Elevation Stage | ES-50PM

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The ES-50PM piezo elevation stage is designed for applications with limited space conditions. The ES-50PM stage is driven by a patented multi-phase piezo motor. Crossed roller bearings assure smooth motion and high stiffness. The ES-50PM allows for a highly rigid XZ or XYZ setup without the need for adapter brackets when combined with the PPS-60, VT-50, and PPX-50 series of linear stages. Versions capable of operation in vacuum (10^{-9} mbar) are available. The ES-50PM is compatible with the MMC-100 and MMC-110 controller.

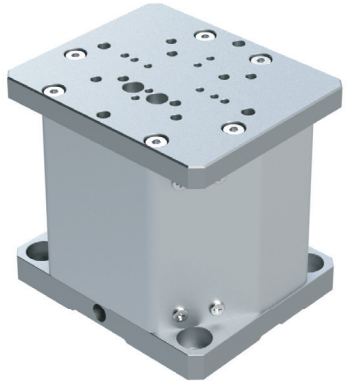
KEY FEATURES

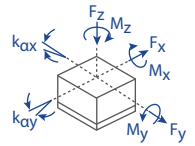
- Travel range of 10 mm
- 2 nm closed loop encoder resolution
- Load capacity up to 1 kg (with constant force spring)
- Crossed roller bearings
- Magnetic limit switch option (open loop only)
- Vacuum and non-magnetic versions available

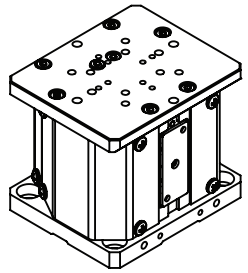
TECHNICAL DATA

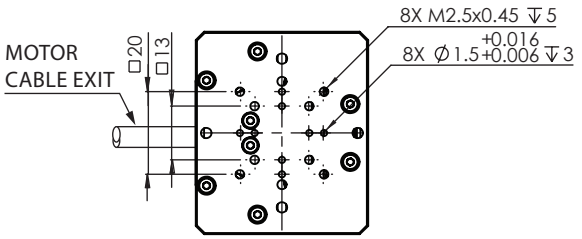
Travel range [mm]	**10**		
Straightness / Flatness [µm]	± 4		
Pitch [µrad]	± 300		
Yaw [µrad]	± 300		
Weight [g], Open Loop	160		
Weight [g], Closed Loop	165		
Motor option	**Piezo Motor**		
Speed, max [mm/s]	> 1 (MMC-100), > 5 (MMC-110)		
Encoder option	**None (open loop)**	**Analog (1 V_{pp})**	**Digital (RS-422)**
Resolution, typical [nm]	1	10	2
Repeatability, bi-directional [nm]	n/a	± 50	± 50
Repeatability, uni-directional [nm]	n/a	50	50
Materials	aluminum body, steel bearing (other materials i.e. stainless steel, titanium, etc. available upon request)		

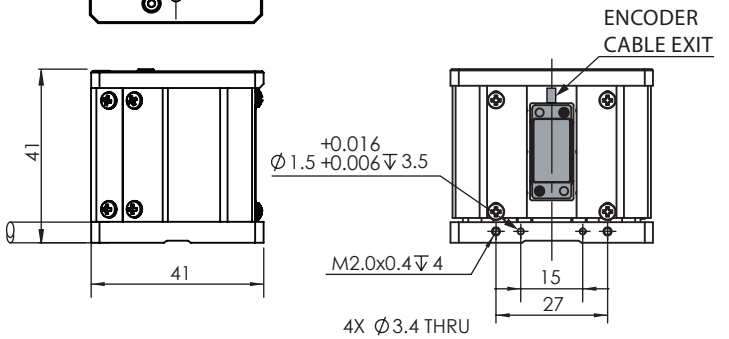
Load, max	F_x [N]	F_y [N]	F_z [N]	M_x [N-m]	M_y [N-m]	M_z [N-m]	$k_{\alpha x}$ [µrad/N-m]	$k_{\alpha y}$ [µrad/N-m]
PM-003	5	5	10	1	1	1	-	-

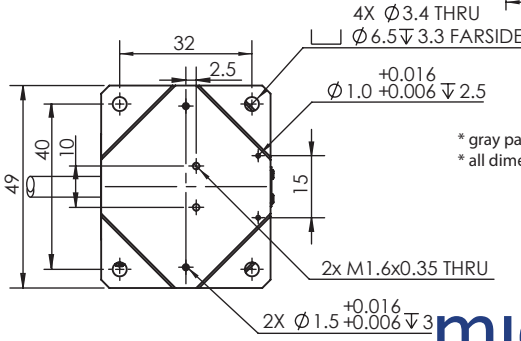












* gray parts for closed loop versions only
* all dimensions are in millimeters

ORDERING INFORMATION

ES-50PM- | **1** | **1** | | | |

DRIVE	Piezo Motor, PM-003	**1**
TRAVEL	10 mm	**1**
ENCODER	None	**0**
	Analog (1 V_{pp})	**2**
	Digital (RS-422)	**3**
LIMIT SWITCH	None	**0**
	Magnetic†	**1**
ENVIRONMENT	Atmospheric	**0**
	High Vacuum, 10^{-6} mbar	**6**
	Ultra-High Vacuum, 10^{-9} mbar	**9**
	Non-Magnetic	**M**

†open loop only

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