

# Rotation Stage | PR-160PM

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The PR-160 is a rotation stage with unlimited travel and a 120 mm aperture. The crossed roller bearing ensures smooth motion and high stability. It utilizes our patented multi-phase piezo motor resulting in high speed ( $> 3 \text{ %/s}$ ) and high blocking torque. The PR-160 can be combined with the linear PPS-110 stage with an adapter bracket. Versions capable of operation in vacuum ( $10^{-9}$  mbar) are available. The PR-160 is compatible with the MMC-103 and MMC-110 controllers.

## KEY FEATURES

- Continuous 360° motion
- 10  $\mu^\circ$  closed loop encoder resolution
- Load capacity up to 10 kg
- 120 mm clear aperture
- Crossed roller bearing
- Low profile, 23 mm height in open loop, 30 mm closed loop
- Vacuum versions available
- Available with closed carriage

## TECHNICAL DATA

Travel range [°]	360°, limitless		
Flatness (bearings) [ $\mu\text{m}$ ]	$\pm 10$		
Eccentricity (bearings) [ $\mu\text{m}$ ]	$\pm 10$		
Wobble [ $\mu\text{rad}$ ]	$\pm 200$		
Weight [g], Open Loop	900		
Weight [g], Closed Loop	1100		
Motor option	Piezo Motor		
Speed, max [°/s]	3 (MMC-110)		
Encoder option	None (open loop)	Analog (1 $V_{pp}$ )	Digital (RS-422)
Resolution, typical [ $\mu^\circ$ ]	5	50	10
Repeatability, bi-directional [ $\mu^\circ$ ]	n/a	$\pm 200$	$\pm 200$
Repeatability, uni-directional [ $\mu^\circ$ ]	n/a	200	200
Materials	aluminum body, steel bearing (other materials i.e. stainless steel, titanium, etc. available upon request)		

## ORDERING INFORMATION

PR-160-

1

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### DRIVE

Piezo Motor, PM-005R ..... 1

### TRAVEL

360° ..... 1

### ENCODER

None ..... 0

Analog (1  $V_{pp}$ ) ..... 2

Digital (RS-422) ..... 3

### LIMIT SWITCH

None ..... 0

†Magnetic ..... 1

### ENVIRONMENT

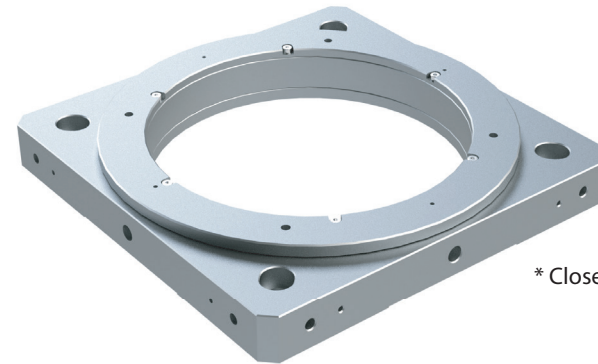
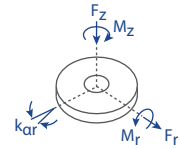
Atmospheric ..... 0

High Vacuum,  $10^{-6}$  mbar ..... 6

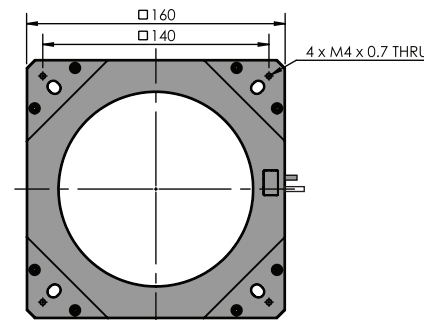
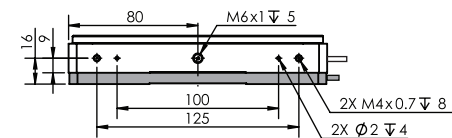
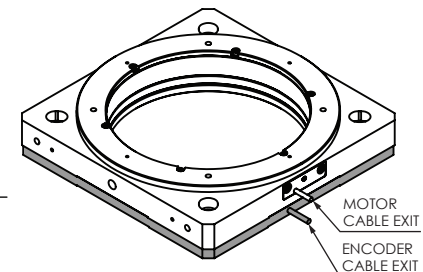
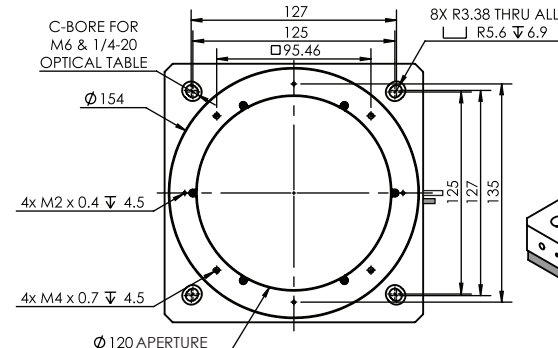
Ultra High Vacuum,  $10^{-9}$  mbar ..... 9

†Only available in open loop

Load, max	$F_r$ [N]	$F_z$ [N]	$M_r$ [N-m]	$M_z$ [N-m]	$k_{ar}$ [ $\mu\text{rad/N-m}$ ]
PM-005R	20	100	5	0.3	150



\* Closed carriage option available



\* all dimensions are in millimeters  
\* grey parts for closed loop and home switch version only

Specifications are subject to change without notice.