

## LRQ-DE Series: High precision linear stages with built-in linear encoders



- 75, 150, 300, 450, 600 mm travel
- Up to 13  $\mu\text{m}$  accuracy over 600 mm travel
- 100 kg load capacity
- Up to 205 mm/s speed and up to 300 N thrust
- Integrated linear encoders with 50 nm resolution provide slip/stall detection and position correction
- Inline and parallel drive configurations
- Ball screw and lead screw configurations
- Designed for use with an X-MCB1 Series stepper motor controller or any 2-phase stepper motor controller

### Product Description

Zaber's LRQ-DE Series products are computer-controlled, motorized linear stages with high stiffness, load, and lifetime capabilities in a compact size. An integrated linear encoder combined with stage calibration provides high accuracy positioning over the full travel of the device. At only 36 mm high, these stages are excellent for applications where a low profile is required. These stages are capable of speeds up to 205 mm/s and can easily be mounted in XY configuration without additional hardware or XYZ configuration with our AB104 angle bracket. Each device is available in either an inline or parallel drive configuration.

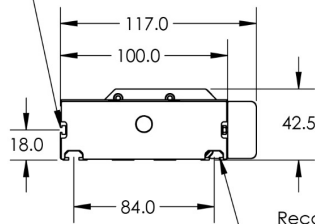
The stages are designed to connect directly to our X-MCB1 Series stepper motor controller, or they can be used with any 2-phase stepper motor controller through the panel mount DB15 connector. When connected to our X-Series controllers, the stages are designed to be 'plug and play' just like all of Zaber's other products.

## Dimension Drawings

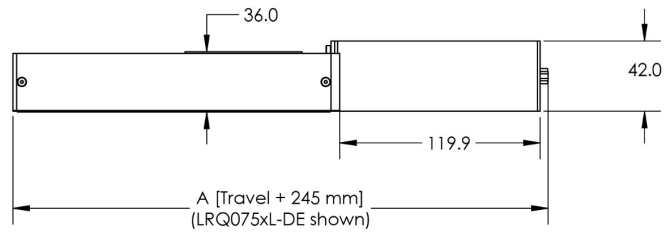
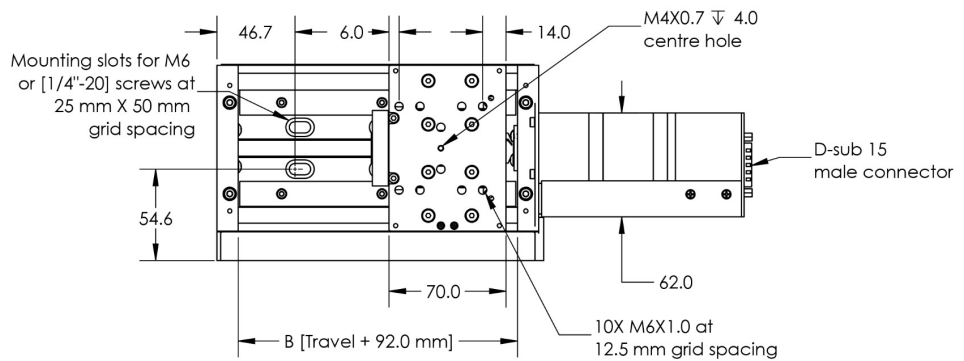
Model Number*	Travel	A	B
LRQ075xL-DE	75.0	320.0	167.0
LRQ150xL-DE	150.0	395.0	242.0
LRQ300xL-DE	300.0	545.0	392.0
LRQ450xL-DE	450.0	695.0	542.0
LRQ600xL-DE	600.0	845.0	692.0

\*See product page for complete list of available models at [www.zaber.com](http://www.zaber.com)

Recommended fastener for side T-slots: standard M2.5 nuts  
 Note: Do not mount stage using these side T-slots. For accessories only



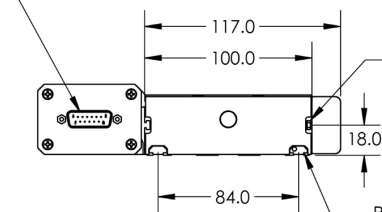
Recommended fastener for bottom T-slots: 6mm T-nuts



Model Number*	Travel	A	B
LRQ075xP-DE	75.0	209.8	167.0
LRQ150xP-DE	150.0	284.8	242.0
LRQ300xP-DE	300.0	434.8	392.0
LRQ450xP-DE	450.0	584.8	542.0
LRQ600xP-DE	600.0	734.8	692.0

\*See product page for complete list of available models at [www.zaber.com](http://www.zaber.com)

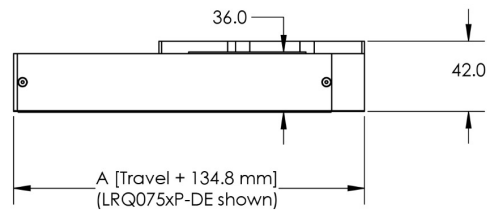
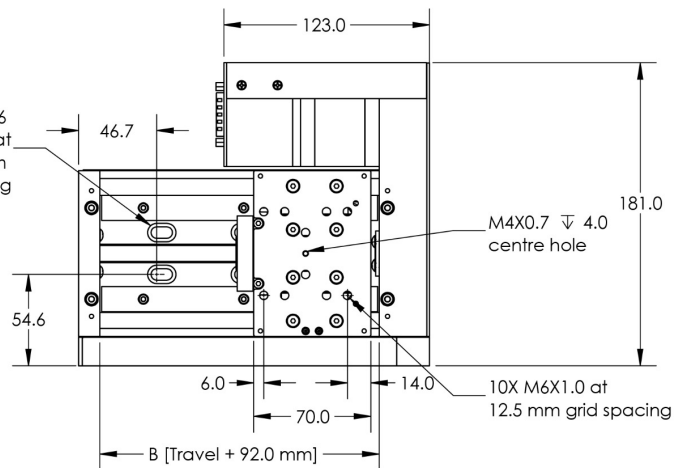
D-sub 15 male connector



Recommended fastener for side T-slots: standard M2.5 nuts  
 Note: Do not mount stage using these side T-slots. For accessories only

Recommended fastener for bottom T-slots: 6mm T-nuts

Mounting slots for M6 [1/4"-20] screws at 25 mm X 50 mm grid spacing



## Product Specifications

Specification	Value	Alternate Unit
Built-in Controller	No	
Recommended Controller	X-MCB1 (48 V) Recommended	
Encoder Type	Linear quadrature encoder	
Encoder Resolution	50 nm	
Maximum Centered Load	1000 N	224.3 lb
Maximum Cantilever Load	3 0 0 0 N"Å c m	4 , 2 4 8 . 4 o z"Å i n
Guide Type	Recirculating Ball Linear Guide	
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Rated Current	2300 mA/phase	
Inductance	2.8 mH/phase	
Motor Connection	D-sub 15	
Limit or Home Sensing	Magnetic home sensor	
Axes of Motion	1	
Mounting Interface	M6 and M3 threaded holes	
Vacuum Compatible	No	
Operating Temperature Range	0 to 50 °C	
RoHS Compliant	Yes	
CE Compliant	Yes	
Stiffness in Pitch	6 4 0 N"Å m / °	2 7 μ r a d / N"Å m
Stiffness in Roll	1 8 5 0 N"Å m / °	9 μ r a d / N"Å m
Stiffness in Yaw	6 6 5 N"Å m / °	2 6 μ r a d / N"Å m

Part Number	Microstep Size (Default Resolution)	Travel Range	Accuracy (unidirectional)	Repeatability
LRQ075AL-DE51T3	0.09921875 $\mu\text{m}$	75 mm (2.953 ")	13 $\mu\text{m}$ (0.000512 ")	< 2.5 $\mu\text{m}$ (< 0.000098 ")
LRQ075BL-DE51T3	0.49609375 $\mu\text{m}$	75 mm (2.953 ")	15 $\mu\text{m}$ (0.000591 ")	< 3.5 $\mu\text{m}$ (< 0.000138 ")
LRQ075HL-DE51T3	0.1953125 $\mu\text{m}$	75 mm (2.953 ")	15 $\mu\text{m}$ (0.000591 ")	< 3 $\mu\text{m}$ (< 0.000118 ")
LRQ150AL-DE51T3	0.09921875 $\mu\text{m}$	150 mm (5.906 ")	13 $\mu\text{m}$ (0.000512 ")	< 2.5 $\mu\text{m}$ (< 0.000098 ")
LRQ150BL-DE51T3	0.49609375 $\mu\text{m}$	150 mm (5.906 ")	15 $\mu\text{m}$ (0.000591 ")	< 3.5 $\mu\text{m}$ (< 0.000138 ")
LRQ150HL-DE51T3	0.1953125 $\mu\text{m}$	150 mm (5.906 ")	15 $\mu\text{m}$ (0.000591 ")	< 3 $\mu\text{m}$ (< 0.000118 ")
LRQ300AL-DE51T3	0.09921875 $\mu\text{m}$	300 mm (11.811 ")	13 $\mu\text{m}$ (0.000512 ")	< 2.5 $\mu\text{m}$ (< 0.000098 ")
LRQ300BL-DE51T3	0.49609375 $\mu\text{m}$	300 mm (11.811 ")	15 $\mu\text{m}$ (0.000591 ")	< 3.5 $\mu\text{m}$ (< 0.000138 ")
LRQ300HL-DE51T3	0.1953125 $\mu\text{m}$	300 mm (11.811 ")	15 $\mu\text{m}$ (0.000591 ")	< 3 $\mu\text{m}$ (< 0.000118 ")
LRQ450AL-DE51T3	0.09921875 $\mu\text{m}$	450 mm (17.717 ")	13 $\mu\text{m}$ (0.000512 ")	< 2.5 $\mu\text{m}$ (< 0.000098 ")
LRQ450BL-DE51T3	0.49609375 $\mu\text{m}$	450 mm (17.717 ")	15 $\mu\text{m}$ (0.000591 ")	< 3.5 $\mu\text{m}$ (< 0.000138 ")
LRQ450HL-DE51T3	0.1953125 $\mu\text{m}$	450 mm (17.717 ")	15 $\mu\text{m}$ (0.000591 ")	< 3 $\mu\text{m}$ (< 0.000118 ")
LRQ600AL-DE51T3	0.09921875 $\mu\text{m}$	600 mm (23.622 ")	13 $\mu\text{m}$ (0.000512 ")	< 2.5 $\mu\text{m}$ (< 0.000098 ")
LRQ600BL-DE51T3	0.49609375 $\mu\text{m}$	600 mm (23.622 ")	15 $\mu\text{m}$ (0.000591 ")	< 3.5 $\mu\text{m}$ (< 0.000138 ")
LRQ600HL-DE51T3	0.1953125 $\mu\text{m}$	600 mm (23.622 ")	15 $\mu\text{m}$ (0.000591 ")	< 3 $\mu\text{m}$ (< 0.000118 ")

Part Number	Backlash	Maximum Speed	Minimum Speed	Speed Resolution
LRQ075AL-DE51T3	< 8 $\mu\text{m}$ (< 0.000315 ")	40 mm/s (1.575 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)
LRQ075BL-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	205 mm/s (8.071 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRQ075HL-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	100 mm/s (3.937 "/s)	0.000119 mm/s (0.000005 "/s)	0.000119 mm/s (0.000005 "/s)
LRQ150AL-DE51T3	< 8 $\mu\text{m}$ (< 0.000315 ")	40 mm/s (1.575 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)
LRQ150BL-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	205 mm/s (8.071 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRQ150HL-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	100 mm/s (3.937 "/s)	0.000119 mm/s (0.000005 "/s)	0.000119 mm/s (0.000005 "/s)
LRQ300AL-DE51T3	< 8 $\mu\text{m}$ (< 0.000315 ")	40 mm/s (1.575 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)
LRQ300BL-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	205 mm/s (8.071 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRQ300HL-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	100 mm/s (3.937 "/s)	0.000119 mm/s (0.000005 "/s)	0.000119 mm/s (0.000005 "/s)
LRQ450AL-DE51T3	< 8 $\mu\text{m}$ (< 0.000315 ")	40 mm/s (1.575 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)
LRQ450BL-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	205 mm/s (8.071 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRQ450HL-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	100 mm/s (3.937 "/s)	0.000119 mm/s (0.000005 "/s)	0.000119 mm/s (0.000005 "/s)
LRQ600AL-DE51T3	< 8 $\mu\text{m}$ (< 0.000315 ")	40 mm/s (1.575 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)
LRQ600BL-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	205 mm/s (8.071 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRQ600HL-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	100 mm/s (3.937 "/s)	0.000119 mm/s (0.000005 "/s)	0.000119 mm/s (0.000005 "/s)

Part Number	Peak Thrust	Maximum Continuous Thrust	Vertical Runout	Horizontal Runout
LRQ075AL-DE51T3	110 N (24.7 lb)	100 N (22.4 lb)	< 190 μm (< 0.007480")	< 31 μm (< 0.001220")
LRQ075BL-DE51T3	100 N (22.4 lb)	100 N (22.4 lb)	< 190 μm (< 0.007480")	< 31 μm (< 0.001220")
LRQ075HL-DE51T3	300 N (67.3 lb)	200 N (44.9 lb)	< 190 μm (< 0.007480")	< 31 μm (< 0.001220")
LRQ150AL-DE51T3	110 N (24.7 lb)	100 N (22.4 lb)	< 190 μm (< 0.007480")	< 31 μm (< 0.001220")
LRQ150BL-DE51T3	100 N (22.4 lb)	100 N (22.4 lb)	< 190 μm (< 0.007480")	< 31 μm (< 0.001220")
LRQ150HL-DE51T3	300 N (67.3 lb)	200 N (44.9 lb)	< 190 μm (< 0.007480")	< 31 μm (< 0.001220")
LRQ300AL-DE51T3	110 N (24.7 lb)	100 N (22.4 lb)	< 190 μm (< 0.007480")	< 31 μm (< 0.001220")
LRQ300BL-DE51T3	100 N (22.4 lb)	100 N (22.4 lb)	< 190 μm (< 0.007480")	< 31 μm (< 0.001220")
LRQ300HL-DE51T3	300 N (67.3 lb)	200 N (44.9 lb)	< 190 μm (< 0.007480")	< 31 μm (< 0.001220")
LRQ450AL-DE51T3	110 N (24.7 lb)	100 N (22.4 lb)	< 200 μm (< 0.007874")	< 62 μm (< 0.002441")
LRQ450BL-DE51T3	100 N (22.4 lb)	100 N (22.4 lb)	< 200 μm (< 0.007874")	< 62 μm (< 0.002441")
LRQ450HL-DE51T3	300 N (67.3 lb)	200 N (44.9 lb)	< 200 μm (< 0.007874")	< 62 μm (< 0.002441")
LRQ600AL-DE51T3	110 N (24.7 lb)	100 N (22.4 lb)	< 210 μm (< 0.008268")	< 77 μm (< 0.003031")
LRQ600BL-DE51T3	100 N (22.4 lb)	100 N (22.4 lb)	< 210 μm (< 0.008268")	< 77 μm (< 0.003031")
LRQ600HL-DE51T3	300 N (67.3 lb)	200 N (44.9 lb)	< 210 μm (< 0.008268")	< 77 μm (< 0.003031")

Part Number	Pitch	Roll	Yaw	Linear Motion Per Motor Rev
LRQ075AL-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	1.27 mm (0.050 ")
LRQ075BL-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	6.35 mm (0.250 ")
LRQ075HL-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	2.5 mm (0.098 ")
LRQ150AL-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	1.27 mm (0.050 ")
LRQ150BL-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	6.35 mm (0.250 ")
LRQ150HL-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	2.5 mm (0.098 ")
LRQ300AL-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	1.27 mm (0.050 ")
LRQ300BL-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	6.35 mm (0.250 ")
LRQ300HL-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	2.5 mm (0.098 ")
LRQ450AL-DE51T3	0.076° (1.326 mrad)	0.041° (0.715 mrad)	0.065° (1.134 mrad)	1.27 mm (0.050 ")
LRQ450BL-DE51T3	0.076° (1.326 mrad)	0.041° (0.715 mrad)	0.065° (1.134 mrad)	6.35 mm (0.250 ")
LRQ450HL-DE51T3	0.076° (1.326 mrad)	0.041° (0.715 mrad)	0.065° (1.134 mrad)	2.5 mm (0.098 ")
LRQ600AL-DE51T3	0.097° (1.693 mrad)	0.054° (0.942 mrad)	0.075° (1.309 mrad)	1.27 mm (0.050 ")
LRQ600BL-DE51T3	0.097° (1.693 mrad)	0.054° (0.942 mrad)	0.075° (1.309 mrad)	6.35 mm (0.250 ")
LRQ600HL-DE51T3	0.097° (1.693 mrad)	0.054° (0.942 mrad)	0.075° (1.309 mrad)	2.5 mm (0.098 ")

Part Number	Mechanical Drive System	Weight
LRQ075AL-DE51T3	Precision lead screw	2.25 kg (4.960 lb)
LRQ075BL-DE51T3	Precision lead screw	2.25 kg (4.960 lb)
LRQ075HL-DE51T3	Precision ball screw	2.25 kg (4.960 lb)
LRQ150AL-DE51T3	Precision lead screw	2.64 kg (5.820 lb)
LRQ150BL-DE51T3	Precision lead screw	2.64 kg (5.820 lb)
LRQ150HL-DE51T3	Precision ball screw	2.64 kg (5.820 lb)
LRQ300AL-DE51T3	Precision lead screw	3.44 kg (7.584 lb)
LRQ300BL-DE51T3	Precision lead screw	3.44 kg (7.584 lb)
LRQ300HL-DE51T3	Precision ball screw	3.44 kg (7.584 lb)
LRQ450AL-DE51T3	Precision lead screw	4.23 kg (9.326 lb)
LRQ450BL-DE51T3	Precision lead screw	4.23 kg (9.326 lb)
LRQ450HL-DE51T3	Precision ball screw	4.23 kg (9.326 lb)
LRQ600AL-DE51T3	Precision lead screw	4.98 kg (10.979 lb)
LRQ600BL-DE51T3	Precision lead screw	4.98 kg (10.979 lb)
LRQ600HL-DE51T3	Precision ball screw	4.98 kg (10.979 lb)



Part Number	Microstep Size (Default Resolution)	Travel Range	Accuracy (unidirectional)	Repeatability
LRQ075AP-DE51T3	0.09921875 $\mu\text{m}$	75 mm (2.953 ")	13 $\mu\text{m}$ (0.000512 ")	< 2.5 $\mu\text{m}$ (< 0.000098 ")
LRQ075BP-DE51T3	0.49609375 $\mu\text{m}$	75 mm (2.953 ")	15 $\mu\text{m}$ (0.000591 ")	< 3.5 $\mu\text{m}$ (< 0.000138 ")
LRQ075HP-DE51T3	0.1953125 $\mu\text{m}$	75 mm (2.953 ")	15 $\mu\text{m}$ (0.000591 ")	< 3 $\mu\text{m}$ (< 0.000118 ")
LRQ150AP-DE51T3	0.09921875 $\mu\text{m}$	150 mm (5.906 ")	13 $\mu\text{m}$ (0.000512 ")	< 2.5 $\mu\text{m}$ (< 0.000098 ")
LRQ150BP-DE51T3	0.49609375 $\mu\text{m}$	150 mm (5.906 ")	15 $\mu\text{m}$ (0.000591 ")	< 3.5 $\mu\text{m}$ (< 0.000138 ")
LRQ150HP-DE51T3	0.1953125 $\mu\text{m}$	150 mm (5.906 ")	15 $\mu\text{m}$ (0.000591 ")	< 3 $\mu\text{m}$ (< 0.000118 ")
LRQ300AP-DE51T3	0.09921875 $\mu\text{m}$	300 mm (11.811 ")	13 $\mu\text{m}$ (0.000512 ")	< 2.5 $\mu\text{m}$ (< 0.000098 ")
LRQ300BP-DE51T3	0.49609375 $\mu\text{m}$	300 mm (11.811 ")	15 $\mu\text{m}$ (0.000591 ")	< 3.5 $\mu\text{m}$ (< 0.000138 ")
LRQ300HP-DE51T3	0.1953125 $\mu\text{m}$	300 mm (11.811 ")	15 $\mu\text{m}$ (0.000591 ")	< 3 $\mu\text{m}$ (< 0.000118 ")
LRQ450AP-DE51T3	0.09921875 $\mu\text{m}$	450 mm (17.717 ")	13 $\mu\text{m}$ (0.000512 ")	< 2.5 $\mu\text{m}$ (< 0.000098 ")
LRQ450BP-DE51T3	0.49609375 $\mu\text{m}$	450 mm (17.717 ")	15 $\mu\text{m}$ (0.000591 ")	< 3.5 $\mu\text{m}$ (< 0.000138 ")
LRQ450HP-DE51T3	0.1953125 $\mu\text{m}$	450 mm (17.717 ")	15 $\mu\text{m}$ (0.000591 ")	< 3 $\mu\text{m}$ (< 0.000118 ")
LRQ600AP-DE51T3	0.09921875 $\mu\text{m}$	600 mm (23.622 ")	13 $\mu\text{m}$ (0.000512 ")	< 2.5 $\mu\text{m}$ (< 0.000098 ")
LRQ600BP-DE51T3	0.49609375 $\mu\text{m}$	600 mm (23.622 ")	15 $\mu\text{m}$ (0.000591 ")	< 3.5 $\mu\text{m}$ (< 0.000138 ")
LRQ600HP-DE51T3	0.1953125 $\mu\text{m}$	600 mm (23.622 ")	15 $\mu\text{m}$ (0.000591 ")	< 3 $\mu\text{m}$ (< 0.000118 ")

Part Number	Backlash	Maximum Speed	Minimum Speed	Speed Resolution
LRQ075AP-DE51T3	< 8 $\mu\text{m}$ (< 0.000315 ")	40 mm/s (1.575 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)
LRQ075BP-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	205 mm/s (8.071 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRQ075HP-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	100 mm/s (3.937 "/s)	0.000119 mm/s (0.000005 "/s)	0.000119 mm/s (0.000005 "/s)
LRQ150AP-DE51T3	< 8 $\mu\text{m}$ (< 0.000315 ")	40 mm/s (1.575 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)
LRQ150BP-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	205 mm/s (8.071 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRQ150HP-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	100 mm/s (3.937 "/s)	0.000119 mm/s (0.000005 "/s)	0.000119 mm/s (0.000005 "/s)
LRQ300AP-DE51T3	< 8 $\mu\text{m}$ (< 0.000315 ")	40 mm/s (1.575 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)
LRQ300BP-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	205 mm/s (8.071 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRQ300HP-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	100 mm/s (3.937 "/s)	0.000119 mm/s (0.000005 "/s)	0.000119 mm/s (0.000005 "/s)
LRQ450AP-DE51T3	< 8 $\mu\text{m}$ (< 0.000315 ")	40 mm/s (1.575 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)
LRQ450BP-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	205 mm/s (8.071 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRQ450HP-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	100 mm/s (3.937 "/s)	0.000119 mm/s (0.000005 "/s)	0.000119 mm/s (0.000005 "/s)
LRQ600AP-DE51T3	< 8 $\mu\text{m}$ (< 0.000315 ")	40 mm/s (1.575 "/s)	0.000061 mm/s (0.000002 "/s)	0.000061 mm/s (0.000002 "/s)
LRQ600BP-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	205 mm/s (8.071 "/s)	0.000303 mm/s (0.000012 "/s)	0.000303 mm/s (0.000012 "/s)
LRQ600HP-DE51T3	< 11 $\mu\text{m}$ (< 0.000433 ")	100 mm/s (3.937 "/s)	0.000119 mm/s (0.000005 "/s)	0.000119 mm/s (0.000005 "/s)

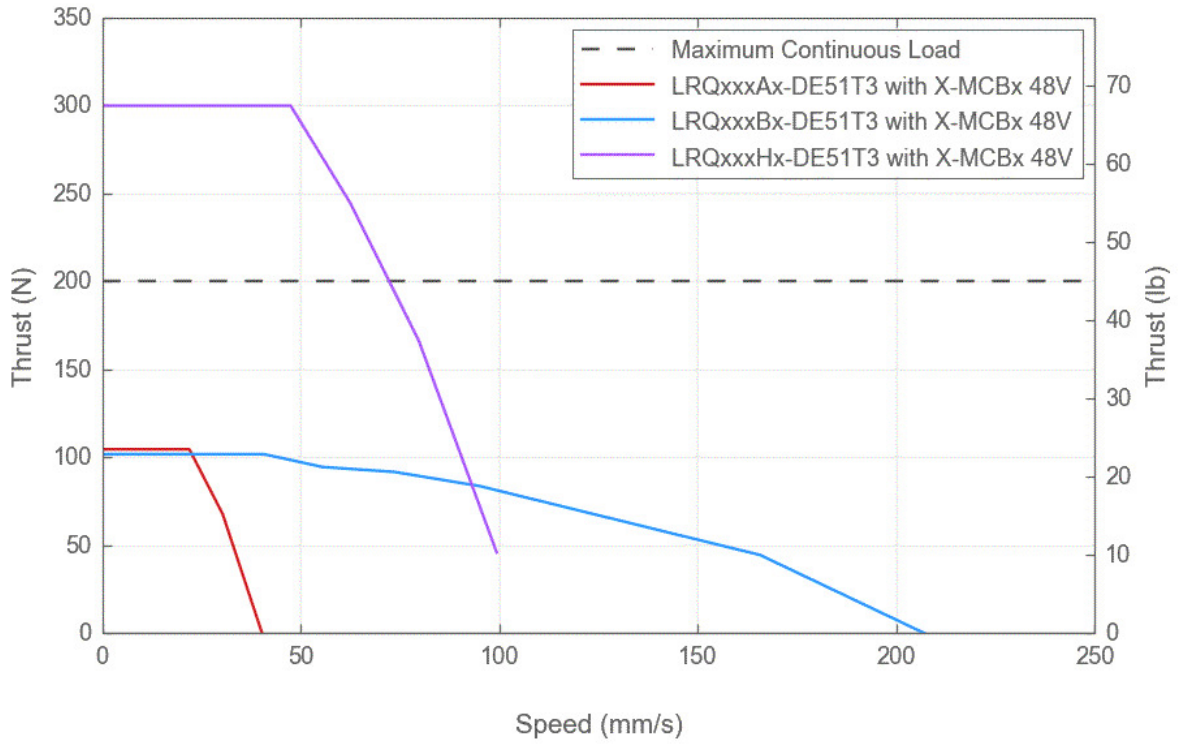
Part Number	Peak Thrust	Maximum Continuous Thrust	Vertical Runout	Horizontal Runout
LRQ075AP-DE51T3	110 N (24.7 lb)	100 N (22.4 lb)	< 190 $\mu\text{m}$ (< 0.007480")	< 31 $\mu\text{m}$ (< 0.001220")
LRQ075BP-DE51T3	100 N (22.4 lb)	100 N (22.4 lb)	< 190 $\mu\text{m}$ (< 0.007480")	< 31 $\mu\text{m}$ (< 0.001220")
LRQ075HP-DE51T3	300 N (67.3 lb)	200 N (44.9 lb)	< 190 $\mu\text{m}$ (< 0.007480")	< 31 $\mu\text{m}$ (< 0.001220")
LRQ150AP-DE51T3	110 N (24.7 lb)	100 N (22.4 lb)	< 190 $\mu\text{m}$ (< 0.007480")	< 31 $\mu\text{m}$ (< 0.001220")
LRQ150BP-DE51T3	100 N (22.4 lb)	100 N (22.4 lb)	< 190 $\mu\text{m}$ (< 0.007480")	< 31 $\mu\text{m}$ (< 0.001220")
LRQ150HP-DE51T3	300 N (67.3 lb)	200 N (44.9 lb)	< 190 $\mu\text{m}$ (< 0.007480")	< 31 $\mu\text{m}$ (< 0.001220")
LRQ300AP-DE51T3	110 N (24.7 lb)	100 N (22.4 lb)	< 190 $\mu\text{m}$ (< 0.007480")	< 31 $\mu\text{m}$ (< 0.001220")
LRQ300BP-DE51T3	100 N (22.4 lb)	100 N (22.4 lb)	< 190 $\mu\text{m}$ (< 0.007480")	< 31 $\mu\text{m}$ (< 0.001220")
LRQ300HP-DE51T3	300 N (67.3 lb)	200 N (44.9 lb)	< 190 $\mu\text{m}$ (< 0.007480")	< 31 $\mu\text{m}$ (< 0.001220")
LRQ450AP-DE51T3	110 N (24.7 lb)	100 N (22.4 lb)	< 200 $\mu\text{m}$ (< 0.007874")	< 62 $\mu\text{m}$ (< 0.002441")
LRQ450BP-DE51T3	100 N (22.4 lb)	100 N (22.4 lb)	< 200 $\mu\text{m}$ (< 0.007874")	< 62 $\mu\text{m}$ (< 0.002441")
LRQ450HP-DE51T3	300 N (67.3 lb)	200 N (44.9 lb)	< 200 $\mu\text{m}$ (< 0.007874")	< 62 $\mu\text{m}$ (< 0.002441")
LRQ600AP-DE51T3	110 N (24.7 lb)	100 N (22.4 lb)	< 210 $\mu\text{m}$ (< 0.008268")	< 77 $\mu\text{m}$ (< 0.003031")
LRQ600BP-DE51T3	100 N (22.4 lb)	100 N (22.4 lb)	< 210 $\mu\text{m}$ (< 0.008268")	< 77 $\mu\text{m}$ (< 0.003031")
LRQ600HP-DE51T3	300 N (67.3 lb)	200 N (44.9 lb)	< 210 $\mu\text{m}$ (< 0.008268")	< 77 $\mu\text{m}$ (< 0.003031")

Part Number	Pitch	Roll	Yaw	Linear Motion Per Motor Rev
LRQ075AP-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	1.27 mm (0.050 ")
LRQ075BP-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	6.35 mm (0.250 ")
LRQ075HP-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	2.5 mm (0.098 ")
LRQ150AP-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	1.27 mm (0.050 ")
LRQ150BP-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	6.35 mm (0.250 ")
LRQ150HP-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	2.5 mm (0.098 ")
LRQ300AP-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	1.27 mm (0.050 ")
LRQ300BP-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	6.35 mm (0.250 ")
LRQ300HP-DE51T3	0.034° (0.593 mrad)	0.015° (0.262 mrad)	0.044° (0.768 mrad)	2.5 mm (0.098 ")
LRQ450AP-DE51T3	0.076° (1.326 mrad)	0.041° (0.715 mrad)	0.065° (1.134 mrad)	1.27 mm (0.050 ")
LRQ450BP-DE51T3	0.076° (1.326 mrad)	0.041° (0.715 mrad)	0.065° (1.134 mrad)	6.35 mm (0.250 ")
LRQ450HP-DE51T3	0.076° (1.326 mrad)	0.041° (0.715 mrad)	0.065° (1.134 mrad)	2.5 mm (0.098 ")
LRQ600AP-DE51T3	0.097° (1.693 mrad)	0.054° (0.942 mrad)	0.075° (1.309 mrad)	1.27 mm (0.050 ")
LRQ600BP-DE51T3	0.097° (1.693 mrad)	0.054° (0.942 mrad)	0.075° (1.309 mrad)	6.35 mm (0.250 ")
LRQ600HP-DE51T3	0.097° (1.693 mrad)	0.054° (0.942 mrad)	0.075° (1.309 mrad)	2.5 mm (0.098 ")

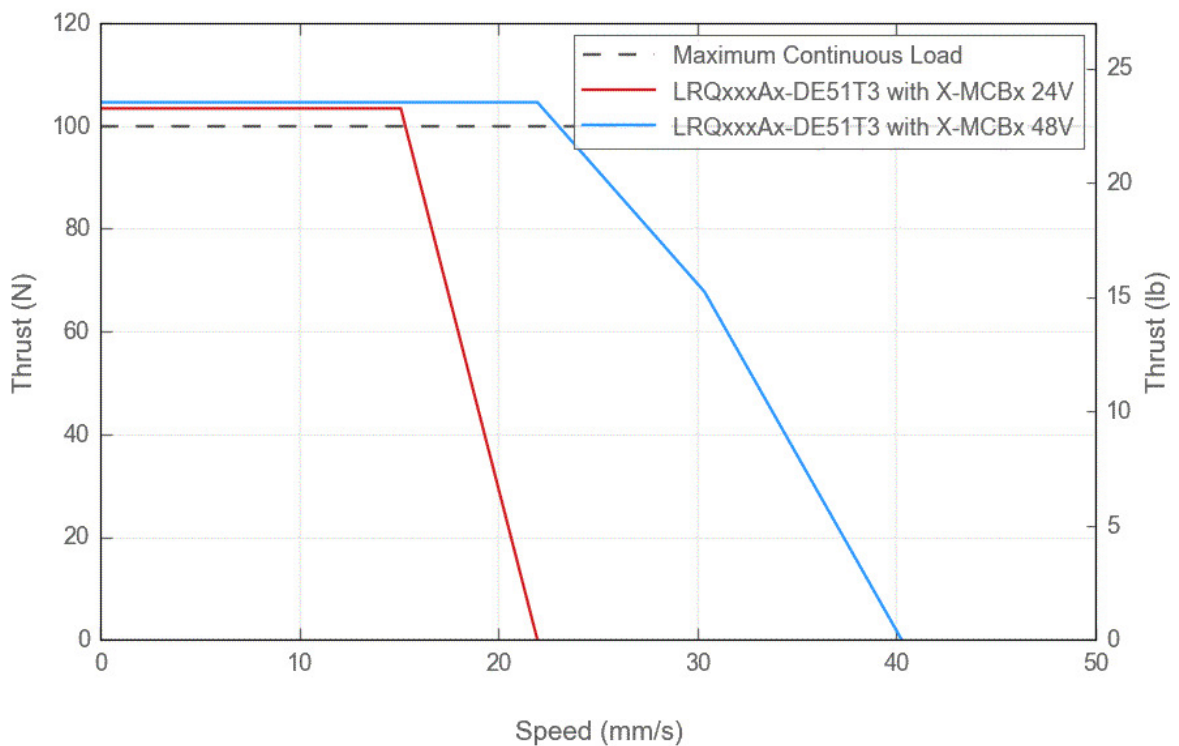
Part Number	Mechanical Drive System	Weight
LRQ075AP-DE51T3	Precision lead screw	2.41 kg (5.313 lb)
LRQ075BP-DE51T3	Precision lead screw	2.41 kg (5.313 lb)
LRQ075HP-DE51T3	Precision ball screw	2.41 kg (5.313 lb)
LRQ150AP-DE51T3	Precision lead screw	2.80 kg (6.173 lb)
LRQ150BP-DE51T3	Precision lead screw	2.80 kg (6.173 lb)
LRQ150HP-DE51T3	Precision ball screw	2.80 kg (6.173 lb)
LRQ300AP-DE51T3	Precision lead screw	3.60 kg (7.937 lb)
LRQ300BP-DE51T3	Precision lead screw	3.60 kg (7.937 lb)
LRQ300HP-DE51T3	Precision ball screw	3.60 kg (7.937 lb)
LRQ450AP-DE51T3	Precision lead screw	4.39 kg (9.678 lb)
LRQ450BP-DE51T3	Precision lead screw	4.39 kg (9.678 lb)
LRQ450HP-DE51T3	Precision ball screw	4.39 kg (9.678 lb)
LRQ600AP-DE51T3	Precision lead screw	5.14 kg (11.332 lb)
LRQ600BP-DE51T3	Precision lead screw	5.14 kg (11.332 lb)
LRQ600HP-DE51T3	Precision ball screw	5.14 kg (11.332 lb)

Specification Charts

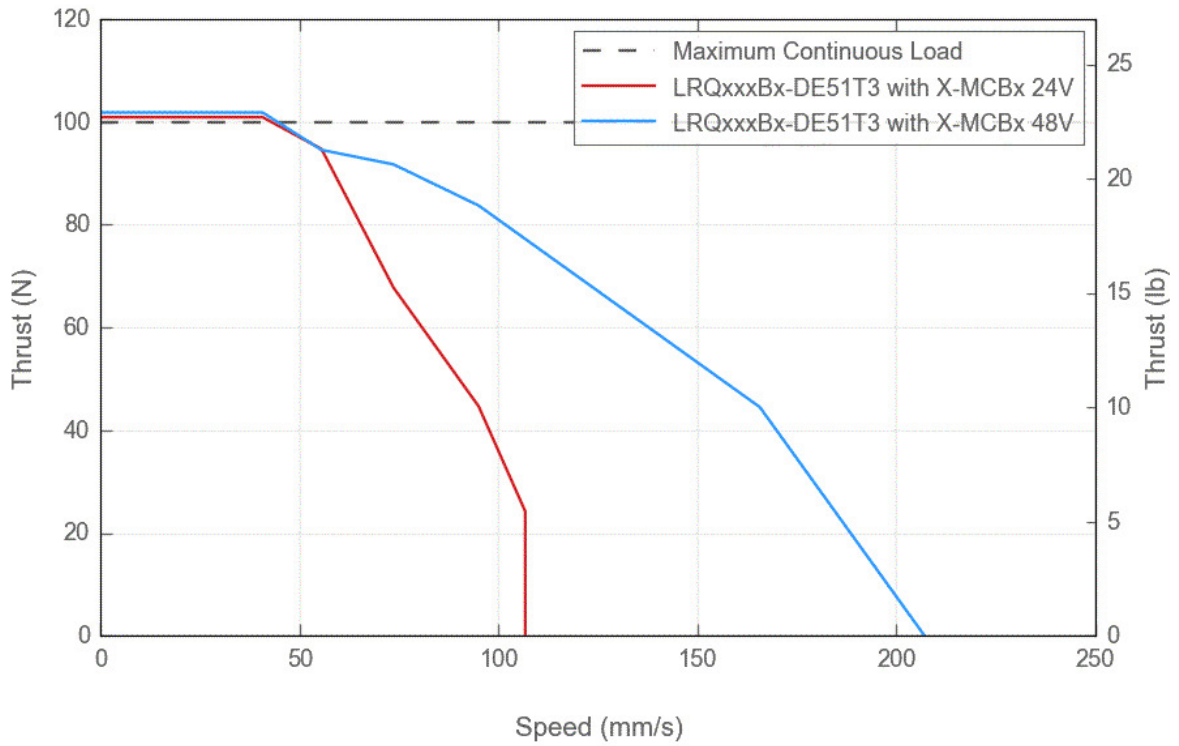
Thrust Speed Performance



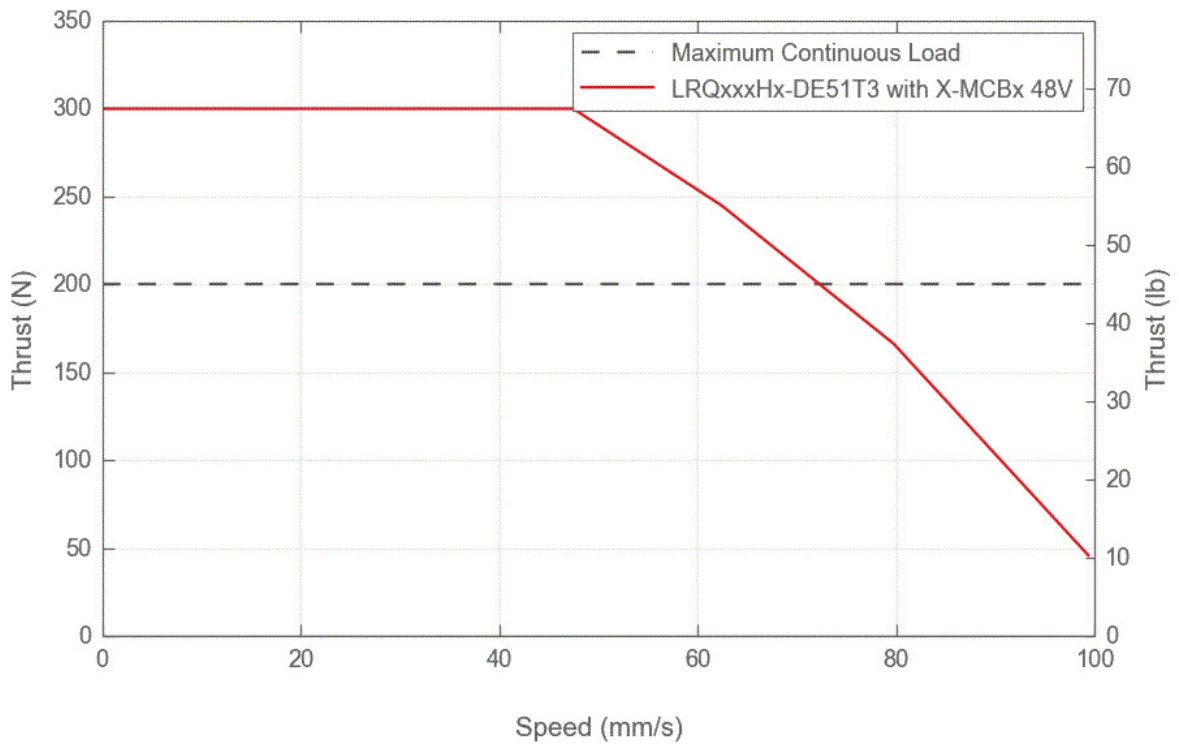
Thrust Speed Performance



### Thrust Speed Performance



### Thrust Speed Performance



### Typical Accuracy

