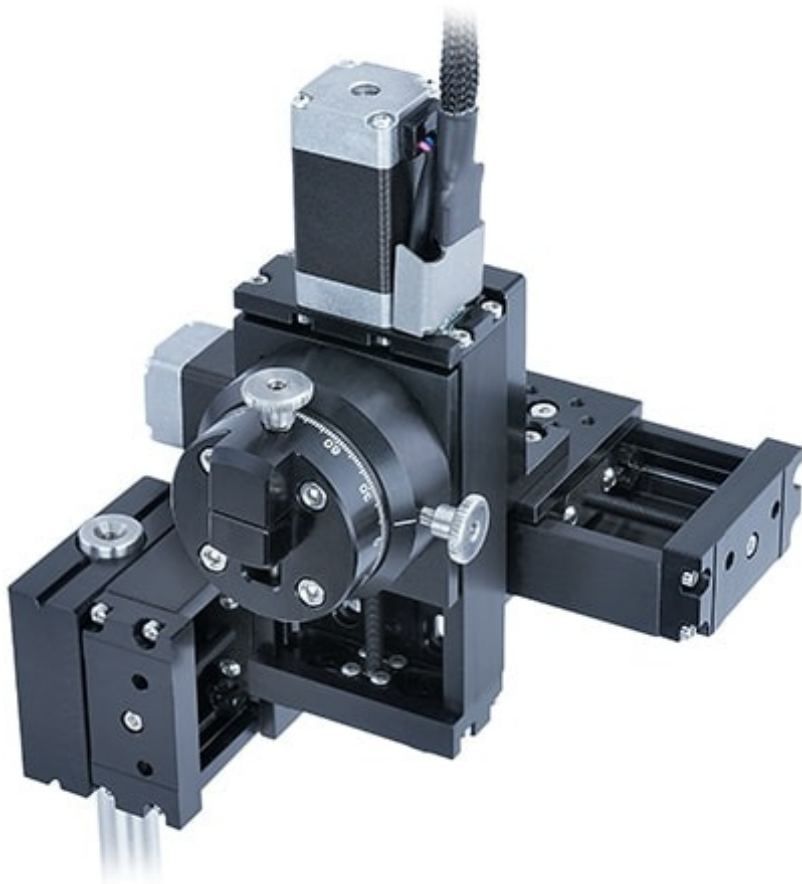


M-LSM Series Datasheet



- 25 mm travel XYZ with resolution finer than 0.05 μm
- Up to 26 mm/s speed and 55 N thrust
- Adjustable probe holder
- Programmable or joystick-activated 4th virtual axis to allow approach along probe angle
- Plug and play controllers and Joystick included
- 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

M-LSM Series Overview

Zaber's motorized micromanipulator series of products are stand-alone units that are either joystick or computer controlled. They can be mounted to either metric or imperial optical breadboards, and oriented to the left or to the right.

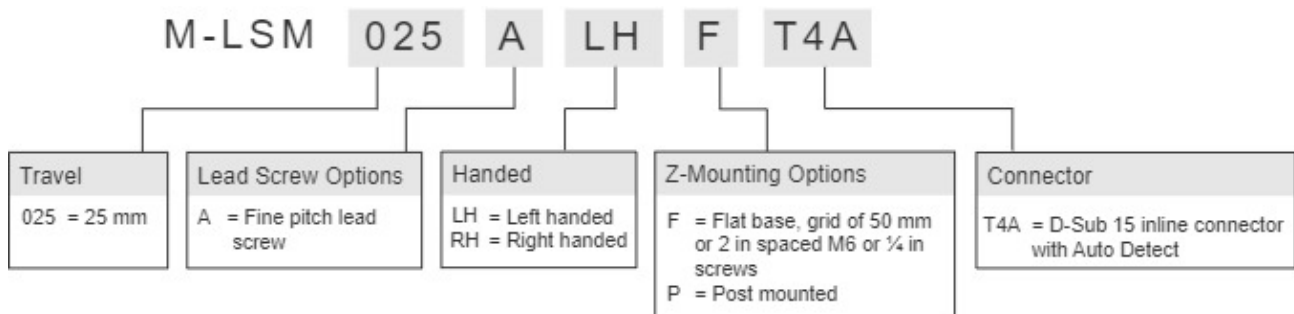
The micromanipulators' probe holders are designed to quickly and easily adjust for probe size and angle. The left thumbscrew on the holder adjusts for the size of the probe (diameters between 2 and 13 mm) and locks it into position. The front face of the holder can be rotated to adjust the angle at which a probe is held, and the top thumbscrew locks it into place.

These micromanipulators can be valuable companion tools to motorized microscopes in applications such as intracytoplasmic injections in reproductive medical procedures e.g. IVF as well as assist in microcellular biological research.

The included X-MCC3 controller connect to the RS-232 or USB port of any computer. Set up is easy with AutoDetect. Once connected, the controllers will automatically detect and configure the micromanipulator axes.

For more information visit: <https://webstaging.izaber.com/products/micromanipulators/M-LSM>

M-LSM Series Part Numbering

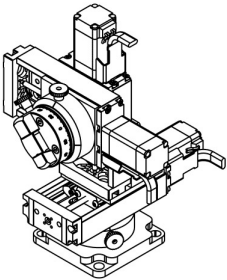


M-LSM Series Drawings

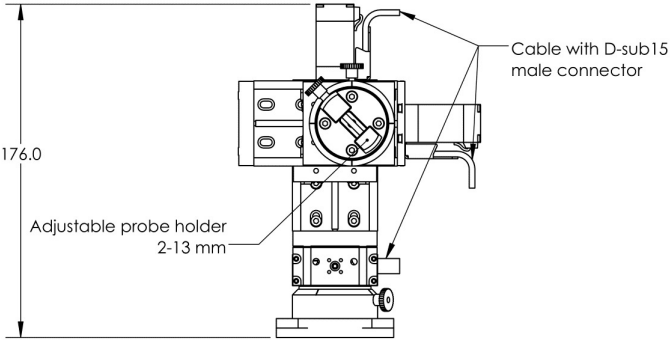
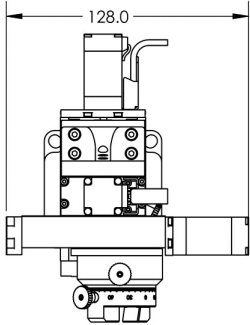
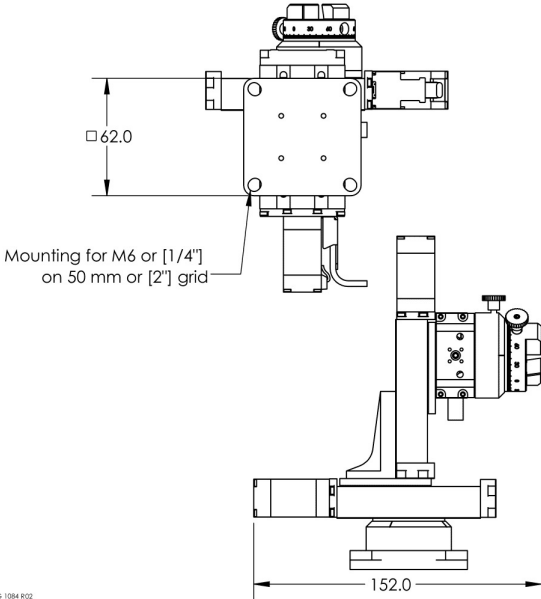
ZABER

M-LSM-RHF Motorized Micromanipulator

dimensions in mm



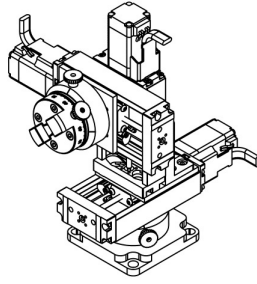
*See product page for complete list of available models at www.zaber.com



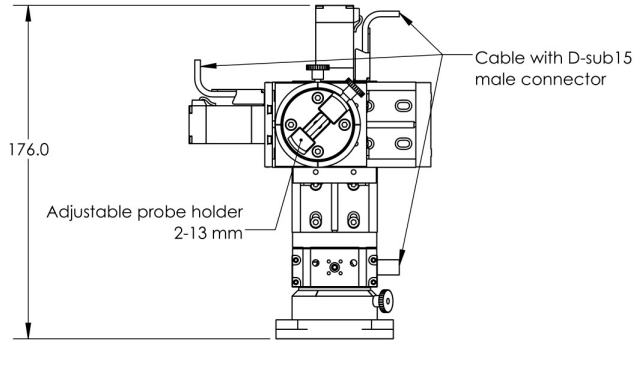
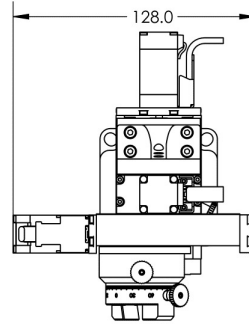
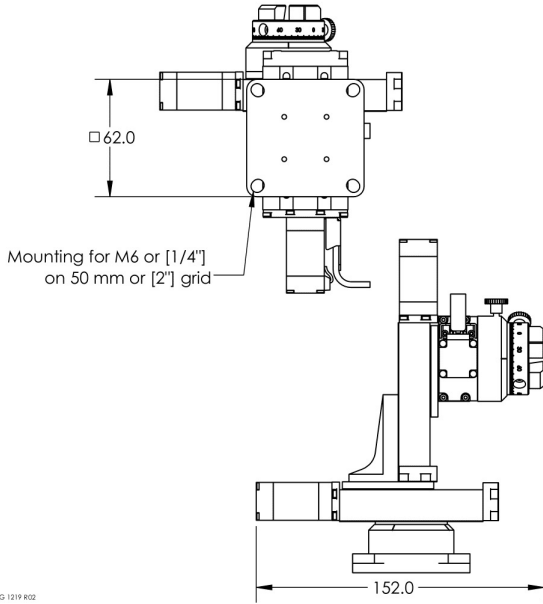
DWG 1084 802

ZABER

M-LSM-LHF Motorized Micromanipulator
dimensions in mm



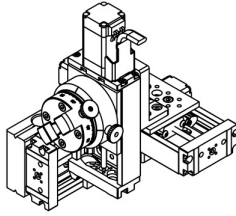
*See product page for complete list
of available models at www.zaber.com



DWG 1219 R02

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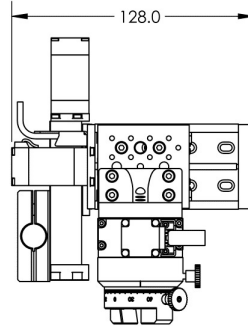
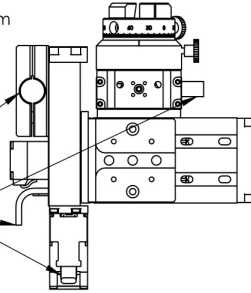
M-LSM-LHP Motorized Micromanipulator
dimensions in mm



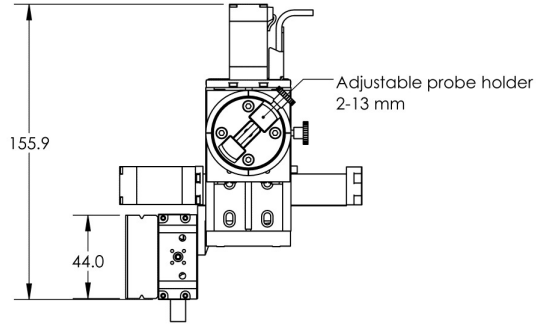
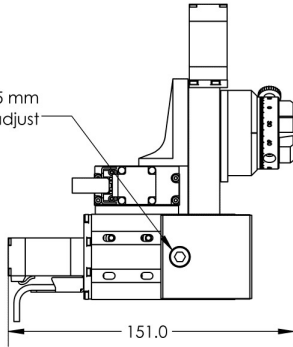
*See product page for complete list of available models at www.zaber.com

Mounting to 12.7 mm or [1/2"] optical post

Cable with D-sub 15 male connector



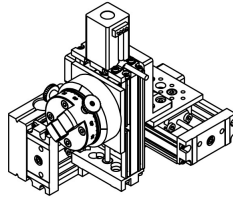
M6 screw 5 mm
Hex key to adjust



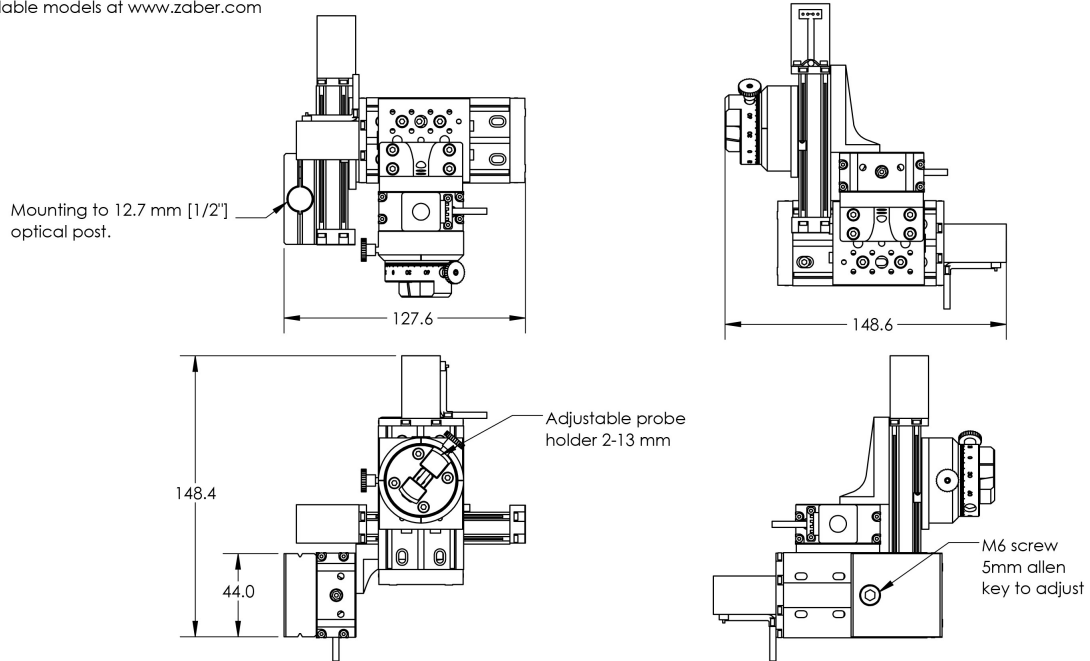
DWG 1220 R02

ZABER

M-LSM-LHP Motorized Micromanipulator
dimensions in mm



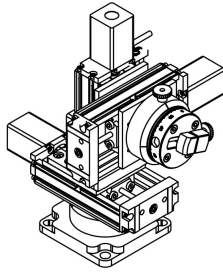
*See product page for complete list
of available models at www.zaber.com



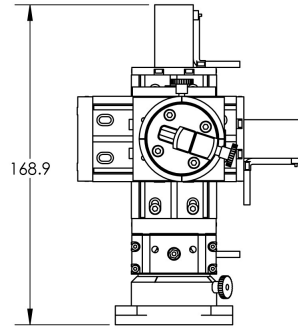
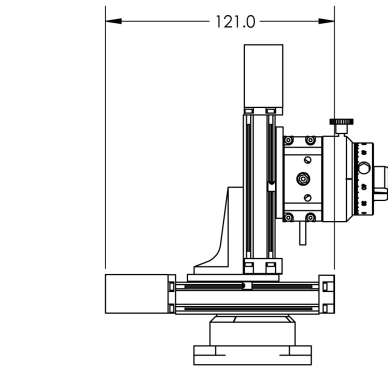
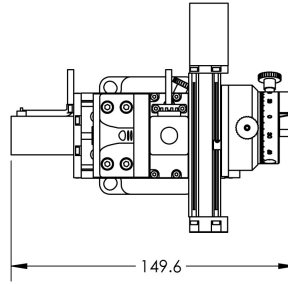
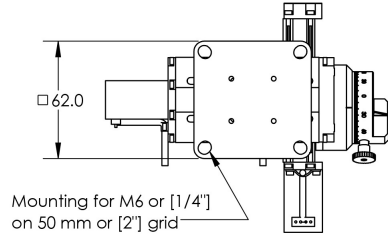
DWG 1220-001

ZABER

M-LSM-RHF Motorized Micromanipulator
dimensions in mm



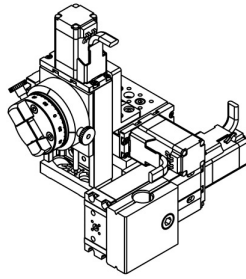
*See product page for complete list
of available models at www.zaber.com



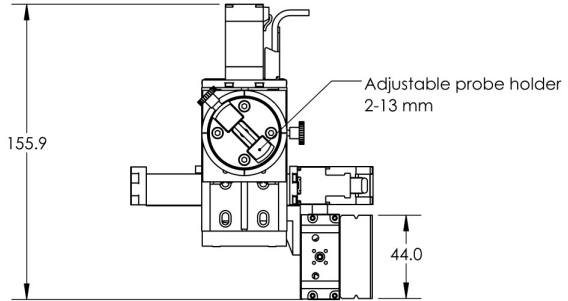
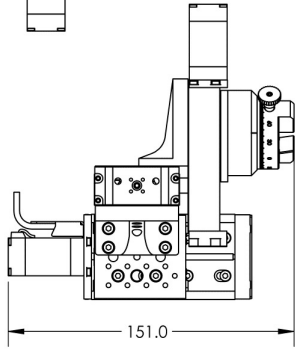
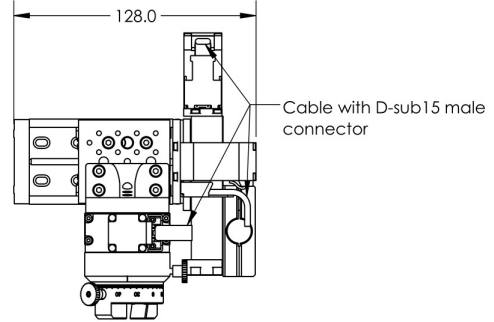
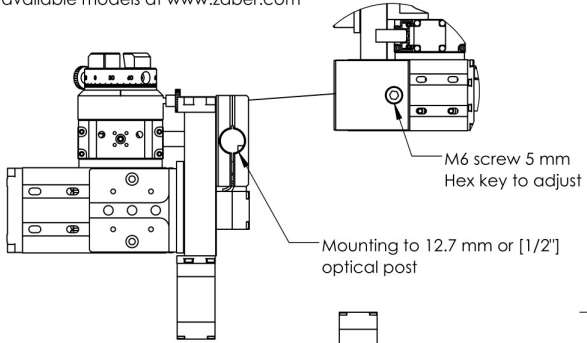
DWG 1084-001A

ZABER

M-LSM-RHP Motorized Micromanipulator
dimensions in mm



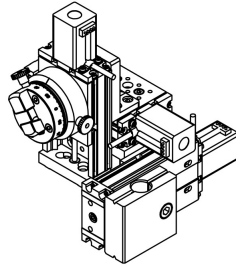
*See product page for complete list of available models at www.zaber.com



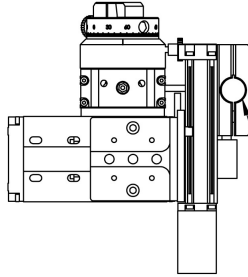
DWG 1217 R02

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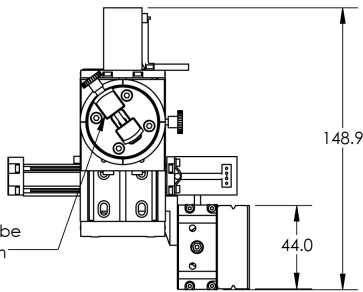
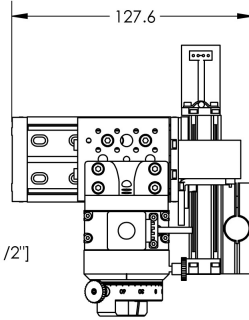
M-LSM-RHP Motorized Micromanipulator
dimensions in mm



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

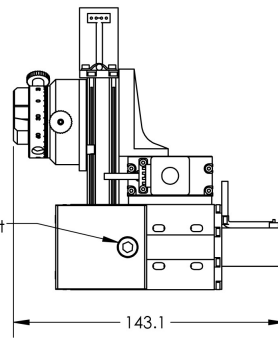


Mounting to 12.7 mm [1/2"]
optical post.



Adjustable probe
holder 2-13 mm

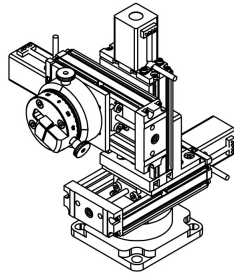
M6 screw
5mm allen
key to adjust



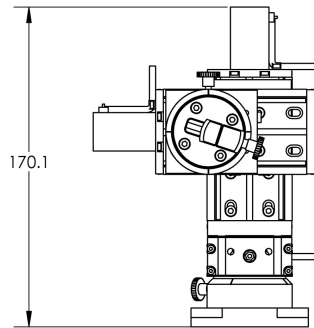
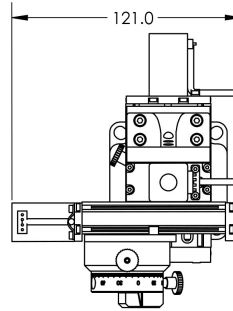
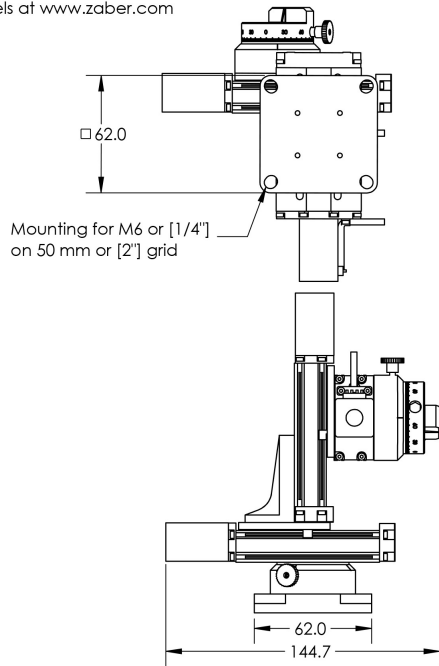
DWG 1217.ept

ZABER

M-LSM-LHF Motorized Micromanipulator
dimensions in mm



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



DWG 1219 rev1

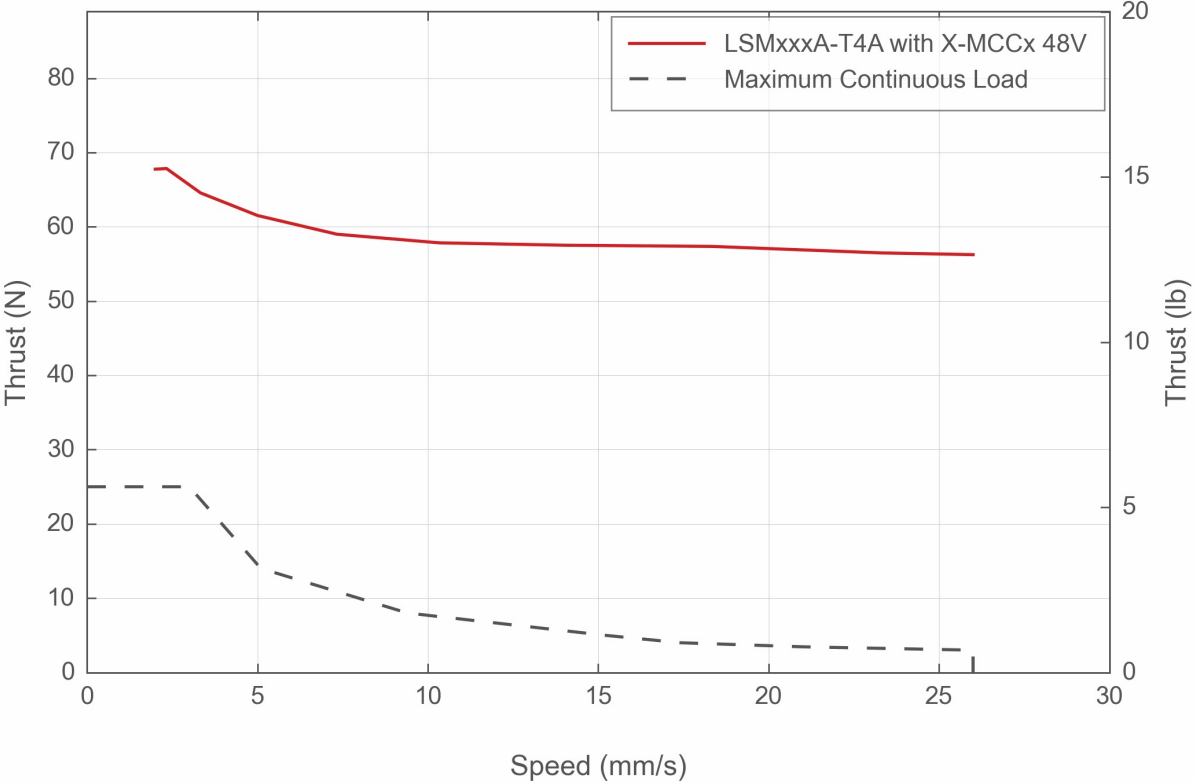
M-LSM Series Specifications

Specification	Value	Alternate Unit
Microstep Size (Default Resolution)	0.047625 μm	
Recommended Controller	X-MCC3 (48 V) Recommended	
AutoDetect	Yes	
Travel Range	25.4 mm	1.000"
Accuracy (unidirectional)	15 μm	0.000591"
Repeatability	< 3 μm	< 0.000118"
Backlash	< 12 μm	< 0.000472"
Maximum Speed	26 mm/s	1.024"/s
Minimum Speed	0.000029 mm/s	0.000001"/s
Speed Resolution	0.000029 mm/s	0.000001"/s
Encoder Type	None	
Peak Thrust	55 N	12.3 lb
Communication Interface	RS-232, USB 2.0	
Communication Protocol	Zaber ASCII (Default), Zaber Binary	
Guide Type	Recirculating ball bearing	
Vertical Runout	< 8 μm	< 0.000315"
Horizontal Runout	< 12 μm	< 0.000472"
Pitch	0.02°	0.349 mrad
Roll	0.02°	0.349 mrad
Yaw	0.03°	0.523 mrad
Probe Diameter Range	2-13 mm	
Probe Angle Range	360°	6.283 rad
Linear Motion Per Motor Rev	0.6096 mm	0.024"
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Rated Current	600 mA/phase	
Motor Winding Resistance	6.5 ohms/phase	
Inductance	3.5 mH/phase	
Motor Rated Power	6.9 Watts	
Motor Connection	D-sub 15	

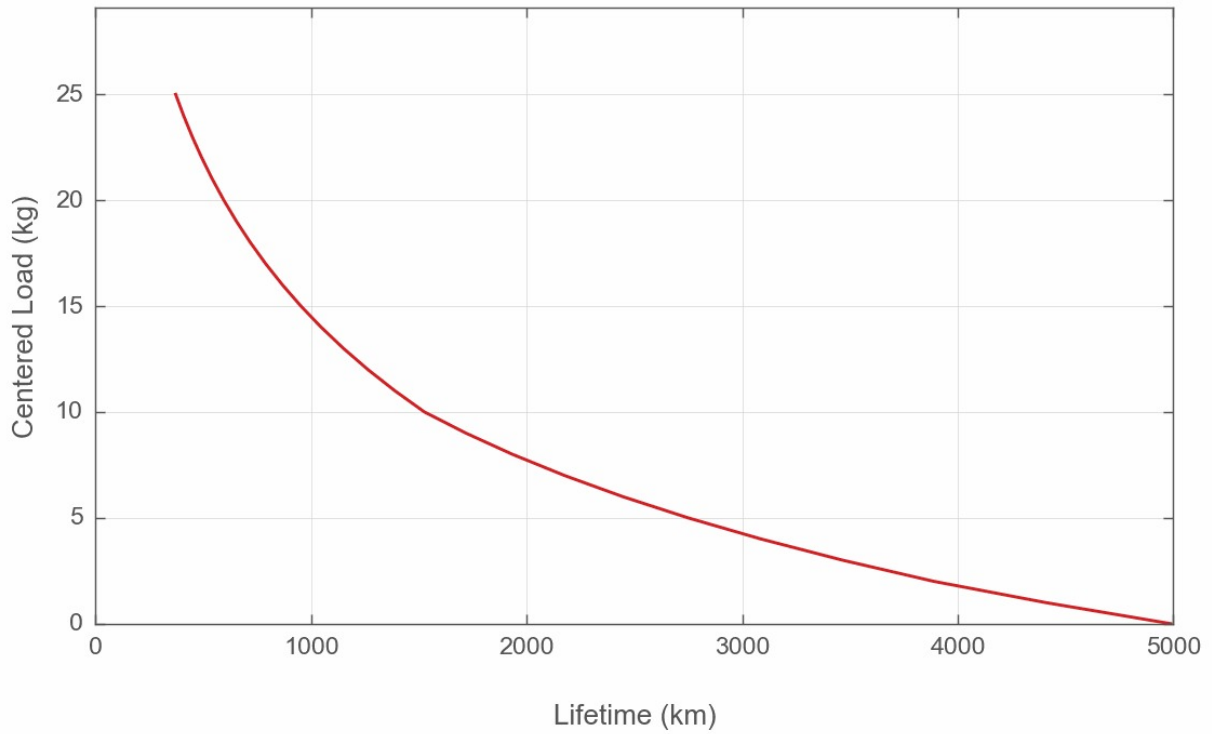
Specification	Value	Alternate Unit
Default Resolution	1/64 of a step	
Mechanical Drive System	Precision lead screw	
Limit or Home Sensing	Magnetic hall sensor	
Axes of Motion	3	
Operating Temperature Range	0-50 °C	
Vacuum Compatible	No	
RoHS Compliant	Yes	
Stage Parallelism	< 25 µm	< 0.000984"
CE Compliant	Yes	
Joystick Control	Velocity Mode	
Weight	1.032 kg	2.275 lb

M-LSM Series Charts

Thrust Speed Performance



LSM Linear Bearing Lifetime



Contact

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