

# Precision Piezo Stage | PPS-110

The PPS-110 is a high-precision, high load, long travel linear stage. It is available with piezo motor, linear motor, or leadscrew drives. Recirculating ball bearings allow for smooth motion, and high guiding accuracy for loads up to 25 kg. Closed loop encoder resolution of 2nm is achievable with a high precision digital encoder.

## KEY FEATURES

- Travel range up to 1000 mm
- Closed loop encoder resolution of 2 nm
- Load capacity up to 25 kg
- Recirculating ball bearings
- Low profile, 40 mm height
- Vacuum versions available

## TECHNICAL DATA

Travel range [mm]	100 mm	200 mm	300 mm	500 mm	1000 mm
Straightness / Flatness [ $\mu\text{m}$ ]	$\pm 3$	$\pm 4$	$\pm 5$	$\pm 10$	$\pm 15$
Pitch [ $\mu\text{rad}$ ]	$\pm 75$	$\pm 100$	$\pm 125$	$\pm 200$	$\pm 300$
Yaw [ $\mu\text{rad}$ ]	$\pm 75$	$\pm 85$	$\pm 100$	$\pm 200$	$\pm 300$
Weight [g], Open Loop	1610	2015	2510	3360	5200
Weight [g], Closed Loop	1660	2065	2560	3410	5265
Motor option	Piezo Motor				
Speed, max [mm/s]	5 (MMC-110)				
Encoder option	Open Loop		Digital (RS-422)		
Resolution, typical [nm]	1		2		
Repeatability, bi-directional [nm]	n/a		$\pm 100$		
Repeatability, uni-directional [nm]	n/a		100		
Materials	aluminum body, steel bearing (other materials i.e. stainless steel, titanium, etc. available upon request)				

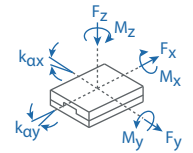
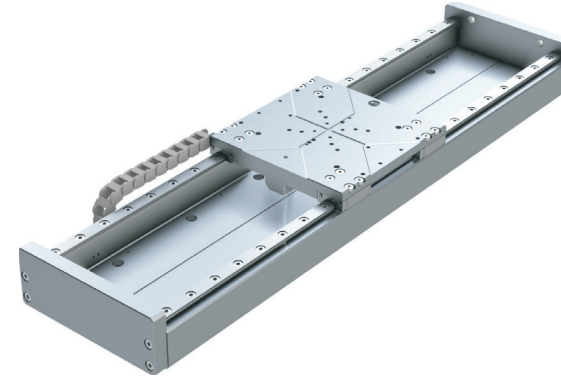
## ORDERING INFORMATION

PPS-110- 1

<b>DRIVE</b>	Piezo Motor (PM-003) .....	1
<b>TRAVEL</b>	100 mm .....	1
	200 mm .....	2
	300 mm .....	3
	500 mm .....	4
	1000 mm .....	5
<b>ENCODER</b>	None (Open Loop) .....	0
	Digital (RS-422) .....	3
<b>LIMIT SWITCH</b>	None .....	0
	Mechanical <sup>†</sup> .....	1
<b>ENVIRONMENT</b>	Atmospheric .....	0
	High Vacuum, $10^{-6}$ mbar .....	6
	Ultra High Vacuum, $10^{-9}$ mbar .....	9

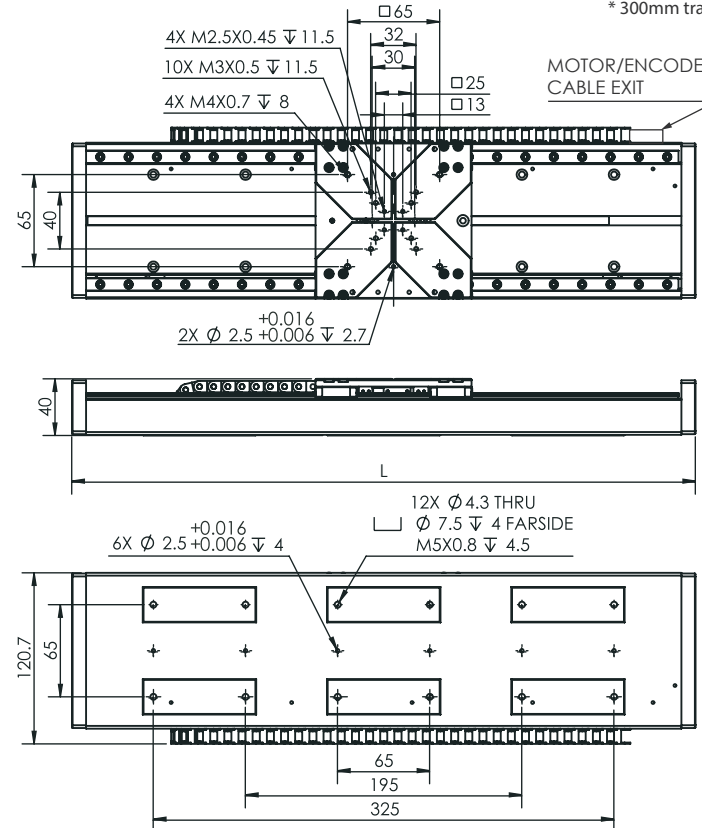
<sup>†</sup>not needed with encoder

Load, max	$F_x$ [N]	$F_y$ [N]	$F_z$ [N]	$M_x$ [N-m]	$M_y$ [N-m]	$M_z$ [N-m]	$k_{ax}$ [ $\mu\text{rad/N-m}$ ]	$k_{ay}$ [ $\mu\text{rad/N-m}$ ]
PM-003	5	150	250	60	30	35	50	50



Travel	L
100	240
200	340
300	440
500	640
1000	1140

\* all dimensions are in millimeters  
\* 300mm travel version shown



Specifications are subject to change without notice.