000079 ")
LSQ300B-E01T3A	300 mm (11.811 ")	1.8 kg (3.968 lb)	65 µm (0.002559 ")	<3 µm (<0.000118 ")
LSQ300D-E01T3A	300 mm (11.811 ")	1.8 kg (3.968 lb)	145 µm (0.005709 ")	<10 µm (<0.000394 ")
LSQ450A-E01T3A	450 mm (17.716 ")	2.3 kg (5.071 lb)	135 µm (0.005315 ")	<2 µm (<0.000079 ")
LSQ450B-E01T3A	450 mm (17.716 ")	2.3 kg (5.071 lb)	75 µm (0.002953 ")	<3 µm (<0.000118 ")
LSQ450D-E01T3A	450 mm (17.716 ")	2.3 kg (5.071 lb)	185 µm (0.007283 ")	<10 µm (<0.000394 ")
LSQ600A-E01T3A	600 mm (23.622 ")	2.9 kg (6.393 lb)	180 µm (0.007087 ")	<2 µm (<0.000079 ")
LSQ600B-E01T3A	600 mm (23.622 ")	2.9 kg (6.393 lb)	100 µm (0.003937 ")	<3 µm (<0.000118 ")

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LSQ600D-E01T3A	600 mm (23.622 ")	2.9 kg (6.393 lb)	230 µm (0.009055 ")	<10 µm (<0.000394 ")

Part Number	Backlash	Straightness of Travel	Microstep Size (Default Resolution)	Peak Thrust
LSQ075A-E01T3A	<15 µm (<0.000591 ")	<20 µm (<0.000787 ")	0.09921875 µm	275 N (61.7 lb)
LSQ075B-E01T3A	<18 µm (<0.000709 ")	<20 µm (<0.000787 ")	0.49609375 µm	120 N (26.9 lb)
LSQ075D-E01T3A	<75 µm (<0.002953 ")	<20 µm (<0.000787 ")	1.984375 µm	35 N (7.8 lb)
LSQ150A-E01T3A	<15 µm (<0.000591 ")	<30 µm (<0.001181 ")	0.09921875 µm	275 N (61.7 lb)
LSQ150B-E01T3A	<18 µm (<0.000709 ")	<30 µm (<0.001181 ")	0.49609375 µm	120 N (26.9 lb)
LSQ150D-E01T3A	<75 µm (<0.002953 ")	<30 µm (<0.001181 ")	1.984375 µm	35 N (7.8 lb)
LSQ300A-E01T3A	<15 µm (<0.000591 ")	<35 µm (<0.001378 ")	0.09921875 µm	275 N (61.7 lb)
LSQ300B-E01T3A	<18 µm (<0.000709 ")	<35 µm (<0.001378 ")	0.49609375 µm	120 N (26.9 lb)
LSQ300D-E01T3A	<75 µm (<0.002953 ")	<35 µm (<0.001378 ")	1.984375 µm	35 N (7.8 lb)
LSQ450A-E01T3A	<15 µm (<0.000591 ")	<40 µm (<0.001575 ")	0.09921875 µm	275 N (61.7 lb)
LSQ450B-E01T3A	<18 µm (<0.000709 ")	<40 µm (<0.001575 ")	0.49609375 µm	120 N (26.9 lb)
LSQ450D-E01T3A	<75 µm (<0.002953 ")	<40 µm (<0.001575 ")	1.984375 µm	35 N (7.8 lb)
LSQ600A-E01T3A	<15 µm (<0.000591 ")	<60 µm (<0.002362 ")	0.09921875 µm	275 N (61.7 lb)
LSQ600B-E01T3A	<18 µm (<0.000709 ")	<60 µm (<0.002362 ")	0.49609375 µm	120 N (26.9 lb)
LSQ600D-E01T3A	<75 µm (<0.002953 ")	<60 µm (<0.002362 ")	1.984375 µm	35 N (7.8 lb)

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Part Number	Maximum Continuous Thrust	Back-driving Force*	Maximum Speed	Minimum Speed
LSQ075A-E01T3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ075B-E01T3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ075D-E01T3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ150A-E01T3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ150B-E01T3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ150D-E01T3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ300A-E01T3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ300B-E01T3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ300D-E01T3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ450A-E01T3A	100 N (22.4 lb)	Non-back-driving	46 mm/s (1.811 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ450B-E01T3A	75 N (16.8 lb)	44 N (9.9 lb)	240 mm/s (9.449 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ450D-E01T3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ600A-E01T3A	100 N (22.4 lb)	Non-back-driving	28 mm/s (1.102 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ600B-E01T3A	75 N (16.8 lb)	44 N (9.9 lb)	144 mm/s (5.669 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ600D-E01T3A	18 N (4 lb)	12 N (2.7 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)

Part Number	Speed Resolution	Linear Motion Per Motor Rev
LSQ075A-E01T3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ075B-E01T3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")

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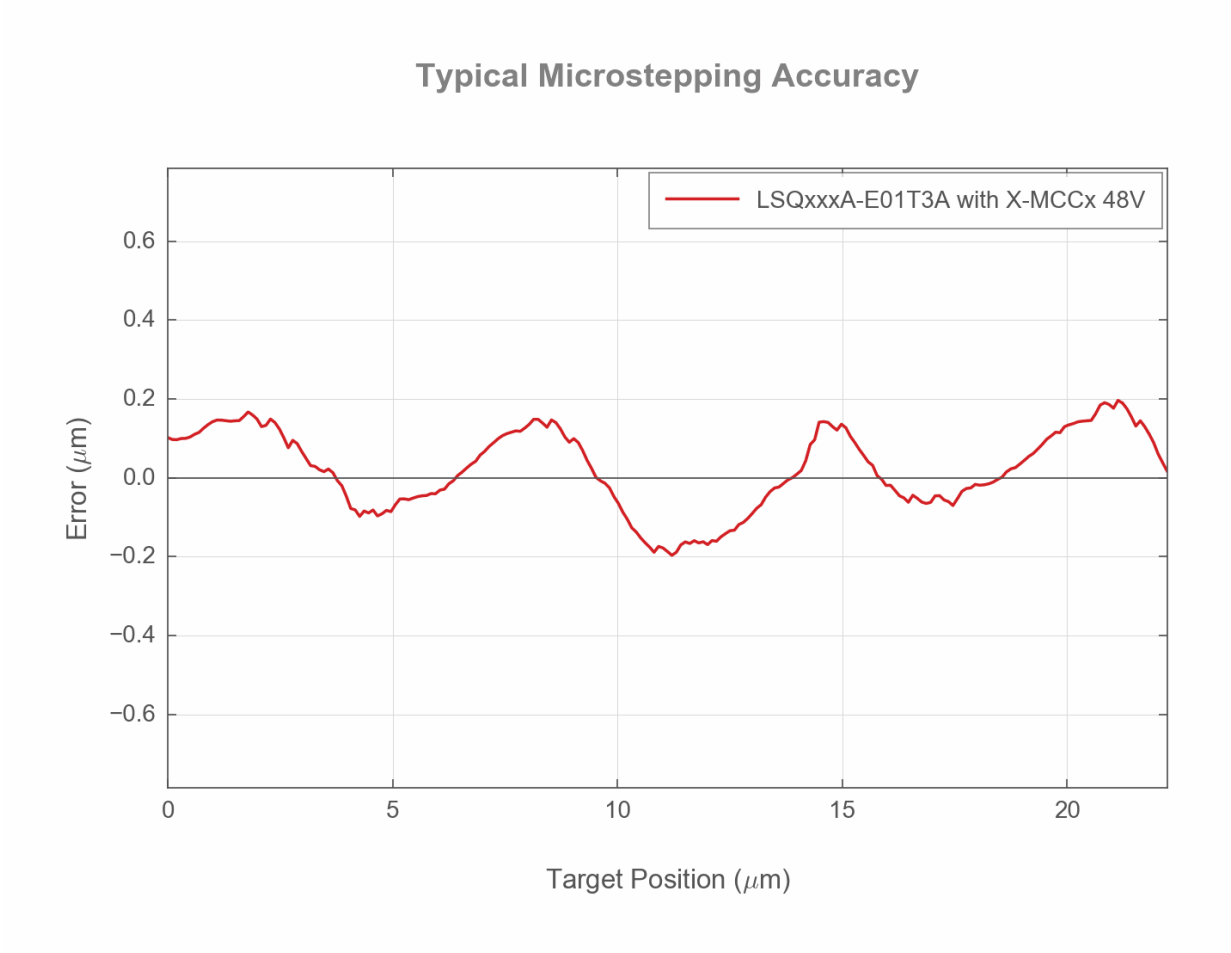
LSQ075D-E01T3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ150A-E01T3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ150B-E01T3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ150D-E01T3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ300A-E01T3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ300B-E01T3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ300D-E01T3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ450A-E01T3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ450B-E01T3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ450D-E01T3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ600A-E01T3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ600B-E01T3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ600D-E01T3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")

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LSQ-E Series Charts

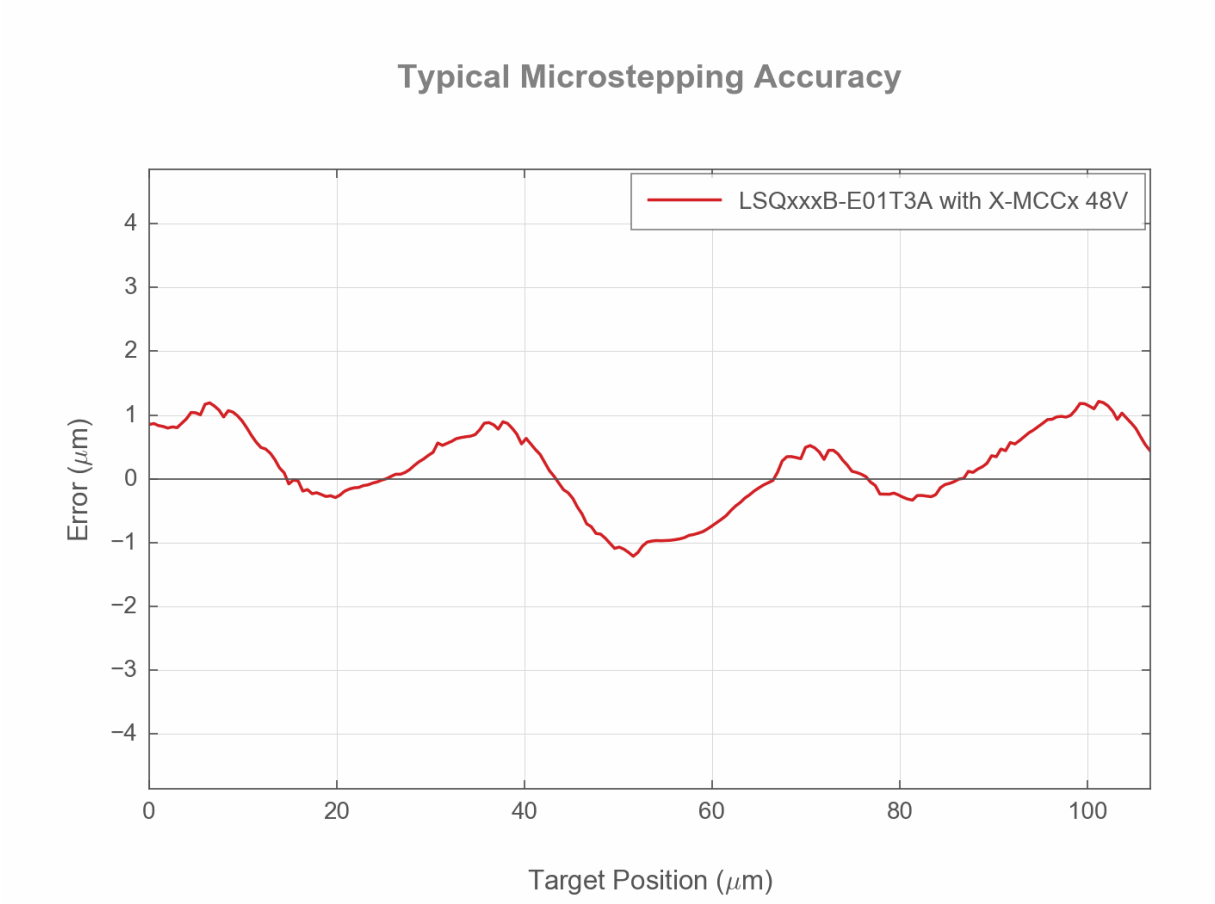
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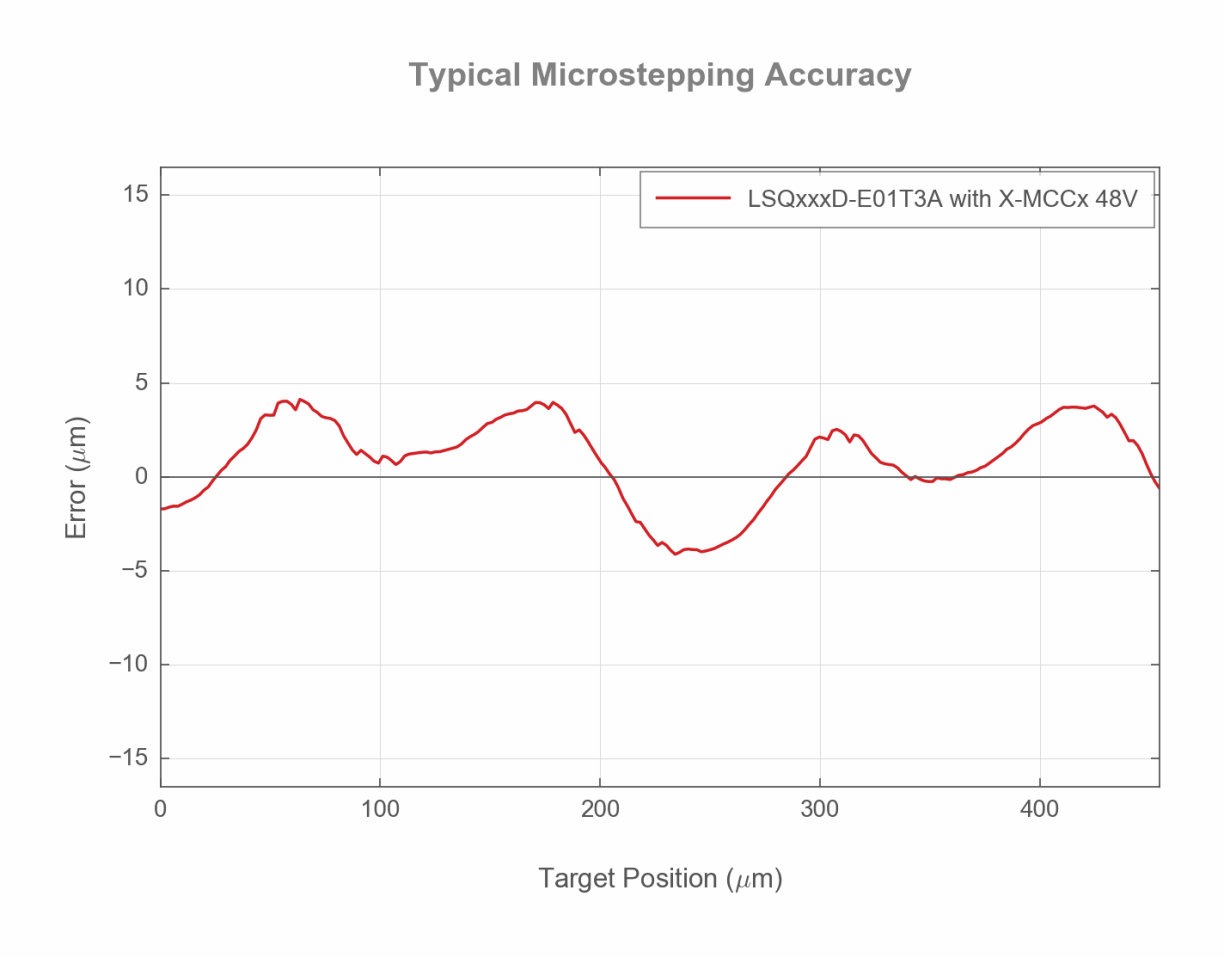
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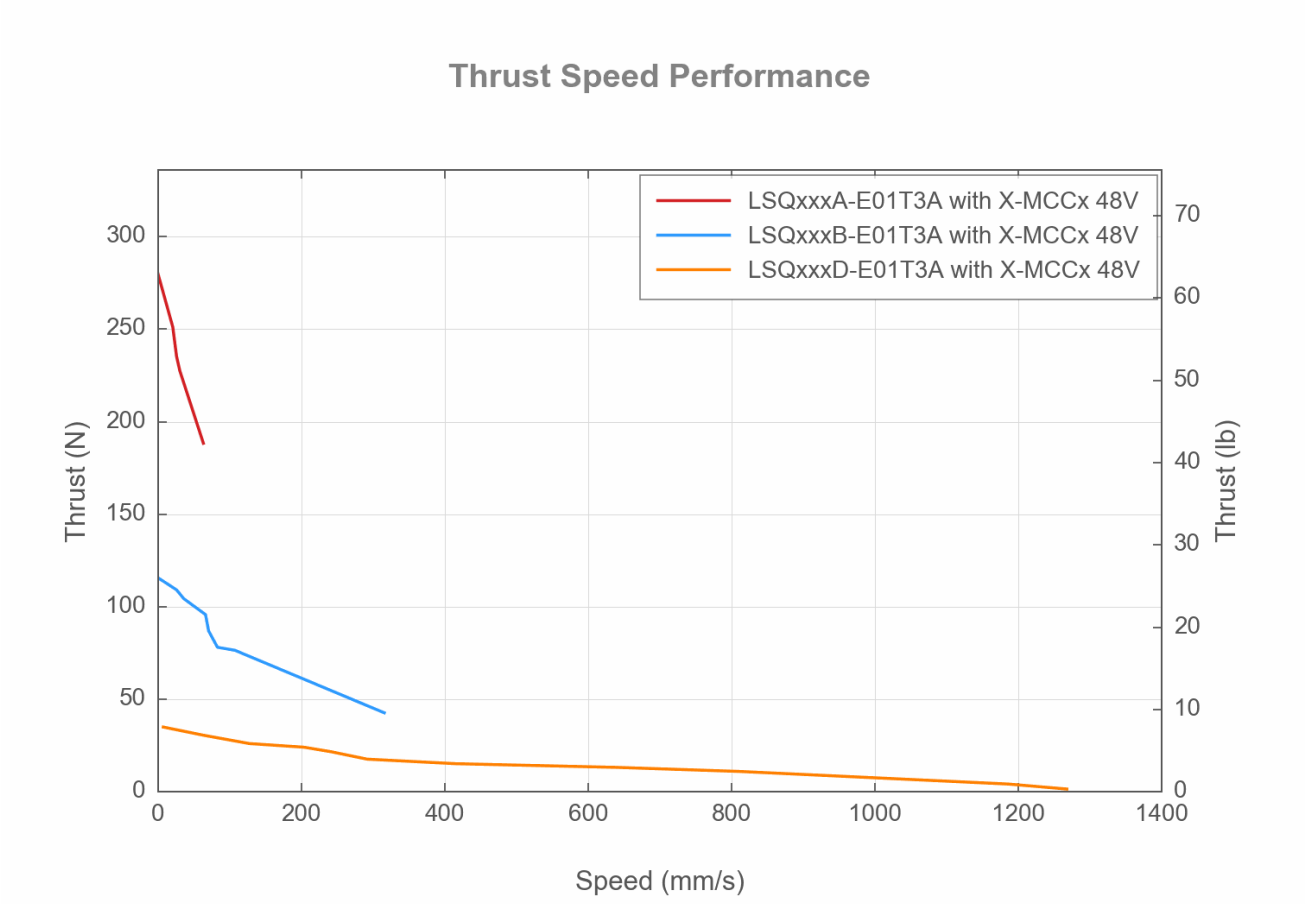
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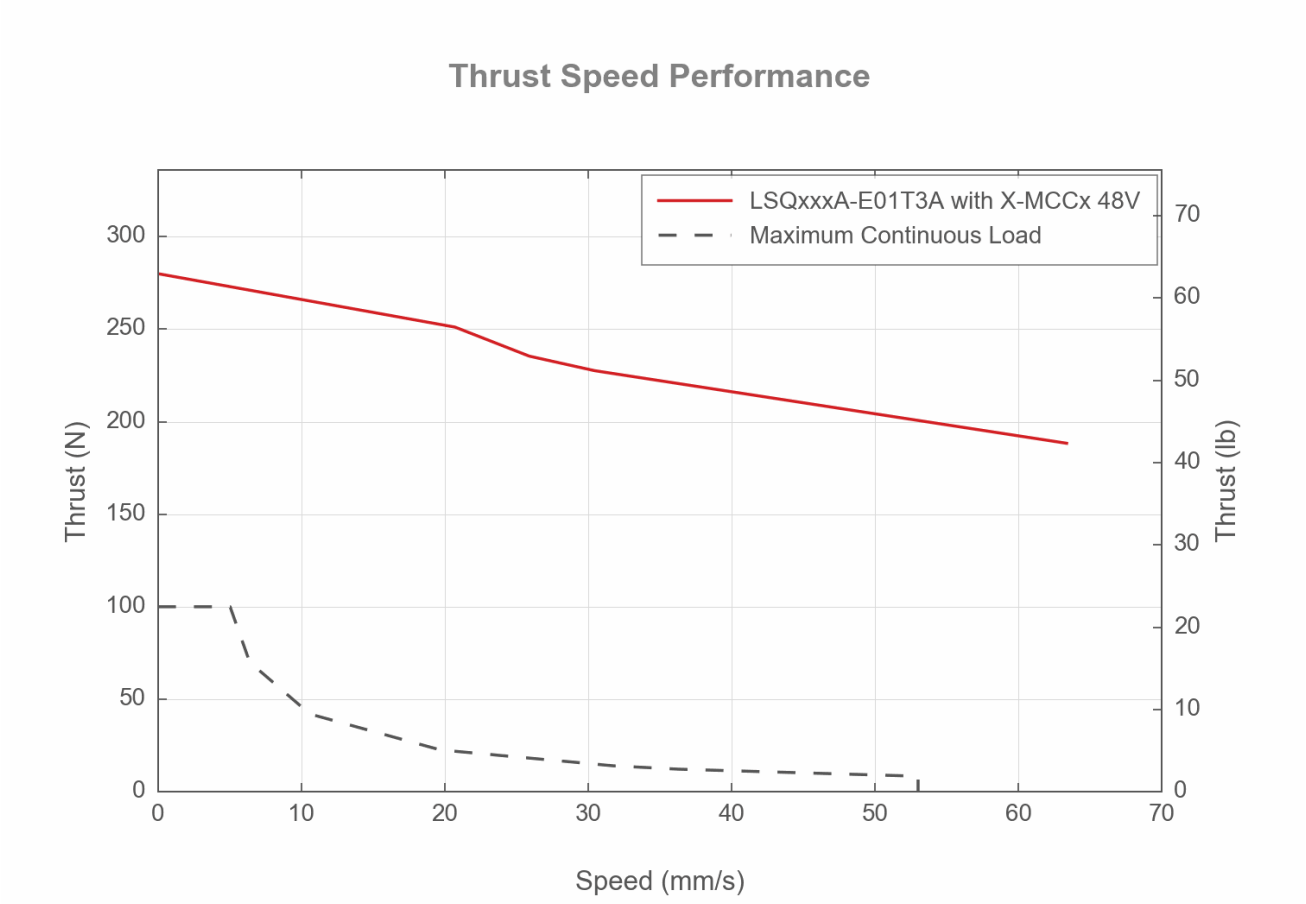
LSQxxxx E01T3A THRUST SPEED



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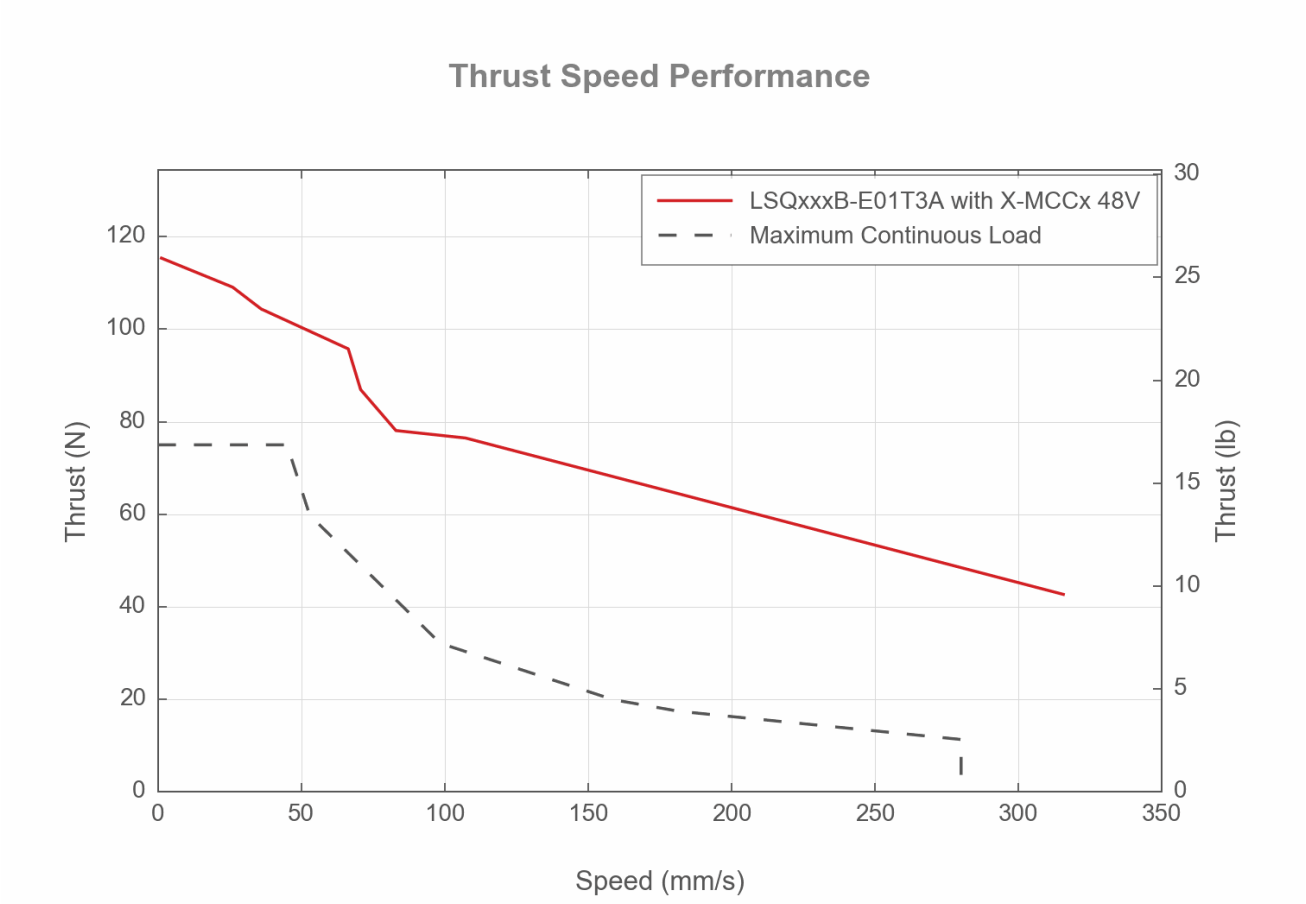
LSQxxxA E01T3A THRUST SPEED



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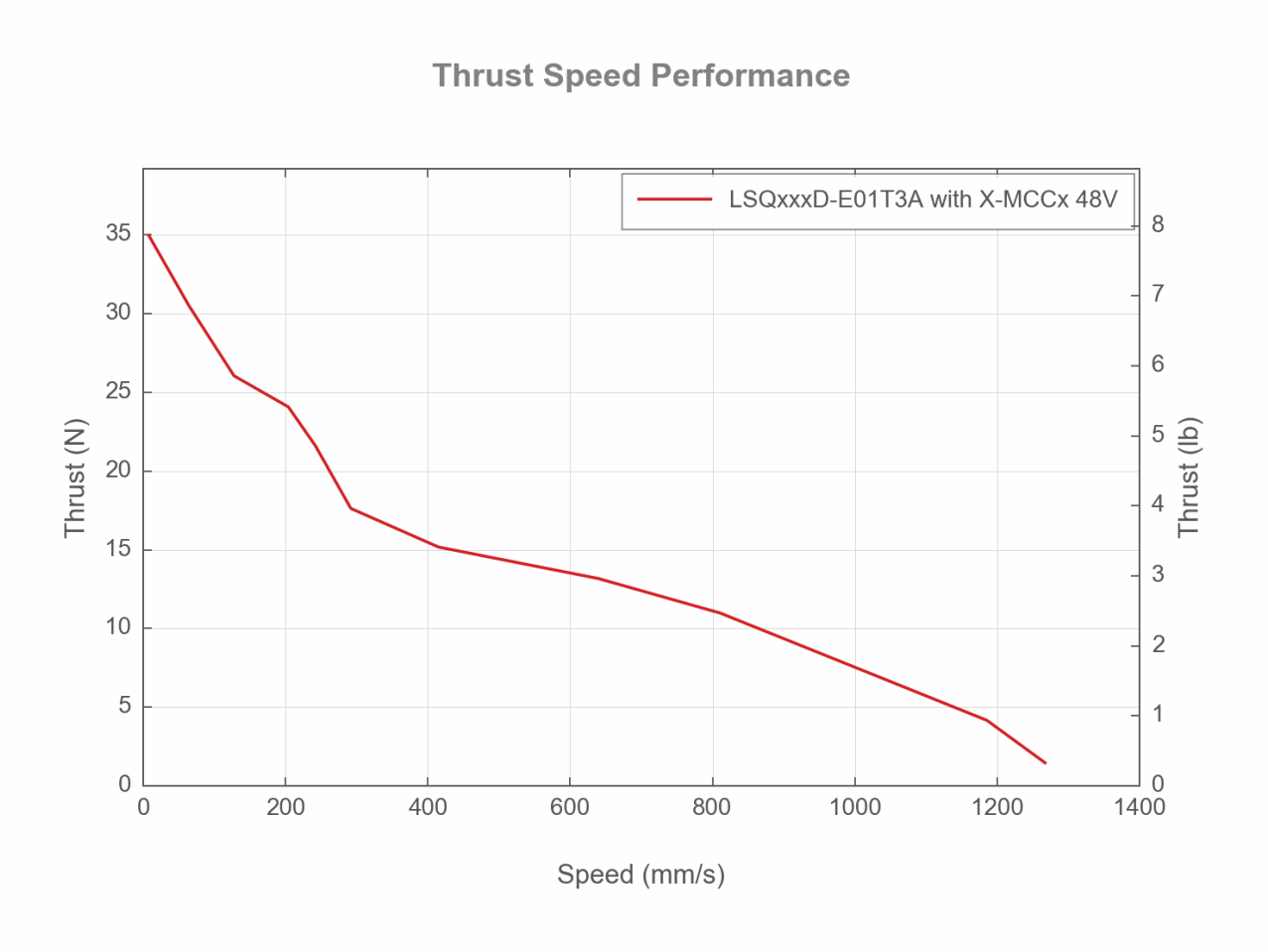
LSQxxxB E01T3A THRUST SPEED



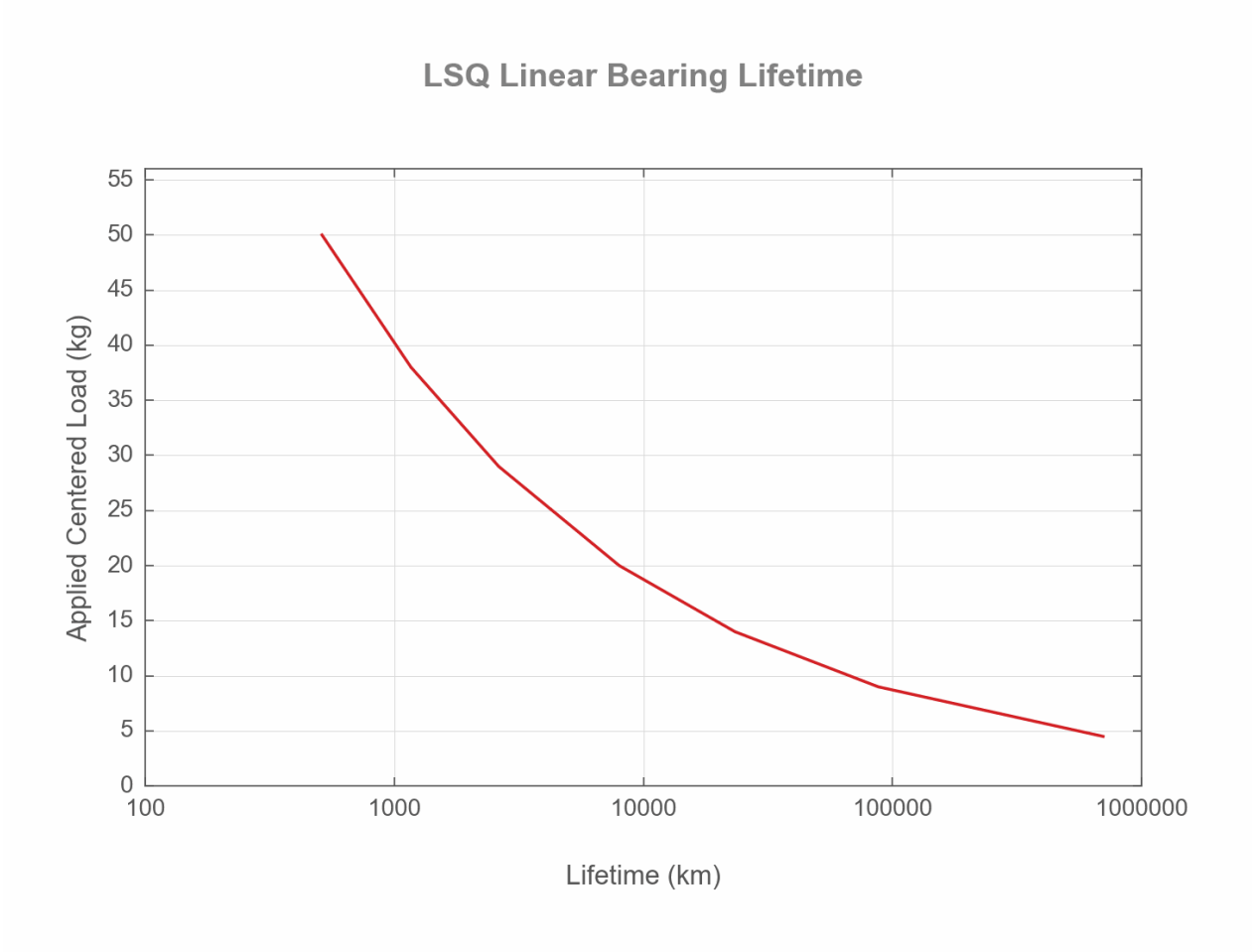
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LSQxxxD E01T3A THRUST SPEED



LSQxxxxx LIFETIME RECIRCULATING BEARING



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LSQ-EC Series Datasheet



- 75, 150, 300, 450 and 600 mm travel
- Up to 1 m/s speed and up to 100 N thrust
- 50 kg load capacity
- Includes rigid cover
- Encoder position feedback with slip/stall detection and automatic recovery
- Integrated recirculating ball bearing guide provides exceptional lifetime
- Designed for use with MCC Family controllers or any 2-phase stepper motor controller
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral
- Custom versions available

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LSQ-EC Series Overview

Zaber's LSQ-EC Series products are computer-controlled, motorized linear stages with integrated stepper motors and motor encoders. These stages are capable of speeds up to 1 m/s and can easily be mounted in XY or XYZ configuration without additional hardware. A rigid non-contact cover prevents the ingress of small objects. The built-in motor encoder allows for closed-loop operation and slip/stall recovery features. The stages are designed to connect directly to our MCC Family 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 controller will automatically detect and configure the LSQ-EC.

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

LSQ-EC Series Part Numbering & Options

LSQ 075 A - E01 C T3A

Travel

075 — 75 mm
150 — 150 mm
300 — 300 mm
450 — 450 mm
600 — 600 mm

Lead Screw Options

A — Fine pitch lead screw
B — Medium pitch lead screw
D — Coarse pitch lead screw

Encoder Options

E01 — Motor Encoder, 500 CPR

Cover

C — Rigid Cover

Connector

T3A — D-sub 15 panel mount connector with Auto Detect

LSQ-EC Series Drawings

- LSQ-EC (Drawing for the LSQ-EC)
- View all drawings and documents at zaber.com

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LSQ-EC Series Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Axes of Motion	1

Positioning Performance

Specification	Value
Flatness of Travel	<30 µm (<0.001181 ")
Pitch Error	0.06 ° (1.047 mrad)
Roll Error	0.03 ° (0.523 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step
Stage Parallelism	<100 µm (<0.003937 ")

Load Performance

Specification	Value
Maximum Centered Load	500 N (112.1 lb)
Maximum Moment (Pitch)	6 N·m (4.4 lb·ft)
Maximum Moment (Roll)	20 N·m (14.76 lb·ft)
Maximum Moment (Yaw)	6 N·m (4.428 lb·ft)
Stiffness (Pitch)	150 N·m/°

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Stiffness (Roll)	225 N·m/°
Stiffness (Yaw)	150 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Encoder Resolution	500 CPR (2 states/rev)
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	2300 mA/phase
Motor Winding Resistance	1 ohms/phase
Motor Winding Inductance	2.2 mH/phase
Motor Connection	D-sub 15
Motor Rotor Inertia	0.0000073 kg·m2

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Precision lead screw
Mounting Interface	M6 threaded holes

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Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Travel Range	Weight	Accuracy (unidirectional)	Repeatability
LSQ075A-E01CT3A	75 mm (2.953 ")	1.36 kg (2.998 lb)	35 µm (0.001378 ")	<2 µm (<0.000079 ")
LSQ075B-E01CT3A	75 mm (2.953 ")	1.36 kg (2.998 lb)	45 µm (0.001772 ")	<3 µm (<0.000118 ")
LSQ075D-E01CT3A	75 mm (2.953 ")	1.36 kg (2.998 lb)	80 µm (0.00315 ")	<10 µm (<0.000394 ")
LSQ150A-E01CT3A	150 mm (5.905 ")	1.6 kg (3.527 lb)	45 µm (0.001772 ")	<2 µm (<0.000079 ")
LSQ150B-E01CT3A	150 mm (5.905 ")	1.6 kg (3.527 lb)	50 µm (0.001968 ")	<3 µm (<0.000118 ")
LSQ150D-E01CT3A	150 mm (5.905 ")	1.6 kg (3.527 lb)	100 µm (0.003937 ")	<10 µm (<0.000394 ")
LSQ300A-E01CT3A	300 mm (11.811 ")	2.05 kg (4.519 lb)	90 µm (0.003543 ")	<2 µm (<0.000079 ")
LSQ300B-E01CT3A	300 mm (11.811 ")	2.05 kg (4.519 lb)	65 µm (0.002559 ")	<3 µm (<0.000118 ")
LSQ300D-E01CT3A	300 mm (11.811 ")	2.05 kg (4.519 lb)	145 µm (0.005709 ")	<10 µm (<0.000394 ")
LSQ450A-E01CT3A	450 mm (17.716 ")	2.6 kg (5.732 lb)	135 µm (0.005315 ")	<2 µm (<0.000079 ")
LSQ450B-E01CT3A	450 mm (17.716 ")	2.6 kg (5.732 lb)	75 µm (0.002953 ")	<3 µm (<0.000118 ")
LSQ450D-E01CT3A	450 mm (17.716 ")	2.6 kg (5.732 lb)	185 µm (0.007283 ")	<10 µm (<0.000394 ")
LSQ600A-E01CT3A	600 mm (23.622 ")	3.25 kg (7.165 lb)	180 µm (0.007087 ")	<2 µm (<0.000079 ")
LSQ600B-E01CT3A	600 mm (23.622 ")	3.25 kg (7.165 lb)	100 µm (0.003937 ")	<3 µm (<0.000118 ")

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LSQ600D-E01CT3A	600 mm (23.622 ")	3.25 kg (7.165 lb)	230 µm (0.009055 ")	<10 µm (<0.000394 ")

Part Number	Backlash	Straightness of Travel	Microstep Size (Default Resolution)	Peak Thrust
LSQ075A-E01CT3A	<15 µm (<0.000591 ")	<20 µm (<0.000787 ")	0.09921875 µm	275 N (61.7 lb)
LSQ075B-E01CT3A	<18 µm (<0.000709 ")	<20 µm (<0.000787 ")	0.49609375 µm	120 N (26.9 lb)
LSQ075D-E01CT3A	<75 µm (<0.002953 ")	<20 µm (<0.000787 ")	1.984375 µm	35 N (7.8 lb)
LSQ150A-E01CT3A	<15 µm (<0.000591 ")	<30 µm (<0.001181 ")	0.09921875 µm	275 N (61.7 lb)
LSQ150B-E01CT3A	<18 µm (<0.000709 ")	<30 µm (<0.001181 ")	0.49609375 µm	120 N (26.9 lb)
LSQ150D-E01CT3A	<75 µm (<0.002953 ")	<30 µm (<0.001181 ")	1.984375 µm	35 N (7.8 lb)
LSQ300A-E01CT3A	<15 µm (<0.000591 ")	<35 µm (<0.001378 ")	0.09921875 µm	275 N (61.7 lb)
LSQ300B-E01CT3A	<18 µm (<0.000709 ")	<35 µm (<0.001378 ")	0.49609375 µm	120 N (26.9 lb)
LSQ300D-E01CT3A	<75 µm (<0.002953 ")	<35 µm (<0.001378 ")	1.984375 µm	35 N (7.8 lb)
LSQ450A-E01CT3A	<15 µm (<0.000591 ")	<40 µm (<0.001575 ")	0.09921875 µm	275 N (61.7 lb)
LSQ450B-E01CT3A	<18 µm (<0.000709 ")	<40 µm (<0.001575 ")	0.49609375 µm	120 N (26.9 lb)
LSQ450D-E01CT3A	<75 µm (<0.002953 ")	<40 µm (<0.001575 ")	1.984375 µm	35 N (7.8 lb)
LSQ600A-E01CT3A	<15 µm (<0.000591 ")	<60 µm (<0.002362 ")	0.09921875 µm	275 N (61.7 lb)
LSQ600B-E01CT3A	<18 µm (<0.000709 ")	<60 µm (<0.002362 ")	0.49609375 µm	120 N (26.9 lb)
LSQ600D-E01CT3A	<75 µm (<0.002953 ")	<60 µm (<0.002362 ")	1.984375 µm	35 N (7.8 lb)

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Part Number	Maximum Continuous Thrust	Back-driving Force*	Maximum Speed	Minimum Speed
LSQ075A-E01CT3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ075B-E01CT3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ075D-E01CT3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ150A-E01CT3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ150B-E01CT3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ150D-E01CT3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ300A-E01CT3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ300B-E01CT3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ300D-E01CT3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ450A-E01CT3A	100 N (22.4 lb)	Non-back-driving	46 mm/s (1.811 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ450B-E01CT3A	75 N (16.8 lb)	44 N (9.9 lb)	240 mm/s (9.449 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ450D-E01CT3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ600A-E01CT3A	100 N (22.4 lb)	Non-back-driving	28 mm/s (1.102 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ600B-E01CT3A	75 N (16.8 lb)	44 N (9.9 lb)	144 mm/s (5.669 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ600D-E01CT3A	18 N (4 lb)	12 N (2.7 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)

Part Number	Speed Resolution	Linear Motion Per Motor Rev
LSQ075A-E01CT3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ075B-E01CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")

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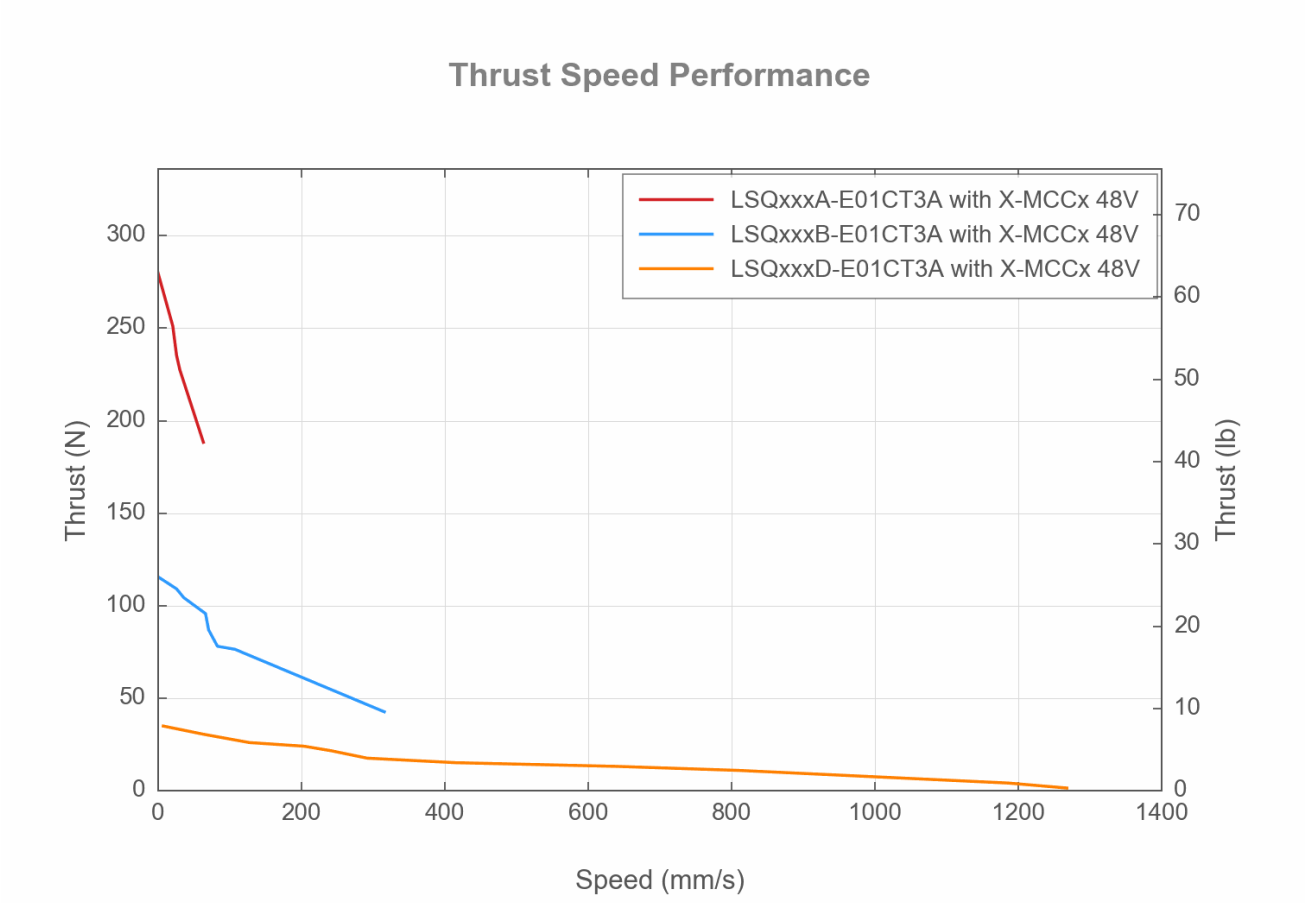
LSQ075D-E01CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ150A-E01CT3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ150B-E01CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ150D-E01CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ300A-E01CT3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ300B-E01CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ300D-E01CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ450A-E01CT3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ450B-E01CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ450D-E01CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ600A-E01CT3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ600B-E01CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ600D-E01CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")

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LSQ-EC Series Charts

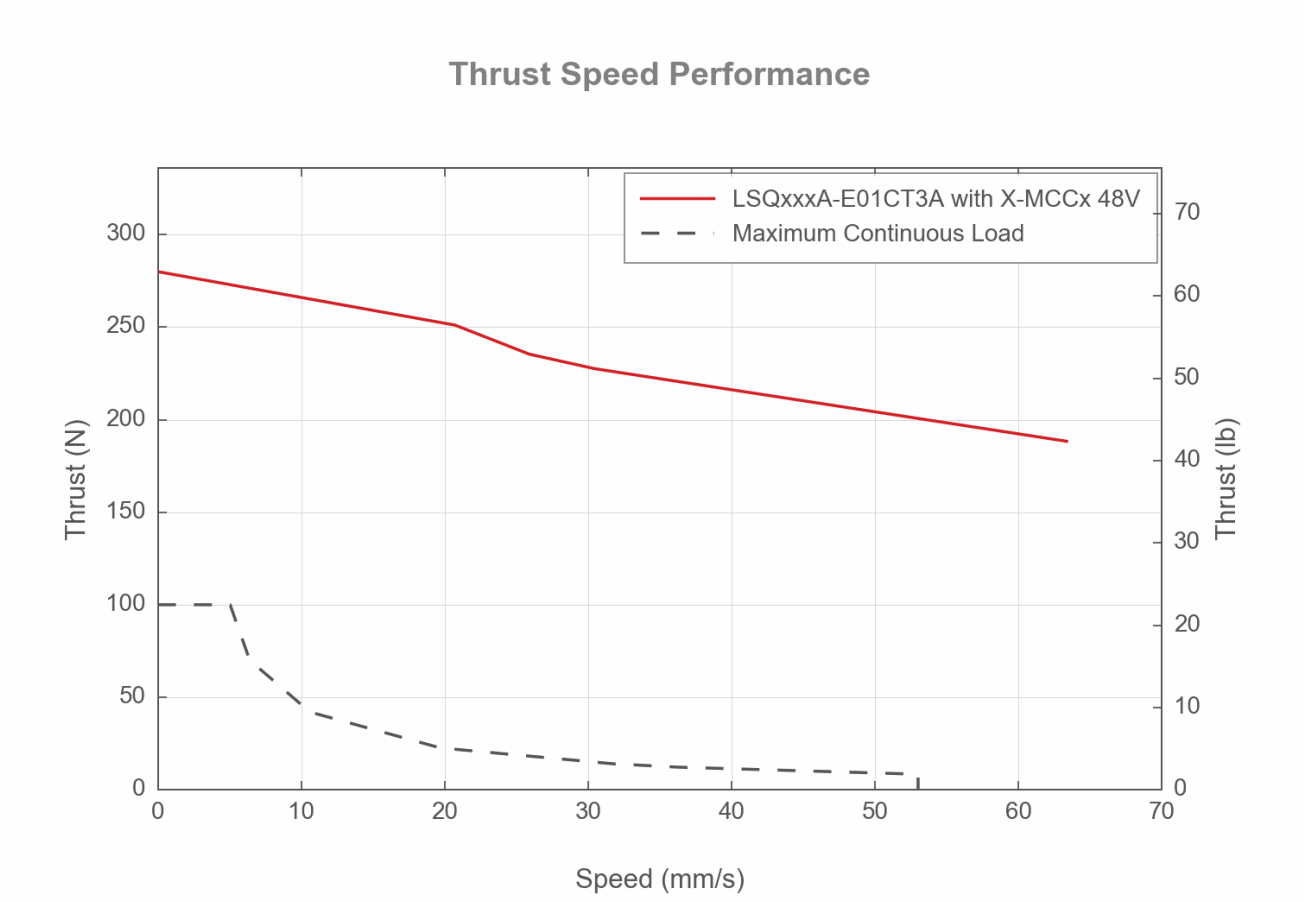
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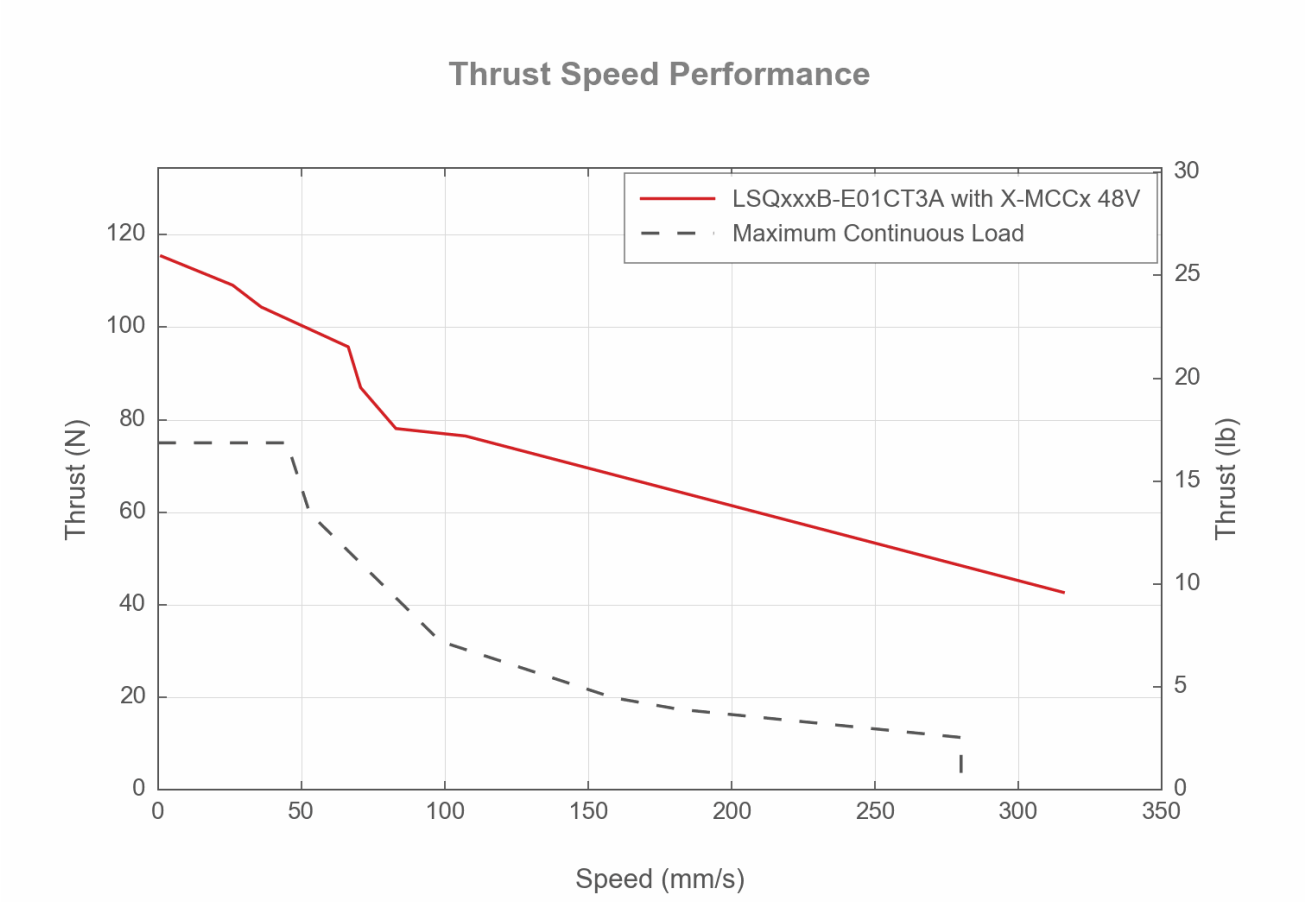
LSQxxxA E01CT3A Thrust Speed



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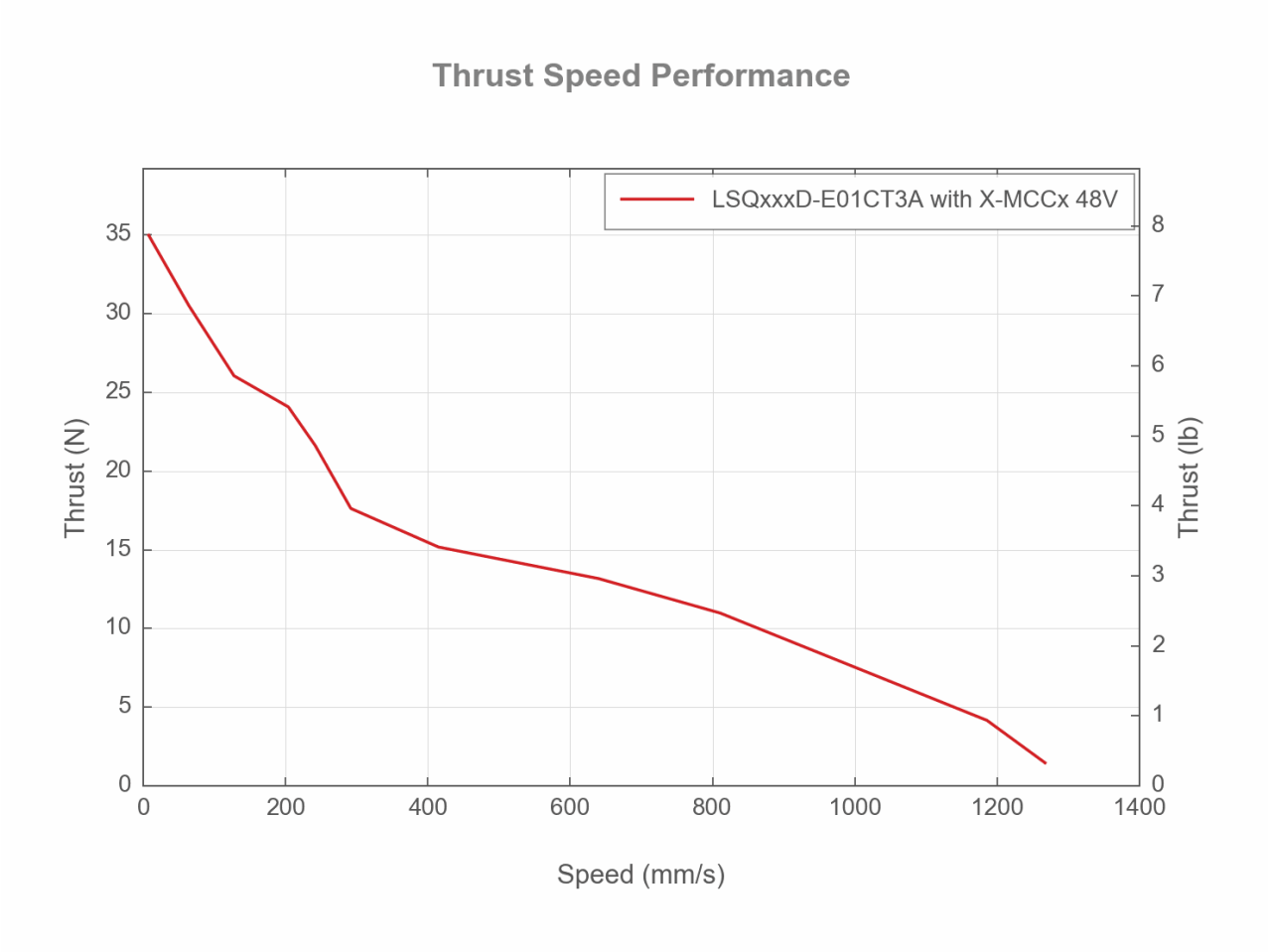
LSQxxxB E01CT3A Thrust Speed



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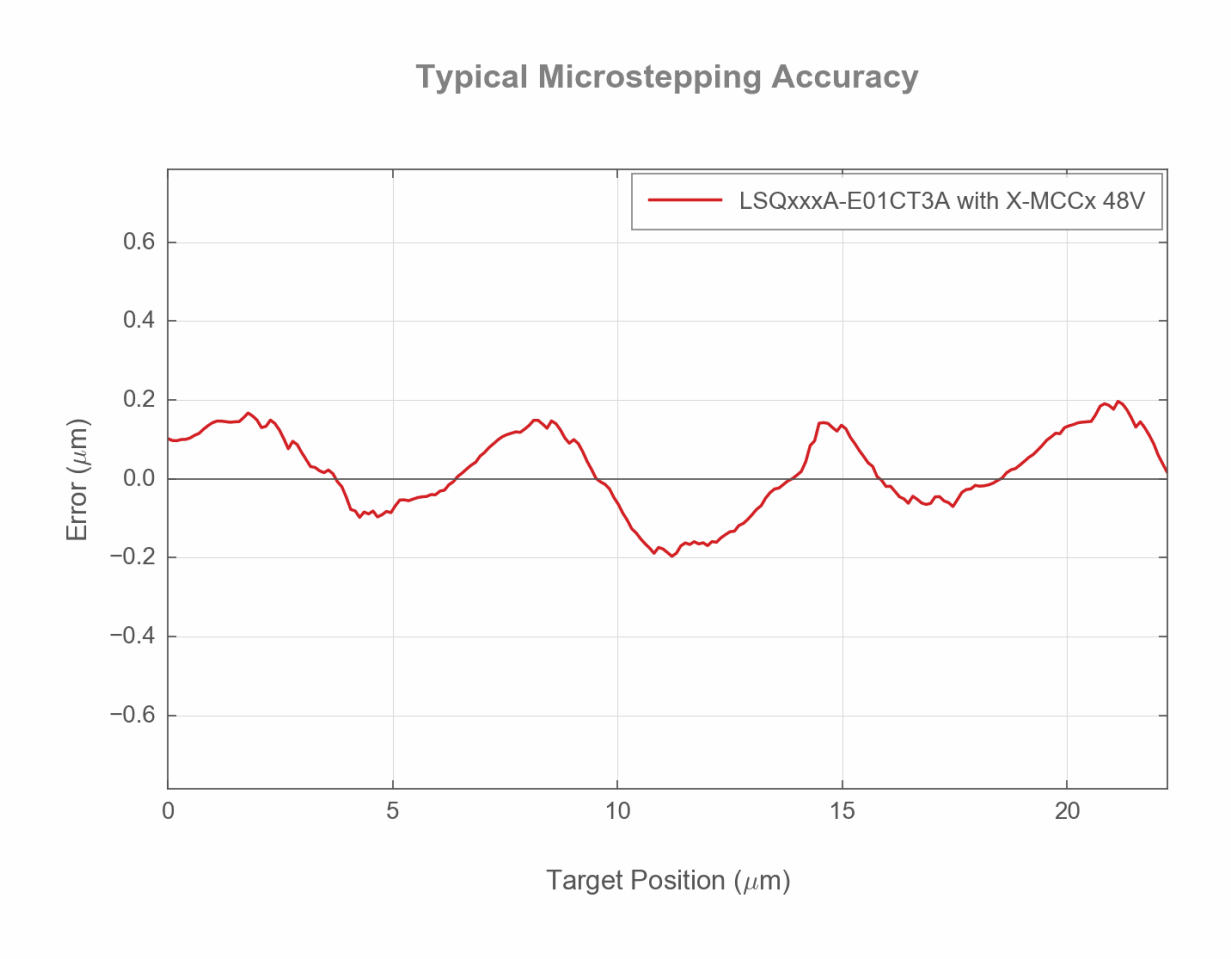
LSQxxxD E01CT3A Thrust Speed



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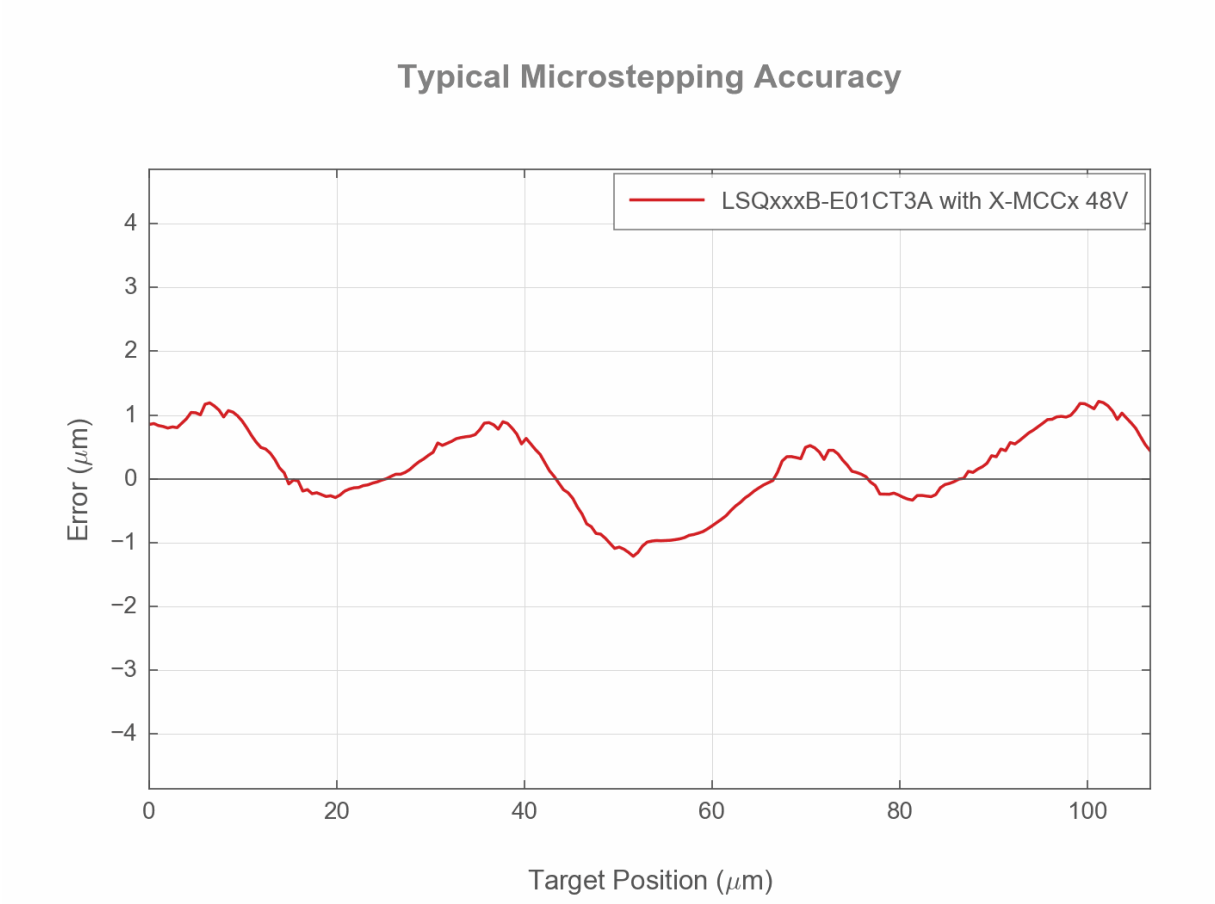
LSQxxxA E01CT3A UStep Accuracy



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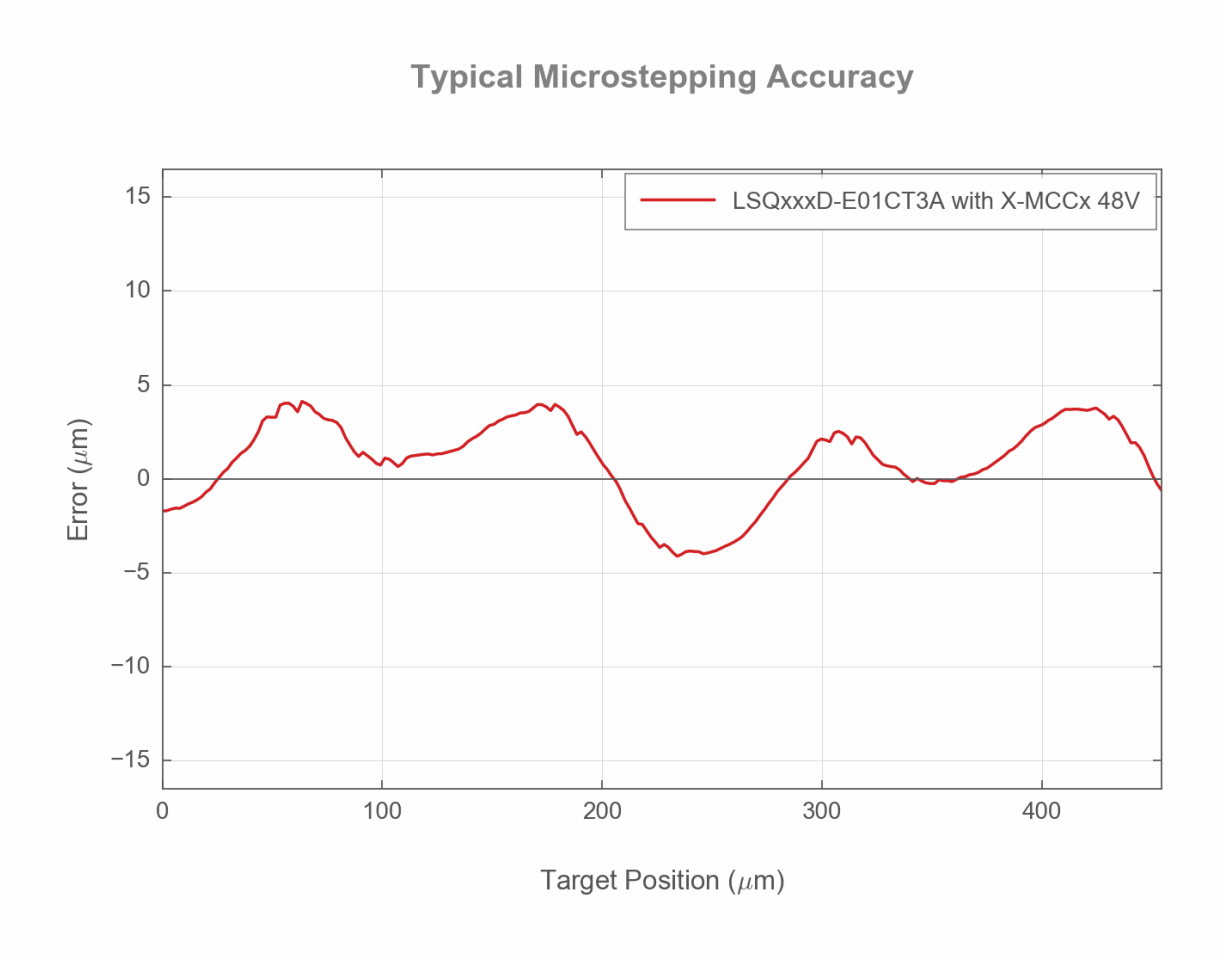
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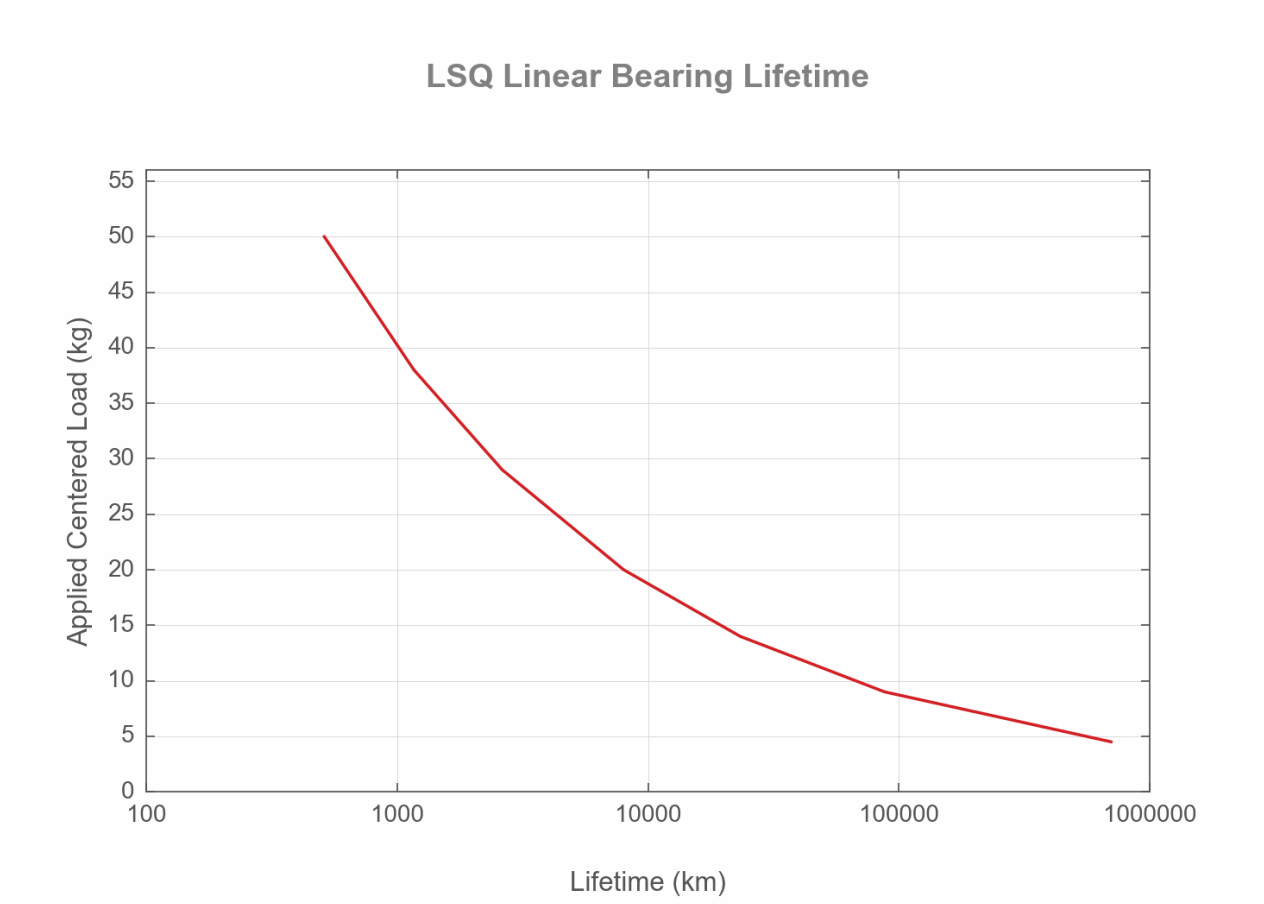
LSQxxxD E01CT3A UStep Accuracy



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LSQxxxxx Lifetime Recirculating Bearing



Contact

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LSQ Series Datasheet



- 75, 150, 300, 450 and 600 mm travel
- Up to 1 m/s speed and up to 100 N thrust
- 50 kg load capacity
- Designed for use with MCC Family controllers or any 2-phase stepper motor controller
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral
- Custom versions available

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LSQ Series Overview

Zaber's LSQ Series products are computer-controlled, motorized linear stages with integrated stepper motors. These stages are capable of speeds up to 1 m/s and can easily be mounted in XY or XYZ configuration without additional hardware. The stages are designed to connect directly to our MCC Family 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 controller will automatically detect and configure the LSQ.

For more information visit: https://www.zaber.com/products/linear-stages/LSQ

LSQ Series Part Numbering & Options

LSQ 075 A - T3A

Travel

- **075** — 75 mm
- **150** — 150 mm
- **300** — 300 mm
- **450** — 450 mm
- **600** — 600 mm

Lead Screw Options

- **A** — Fine pitch lead screw
- **B** — Medium pitch lead screw
- **D** — Coarse pitch lead screw

Connector

- **T3A** — D-sub 15 panel mount connector with Auto Detect

LSQ Series Drawings

- LSQ (Drawing for the LSQ)
- View all drawings and documents at zaber.com

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LSQ Series Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Axes of Motion	1

Positioning Performance

Specification	Value
Flatness of Travel	<30 µm (<0.001181 ")
Pitch Error	0.06 ° (1.047 mrad)
Roll Error	0.03 ° (0.523 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step
Stage Parallelism	<100 µm (<0.003937 ")

Load Performance

Specification	Value
Maximum Centered Load	500 N (112.1 lb)
Maximum Moment (Pitch)	6 N·m (4.4 lb·ft)
Maximum Moment (Roll)	20 N·m (14.76 lb·ft)
Maximum Moment (Yaw)	6 N·m (4.428 lb·ft)
Stiffness (Pitch)	150 N·m/°

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Stiffness (Roll)	225 N·m/°
Stiffness (Yaw)	150 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	2300 mA/phase
Motor Winding Resistance	1 ohms/phase
Motor Winding Inductance	2.2 mH/phase
Motor Connection	D-sub 15
Motor Rotor Inertia	0.0000073 kg·m2

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Precision lead screw
Mounting Interface	M6 threaded holes and 8-32 threaded holes

Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

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Part Number	Travel Range	Weight	Accuracy (unidirectional)	Repeatability
LSQ075A-T3A	75 mm (2.953 ")	1.2 kg (2.646 lb)	35 µm (0.001378 ")	<2 µm (<0.000079 ")
LSQ075B-T3A	75 mm (2.953 ")	1.2 kg (2.646 lb)	45 µm (0.001772 ")	<3 µm (<0.000118 ")
LSQ075D-T3A	75 mm (2.953 ")	1.2 kg (2.646 lb)	80 µm (0.00315 ")	<10 µm (<0.000394 ")
LSQ150A-T3A	150 mm (5.905 ")	1.4 kg (3.086 lb)	45 µm (0.001772 ")	<2 µm (<0.000079 ")
LSQ150B-T3A	150 mm (5.905 ")	1.4 kg (3.086 lb)	50 µm (0.001968 ")	<3 µm (<0.000118 ")
LSQ150D-T3A	150 mm (5.905 ")	1.4 kg (3.086 lb)	100 µm (0.003937 ")	<10 µm (<0.000394 ")
LSQ300A-T3A	300 mm (11.811 ")	1.8 kg (3.968 lb)	90 µm (0.003543 ")	<2 µm (<0.000079 ")
LSQ300B-T3A	300 mm (11.811 ")	1.8 kg (3.968 lb)	65 µm (0.002559 ")	<3 µm (<0.000118 ")
LSQ300D-T3A	300 mm (11.811 ")	1.8 kg (3.968 lb)	145 µm (0.005709 ")	<10 µm (<0.000394 ")
LSQ450A-T3A	450 mm (17.716 ")	2.3 kg (5.071 lb)	135 µm (0.005315 ")	<2 µm (<0.000079 ")
LSQ450B-T3A	450 mm (17.716 ")	2.3 kg (5.071 lb)	75 µm (0.002953 ")	<3 µm (<0.000118 ")
LSQ450D-T3A	450 mm (17.716 ")	2.3 kg (5.071 lb)	185 µm (0.007283 ")	<10 µm (<0.000394 ")
LSQ600A-T3A	600 mm (23.622 ")	2.9 kg (6.393 lb)	180 µm (0.007087 ")	<2 µm (<0.000079 ")
LSQ600B-T3A	600 mm (23.622 ")	2.9 kg (6.393 lb)	100 µm (0.003937 ")	<3 µm (<0.000118 ")
LSQ600D-T3A	600 mm (23.622 ")	2.9 kg (6.393 lb)	230 µm (0.009055 ")	<10 µm (<0.000394 ")

Part Number	Backlash	Straightness of Travel	Microstep Size (Default Resolution)	Peak Thrust
LSQ075A-T3A	<15 µm (<0.000591 ")	<20 µm (<0.000787 ")	0.09921875 µm	275 N (61.7 lb)
LSQ075B-T3A	<18 µm (<0.000709 ")	<20 µm (<0.000787 ")	0.49609375 µm	120 N (26.9 lb)

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LSQ075D-T3A	<75 µm (<0.002953 ")	<20 µm (<0.000787 ")	1.984375 µm	35 N (7.8 lb)
LSQ150A-T3A	<15 µm (<0.000591 ")	<30 µm (<0.001181 ")	0.09921875 µm	275 N (61.7 lb)
LSQ150B-T3A	<18 µm (<0.000709 ")	<30 µm (<0.001181 ")	0.49609375 µm	120 N (26.9 lb)
LSQ150D-T3A	<75 µm (<0.002953 ")	<30 µm (<0.001181 ")	1.984375 µm	35 N (7.8 lb)
LSQ300A-T3A	<15 µm (<0.000591 ")	<35 µm (<0.001378 ")	0.09921875 µm	275 N (61.7 lb)
LSQ300B-T3A	<18 µm (<0.000709 ")	<35 µm (<0.001378 ")	0.49609375 µm	120 N (26.9 lb)
LSQ300D-T3A	<75 µm (<0.002953 ")	<35 µm (<0.001378 ")	1.984375 µm	35 N (7.8 lb)
LSQ450A-T3A	<15 µm (<0.000591 ")	<40 µm (<0.001575 ")	0.09921875 µm	275 N (61.7 lb)
LSQ450B-T3A	<18 µm (<0.000709 ")	<40 µm (<0.001575 ")	0.49609375 µm	120 N (26.9 lb)
LSQ450D-T3A	<75 µm (<0.002953 ")	<40 µm (<0.001575 ")	1.984375 µm	35 N (7.8 lb)
LSQ600A-T3A	<15 µm (<0.000591 ")	<60 µm (<0.002362 ")	0.09921875 µm	275 N (61.7 lb)
LSQ600B-T3A	<18 µm (<0.000709 ")	<60 µm (<0.002362 ")	0.49609375 µm	120 N (26.9 lb)
LSQ600D-T3A	<75 µm (<0.002953 ")	<60 µm (<0.002362 ")	1.984375 µm	35 N (7.8 lb)

Part Number	Maximum Continuous Thrust	Back-driving Force*	Maximum Speed	Minimum Speed
LSQ075A-T3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ075B-T3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ075D-T3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ150A-T3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ150B-T3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)

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LSQ150D-T3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ300A-T3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ300B-T3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ300D-T3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ450A-T3A	100 N (22.4 lb)	Non-back-driving	46 mm/s (1.811 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ450B-T3A	75 N (16.8 lb)	44 N (9.9 lb)	240 mm/s (9.449 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ450D-T3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ600A-T3A	100 N (22.4 lb)	Non-back-driving	28 mm/s (1.102 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ600B-T3A	75 N (16.8 lb)	44 N (9.9 lb)	144 mm/s (5.669 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ600D-T3A	18 N (4 lb)	12 N (2.7 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)

Part Number	Speed Resolution	Linear Motion Per Motor Rev
LSQ075A-T3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ075B-T3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ075D-T3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ150A-T3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ150B-T3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ150D-T3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ300A-T3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ300B-T3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")

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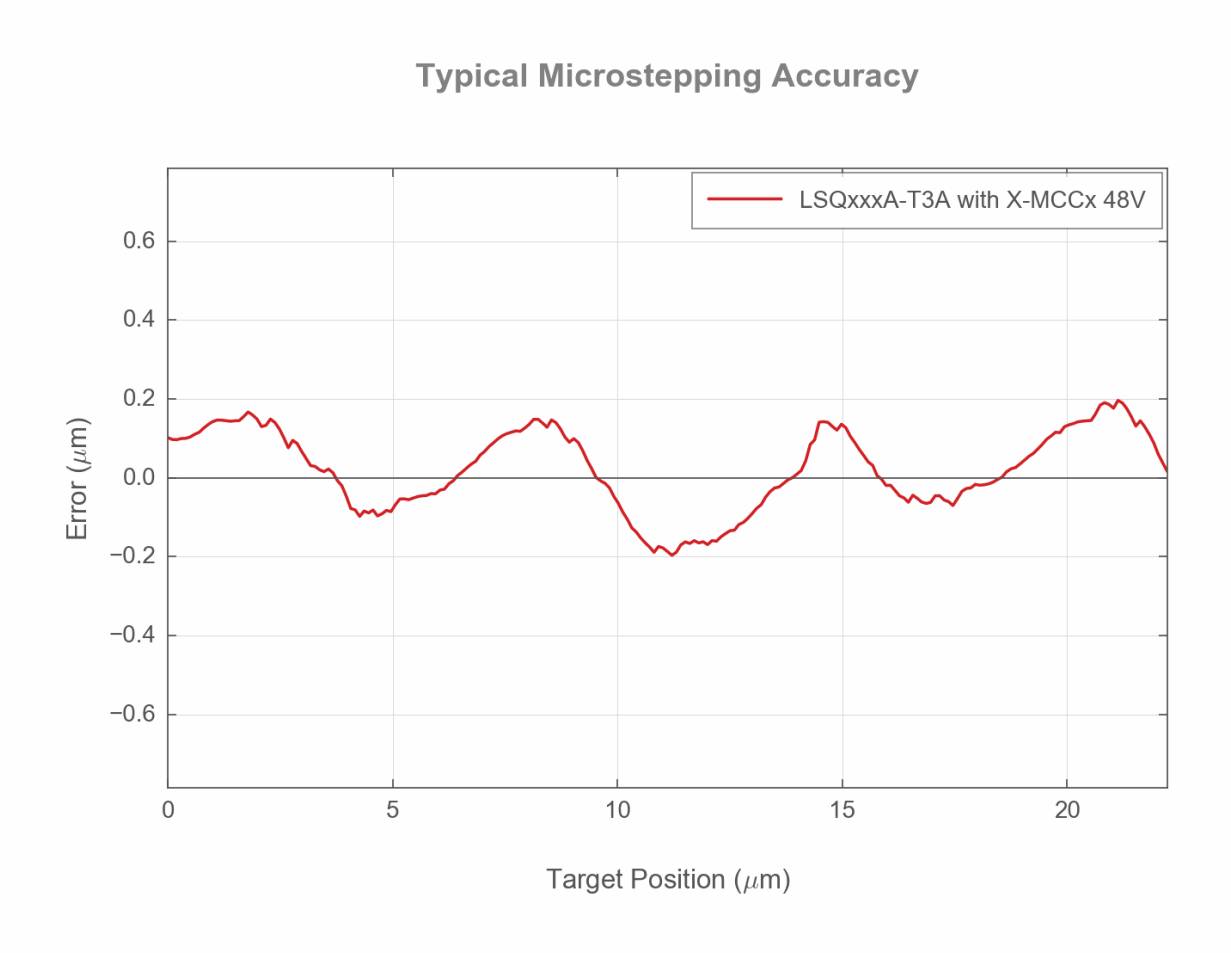
LSQ300D-T3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ450A-T3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ450B-T3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ450D-T3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ600A-T3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ600B-T3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ600D-T3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")

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LSQ Series Charts

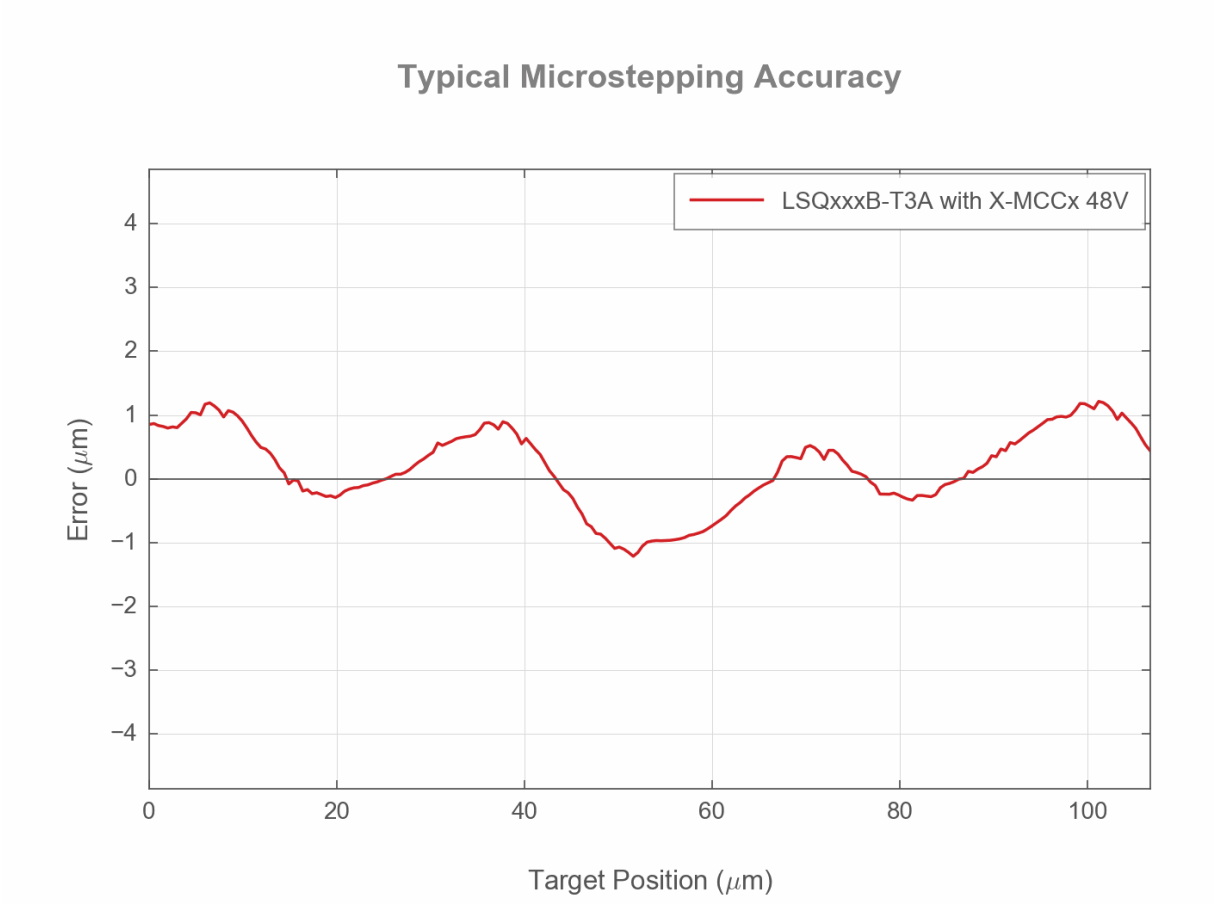
LSQxxxA T3A USTEP ACCURACY



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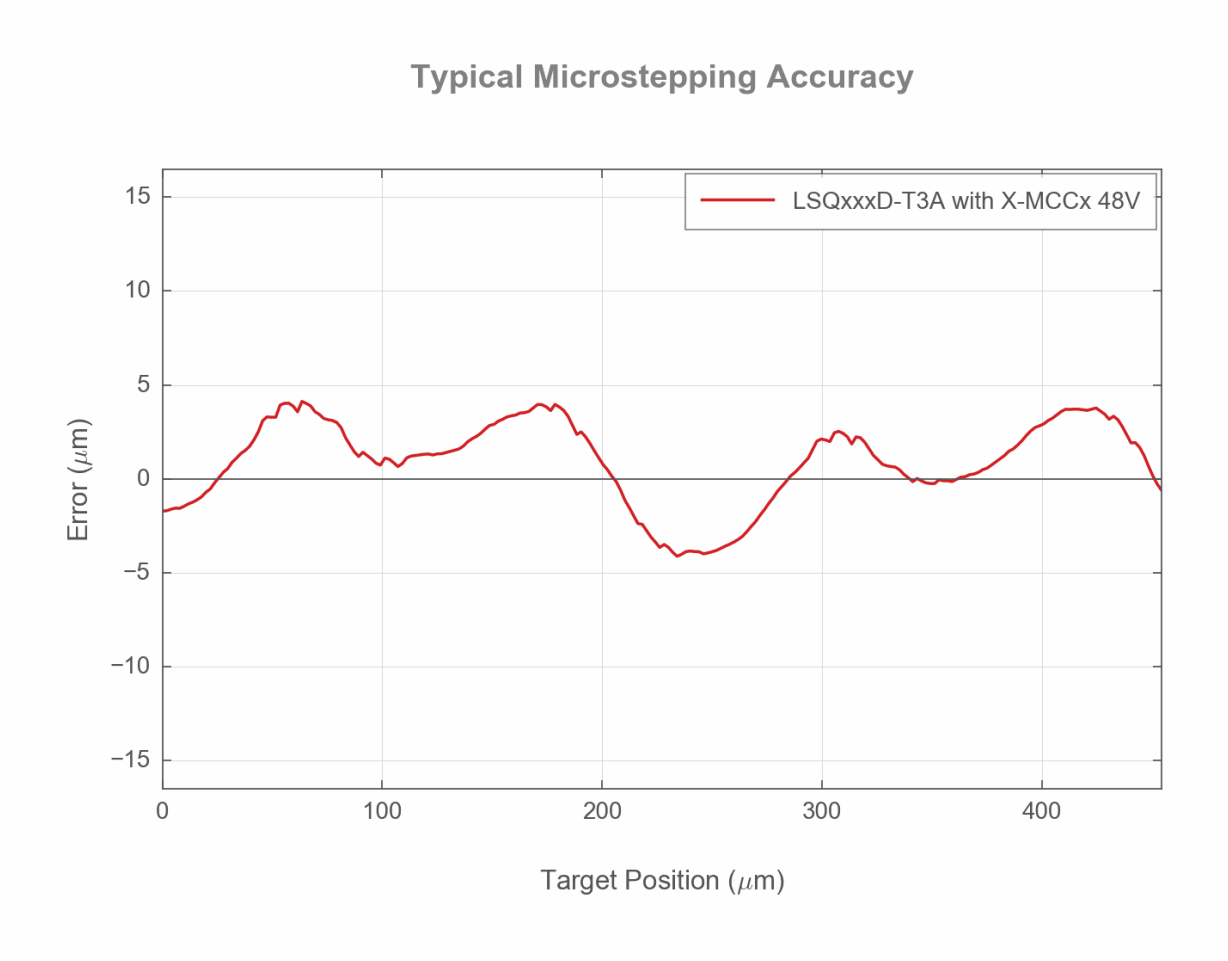
LSQxxxB T3A USTEP ACCURACY



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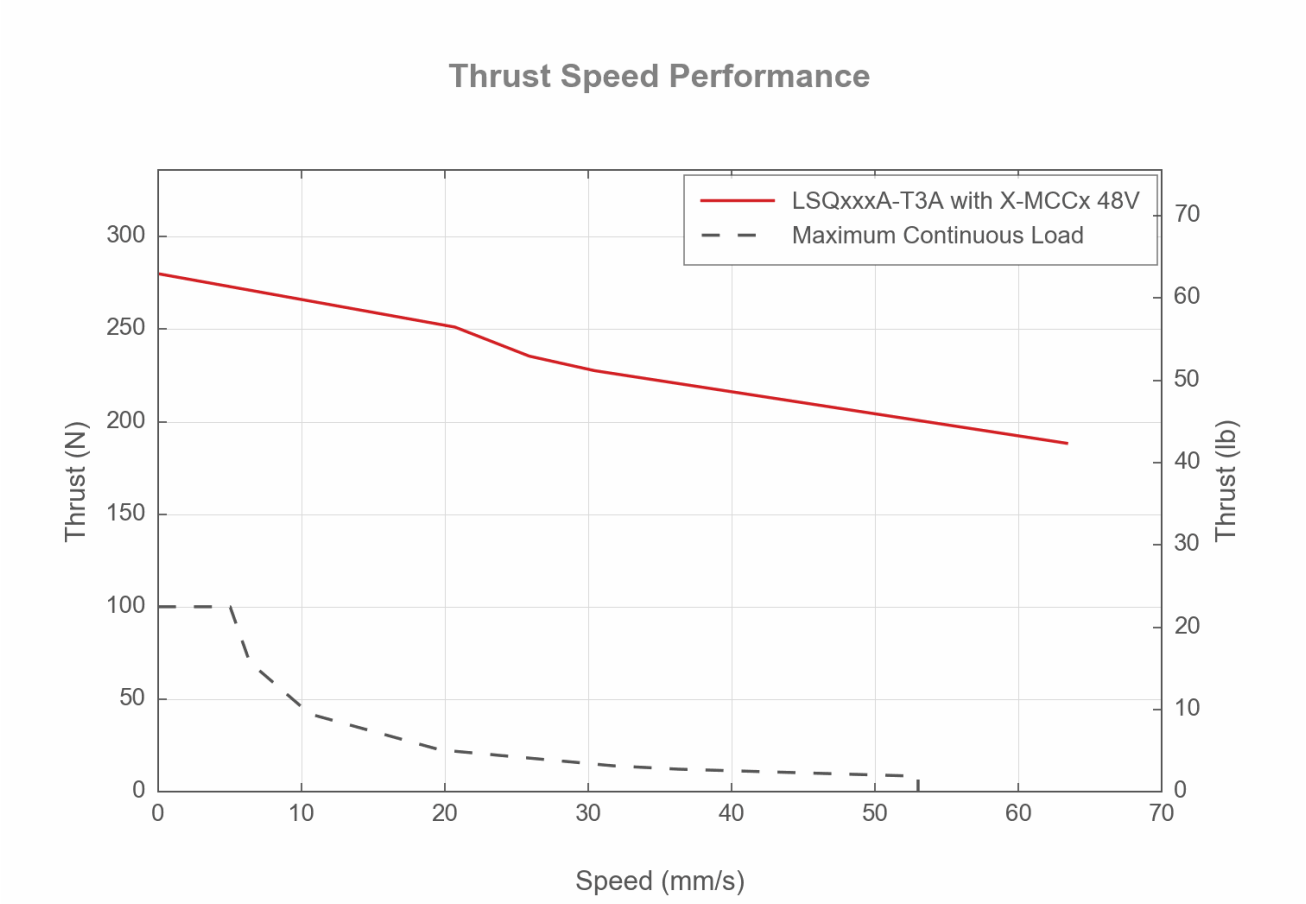
LSQxxxD T3A USTEP ACCURACY



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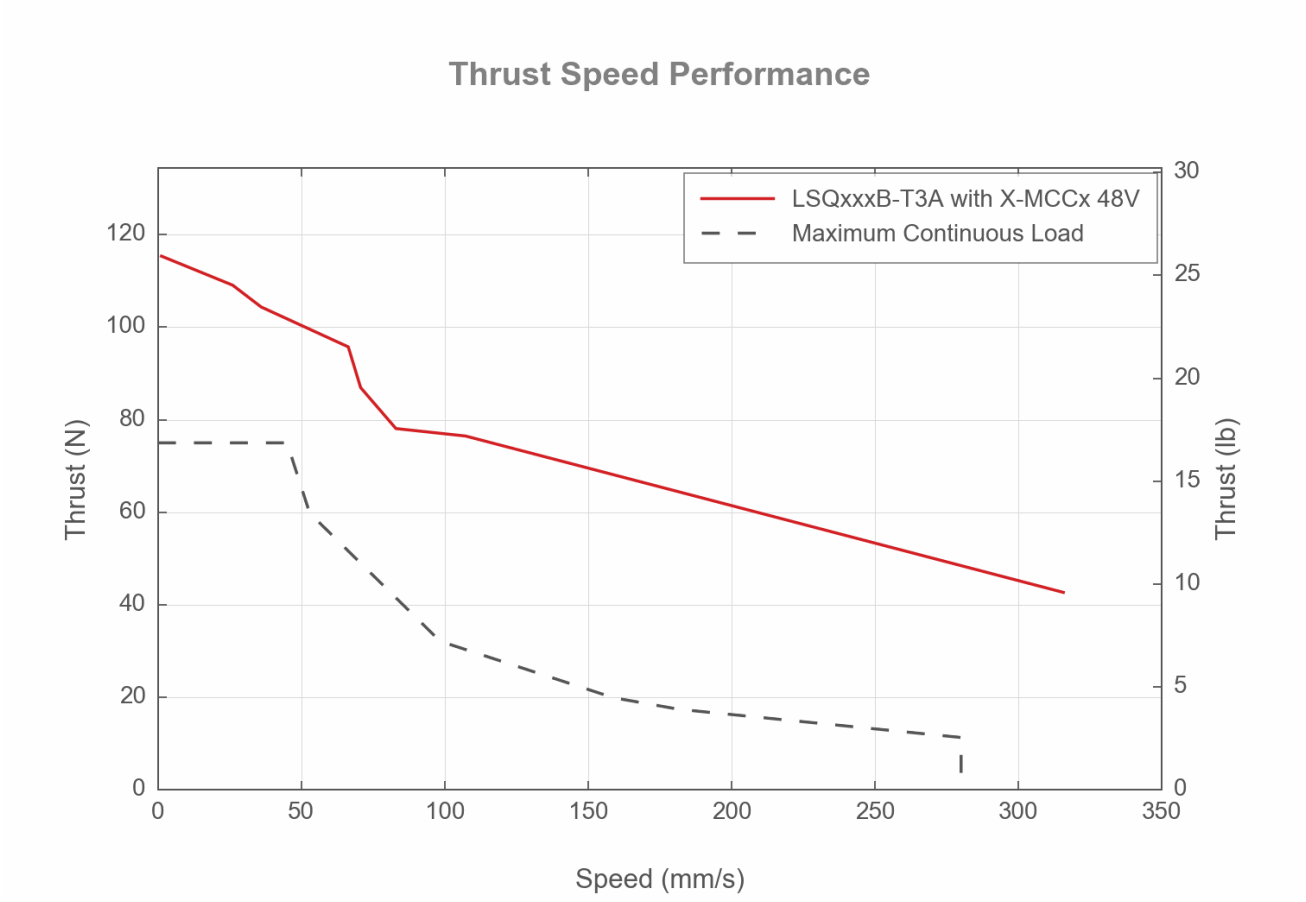
LSQxxxA T3A THRUST SPEED



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LSQxxxB T3A THRUST SPEED



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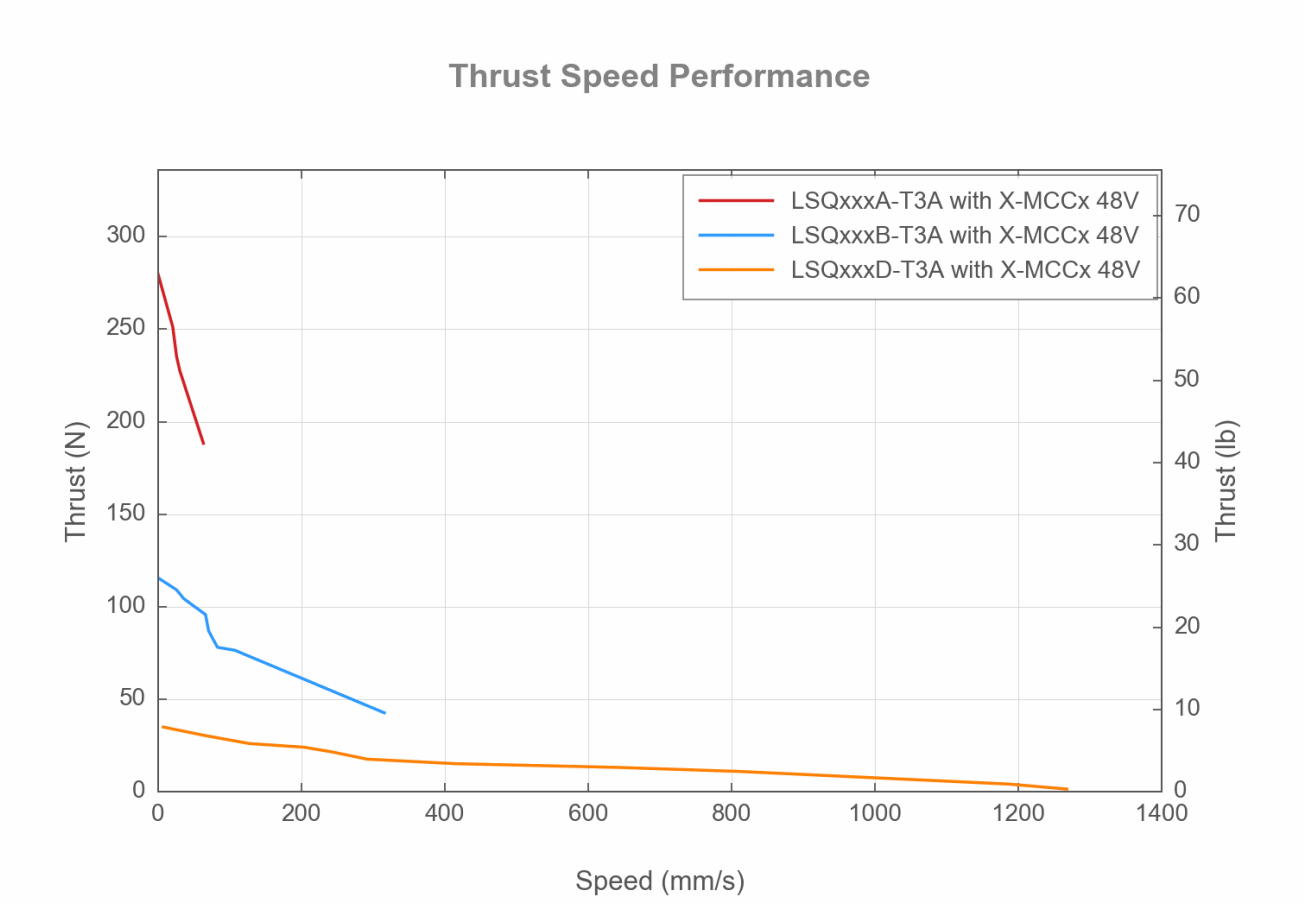
LSQxxxD T3A THRUST SPEED



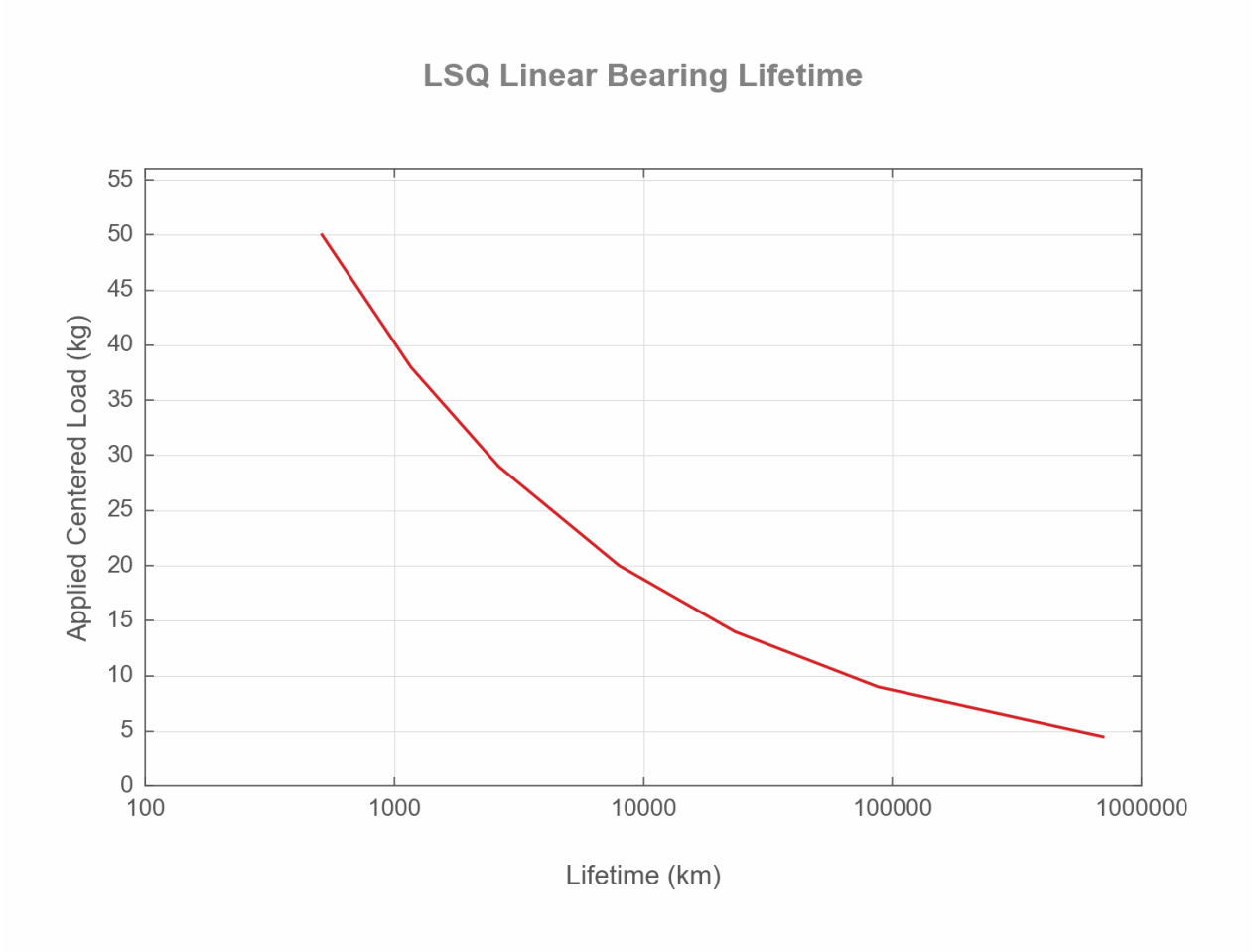
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LSQxxxx T3A THRUST SPEED



LSQxxxxx LIFETIME RECIRCULATING BEARING



Contact

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LSQ-C Series Datasheet



- 75, 150, 300, 450 and 600 mm travel
- Up to 1 m/s speed and up to 100 N thrust
- 50 kg load capacity
- Includes rigid cover
- Designed for use with MCC Family controllers or any 2-phase stepper motor controller
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral
- Custom versions available

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LSQ-C Series Overview

Zaber's LSQ-C Series products are computer-controlled, motorized linear stages with integrated stepper motors. These stages are capable of speeds up to 1 m/s and can easily be mounted in XY or XYZ configuration without additional hardware. A rigid non-contact cover prevents the ingress of small objects. The stages are designed to connect directly to our MCC Family 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 controller will automatically detect and configure the LSQ-C.

For more information visit: https://www.zaber.com/products/linear-stages/LSQ-C

LSQ-C Series Part Numbering & Options

LSQ 075 A - C T3A

Travel	Lead Screw Options	Cover	Connector
075 — 75 mm **150** — 150 mm **300** — 300 mm **450** — 450 mm **600** — 600 mm	**A** — Fine pitch lead screw **B** — Medium pitch lead screw **D** — Coarse pitch lead screw	**C** — Rigid Cover	**T3A** — D-sub 15 panel mount connector with Auto Detect

LSQ-C Series Drawings

- LSQ-C (Drawing for the LSQ-C)
- View all drawings and documents at zaber.com

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LSQ-C Series Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Axes of Motion	1

Positioning Performance

Specification	Value
Flatness of Travel	<30 µm (<0.001181 ")
Pitch Error	0.06 ° (1.047 mrad)
Roll Error	0.03 ° (0.523 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step
Stage Parallelism	<100 µm (<0.003937 ")

Load Performance

Specification	Value
Maximum Centered Load	500 N (112.1 lb)
Maximum Moment (Pitch)	6 N·m (4.4 lb·ft)
Maximum Moment (Roll)	20 N·m (14.76 lb·ft)
Maximum Moment (Yaw)	6 N·m (4.428 lb·ft)
Stiffness (Pitch)	150 N·m/°

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Stiffness (Roll)	225 N·m/°
Stiffness (Yaw)	150 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	2300 mA/phase
Motor Winding Resistance	1 ohms/phase
Motor Winding Inductance	2.2 mH/phase
Motor Connection	D-sub 15
Motor Rotor Inertia	0.0000073 kg·m2

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Precision lead screw
Mounting Interface	M6 threaded holes

Environmental & Compliance

Specification	Value
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No

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Part Number	Travel Range	Weight	Accuracy (unidirectional)	Repeatability
LSQ075A-CT3A	75 mm (2.953 ")	1.36 kg (2.998 lb)	35 µm (0.001378 ")	<2 µm (<0.000079 ")
LSQ075B-CT3A	75 mm (2.953 ")	1.36 kg (2.998 lb)	45 µm (0.001772 ")	<3 µm (<0.000118 ")
LSQ075D-CT3A	75 mm (2.953 ")	1.36 kg (2.998 lb)	80 µm (0.00315 ")	<10 µm (<0.000394 ")
LSQ150A-CT3A	150 mm (5.905 ")	1.6 kg (3.527 lb)	45 µm (0.001772 ")	<2 µm (<0.000079 ")
LSQ150B-CT3A	150 mm (5.905 ")	1.6 kg (3.527 lb)	50 µm (0.001968 ")	<3 µm (<0.000118 ")
LSQ150D-CT3A	150 mm (5.905 ")	1.6 kg (3.527 lb)	100 µm (0.003937 ")	<10 µm (<0.000394 ")
LSQ300A-CT3A	300 mm (11.811 ")	2.05 kg (4.519 lb)	90 µm (0.003543 ")	<2 µm (<0.000079 ")
LSQ300B-CT3A	300 mm (11.811 ")	2.05 kg (4.519 lb)	65 µm (0.002559 ")	<3 µm (<0.000118 ")
LSQ300D-CT3A	300 mm (11.811 ")	2.05 kg (4.519 lb)	145 µm (0.005709 ")	<10 µm (<0.000394 ")
LSQ450A-CT3A	450 mm (17.716 ")	2.6 kg (5.732 lb)	135 µm (0.005315 ")	<2 µm (<0.000079 ")
LSQ450B-CT3A	450 mm (17.716 ")	2.6 kg (5.732 lb)	75 µm (0.002953 ")	<3 µm (<0.000118 ")
LSQ450D-CT3A	450 mm (17.716 ")	2.6 kg (5.732 lb)	185 µm (0.007283 ")	<10 µm (<0.000394 ")
LSQ600A-CT3A	600 mm (23.622 ")	3.25 kg (7.165 lb)	180 µm (0.007087 ")	<2 µm (<0.000079 ")
LSQ600B-CT3A	600 mm (23.622 ")	3.25 kg (7.165 lb)	100 µm (0.003937 ")	<3 µm (<0.000118 ")
LSQ600D-CT3A	600 mm (23.622 ")	3.25 kg (7.165 lb)	230 µm (0.009055 ")	<10 µm (<0.000394 ")

Part Number	Backlash	Straightness of Travel	Microstep Size (Default Resolution)	Peak Thrust
LSQ075A-CT3A	<15 µm (<0.000591 ")	<20 µm (<0.000787 ")	0.09921875 µm	275 N (61.7 lb)
LSQ075B-CT3A	<18 µm (<0.000709 ")	<20 µm (<0.000787 ")	0.49609375 µm	120 N (26.9 lb)

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LSQ075D-CT3A	<75 µm (<0.002953 ")	<20 µm (<0.000787 ")	1.984375 µm	35 N (7.8 lb)
LSQ150A-CT3A	<15 µm (<0.000591 ")	<30 µm (<0.001181 ")	0.09921875 µm	275 N (61.7 lb)
LSQ150B-CT3A	<18 µm (<0.000709 ")	<30 µm (<0.001181 ")	0.49609375 µm	120 N (26.9 lb)
LSQ150D-CT3A	<75 µm (<0.002953 ")	<30 µm (<0.001181 ")	1.984375 µm	35 N (7.8 lb)
LSQ300A-CT3A	<15 µm (<0.000591 ")	<35 µm (<0.001378 ")	0.09921875 µm	275 N (61.7 lb)
LSQ300B-CT3A	<18 µm (<0.000709 ")	<35 µm (<0.001378 ")	0.49609375 µm	120 N (26.9 lb)
LSQ300D-CT3A	<75 µm (<0.002953 ")	<35 µm (<0.001378 ")	1.984375 µm	35 N (7.8 lb)
LSQ450A-CT3A	<15 µm (<0.000591 ")	<40 µm (<0.001575 ")	0.09921875 µm	275 N (61.7 lb)
LSQ450B-CT3A	<18 µm (<0.000709 ")	<40 µm (<0.001575 ")	0.49609375 µm	120 N (26.9 lb)
LSQ450D-CT3A	<75 µm (<0.002953 ")	<40 µm (<0.001575 ")	1.984375 µm	35 N (7.8 lb)
LSQ600A-CT3A	<15 µm (<0.000591 ")	<60 µm (<0.002362 ")	0.09921875 µm	275 N (61.7 lb)
LSQ600B-CT3A	<18 µm (<0.000709 ")	<60 µm (<0.002362 ")	0.49609375 µm	120 N (26.9 lb)
LSQ600D-CT3A	<75 µm (<0.002953 ")	<60 µm (<0.002362 ")	1.984375 µm	35 N (7.8 lb)

Part Number	Maximum Continuous Thrust	Back-driving Force*	Maximum Speed	Minimum Speed
LSQ075A-CT3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ075B-CT3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ075D-CT3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ150A-CT3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ150B-CT3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)

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LSQ150D-CT3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ300A-CT3A	100 N (22.4 lb)	Non-back-driving	53 mm/s (2.087 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ300B-CT3A	75 N (16.8 lb)	44 N (9.9 lb)	280 mm/s (11.024 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ300D-CT3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ450A-CT3A	100 N (22.4 lb)	Non-back-driving	46 mm/s (1.811 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ450B-CT3A	75 N (16.8 lb)	44 N (9.9 lb)	240 mm/s (9.449 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ450D-CT3A	18 N (4 lb)	12 N (2.7 lb)	1000 mm/s (39.37 "/s)	0.001212 mm/s (0.000048 "/s)
LSQ600A-CT3A	100 N (22.4 lb)	Non-back-driving	28 mm/s (1.102 "/s)	0.000061 mm/s (0.000002 "/s)
LSQ600B-CT3A	75 N (16.8 lb)	44 N (9.9 lb)	144 mm/s (5.669 "/s)	0.000303 mm/s (0.000012 "/s)
LSQ600D-CT3A	18 N (4 lb)	12 N (2.7 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)

Part Number	Speed Resolution	Linear Motion Per Motor Rev
LSQ075A-CT3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ075B-CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ075D-CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ150A-CT3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ150B-CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ150D-CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ300A-CT3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ300B-CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")

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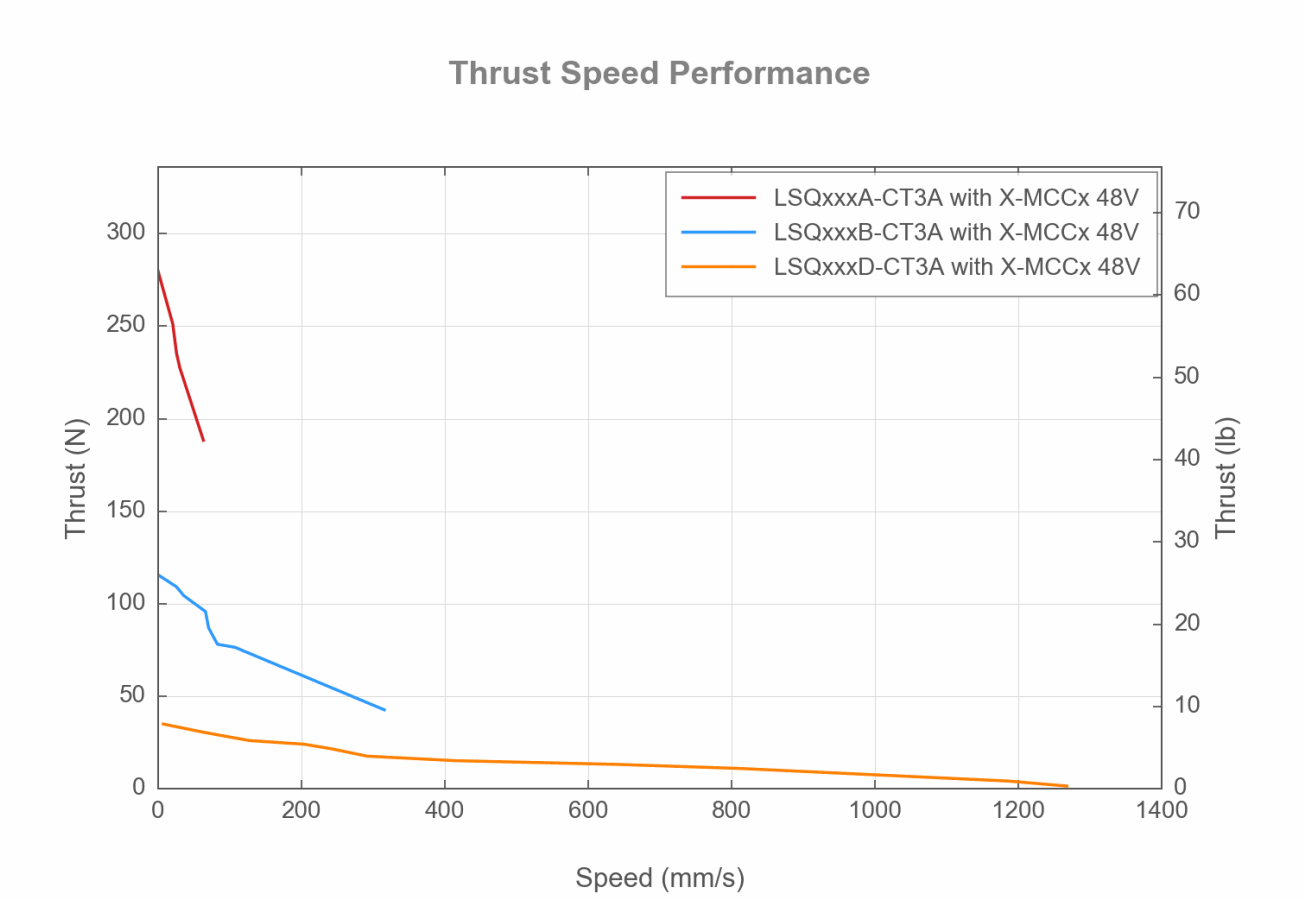
LSQ300D-CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ450A-CT3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ450B-CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ450D-CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")
LSQ600A-CT3A	0.000061 mm/s (0.000002 "/s)	1.27 mm (0.05 ")
LSQ600B-CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")
LSQ600D-CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")

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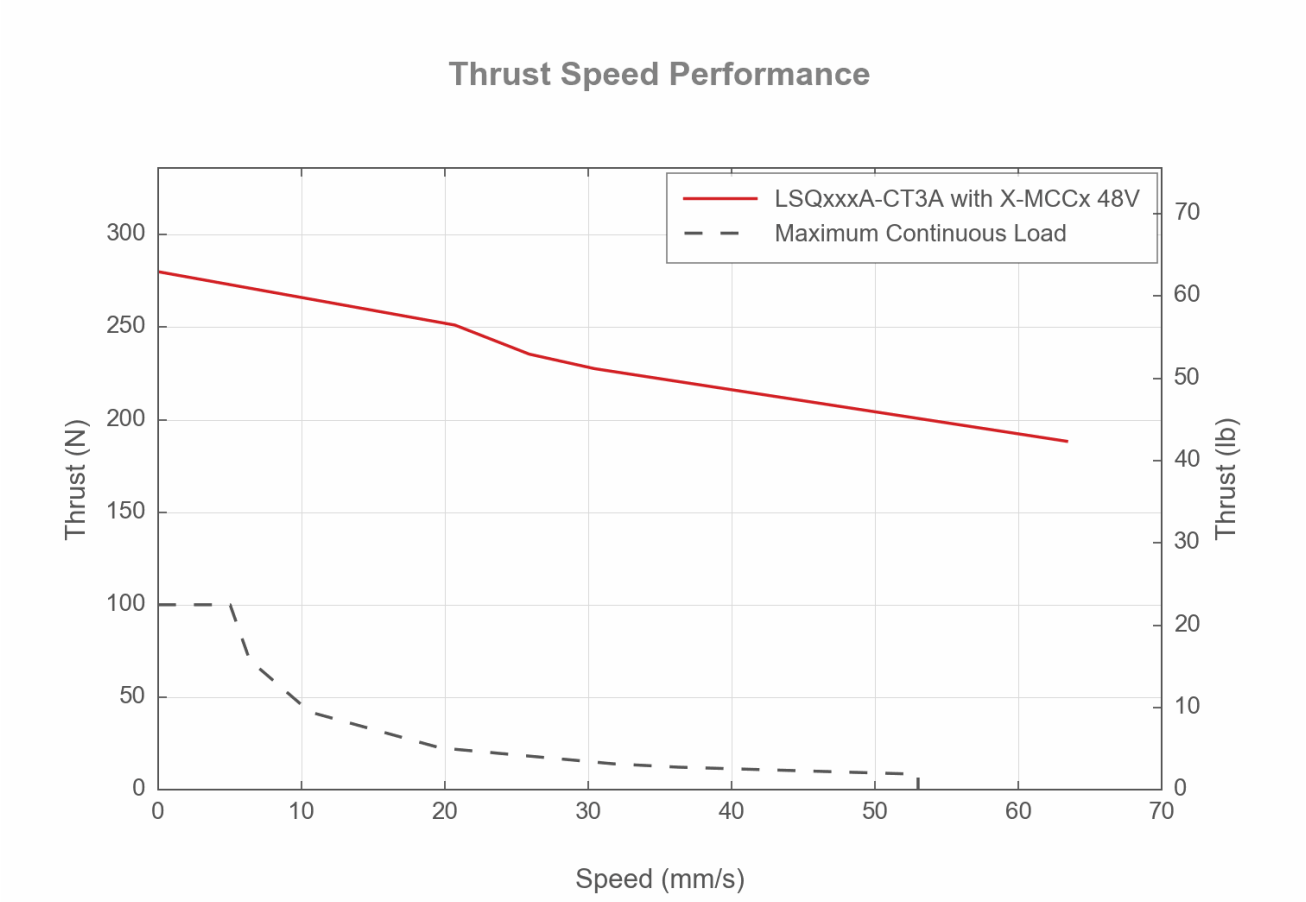
LSQxxxX CT3A Thrust Speed



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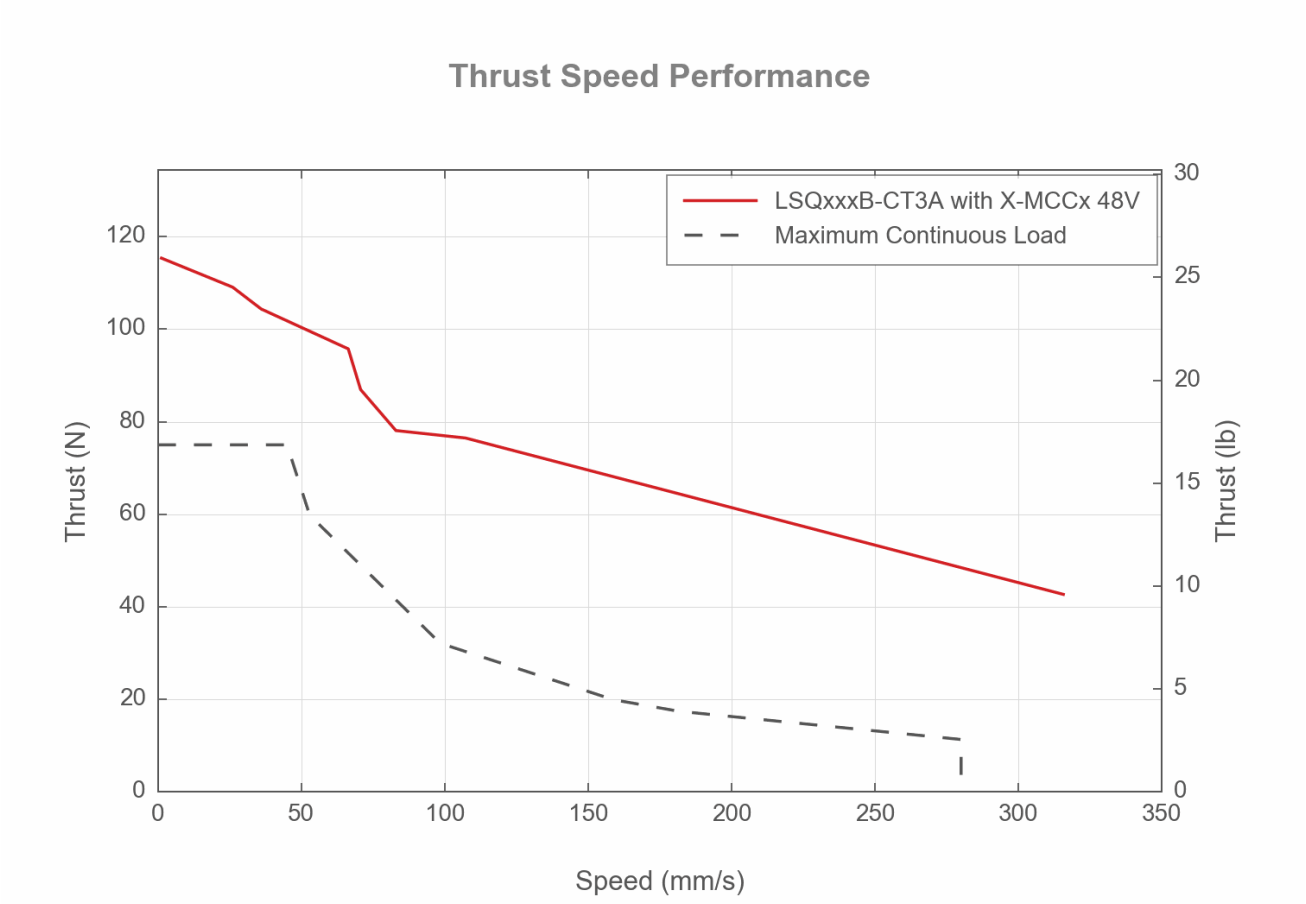
LSQxxxA CT3A Thrust Speed



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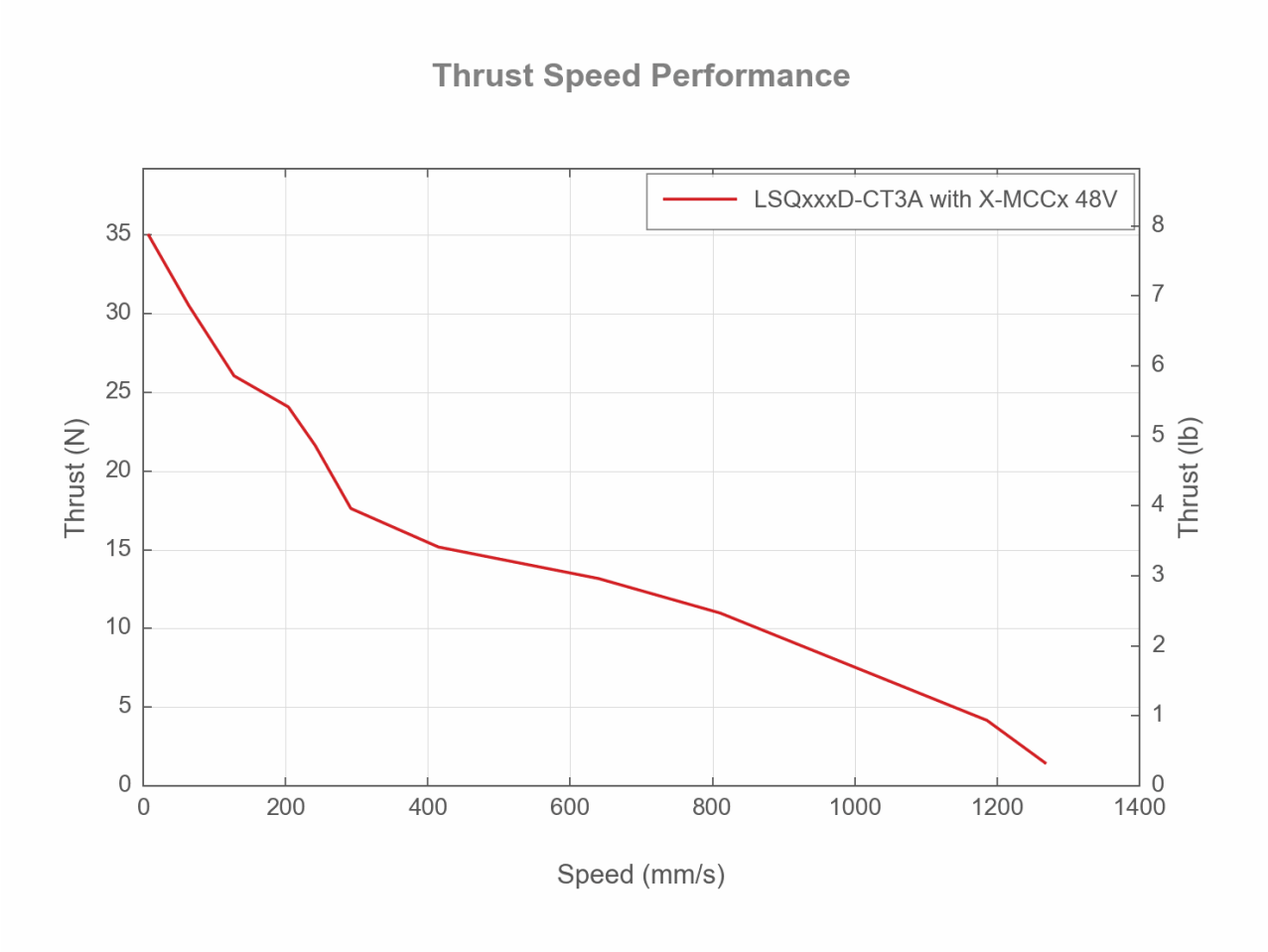
LSQxxxB CT3A Thrust Speed



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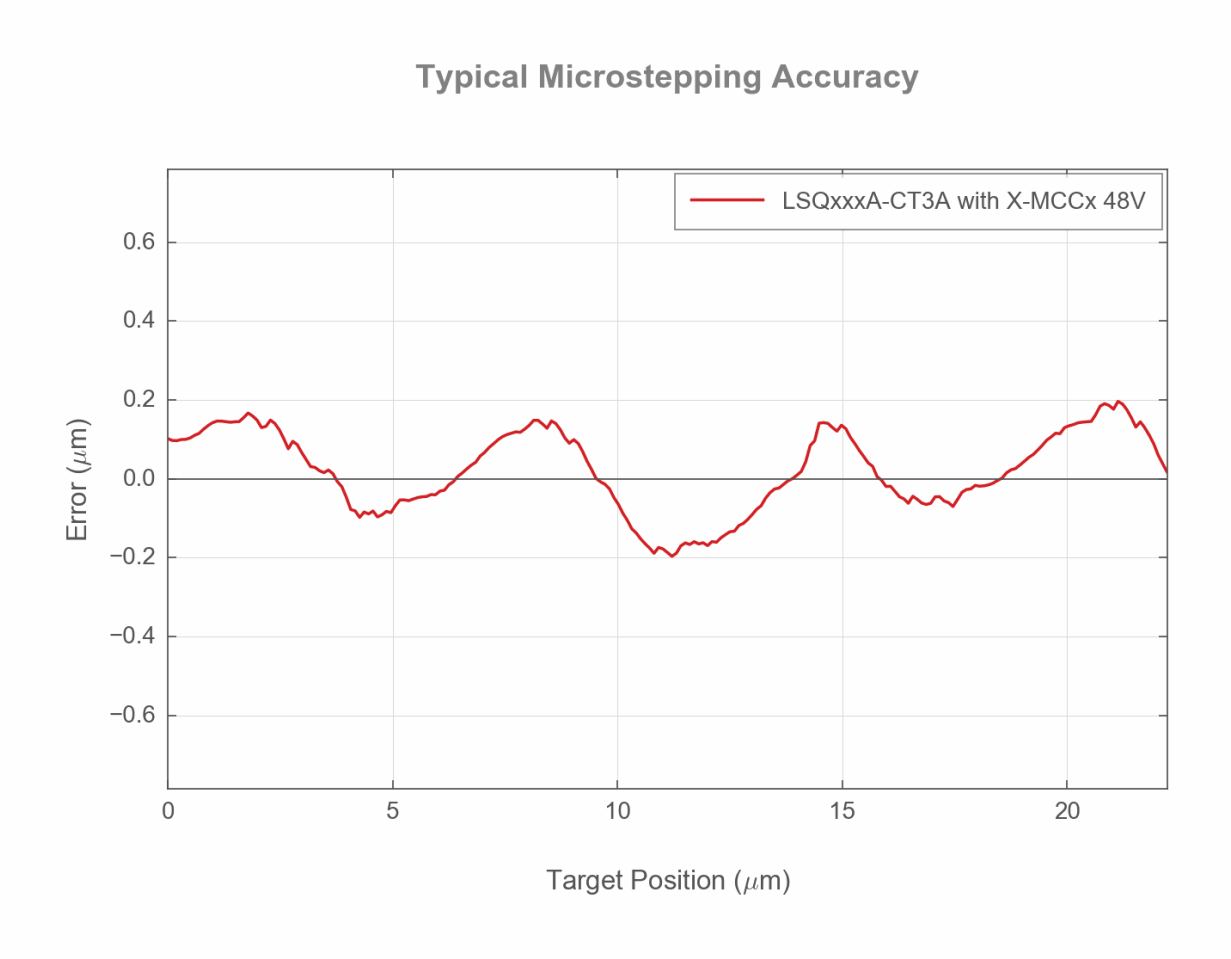
LSQxxxD CT3A Thrust Speed



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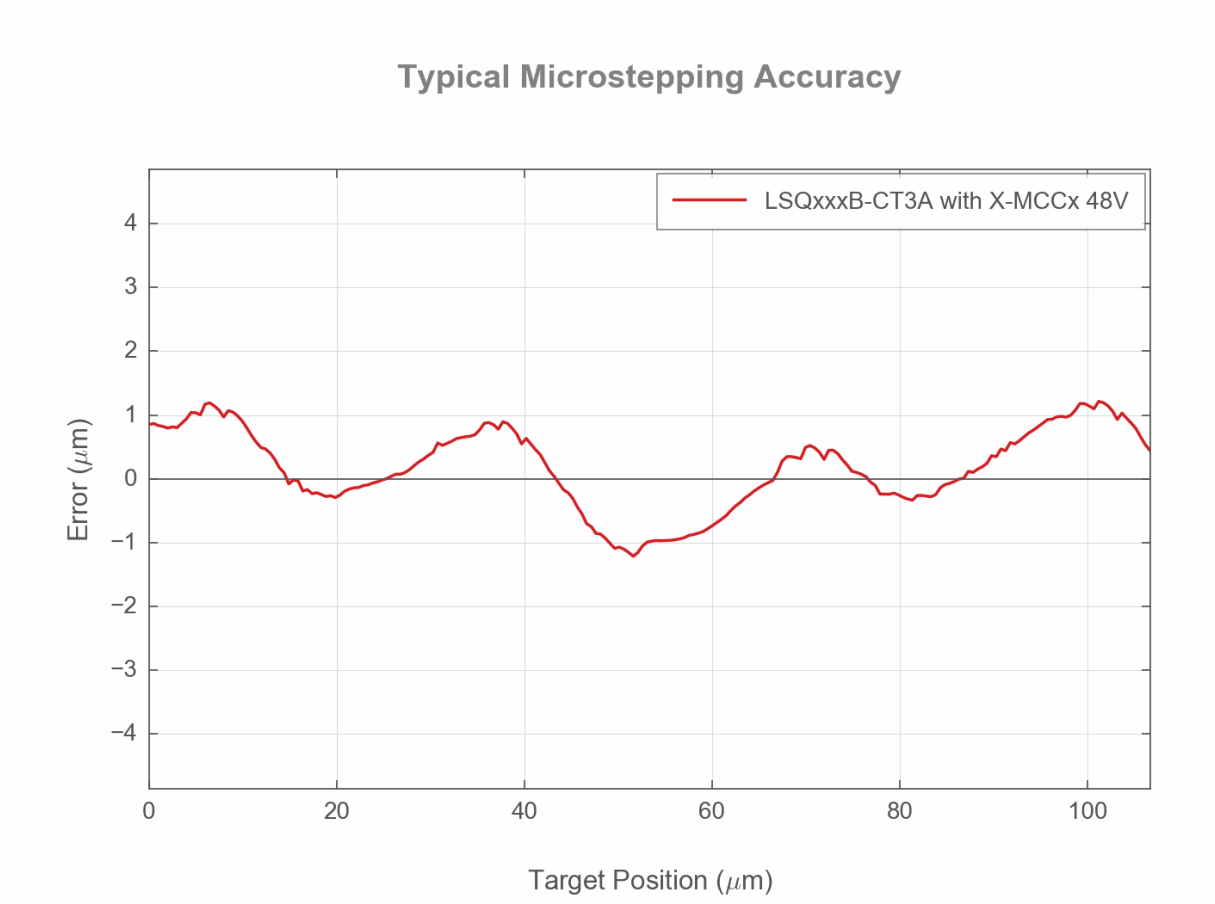
LSQxxxA CT3A UStep Accuracy



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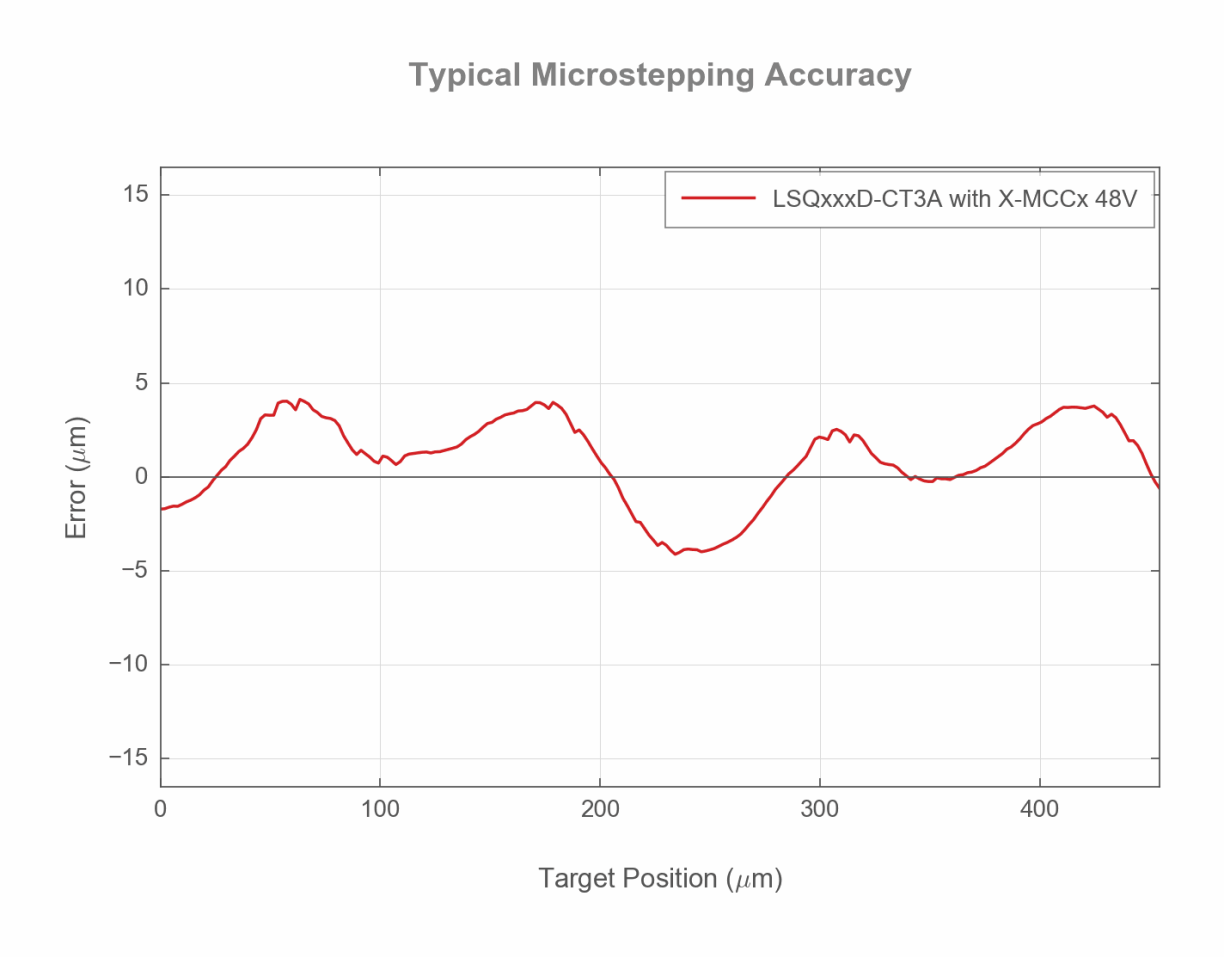
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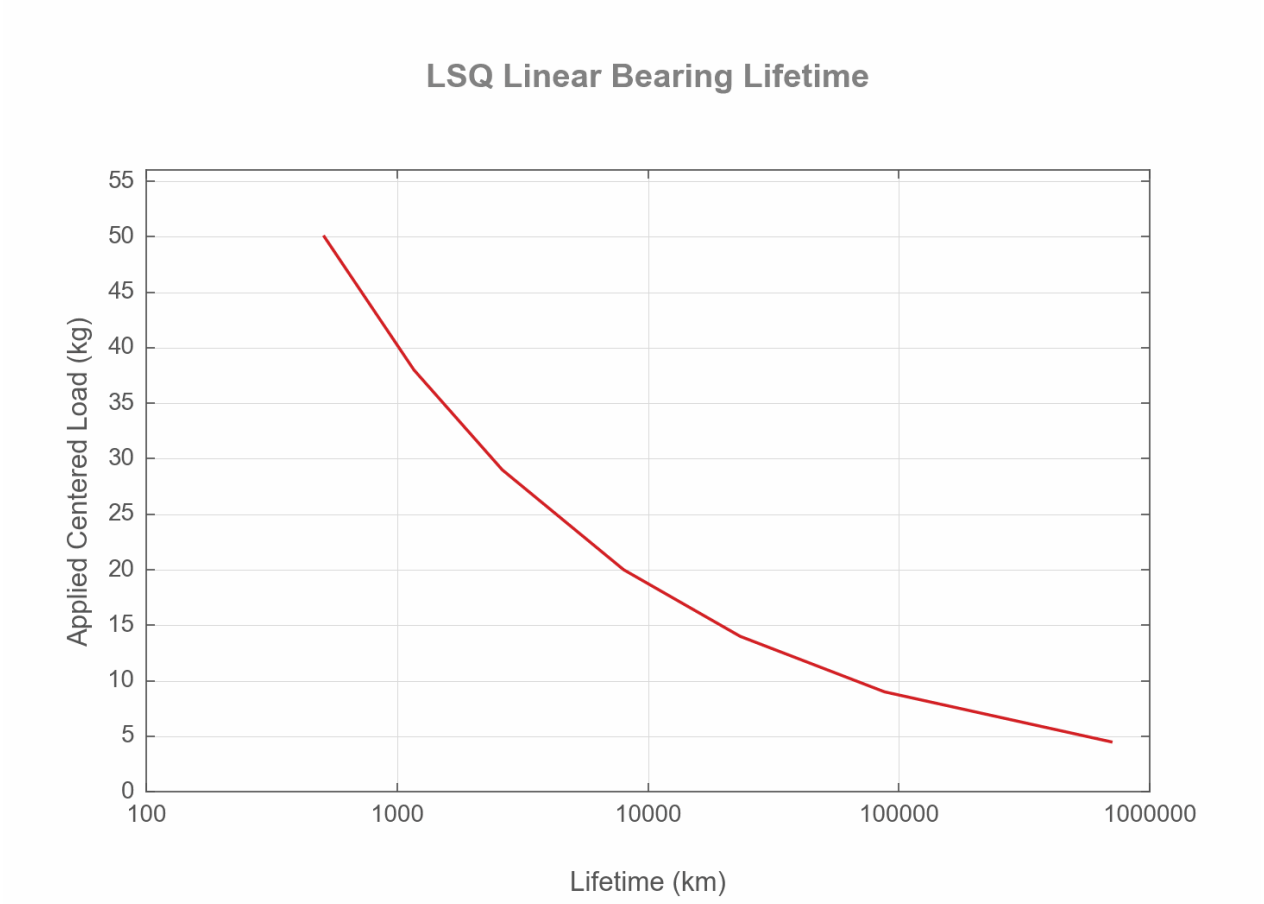
LSQxxxD CT3A UStep Accuracy



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LSQxxxxx Lifetime Recirculating Bearing



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