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-LRT-AEC Series Datasheet



- 100, 250, 500, 750, 1000, 1500 mm travel
- 20 µm full travel accuracy
- 300 kg load capacity
- Includes stainless steel dust covers
- Ball screw and lead screw configurations
- Optional integrated power-off brake for vertical applications
- Integrated linear encoders with 50 nm resolution provide slip/stall detection and position correction
- Built-in controller; daisy-chains with other Zaber products

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X-LRT-AEC Series Overview

Zaber's X-LRT-AEC Series are computer-controlled, motorized linear stages designed for positioning high loads to within 20 µm accuracy. An integrated linear encoder combined with stage calibration provides high accuracy positioning over the full travel of the device. They have low pitch, roll, yaw and runout and long lifetime. Flexible dust covers keep out moderate debris. An indexed knob provides convenient manual control for versatile operation even without a computer. An optional power-off brake is available to enable vertical applications with backdrivable screws.

X-LRT-AEC devices are stand-alone units requiring only a standard 48 V power supply. They connect to the RS-232 port or USB port of any computer, and can be daisy-chained with any other Zaber products. Like all of Zaber's products, the X-LRT-AEC Series is designed to be 'plug and play' and very easy to set up and operate.

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

X-LRT-AEC Series Part Numbering & Options

X-LRT 0100 A L - _ AE53 C

Travel
- **0100** — 100 mm
- **0250** — 250 mm
- **...**
- **1000** — 1000 mm
- **1500** — 1500 mm

Drive Screw Options
- **A** — Fine pitch lead screw
- **B** — Medium pitch lead screw
- **D** — Coarse pitch lead screw
- **H** — Fine pitch ball screw

Drive Configuration
- **L** — Inline

Brake Option
- **None** — No Brake
- **B** — Brake

Encoder Options
- **AE53** — Analog encoder, measure down to 50 nm

Cover
- **C** — Stainless Steel Dust Cover

X-LRT-AEC Series Drawings

- X-LRT-AEC (Drawing for the X-LRT-AEC)
- X-LRT-BAEC (Drawing for the X-LRT-BAEC)
- View all drawings and documents at zaber.com

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X-LRT-AEC 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
Accuracy (unidirectional)	20 µm (0.000787 ")
Backlash	<15 µm (<0.000591 ")
Flatness of Travel	<10 µm (<0.000394 ")
Straightness of Travel	<50 µm (<0.001968 ")
Pitch Error	0.015 ° (0.262 mrad)
Roll Error	0.02 ° (0.349 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Centered Load	2940 N (659.3 lb)
Maximum Moment (Pitch)	70 N·m (51.7 lb·ft)
Maximum Moment (Roll)	80 N·m (59.04 lb·ft)

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Maximum Moment (Yaw)	70 N·m (51.66 lb·ft)
Stiffness (Pitch)	1400 N·m/°
Stiffness (Roll)	700 N·m/°
Stiffness (Yaw)	1200 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	Linear analog encoder
Encoder Resolution	50 nm
Limit or Home Sensing	Linear Encoder Index Mark

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	3000 mA/phase
Motor Winding Inductance	2 mH/phase

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default)
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin screw terminal
Maximum Current Draw	3600 mA

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Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide

Environmental & Compliance

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

Part Number	Travel Range	Weight	Repeatability	Minimum Incremental Move
X-LRT0100AL-AE53C	100 mm (3.937 ")	3.65 kg (8.047 lb)	<1 µm (<0.000039 ")	500 nm
X-LRT0100BL-AE53C	100 mm (3.937 ")	3.65 kg (8.047 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT0100BL-BAE53C	100 mm (3.937 ")	4.276 kg (9.427 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT0100DL-AE53C	100 mm (3.937 ")	3.65 kg (8.047 lb)	<1.5 µm (<0.000059 ")	8000 nm
X-LRT0100DL-BAE53C	100 mm (3.937 ")	4.276 kg (9.427 lb)	<1.5 µm (<0.000059 ")	8000 nm
X-LRT0100HL-AE53C	100 mm (3.937 ")	3.65 kg (8.047 lb)	<1.5 µm (<0.000059 ")	1200 nm
X-LRT0100HL-BAE53C	100 mm (3.937 ")	4.276 kg (9.427 lb)	<1.5 µm (<0.000059 ")	1200 nm
X-LRT0250AL-AE53C	250 mm (9.843 ")	4.441 kg (9.791 lb)	<1 µm (<0.000039 ")	500 nm
X-LRT0250BL-AE53C	250 mm (9.843 ")	4.441 kg (9.791 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT0250BL-BAE53C	250 mm (9.843 ")	5.067 kg (11.171 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT0250DL-AE53C	250 mm (9.843 ")	4.441 kg (9.791 lb)	<1.5 µm (<0.000059 ")	8000 nm

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X-LRT0250DL-BAE53C	250 mm (9.843 ")	5.067 kg (11.171 lb)	<1.5 µm (<0.000059 ")	8000 nm
X-LRT0250HL-AE53C	250 mm (9.843 ")	4.441 kg (9.791 lb)	<1.5 µm (<0.000059 ")	1200 nm
X-LRT0250HL-BAE53C	250 mm (9.843 ")	5.067 kg (11.171 lb)	<1.5 µm (<0.000059 ")	1200 nm
X-LRT0500AL-AE53C	500 mm (19.685 ")	5.758 kg (12.694 lb)	<1 µm (<0.000039 ")	500 nm
X-LRT0500BL-AE53C	500 mm (19.685 ")	5.758 kg (12.694 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT0500BL-BAE53C	500 mm (19.685 ")	6.384 kg (14.074 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT0500DL-AE53C	500 mm (19.685 ")	5.758 kg (12.694 lb)	<1.5 µm (<0.000059 ")	8000 nm
X-LRT0500DL-BAE53C	500 mm (19.685 ")	6.384 kg (14.074 lb)	<1.5 µm (<0.000059 ")	8000 nm
X-LRT0500HL-AE53C	500 mm (19.685 ")	5.758 kg (12.694 lb)	<1.5 µm (<0.000059 ")	1200 nm
X-LRT0500HL-BAE53C	500 mm (19.685 ")	6.384 kg (14.074 lb)	<1.5 µm (<0.000059 ")	1200 nm
X-LRT0750AL-AE53C	750 mm (29.528 ")	7.076 kg (15.6 lb)	<1 µm (<0.000039 ")	500 nm
X-LRT0750BL-AE53C	750 mm (29.528 ")	7.076 kg (15.6 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT0750BL-BAE53C	750 mm (29.528 ")	7.702 kg (16.98 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT0750DL-AE53C	750 mm (29.528 ")	7.076 kg (15.6 lb)	<1.5 µm (<0.000059 ")	8000 nm
X-LRT0750DL-BAE53C	750 mm (29.528 ")	7.702 kg (16.98 lb)	<1.5 µm (<0.000059 ")	8000 nm
X-LRT0750HL-AE53C	750 mm (29.528 ")	7.076 kg (15.6 lb)	<1.5 µm (<0.000059 ")	1200 nm
X-LRT0750HL-BAE53C	750 mm (29.528 ")	7.702 kg (16.98 lb)	<1.5 µm (<0.000059 ")	1200 nm
X-LRT1000AL-AE53C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	<1 µm (<0.000039 ")	500 nm
X-LRT1000BL-AE53C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT1000BL-BAE53C	1000 mm (39.37 ")	9.019 kg (19.883 lb)	<1.5 µm (<0.000059 ")	2000 nm

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X-LRT1000DL-AE53C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	<1.5 µm (<0.000059 ")	8000 nm
X-LRT1000DL-BAE53C	1000 mm (39.37 ")	9.019 kg (19.883 lb)	<1.5 µm (<0.000059 ")	8000 nm
X-LRT1000HL-AE53C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	<1.5 µm (<0.000059 ")	1200 nm
X-LRT1000HL-BAE53C	1000 mm (39.37 ")	9.019 kg (19.883 lb)	<1.5 µm (<0.000059 ")	1200 nm
X-LRT1500AL-AE53C	1500 mm (59.055 ")	11.028 kg (24.313 lb)	<1 µm (<0.000039 ")	500 nm
X-LRT1500BL-AE53C	1500 mm (59.055 ")	11.028 kg (24.313 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT1500BL-BAE53C	1500 mm (59.055 ")	11.654 kg (25.693 lb)	<1.5 µm (<0.000059 ")	2000 nm
X-LRT1500DL-AE53C	1500 mm (59.055 ")	11.028 kg (24.313 lb)	<1.5 µm (<0.000059 ")	8000 nm
X-LRT1500DL-BAE53C	1500 mm (59.055 ")	11.654 kg (25.693 lb)	<1.5 µm (<0.000059 ")	8000 nm

Part Number	Microstep Size (Default Resolution)	Peak Thrust	Maximum Axial Brake Force	Maximum Continuous Thrust
X-LRT0100AL-AE53C	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
X-LRT0100BL-AE53C	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)
X-LRT0100BL-BAE53C	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
X-LRT0100DL-AE53C	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
X-LRT0100DL-BAE53C	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)
X-LRT0100HL-AE53C	0.390625 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
X-LRT0100HL-BAE53C	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)	1200 N (269.1 lb)
X-LRT0250AL-AE53C	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
X-LRT0250BL-AE53C	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)

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X-LRT0250BL-BAE53C	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
X-LRT0250DL-AE53C	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
X-LRT0250DL-BAE53C	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)
X-LRT0250HL-AE53C	0.390625 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
X-LRT0250HL-BAE53C	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)	1200 N (269.1 lb)
X-LRT0500AL-AE53C	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
X-LRT0500BL-AE53C	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)
X-LRT0500BL-BAE53C	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
X-LRT0500DL-AE53C	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
X-LRT0500DL-BAE53C	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)
X-LRT0500HL-AE53C	0.390625 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
X-LRT0500HL-BAE53C	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)	1200 N (269.1 lb)
X-LRT0750AL-AE53C	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
X-LRT0750BL-AE53C	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)
X-LRT0750BL-BAE53C	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
X-LRT0750DL-AE53C	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
X-LRT0750DL-BAE53C	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)
X-LRT0750HL-AE53C	0.390625 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
X-LRT0750HL-BAE53C	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)	1200 N (269.1 lb)
X-LRT1000AL-AE53C	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)

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X-LRT1000BL-AE53C	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)
X-LRT1000BL-BAE53C	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
X-LRT1000DL-AE53C	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
X-LRT1000DL-BAE53C	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)
X-LRT1000HL-AE53C	0.390625 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
X-LRT1000HL-BAE53C	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)	1200 N (269.1 lb)
X-LRT1500AL-AE53C	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
X-LRT1500BL-AE53C	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)
X-LRT1500BL-BAE53C	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
X-LRT1500DL-AE53C	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
X-LRT1500DL-BAE53C	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)

Part Number	Back-driving Force*	Maximum Speed	Minimum Speed	Speed Resolution
X-LRT0100AL-AE53C	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0100BL-AE53C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0100BL-BAE53C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0100DL-AE53C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0100DL-BAE53C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0100HL-AE53C	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0100HL-BAE53C	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)

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X-LRT0250AL-AE53C	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0250BL-AE53C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0250BL-BAE53C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0250DL-AE53C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0250DL-BAE53C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0250HL-AE53C	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0250HL-BAE53C	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0500AL-AE53C	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0500BL-AE53C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0500BL-BAE53C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0500DL-AE53C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0500DL-BAE53C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0500HL-AE53C	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0500HL-BAE53C	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0750AL-AE53C	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0750BL-AE53C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0750BL-BAE53C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0750DL-AE53C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0750DL-BAE53C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0750HL-AE53C	157 (± 30%) N (35.2 lb)	150 mm/s (5.905 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)

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X-LRT0750HL-BAE53C	157 (± 30%) N (35.2 lb)	150 mm/s (5.905 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT1000AL-AE53C	Non-back-driving	28 mm/s (1.102 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT1000BL-AE53C	420 (± 30%) N (94.2 lb)	120 mm/s (4.724 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT1000BL-BAE53C	420 (± 30%) N (94.2 lb)	120 mm/s (4.724 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT1000DL-AE53C	40 (± 30%) N (9 lb)	500 mm/s (19.685 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT1000DL-BAE53C	40 (± 30%) N (9 lb)	500 mm/s (19.685 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT1000HL-AE53C	157 (± 30%) N (35.2 lb)	95 mm/s (3.74 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT1000HL-BAE53C	157 (± 30%) N (35.2 lb)	95 mm/s (3.74 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT1500AL-AE53C	Non-back-driving	13 mm/s (0.512 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT1500BL-AE53C	420 (± 30%) N (94.2 lb)	55 mm/s (2.165 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT1500BL-BAE53C	420 (± 30%) N (94.2 lb)	55 mm/s (2.165 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT1500DL-AE53C	40 (± 30%) N (9 lb)	225 mm/s (8.858 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT1500DL-BAE53C	40 (± 30%) N (9 lb)	225 mm/s (8.858 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)

Part Number	Linear Motion Per Motor Rev	Mechanical Drive System
X-LRT0100AL-AE53C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0100BL-AE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0100BL-BAE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0100DL-AE53C	25.4 mm (1 ")	Precision lead screw
X-LRT0100DL-BAE53C	25.4 mm (1 ")	Precision lead screw

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X-LRT0100HL-AE53C	5 mm (0.197 ")	Precision ball screw
X-LRT0100HL-BAE53C	5 mm (0.197 ")	Precision ball screw
X-LRT0250AL-AE53C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0250BL-AE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0250BL-BAE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0250DL-AE53C	25.4 mm (1 ")	Precision lead screw
X-LRT0250DL-BAE53C	25.4 mm (1 ")	Precision lead screw
X-LRT0250HL-AE53C	5 mm (0.197 ")	Precision ball screw
X-LRT0250HL-BAE53C	5 mm (0.197 ")	Precision ball screw
X-LRT0500AL-AE53C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0500BL-AE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0500BL-BAE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0500DL-AE53C	25.4 mm (1 ")	Precision lead screw
X-LRT0500DL-BAE53C	25.4 mm (1 ")	Precision lead screw
X-LRT0500HL-AE53C	5 mm (0.197 ")	Precision ball screw
X-LRT0500HL-BAE53C	5 mm (0.197 ")	Precision ball screw
X-LRT0750AL-AE53C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0750BL-AE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0750BL-BAE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0750DL-AE53C	25.4 mm (1 ")	Precision lead screw

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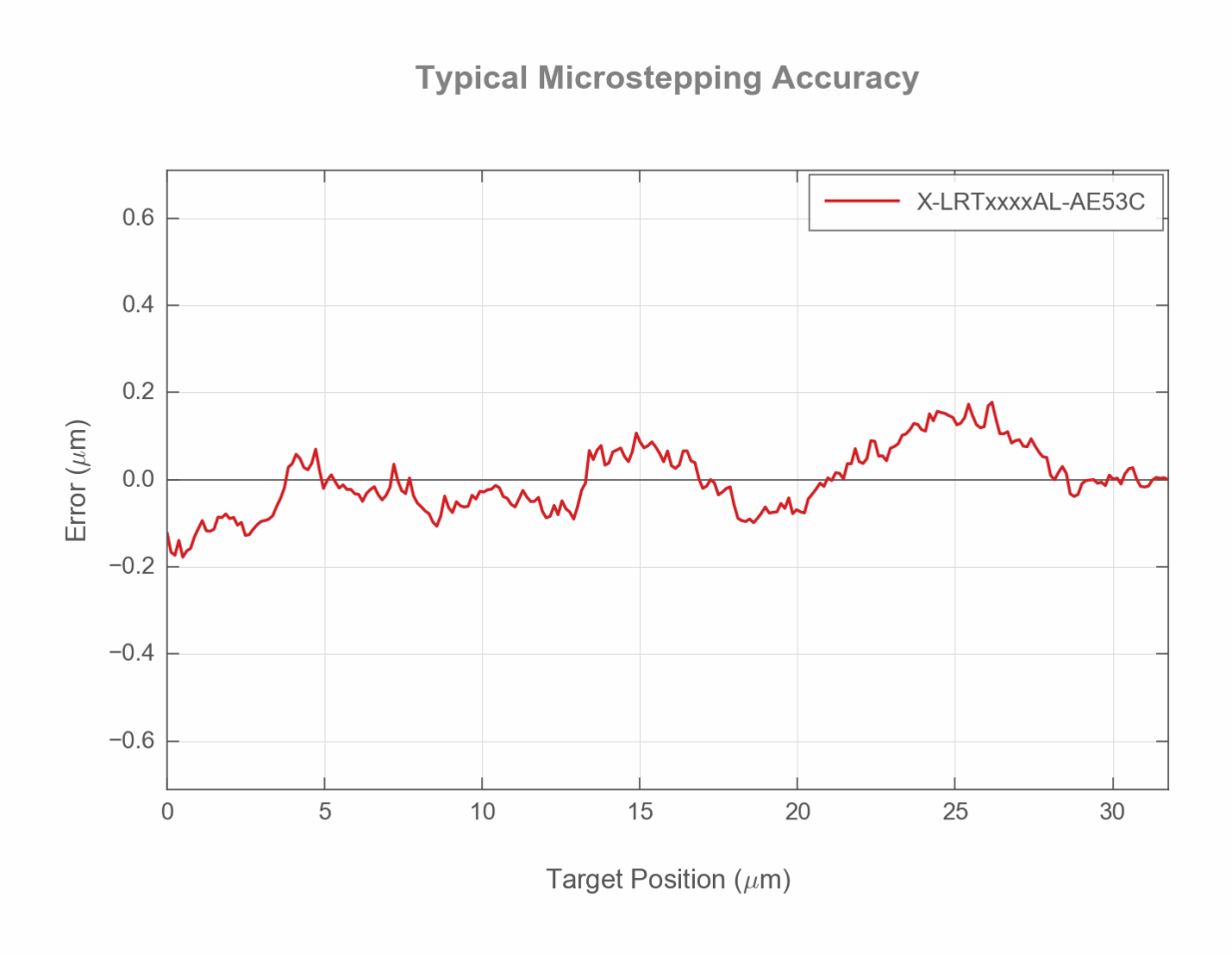
X-LRT0750DL-BAE53C	25.4 mm (1 ")	Precision lead screw
X-LRT0750HL-AE53C	5 mm (0.197 ")	Precision ball screw
X-LRT0750HL-BAE53C	5 mm (0.197 ")	Precision ball screw
X-LRT1000AL-AE53C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT1000BL-AE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT1000BL-BAE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT1000DL-AE53C	25.4 mm (1 ")	Precision lead screw
X-LRT1000DL-BAE53C	25.4 mm (1 ")	Precision lead screw
X-LRT1000HL-AE53C	5 mm (0.197 ")	Precision ball screw
X-LRT1000HL-BAE53C	5 mm (0.197 ")	Precision ball screw
X-LRT1500AL-AE53C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT1500BL-AE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT1500BL-BAE53C	6.35 mm (0.25 ")	Precision lead screw
X-LRT1500DL-AE53C	25.4 mm (1 ")	Precision lead screw
X-LRT1500DL-BAE53C	25.4 mm (1 ")	Precision lead screw

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X-LRT-AEC Series Charts

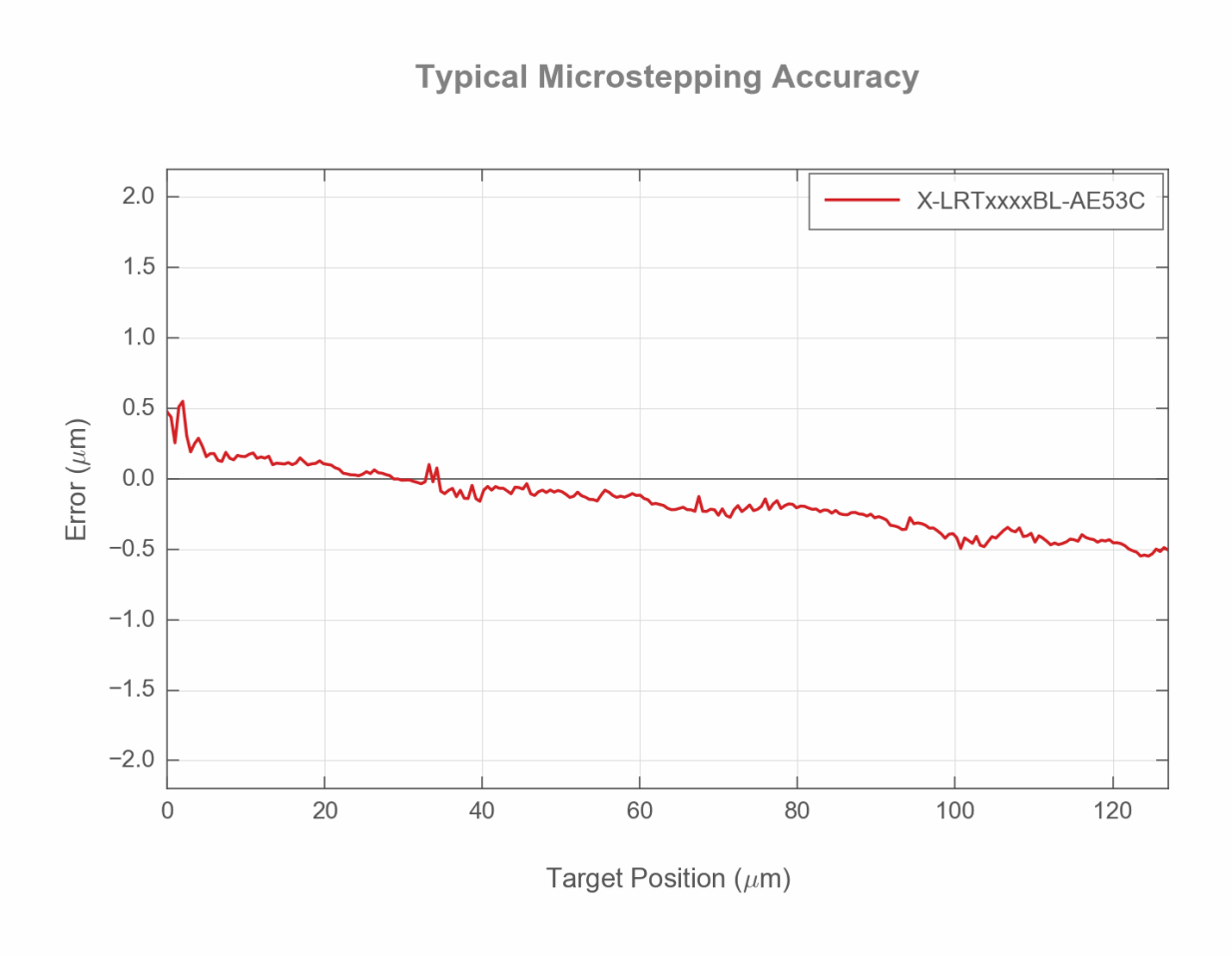
ERROR POSITION



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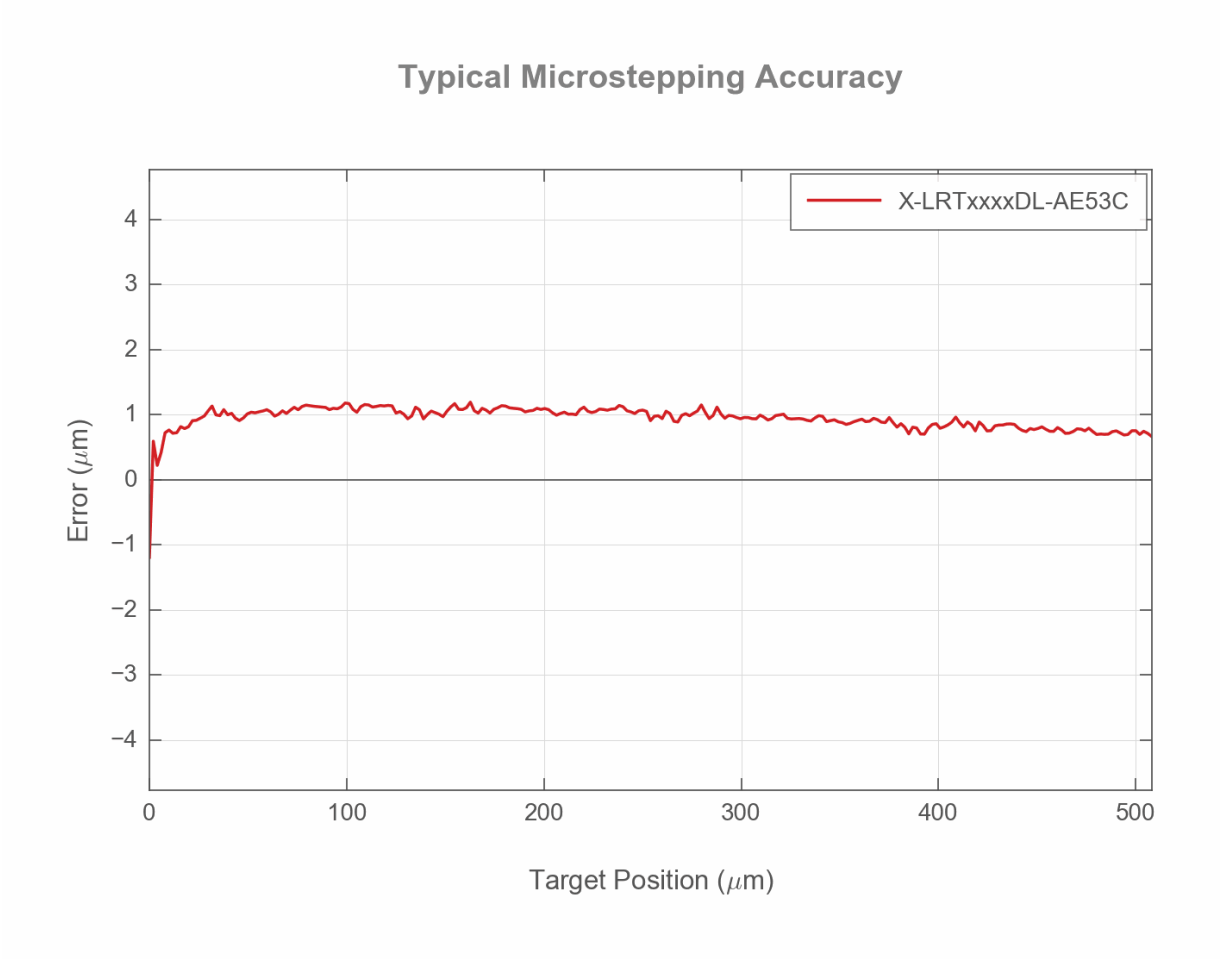
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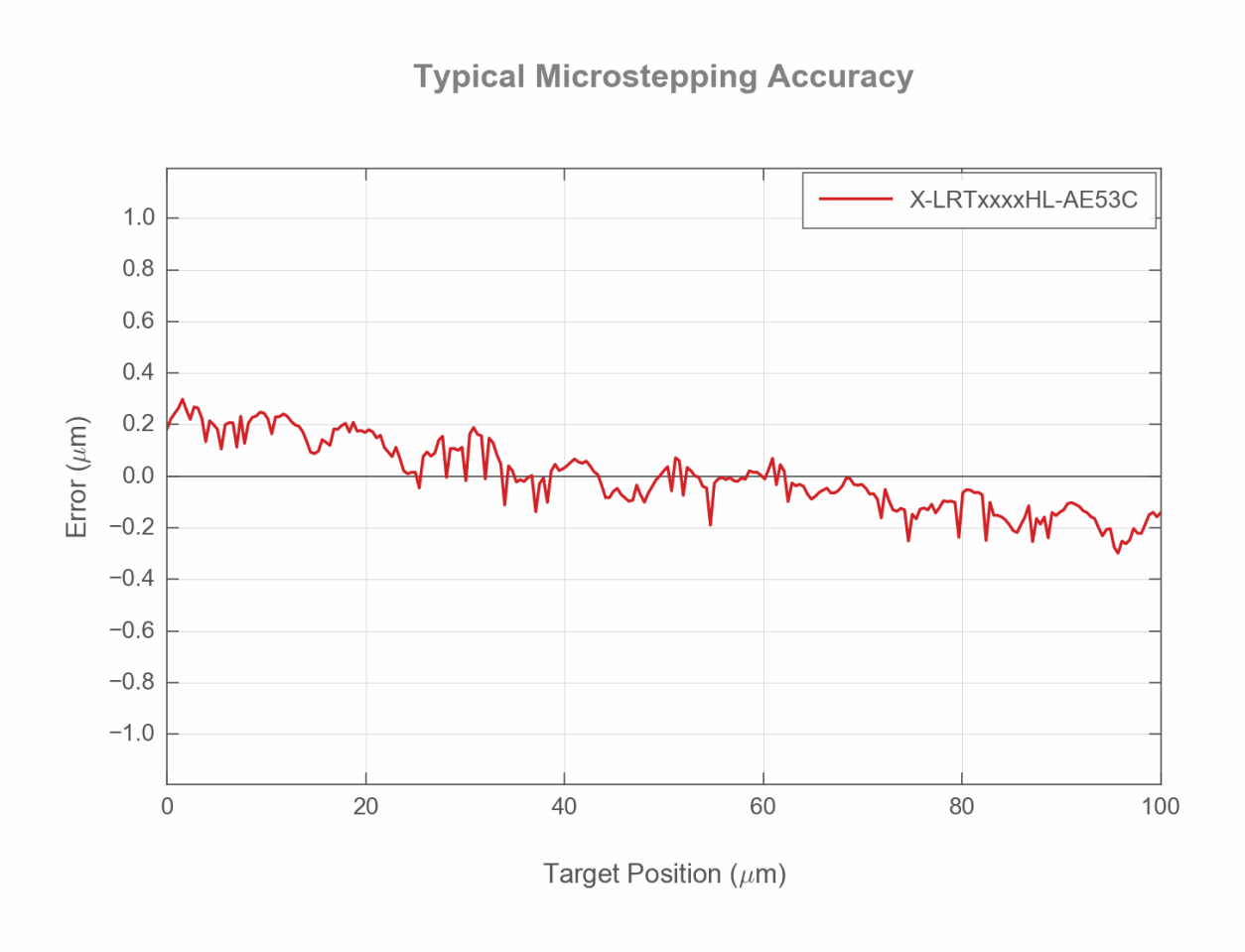
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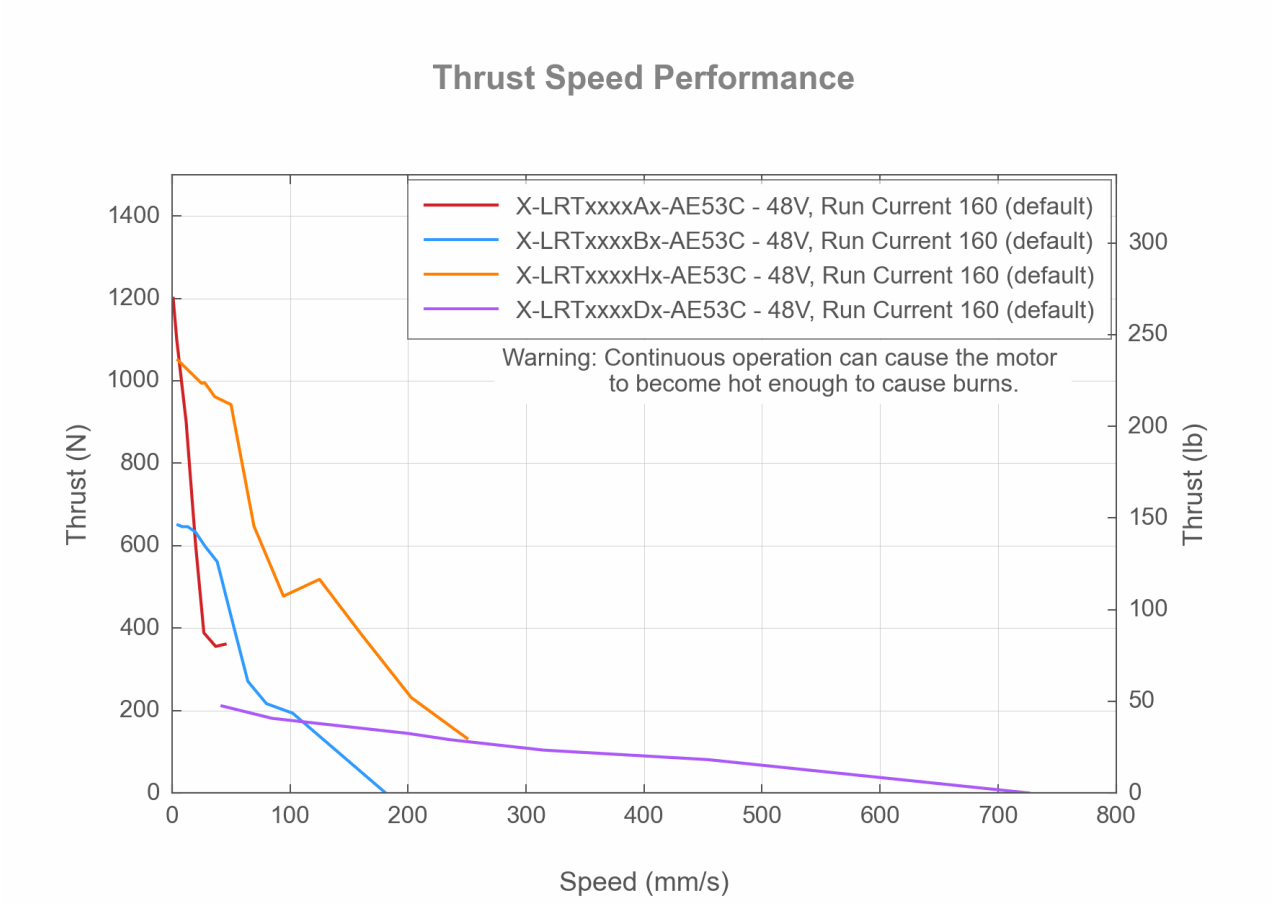
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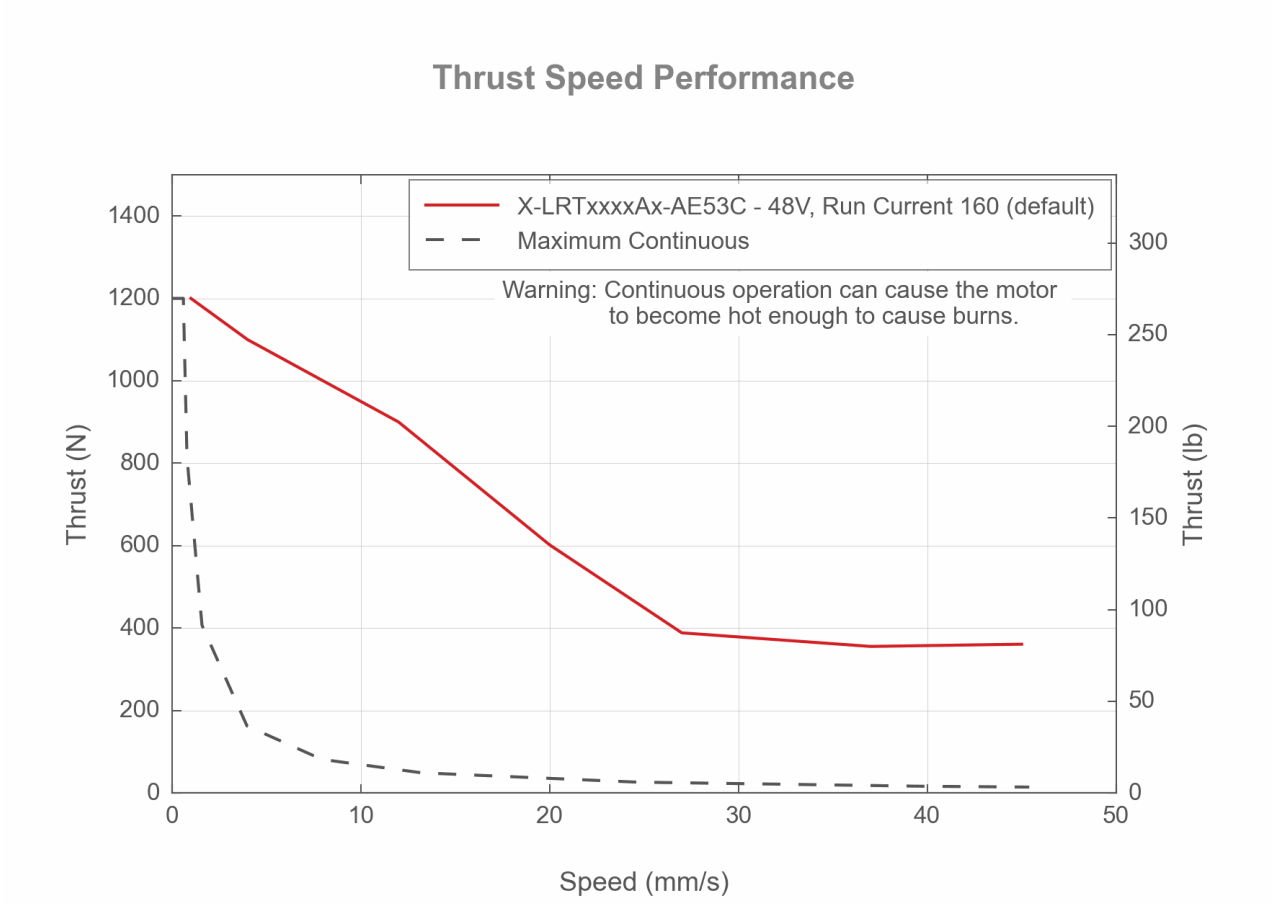
Thrust Speed Performance



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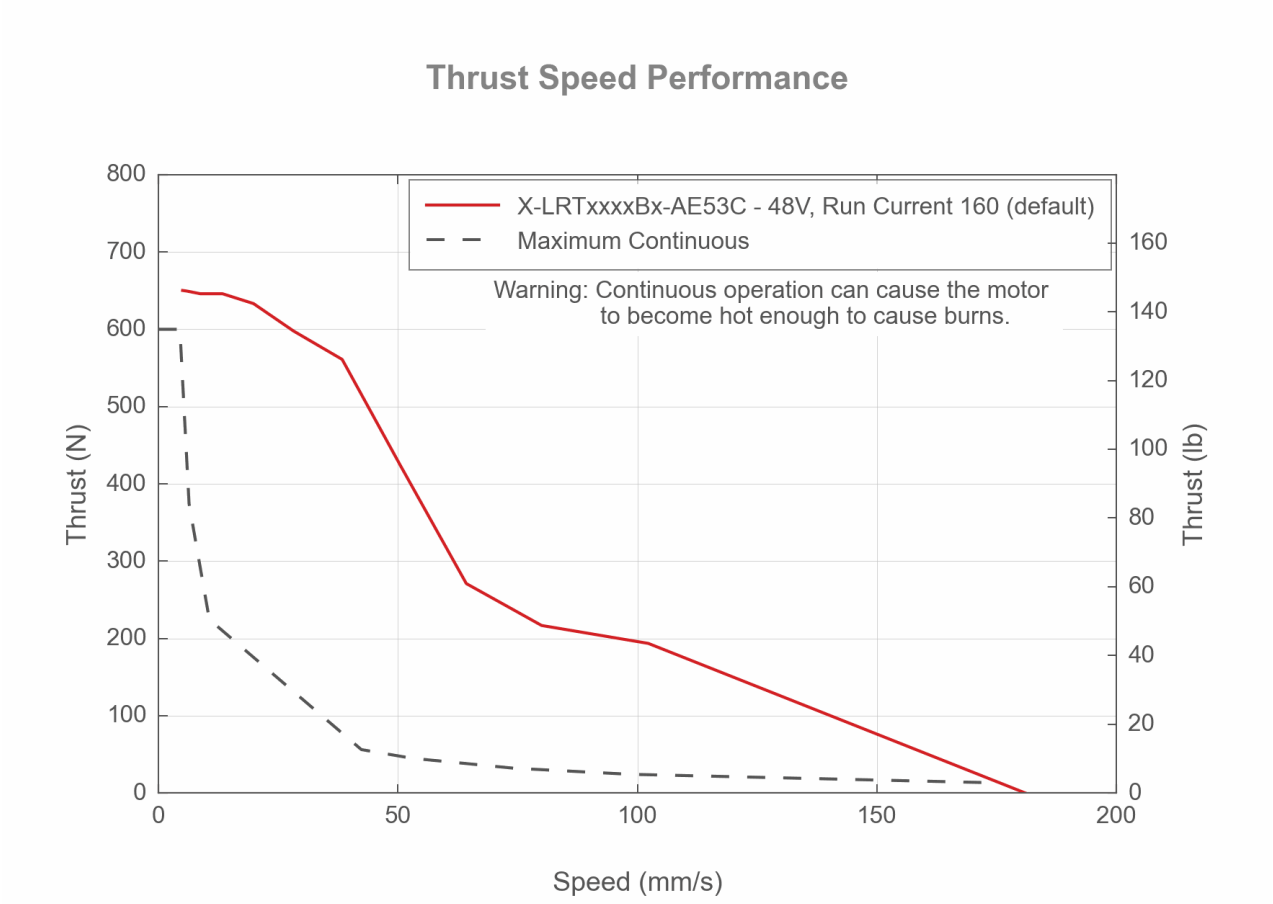
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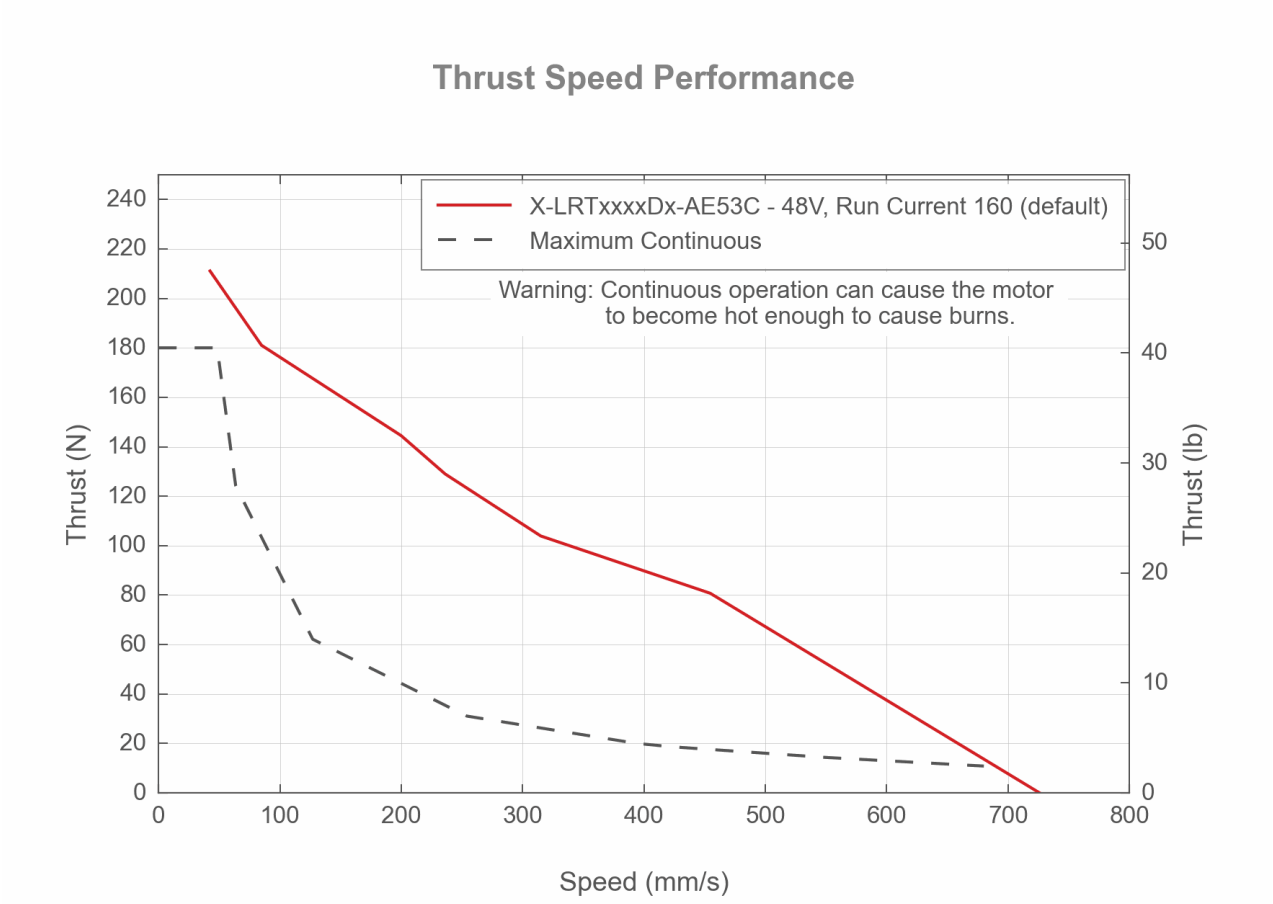
Thrust Speed Performance



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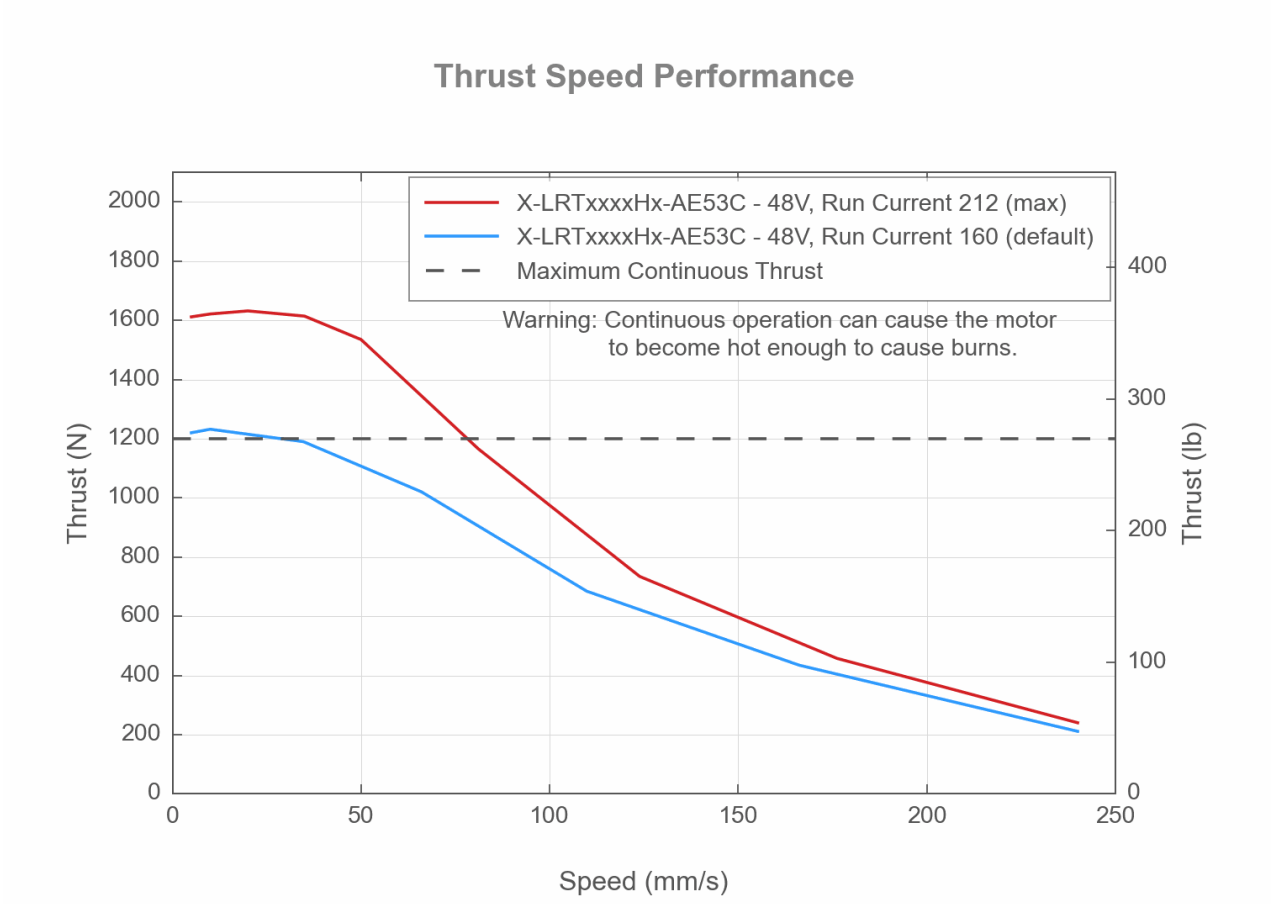
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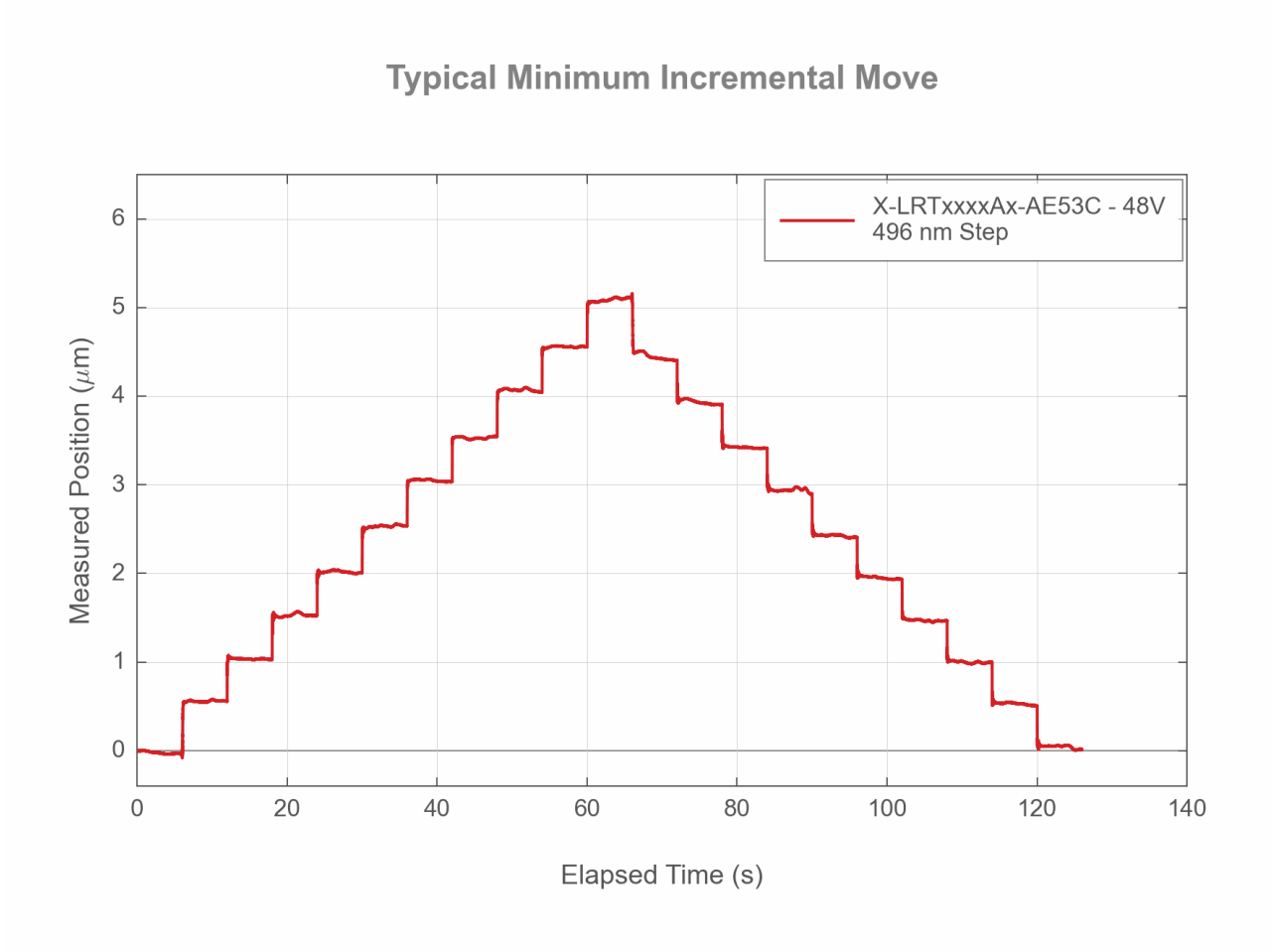
Thrust Speed Performance



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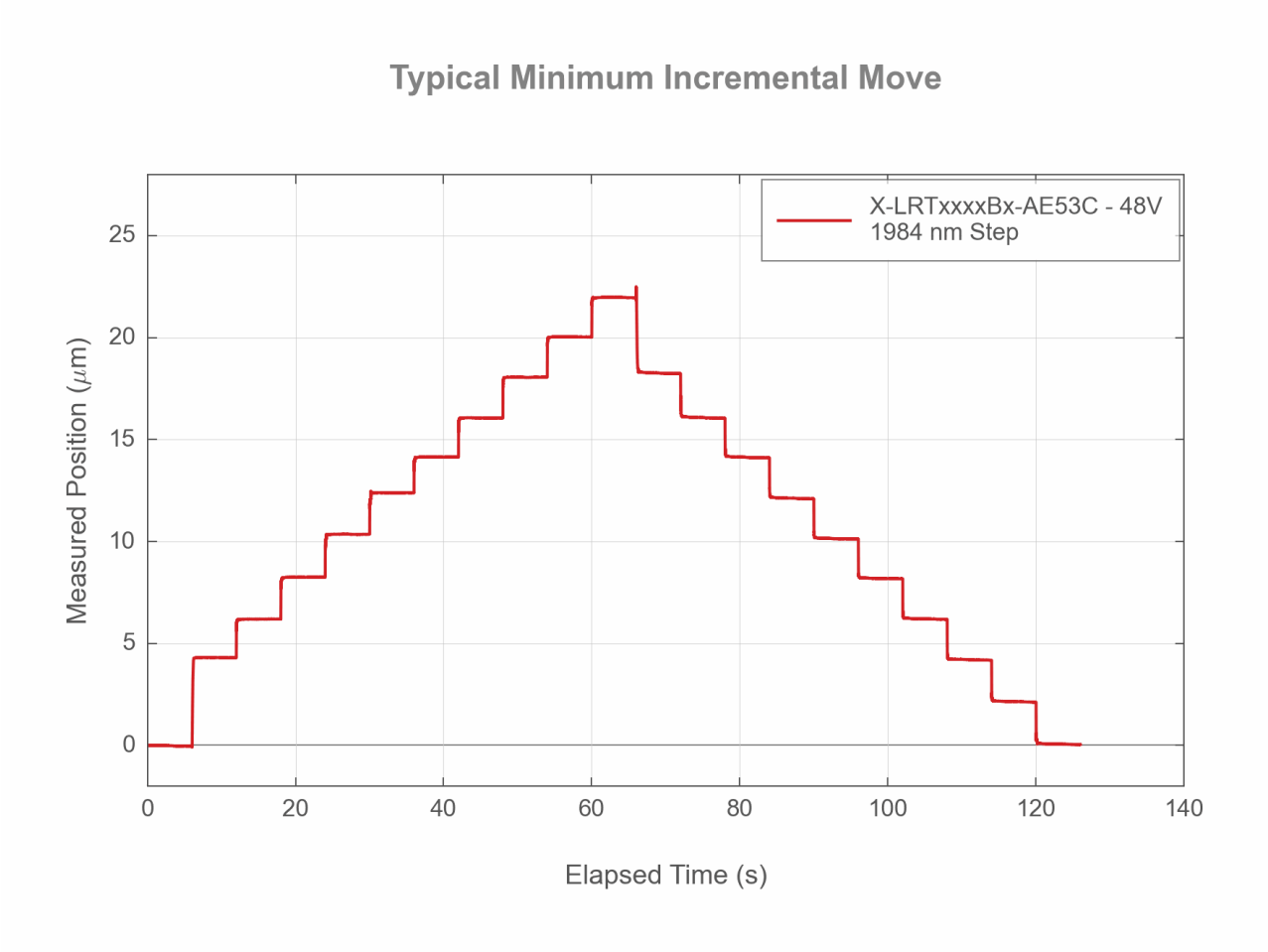
Typical Minimum Incremental Move



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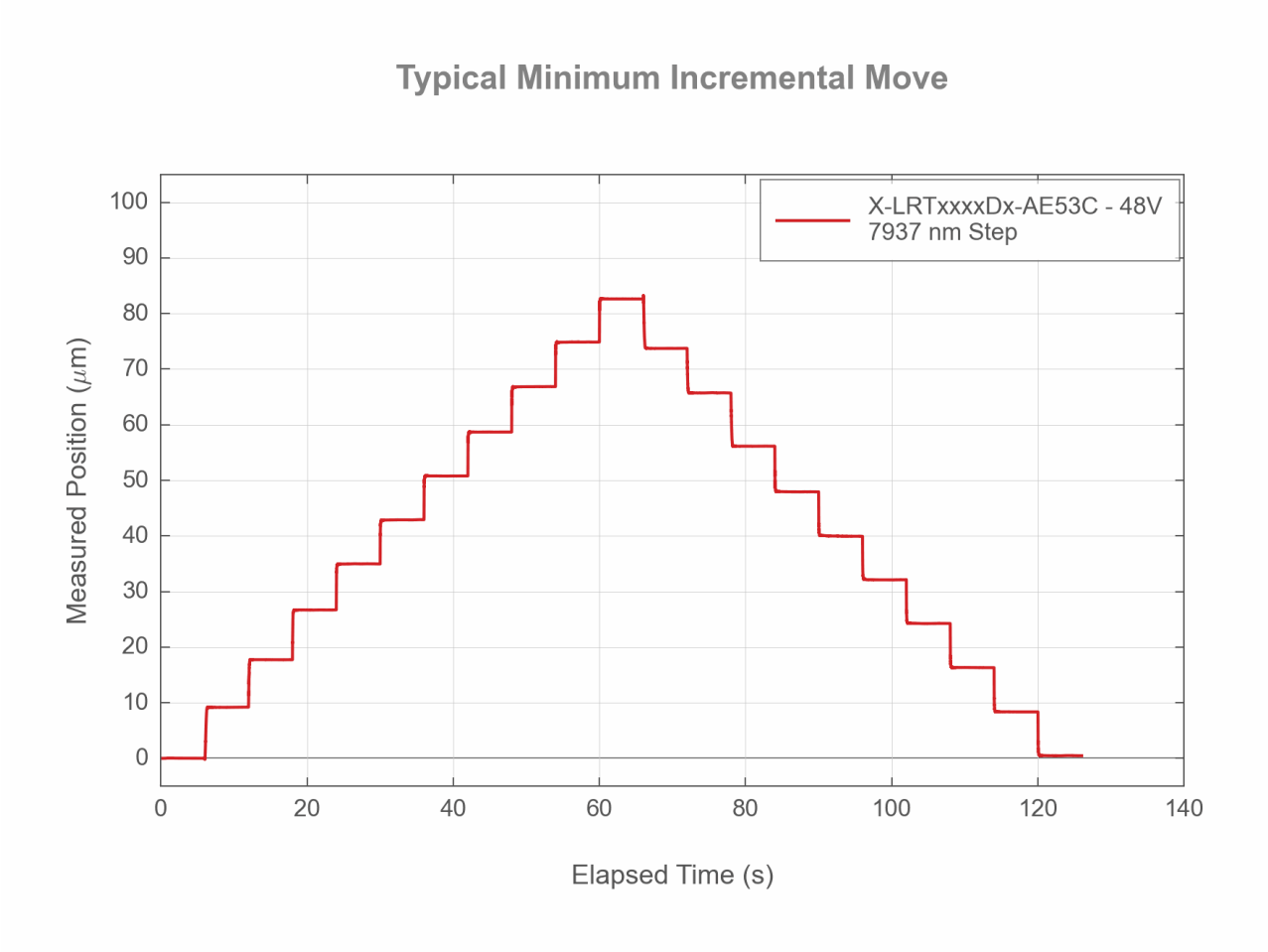
Typical Minimum Incremental Move



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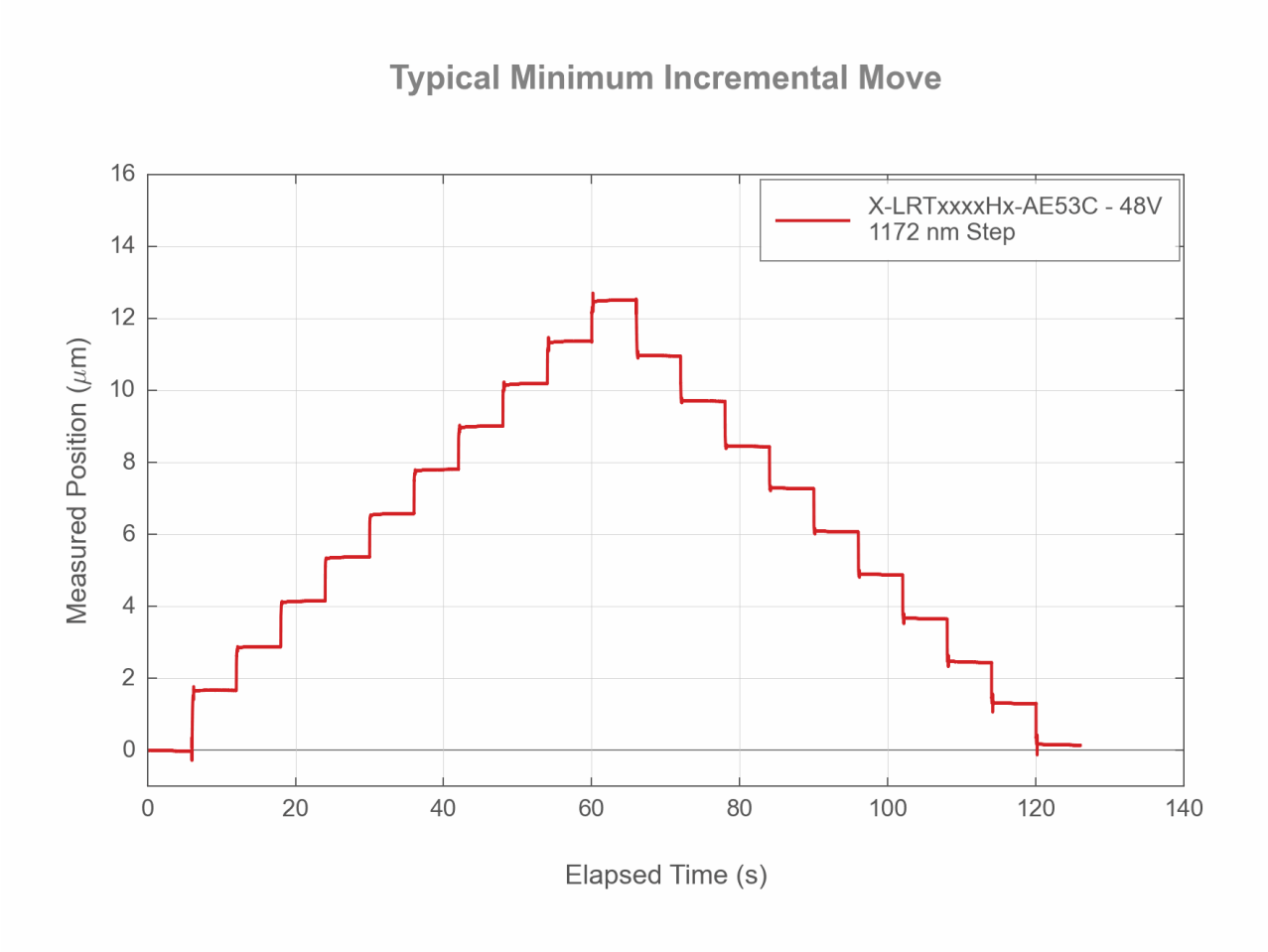
Typical Minimum Incremental Move



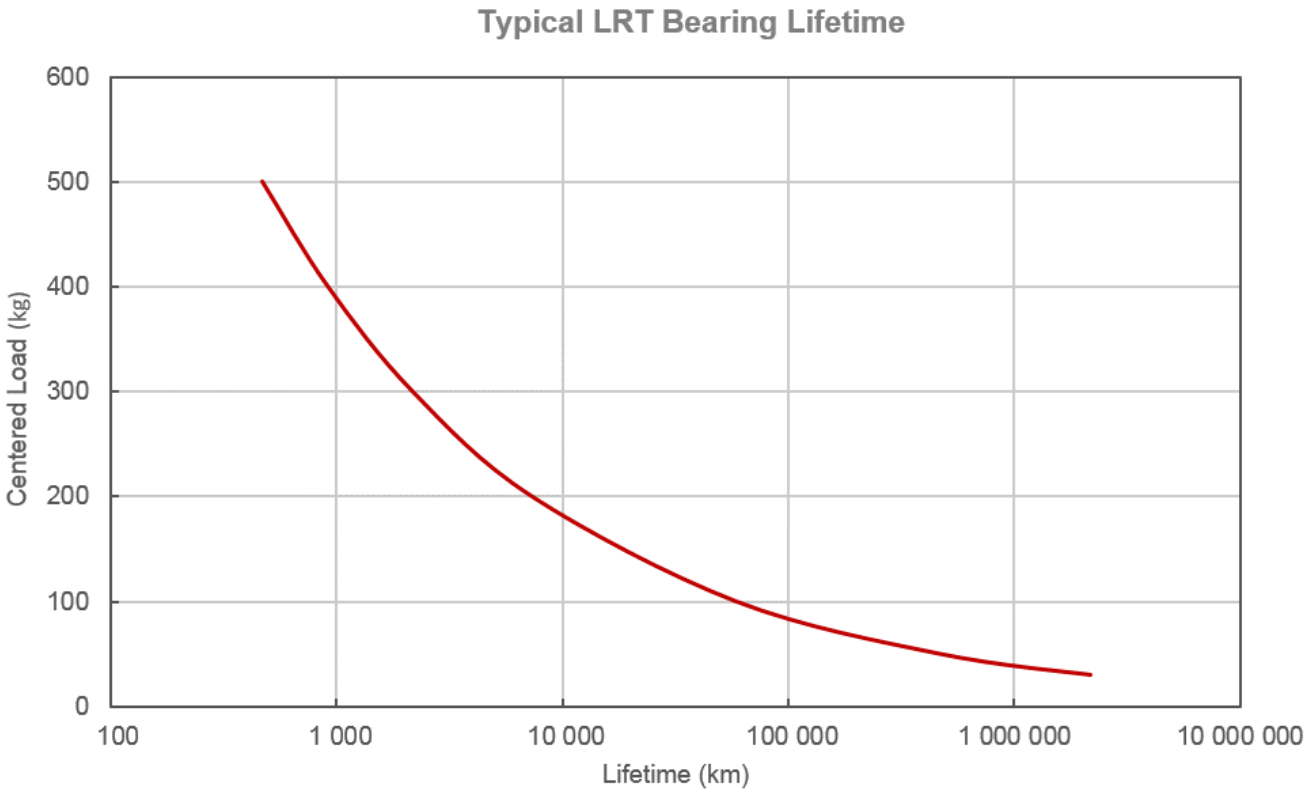
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Typical Minimum Incremental Move



LRT LIFETIME



Contact

Email: contact@zaber.com

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X-LRT-EC Series Datasheet



- 100, 250, 500, 750, 1000, 1500 mm travel
- Up to 700 mm/s speed and up to 1200 N thrust
- 300 kg load capacity
- High moment stiffness
- Ball screw and lead screw configurations
- Includes stainless steel dust covers
- Optional integrated power-off brake for vertical applications
- Built-in, 400 CPR, motor encoder provides slip/stall detection and recovery
- Built-in controller; daisy-chains with other Zaber products

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X-LRT-EC Series Overview

Zaber's X-LRT-EC Series devices are computer-controlled, motorized linear stages with high torsional stiffness, load capacity, and long lifetime. They have low pitch, roll, yaw, and runout. A flexible stainless steel dust cover prevents the ingress of small objects. They are stand-alone units requiring only a standard 24 V or 48 V power supply. The built-in motor encoder allows closed-loop operation and slip/stall recovery features. An indexed knob provides convenient manual control for versatile operation even without a computer. An optional power-off brake is available to enable vertical applications with backdrivable screws.

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 units.

Like all of Zaber's products, the X-LRT-EC Series is designed to be 'plug and play' and very easy to set up and operate. These stages can easily be mounted in XY or XYZ configurations with an angle bracket.

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

X-LRT-EC Series Part Numbering & Options

X-LRT 0100 A L - _ E08 C

Travel
- **0100** — 100 mm
- **0250** — 250 mm
- **…**
- **1000** — 1000 mm
- **1500** — 1500 mm

Drive Screw Options
- **A** — Fine pitch lead screw
- **B** — Medium pitch lead screw
- **D** — Coarse pitch lead screw
- **H** — Fine pitch ball screw

Drive Configuration
- **L** — Inline

Brake Option
- **None** — No Brake
- **B** — Brake

Encoder Options
- **E08** — Motor Encoder, 400 CPR

Cover
- **C** — Stainless Steel Dust Cover

X-LRT-EC Series Drawings

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

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X-LRT-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	<10 µm (<0.000394 ")
Straightness of Travel	<50 µm (<0.001968 ")
Pitch Error	0.015 ° (0.262 mrad)
Roll Error	0.02 ° (0.349 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Centered Load	2940 N (659.3 lb)
Maximum Moment (Pitch)	70 N·m (51.7 lb·ft)
Maximum Moment (Roll)	120 N·m (88.56 lb·ft)
Maximum Moment (Yaw)	70 N·m (51.66 lb·ft)
Stiffness (Pitch)	1400 N·m/°

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Stiffness (Roll)	700 N·m/°
Stiffness (Yaw)	1200 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Encoder Resolution	400 CPR (16 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	3000 mA/phase
Motor Winding Inductance	2 mH/phase

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin screw terminal
Maximum Current Draw	3600 mA

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Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide

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-LRT0100AL-E08C	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<4 µm (<0.000157 ")
X-LRT0100BL-BE08C	100 mm (3.937 ")	4.276 kg (9.427 lb)	25 µm (0.000984 ")	<4 µm (<0.000157 ")
X-LRT0100BL-E08C	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<4 µm (<0.000157 ")
X-LRT0100DL-BE08C	100 mm (3.937 ")	4.276 kg (9.427 lb)	25 µm (0.000984 ")	<8 µm (<0.000315 ")
X-LRT0100DL-E08C	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<8 µm (<0.000315 ")
X-LRT0100HL-BE08C	100 mm (3.937 ")	4.276 kg (9.427 lb)	45 µm (0.001772 ")	<4 µm (<0.000157 ")
X-LRT0100HL-E08C	100 mm (3.937 ")	3.65 kg (8.047 lb)	45 µm (0.001772 ")	<4 µm (<0.000157 ")
X-LRT0250AL-E08C	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<4 µm (<0.000157 ")
X-LRT0250BL-BE08C	250 mm (9.843 ")	5.067 kg (11.171 lb)	63 µm (0.00248 ")	<4 µm (<0.000157 ")
X-LRT0250BL-E08C	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<4 µm (<0.000157 ")
X-LRT0250DL-BE08C	250 mm (9.843 ")	5.067 kg (11.171 lb)	63 µm (0.00248 ")	<8 µm (<0.000315 ")

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X-LRT0250DL-E08C	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<8 µm (<0.000315 ")
X-LRT0250HL-BE08C	250 mm (9.843 ")	5.067 kg (11.171 lb)	113 µm (0.004449 ")	<4 µm (<0.000157 ")
X-LRT0250HL-E08C	250 mm (9.843 ")	4.441 kg (9.791 lb)	113 µm (0.004449 ")	<4 µm (<0.000157 ")
X-LRT0500AL-E08C	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<4 µm (<0.000157 ")
X-LRT0500BL-BE08C	500 mm (19.685 ")	6.384 kg (14.074 lb)	125 µm (0.004921 ")	<4 µm (<0.000157 ")
X-LRT0500BL-E08C	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<4 µm (<0.000157 ")
X-LRT0500DL-BE08C	500 mm (19.685 ")	6.384 kg (14.074 lb)	125 µm (0.004921 ")	<8 µm (<0.000315 ")
X-LRT0500DL-E08C	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<8 µm (<0.000315 ")
X-LRT0500HL-BE08C	500 mm (19.685 ")	6.384 kg (14.074 lb)	225 µm (0.008858 ")	<4 µm (<0.000157 ")
X-LRT0500HL-E08C	500 mm (19.685 ")	5.758 kg (12.694 lb)	225 µm (0.008858 ")	<4 µm (<0.000157 ")
X-LRT0750AL-E08C	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<4 µm (<0.000157 ")
X-LRT0750BL-BE08C	750 mm (29.528 ")	7.702 kg (16.98 lb)	188 µm (0.007402 ")	<4 µm (<0.000157 ")
X-LRT0750BL-E08C	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<4 µm (<0.000157 ")
X-LRT0750DL-BE08C	750 mm (29.528 ")	7.702 kg (16.98 lb)	188 µm (0.007402 ")	<8 µm (<0.000315 ")
X-LRT0750DL-E08C	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<8 µm (<0.000315 ")
X-LRT0750HL-BE08C	750 mm (29.528 ")	7.702 kg (16.98 lb)	338 µm (0.013307 ")	<4 µm (<0.000157 ")
X-LRT0750HL-E08C	750 mm (29.528 ")	7.076 kg (15.6 lb)	338 µm (0.013307 ")	<4 µm (<0.000157 ")
X-LRT1000AL-E08C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<4 µm (<0.000157 ")
X-LRT1000BL-BE08C	1000 mm (39.37 ")	9.019 kg (19.883 lb)	250 µm (0.009842 ")	<4 µm (<0.000157 ")
X-LRT1000BL-E08C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<4 µm (<0.000157 ")

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X-LRT1000DL-BE08C	1000 mm (39.37 ")	9.019 kg (19.883 lb)	250 µm (0.009842 ")	<8 µm (<0.000315 ")
X-LRT1000DL-E08C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<8 µm (<0.000315 ")
X-LRT1000HL-BE08C	1000 mm (39.37 ")	9.019 kg (19.883 lb)	450 µm (0.017716 ")	<4 µm (<0.000157 ")
X-LRT1000HL-E08C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	450 µm (0.017716 ")	<4 µm (<0.000157 ")
X-LRT1500AL-E08C	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<4 µm (<0.000157 ")
X-LRT1500BL-BE08C	1500 mm (59.055 ")	11.654 kg (25.693 lb)	375 µm (0.014764 ")	<4 µm (<0.000157 ")
X-LRT1500BL-E08C	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<4 µm (<0.000157 ")
X-LRT1500DL-BE08C	1500 mm (59.055 ")	11.654 kg (25.693 lb)	375 µm (0.014764 ")	<8 µm (<0.000315 ")
X-LRT1500DL-E08C	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<8 µm (<0.000315 ")

Part Number	Backlash	Microstep Size (Default Resolution)	Peak Thrust	Maximum Axial Brake Force
X-LRT0100AL-E08C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
X-LRT0100BL-BE08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)
X-LRT0100BL-E08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
X-LRT0100DL-BE08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
X-LRT0100DL-E08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	
X-LRT0100HL-BE08C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)
X-LRT0100HL-E08C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	
X-LRT0250AL-E08C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
X-LRT0250BL-BE08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)

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X-LRT0250BL-E08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
X-LRT0250DL-BE08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
X-LRT0250DL-E08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	
X-LRT0250HL-BE08C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)
X-LRT0250HL-E08C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	
X-LRT0500AL-E08C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
X-LRT0500BL-BE08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)
X-LRT0500BL-E08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
X-LRT0500DL-BE08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
X-LRT0500DL-E08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	
X-LRT0500HL-BE08C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)
X-LRT0500HL-E08C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	
X-LRT0750AL-E08C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
X-LRT0750BL-BE08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)
X-LRT0750BL-E08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
X-LRT0750DL-BE08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
X-LRT0750DL-E08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	
X-LRT0750HL-BE08C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)
X-LRT0750HL-E08C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	
X-LRT1000AL-E08C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	

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X-LRT1000BL-BE08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)
X-LRT1000BL-E08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
X-LRT1000DL-BE08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
X-LRT1000DL-E08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	
X-LRT1000HL-BE08C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)
X-LRT1000HL-E08C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	
X-LRT1500AL-E08C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
X-LRT1500BL-BE08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)
X-LRT1500BL-E08C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
X-LRT1500DL-BE08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
X-LRT1500DL-E08C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	

Part Number	Maximum Continuous Thrust	Back-driving Force*	Maximum Speed	Minimum Speed
X-LRT0100AL-E08C	1200 N (269.1 lb)	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0100BL-BE08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0100BL-E08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0100DL-BE08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0100DL-E08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0100HL-BE08C	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0100HL-E08C	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)

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X-LRT0250AL-E08C	1200 N (269.1 lb)	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0250BL-BE08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0250BL-E08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0250DL-BE08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0250DL-E08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0250HL-BE08C	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0250HL-E08C	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0500AL-E08C	1200 N (269.1 lb)	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0500BL-BE08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0500BL-E08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0500DL-BE08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0500DL-E08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0500HL-BE08C	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0500HL-E08C	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0750AL-E08C	1200 N (269.1 lb)	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0750BL-BE08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0750BL-E08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0750DL-BE08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0750DL-E08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0750HL-BE08C	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	150 mm/s (5.905 "/s)	0.000239 mm/s (0.000009 "/s)

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X-LRT0750HL-E08C	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	150 mm/s (5.905 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT1000AL-E08C	1200 N (269.1 lb)	Non-back-driving	28 mm/s (1.102 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT1000BL-BE08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	120 mm/s (4.724 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT1000BL-E08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	120 mm/s (4.724 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT1000DL-BE08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	500 mm/s (19.685 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT1000DL-E08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	500 mm/s (19.685 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT1000HL-BE08C	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	95 mm/s (3.74 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT1000HL-E08C	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	95 mm/s (3.74 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT1500AL-E08C	1200 N (269.1 lb)	Non-back-driving	13 mm/s (0.512 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT1500BL-BE08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	55 mm/s (2.165 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT1500BL-E08C	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	55 mm/s (2.165 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT1500DL-BE08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	225 mm/s (8.858 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT1500DL-E08C	180 N (40.4 lb)	40 (± 30%) N (9 lb)	225 mm/s (8.858 "/s)	0.001212 mm/s (0.000048 "/s)

Part Number	Speed Resolution	Linear Motion Per Motor Rev	Mechanical Drive System
X-LRT0100AL-E08C	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0100BL-BE08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT0100BL-E08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT0100DL-BE08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw
X-LRT0100DL-E08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw

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X-LRT0100HL-BE08C	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	Precision ball screw
X-LRT0100HL-E08C	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	Precision ball screw
X-LRT0250AL-E08C	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0250BL-BE08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT0250BL-E08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT0250DL-BE08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw
X-LRT0250DL-E08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw
X-LRT0250HL-BE08C	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	Precision ball screw
X-LRT0250HL-E08C	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	Precision ball screw
X-LRT0500AL-E08C	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0500BL-BE08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT0500BL-E08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT0500DL-BE08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw
X-LRT0500DL-E08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw
X-LRT0500HL-BE08C	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	Precision ball screw
X-LRT0500HL-E08C	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	Precision ball screw
X-LRT0750AL-E08C	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0750BL-BE08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT0750BL-E08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT0750DL-BE08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw

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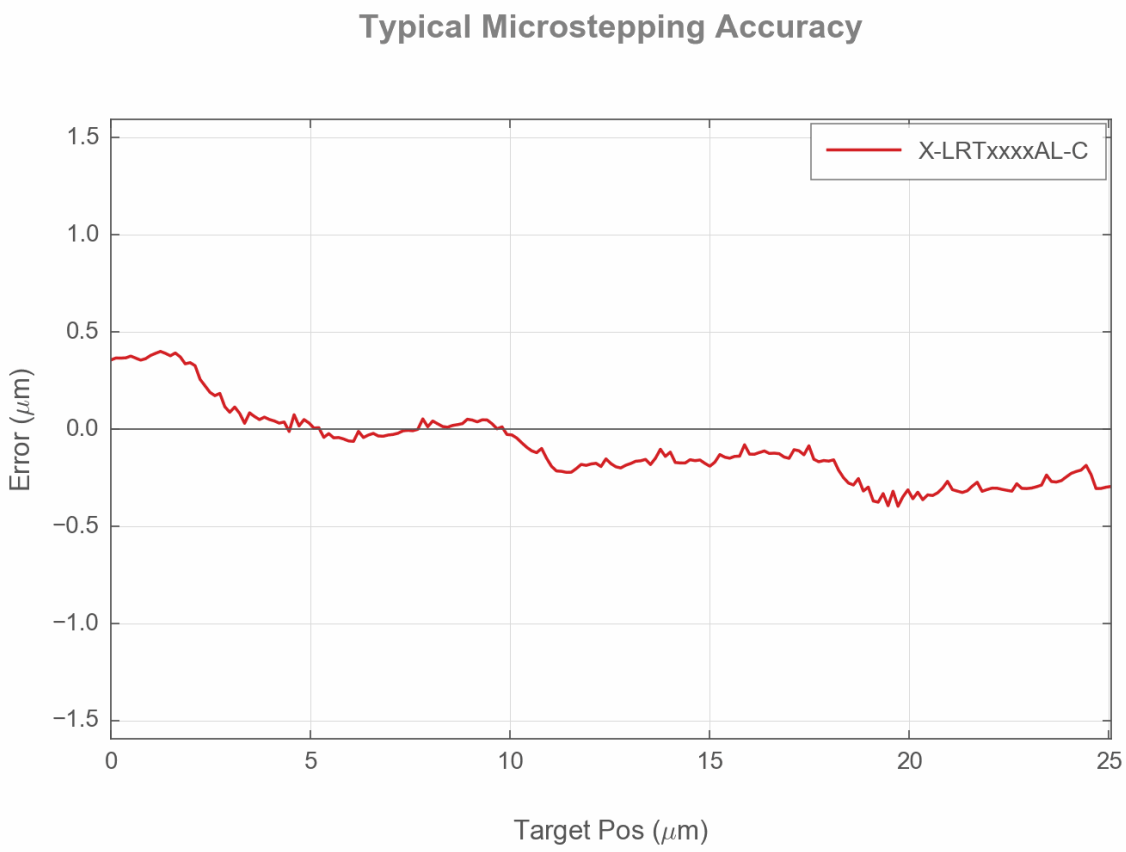
X-LRT0750DL-E08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw
X-LRT0750HL-BE08C	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	Precision ball screw
X-LRT0750HL-E08C	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	Precision ball screw
X-LRT1000AL-E08C	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	Precision lead screw
X-LRT1000BL-BE08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT1000BL-E08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT1000DL-BE08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw
X-LRT1000DL-E08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw
X-LRT1000HL-BE08C	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	Precision ball screw
X-LRT1000HL-E08C	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	Precision ball screw
X-LRT1500AL-E08C	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	Precision lead screw
X-LRT1500BL-BE08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT1500BL-E08C	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	Precision lead screw
X-LRT1500DL-BE08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw
X-LRT1500DL-E08C	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	Precision lead screw

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X-LRT-EC Series Charts

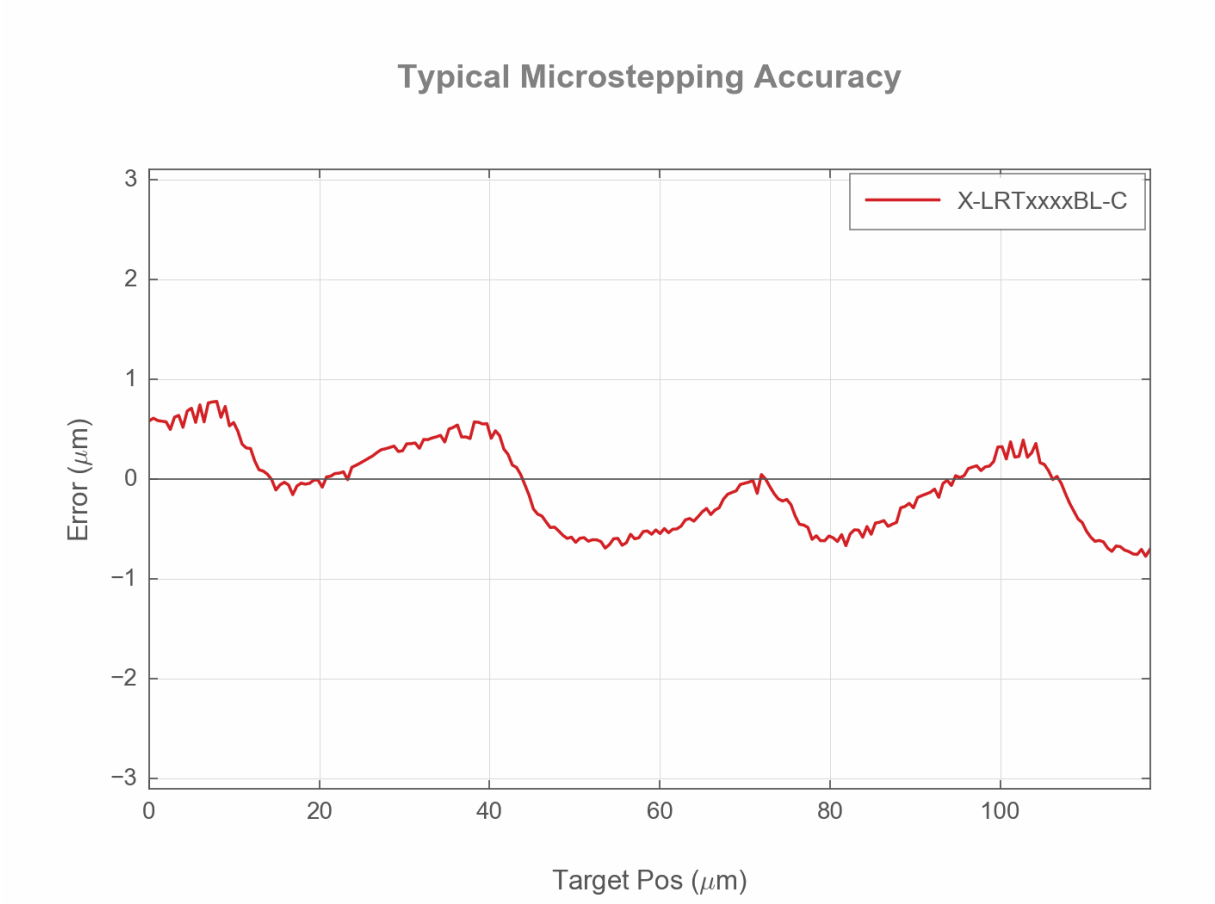
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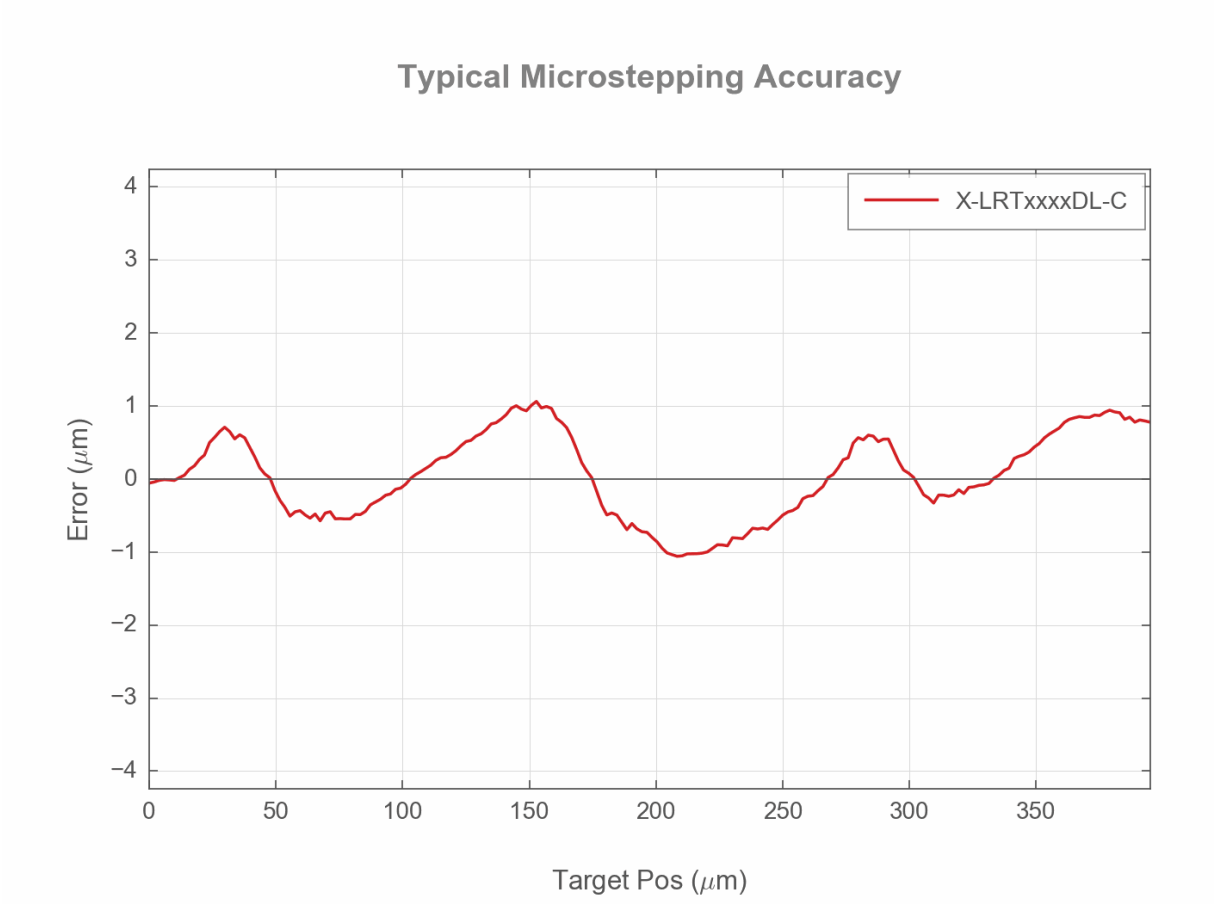
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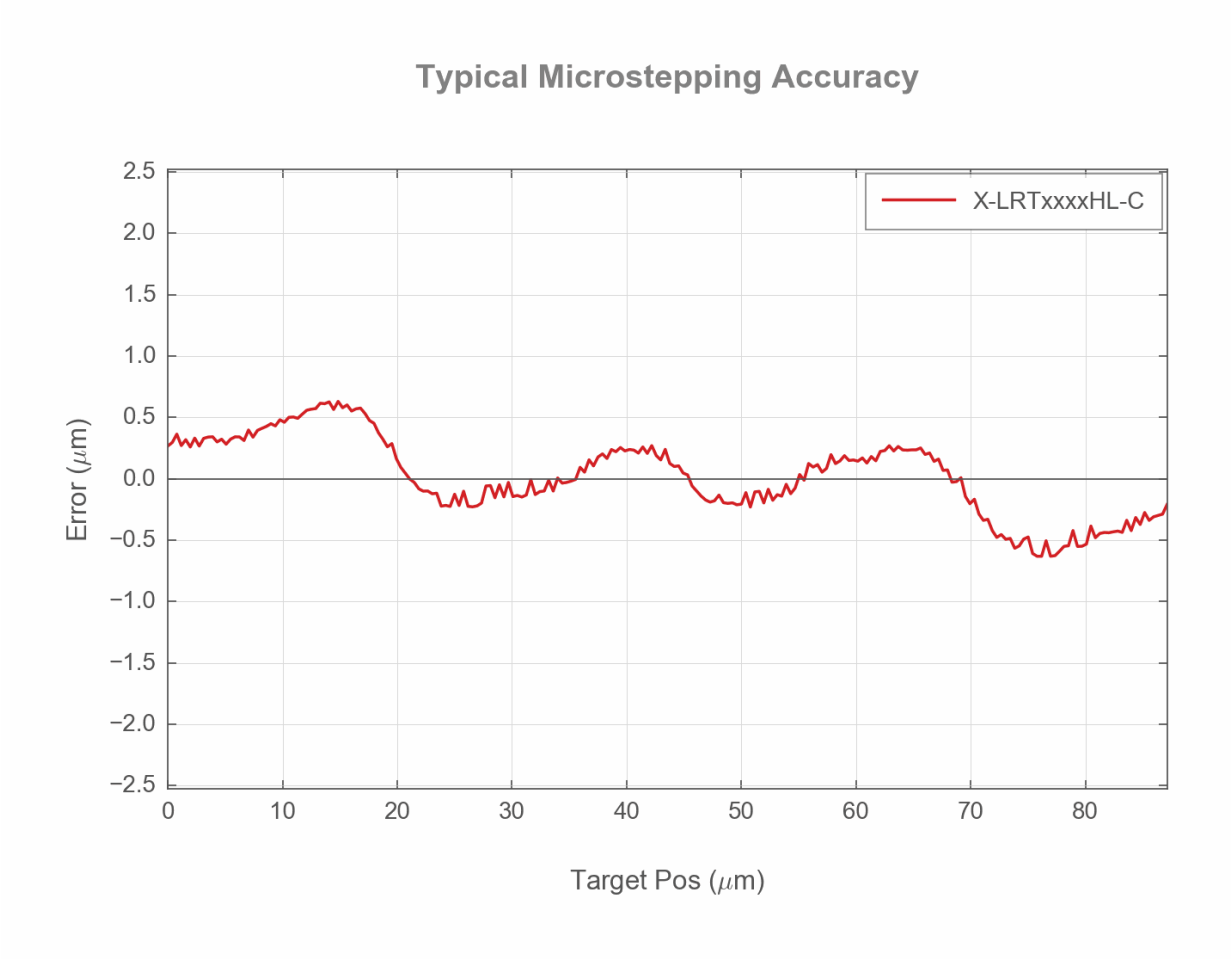
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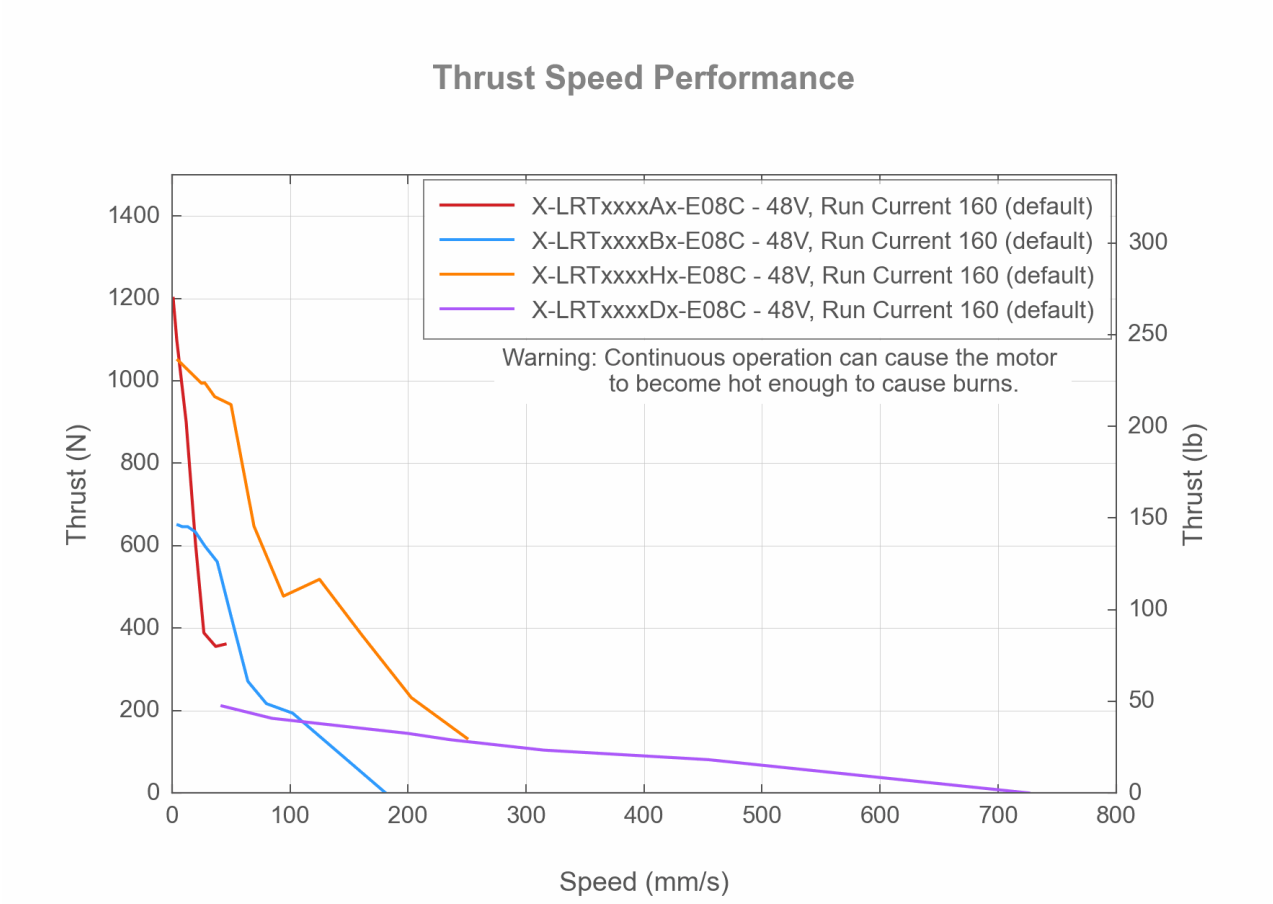
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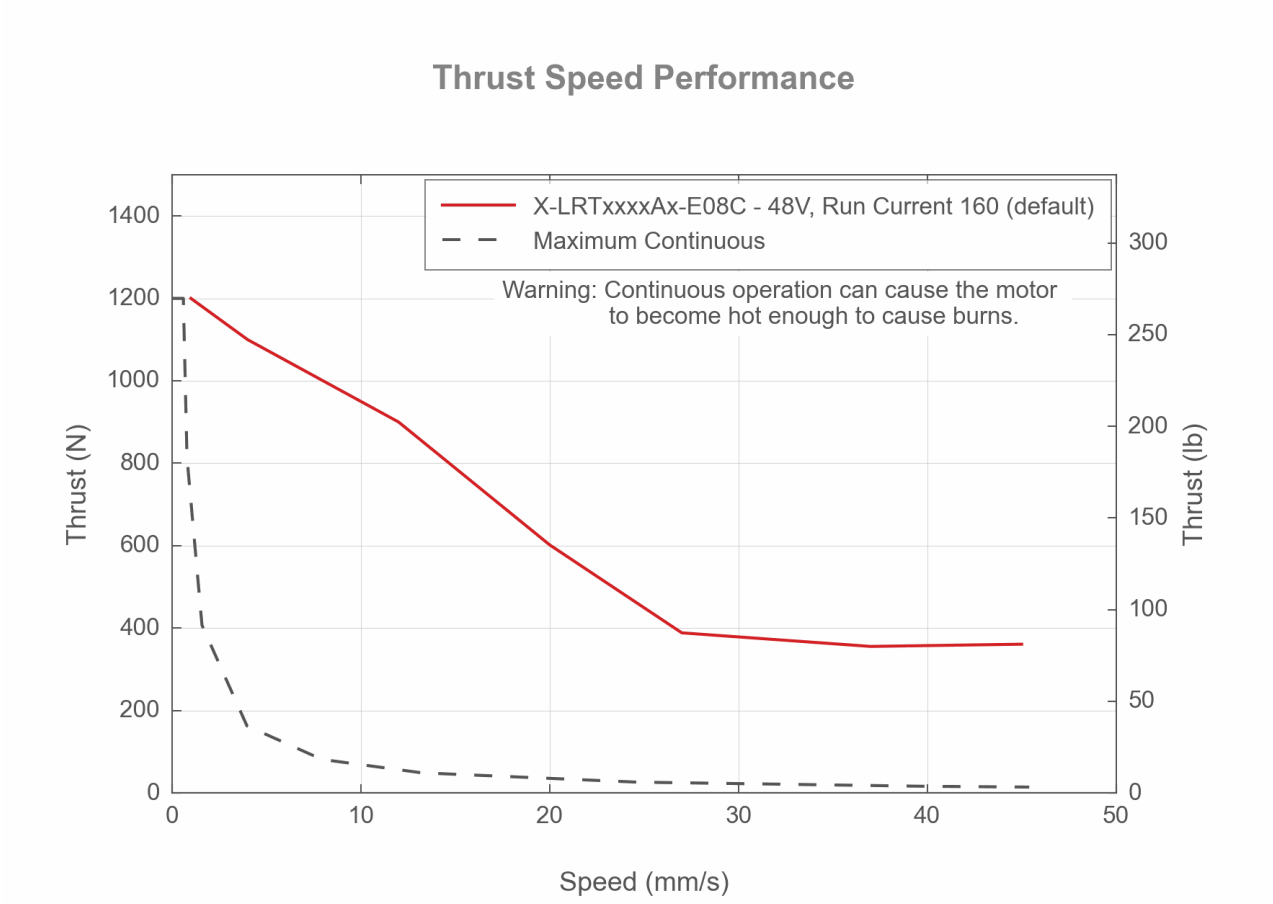
Thrust Speed Performance



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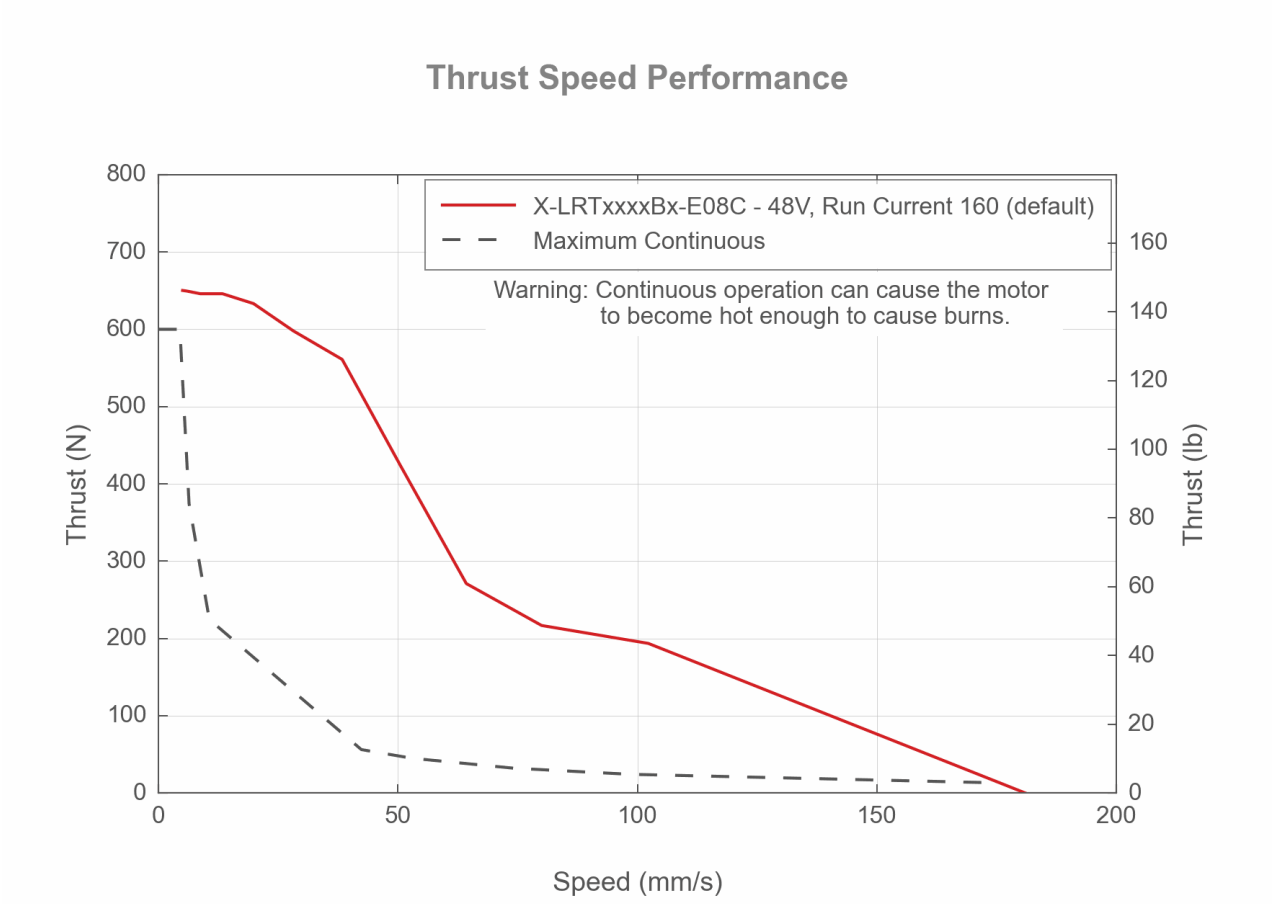
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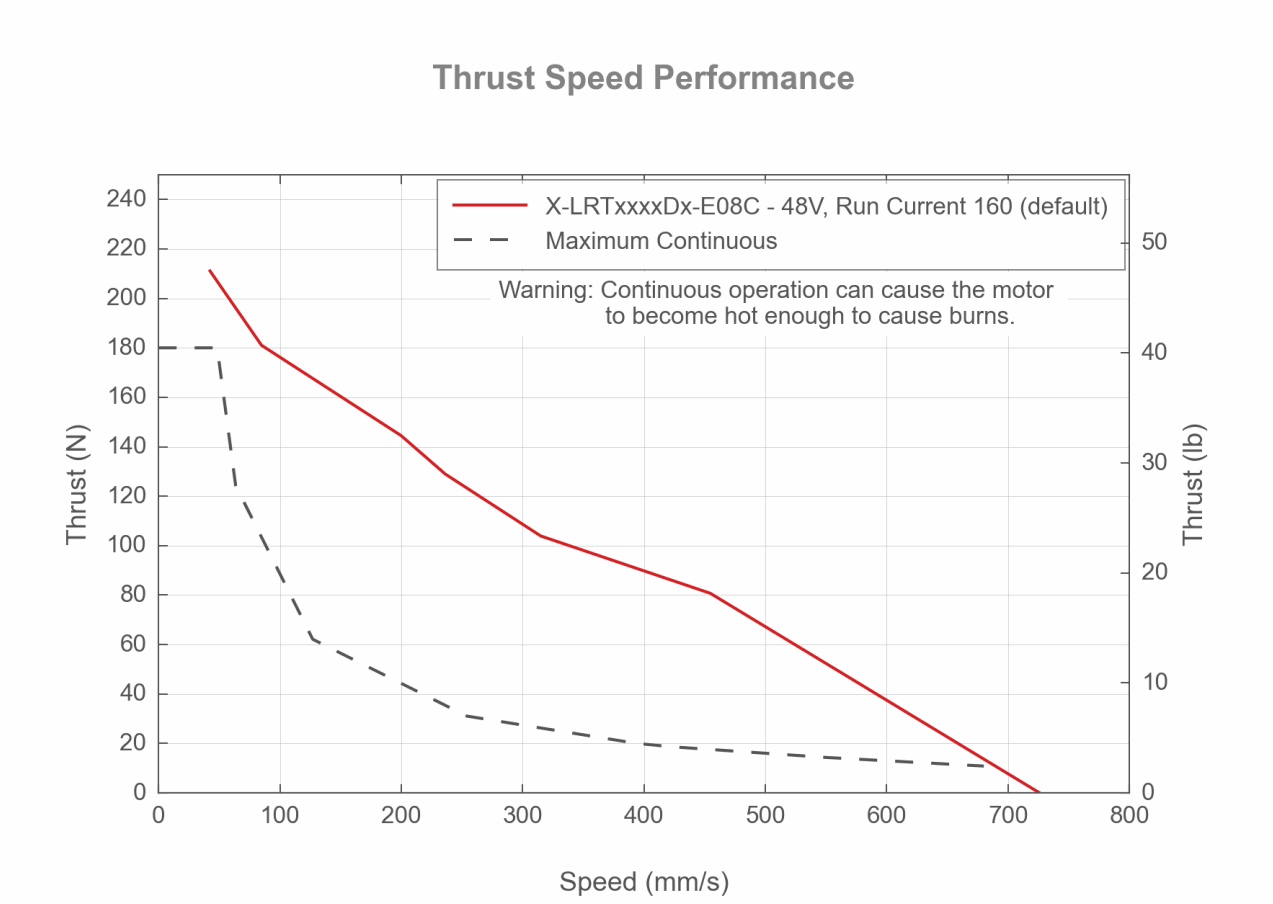
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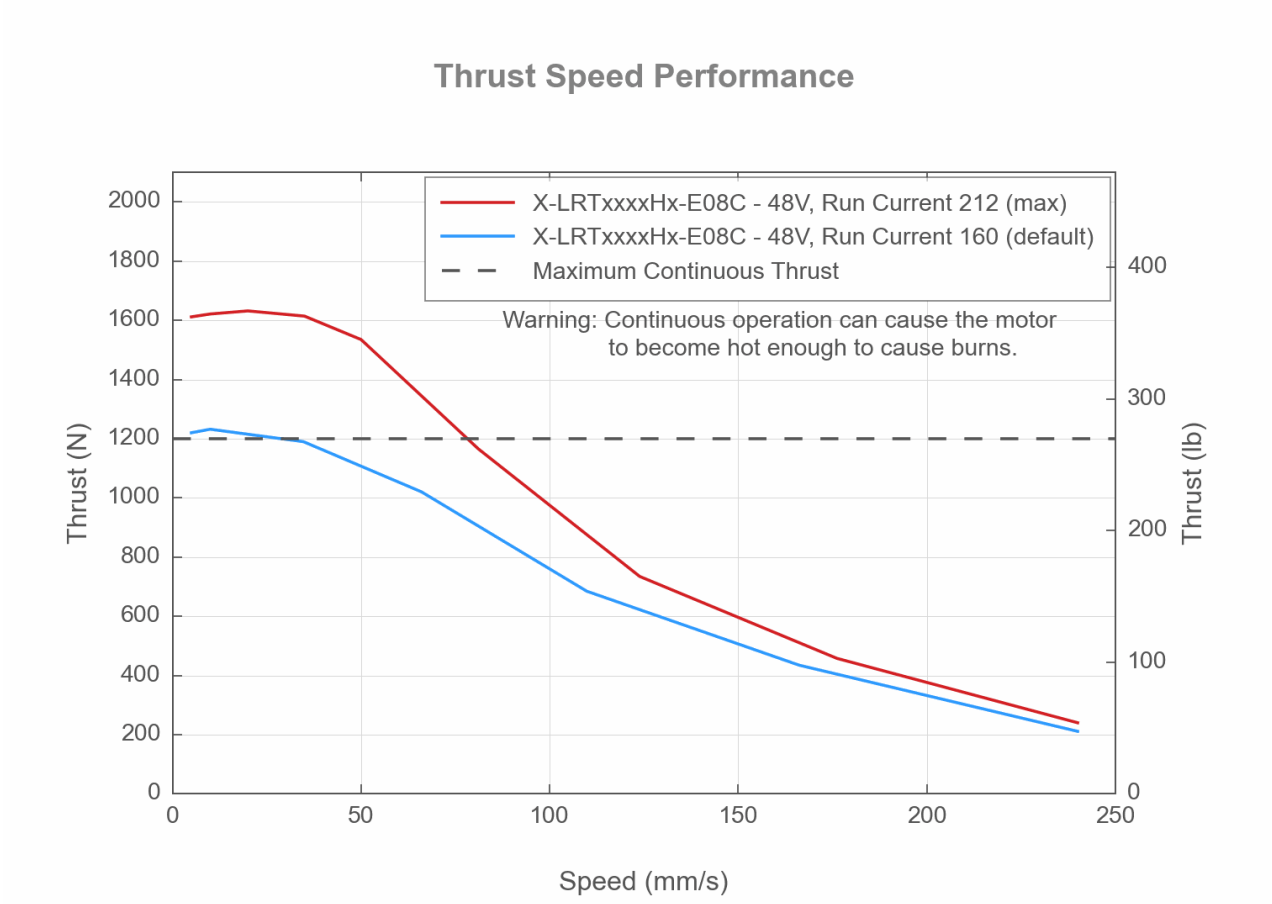
Thrust Speed Performance



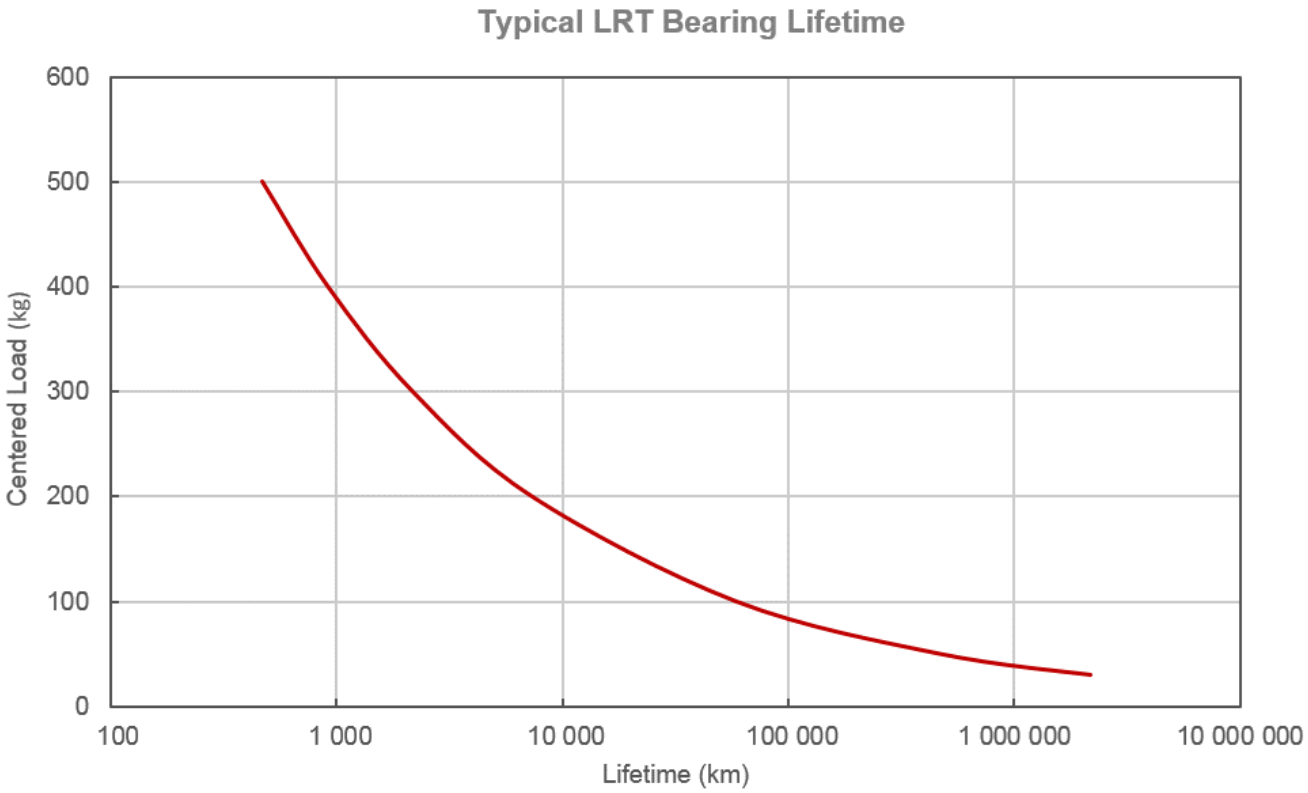
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Thrust Speed Performance



LRT Lifetime



Contact

Email: contact@zaber.com

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X-LRT-C Series Datasheet



- 100, 250, 500, 750, 1000, 1500 mm travel
- Up to 700 mm/s speed and up to 1200 N thrust
- 300 kg load capacity
- High moment stiffness
- Includes stainless steel dust covers
- Ball screw and lead screw configurations
- Built-in controller; daisy-chains with other Zaber products

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X-LRT-C Series Overview

Zaber's X-LRT-C Series devices have high torsional stiffness, load capacity, and long lifetime. They have low pitch, roll, yaw, and runout. A flexible stainless steel dust cover prevents the ingress of small objects. They are stand-alone units requiring only a standard 24 V or 48 V power supply. An indexed knob provides convenient manual control for versatile operation even without a computer.

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 units.

Like all of Zaber's products, the X-LRT-C Series is designed to be 'plug and play' and very easy to set up and operate. These stages can easily be mounted in XY or XYZ configurations with an angle bracket.

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

X-LRT-C Series Part Numbering & Options

X-LRT 0100 A L - C

Travel	Drive Screw Options	Drive Configuration	Cover
0100 — 100 mm **0250** — 250 mm **...** **1000** — 1000 mm **1500** — 1500 mm	**A** — Fine pitch lead screw **B** — Medium pitch lead screw **D** — Coarse pitch lead screw **H** — Fine pitch ball screw	**L** — Inline	**C** — Stainless Steel Dust Cover

X-LRT-C Series Drawings

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

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X-LRT-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	<10 µm (<0.000394 ")
Straightness of Travel	<50 µm (<0.001968 ")
Pitch Error	0.015 ° (0.262 mrad)
Roll Error	0.02 ° (0.349 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Centered Load	2940 N (659.3 lb)
Maximum Moment (Pitch)	70 N·m (51.7 lb·ft)
Maximum Moment (Roll)	120 N·m (88.56 lb·ft)
Maximum Moment (Yaw)	70 N·m (51.66 lb·ft)
Stiffness (Pitch)	1400 N·m/°

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Stiffness (Roll)	700 N·m/°
Stiffness (Yaw)	1200 N·m/°

Encoder & Sensing

Specification	Value
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	3000 mA/phase
Motor Winding Inductance	2 mH/phase

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin screw terminal
Maximum Current Draw	3600 mA

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide

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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-LRT0100AL-C	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<4 µm (<0.000157 ")
X-LRT0100BL-C	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<4 µm (<0.000157 ")
X-LRT0100DL-C	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<8 µm (<0.000315 ")
X-LRT0100HL-C	100 mm (3.937 ")	3.65 kg (8.047 lb)	45 µm (0.001772 ")	<4 µm (<0.000157 ")
X-LRT0250AL-C	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<4 µm (<0.000157 ")
X-LRT0250BL-C	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<4 µm (<0.000157 ")
X-LRT0250DL-C	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<8 µm (<0.000315 ")
X-LRT0250HL-C	250 mm (9.843 ")	4.441 kg (9.791 lb)	113 µm (0.004449 ")	<4 µm (<0.000157 ")
X-LRT0500AL-C	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<4 µm (<0.000157 ")
X-LRT0500BL-C	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<4 µm (<0.000157 ")
X-LRT0500DL-C	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<8 µm (<0.000315 ")
X-LRT0500HL-C	500 mm (19.685 ")	5.758 kg (12.694 lb)	225 µm (0.008858 ")	<4 µm (<0.000157 ")
X-LRT0750AL-C	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<4 µm (<0.000157 ")
X-LRT0750BL-C	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<4 µm (<0.000157 ")

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X-LRT0750DL-C	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<8 µm (<0.000315 ")
X-LRT0750HL-C	750 mm (29.528 ")	7.076 kg (15.6 lb)	338 µm (0.013307 ")	<4 µm (<0.000157 ")
X-LRT1000AL-C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<4 µm (<0.000157 ")
X-LRT1000BL-C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<4 µm (<0.000157 ")
X-LRT1000DL-C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<8 µm (<0.000315 ")
X-LRT1000HL-C	1000 mm (39.37 ")	8.393 kg (18.503 lb)	450 µm (0.017716 ")	<4 µm (<0.000157 ")
X-LRT1500AL-C	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<4 µm (<0.000157 ")
X-LRT1500BL-C	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<4 µm (<0.000157 ")
X-LRT1500DL-C	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<8 µm (<0.000315 ")

Part Number	Backlash	Microstep Size (Default Resolution)	Peak Thrust	Maximum Continuous Thrust
X-LRT0100AL-C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
X-LRT0100BL-C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
X-LRT0100DL-C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)
X-LRT0100HL-C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
X-LRT0250AL-C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
X-LRT0250BL-C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
X-LRT0250DL-C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)
X-LRT0250HL-C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
X-LRT0500AL-C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)

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X-LRT0500BL-C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
X-LRT0500DL-C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)
X-LRT0500HL-C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
X-LRT0750AL-C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
X-LRT0750BL-C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
X-LRT0750DL-C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)
X-LRT0750HL-C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
X-LRT1000AL-C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
X-LRT1000BL-C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
X-LRT1000DL-C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)
X-LRT1000HL-C	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
X-LRT1500AL-C	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
X-LRT1500BL-C	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
X-LRT1500DL-C	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)

Part Number	Back-driving Force*	Maximum Speed	Minimum Speed	Speed Resolution
X-LRT0100AL-C	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0100BL-C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0100DL-C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0100HL-C	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)

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X-LRT0250AL-C	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0250BL-C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0250DL-C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0250HL-C	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0500AL-C	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0500BL-C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0500DL-C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0500HL-C	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT0750AL-C	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT0750BL-C	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT0750DL-C	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT0750HL-C	157 (± 30%) N (35.2 lb)	150 mm/s (5.905 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT1000AL-C	Non-back-driving	28 mm/s (1.102 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT1000BL-C	420 (± 30%) N (94.2 lb)	120 mm/s (4.724 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT1000DL-C	40 (± 30%) N (9 lb)	500 mm/s (19.685 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
X-LRT1000HL-C	157 (± 30%) N (35.2 lb)	95 mm/s (3.74 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
X-LRT1500AL-C	Non-back-driving	13 mm/s (0.512 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
X-LRT1500BL-C	420 (± 30%) N (94.2 lb)	55 mm/s (2.165 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
X-LRT1500DL-C	40 (± 30%) N (9 lb)	225 mm/s (8.858 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)

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Part Number	Linear Motion Per Motor Rev	Mechanical Drive System
X-LRT0100AL-C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0100BL-C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0100DL-C	25.4 mm (1 ")	Precision lead screw
X-LRT0100HL-C	5 mm (0.197 ")	Precision ball screw
X-LRT0250AL-C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0250BL-C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0250DL-C	25.4 mm (1 ")	Precision lead screw
X-LRT0250HL-C	5 mm (0.197 ")	Precision ball screw
X-LRT0500AL-C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0500BL-C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0500DL-C	25.4 mm (1 ")	Precision lead screw
X-LRT0500HL-C	5 mm (0.197 ")	Precision ball screw
X-LRT0750AL-C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT0750BL-C	6.35 mm (0.25 ")	Precision lead screw
X-LRT0750DL-C	25.4 mm (1 ")	Precision lead screw
X-LRT0750HL-C	5 mm (0.197 ")	Precision ball screw
X-LRT1000AL-C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT1000BL-C	6.35 mm (0.25 ")	Precision lead screw
X-LRT1000DL-C	25.4 mm (1 ")	Precision lead screw
X-LRT1000HL-C	5 mm (0.197 ")	Precision ball screw

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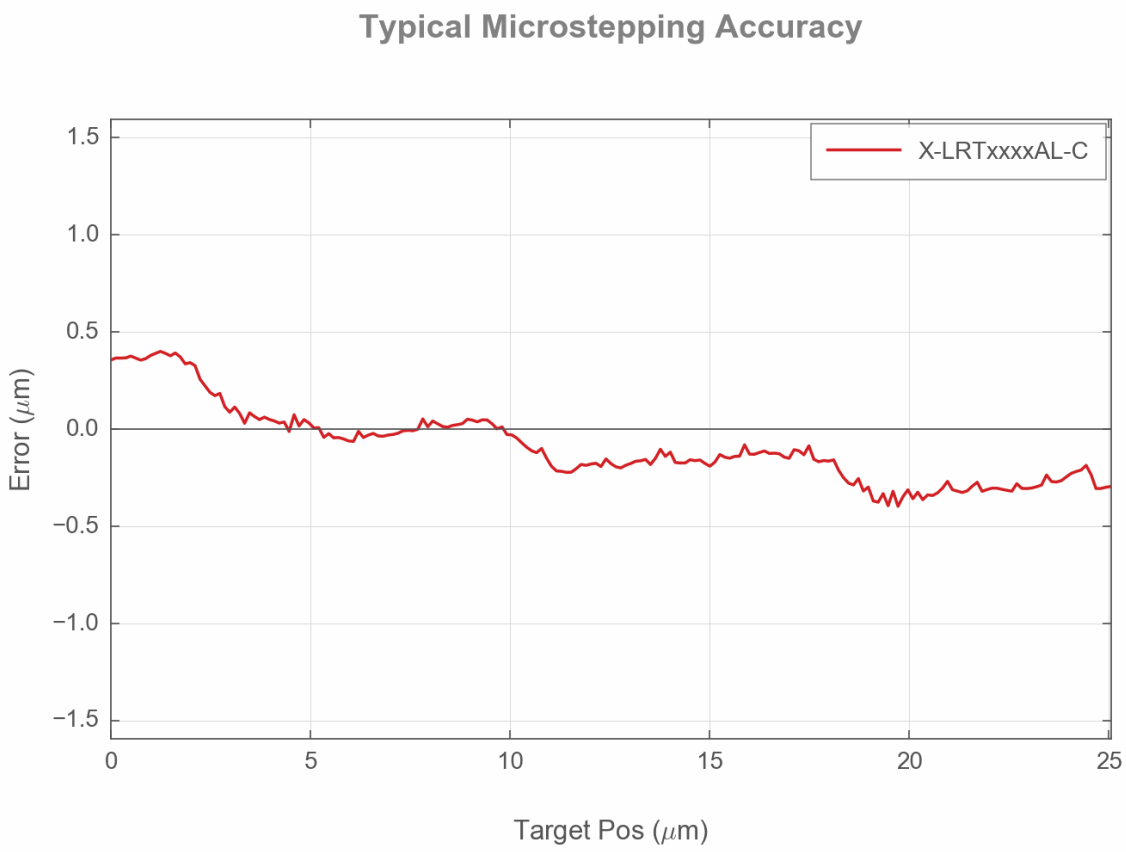
X-LRT1500AL-C	1.5875 mm (0.062 ")	Precision lead screw
X-LRT1500BL-C	6.35 mm (0.25 ")	Precision lead screw
X-LRT1500DL-C	25.4 mm (1 ")	Precision lead screw

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X-LRT-C Series Charts

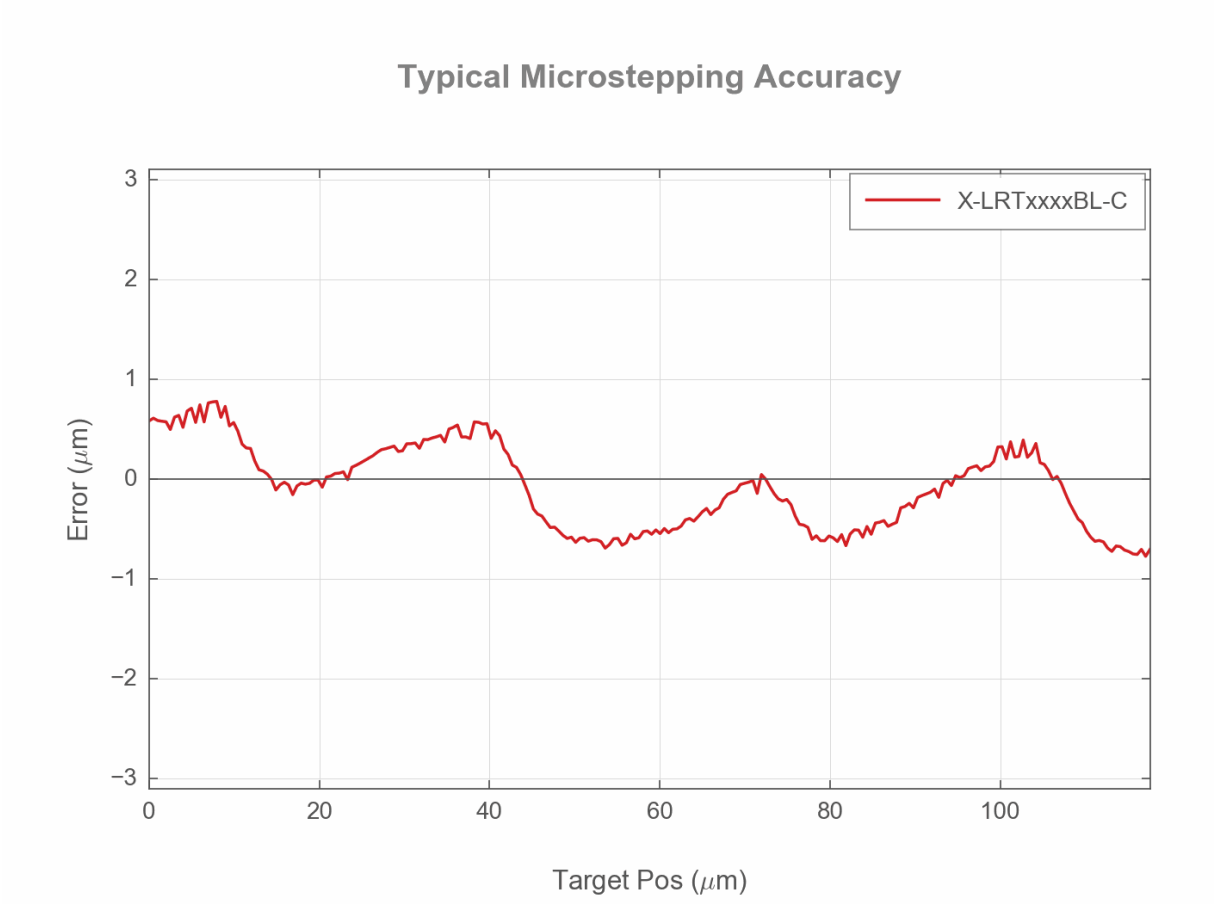
LRT0250AL C MICROSTEP ACCURACY



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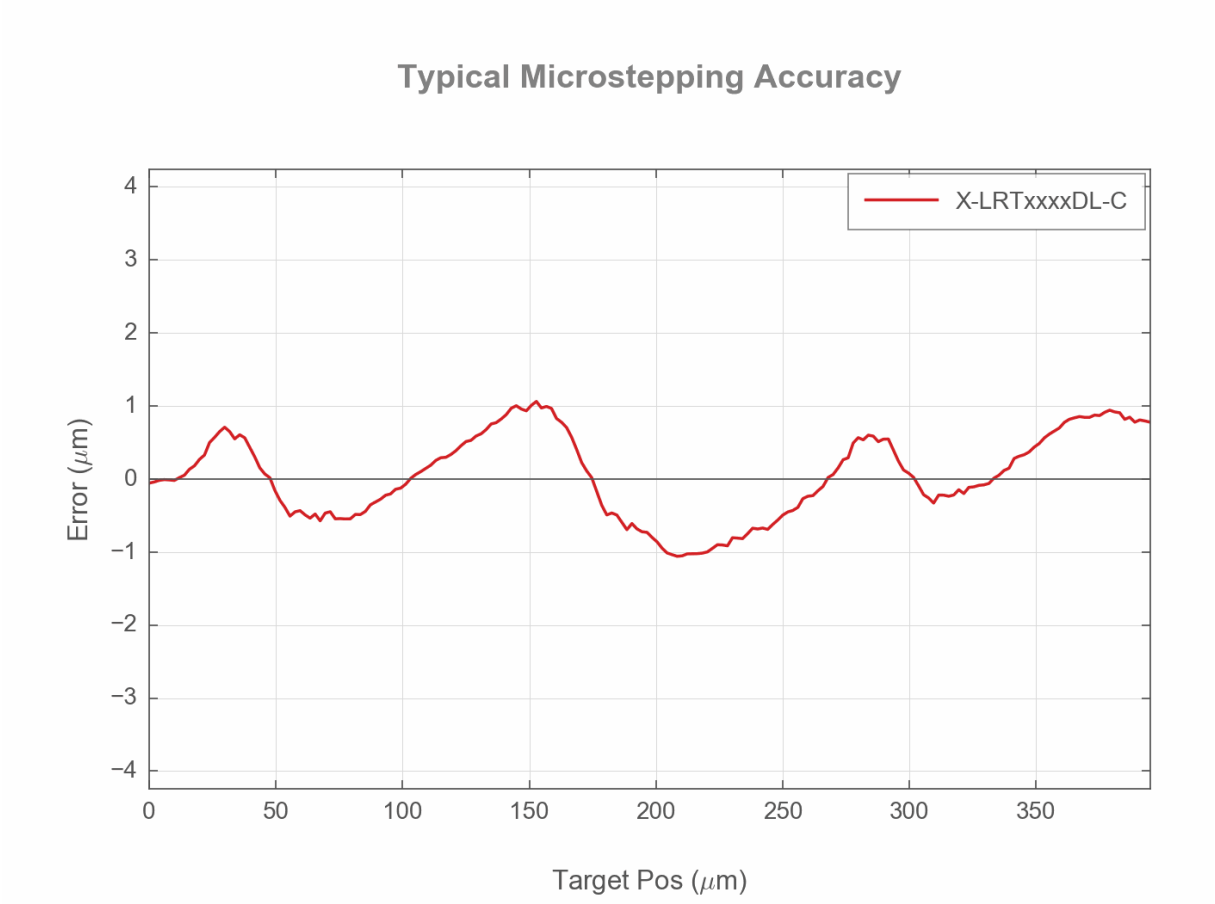
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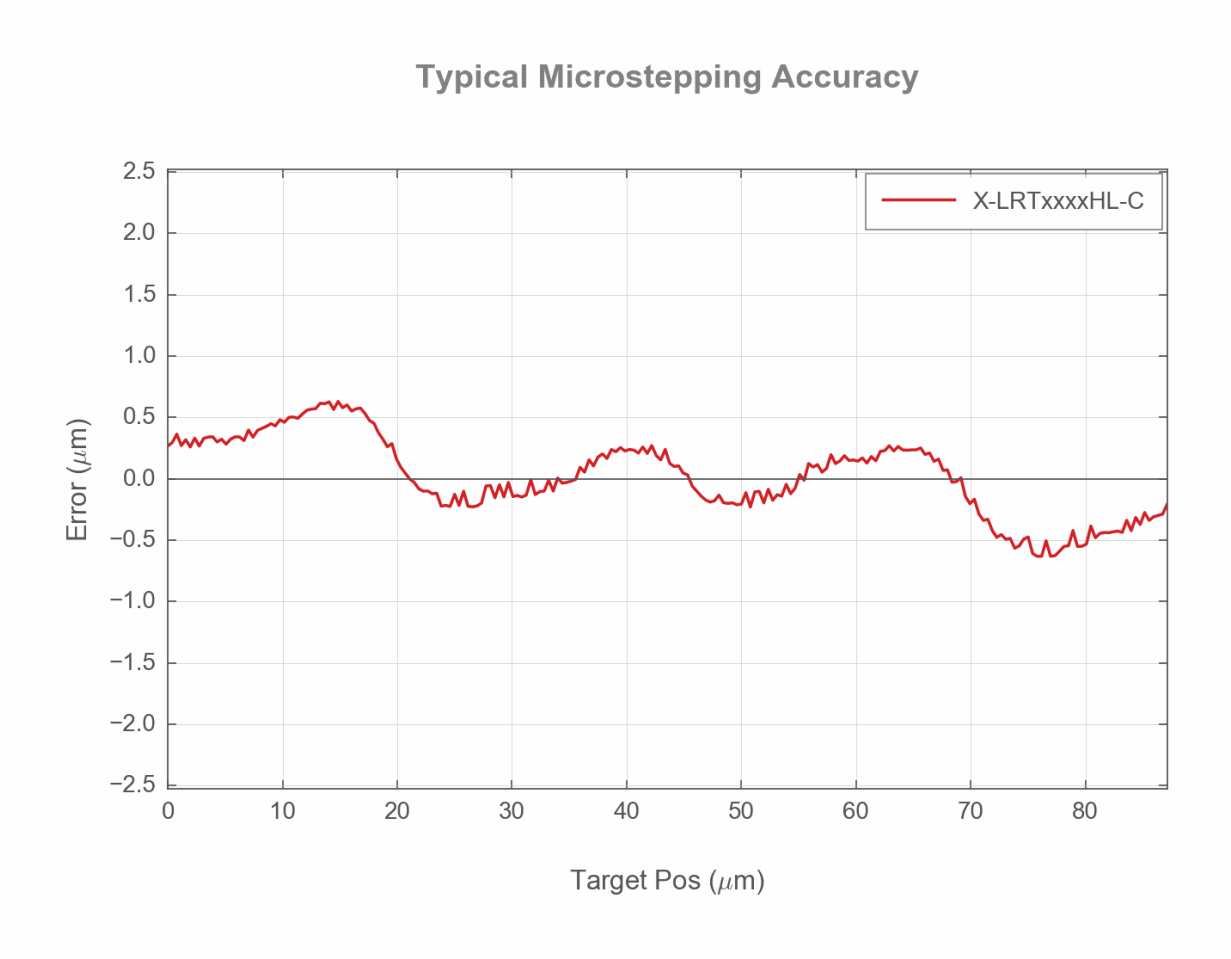
LRT1000DL C MICROSTEP ACCURACY



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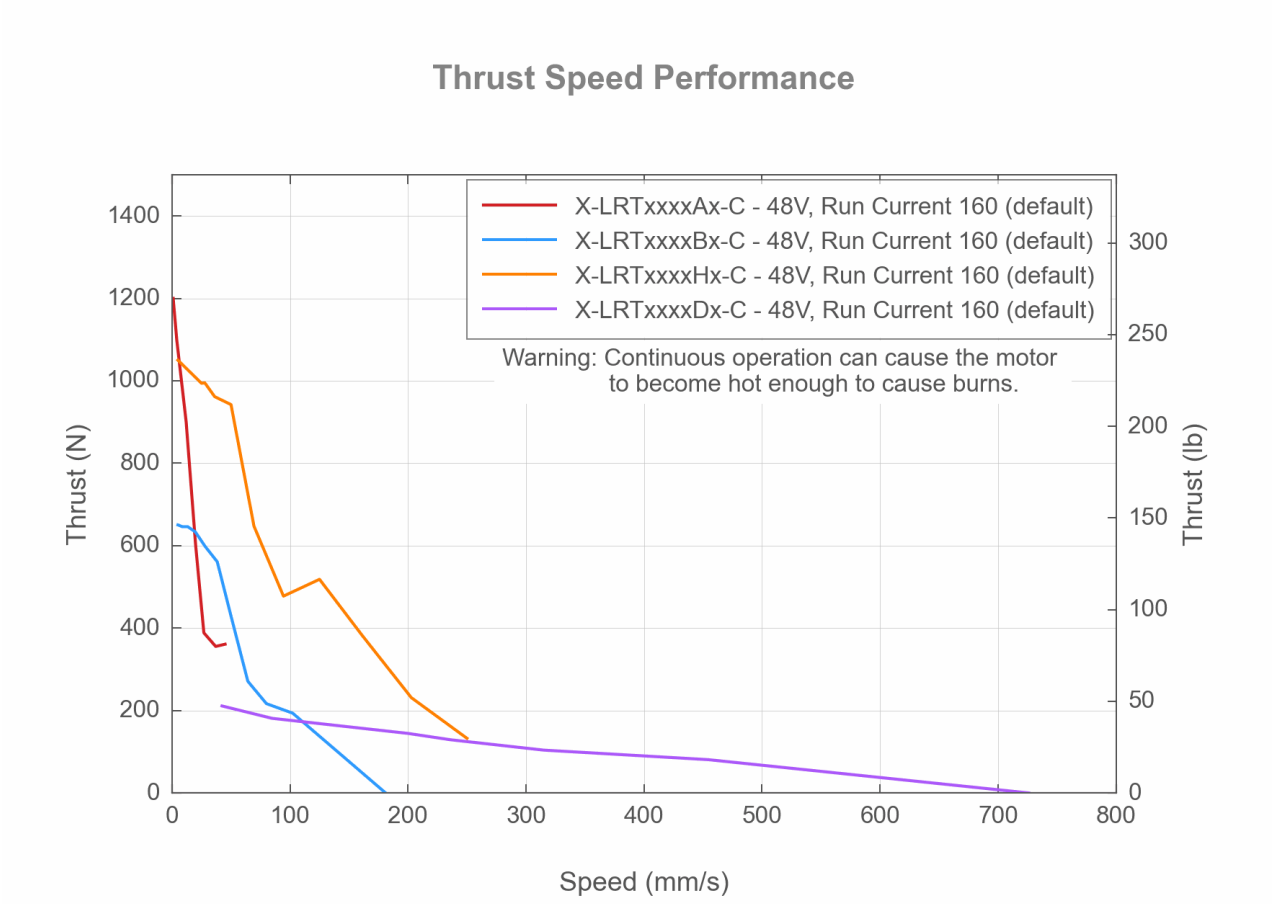
LRT0500HL C MICROSTEP ACCURACY



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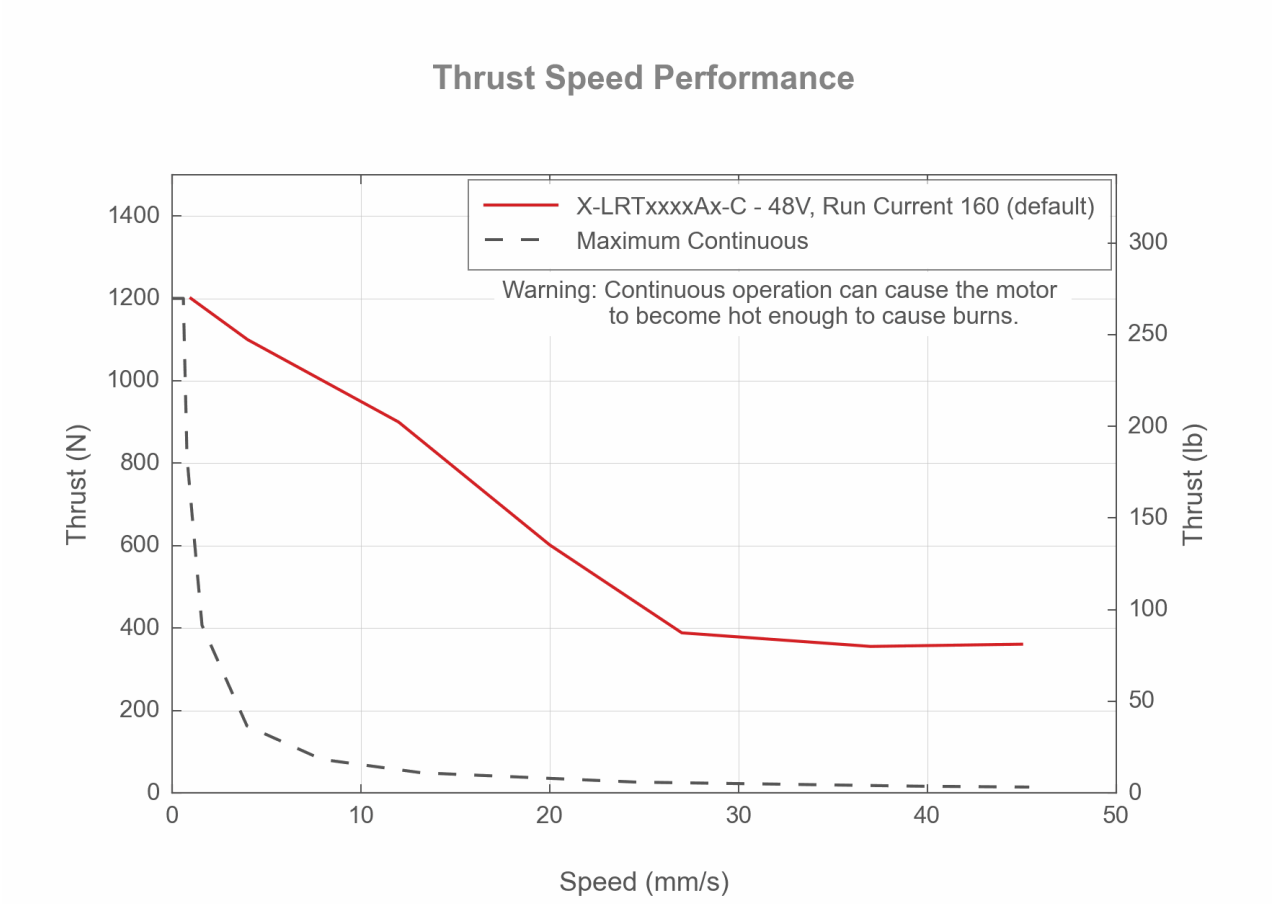
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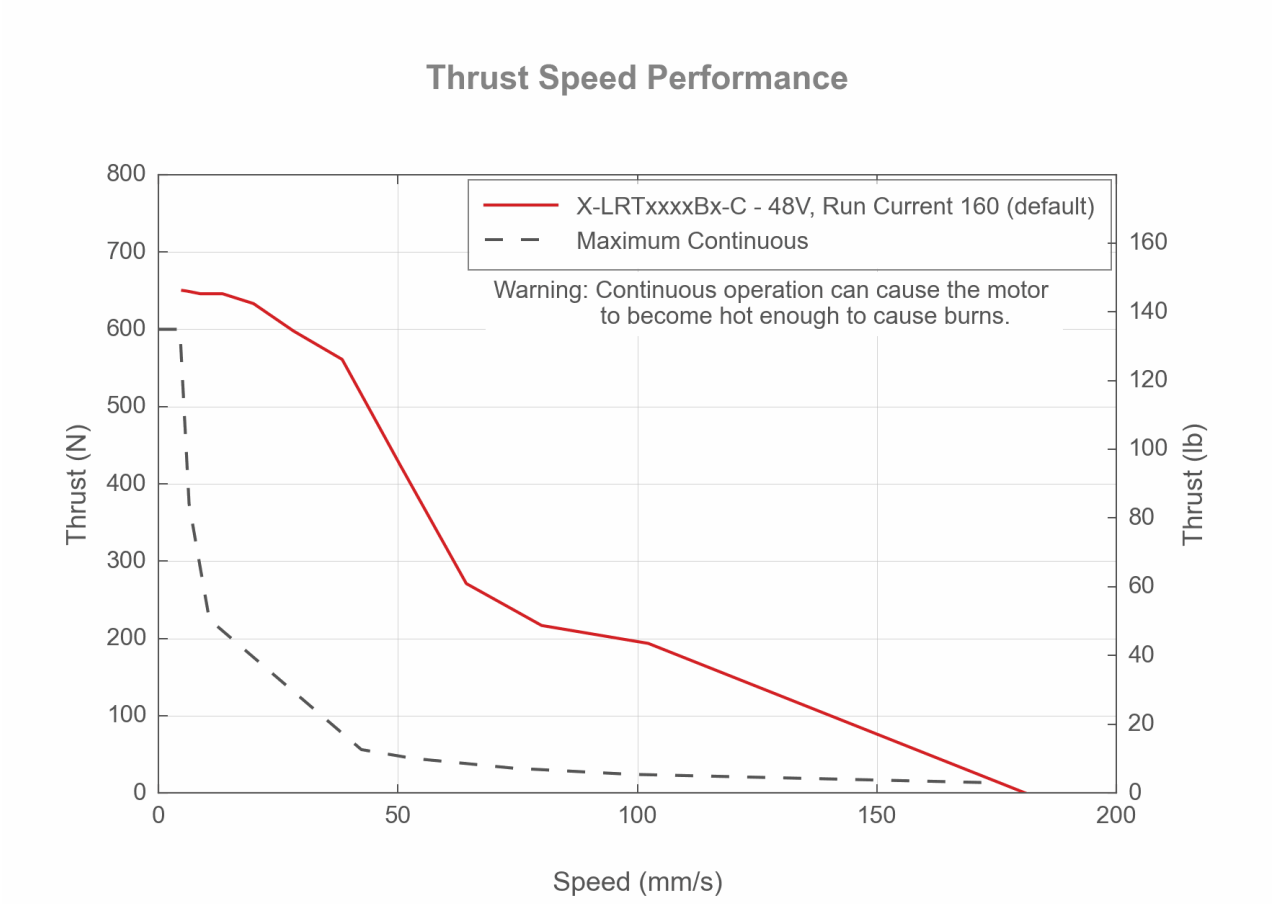
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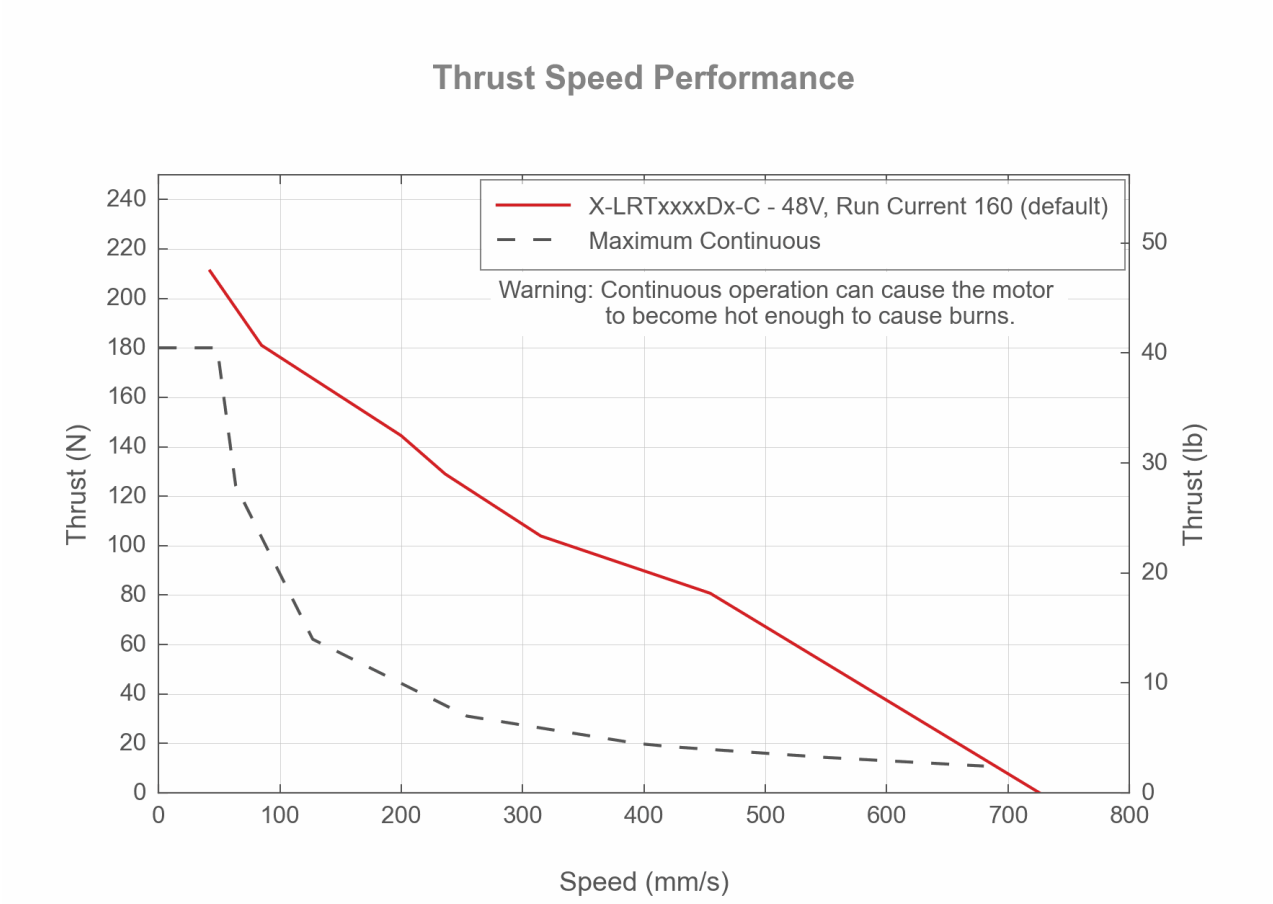
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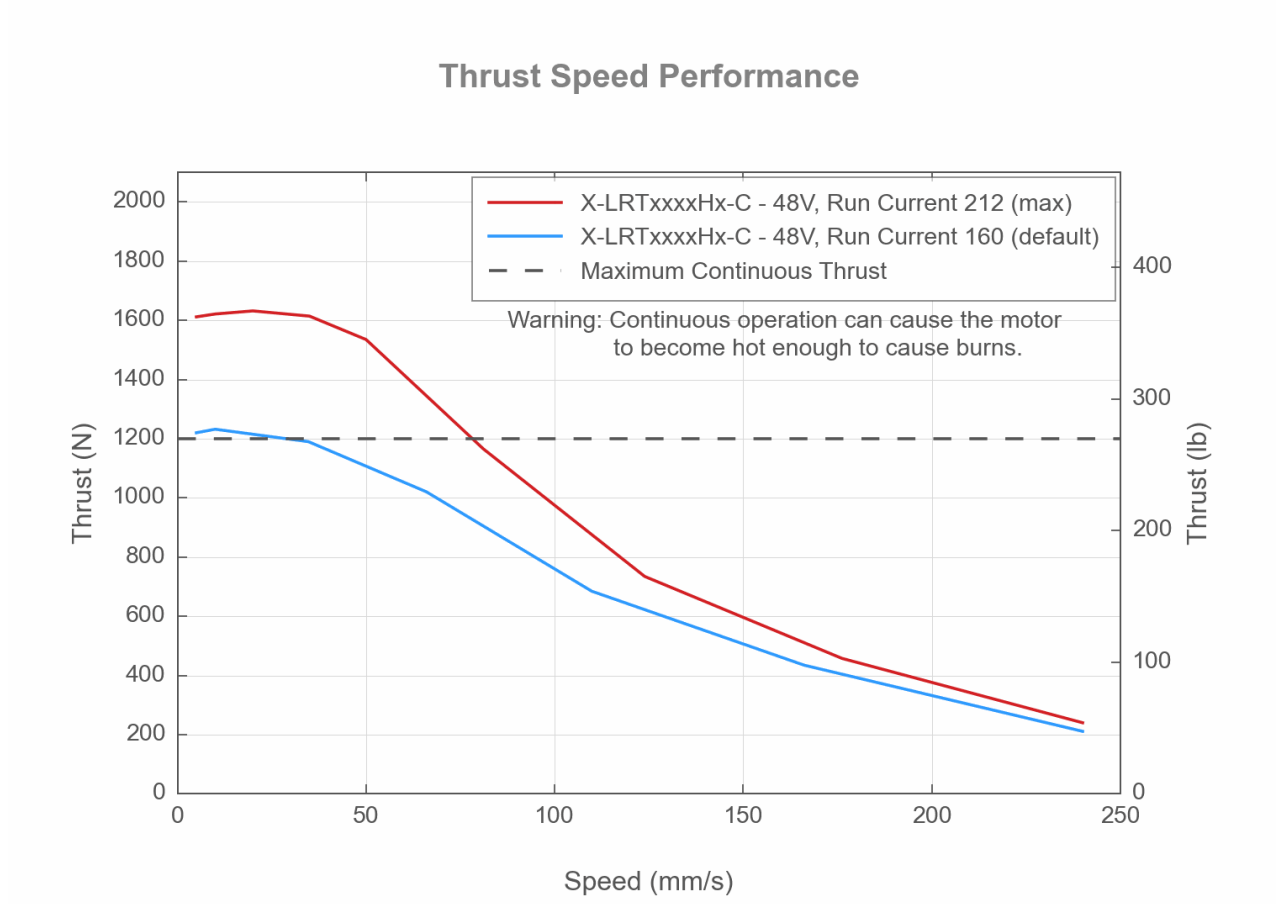
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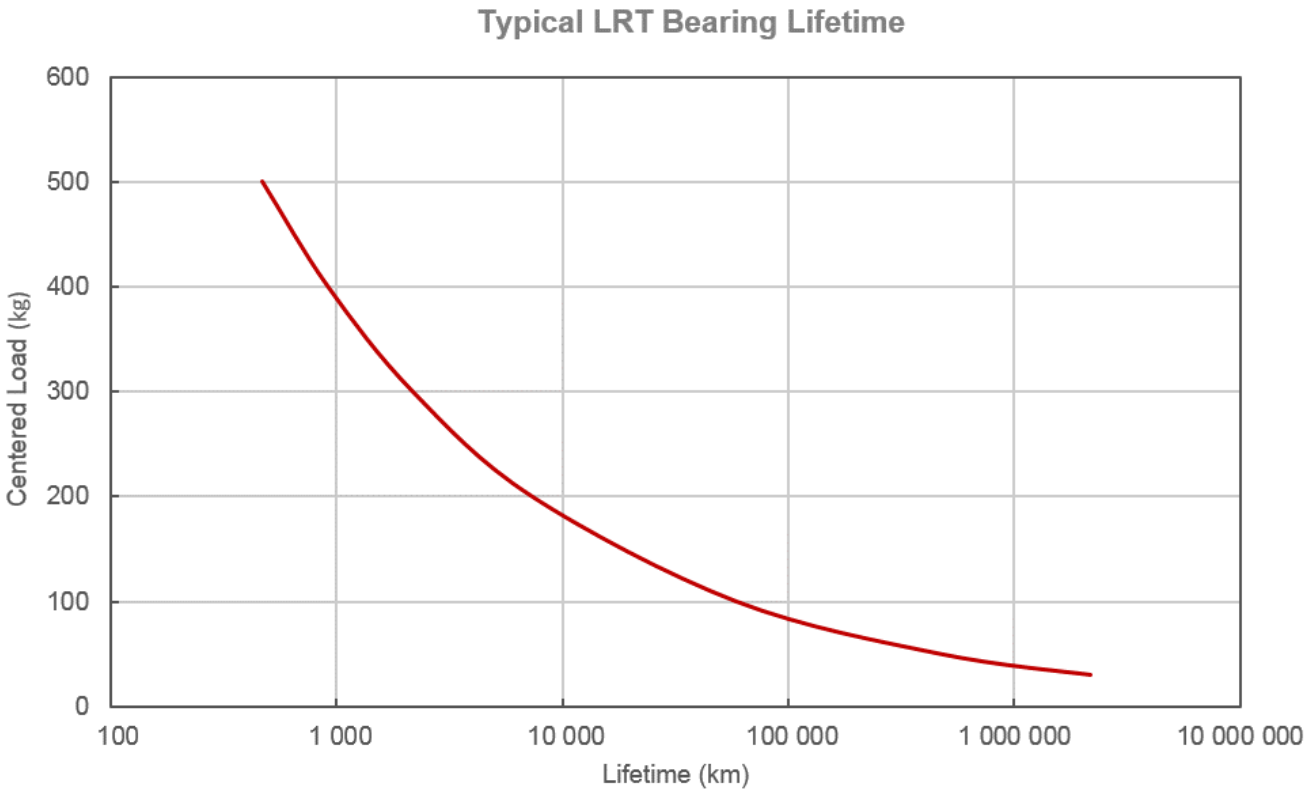
Thrust Speed Performance



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LRT Lifetime



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LRT-AEC Series Datasheet



- 100, 250, 500, 750, 1000, 1500 mm travel
- 20 µm full travel accuracy
- 300 kg load capacity
- Includes stainless steel dust covers
- Ball screw and lead screw configurations
- Integrated linear encoders with 50 nm resolution provide slip/stall detection and position correction
- Optional integrated power-off brake for vertical applications
- Designed for use with MCC controllers for coordinated multi-axis motion
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral

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LRT-AEC Series Overview

Zaber's LRT-AEC Series are computer-controlled, motorized linear stages designed for positioning high loads to within 20 µm accuracy. An integrated linear encoder combined with stage calibration provides high accuracy positioning over the full travel of the device. They have low pitch, roll, yaw and runout and long lifetime. Flexible dust covers keep out moderate debris. An optional power-off brake is available to enable vertical applications with backdrivable screws.

The stages are designed to connect directly to our MCC Family universal motor controllers, or they can be used with third party 2-phase stepper motor controllers through the panel mount DB26 connector. Set up is easy with AutoDetect. Once connected, the controller will automatically detect and configure the LRT-AEC.

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

LRT-AEC Series Part Numbering & Options

LRT 0100 A L - _ AE53 C T10A

Travel
- **0100** — 100 mm
- **0250** — 250 mm
- **...**
- **1000** — 1000 mm
- **1500** — 1500 mm

Drive Screw Options
- **A** — Fine pitch lead screw
- **B** — Medium pitch lead screw
- **D** — Coarse pitch lead screw
- **H** — Fine pitch ball screw

Drive Configuration
- **L** — Inline

Brake Option
- **None** — No Brake
- **B** — Brake

Encoder Options
- **AE53** — Analog encoder, measure down to 50 nm

Cover
- **C** — Stainless Steel Dust Cover

Connector
- **T10A** — D-sub 26 panel mount connector with Auto Detect

LRT-AEC Series Drawings

• View all drawings and documents at zaber.com

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LRT-AEC Series Specifications

Overview

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

Positioning Performance

Specification	Value
Accuracy (unidirectional)	20 µm (0.000787 ")
Backlash	<15 µm (<0.000591 ")
Flatness of Travel	<10 µm (<0.000394 ")
Straightness of Travel	<50 µm (<0.001968 ")
Pitch Error	0.015 ° (0.262 mrad)
Roll Error	0.02 ° (0.349 mrad)
Yaw Error	0.03 ° (0.523 mrad)

Load Performance

Specification	Value
Maximum Centered Load	2940 N (659.3 lb)
Maximum Moment (Pitch)	70 N·m (51.7 lb·ft)
Maximum Moment (Roll)	80 N·m (59.04 lb·ft)

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Maximum Moment (Yaw)	70 N·m (51.66 lb·ft)
Stiffness (Pitch)	1400 N·m/°
Stiffness (Roll)	700 N·m/°
Stiffness (Yaw)	1200 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	Linear analog encoder
Encoder Resolution	50 nm
Limit or Home Sensing	Linear Encoder Index Mark

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2-phase)
Motor Rated Current	3000 mA/phase
Motor Winding Inductance	2 mH/phase
Motor Connection	D-sub 26

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide

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	Repeatability	Minimum Incremental Move
LRT0100AL-AE53CT10A	100 mm (3.937 ")	3.65 kg (8.047 lb)	<1 µm (<0.000039 ")	500 nm
LRT0100BL-AE53CT10A	100 mm (3.937 ")	3.65 kg (8.047 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT0100BL-BAE53CT10A	100 mm (3.937 ")	4.276 kg (9.427 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT0100DL-AE53CT10A	100 mm (3.937 ")	3.65 kg (8.047 lb)	<1.5 µm (<0.000059 ")	8000 nm
LRT0100DL-BAE53CT10A	100 mm (3.937 ")	4.276 kg (9.427 lb)	<1.5 µm (<0.000059 ")	8000 nm
LRT0100HL-AE53CT10A	100 mm (3.937 ")	3.65 kg (8.047 lb)	<1.5 µm (<0.000059 ")	1200 nm
LRT0100HL-BAE53CT10A	100 mm (3.937 ")	4.276 kg (9.427 lb)	<1.5 µm (<0.000059 ")	1200 nm
LRT0250AL-AE53CT10A	250 mm (9.843 ")	4.441 kg (9.791 lb)	<1 µm (<0.000039 ")	500 nm
LRT0250BL-AE53CT10A	250 mm (9.843 ")	4.441 kg (9.791 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT0250BL-BAE53CT10A	250 mm (9.843 ")	5.067 kg (11.171 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT0250DL-AE53CT10A	250 mm (9.843 ")	4.441 kg (9.791 lb)	<1.5 µm (<0.000059 ")	8000 nm
LRT0250DL-BAE53CT10A	250 mm (9.843 ")	5.067 kg (11.171 lb)	<1.5 µm (<0.000059 ")	8000 nm
LRT0250HL-AE53CT10A	250 mm (9.843 ")	4.441 kg (9.791 lb)	<1.5 µm (<0.000059 ")	1200 nm
LRT0250HL-BAE53CT10A	250 mm (9.843 ")	5.067 kg (11.171 lb)	<1.5 µm (<0.000059 ")	1200 nm
LRT0500AL-AE53CT10A	500 mm (19.685 ")	5.758 kg (12.694 lb)	<1 µm (<0.000039 ")	500 nm
LRT0500BL-AE53CT10A	500 mm (19.685 ")	5.758 kg (12.694 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT0500BL-BAE53CT10A	500 mm (19.685 ")	6.384 kg (14.074 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT0500DL-AE53CT10A	500 mm (19.685 ")	5.758 kg (12.694 lb)	<1.5 µm (<0.000059 ")	8000 nm
LRT0500DL-BAE53CT10A	500 mm (19.685 ")	6.384 kg (14.074 lb)	<1.5 µm (<0.000059 ")	8000 nm

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LRT0500HL-AE53CT10A	500 mm (19.685 ")	5.758 kg (12.694 lb)	<1.5 µm (<0.000059 ")	1200 nm
LRT0500HL-BAE53CT10A	500 mm (19.685 ")	6.384 kg (14.074 lb)	<1.5 µm (<0.000059 ")	1200 nm
LRT0750AL-AE53CT10A	750 mm (29.528 ")	7.076 kg (15.6 lb)	<1 µm (<0.000039 ")	500 nm
LRT0750BL-AE53CT10A	750 mm (29.528 ")	7.076 kg (15.6 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT0750BL-BAE53CT10A	750 mm (29.528 ")	7.702 kg (16.98 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT0750DL-AE53CT10A	750 mm (29.528 ")	7.076 kg (15.6 lb)	<1.5 µm (<0.000059 ")	8000 nm
LRT0750DL-BAE53CT10A	750 mm (29.528 ")	7.702 kg (16.98 lb)	<1.5 µm (<0.000059 ")	8000 nm
LRT0750HL-AE53CT10A	750 mm (29.528 ")	7.076 kg (15.6 lb)	<1.5 µm (<0.000059 ")	1200 nm
LRT0750HL-BAE53CT10A	750 mm (29.528 ")	7.702 kg (16.98 lb)	<1.5 µm (<0.000059 ")	1200 nm
LRT1000AL-AE53CT10A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	<1 µm (<0.000039 ")	500 nm
LRT1000BL-AE53CT10A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT1000BL-BAE53CT10A	1000 mm (39.37 ")	9.019 kg (19.883 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT1000DL-AE53CT10A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	<1.5 µm (<0.000059 ")	8000 nm
LRT1000DL-BAE53CT10A	1000 mm (39.37 ")	9.019 kg (19.883 lb)	<1.5 µm (<0.000059 ")	8000 nm
LRT1000HL-AE53CT10A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	<1.5 µm (<0.000059 ")	1200 nm
LRT1000HL-BAE53CT10A	1000 mm (39.37 ")	9.019 kg (19.883 lb)	<1.5 µm (<0.000059 ")	1200 nm
LRT1500AL-AE53CT10A	1500 mm (59.055 ")	11.028 kg (24.313 lb)	<1 µm (<0.000039 ")	500 nm
LRT1500BL-AE53CT10A	1500 mm (59.055 ")	11.028 kg (24.313 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT1500BL-BAE53CT10A	1500 mm (59.055 ")	11.654 kg (25.693 lb)	<1.5 µm (<0.000059 ")	2000 nm
LRT1500DL-AE53CT10A	1500 mm (59.055 ")	11.028 kg (24.313 lb)	<1.5 µm (<0.000059 ")	8000 nm

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LRT1500DL-BAE53CT10A	1500 mm (59.055 ")	11.654 kg (25.693 lb)	<1.5 µm (<0.000059 ")	8000 nm

Part Number	Microstep Size (Default Resolution)	Peak Thrust	Maximum Axial Brake Force	Maximum Continuous Thrust
LRT0100AL-AE53CT10A	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT0100BL-AE53CT10A	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)
LRT0100BL-BAE53CT10A	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
LRT0100DL-AE53CT10A	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
LRT0100DL-BAE53CT10A	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)
LRT0100HL-AE53CT10A	0.390625 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT0100HL-BAE53CT10A	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)	1200 N (269.1 lb)
LRT0250AL-AE53CT10A	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT0250BL-AE53CT10A	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)
LRT0250BL-BAE53CT10A	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
LRT0250DL-AE53CT10A	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
LRT0250DL-BAE53CT10A	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)
LRT0250HL-AE53CT10A	0.390625 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT0250HL-BAE53CT10A	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)	1200 N (269.1 lb)
LRT0500AL-AE53CT10A	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT0500BL-AE53CT10A	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)
LRT0500BL-BAE53CT10A	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)

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LRT0500DL-AE53CT10A	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
LRT0500DL-BAE53CT10A	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)
LRT0500HL-AE53CT10A	0.390625 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT0500HL-BAE53CT10A	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)	1200 N (269.1 lb)
LRT0750AL-AE53CT10A	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT0750BL-AE53CT10A	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)
LRT0750BL-BAE53CT10A	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
LRT0750DL-AE53CT10A	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
LRT0750DL-BAE53CT10A	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)
LRT0750HL-AE53CT10A	0.390625 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT0750HL-BAE53CT10A	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)	1200 N (269.1 lb)
LRT1000AL-AE53CT10A	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT1000BL-AE53CT10A	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)
LRT1000BL-BAE53CT10A	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
LRT1000DL-AE53CT10A	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
LRT1000DL-BAE53CT10A	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)
LRT1000HL-AE53CT10A	0.390625 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT1000HL-BAE53CT10A	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)	1200 N (269.1 lb)
LRT1500AL-AE53CT10A	0.124023438 µm	1200 N (269.1 lb)		1200 N (269.1 lb)
LRT1500BL-AE53CT10A	0.49609375 µm	600 N (134.6 lb)		600 N (134.6 lb)

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LRT1500BL-BAE53CT10A	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)	600 N (134.6 lb)
LRT1500DL-AE53CT10A	1.984375 µm	200 N (44.9 lb)		180 N (40.4 lb)
LRT1500DL-BAE53CT10A	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)	180 N (40.4 lb)

Part Number	Back-driving Force*	Maximum Speed	Minimum Speed	Speed Resolution
LRT0100AL-AE53CT10A	Non-back-driving	45 mm/s (1.772 "/s)	0.0000757 mm/s (0.000003 "/s)	0.0000757 mm/s (0.000003 "/s)
LRT0100BL-AE53CT10A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0100BL-BAE53CT10A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0100DL-AE53CT10A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)
LRT0100DL-BAE53CT10A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)
LRT0100HL-AE53CT10A	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000238583 mm/s (0.000009 "/s)	0.000238583 mm/s (0.000009 "/s)
LRT0100HL-BAE53CT10A	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000238583 mm/s (0.000009 "/s)	0.000238583 mm/s (0.000009 "/s)
LRT0250AL-AE53CT10A	Non-back-driving	45 mm/s (1.772 "/s)	0.0000757 mm/s (0.000003 "/s)	0.0000757 mm/s (0.000003 "/s)
LRT0250BL-AE53CT10A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0250BL-BAE53CT10A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0250DL-AE53CT10A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)
LRT0250DL-BAE53CT10A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)
LRT0250HL-AE53CT10A	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000238583 mm/s (0.000009 "/s)	0.000238583 mm/s (0.000009 "/s)
LRT0250HL-BAE53CT10A	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000238583 mm/s (0.000009 "/s)	0.000238583 mm/s (0.000009 "/s)

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LRT0500AL-AE53CT10A	Non-back-driving	45 mm/s (1.772 "/s)	0.0000757 mm/s (0.000003 "/s)	0.0000757 mm/s (0.000003 "/s)
LRT0500BL-AE53CT10A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0500BL-BAE53CT10A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0500DL-AE53CT10A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)
LRT0500DL-BAE53CT10A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)
LRT0500HL-AE53CT10A	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000238583 mm/s (0.000009 "/s)	0.000238583 mm/s (0.000009 "/s)
LRT0500HL-BAE53CT10A	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000238583 mm/s (0.000009 "/s)	0.000238583 mm/s (0.000009 "/s)
LRT0750AL-AE53CT10A	Non-back-driving	45 mm/s (1.772 "/s)	0.0000757 mm/s (0.000003 "/s)	0.0000757 mm/s (0.000003 "/s)
LRT0750BL-AE53CT10A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0750BL-BAE53CT10A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0750DL-AE53CT10A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)
LRT0750DL-BAE53CT10A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)
LRT0750HL-AE53CT10A	157 (± 30%) N (35.2 lb)	150 mm/s (5.905 "/s)	0.000238583 mm/s (0.000009 "/s)	0.000238583 mm/s (0.000009 "/s)
LRT0750HL-BAE53CT10A	157 (± 30%) N (35.2 lb)	150 mm/s (5.905 "/s)	0.000238583 mm/s (0.000009 "/s)	0.000238583 mm/s (0.000009 "/s)
LRT1000AL-AE53CT10A	Non-back-driving	28 mm/s (1.102 "/s)	0.0000757 mm/s (0.000003 "/s)	0.0000757 mm/s (0.000003 "/s)
LRT1000BL-AE53CT10A	420 (± 30%) N (94.2 lb)	120 mm/s (4.724 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT1000BL-BAE53CT10A	420 (± 30%) N (94.2 lb)	120 mm/s (4.724 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT1000DL-AE53CT10A	40 (± 30%) N (9 lb)	500 mm/s (19.685 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)
LRT1000DL-BAE53CT10A	40 (± 30%) N (9 lb)	500 mm/s (19.685 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)

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LRT1000HL-AE53CT10A	157 (± 30%) N (35.2 lb)	95 mm/s (3.74 "/s)	0.000238583 mm/s (0.000009 "/s)	0.000238583 mm/s (0.000009 "/s)
LRT1000HL-BAE53CT10A	157 (± 30%) N (35.2 lb)	95 mm/s (3.74 "/s)	0.000238583 mm/s (0.000009 "/s)	0.000238583 mm/s (0.000009 "/s)
LRT1500AL-AE53CT10A	Non-back-driving	13 mm/s (0.512 "/s)	0.0000757 mm/s (0.000003 "/s)	0.0000757 mm/s (0.000003 "/s)
LRT1500BL-AE53CT10A	420 (± 30%) N (94.2 lb)	55 mm/s (2.165 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT1500BL-BAE53CT10A	420 (± 30%) N (94.2 lb)	55 mm/s (2.165 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT1500DL-AE53CT10A	40 (± 30%) N (9 lb)	225 mm/s (8.858 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)
LRT1500DL-BAE53CT10A	40 (± 30%) N (9 lb)	225 mm/s (8.858 "/s)	0.00121 mm/s (0.000048 "/s)	0.00121 mm/s (0.000048 "/s)

Part Number	Linear Motion Per Motor Rev
LRT0100AL-AE53CT10A	1.5875 mm (0.062 ")
LRT0100BL-AE53CT10A	6.35 mm (0.25 ")
LRT0100BL-BAE53CT10A	6.35 mm (0.25 ")
LRT0100DL-AE53CT10A	25.4 mm (1 ")
LRT0100DL-BAE53CT10A	25.4 mm (1 ")
LRT0100HL-AE53CT10A	5 mm (0.197 ")
LRT0100HL-BAE53CT10A	5 mm (0.197 ")
LRT0250AL-AE53CT10A	1.5875 mm (0.062 ")
LRT0250BL-AE53CT10A	6.35 mm (0.25 ")
LRT0250BL-BAE53CT10A	6.35 mm (0.25 ")
LRT0250DL-AE53CT10A	25.4 mm (1 ")

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LRT0250DL-BAE53CT10A	25.4 mm (1 ")
LRT0250HL-AE53CT10A	5 mm (0.197 ")
LRT0250HL-BAE53CT10A	5 mm (0.197 ")
LRT0500AL-AE53CT10A	1.5875 mm (0.062 ")
LRT0500BL-AE53CT10A	6.35 mm (0.25 ")
LRT0500BL-BAE53CT10A	6.35 mm (0.25 ")
LRT0500DL-AE53CT10A	25.4 mm (1 ")
LRT0500DL-BAE53CT10A	25.4 mm (1 ")
LRT0500HL-AE53CT10A	5 mm (0.197 ")
LRT0500HL-BAE53CT10A	5 mm (0.197 ")
LRT0750AL-AE53CT10A	1.5875 mm (0.062 ")
LRT0750BL-AE53CT10A	6.35 mm (0.25 ")
LRT0750BL-BAE53CT10A	6.35 mm (0.25 ")
LRT0750DL-AE53CT10A	25.4 mm (1 ")
LRT0750DL-BAE53CT10A	25.4 mm (1 ")
LRT0750HL-AE53CT10A	5 mm (0.197 ")
LRT0750HL-BAE53CT10A	5 mm (0.197 ")
LRT1000AL-AE53CT10A	1.5875 mm (0.062 ")
LRT1000BL-AE53CT10A	6.35 mm (0.25 ")
LRT1000BL-BAE53CT10A	6.35 mm (0.25 ")

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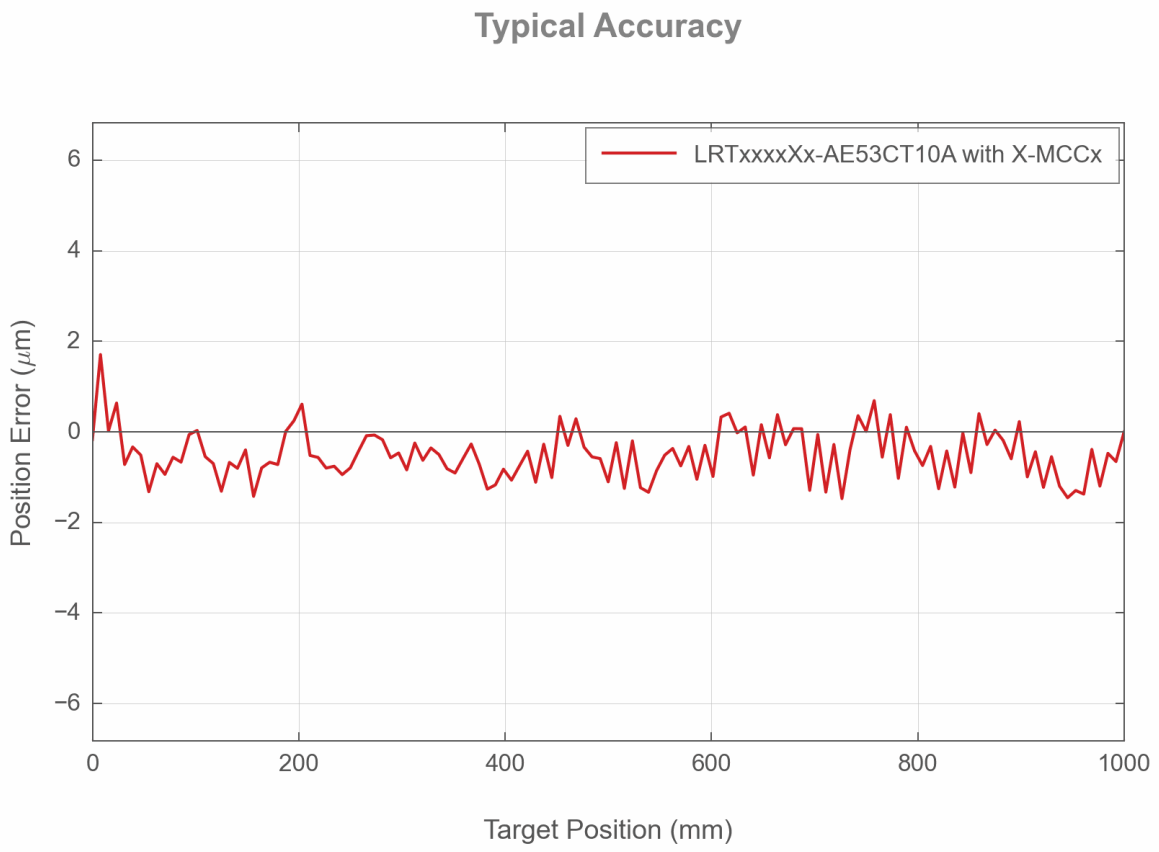
LRT1000DL-AE53CT10A	25.4 mm (1 ")
LRT1000DL-BAE53CT10A	25.4 mm (1 ")
LRT1000HL-AE53CT10A	5 mm (0.197 ")
LRT1000HL-BAE53CT10A	5 mm (0.197 ")
LRT1500AL-AE53CT10A	1.5875 mm (0.062 ")
LRT1500BL-AE53CT10A	6.35 mm (0.25 ")
LRT1500BL-BAE53CT10A	6.35 mm (0.25 ")
LRT1500DL-AE53CT10A	25.4 mm (1 ")
LRT1500DL-BAE53CT10A	25.4 mm (1 ")

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LRT-AEC Series Charts

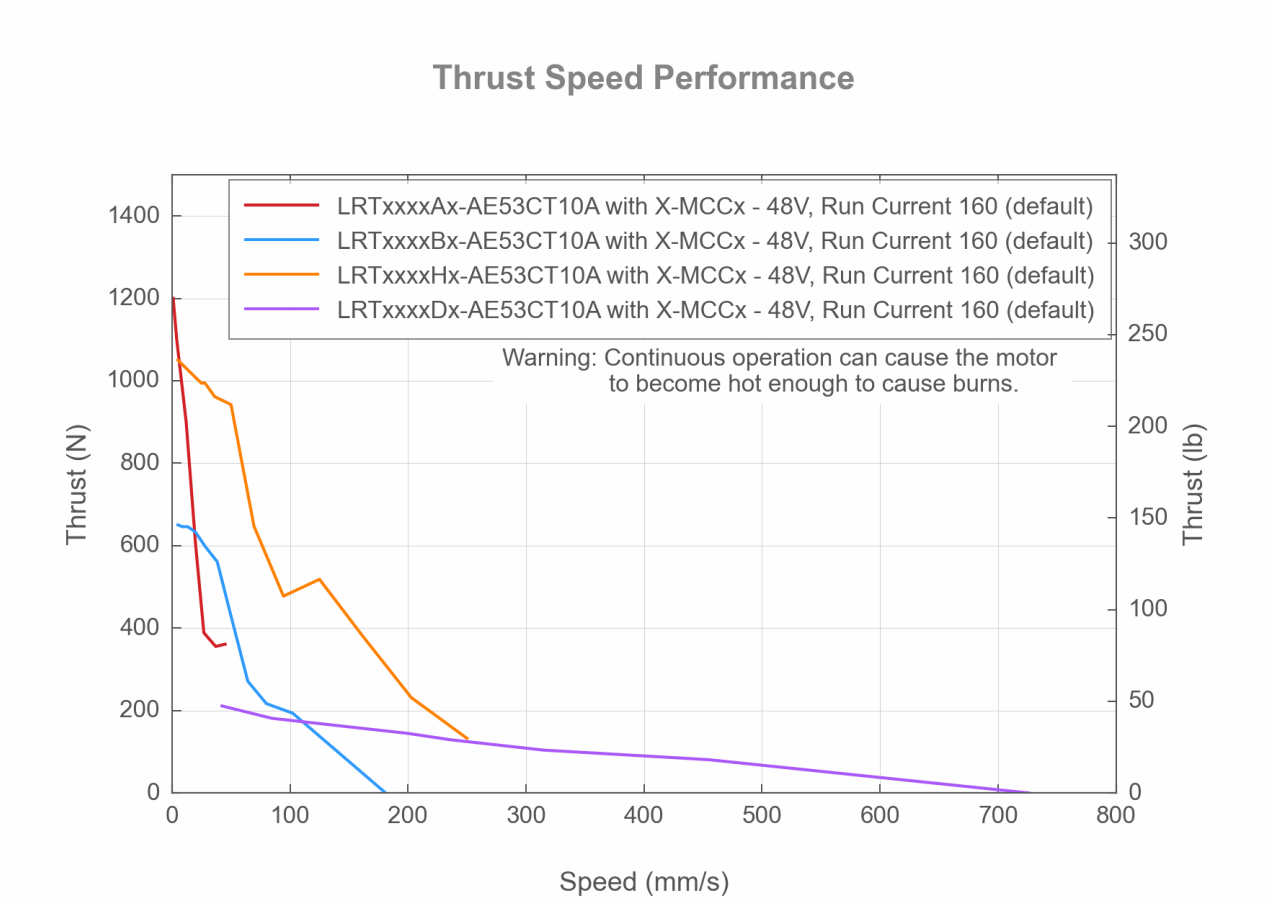
LRTxxxxXx AE53CT10A Typical Accuracy



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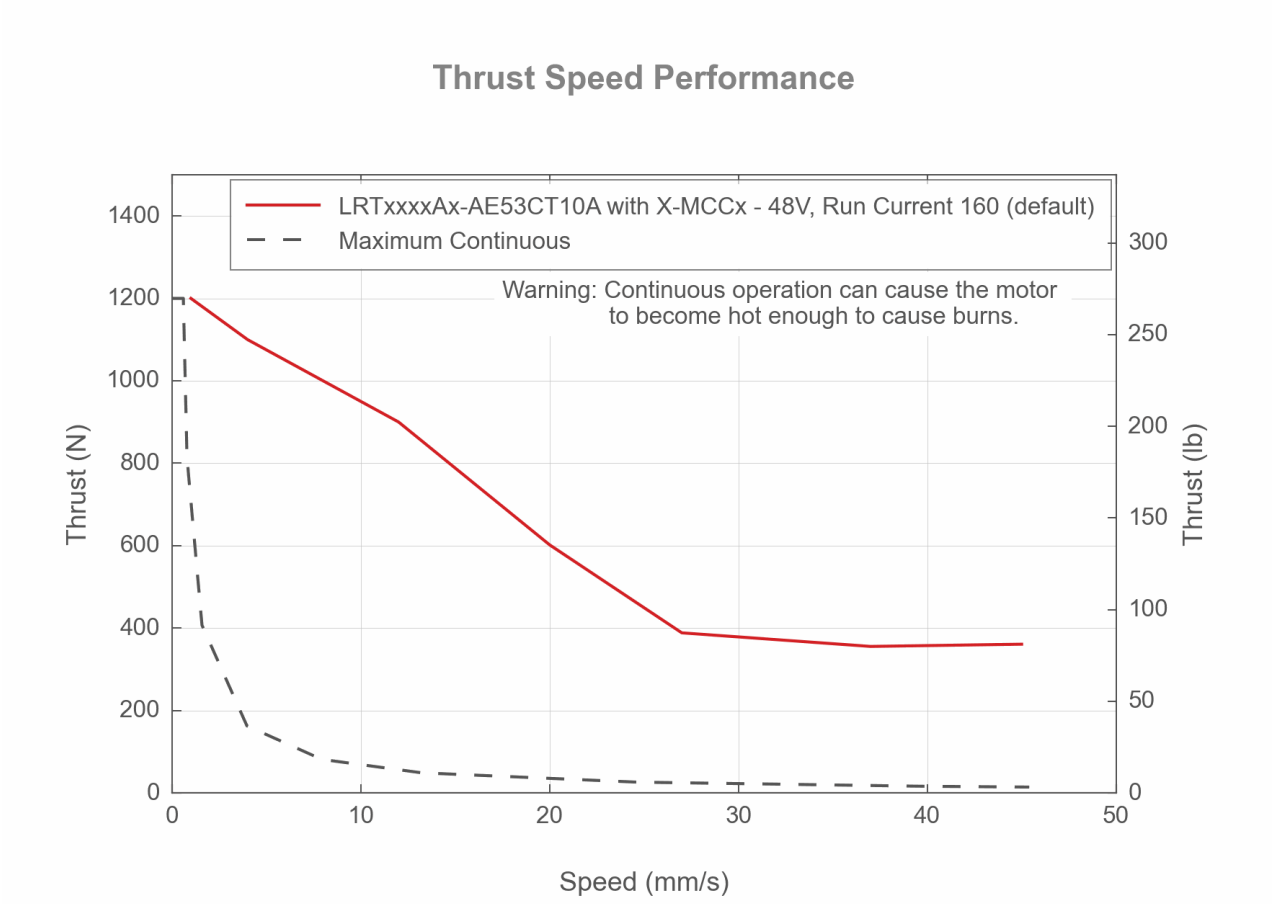
LRTxxxxAx AE53CT10A Thrust Speed Performance



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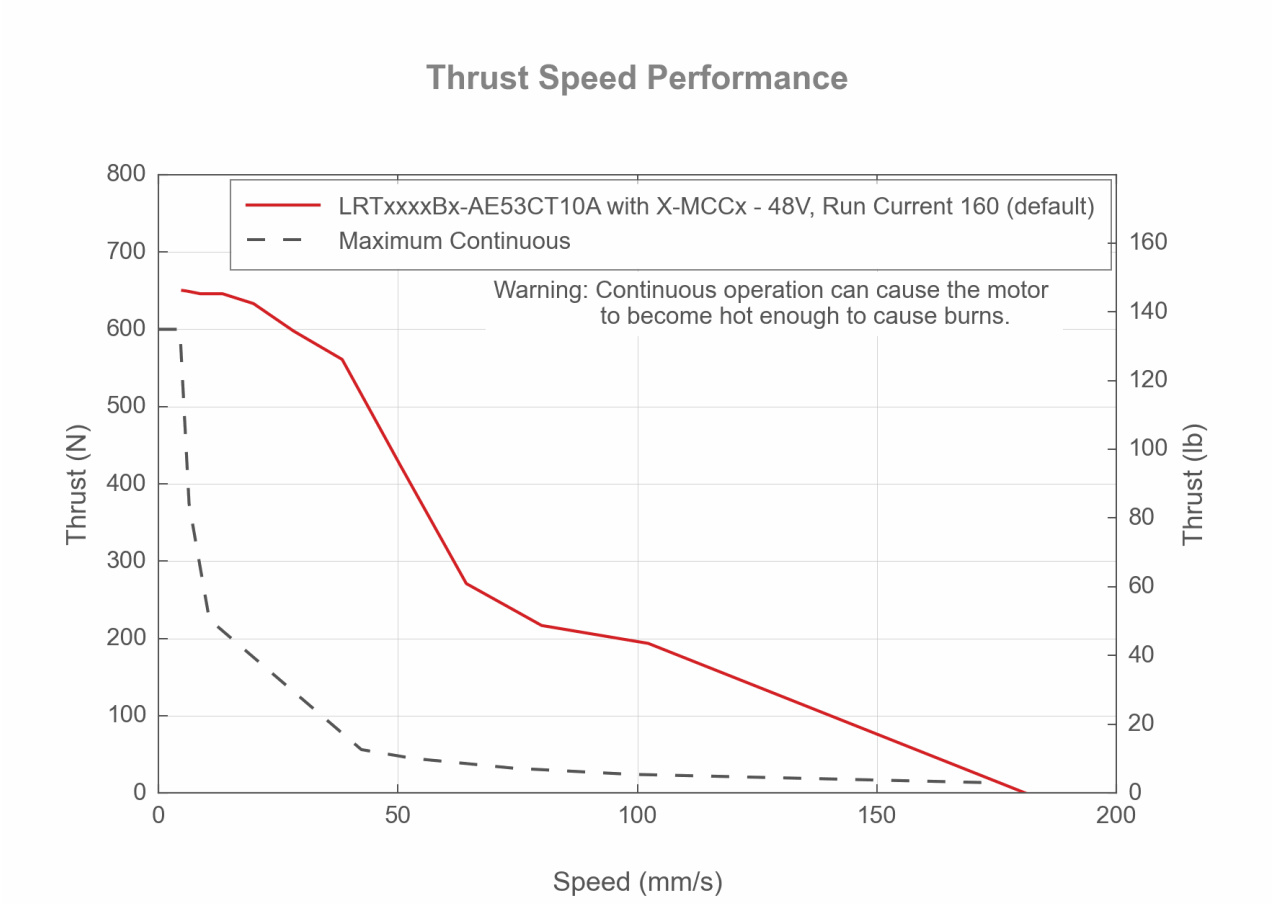
LRTxxxxAx AE53CT10A Thrust Speed Performance



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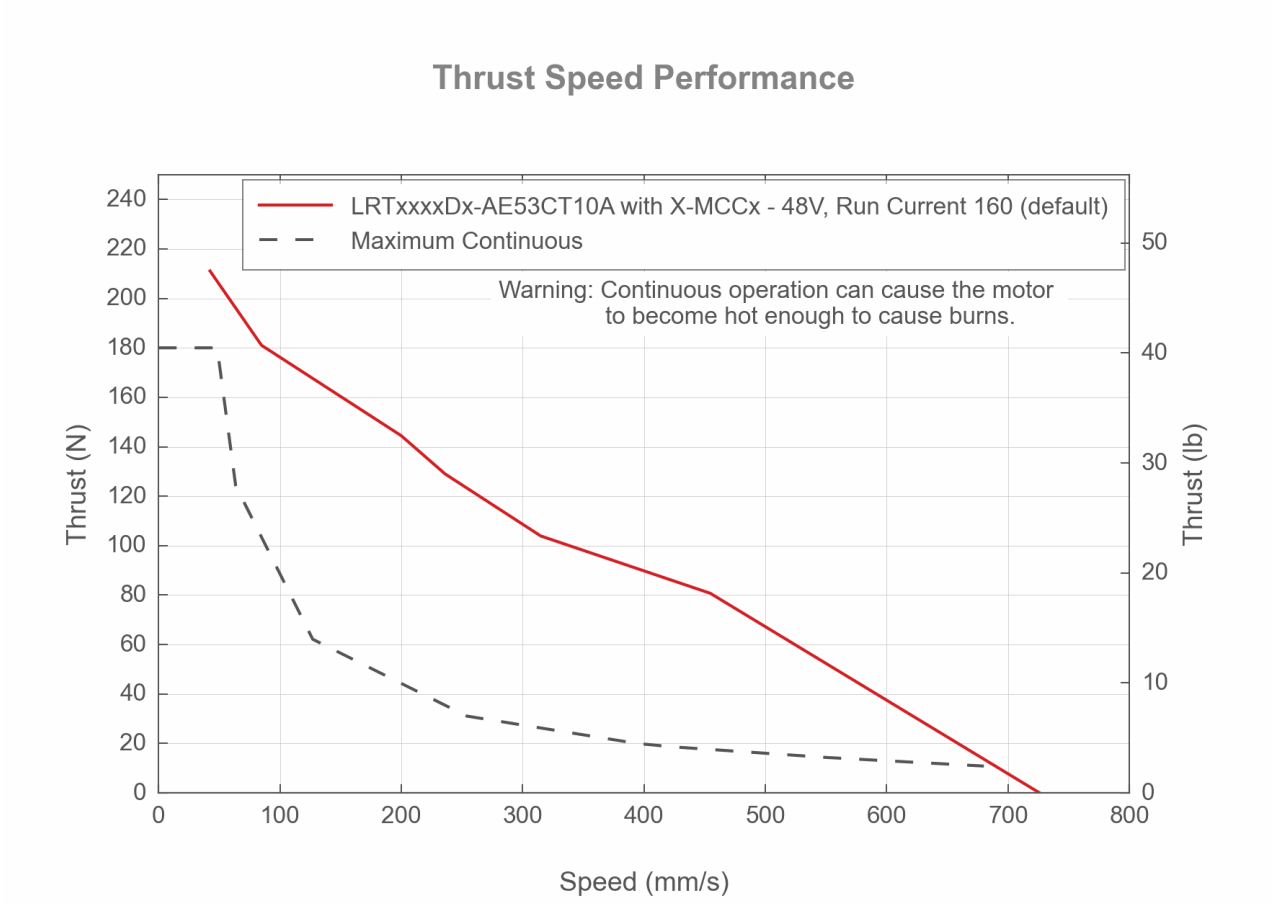
LRTxxxxBx AE53CT10A Thrust Speed Performance



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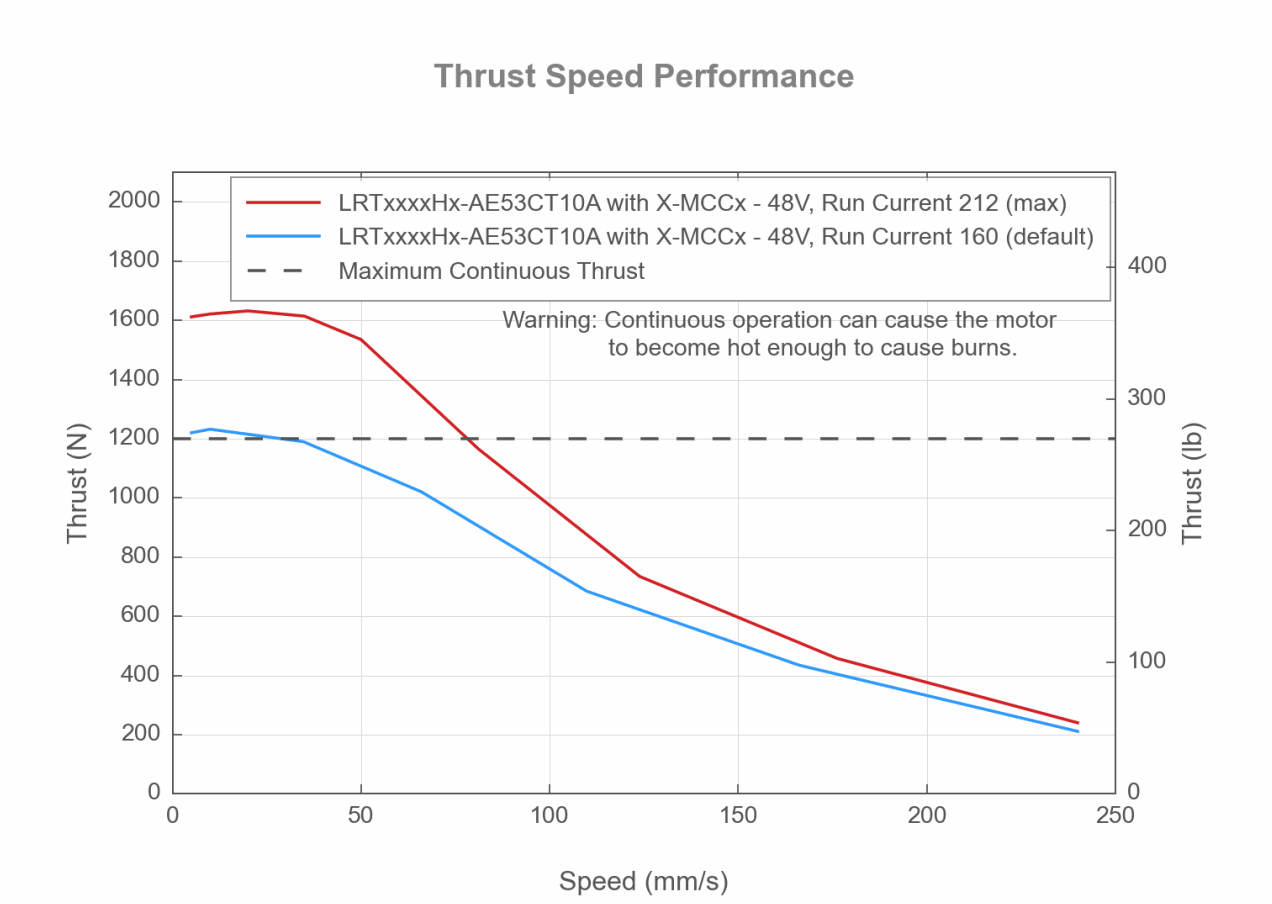
LRTxxxxDx AE53CT10A Thrust Speed Performance



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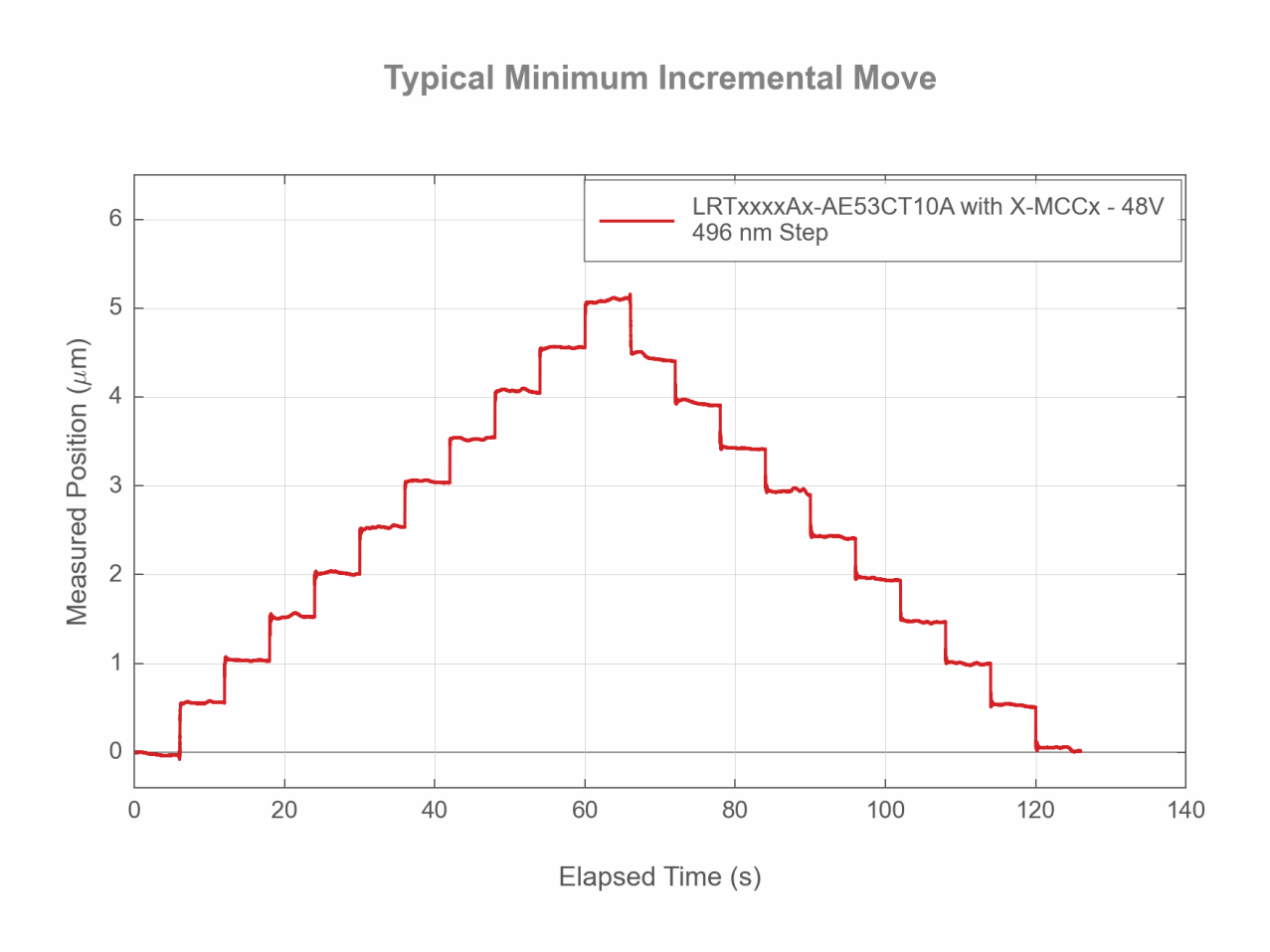
LRTxxxxHx AE53CT10A Thrust Speed Performance



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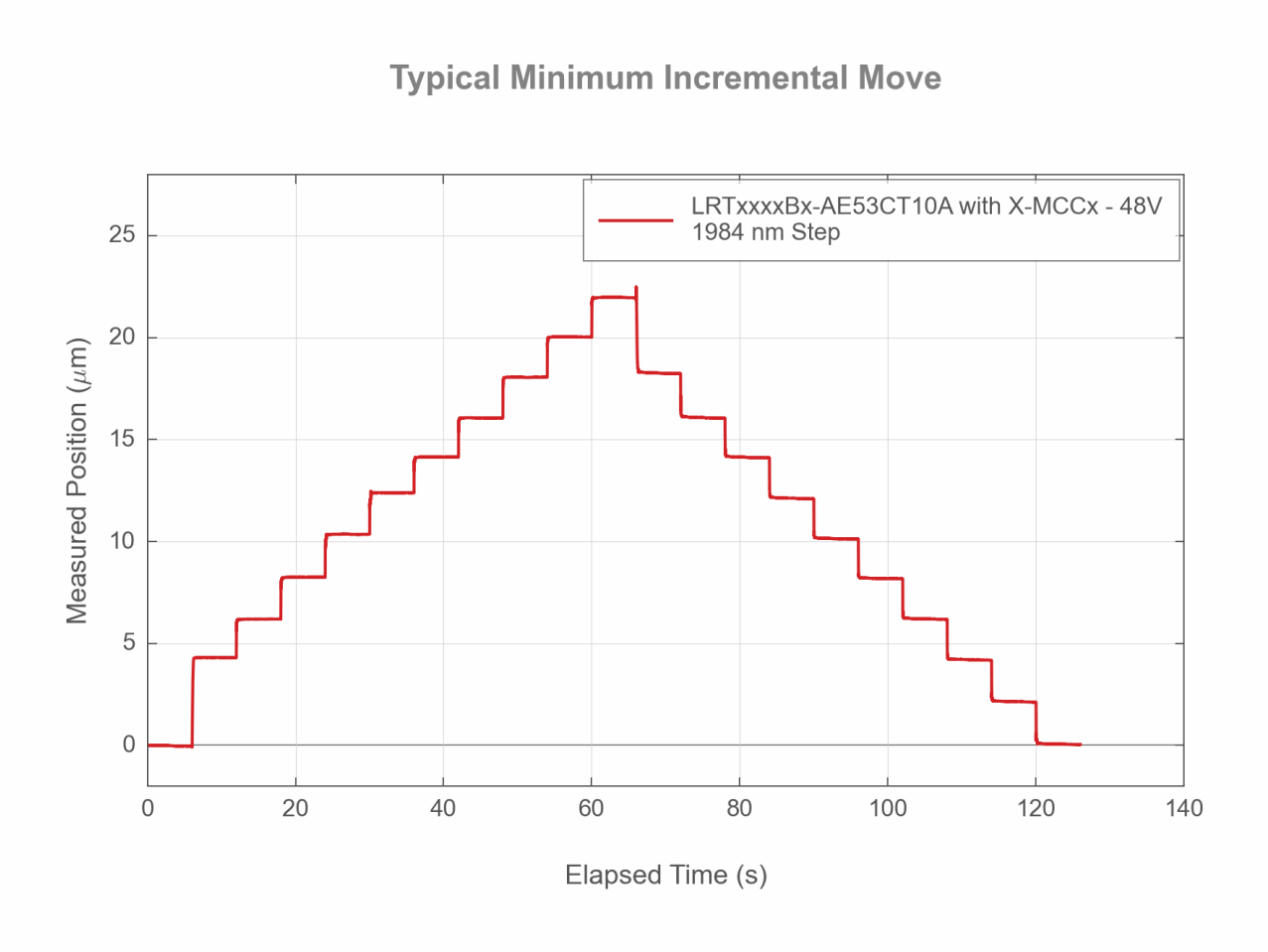
LRTxxxxAx AE53CT10A Typical Minimum Incremental Move



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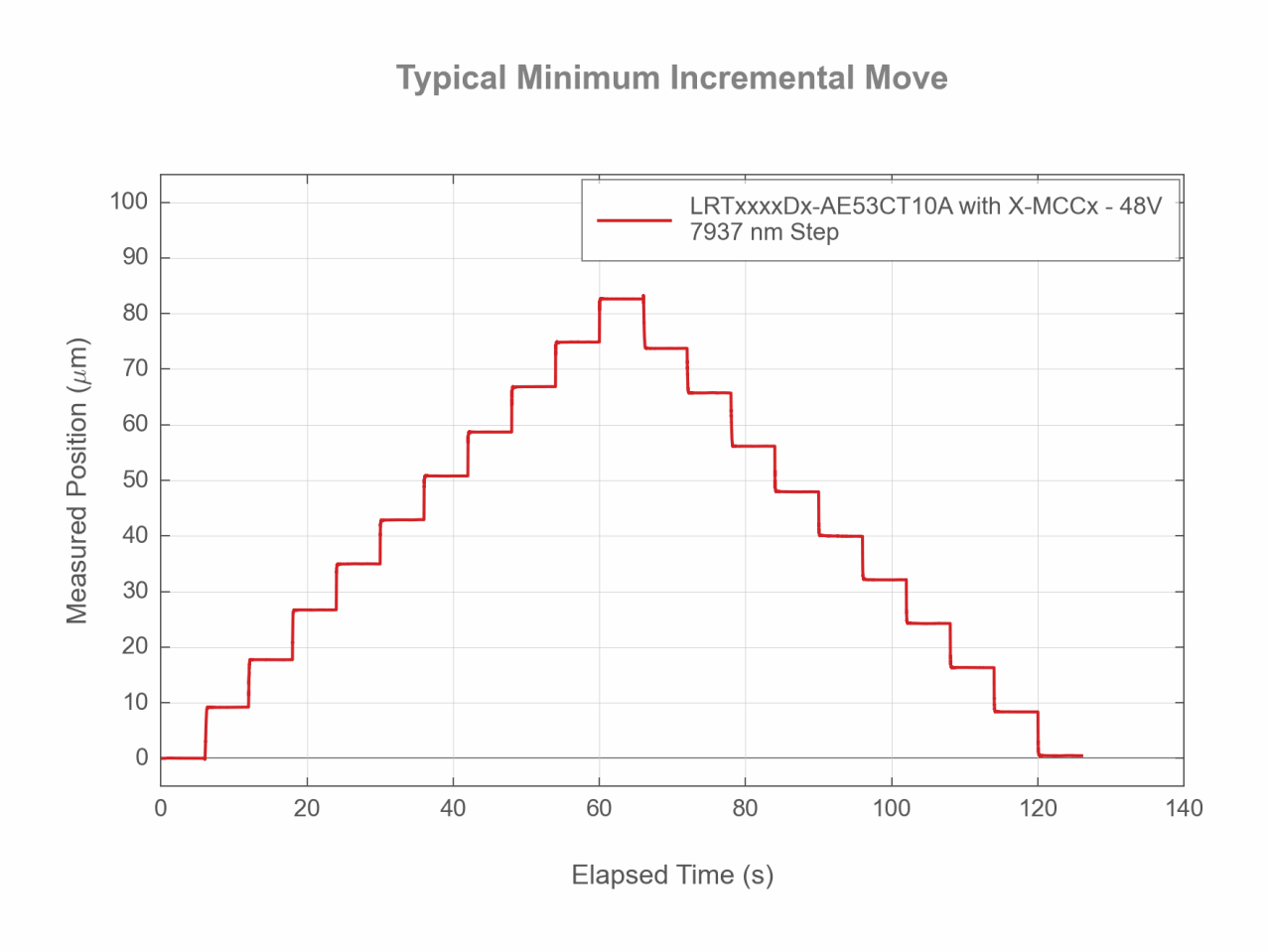
LRTxxxxBx AE53CT10A Typical Minimum Incremental Move



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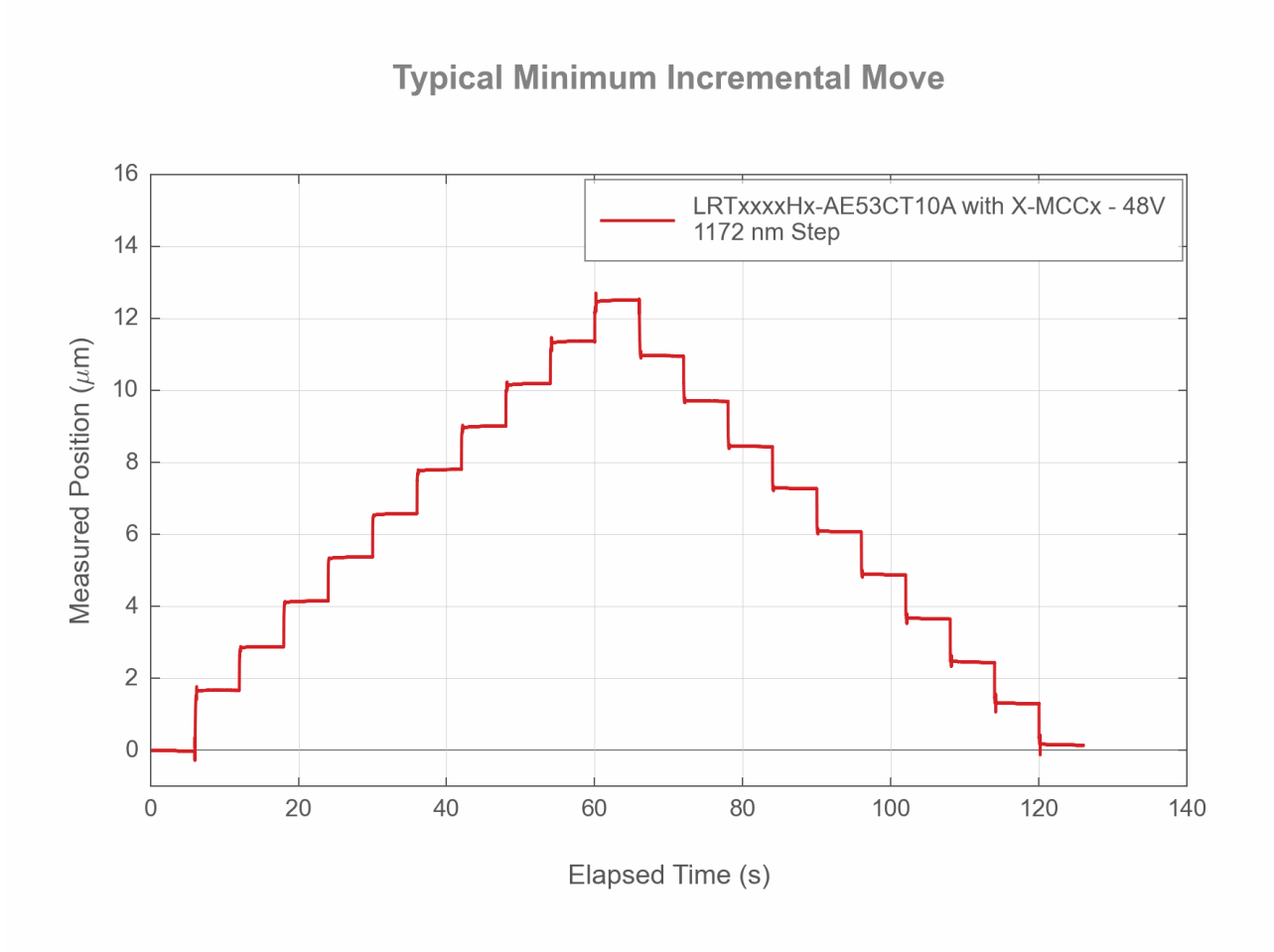
LRTxxxxDx AE53CT10A Typical Minimum Incremental Move



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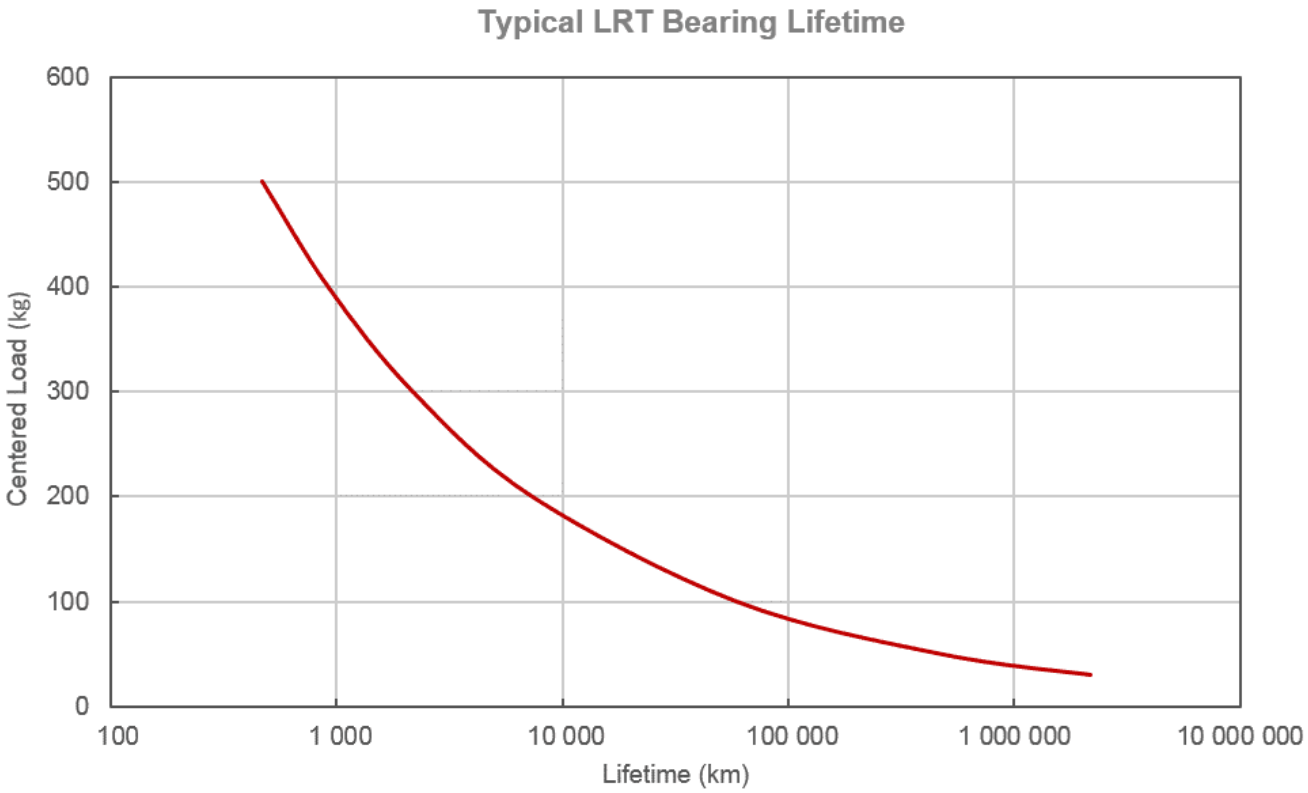
LRTxxxxHx AE53CT10A Typical Minimum Incremental Move



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LRT Lifetime



Contact

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LRT-EC Series Datasheet



- 100, 250, 500, 750, 1000, 1500 mm travel
- Up to 700 mm/s speed and up to 1200 N thrust
- 300 kg load capacity
- Ball screw and lead screw configurations
- Includes stainless steel dust covers
- High moment stiffness
- Built-in, 400 CPR, motor encoder provides slip/stall detection and recovery
- Optional integrated power-off brake for vertical applications
- 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

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LRT-EC Series Overview

Zaber's LRT-EC Series products are computer-controlled, motorized linear stages with high stiffness, load, and lifetime capabilities in a compact size. A flexible stainless steel dust cover prevents the ingress of small objects. These stages can bolt together to make XY and XYZ systems. For Z-axis systems, an optional power-off brake is available to protect against backdriving. Some multi-axis configurations may require additional accessories; please contact Zaber Technical Support to ensure the correct ones are selected.

The built-in motor encoder allows for closed-loop operation and slip/stall recovery features. The stages are designed to connect directly to our 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 LRT-EC.

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

LRT-EC Series Part Numbering & Options

LRT 0100 A L - _ E08 C T3A

Travel
- **0100** — 100 mm
- **0250** — 250 mm
- **...**
- **1000** — 1000 mm
- **1500** — 1500 mm

Drive Screw Options
- **A** — Fine pitch lead screw
- **B** — Medium pitch lead screw
- **D** — Coarse pitch lead screw
- **H** — Fine pitch ball screw

Drive Configuration
- **L** — Inline

Brake Option
- **None** — No Brake
- **B** — Brake

Encoder Options
- **E08** — Motor Encoder, 400 CPR

Cover
- **C** — Stainless Steel Dust Cover

Connector
- **T3A** — D-sub 15 panel mount connector with Auto Detect
- **T10A** — D-sub 26 panel mount connector with Auto Detect

LRT-EC Series Drawings

• View all drawings and documents at zaber.com

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LRT-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	<10 µm (<0.000394 ")
Straightness of Travel	<50 µm (<0.001968 ")
Pitch Error	0.015 ° (0.262 mrad)
Roll Error	0.02 ° (0.349 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Centered Load	2940 N (659.3 lb)
Maximum Moment (Pitch)	70 N·m (51.7 lb·ft)
Maximum Moment (Roll)	120 N·m (88.56 lb·ft)
Maximum Moment (Yaw)	70 N·m (51.66 lb·ft)
Stiffness (Pitch)	1400 N·m/°

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Stiffness (Roll)	700 N·m/°
Stiffness (Yaw)	1200 N·m/°

Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Encoder Resolution	400 CPR (16 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	3000 mA/phase
Motor Winding Resistance	0.53 ohms/phase
Motor Winding Inductance	2 mH/phase

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide

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
LRT0100AL-E08CT3A	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<4 µm (<0.000157 ")
LRT0100BL-BE08CT10A	100 mm (3.937 ")	4.276 kg (9.427 lb)	25 µm (0.000984 ")	<4 µm (<0.000157 ")
LRT0100BL-E08CT3A	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<4 µm (<0.000157 ")
LRT0100DL-BE08CT10A	100 mm (3.937 ")	4.276 kg (9.427 lb)	25 µm (0.000984 ")	<8 µm (<0.000315 ")
LRT0100DL-E08CT3A	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<8 µm (<0.000315 ")
LRT0100HL-BE08CT10A	100 mm (3.937 ")	4.276 kg (9.427 lb)	45 µm (0.001772 ")	<4 µm (<0.000157 ")
LRT0100HL-E08CT3A	100 mm (3.937 ")	3.65 kg (8.047 lb)	45 µm (0.001772 ")	<4 µm (<0.000157 ")
LRT0250AL-E08CT3A	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<4 µm (<0.000157 ")
LRT0250BL-BE08CT10A	250 mm (9.843 ")	5.067 kg (11.171 lb)	63 µm (0.00248 ")	<4 µm (<0.000157 ")
LRT0250BL-E08CT3A	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<4 µm (<0.000157 ")
LRT0250DL-BE08CT10A	250 mm (9.843 ")	5.067 kg (11.171 lb)	63 µm (0.00248 ")	<8 µm (<0.000315 ")
LRT0250DL-E08CT3A	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<8 µm (<0.000315 ")
LRT0250HL-BE08CT10A	250 mm (9.843 ")	5.067 kg (11.171 lb)	113 µm (0.004449 ")	<4 µm (<0.000157 ")
LRT0250HL-E08CT3A	250 mm (9.843 ")	4.553 kg (10.038 lb)	113 µm (0.004449 ")	<4 µm (<0.000157 ")
LRT0500AL-E08CT3A	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<4 µm (<0.000157 ")
LRT0500BL-BE08CT10A	500 mm (19.685 ")	6.384 kg (14.074 lb)	125 µm (0.004921 ")	<4 µm (<0.000157 ")
LRT0500BL-E08CT3A	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<4 µm (<0.000157 ")
LRT0500DL-BE08CT10A	500 mm (19.685 ")	6.384 kg (14.074 lb)	125 µm (0.004921 ")	<8 µm (<0.000315 ")
LRT0500DL-E08CT3A	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<8 µm (<0.000315 ")

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LRT0500HL-BE08CT10A	500 mm (19.685 ")	6.384 kg (14.074 lb)	225 µm (0.008858 ")	<4 µm (<0.000157 ")
LRT0500HL-E08CT3A	500 mm (19.685 ")	5.858 kg (12.915 lb)	225 µm (0.008858 ")	<4 µm (<0.000157 ")
LRT0750AL-E08CT3A	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<4 µm (<0.000157 ")
LRT0750BL-BE08CT10A	750 mm (29.528 ")	7.702 kg (16.98 lb)	188 µm (0.007402 ")	<4 µm (<0.000157 ")
LRT0750BL-E08CT3A	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<4 µm (<0.000157 ")
LRT0750DL-BE08CT10A	750 mm (29.528 ")	7.702 kg (16.98 lb)	188 µm (0.007402 ")	<8 µm (<0.000315 ")
LRT0750DL-E08CT3A	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<8 µm (<0.000315 ")
LRT0750HL-BE08CT10A	750 mm (29.528 ")	7.702 kg (16.98 lb)	338 µm (0.013307 ")	<4 µm (<0.000157 ")
LRT0750HL-E08CT3A	750 mm (29.528 ")	7.076 kg (15.6 lb)	338 µm (0.013307 ")	<4 µm (<0.000157 ")
LRT1000AL-E08CT3A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<4 µm (<0.000157 ")
LRT1000BL-BE08CT10A	1000 mm (39.37 ")	9.019 kg (19.883 lb)	250 µm (0.009842 ")	<4 µm (<0.000157 ")
LRT1000BL-E08CT3A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<4 µm (<0.000157 ")
LRT1000DL-BE08CT10A	1000 mm (39.37 ")	9.019 kg (19.883 lb)	250 µm (0.009842 ")	<8 µm (<0.000315 ")
LRT1000DL-E08CT3A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<8 µm (<0.000315 ")
LRT1000HL-BE08CT10A	1000 mm (39.37 ")	9.019 kg (19.883 lb)	450 µm (0.017716 ")	<4 µm (<0.000157 ")
LRT1000HL-E08CT3A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	450 µm (0.017716 ")	<4 µm (<0.000157 ")
LRT1500AL-E08CT3A	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<4 µm (<0.000157 ")
LRT1500BL-BE08CT10A	1500 mm (59.055 ")	11.654 kg (25.693 lb)	375 µm (0.014764 ")	<4 µm (<0.000157 ")
LRT1500BL-E08CT3A	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<4 µm (<0.000157 ")
LRT1500DL-BE08CT10A	1500 mm (59.055 ")	11.654 kg (25.693 lb)	375 µm (0.014764 ")	<8 µm (<0.000315 ")

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LRT1500DL-E08CT3A	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<8 µm (<0.000315 ")

Part Number	Backlash	Microstep Size (Default Resolution)	Peak Thrust	Maximum Axial Brake Force
LRT0100AL-E08CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
LRT0100BL-BE08CT10A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)
LRT0100BL-E08CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
LRT0100DL-BE08CT10A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
LRT0100DL-E08CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	
LRT0100HL-BE08CT10A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)
LRT0100HL-E08CT3A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	
LRT0250AL-E08CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
LRT0250BL-BE08CT10A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)
LRT0250BL-E08CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
LRT0250DL-BE08CT10A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
LRT0250DL-E08CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	
LRT0250HL-BE08CT10A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)
LRT0250HL-E08CT3A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	
LRT0500AL-E08CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
LRT0500BL-BE08CT10A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)
LRT0500BL-E08CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	

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LRT0500DL-BE08CT10A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
LRT0500DL-E08CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	
LRT0500HL-BE08CT10A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)
LRT0500HL-E08CT3A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	
LRT0750AL-E08CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
LRT0750BL-BE08CT10A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)
LRT0750BL-E08CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
LRT0750DL-BE08CT10A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
LRT0750DL-E08CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	
LRT0750HL-BE08CT10A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)
LRT0750HL-E08CT3A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	
LRT1000AL-E08CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
LRT1000BL-BE08CT10A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)
LRT1000BL-E08CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
LRT1000DL-BE08CT10A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
LRT1000DL-E08CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	
LRT1000HL-BE08CT10A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.8 lb)
LRT1000HL-E08CT3A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	
LRT1500AL-E08CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	
LRT1500BL-BE08CT10A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.9 lb)

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LRT1500BL-E08CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	
LRT1500DL-BE08CT10A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.5 lb)
LRT1500DL-E08CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	

Part Number	Maximum Continuous Thrust	Back-driving Force*	Maximum Speed	Minimum Speed
LRT0100AL-E08CT3A	1200 N (269.1 lb)	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)
LRT0100BL-BE08CT10A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0100BL-E08CT3A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0100DL-BE08CT10A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0100DL-E08CT3A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0100HL-BE08CT10A	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
LRT0100HL-E08CT3A	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
LRT0250AL-E08CT3A	1200 N (269.1 lb)	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)
LRT0250BL-BE08CT10A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0250BL-E08CT3A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0250DL-BE08CT10A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0250DL-E08CT3A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0250HL-BE08CT10A	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
LRT0250HL-E08CT3A	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
LRT0500AL-E08CT3A	1200 N (269.1 lb)	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)

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LRT0500BL-BE08CT10A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0500BL-E08CT3A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0500DL-BE08CT10A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0500DL-E08CT3A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0500HL-BE08CT10A	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
LRT0500HL-E08CT3A	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)
LRT0750AL-E08CT3A	1200 N (269.1 lb)	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)
LRT0750BL-BE08CT10A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0750BL-E08CT3A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0750DL-BE08CT10A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0750DL-E08CT3A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0750HL-BE08CT10A	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	150 mm/s (5.905 "/s)	0.000239 mm/s (0.000009 "/s)
LRT0750HL-E08CT3A	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	150 mm/s (5.905 "/s)	0.000239 mm/s (0.000009 "/s)
LRT1000AL-E08CT3A	1200 N (269.1 lb)	Non-back-driving	28 mm/s (1.102 "/s)	0.000076 mm/s (0.000003 "/s)
LRT1000BL-BE08CT10A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	120 mm/s (4.724 "/s)	0.000303 mm/s (0.000012 "/s)
LRT1000BL-E08CT3A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	120 mm/s (4.724 "/s)	0.000303 mm/s (0.000012 "/s)
LRT1000DL-BE08CT10A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	500 mm/s (19.685 "/s)	0.001212 mm/s (0.000048 "/s)
LRT1000DL-E08CT3A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	500 mm/s (19.685 "/s)	0.001212 mm/s (0.000048 "/s)
LRT1000HL-BE08CT10A	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	95 mm/s (3.74 "/s)	0.000239 mm/s (0.000009 "/s)
LRT1000HL-E08CT3A	1200 N (269.1 lb)	157 (± 30%) N (35.2 lb)	95 mm/s (3.74 "/s)	0.000239 mm/s (0.000009 "/s)

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LRT1500AL-E08CT3A	1200 N (269.1 lb)	Non-back-driving	13 mm/s (0.512 "/s)	0.000076 mm/s (0.000003 "/s)
LRT1500BL-BE08CT10A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	55 mm/s (2.165 "/s)	0.000303 mm/s (0.000012 "/s)
LRT1500BL-E08CT3A	600 N (134.6 lb)	420 (± 30%) N (94.2 lb)	55 mm/s (2.165 "/s)	0.000303 mm/s (0.000012 "/s)
LRT1500DL-BE08CT10A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	225 mm/s (8.858 "/s)	0.001212 mm/s (0.000048 "/s)
LRT1500DL-E08CT3A	180 N (40.4 lb)	40 (± 30%) N (9 lb)	225 mm/s (8.858 "/s)	0.001212 mm/s (0.000048 "/s)

Part Number	Speed Resolution	Linear Motion Per Motor Rev	Motor Connection	Mechanical Drive System
LRT0100AL-E08CT3A	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	D-sub 15	Precision lead screw
LRT0100BL-BE08CT10A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 26	Precision lead screw
LRT0100BL-E08CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 15	Precision lead screw
LRT0100DL-BE08CT10A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 26	Precision lead screw
LRT0100DL-E08CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 15	Precision lead screw
LRT0100HL-BE08CT10A	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	D-sub 26	Precision ball screw
LRT0100HL-E08CT3A	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	D-sub 15	Precision ball screw
LRT0250AL-E08CT3A	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	D-sub 15	Precision lead screw
LRT0250BL-BE08CT10A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 26	Precision lead screw
LRT0250BL-E08CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 15	Precision lead screw
LRT0250DL-BE08CT10A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 26	Precision lead screw
LRT0250DL-E08CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 15	Precision lead screw
LRT0250HL-BE08CT10A	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	D-sub 26	Precision ball screw

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LRT0250HL-E08CT3A	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	D-sub 15	Precision ball screw
LRT0500AL-E08CT3A	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	D-sub 15	Precision lead screw
LRT0500BL-BE08CT10A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 26	Precision lead screw
LRT0500BL-E08CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 15	Precision lead screw
LRT0500DL-BE08CT10A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 26	Precision lead screw
LRT0500DL-E08CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 15	Precision lead screw
LRT0500HL-BE08CT10A	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	D-sub 26	Precision ball screw
LRT0500HL-E08CT3A	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	D-sub 15	Precision ball screw
LRT0750AL-E08CT3A	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	D-sub 15	Precision lead screw
LRT0750BL-BE08CT10A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 26	Precision lead screw
LRT0750BL-E08CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 15	Precision lead screw
LRT0750DL-BE08CT10A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 26	Precision lead screw
LRT0750DL-E08CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 15	Precision lead screw
LRT0750HL-BE08CT10A	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	D-sub 26	Precision ball screw
LRT0750HL-E08CT3A	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	D-sub 15	Precision ball screw
LRT1000AL-E08CT3A	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	D-sub 15	Precision lead screw
LRT1000BL-BE08CT10A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 26	Precision lead screw
LRT1000BL-E08CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 15	Precision lead screw
LRT1000DL-BE08CT10A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 26	Precision lead screw
LRT1000DL-E08CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 15	Precision lead screw

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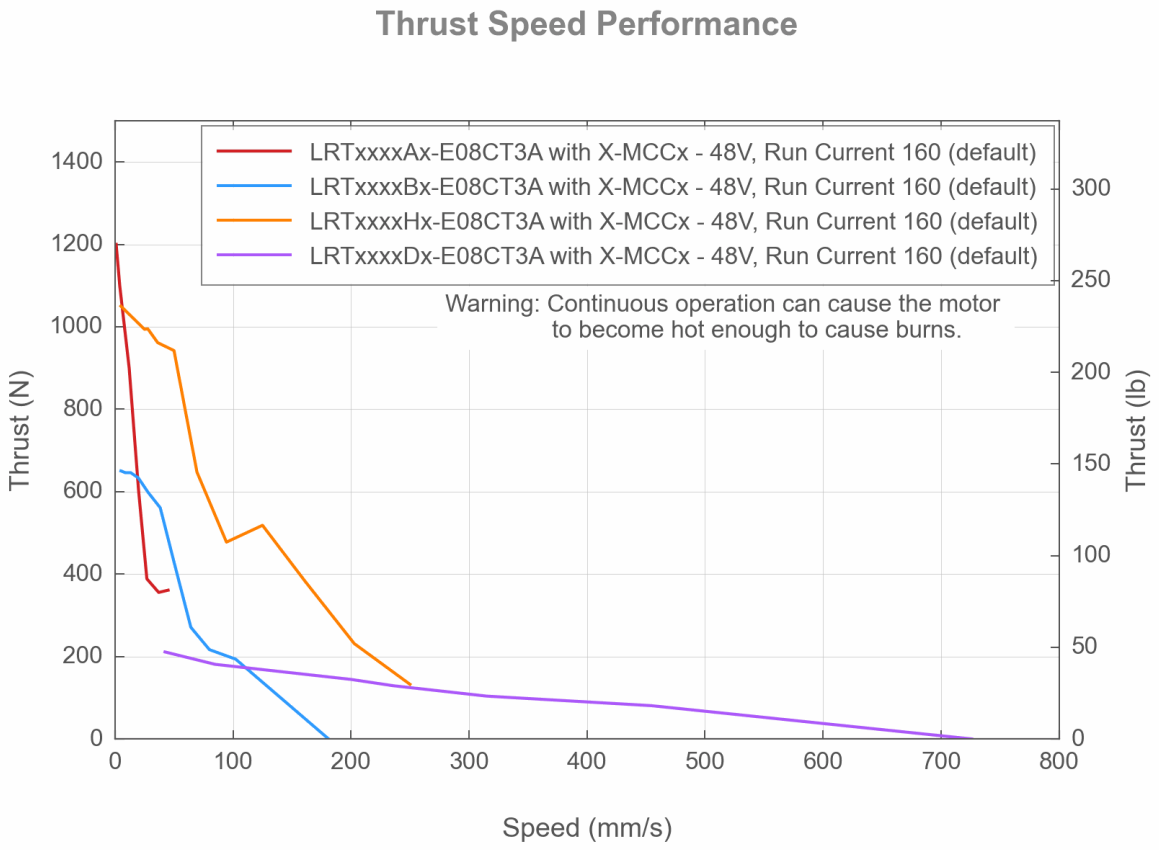
LRT1000HL-BE08CT10A	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	D-sub 26	Precision ball screw
LRT1000HL-E08CT3A	0.000239 mm/s (0.000009 "/s)	5 mm (0.197 ")	D-sub 15	Precision ball screw
LRT1500AL-E08CT3A	0.000076 mm/s (0.000003 "/s)	1.5875 mm (0.062 ")	D-sub 15	Precision lead screw
LRT1500BL-BE08CT10A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 26	Precision lead screw
LRT1500BL-E08CT3A	0.000303 mm/s (0.000012 "/s)	6.35 mm (0.25 ")	D-sub 15	Precision lead screw
LRT1500DL-BE08CT10A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 26	Precision lead screw
LRT1500DL-E08CT3A	0.001212 mm/s (0.000048 "/s)	25.4 mm (1 ")	D-sub 15	Precision lead screw

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LRT-EC Series Charts

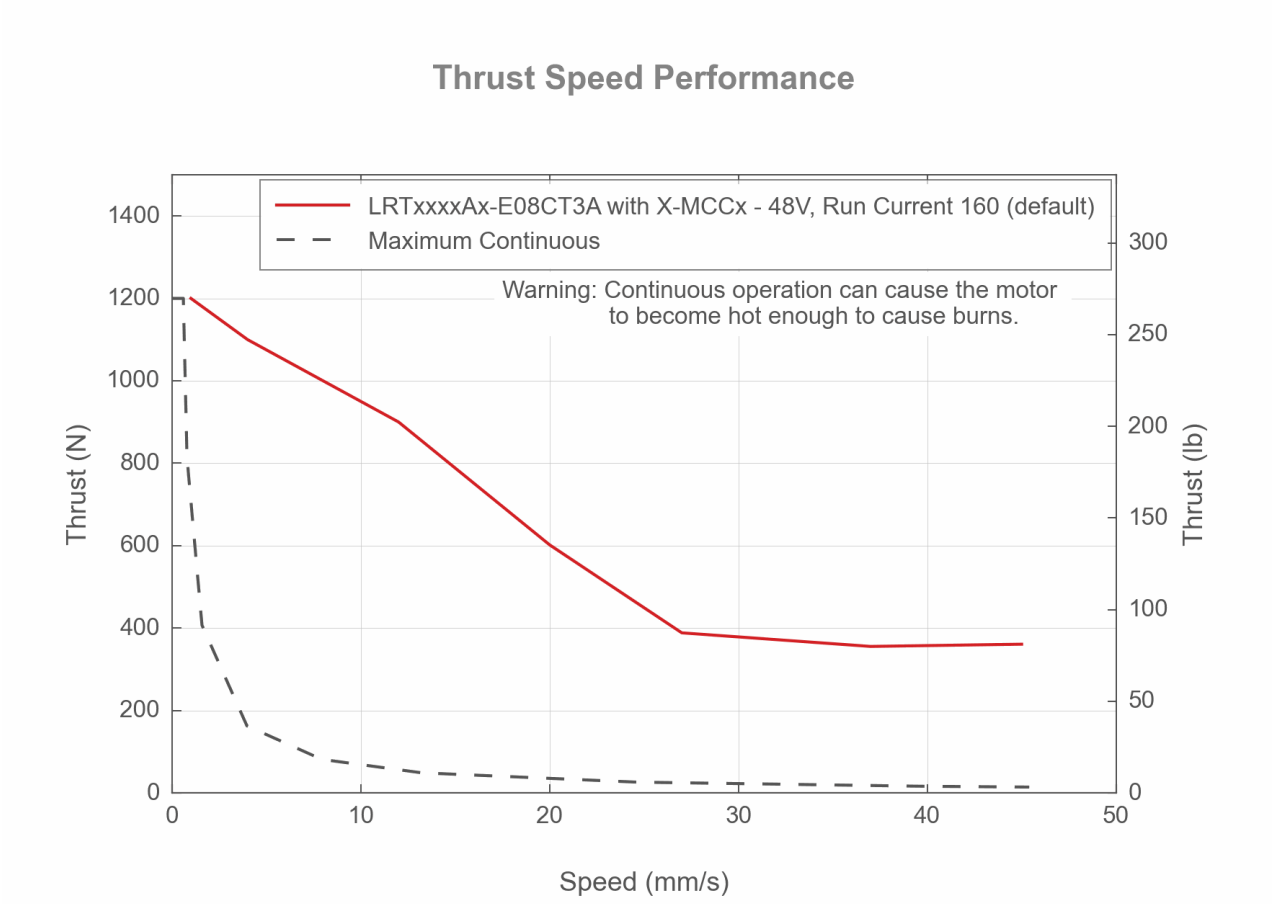
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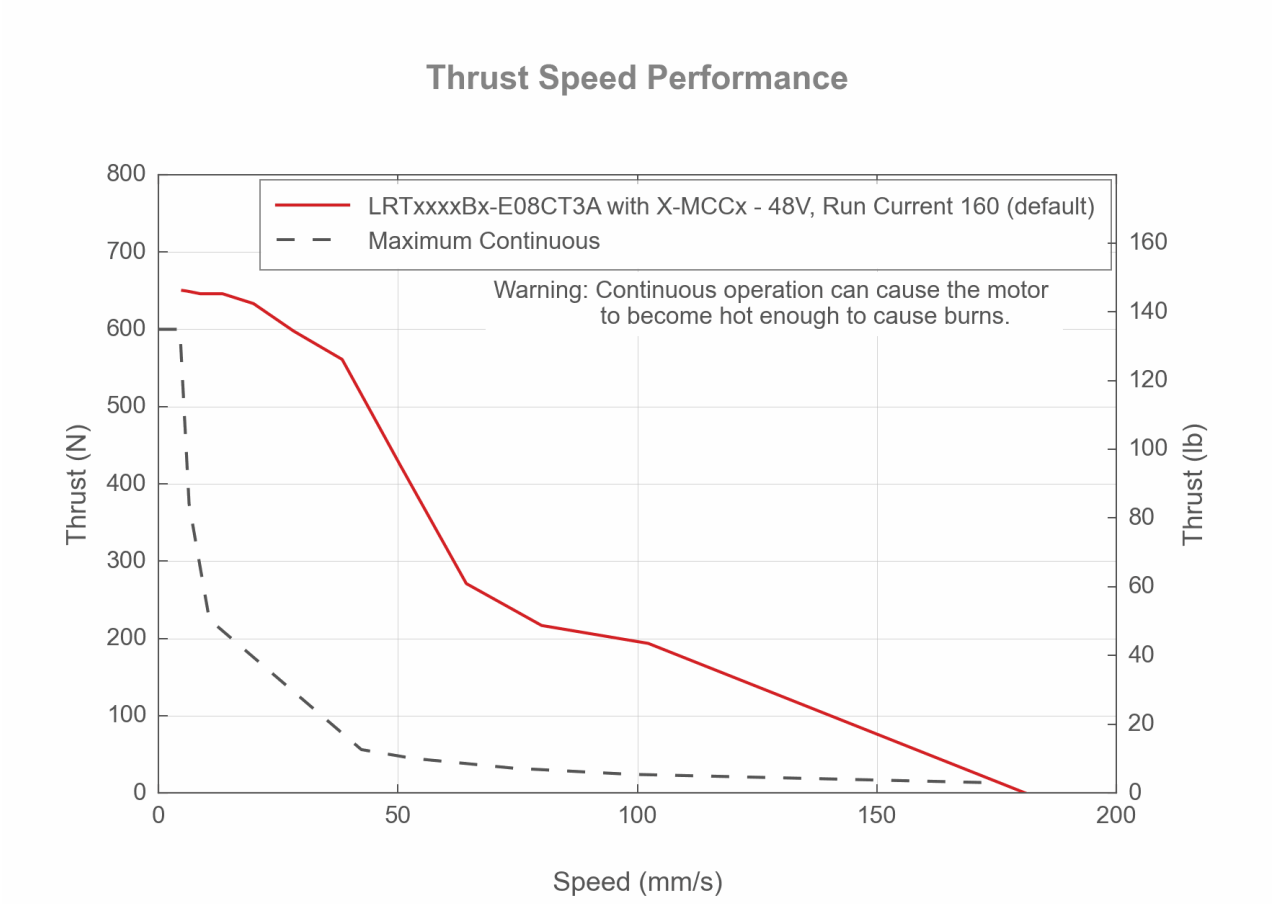
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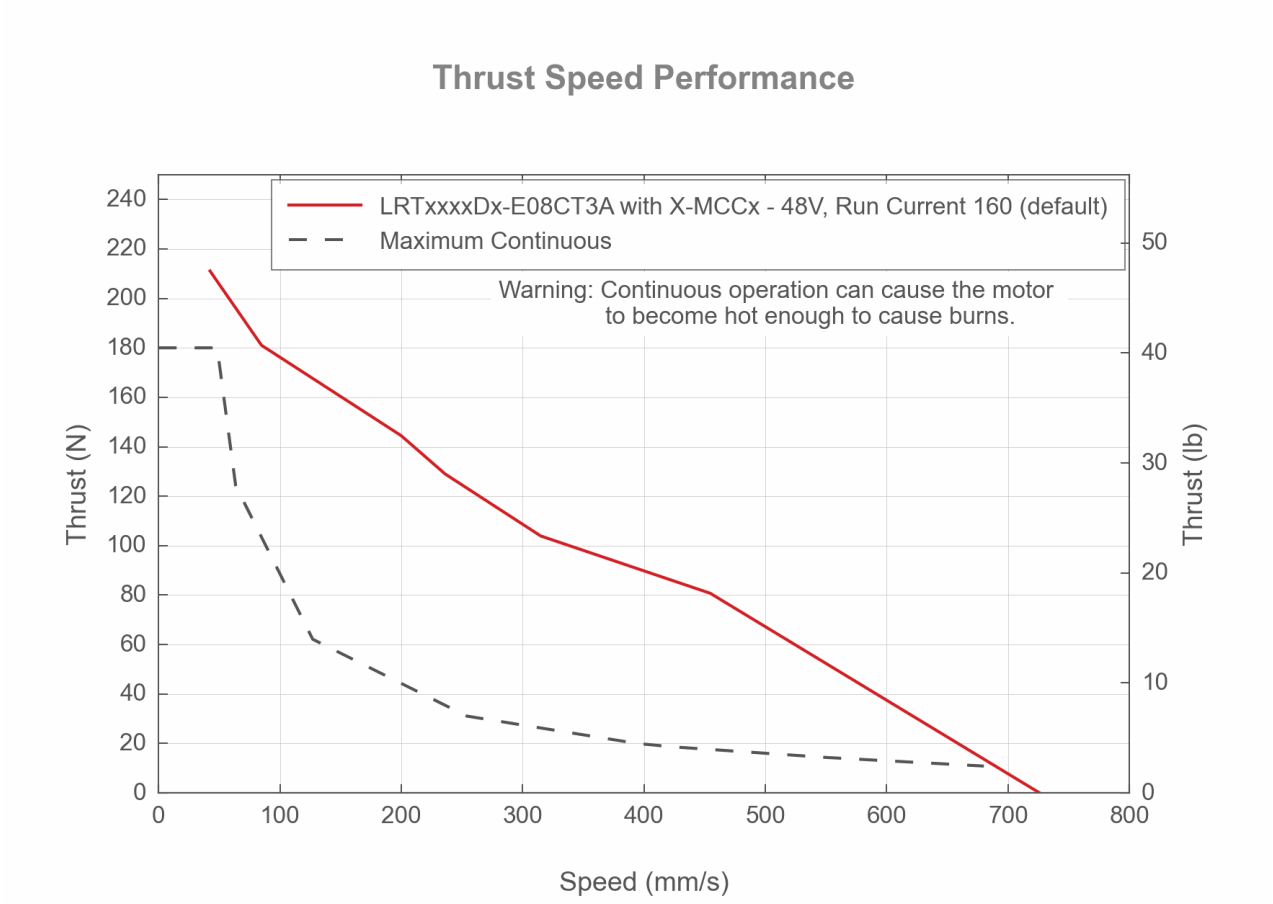
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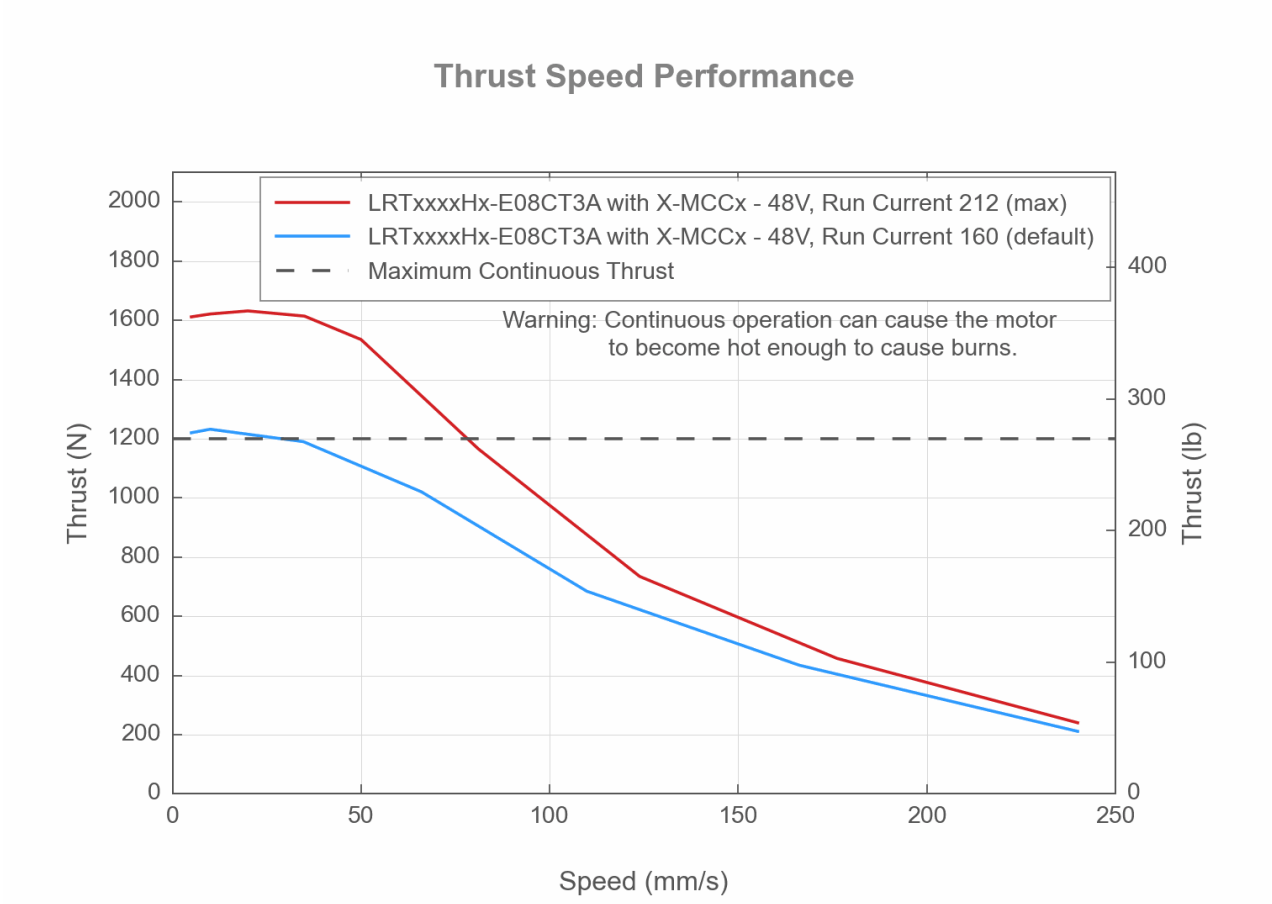
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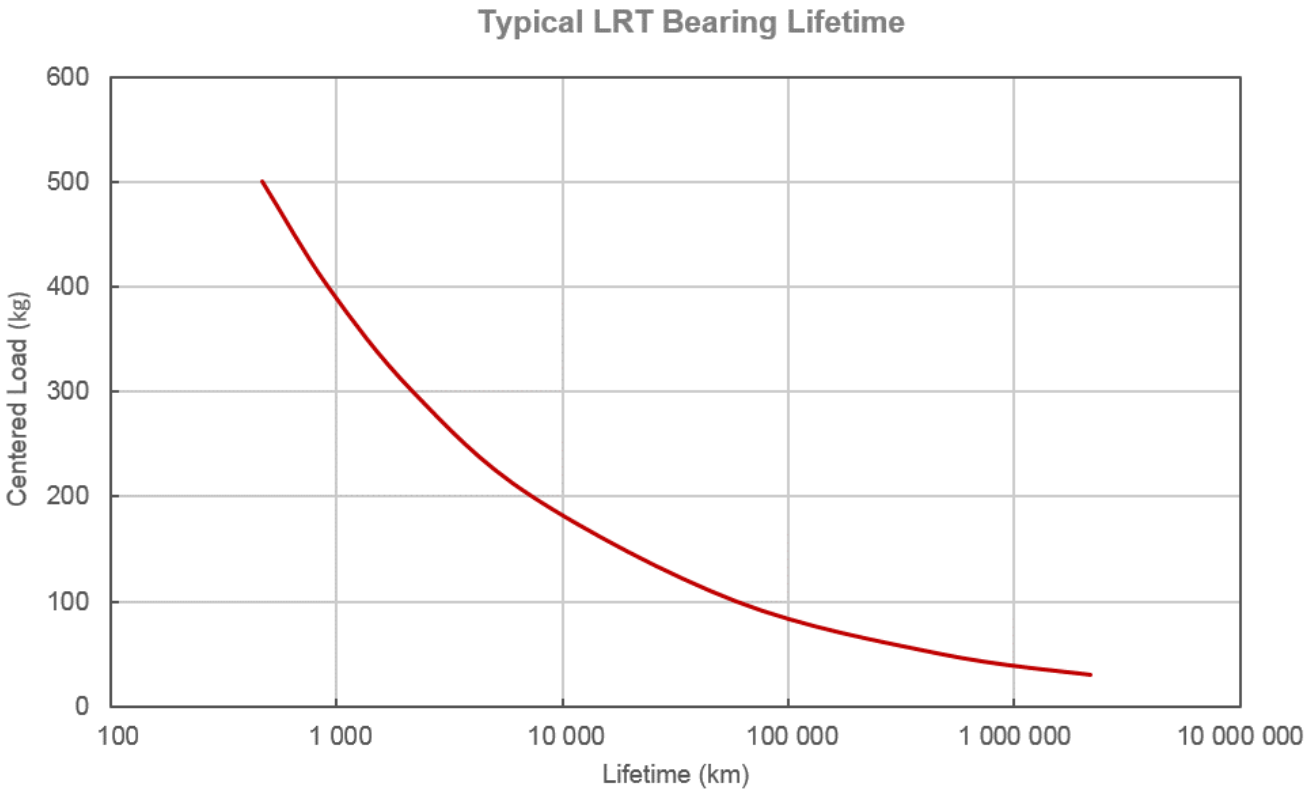
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LRT Lifetime



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LRT-ECM Series Datasheet



• Primary Specs

100, 250, 500, 750, 1000 mm travel
Up to 240 mm/s speed and up to 1440 N thrust
300 kg load capacity
16,384 states/rev motor encoder

• Drivetrain & Mechanical Design

High-power BLDC motors provide smooth, quiet motion and high throughput.
Ball screw ensures high-accuracy, high-speed linear motion.
Flexible stainless steel dust cover protects from contamination.
High moment stiffness supports heavy offset loads across full travel.
Optional integrated power-off brake holds payloads securely in vertical applications.

• Controller Integration & Motion Control

Designed and optimized for the MCC motor controller, enabling closed-loop control, force sensing, and high-precision homing.
AutoDetect configures motor parameters, encoder settings, and servo loop tuning automatically on the MCC controller — reducing setup time and eliminating manual entry errors.

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• Ideal for applications that require:

High dynamic performance: Accelerating heavy loads quickly with high thrust maintained at top.
Stall & force protection: Active force measurement, collision detection or stall prevention.
Low noise & thermal stability: Quiet operation and low heat generation for sensitive environments.

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LRT-ECM Series Overview

Zaber's LRT-ECM Series brings high speed, power, and precision to compact, high-load, high-lifetime linear stages.
The brushless DC servo motors provide quiet, smooth operation and lower running temperatures — making it ideal for continuous, high-throughput applications where thermal stability and avoiding motor stalls are critical.
Setup is plug-and-play. With AutoDetect, the MCC controller automatically identifies the stage and configures all motor parameters, encoder settings, and servo tuning. No manual tuning or parameter entry required — simply connect the stage, home it, and begin operating immediately. The high-resolution motor encoder enables precise closed-loop servo control of the motor, accurate linear positioning, and force-sensing capabilities.
Engineered with high moment stiffness and protected by a flexible stainless steel dust cover, these stages easily integrate into robust XY and XYZ multi-axis systems. For vertical Z-axis configurations, an optional integrated power-off brake protects against back-driving during power loss. Some multi-axis configurations may require additional accessories; please contact Zaber Technical Support to ensure the correct ones are selected.
Note: The LRT-ECM is designed and optimized for use with the MCC family of universal motor controllers.

[For more information visit: https://www.zaber.com/products/brushless-motors/LRT-ECM](https://www.zaber.com/products/brushless-motors/LRT-ECM)

LRT-ECM Series Part Numbering & Options

LRT 0100 H L - B E10 C M05 T12A

Travel
- **0100** — 100 mm
- **0250** — 250 mm
- **0500** — 500 mm
- **0750** — 750 mm
- **1000** — 1000 mm

Lead Screw Options
- **H** — Fine pitch ball screw

Drive Configuration
- **L** — Inline

Brake Option
- **None** — No Brake
- **B** — Brake

Encoder Options
- **E10** — Absolute Motor Encoder, 4096 CPR

Cover
- **C** — Stainless Steel Dust Cover

Motor Options
- **M05** — Brushless DC Motor

Connector
- **T11A** — D-sub 15 panel mount connector and M12 T-code connector with Auto Detect
- **T12A** — D-sub 26 panel mount connector and M12 T-code connector with Auto Detect

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LRT-ECM Series Drawings

- LRT-BECM (Drawing for the LRT-BECM)
- LRT-ECM (Drawing for the LRT-ECM)
- View all drawings and documents at zaber.com

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LRT-ECM 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
Repeatability	<4 µm (<0.000157 ")
Minimum Incremental Move	6.5 µm
Backlash	<25 µm (<0.000984 ")
Flatness of Travel	<10 µm (<0.000394 ")
Straightness of Travel	<50 µm (<0.001968 ")
Pitch Error	0.015 ° (0.262 mrad)
Roll Error	0.02 ° (0.349 mrad)
Yaw Error	0.03 ° (0.523 mrad)

Load Performance

Specification	Value
Peak Thrust	1440 N (322.9 lb)
Maximum Axial Brake Force	1200 N (269.8 lb)
Maximum Continuous Thrust	440 N (98.7 lb)

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Back-driving Force*	(± 50%) 140
Maximum Centered Load	2940 N (659.3 lb)
Maximum Moment (Pitch)	70 N·m (51.7 lb·ft)
Maximum Moment (Roll)	120 N·m (88.56 lb·ft)
Maximum Moment (Yaw)	70 N·m (51.66 lb·ft)
Stiffness (Pitch)	1400 N·m/°
Stiffness (Roll)	700 N·m/°
Stiffness (Yaw)	1200 N·m/°

Speed

Specification	Value
Maximum Speed	240 mm/s (9.449 "/s)
Minimum Speed	0.000186 mm/s (0.000007 "/s)
Speed Resolution	0.000186 mm/s (0.000007 "/s)
Typical Velocity Stability	± 2% at 100 mm/s with a 5 kg payload

Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (single-turn absolute)
Encoder Resolution	4096 CPR (16384 states/rev)
Encoder Count Size	305.176 nm
Limit or Home Sensing	Encoder index signal and magnetic home sensor

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Motor

Specification	Value
Linear Motion Per Motor Rev	5 mm (0.197 ")
Motor Type	Brushless DC (3 phase)
Motor Rated Current	5000 mA
Motor Winding Resistance	0.55 ohms line-to-line
Motor Winding Inductance	0.68 mH line-to-line

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Precision ball screw

Environmental & Compliance

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

Part Number	Travel Range	Weight	Accuracy (unidirectional)	Motor Connection
LRT0100HL-BE10CM05T12A	100 mm (3.937 ")	4.352 kg (9.595 lb)	45 µm (0.001772 ")	M12 T-code (motor) and D-sub 26 (sensors)
LRT0100HL-E10CM05T11A	100 mm (3.937 ")	3.726 kg (8.214 lb)	45 µm (0.001772 ")	M12 T-code (motor) and D-sub 15 (sensors)
LRT0250HL-BE10CM05T12A	250 mm (9.843 ")	5.143 kg (11.338 lb)	113 µm (0.004449 ")	M12 T-code (motor) and D-sub 26 (sensors)

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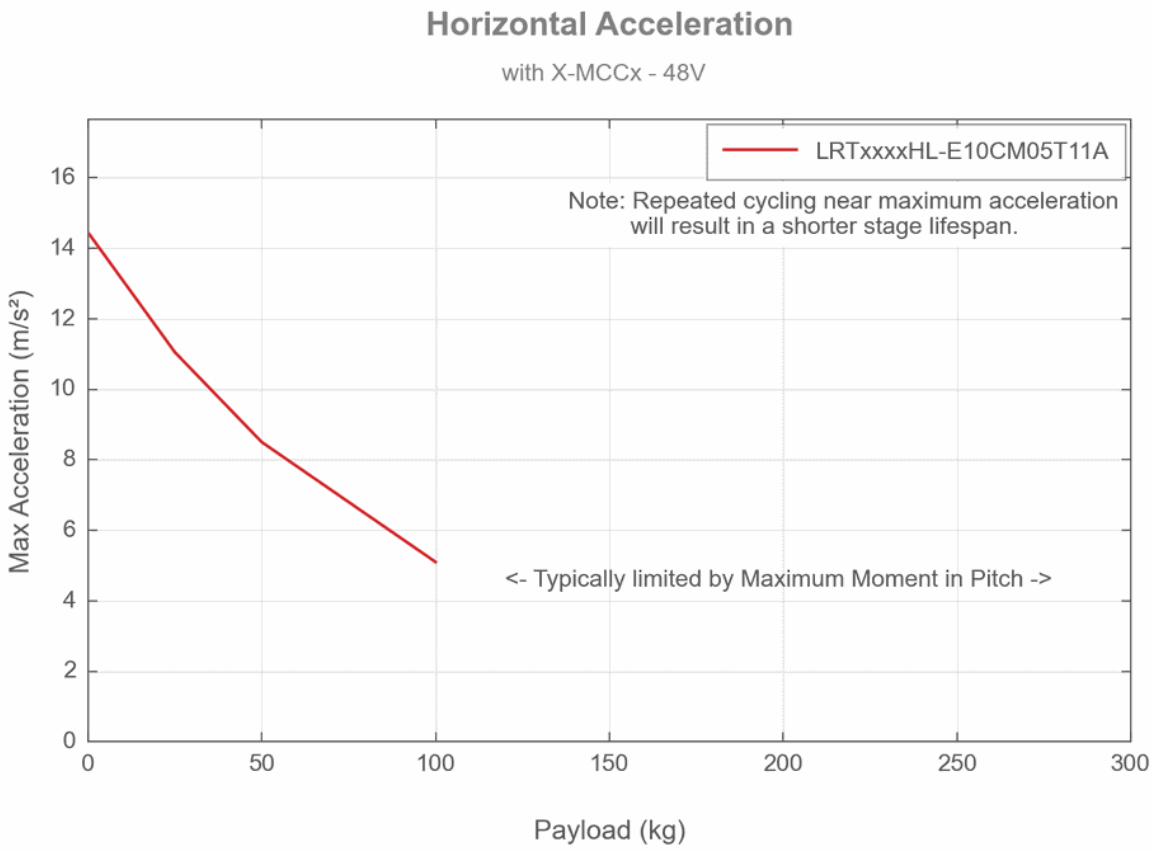
LRT0250HL-E10CM05T11A	250 mm (9.843 ")	4.517 kg (9.958 lb)	113 µm (0.004449 ")	M12 T-code (motor) and D-sub 15 (sensors)
LRT0500HL-BE10CM05T12A	500 mm (19.685 ")	6.46 kg (14.242 lb)	225 µm (0.008858 ")	M12 T-code (motor) and D-sub 26 (sensors)
LRT0500HL-E10CM05T11A	500 mm (19.685 ")	5.834 kg (12.862 lb)	225 µm (0.008858 ")	M12 T-code (motor) and D-sub 15 (sensors)
LRT0750HL-BE10CM05T12A	750 mm (29.528 ")	7.778 kg (17.148 lb)	338 µm (0.013307 ")	M12 T-code (motor) and D-sub 26 (sensors)
LRT0750HL-E10CM05T11A	750 mm (29.528 ")	7.152 kg (15.767 lb)	338 µm (0.013307 ")	M12 T-code (motor) and D-sub 15 (sensors)
LRT1000HL-BE10CM05T12A	1000 mm (39.37 ")	9.095 kg (20.051 lb)	450 µm (0.017716 ")	M12 T-code (motor) and D-sub 26 (sensors)
LRT1000HL-E10CM05T11A	1000 mm (39.37 ")	8.469 kg (18.671 lb)	450 µm (0.017716 ")	M12 T-code (motor) and D-sub 15 (sensors)

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LRT-ECM Series Charts

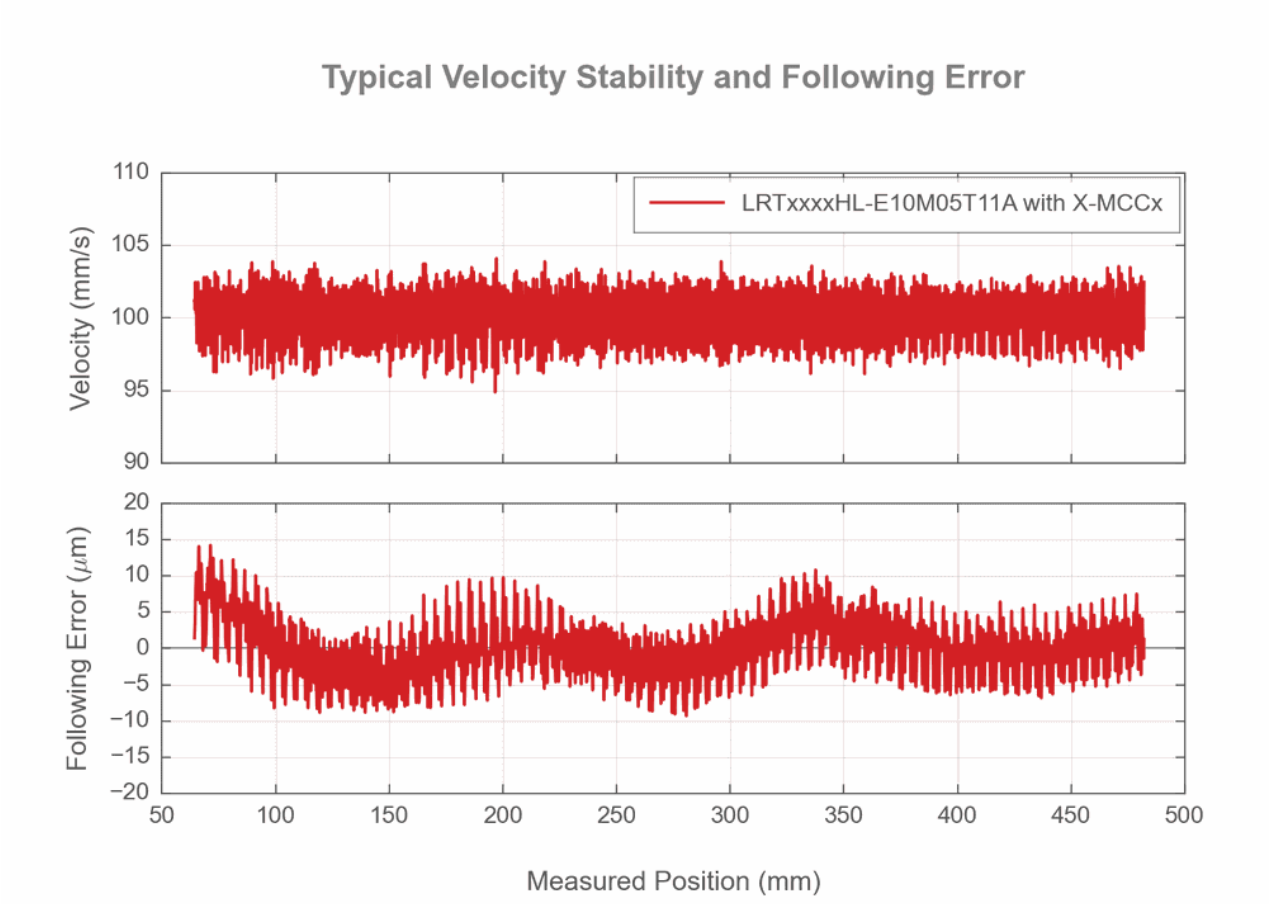
With LRTxxxxHL E10CM05T11A Horizontal Acceleration 170976



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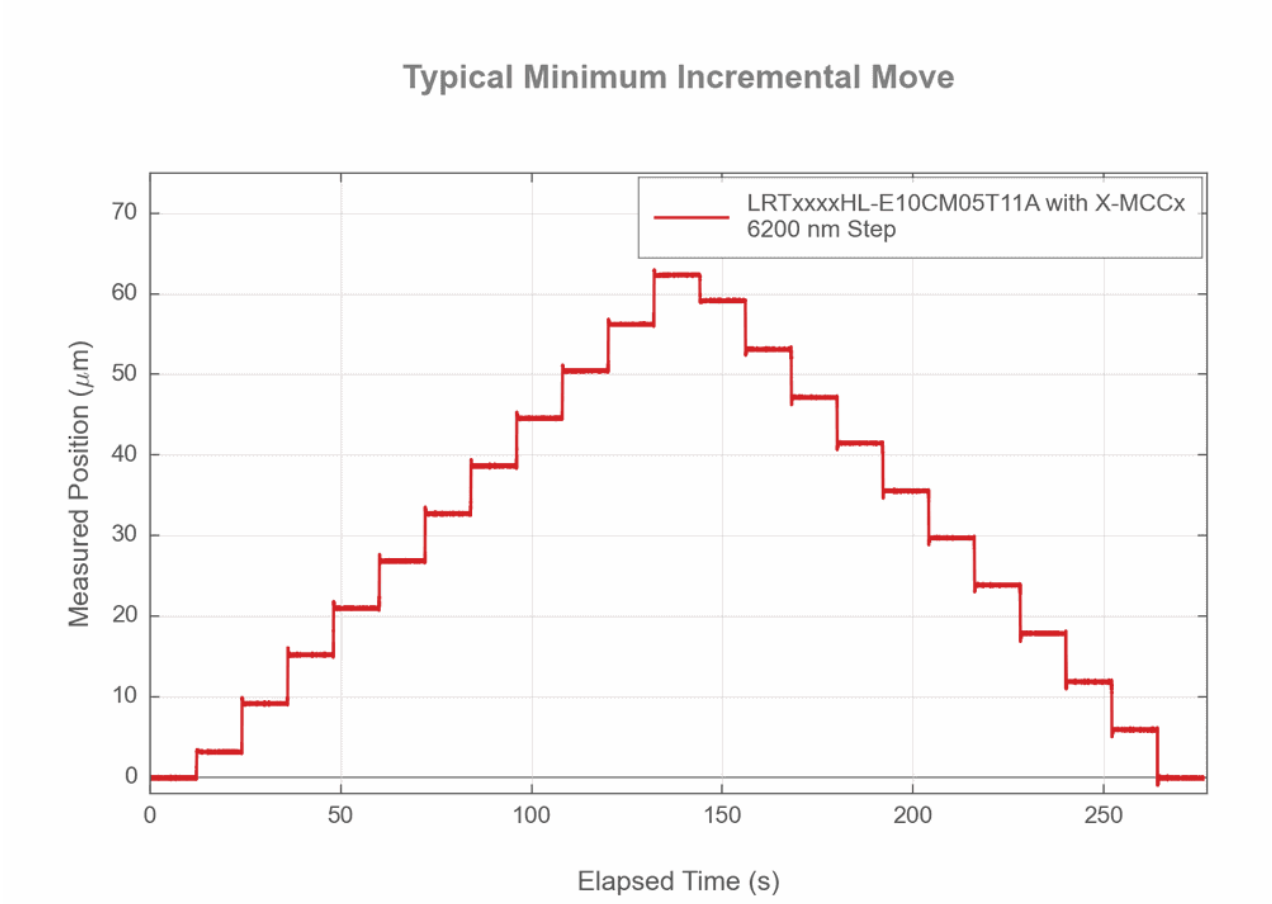
LRTxxxxHL E10M05T11A With X MCCx Typical Velocity Stability And Following Error 169406



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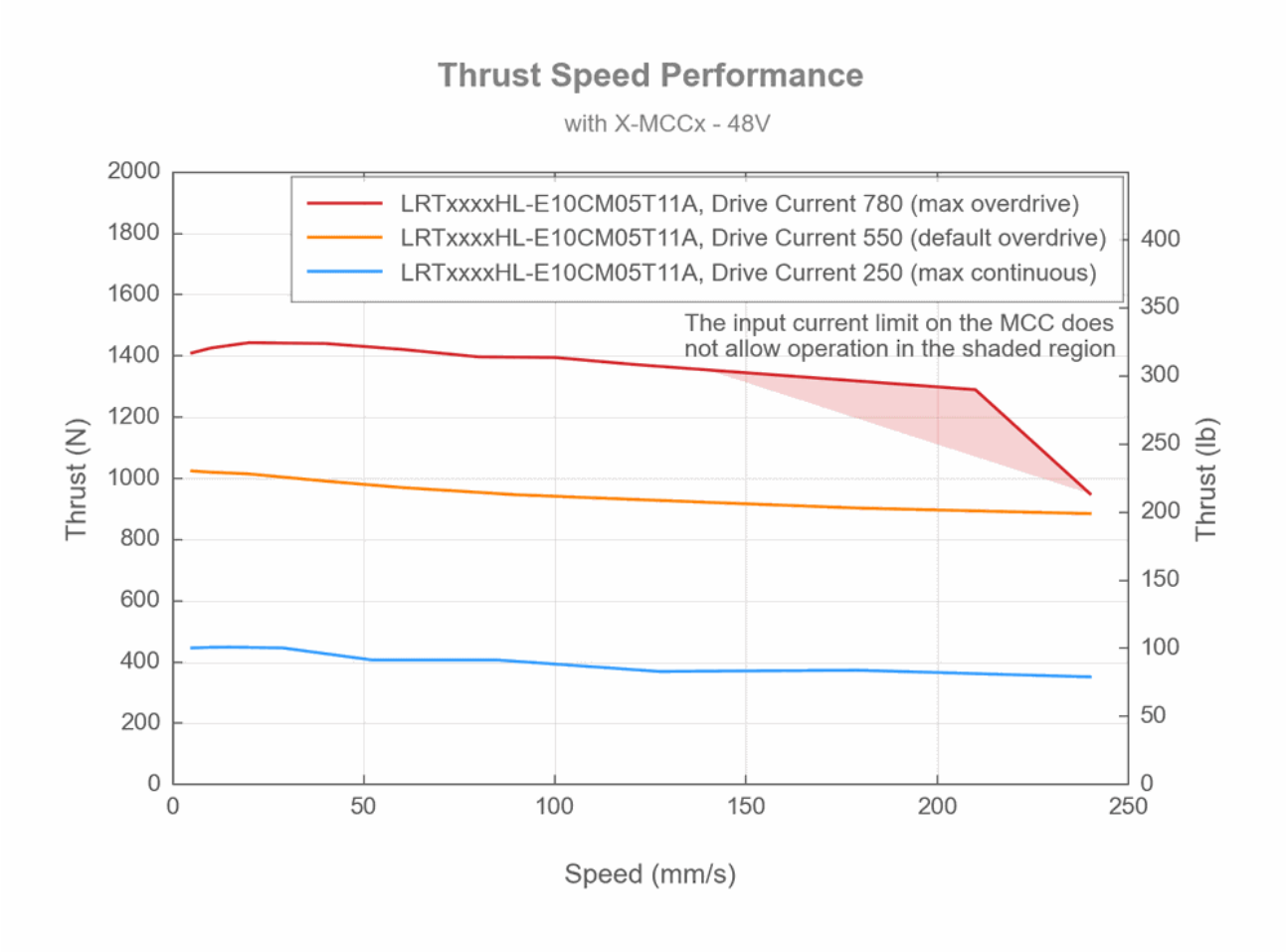
LRTxxxxHL E10CM05T11A With X MCCx 6200 Nm Step Typical Minimum Incremental Move 169464



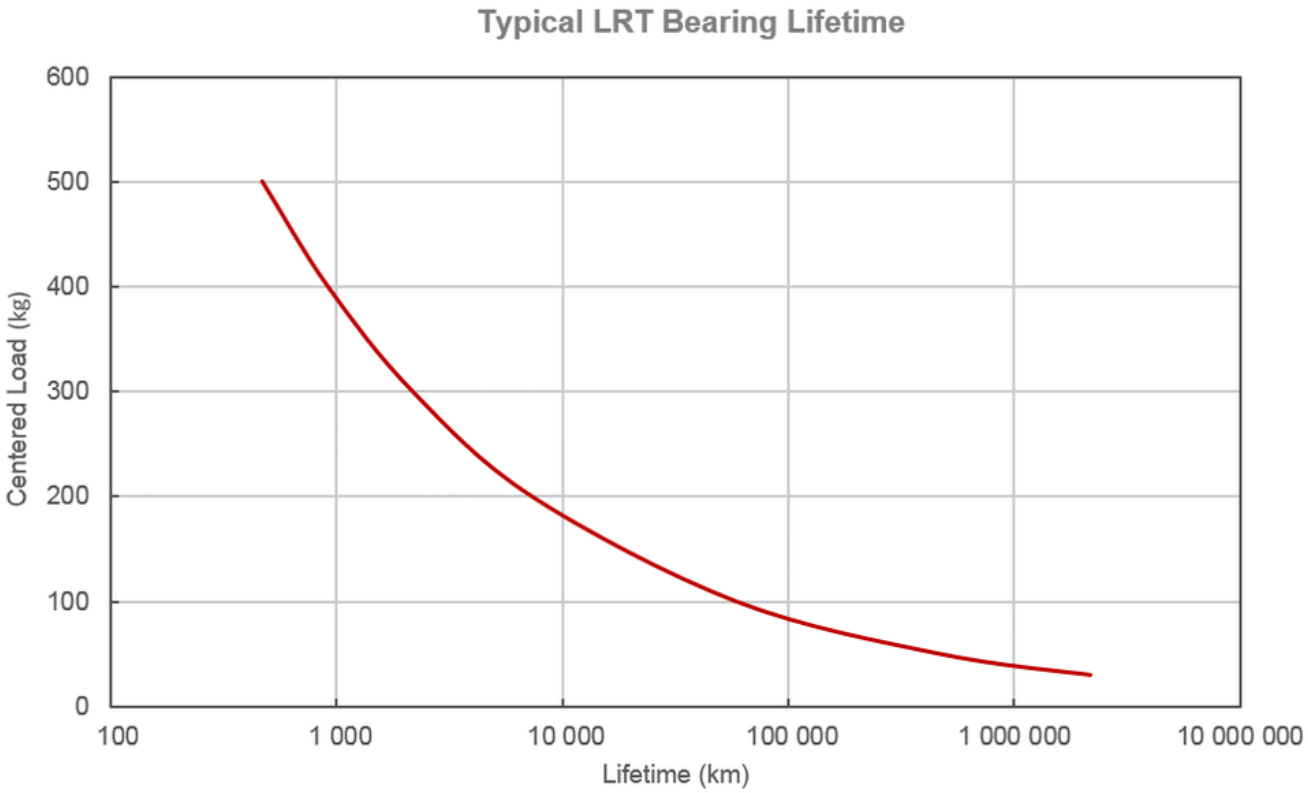
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LRTxxxxHL E10CM05T11A, With X MCCx 48V Thrust Speed Performance 173178, 175711, 175358



LRT_Lifetime



Contact

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LRT-C Series Datasheet



- 100, 250, 500, 750, 1000, 1500 mm travel
- Up to 700 mm/s speed and up to 1200 N thrust
- 300 kg load capacity
- High moment stiffness
- Includes stainless steel dust covers
- Ball screw and lead screw configurations
- 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

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LRT-C Series Overview

Zaber's LRT-C Series devices are computer-controlled, motorized linear stages with high stiffness, load, and lifetime capabilities in a compact size. A flexible stainless steel dust cover prevents the ingress of small objects. These stages can bolt together to make XY and XYZ systems. Some multi-axis configurations may require additional accessories; please contact Zaber Technical Support to ensure the correct ones are selected.

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 LRT-C.

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

LRT-C Series Part Numbering & Options

LRT 0100 A L - C T3A

Travel

0100 — 100 mm
0250 — 250 mm
...
1000 — 1000 mm
1500 — 1500 mm

Drive Screw Options

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

Drive Configuration

L — Inline

Cover

C — Stainless Steel Dust Cover

Connector

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

LRT-C Series Drawings

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

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LRT-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	<10 µm (<0.000394 ")
Straightness of Travel	<50 µm (<0.001968 ")
Pitch Error	0.015 ° (0.262 mrad)
Roll Error	0.02 ° (0.349 mrad)
Yaw Error	0.03 ° (0.523 mrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Centered Load	2940 N (659.3 lb)
Maximum Moment (Pitch)	70 N·m (51.7 lb·ft)
Maximum Moment (Roll)	120 N·m (88.56 lb·ft)
Maximum Moment (Yaw)	70 N·m (51.66 lb·ft)
Stiffness (Pitch)	1400 N·m/°

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Stiffness (Roll)	700 N·m/°
Stiffness (Yaw)	1200 N·m/°

Encoder & Sensing

Specification	Value
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	3000 mA/phase
Motor Winding Resistance	0.53 ohms/phase
Motor Winding Inductance	2 mH/phase
Motor Connection	D-sub 15

Mechanical

Specification	Value
Guide Type	Recirculating Ball Linear Guide

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

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LRT0100AL-CT3A	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<4 µm (<0.000157 ")
LRT0100BL-CT3A	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<4 µm (<0.000157 ")
LRT0100DL-CT3A	100 mm (3.937 ")	3.65 kg (8.047 lb)	25 µm (0.000984 ")	<8 µm (<0.000315 ")
LRT0100HL-CT3A	100 mm (3.937 ")	3.65 kg (8.047 lb)	45 µm (0.001772 ")	<4 µm (<0.000157 ")
LRT0250AL-CT3A	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<4 µm (<0.000157 ")
LRT0250BL-CT3A	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<4 µm (<0.000157 ")
LRT0250DL-CT3A	250 mm (9.843 ")	4.441 kg (9.791 lb)	63 µm (0.00248 ")	<8 µm (<0.000315 ")
LRT0250HL-CT3A	250 mm (9.843 ")	4.441 kg (9.791 lb)	113 µm (0.004449 ")	<4 µm (<0.000157 ")
LRT0500AL-CT3A	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<4 µm (<0.000157 ")
LRT0500BL-CT3A	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<4 µm (<0.000157 ")
LRT0500DL-CT3A	500 mm (19.685 ")	5.758 kg (12.694 lb)	125 µm (0.004921 ")	<8 µm (<0.000315 ")
LRT0500HL-CT3A	500 mm (19.685 ")	5.758 kg (12.694 lb)	225 µm (0.008858 ")	<4 µm (<0.000157 ")
LRT0750AL-CT3A	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<4 µm (<0.000157 ")
LRT0750BL-CT3A	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<4 µm (<0.000157 ")
LRT0750DL-CT3A	750 mm (29.528 ")	7.076 kg (15.6 lb)	188 µm (0.007402 ")	<8 µm (<0.000315 ")
LRT0750HL-CT3A	750 mm (29.528 ")	7.076 kg (15.6 lb)	338 µm (0.013307 ")	<4 µm (<0.000157 ")
LRT1000AL-CT3A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<4 µm (<0.000157 ")
LRT1000BL-CT3A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<4 µm (<0.000157 ")
LRT1000DL-CT3A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	250 µm (0.009842 ")	<8 µm (<0.000315 ")
LRT1000HL-CT3A	1000 mm (39.37 ")	8.393 kg (18.503 lb)	450 µm (0.017716 ")	<4 µm (<0.000157 ")

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LRT1500AL-CT3A	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<4 µm (<0.000157 ")
LRT1500BL-CT3A	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<4 µm (<0.000157 ")
LRT1500DL-CT3A	1500 mm (59.055 ")	11.028 kg (24.313 lb)	375 µm (0.014764 ")	<8 µm (<0.000315 ")

Part Number	Backlash	Microstep Size (Default Resolution)	Peak Thrust	Maximum Continuous Thrust
LRT0100AL-CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT0100BL-CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
LRT0100DL-CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)
LRT0100HL-CT3A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT0250AL-CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT0250BL-CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
LRT0250DL-CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)
LRT0250HL-CT3A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT0500AL-CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT0500BL-CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
LRT0500DL-CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)
LRT0500HL-CT3A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT0750AL-CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT0750BL-CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
LRT0750DL-CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)

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LRT0750HL-CT3A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT1000AL-CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT1000BL-CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
LRT1000DL-CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)
LRT1000HL-CT3A	<25 µm (<0.000984 ")	0.390625 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT1500AL-CT3A	<12 µm (<0.000472 ")	0.124023438 µm	1200 N (269.1 lb)	1200 N (269.1 lb)
LRT1500BL-CT3A	<45 µm (<0.001772 ")	0.49609375 µm	600 N (134.6 lb)	600 N (134.6 lb)
LRT1500DL-CT3A	<75 µm (<0.002953 ")	1.984375 µm	200 N (44.9 lb)	180 N (40.4 lb)

Part Number	Back-driving Force*	Maximum Speed	Minimum Speed	Speed Resolution
LRT0100AL-CT3A	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
LRT0100BL-CT3A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0100DL-CT3A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0100HL-CT3A	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
LRT0250AL-CT3A	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
LRT0250BL-CT3A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0250DL-CT3A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0250HL-CT3A	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
LRT0500AL-CT3A	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
LRT0500BL-CT3A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)

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LRT0500DL-CT3A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0500HL-CT3A	157 (± 30%) N (35.2 lb)	240 mm/s (9.449 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
LRT0750AL-CT3A	Non-back-driving	45 mm/s (1.772 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
LRT0750BL-CT3A	420 (± 30%) N (94.2 lb)	175 mm/s (6.89 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT0750DL-CT3A	40 (± 30%) N (9 lb)	700 mm/s (27.559 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
LRT0750HL-CT3A	157 (± 30%) N (35.2 lb)	150 mm/s (5.905 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
LRT1000AL-CT3A	Non-back-driving	28 mm/s (1.102 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
LRT1000BL-CT3A	420 (± 30%) N (94.2 lb)	120 mm/s (4.724 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT1000DL-CT3A	40 (± 30%) N (9 lb)	500 mm/s (19.685 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)
LRT1000HL-CT3A	157 (± 30%) N (35.2 lb)	95 mm/s (3.74 "/s)	0.000239 mm/s (0.000009 "/s)	0.000239 mm/s (0.000009 "/s)
LRT1500AL-CT3A	Non-back-driving	13 mm/s (0.512 "/s)	0.000076 mm/s (0.000003 "/s)	0.000076 mm/s (0.000003 "/s)
LRT1500BL-CT3A	420 (± 30%) N (94.2 lb)	55 mm/s (2.165 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRT1500DL-CT3A	40 (± 30%) N (9 lb)	225 mm/s (8.858 "/s)	0.001212 mm/s (0.000048 "/s)	0.001212 mm/s (0.000048 "/s)

Part Number	Linear Motion Per Motor Rev	Mechanical Drive System
LRT0100AL-CT3A	1.5875 mm (0.062 ")	Precision lead screw
LRT0100BL-CT3A	6.35 mm (0.25 ")	Precision lead screw
LRT0100DL-CT3A	25.4 mm (1 ")	Precision lead screw
LRT0100HL-CT3A	5 mm (0.197 ")	Precision ball screw
LRT0250AL-CT3A	1.5875 mm (0.062 ")	Precision lead screw

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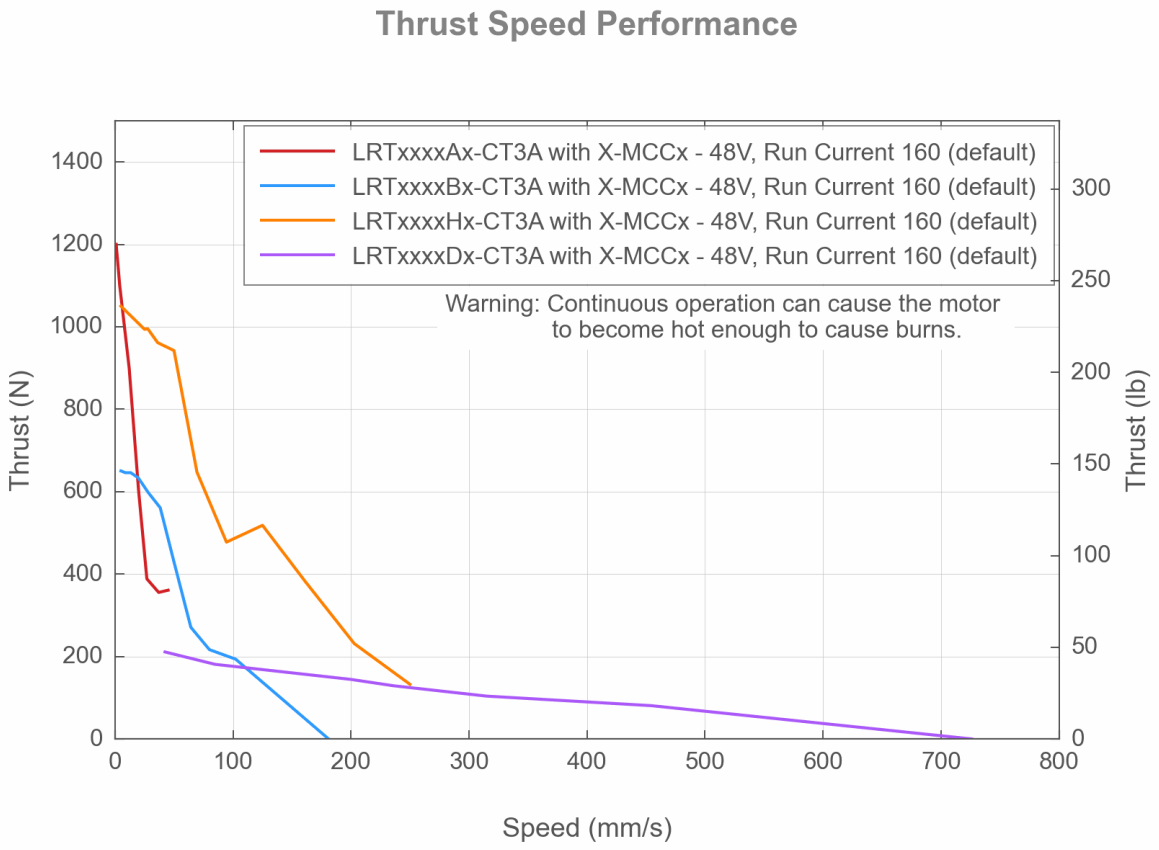
LRT0250BL-CT3A	6.35 mm (0.25 ")	Precision lead screw
LRT0250DL-CT3A	25.4 mm (1 ")	Precision lead screw
LRT0250HL-CT3A	5 mm (0.197 ")	Precision ball screw
LRT0500AL-CT3A	1.5875 mm (0.062 ")	Precision lead screw
LRT0500BL-CT3A	6.35 mm (0.25 ")	Precision lead screw
LRT0500DL-CT3A	25.4 mm (1 ")	Precision lead screw
LRT0500HL-CT3A	5 mm (0.197 ")	Precision ball screw
LRT0750AL-CT3A	1.5875 mm (0.062 ")	Precision lead screw
LRT0750BL-CT3A	6.35 mm (0.25 ")	Precision lead screw
LRT0750DL-CT3A	25.4 mm (1 ")	Precision lead screw
LRT0750HL-CT3A	5 mm (0.197 ")	Precision ball screw
LRT1000AL-CT3A	1.5875 mm (0.062 ")	Precision lead screw
LRT1000BL-CT3A	6.35 mm (0.25 ")	Precision lead screw
LRT1000DL-CT3A	25.4 mm (1 ")	Precision lead screw
LRT1000HL-CT3A	5 mm (0.197 ")	Precision ball screw
LRT1500AL-CT3A	1.5875 mm (0.062 ")	Precision lead screw
LRT1500BL-CT3A	6.35 mm (0.25 ")	Precision lead screw
LRT1500DL-CT3A	25.4 mm (1 ")	Precision lead screw

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LRT-C Series Charts

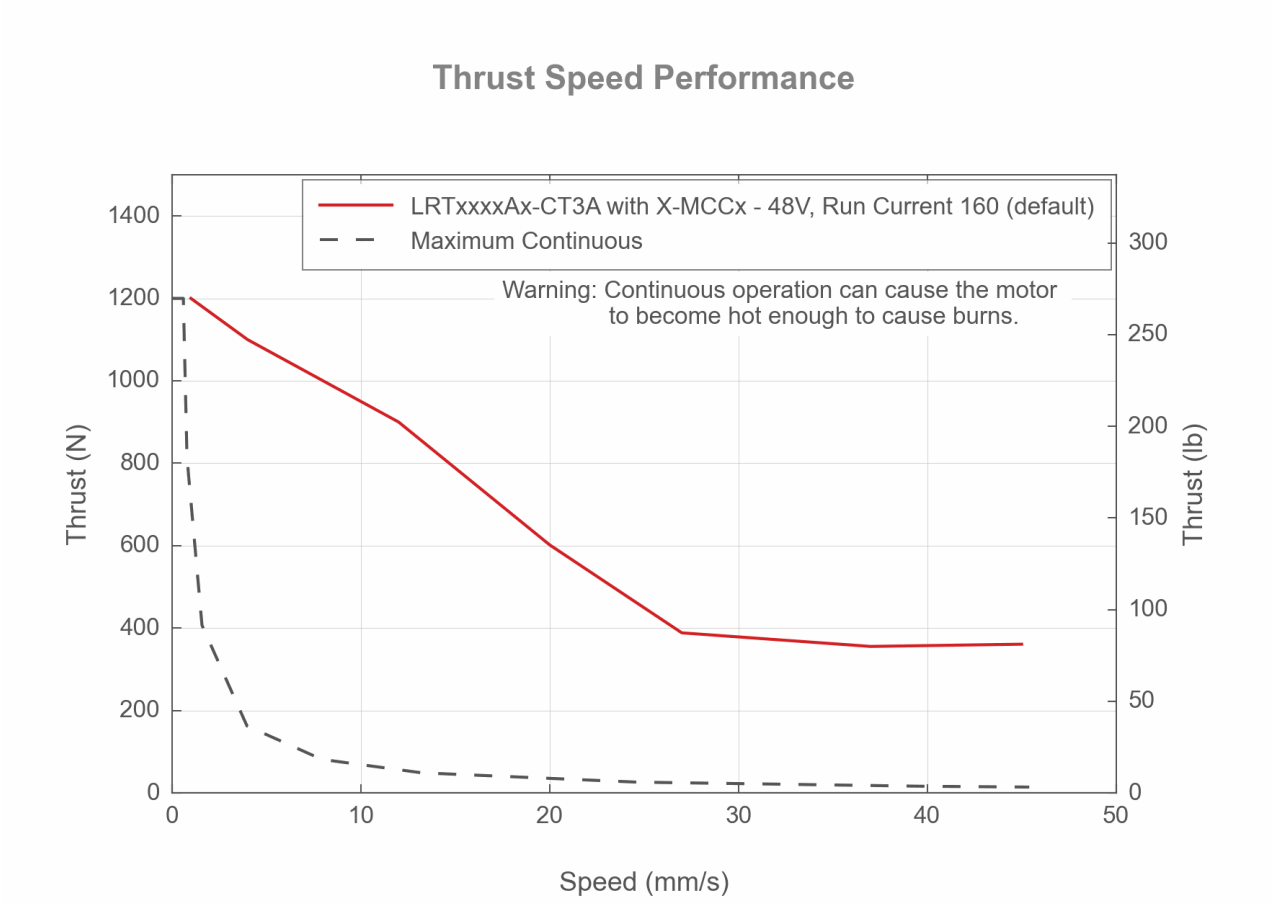
LRTxxxxAx CT3A Thrust Speed Performance



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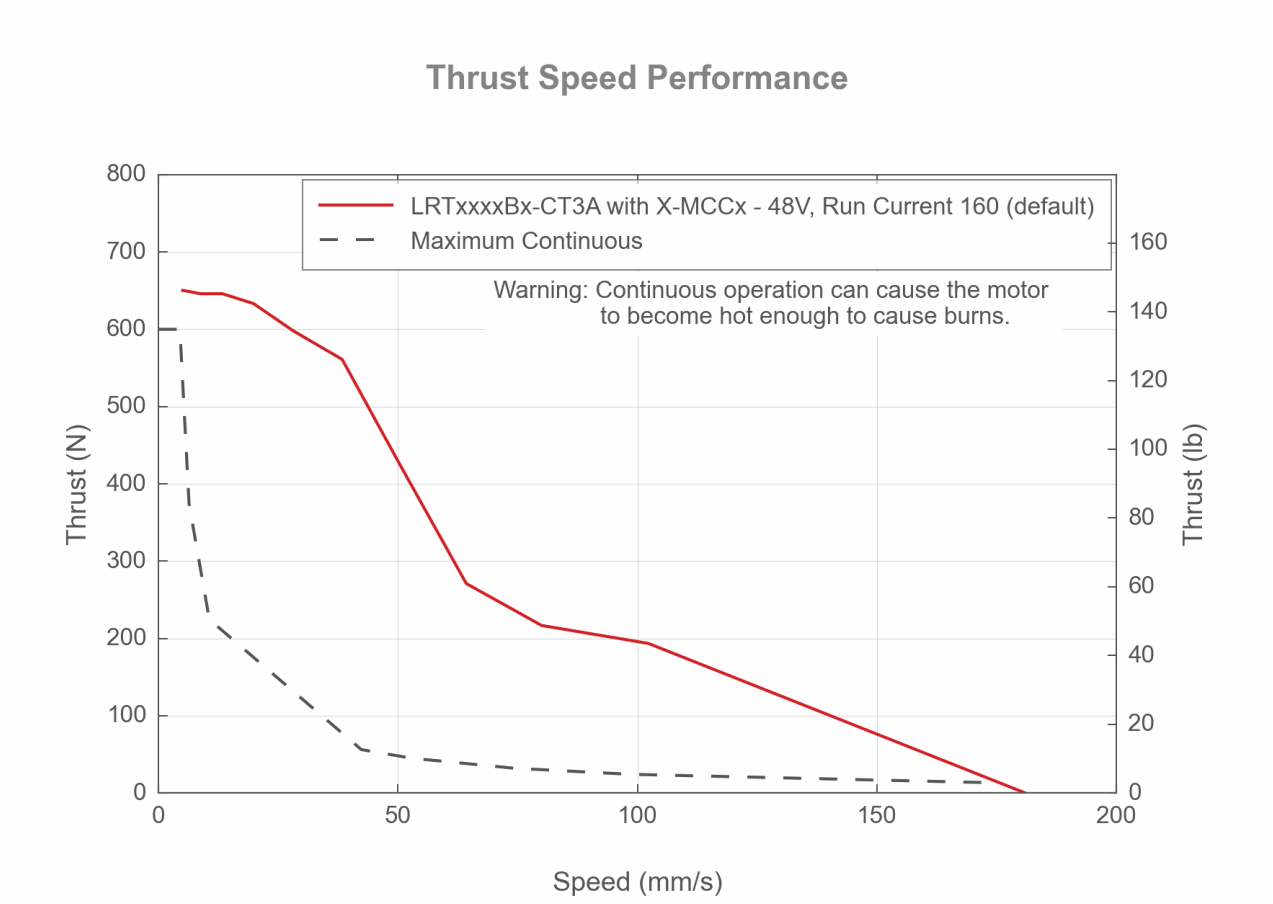
LRTxxxxAx CT3A Thrust Speed Performance



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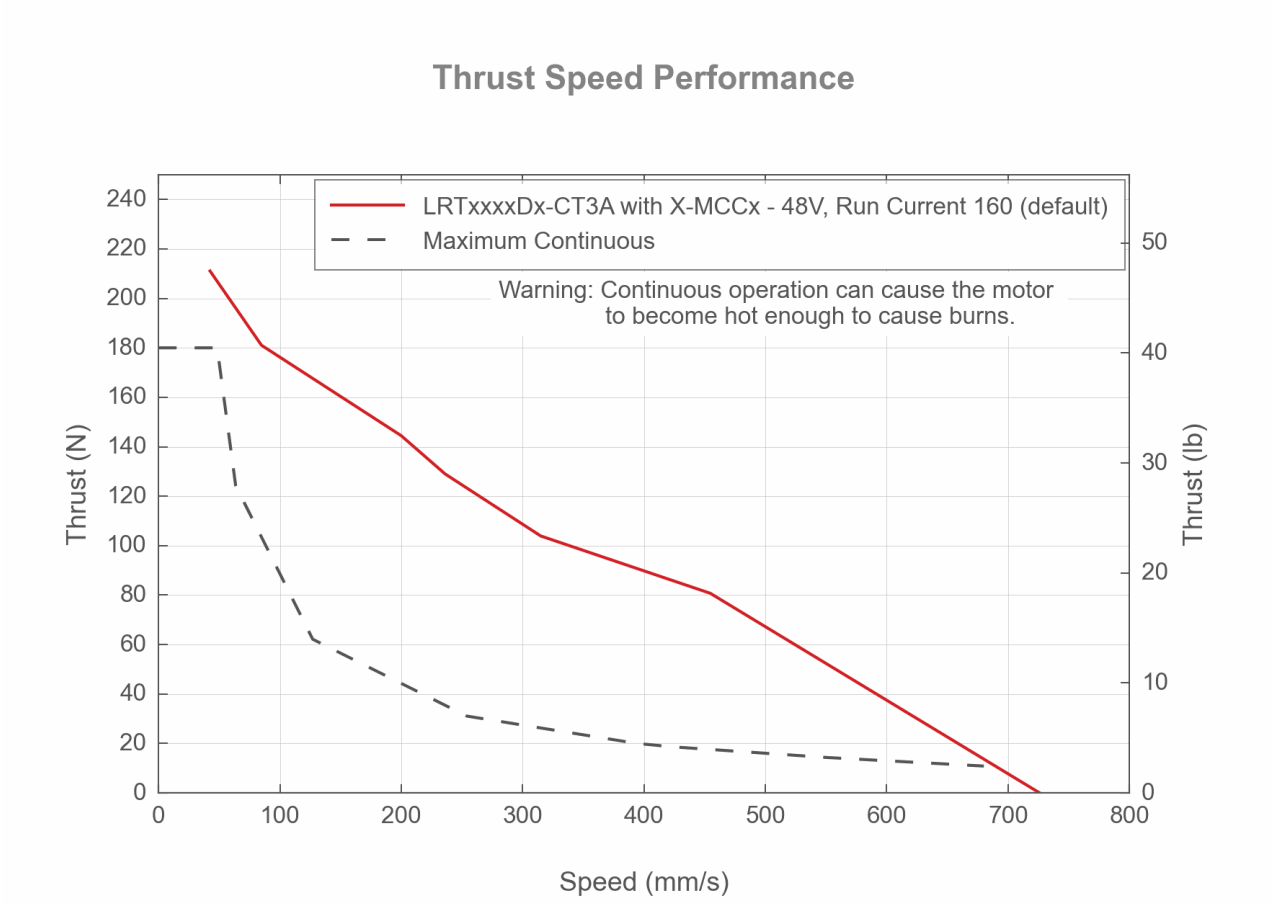
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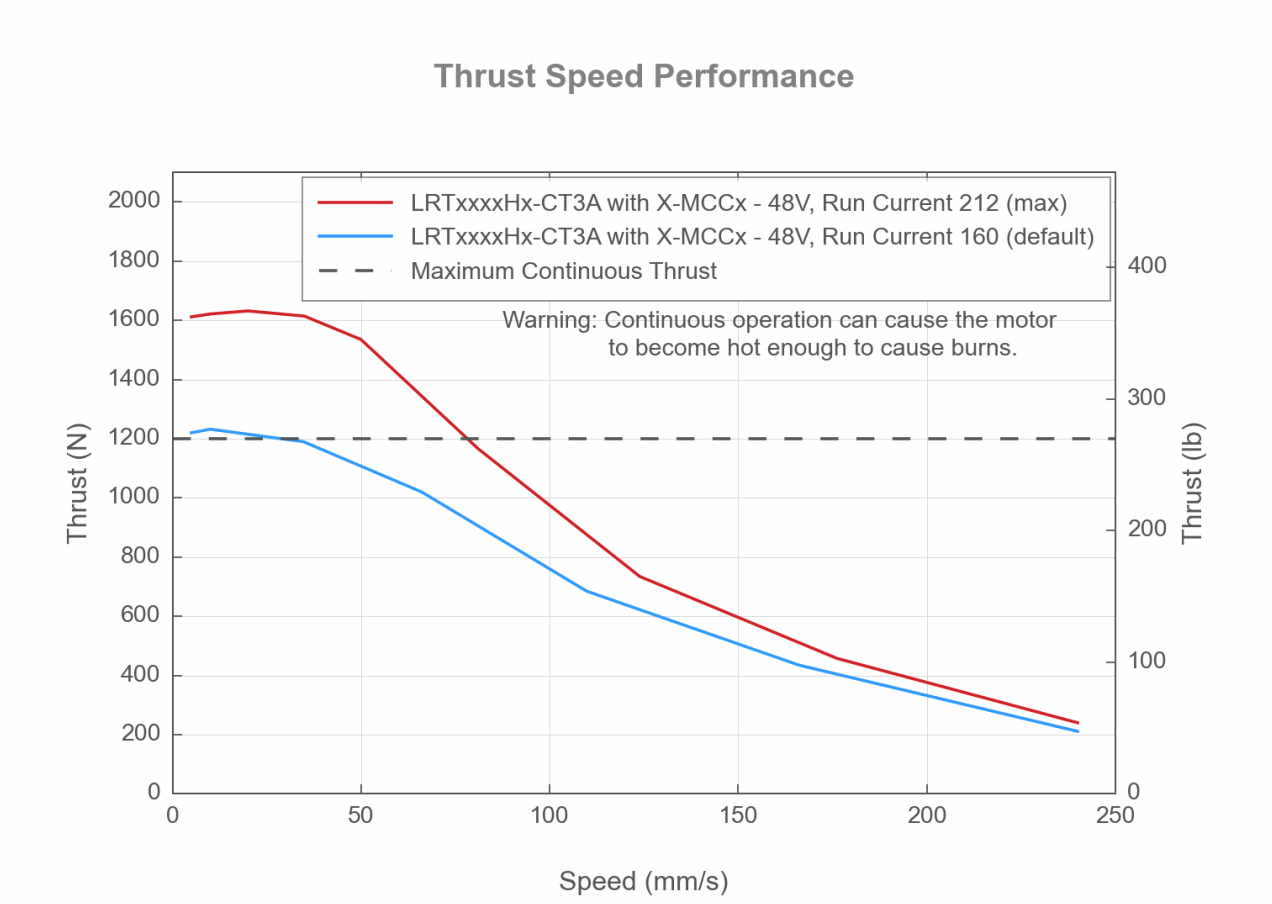
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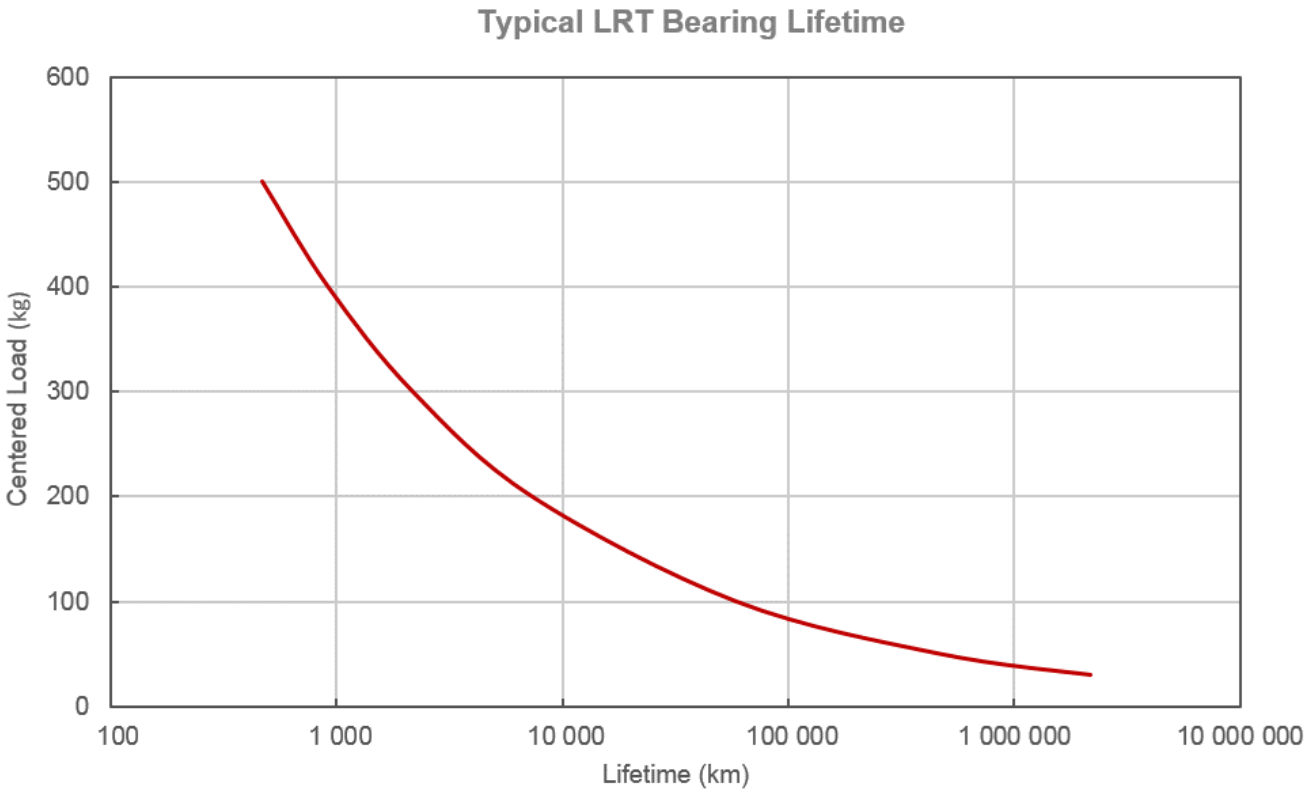
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