

# Precision Positioning Stage | PPS-110SM

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The PPS-110 is a high-precision, 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 resolution of 50 nm is achievable with a high precision digital encoder.

## KEY FEATURES

- Travel range up to 1000 mm
- Closed loop encoder resolution of 50 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	2050	2500	2950	3850	5750
Weight [g], Closed Loop	2075	2525	2975	3875	5775
Motor option	2-Phase Stepper Motor				
Speed, max [mm/s]	10 (Higher speed on request)				
Encoder option	Open Loop		Digital (RS-422)		
Resolution, typical [ $\mu\text{m}$ ]	0.1		0.05		
Repeatability, bi-directional [ $\mu\text{m}$ ]	$\pm 4$		$\pm 0.2$		
Repeatability, uni-directional [ $\mu\text{m}$ ]	0.4		0.2		
Materials	aluminum body, steel bearing (other materials i.e. stainless steel, titanium, etc. available upon request)				

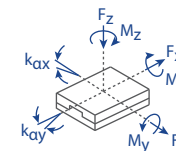
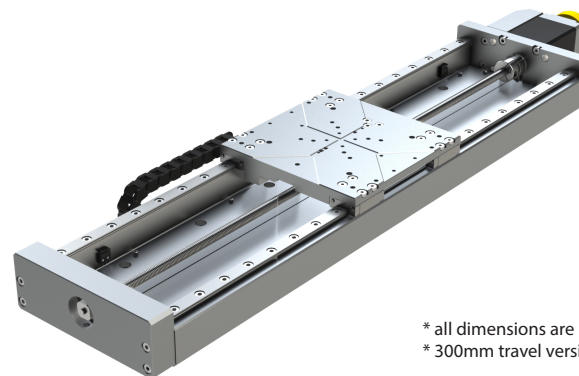
## ORDERING INFORMATION<sup>‡</sup>

PPS-110- 2 1

<b>DRIVE</b>	Stepper Motor .....	2
<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>	Mechanical .....	1
<b>ENVIRONMENT</b>	Atmospheric .....	0
	High Vacuum, $10^{-6}$ mbar .....	6
	Ultra High Vacuum, $10^{-9}$ mbar .....	9

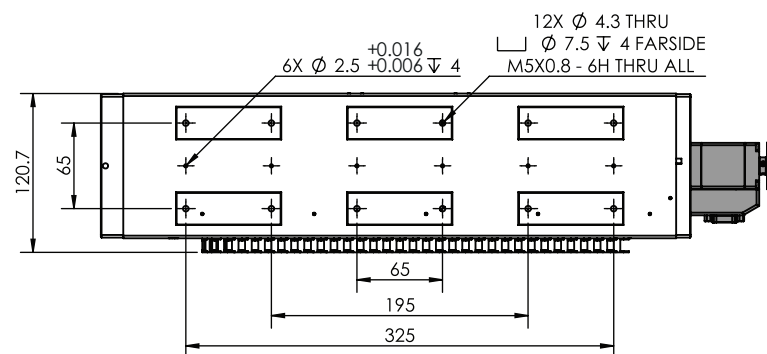
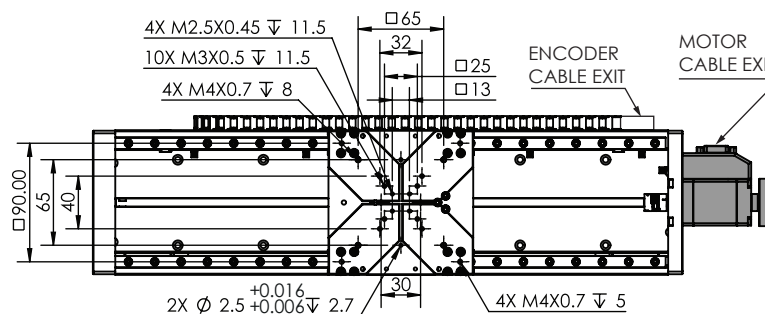
<sup>‡</sup> refer to product manual for additional information.

Load, max	$F_x$ [N]	$F_y$ [N]	$F_z$ [N]	$M_x$ [N-m]	$M_y$ [N-m]	$M_z$ [N-m]	$k_{ax}$ [ $\mu\text{rad/N-m}$ ]	$k_{ay}$ [ $\mu\text{rad/N-m}$ ]
SM-008	30	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.