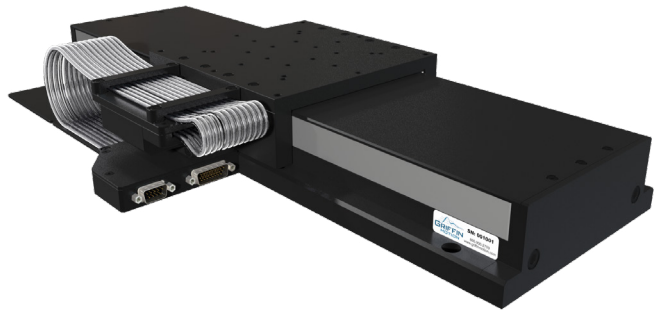


## LM3-LM Series Datasheet

### Linear Motor Positioning Stage

#### FEATURES

- 100-800mm Travels Available
- Ironless Linear Motor
- Optical Limit Switch and Home Index
- High Resolution Linear Encoder, 1Vpp and RS422 Available
- Integrated Cable Management
- Recirculating Linear Bearings
- Silicone Side Seals



The LM3-LM is a light-duty linear stage ideal for applications in optics, microscopy, medical device, and more. Offering micron-level precision, excellent repeatability, and exceptional dynamics, the LM3-LM ensures smooth and reproducible movements with high levels of positioning accuracy. Crafted with high-quality materials, precision-engineered components and durable side seals, the LM3-LM is built to last. Invest in the LM3-LM linear stage and redefine the possibilities for precision motion in your light-duty application.

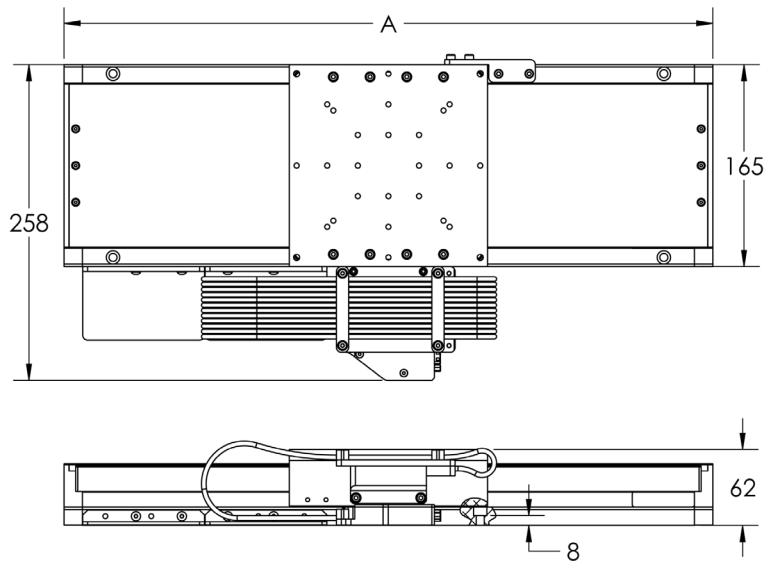
## Ordering Options and Dimensions

Stage Series	Stage Travel (mm)	Drive Type	Motor Code	Feedback Code	Precision Grade	Additional Options	Custom Features
LM3	100, 150, 200, 250, 300, 400, 500, 600, 800 <sup>1</sup>	LM-Linear Motor	G-Ironless, HV Winding	L-1Vpp, 25 Periods/mm, Limits and Index	S- Standard	F-Side Seals	00-None
				M- RS422, 0.1µm, Limits and Index	P- Precision <sup>2</sup>		Any Other <sup>3</sup>

Example Part Number: LM3-300-LM-G-M-S-F-00

Notes:

- Other custom travels may be available upon request, not longer than 1000mm.
- Non-standard ordering option, contact Griffin Motion for more information.
- Common customizations include cleanroom preparation, stainless hardware and custom mounting holes. Many other customizations are also available, contact Griffin Motion for more information.



Stage Travel (mm)	Stage Length "A" (mm)
100	330
150	380
200	430
250	480
300	530
400	630
500	730
600	830
800	1030

## LM3-LM Performance Specifications

Nominal Travel (mm)	100	150	200	250	300	400	500	600	800
Mechanical Accuracy ( $\mu\text{m}$ ) <sup>3</sup>	$\pm 6.0$	$\pm 7.0$	$\pm 8.0$	$\pm 9.0$	$\pm 10.0$	$\pm 12.0$	$\pm 14.0$	$\pm 16.0$	$\pm 20.0$
Calibrated Accuracy ( $\mu\text{m}$ ) <sup>1</sup>	$\pm 2.0$								
Bi-Directional Repeatability ( $\mu\text{m}$ ) <sup>3</sup>	1.0								
Maximum Velocity (mm/s)	900 (2000 for "L" Encoder)								
Maximum Force, X Direction (N) <sup>2</sup>	41								
Maximum Force, Y Direction (N) <sup>2</sup>	200								
Maximum Force, Z Direction (N) <sup>2</sup>	440								
Maximum Moment About X (Nm) <sup>2</sup>	50								
Maximum Moment About Y (Nm) <sup>2</sup>	50								
Maximum Moment About Z (Nm) <sup>2</sup>	25								
Moving Mass (kg)	2.02								
Flatness (Z Motion) ( $\mu\text{m}$ ) <sup>2</sup>	$\pm 3.5$	$\pm 3.5$	$\pm 4.0$	$\pm 4.5$	$\pm 5.0$	$\pm 6.0$	$\pm 7.0$	$\pm 8.0$	$\pm 10.0$
Straightness (Y Motion) ( $\mu\text{m}$ ) <sup>2</sup>	$\pm 3.5$	$\pm 3.5$	$\pm 4.0$	$\pm 4.5$	$\pm 5.0$	$\pm 6.0$	$\pm 7.0$	$\pm 8.0$	$\pm 10.0$
Pitch Motion (arc-sec) <sup>3</sup>	$\pm 6.0$	$\pm 6.0$	$\pm 8.0$	$\pm 10.0$	$\pm 12.0$	$\pm 14.0$	$\pm 16.0$	$\pm 18.0$	$\pm 22.0$
Yaw Motion (arc-sec) <sup>3</sup>	$\pm 6.0$	$\pm 6.0$	$\pm 8.0$	$\pm 10.0$	$\pm 12.0$	$\pm 14.0$	$\pm 16.0$	$\pm 18.0$	$\pm 22.0$
Stage Mass (kg)	7.2	8.0	8.8	9.6	10.4	11.8	13.3	15.1	17.0

### Notes

1. In order to have a stage calibrated and verified, Griffin Motion must perform the controls configuration.
2. See coordinate convention below.
3. Specification is verified on every stage via laser measurement. Other specifications can be verified upon request. A custom part number may be required, additional charges may apply.
4. Improved accuracy, repeatability, flatness, straightness, pitch, and yaw are available with "P" Precision Grade.

