

LRT0500AL-CT3A 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 an X-MCC Series stepper motor controller or any 2-phase stepper motor controller
- With AutoDetect, the X-MCC controller configures its settings automatically for the connected peripheral

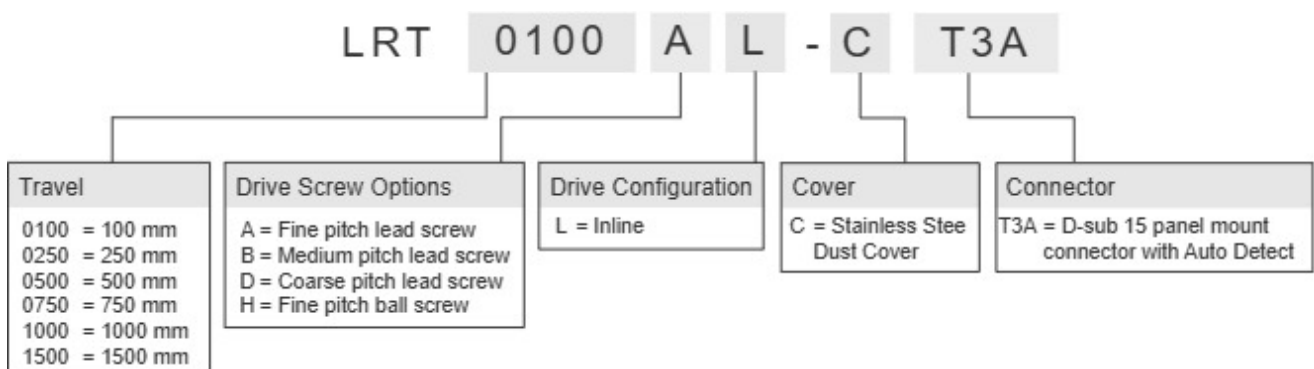
LRT-C Series Overview

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 X-MCC Series universal motor controllers, or they can be used with any 2-phase stepper motor controller through the panel mount DB15 connector. Set up is easy with AutoDetect. Once connected, the X-MCC controller will automatically detect and configure the LRT-C.

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

LRT-C Series Part Numbering & Options



LRT0500AL-CT3A Drawings

- [LRT-C.png \(Drawing for the LRT-C\)](#)

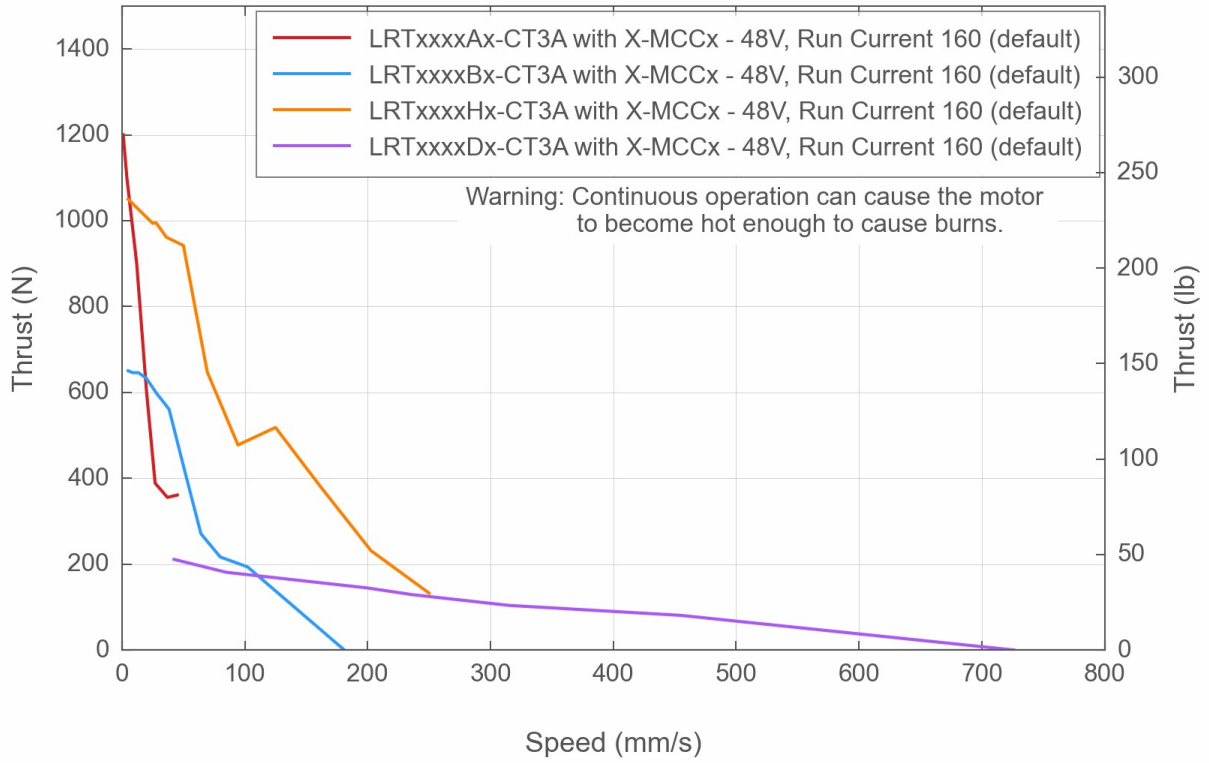
LRT0500AL-CT3A Specifications

Microstep Size (Default Resolution)	0.124023438 μm
Built-in Controller	No
Recommended Controller	X-MCC (48 V) Recommended
AutoDetect	Yes
Travel Range	500 mm (19.685")
Accuracy (unidirectional)	125 μm (0.004921")
Repeatability	< 4 μm (< 0.000157")
Backlash	< 12 μm (< 0.000472")
Maximum Speed	45 mm/s (1.772"/s)
Minimum Speed	0.000076 mm/s (0.000003"/s)
Speed Resolution	0.000076 mm/s (0.000003"/s)
Peak Thrust	1200 N (269.1 lb)
Back-driving Force*	Non-back-driving
Maximum Continuous Thrust	1200 N (269.1 lb)
Maximum Centered Load	2940 N (659.3 lb)
Maximum Moment (Pitch)	70 N-m (51.7 ft-lb)
Maximum Moment (Roll)	120 N-m (88.6 ft-lb)
Maximum Moment (Yaw)	70 N-m (51.7 ft-lb)
Vertical Runout	< 10 μm (< 0.000394")
Horizontal Runout	< 50 μm (< 0.001968")
Pitch	0.015° (0.262 mrad)
Roll	0.02° (0.349 mrad)
Yaw	0.03° (0.523 mrad)
Stiffness in Pitch	1400 N-m/° (12 $\mu\text{rad/N-m}$)
Stiffness in Roll	700 N-m/° (25 $\mu\text{rad/N-m}$)
Stiffness in Yaw	1200 N-m/° (15 $\mu\text{rad/N-m}$)
Linear Motion Per Motor Rev	1.5875 mm (0.062")
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	3000 mA/phase
Motor Winding Resistance	0.53 ohms/phase

Microstep Size (Default Resolution)	0.124023438 μm
Inductance	2 mH/phase
Motor Connection	D-sub 15
Default Resolution	1/64 of a step
Guide Type	Recirculating Ball Linear Guide
Mechanical Drive System	Precision lead screw
Limit or Home Sensing	Magnetic home sensor
Axes of Motion	1
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No
Weight	5.758 kg (12.694 lb)

LRT-C Series Charts

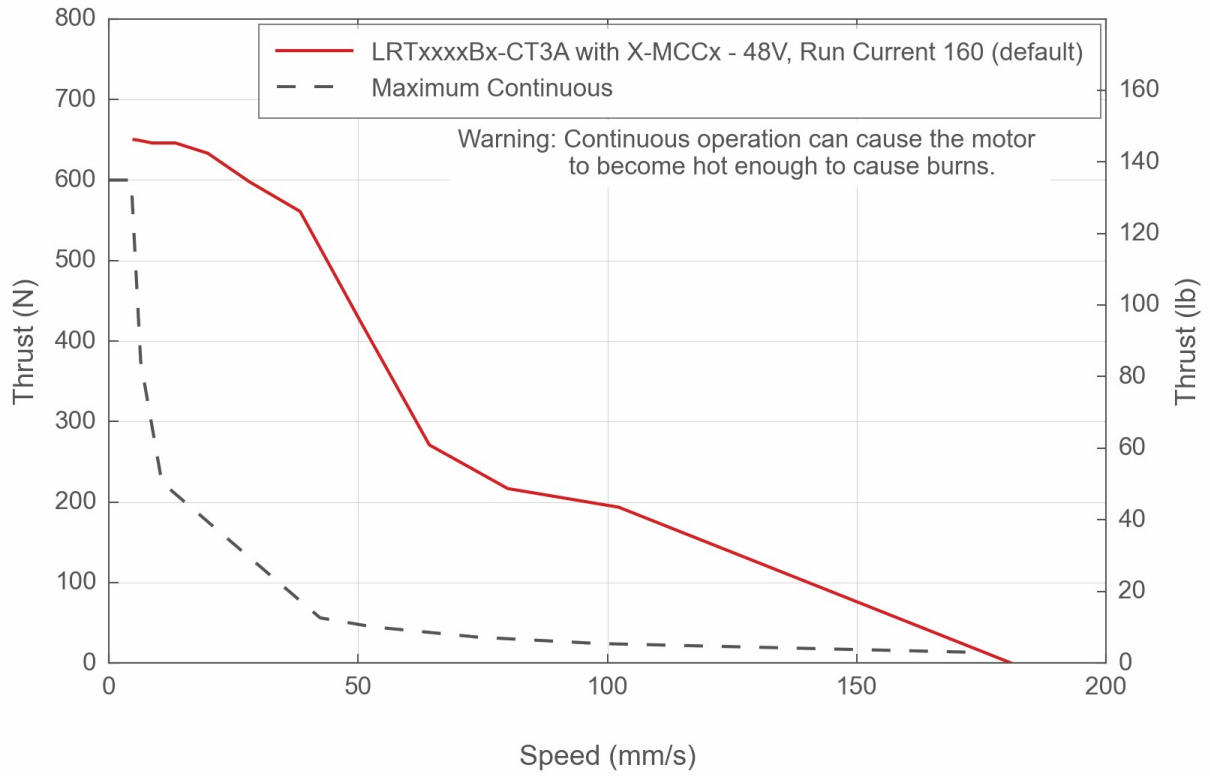
Thrust Speed Performance



Thrust Speed Performance



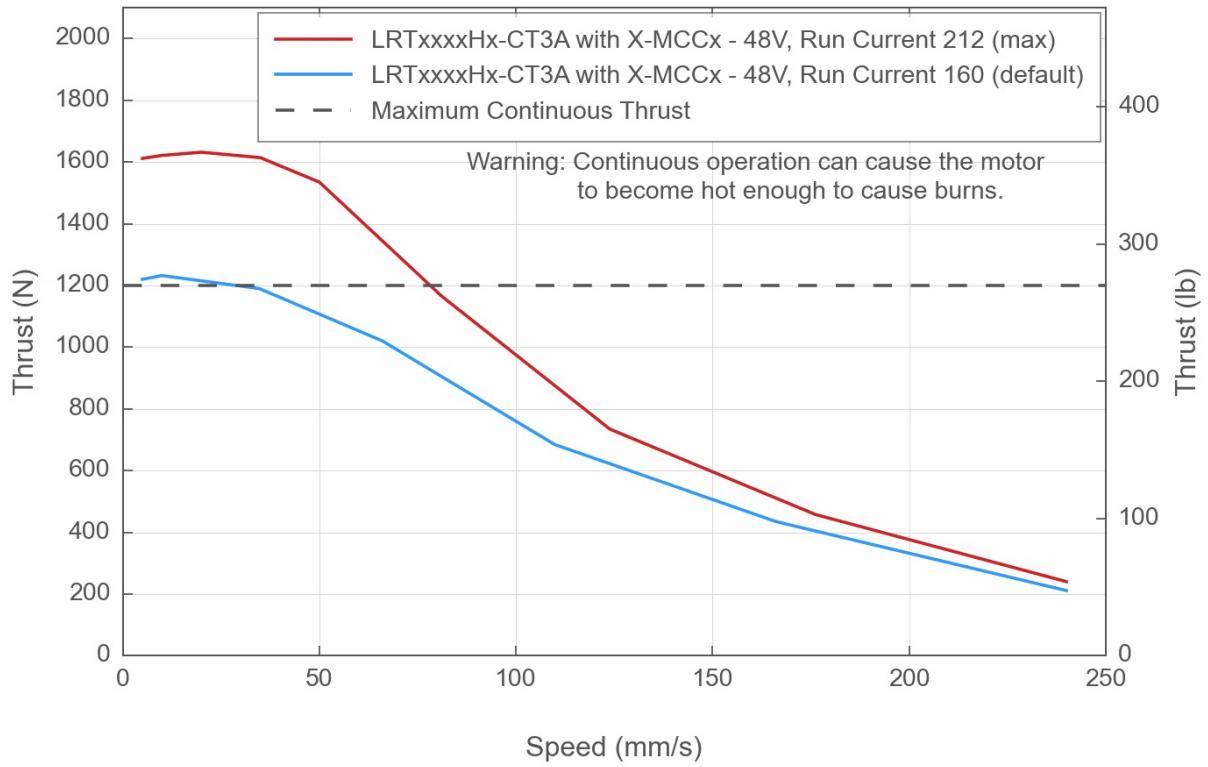
Thrust Speed Performance



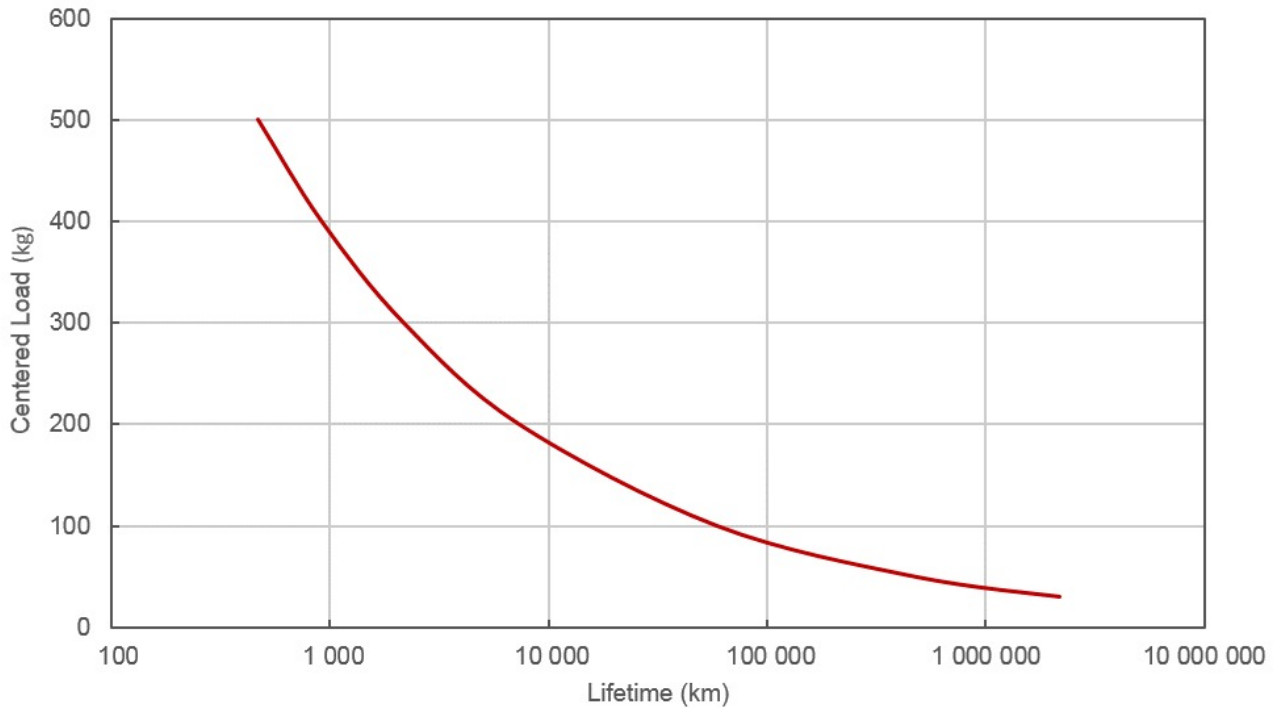
Thrust Speed Performance



Thrust Speed Performance



Typical LRT Bearing Lifetime



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