LRM100A-T3A Datasheet

- 25, 50, 100, 150, 200 mm travel
- Up to 8 µm accuracy and 50 nm resolution
- 50 kg load capacity
- Hardened steel construction and integrated recirculating ball bearing guide provide exceptional stiffness and thermal stability
- 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

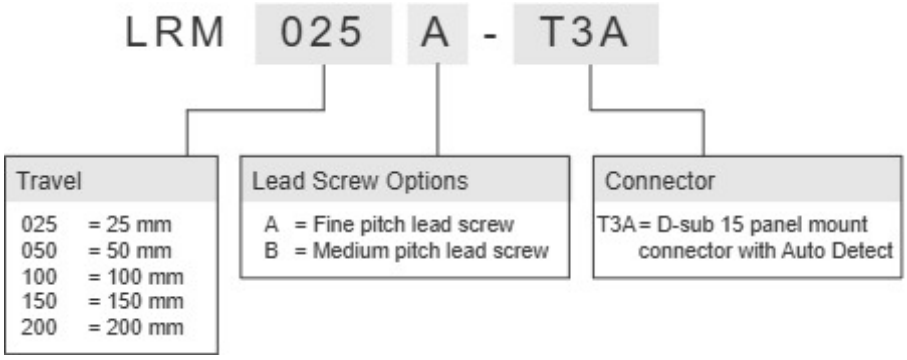
LRM Series Overview

Zaber's LRM series products are motorized linear stages. The LRM's hardened steel construction and recirculating ball bearing guide provide exceptional rigidity and thermal stability. High stiffness makes the LRM ideal for multi-axis configurations or applications where excellent stability under moment loads is required.

The stages are designed to interface with our X-MCC Series universal motor controllers, offering high resolution daisy-chainable operation. Set up is easy with AutoDetect. Once connected, the X-MCC controller will automatically detect and configure the LRM.

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

LRM Series Part Numbering & Options



LRM100A-T3A Drawings

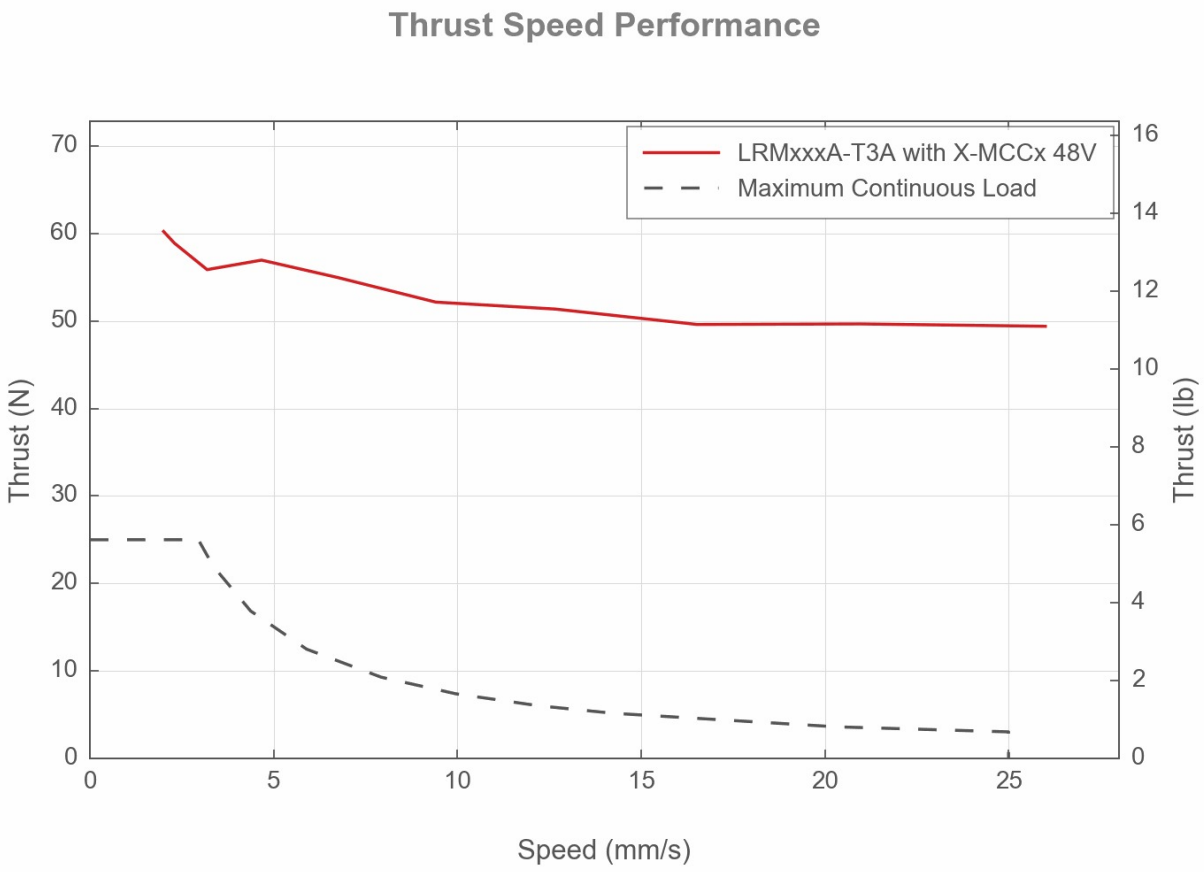
- LRM.png (Drawing for the LRM)

LRM100A-T3A Specifications

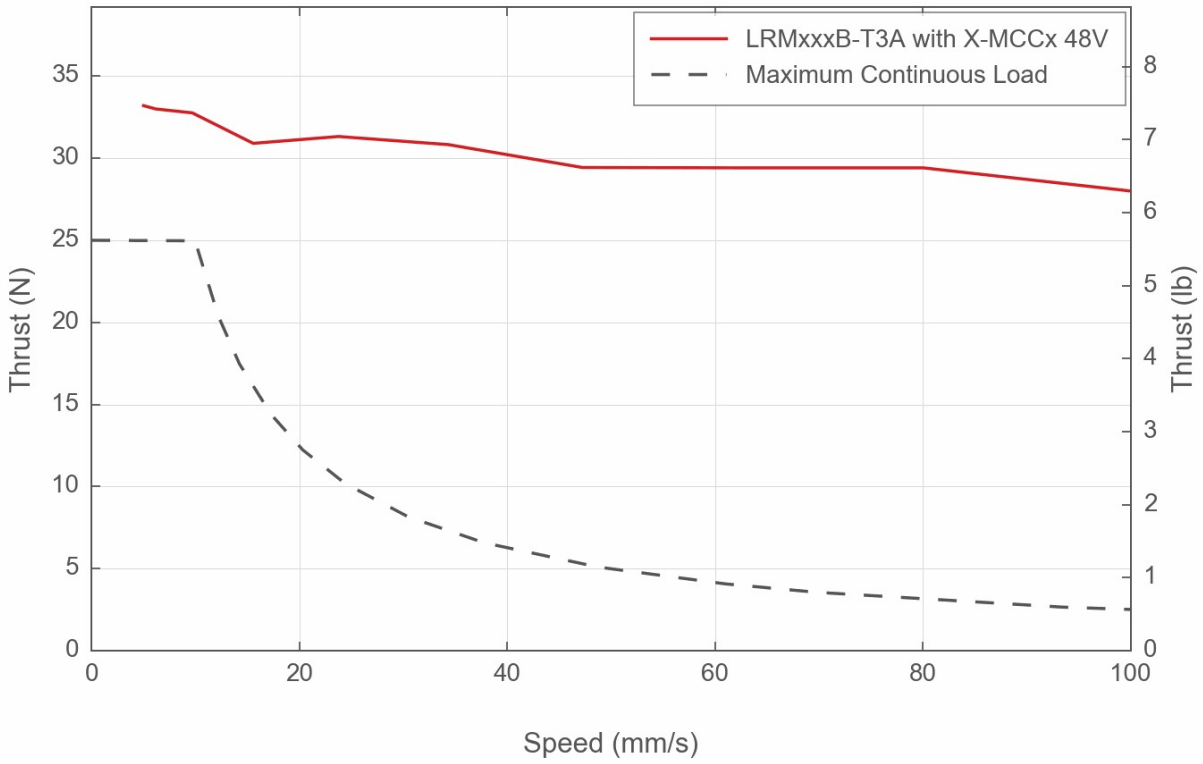
Microstep Size (Default Resolution)	**0.047625 µm**
Built-in Controller	No
Recommended Controller	X-MCC (48 V) Recommended
AutoDetect	Yes
Travel Range	100 mm (3.937")
Accuracy (unidirectional)	30 µm (0.001181")
Repeatability	< 4 µm (< 0.000157")
Backlash	< 5 µm (< 0.000197")
Maximum Speed	25 mm/s (0.984"/s)
Minimum Speed	0.000029 mm/s (0.000001"/s)
Speed Resolution	0.000029 mm/s (0.000001"/s)
Encoder Type	No
Peak Thrust	50 N (11.2 lb)
Maximum Continuous Thrust	25 N (5.6 lb)
Maximum Centered Load	500 N (112.1 lb)
Maximum Moment (Pitch)	6 N-m (4.4 ft-lb)
Maximum Moment (Roll)	15 N-m (11.1 ft-lb)
Maximum Moment (Yaw)	6 N-m (4.4 ft-lb)
Vertical Runout	< 8 µm (< 0.000315")
Horizontal Runout	< 12 µm (< 0.000472")
Pitch	0.02° (0.349 mrad)
Roll	0.02° (0.349 mrad)
Yaw	0.02° (0.349 mrad)
Stiffness in Pitch	550 N-m/° (32 µrad/N-m)
Stiffness in Roll	550 N-m/° (32 µrad/N-m)
Stiffness in Yaw	550 N-m/° (32 µrad/N-m)
Linear Motion Per Motor Rev	0.6096 mm (0.024")
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	600 mA/phase
Motor Winding Resistance	6.5 ohms/phase

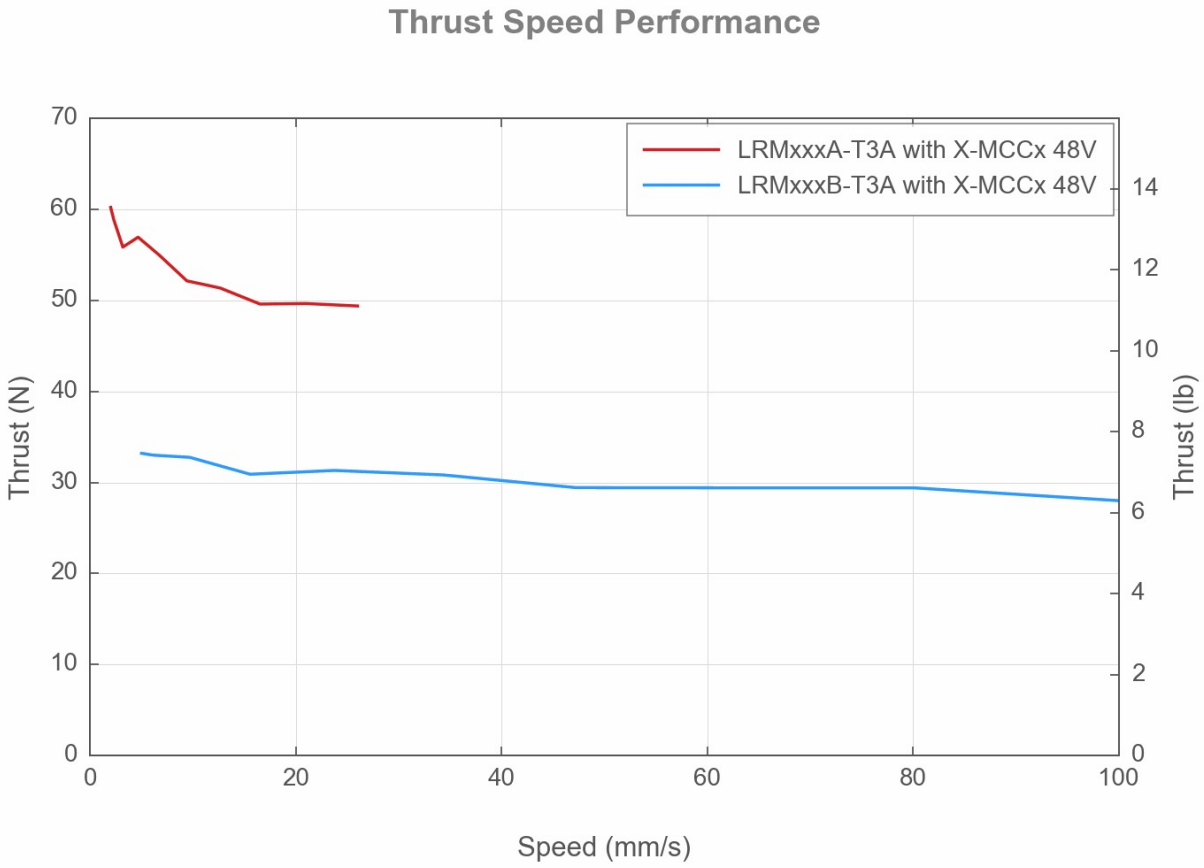
Microstep Size (Default Resolution)	**0.047625 µm**
Inductance	3.5 mH/phase
Motor Rated Power	6.9 Watts
Motor Connection	D-sub 15
Motor Rotor Inertia	2.9 g-cm2
Default Resolution	1/64 of a step
Motor Frame Size	NEMA 08
Guide Type	Recirculating ball bearing
Mechanical Drive System	Precision lead screw
Limit or Home Sensing	Magnetic hall sensor
Axes of Motion	1
Mounting Interface	M3 and M6 threaded holes
Stage Parallelism	< 10 µm (< 0.000394")
Operating Temperature Range	0 to 50 °C
CE Compliant	Yes
Vacuum Compatible	No
Weight	0.95 kg (2.094 lb)

LRM Series Charts

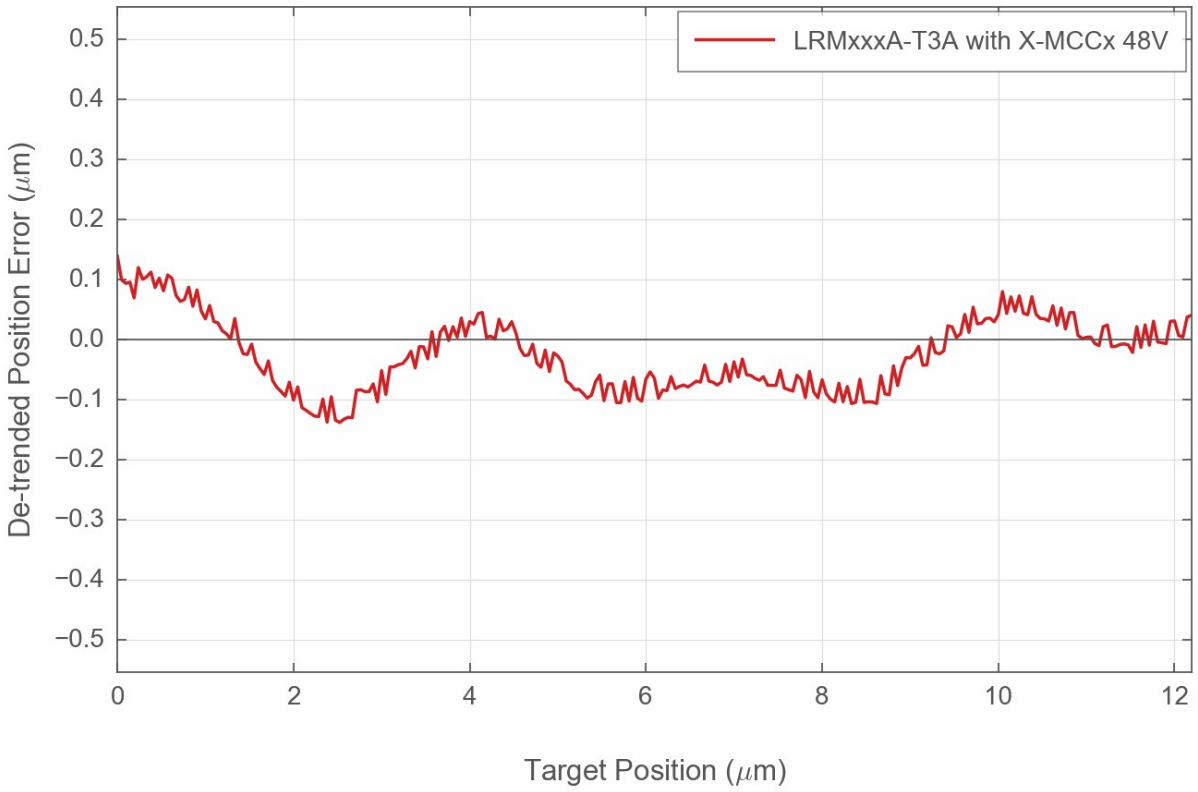


Thrust Speed Performance

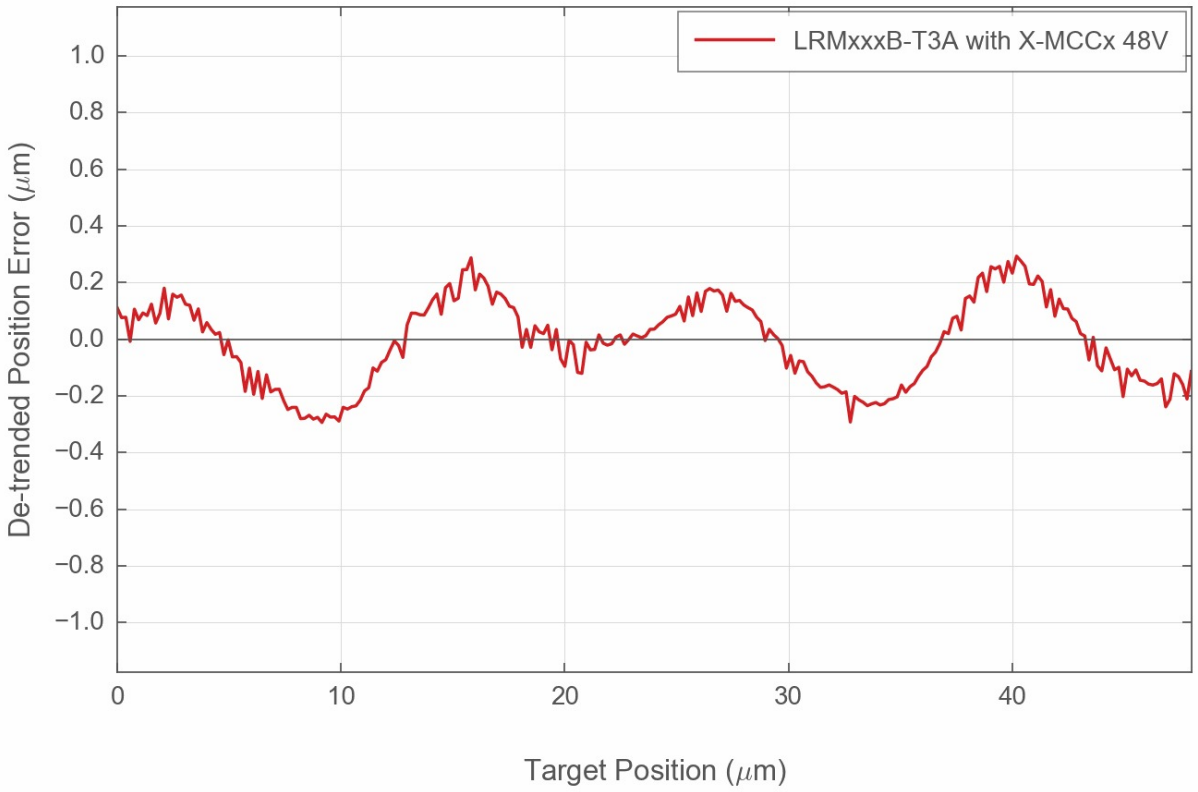



Thrust Speed Performance
LRMxxxA-T3A with X-MCCx 48V
LRMxxxB-T3A with X-MCCx 48V
Thrust (N)
Thrust (lb)
Speed (mm/s)
0
10
20
30
40
50
60
70
0
2
4
6
8
10
12
14
0
20
40
60
80
100

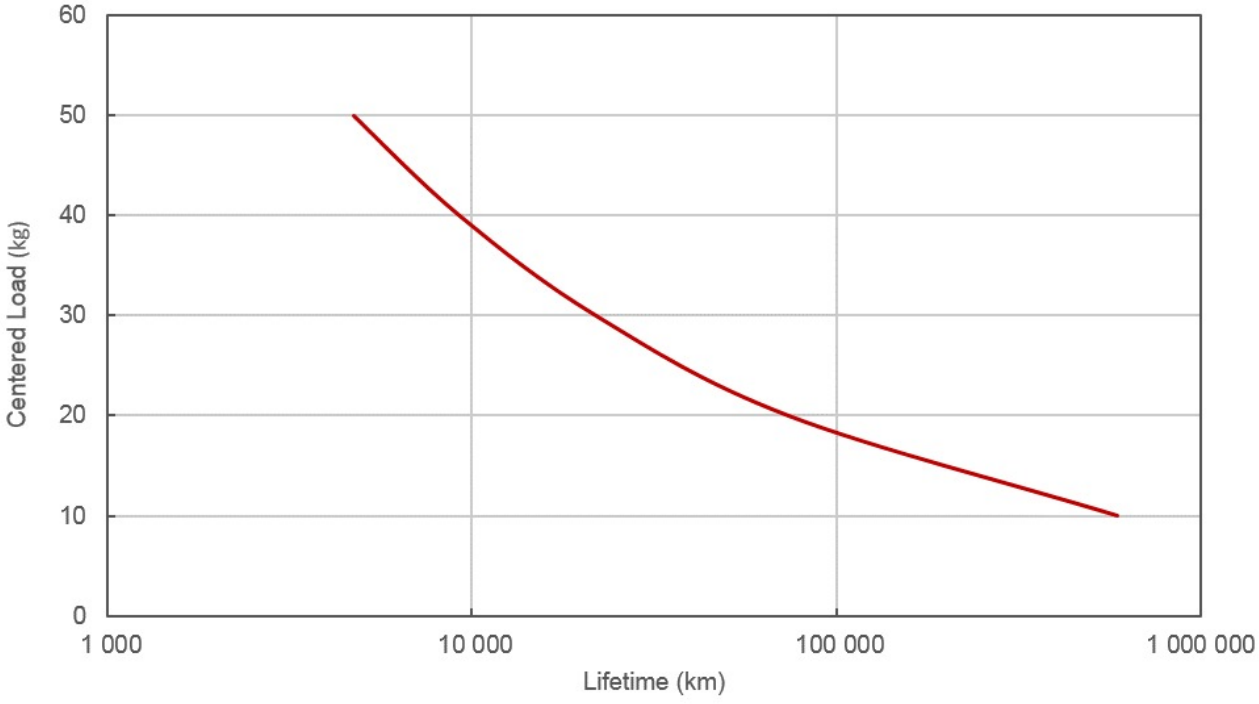
Typical Microstepping Accuracy



Typical Microstepping Accuracy



LRM Linear Bearing Lifetime



Contact

Email: contact@zaber.com
Phone (toll free Canada/USA): 1-888-276-8033
Phone (direct): 1-604-569-3780
Fax: 1-604-648-8033

Zaber Technologies Inc.
#2 - 605 West Kent Ave. N.
Vancouver, British Columbia
Canada, V6P 6T7
https://www.zaber.com