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-LRQ600AL-E01 Datasheet



- 75, 150, 300, 450, 600 mm travel
- Up to 840 mm/s speed and up to 300 N thrust
- 100 kg load capacity
- Ball screw and lead screw configurations
- Inline and parallel drive configurations
- Integrated, 500 CPR, motor mounted encoder provides slip/stall detection and recovery
- Built-in controller; daisy-chains with other Zaber products
- Custom versions available

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X-LRQ600AL-E01 Overview

Zaber's X-LRQ-E Series devices are computer-controlled, motorized linear stages with high stiffness, load, and lifetime capabilities in a compact size. Each device is available in either an inline or parallel drive configuration. 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 optional indexed knob provides convenient manual control for versatile operation even without a computer.

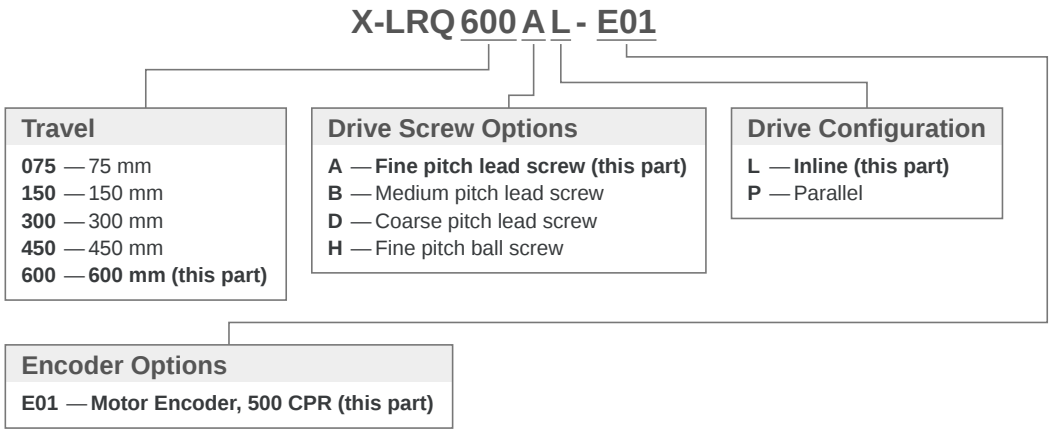
These stages connect to the RS-232 port or USB port of any computer, and they can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply. Convenient locking, 4-pin, M8 connectors on the unit allow for secure connection between units.

At only 36 mm high, these stages are excellent for applications where a low profile is required. The X-LRQ-E's innovative design allows speeds up to 840 mm/s and loads up to 100 kg. Like all of Zaber's products, the X-LRQ-E Series is designed to be 'plug and play' and very easy to set up and operate. These stages can bolt together into XY and XYZ systems. Some multi axis configurations may require additional accessories, please contact Zaber Technical Support to ensure the correct ones are selected.

[For more information visit: https://www.zaber.com/products/linear-stages/X-LRQ-E?part=X-LRQ600AL-E01](https://www.zaber.com/products/linear-stages/X-LRQ-E?part=X-LRQ600AL-E01)

X-LRQ600AL-E01 Part Numbering & Options

Part number: X-LRQ600AL-E01



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X-LRQ600AL-E01 Drawings

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

X-LRQ600AL-E01 Specifications

Overview

Specification	Value
Built-in Controller	Yes
Travel Range	600 mm (23.622 ")
Manual Control	Indexed knob with push switch
Axes of Motion	1
LED Indicators	Yes
Weight	4.78 kg (10.538 lb)

Positioning Performance

Specification	Value
Accuracy (unidirectional)	150 µm (0.005905 ")
Repeatability	<2.5 µm (<0.000098 ")
Backlash	<8 µm (<0.000315 ")
Flatness of Travel	<75 µm (<0.002953 ")
Straightness of Travel	<60 µm (<0.002362 ")
Pitch Error	0.045 ° (0.785 mrad)
Roll Error	0.035 ° (0.611 mrad)

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Yaw Error	0.04 ° (0.698 mrad)
Microstep Size (Default Resolution)	0.09921875 µm
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Peak Thrust	110 N (24.7 lb)
Maximum Continuous Thrust	100 N (22.4 lb)
Back-driving Force*	Non-back-driving
Maximum Centred Load	1000 N (224.3 lb)
Maximum Moment (Pitch)	30 N·m (22.1 lb·ft)
Maximum Moment (Roll)	30 N·m (22.14 lb·ft)
Maximum Moment (Yaw)	30 N·m (22.14 lb·ft)
Stiffness (Pitch)	640 N·m/°
Stiffness (Roll)	1850 N·m/°
Stiffness (Yaw)	665 N·m/°

Speed

Specification	Value
Maximum Speed	40 mm/s (1.575 "/s)
Minimum Speed	0.000061 mm/s (0.000002 "/s)
Speed Resolution	0.000061 mm/s (0.000002 "/s)

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Encoder & Sensing

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

Motor

Specification	Value
Linear Motion Per Motor Rev	1.27 mm (0.05 ")
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	2300 mA/phase
Motor Winding Inductance	2.8 mH/phase

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin screw terminal
Maximum Current Draw	1200 mA

Mechanical

Specification	Value
Guide Type	Recirculating ball linear guide
Mechanical Drive System	Precision lead screw
Mounting Interface	M6 and M3 threaded holes

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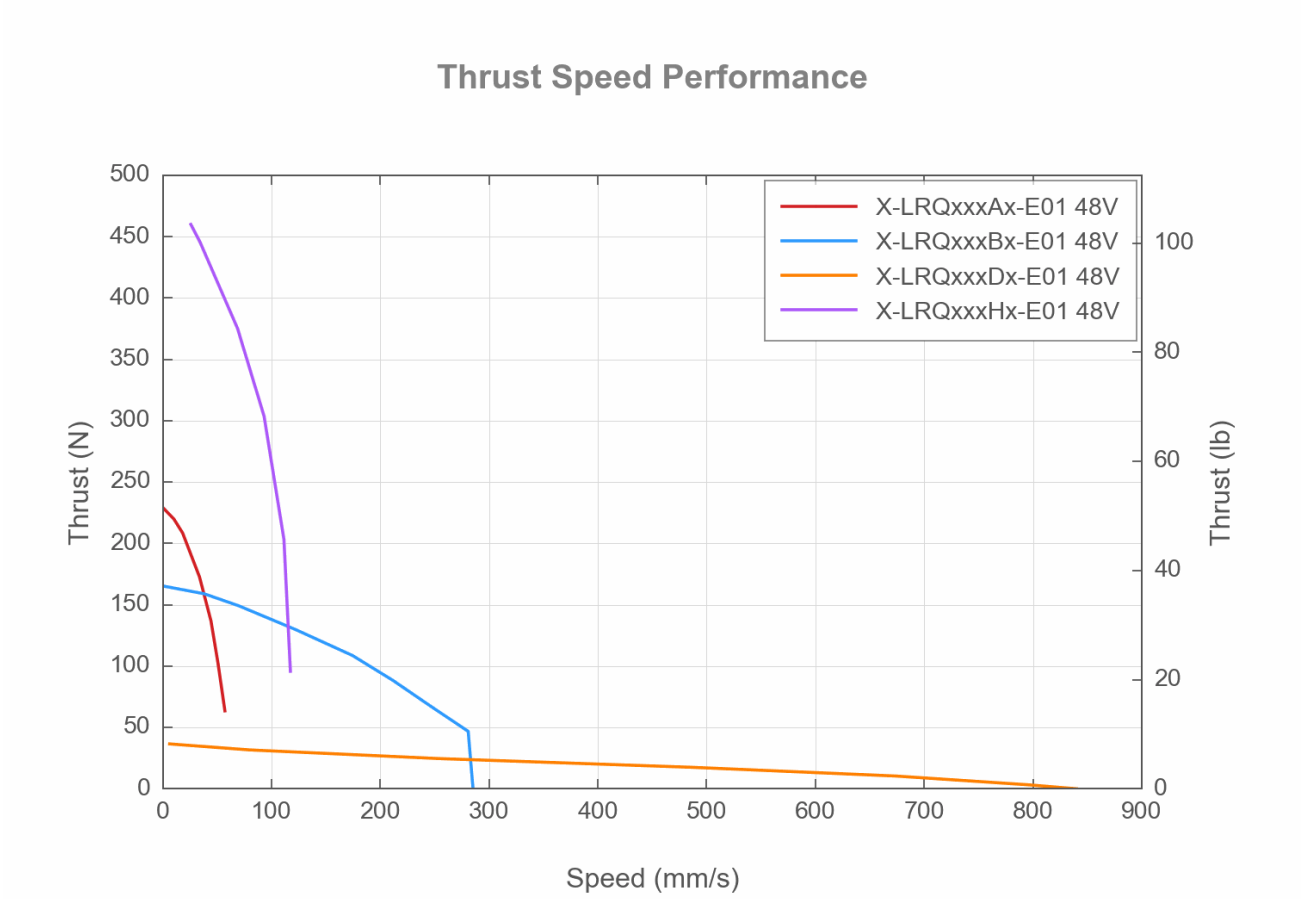
Environmental & Compliance

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

X-LRQ600AL-E01 Charts

Thrust Speed



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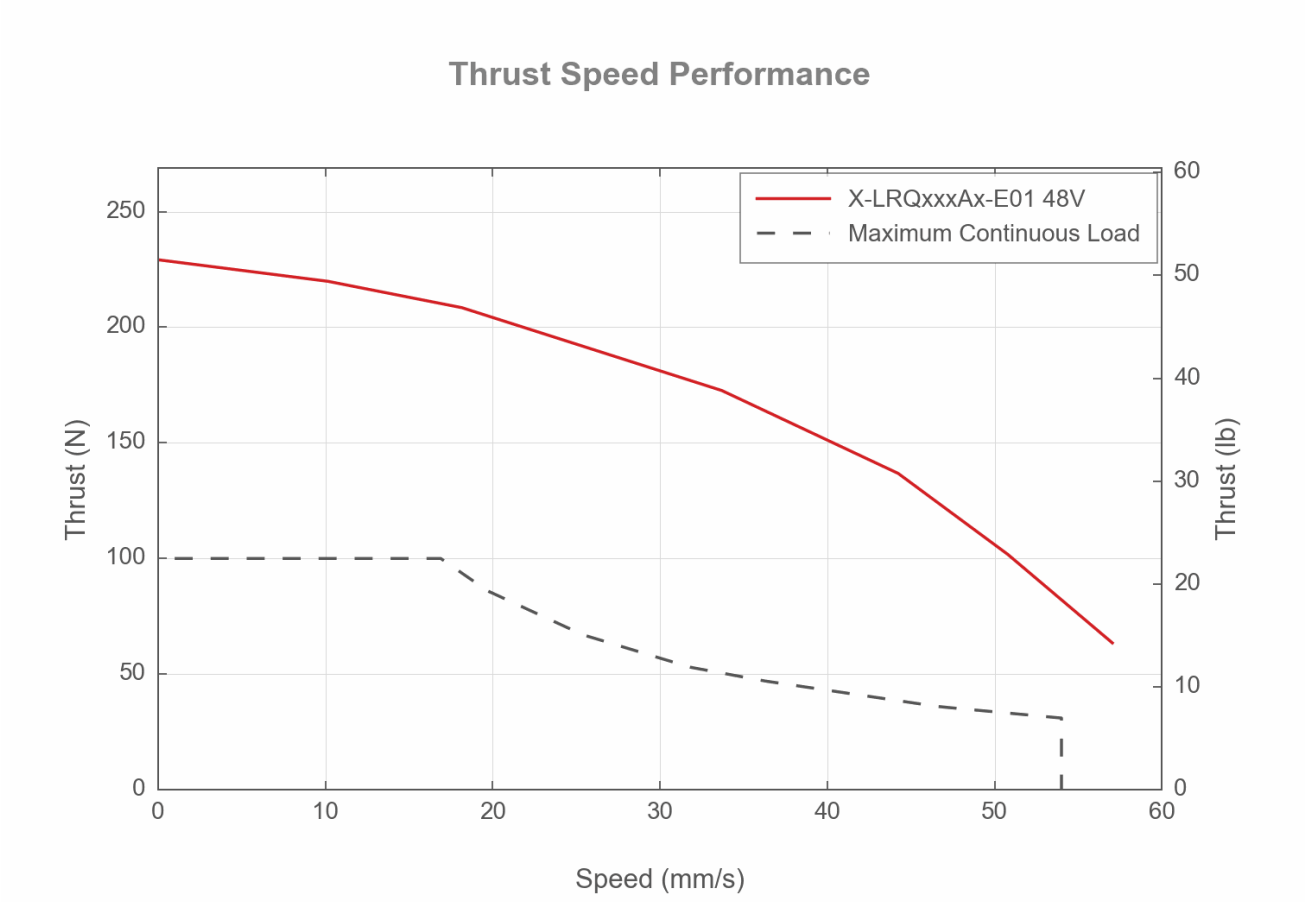
Thrust Speed



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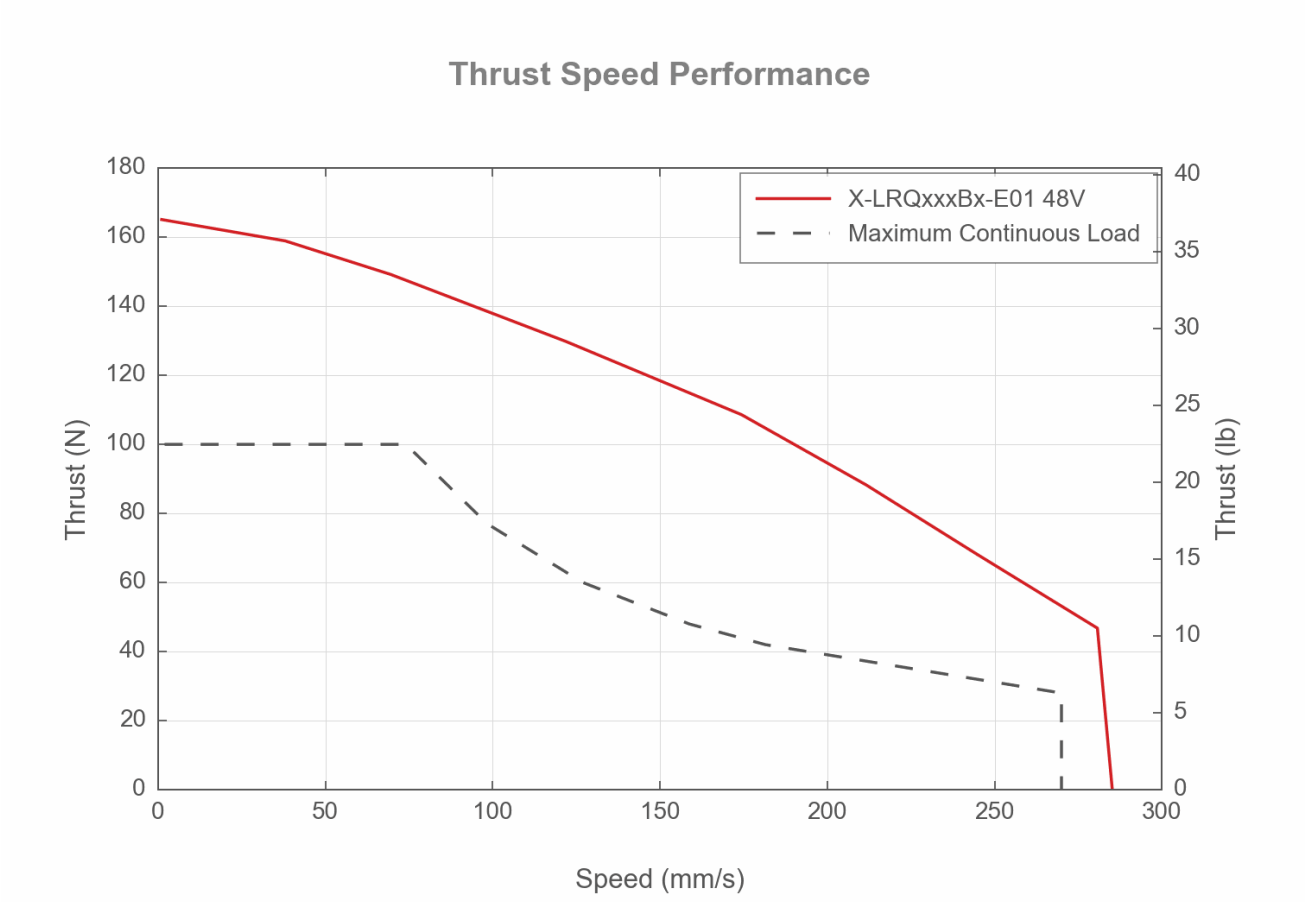

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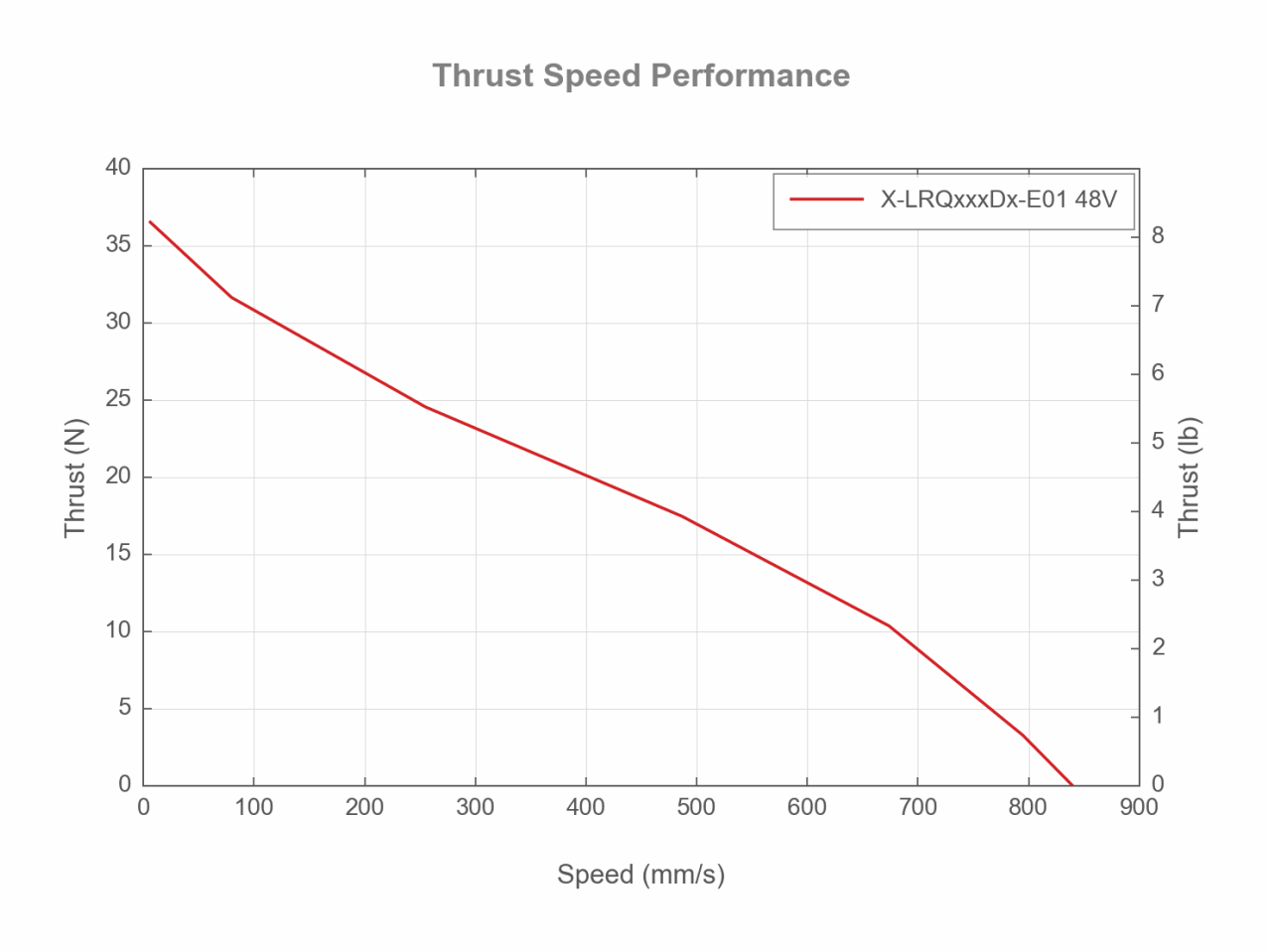

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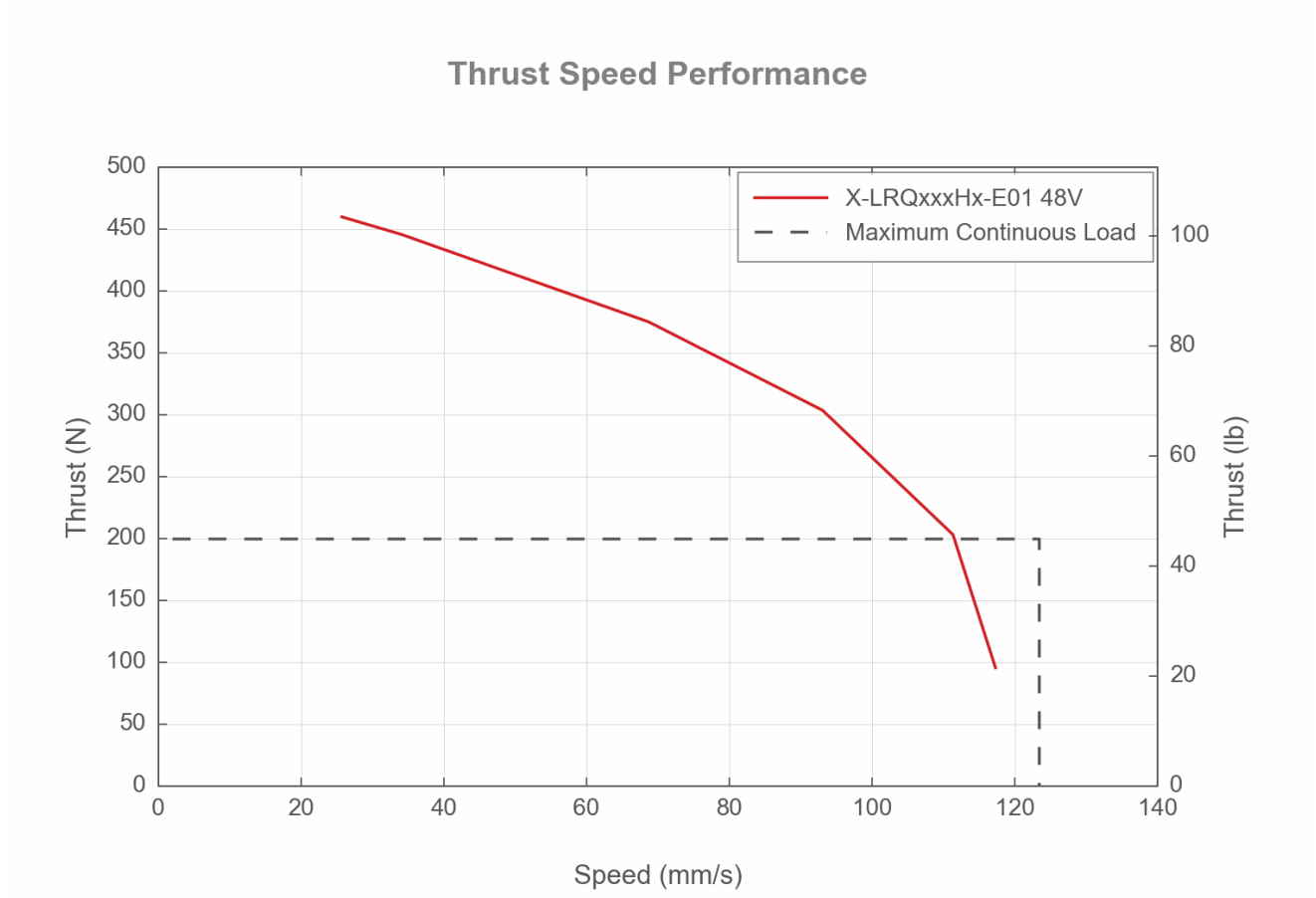
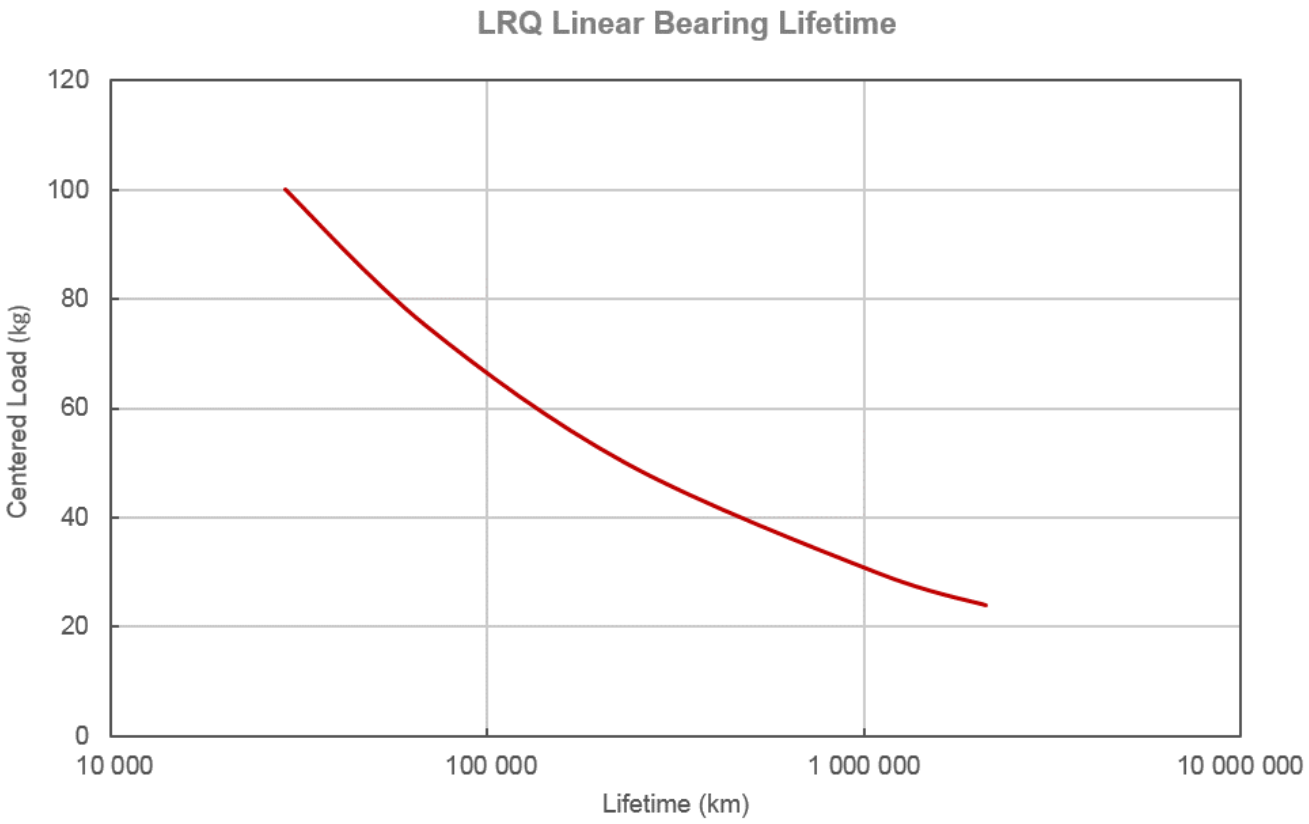
Thrust Speed



LRQ Lifetime



Contact

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