

## LRU0500H25-BE01T12A Datasheet



- 250, 500, 1000, 1500, 2000 mm travel
- 500 kg load capacity and up to 360 Nm moment load capacity
- Achieves thrust up to 2850 N and speeds up to 400 mm/s
- Large mounting platform with high moment stiffness
- Built-in, 500 CPR motor encoder provides slip/stall detection and recovery
- Designed for use with Zaber's 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
- Optional integrated power-off brake for vertical applications

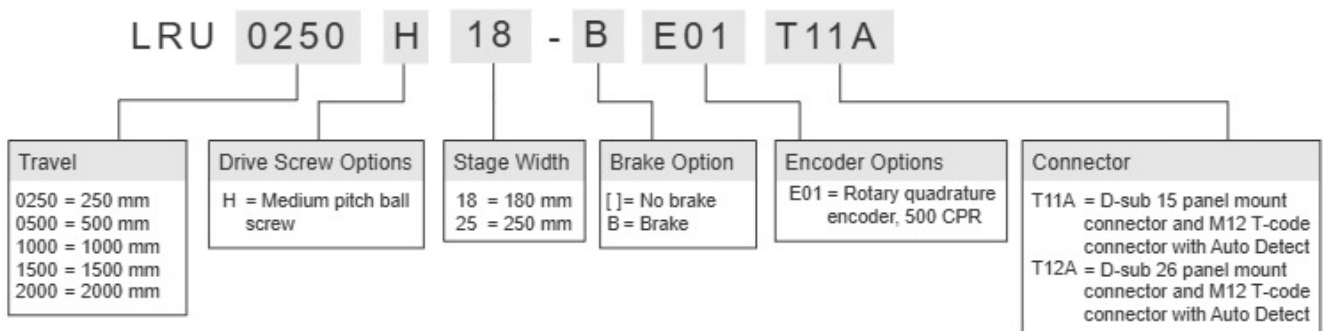
## LRU-E Series Overview

Zaber's LRU-E Series are motorized linear stages with built-in motor encoders. They support up to 500 kg loads and output up to 2850 N of thrust while having long lifetime capabilities. An optional power-off brake is available to protect against backdriving and other unwanted motion in a power-off state. They provide a large stage top and footprint. These stages integrate well with the T-slot ecosystem. They also share mounting patterns with other Zaber devices for easily building XY systems, gantries, or gimbals. These mounting patterns also support popular third party cobot arms. 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 Zaber's X-MCC Series universal motor controllers, or they can be used with any high power 2-phase stepper motor controller. Set up is easy with AutoDetect. Once connected, the X-MCC controller will automatically detect and configure the LRU-E.

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

## LRU-E Series Part Numbering & Options



## LRU0500H25-BE01T12A Drawings

- [Drawing for the LRUXH18-E.pdf \(Drawing for the LRUXH18-E\)](#)
- [Drawing for the LRUXH18-BE.pdf \(Drawing for the LRUXH18-BE\)](#)
- [Drawing for the LRUXH25-E.pdf \(Drawing for the LRUXH25-E\)](#)
- [Drawing for the LRUXH25-BE.pdf \(Drawing for the LRUXH25-BE\)](#)

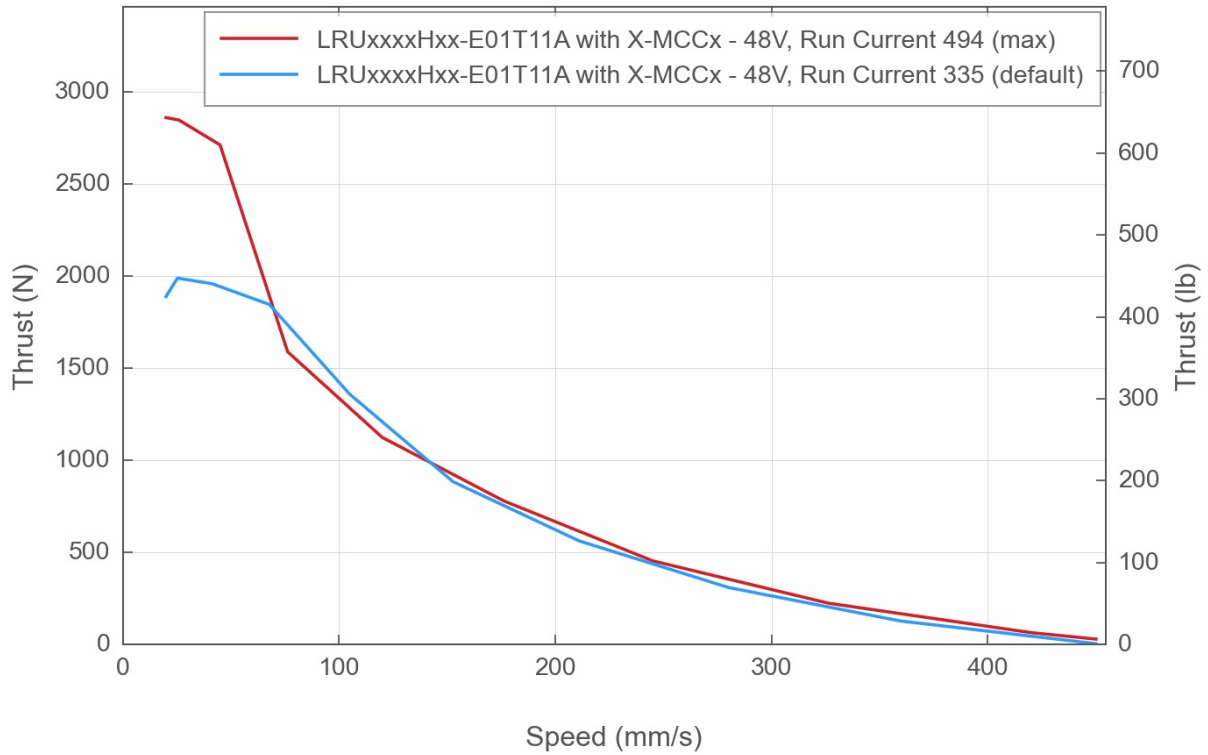
## LRU0500H25-BE01T12A Specifications

<b>Microstep Size (Default Resolution)</b>	<b>0.78125 <math>\mu\text{m}</math></b>
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Travel Range	500 mm (19.685")
Accuracy (unidirectional)	160 $\mu\text{m}$ (0.006299")
Repeatability	< 3 $\mu\text{m}$ (< 0.000118")
Backlash	< 40 $\mu\text{m}$ (< 0.001575")
Maximum Speed	380 mm/s (14.961"/s)
Minimum Speed	0.000476 mm/s (0.000019"/s)
Speed Resolution	0.000476 mm/s (0.000019"/s)
Encoder Resolution	500 CPR (2000 states/rev)
Encoder Type	Rotary quadrature encoder
Peak Thrust	2850 N (639.1 lb)
Back-driving Force*	( $\pm$ 30%) 250 N (56.1 lb)
Maximum Continuous Thrust	2850 N (639.1 lb)
Maximum Centered Load	5000 N (1121.3 lb)
Maximum Moment (Pitch)	360 N-m (265.7 ft-lb)
Maximum Moment (Roll)	360 N-m (265.7 ft-lb)
Maximum Moment (Yaw)	360 N-m (265.7 ft-lb)
Vertical Runout	< 70 $\mu\text{m}$ (< 0.002756")
Horizontal Runout	< 70 $\mu\text{m}$ (< 0.002756")
Pitch	0.06° (1.047 mrad)
Roll	0.06° (1.047 mrad)
Yaw	0.06° (1.047 mrad)

<b>Microstep Size (Default Resolution)</b>	<b>0.78125 <math>\mu\text{m}</math></b>
Stiffness in Pitch	3700 N-m/ $^\circ$ (5 $\mu\text{rad/N-m}$ )
Stiffness in Roll	2600 N-m/ $^\circ$ (7 $\mu\text{rad/N-m}$ )
Stiffness in Yaw	3300 N-m/ $^\circ$ (5 $\mu\text{rad/N-m}$ )
Linear Motion Per Motor Rev	10 mm (0.394")
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	9470 mA/phase
Motor Winding Resistance	0.23 ohms/phase
Inductance	2.1 mH/phase
Motor Connection	M12 T-code (motor) and D-sub 26 (sensors)
Default Resolution	1/64 of a step
Guide Type	Recirculating ball linear guide
Mechanical Drive System	Precision ball screw
Limit or Home Sensing	Magnetic home sensor
Axes of Motion	1
Maximum Axial Brake Force	2850 N (640.7 lb)
Operating Temperature Range	0 to 50 $^\circ\text{C}$
CE Compliant	Yes
Vacuum Compatible	No
Weight	23.2 kg (51.147 lb)

## LRU-E Series Charts

### Thrust Speed Performance



## Contact

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