

LRM Series Datasheet



- 75, 150, 300, 450 and 600 mm travel
- 20 kg load capacity
- Up to 1 m/s speed and up to 100 N thrust
- Designed for use with a X-MCB1 Series stepper motor controller or any 2-phase stepper motor controller
- Custom versions available

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 cantilever loads is required.

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

Drawings

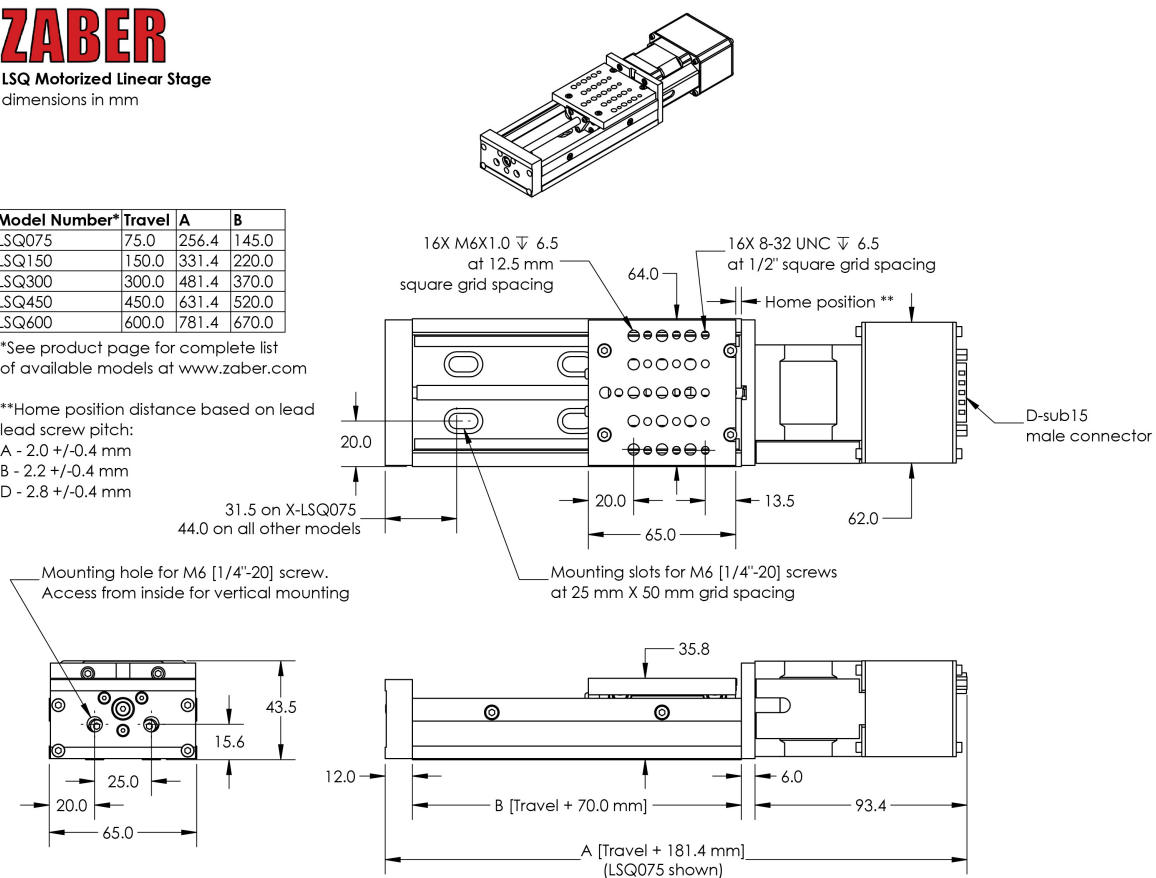
ZABER

LSQ Motorized Linear Stage
dimensions in mm

Model Number*	Travel	A	B
LSQ075	75.0	256.4	145.0
LSQ150	150.0	331.4	220.0
LSQ300	300.0	481.4	370.0
LSQ450	450.0	631.4	520.0
LSQ600	600.0	781.4	670.0

*See product page for complete list of available models at www.zaber.com

**Home position distance based on lead screw pitch:
A - 2.0 +/-0.4 mm
B - 2.2 +/-0.4 mm
D - 2.8 +/-0.4 mm



DWG 1179 R01A

Specifications

Specification	Value	Alternate Unit
Built-in Controller	No	
Recommended Controller	X-MCB1 (48 V) Recommended	
Encoder Type	None	
Maximum Centered Load	200 N	44.9 lb
Maximum Cantilever Load	800 N-cm	1132.9 oz-in
Guide Type	Roller bearing	
Vertical Runout	< 24 μm	< 0.000945 "
Horizontal Runout	< 26 μm	< 0.001024 "
Pitch	0.075 °	1.309 mrad
Stiffness in Pitch	150 N-m/°	116 $\mu\text{rad/N-m}$
Roll	0.04 °	0.698 mrad
Stiffness in Roll	150 N-m/°	116 $\mu\text{rad/N-m}$
Yaw	0.03 °	0.523 mrad
Stiffness in Yaw	150 N-m/°	116 $\mu\text{rad/N-m}$
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Rated Current	1250 mA/phase	
Inductance	2.8 mH/phase	
Motor Connection	D-sub 15	
Mechanical Drive System	Precision lead screw	
Limit or Home Sensing	Magnetic home sensor	
Axes of Motion	1	
Mounting Interface	M6 threaded holes and 8-32 threaded holes	
Vacuum Compatible	No	
Operating Temperature Range	0 to 50 °C	
Stage Parallelism	< 100 μm	< 0.003937 "
RoHS Compliant	Yes	
CE Compliant	Yes	

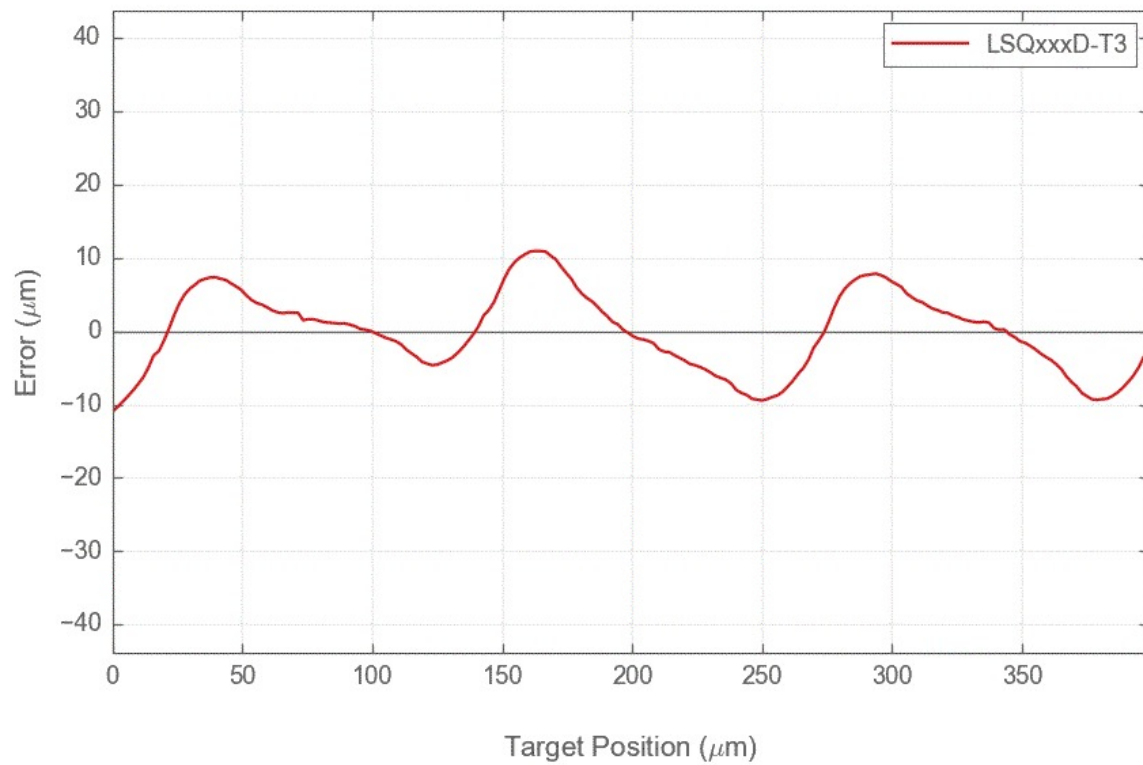
Part Number	Microstep Size (Default Resolution)	Travel Range	Accuracy (unidirectional)	Repeatability
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Part Number	Backlash	Maximum Speed	Minimum Speed	Speed Resolution
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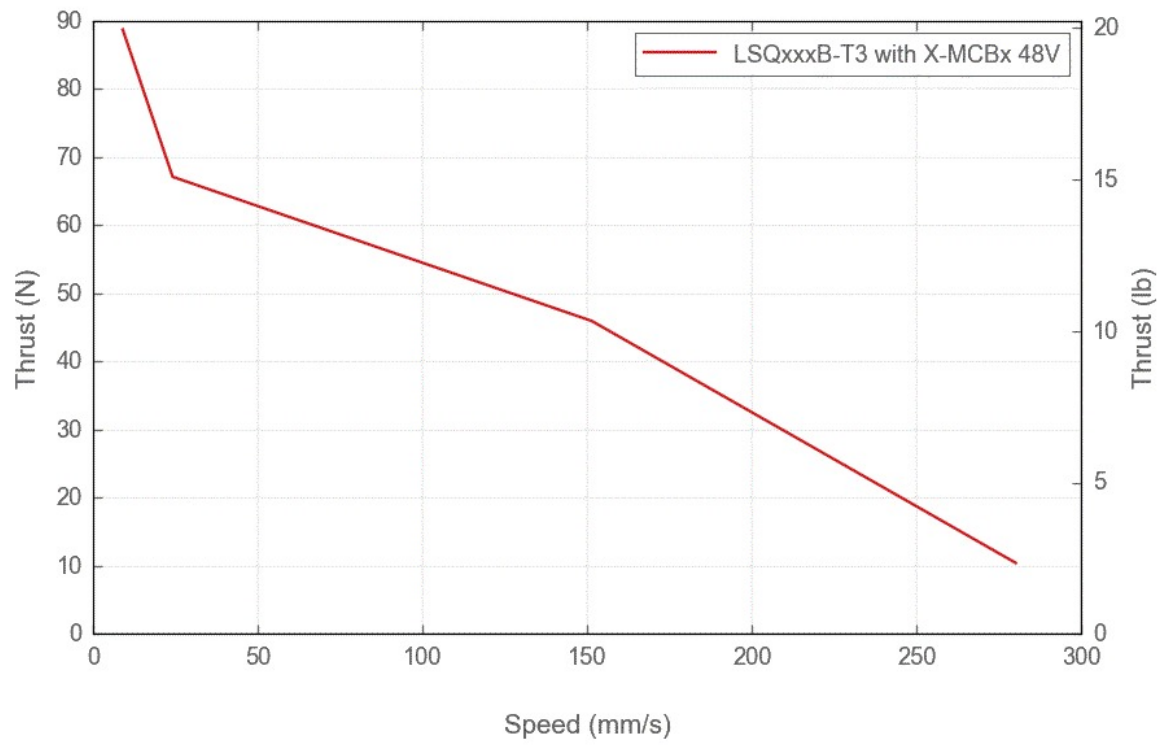
Part Number	Peak Thrust	Maximum Continuous Thrust	Linear Motion Per Motor Rev	Weight
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Charts

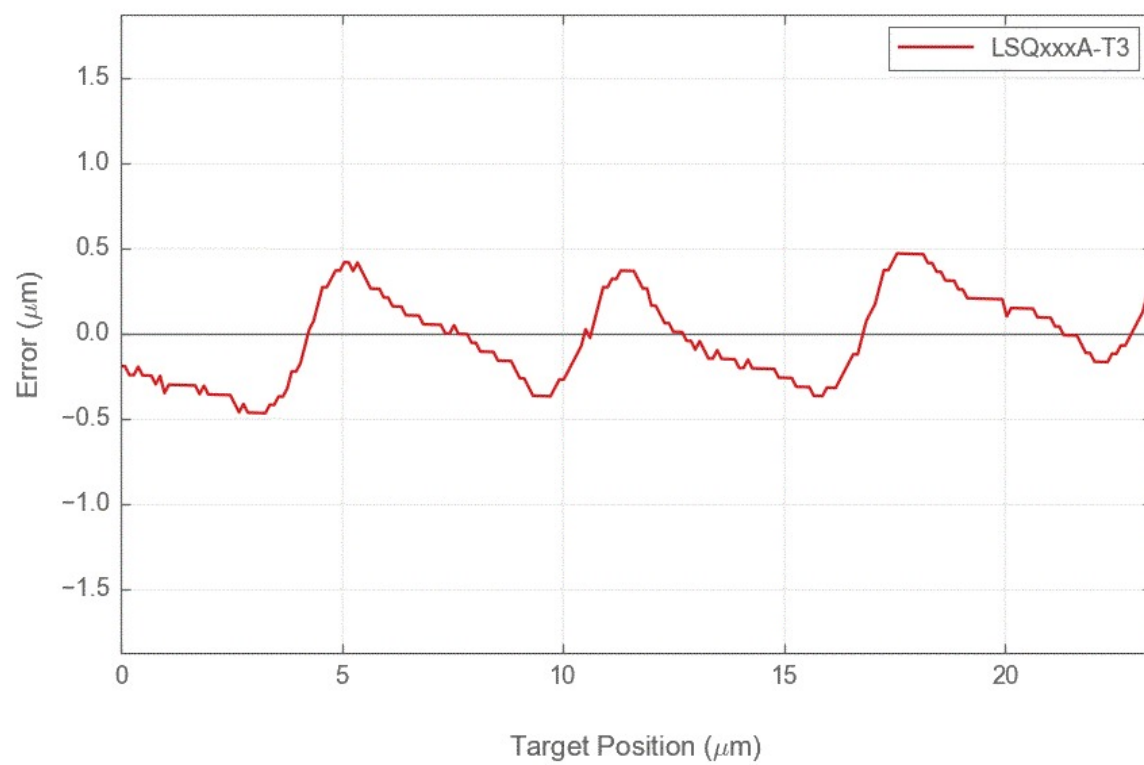
Typical Microstepping Accuracy



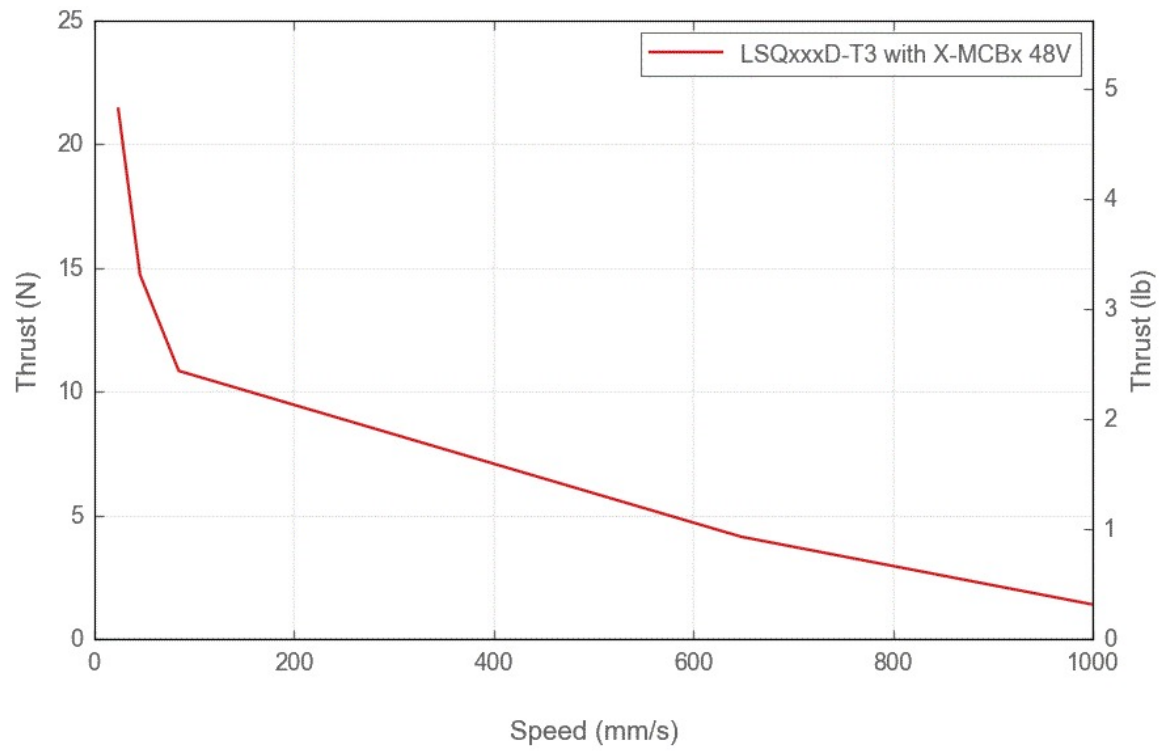
Thrust Speed Performance



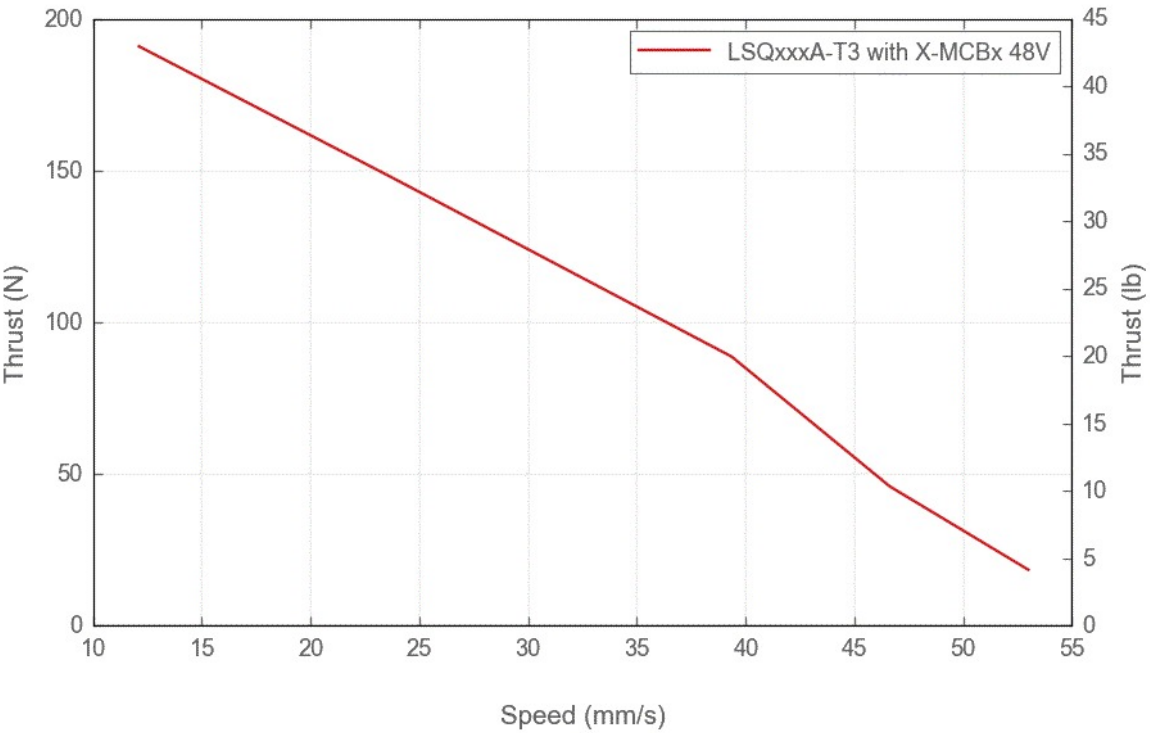
Typical Microstepping Accuracy



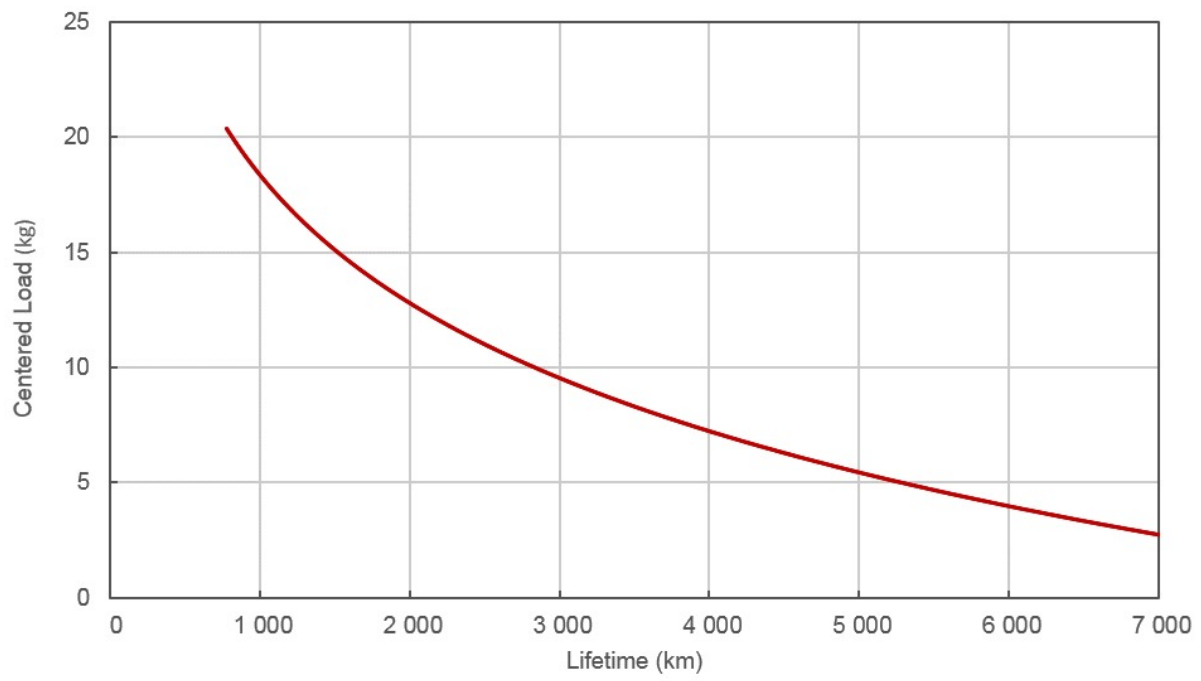
Thrust Speed Performance



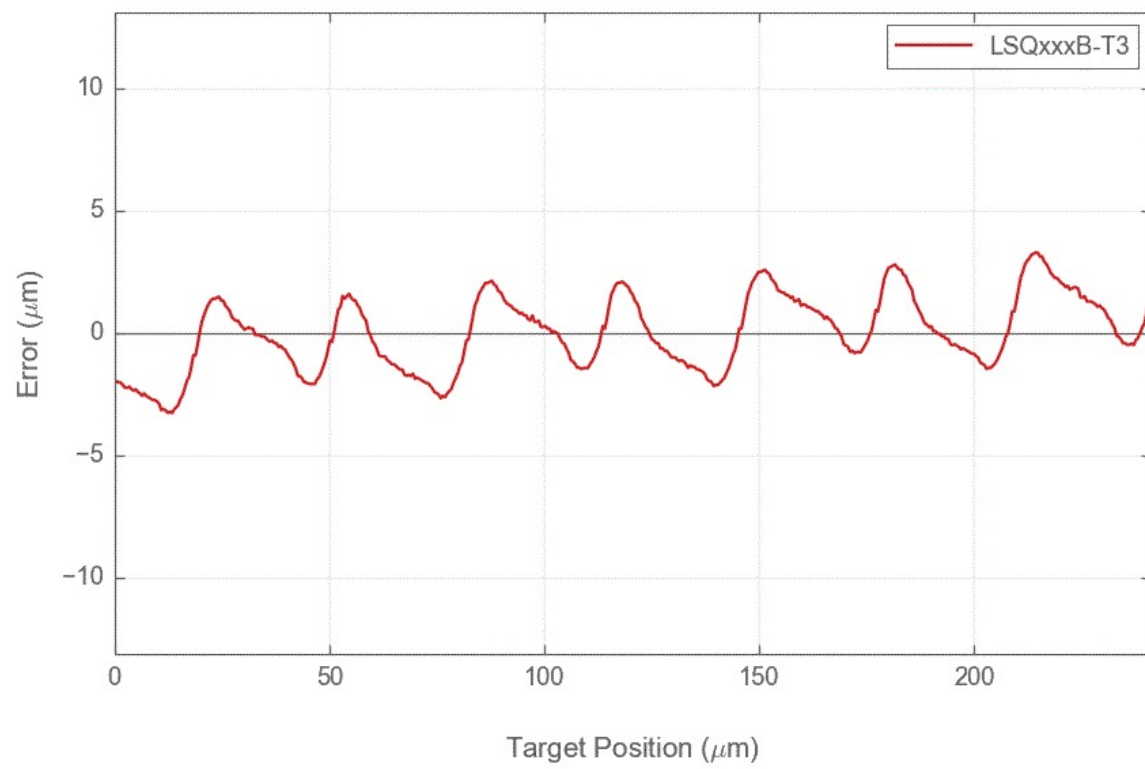
Thrust Speed Performance



LSQ Linear Bearing Lifetime



Typical Microstepping Accuracy



Thrust Speed Performance

