

LRM200A-E03T3A 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
- Encoder position feedback with slip/stall detection and automatic recovery
- 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

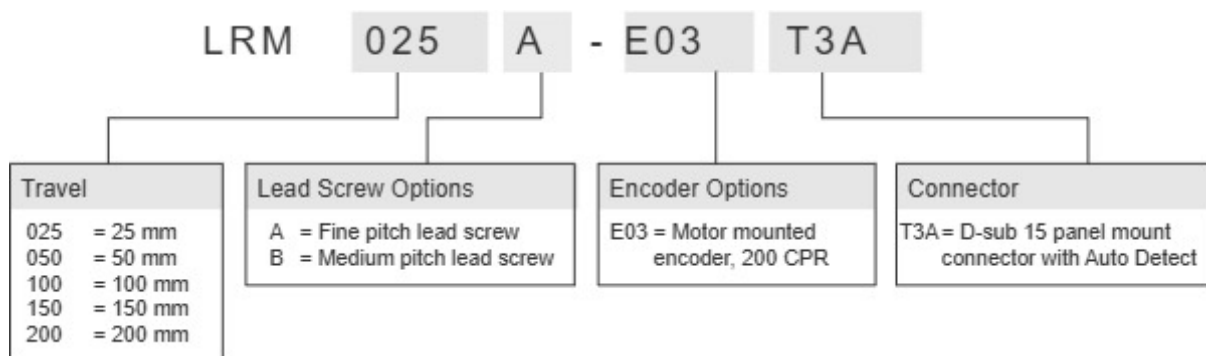
LRM-E Series Overview

Zaber's LRM-E series products are motorized linear stages with built-in motor encoders. The LRM-E's hardened steel construction and recirculating ball bearing guide provide exceptional rigidity and thermal stability. High stiffness makes the LRM-E 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-E.

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

LRM-E Series Part Numbering & Options



LRM200A-E03T3A Drawings

- [LRM-E.png \(Drawing for the LRM-E\)](#)

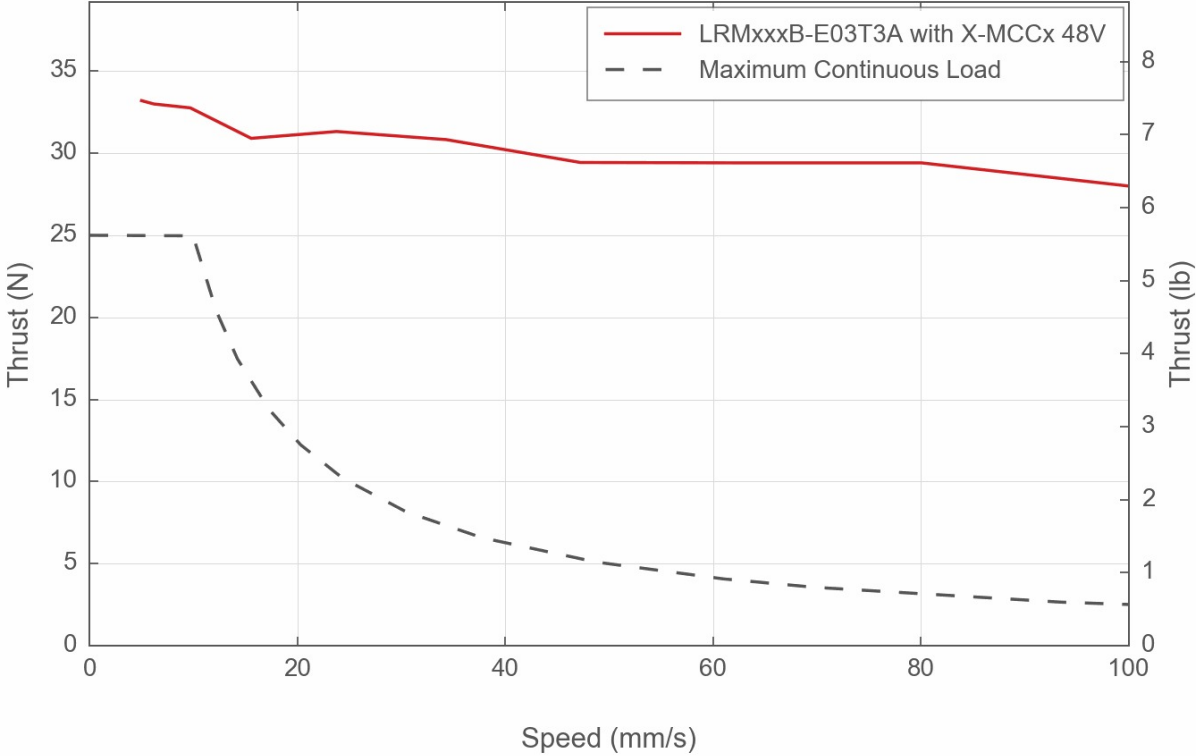
LRM200A-E03T3A Specifications

| | |
|--|--|
| Microstep Size (Default Resolution) | 0.047625 μm |
| Built-in Controller | No |
| Recommended Controller | X-MCC (48 V) Recommended |
| AutoDetect | Yes |
| Travel Range | 200 mm (7.874") |
| Accuracy (unidirectional) | 60 μm (0.002362") |
| 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 Resolution | 200 CPR (800 states/rev) |
| Encoder Type | Rotary quadrature encoder |
| 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 $\mu\text{rad/N-m}$) |
| Stiffness in Roll | 550 N-m/° (32 $\mu\text{rad/N-m}$) |
| Stiffness in Yaw | 550 N-m/° (32 $\mu\text{rad/N-m}$) |
| 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 |

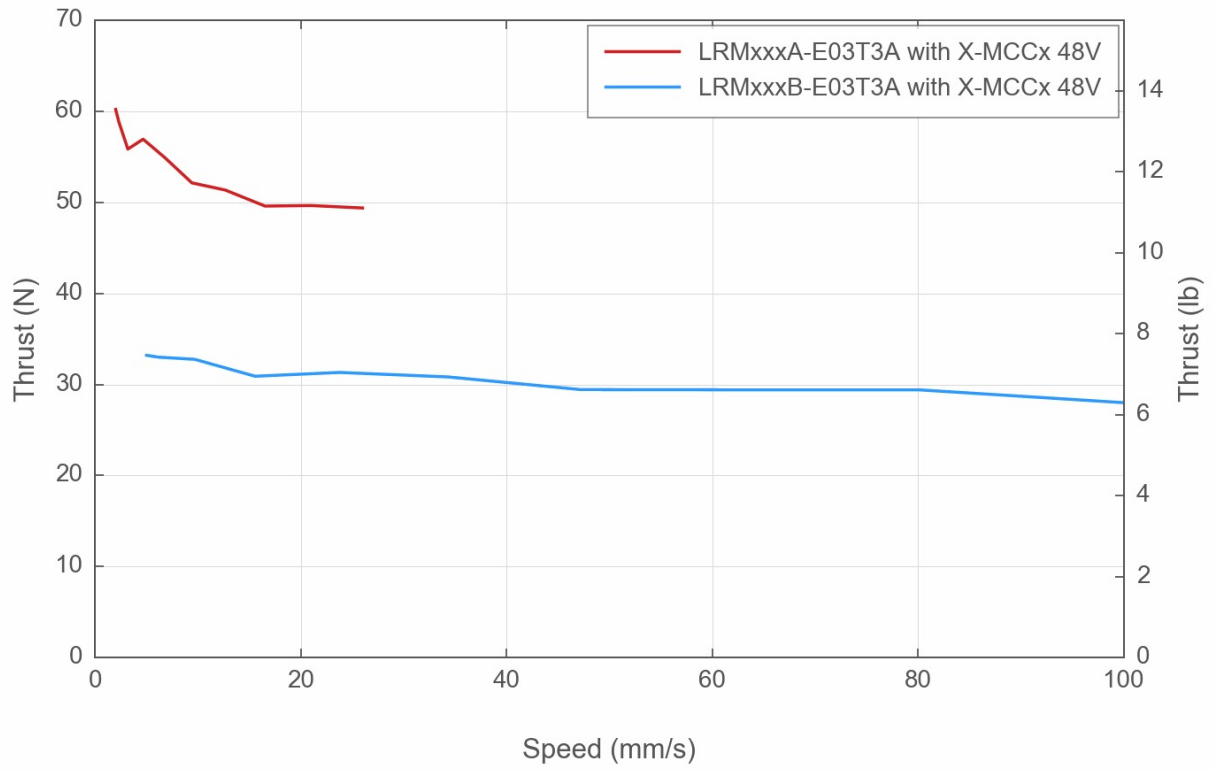
| | |
|--|--|
| Microstep Size (Default Resolution) | 0.047625 μm |
| Motor Winding Resistance | 6.5 ohms/phase |
| Inductance | 3.5 mH/phase |
| Motor Rated Power | 6.9 Watts |
| Motor Connection | D-sub 15 |
| Motor Rotor Inertia | 2.9 g-cm ² |
| Default Resolution | 1/64 of a step |
| Motor Frame 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 | 1.31 kg (2.888 lb) |

LRM-E Series Charts

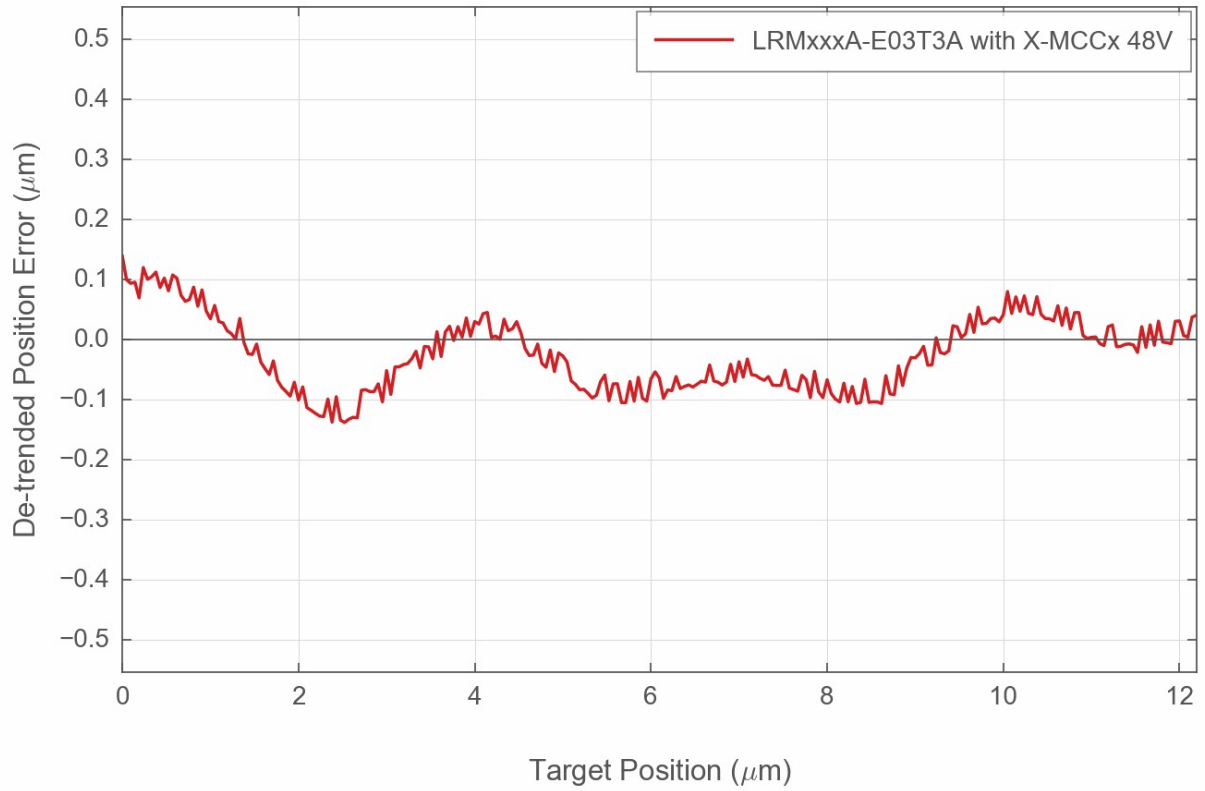
Thrust Speed Performance



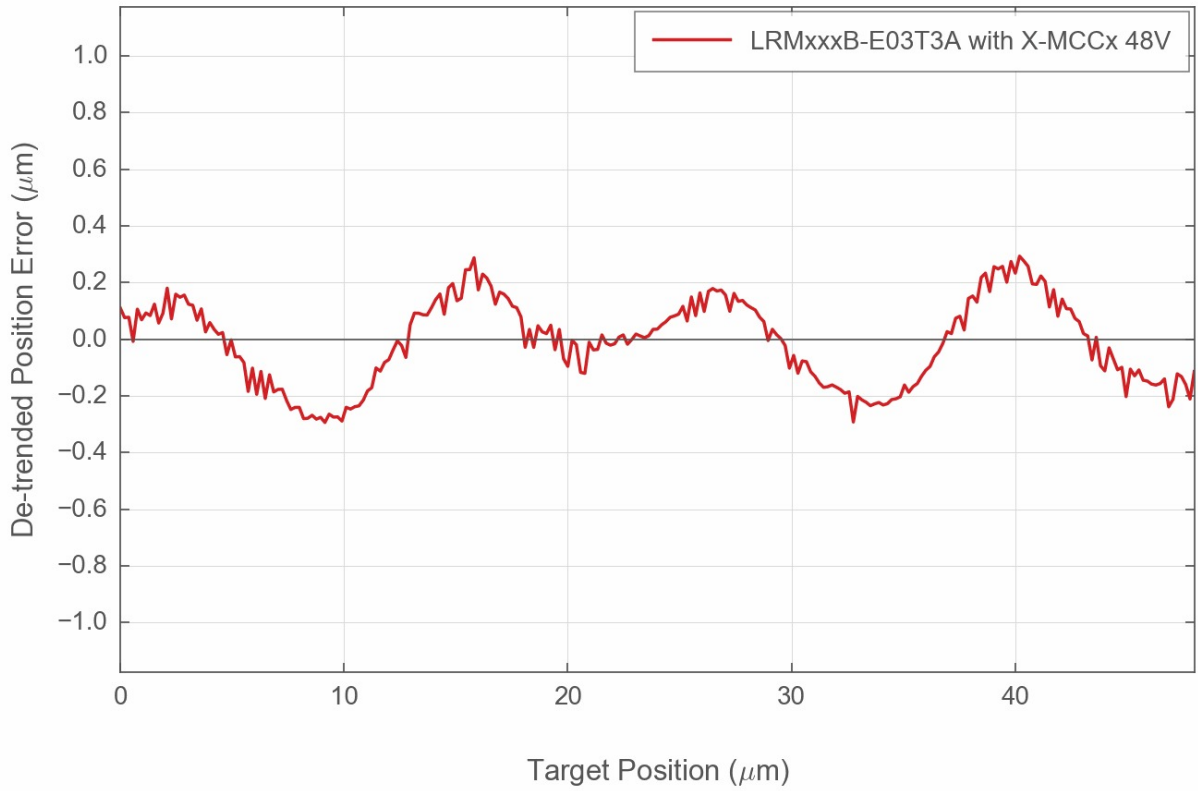
Thrust Speed Performance



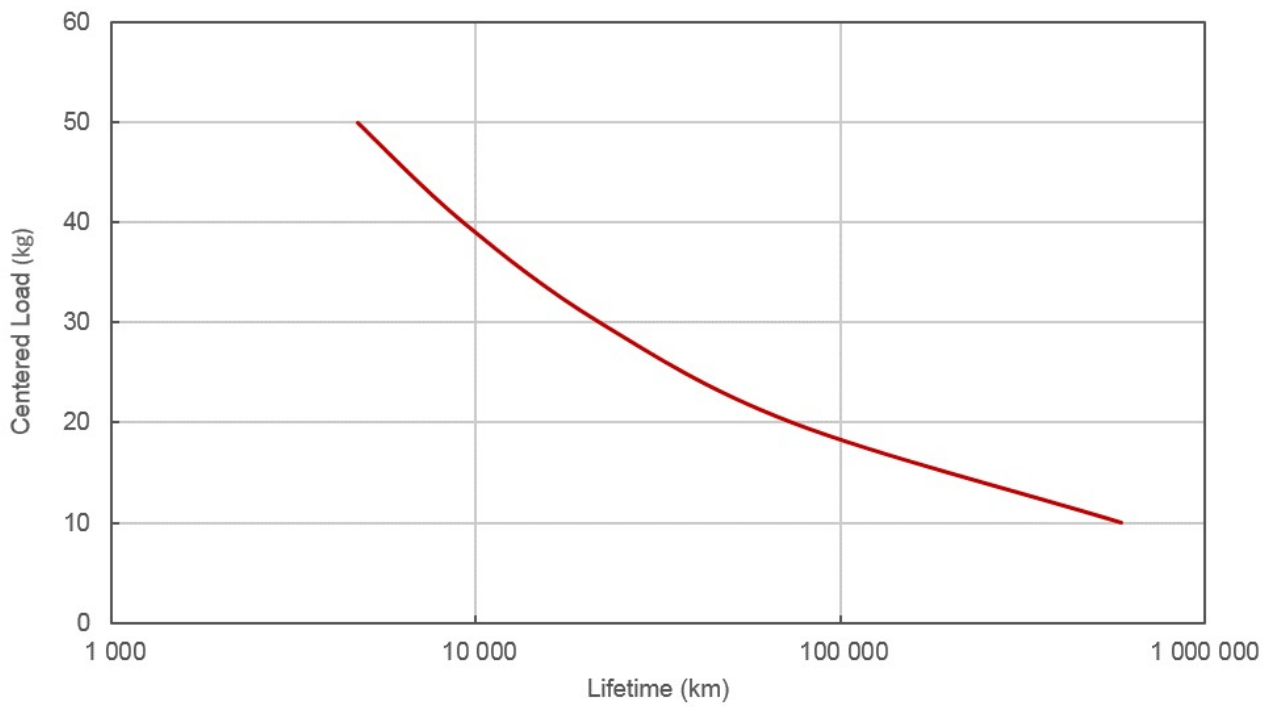
Typical Microstepping Accuracy



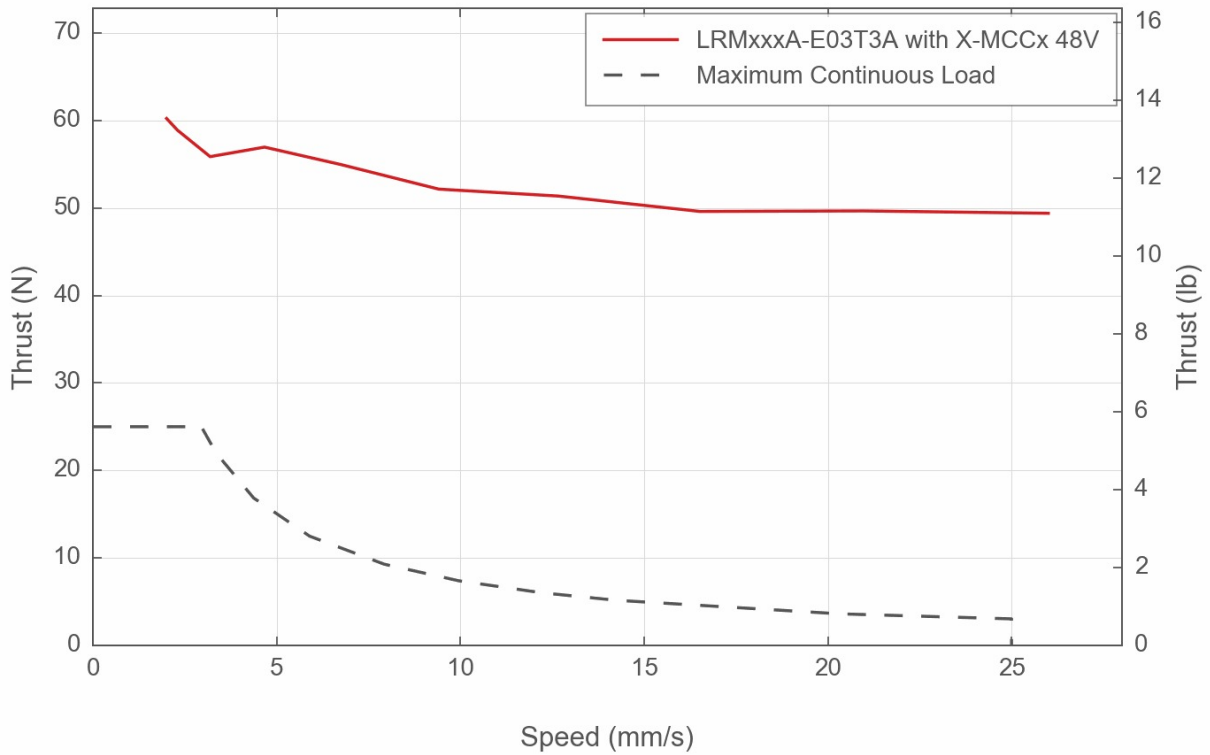
Typical Microstepping Accuracy



LRM Linear Bearing Lifetime



Thrust Speed Performance



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>