

LRT1000BL-BE08CT10A 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 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-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 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-EC.

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

LRT-EC Series Part Numbering & Options



LRT1000BL-BE08CT10A Drawings

- [LRT-BECT10A.png \(Drawing for the LRT-BECT10A\)](#)

LRT1000BL-BE08CT10A Specifications

| | |
|--|--|
| Microstep Size (Default Resolution) | 0.49609375 μm |
| Built-in Controller | No |
| Recommended Controller | X-MCC (48 V) Recommended |
| AutoDetect | Yes |
| Travel Range | 1000 mm (39.370") |
| Accuracy (unidirectional) | 250 μm (0.009842") |
| Repeatability | < 4 μm (< 0.000157") |
| Backlash | < 45 μm (< 0.001772") |
| Maximum Speed | 120 mm/s (4.724"/s) |
| Minimum Speed | 0.000303 mm/s (0.000012"/s) |
| Speed Resolution | 0.000303 mm/s (0.000012"/s) |
| Encoder Resolution | 400 CPR (1600 states/rev) |
| Encoder Type | Rotary quadrature encoder |
| Peak Thrust | 600 N (134.6 lb) |
| Back-driving Force* | (\pm 30%) 420 N (94.2 lb) |
| Maximum Continuous Thrust | 600 N (134.6 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 | 6.35 mm (0.250") |
| Motor Steps Per Rev | 200 |
| Motor Type | Stepper (2 phase) |

| | |
|--|--|
| Microstep Size (Default Resolution) | 0.49609375 μm |
| Motor Rated Current | 3000 mA/phase |
| Motor Winding Resistance | 0.53 ohms/phase |
| 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 |
| Maximum Axial Brake Force | 600 N (134.9 lb) |
| Operating Temperature Range | 0 to 50 °C |
| CE Compliant | Yes |
| Vacuum Compatible | No |
| Weight | 9.019 kg (19.883 lb) |

LRT-EC 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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