

# Piezo XY Stage | PPX-32CR

The PPX-32CR is a low profile, integrated XY stage with a height of only 14mm. Crossed roller bearings guarantee smooth and stable motion for loads up to 10 N. It utilizes a multi-phase piezo motor resulting in high speed (> 10 mm/s) and high blocking force (> 2 N). The PPX-32CR is available in open loop or with a linear encoder. Closed-loop encoder resolution of 2 nm is achievable. Versions capable of operation in vacuum ( $10^{-9}$  mbar) are available. The PPX-32CR is compatible with the MMC-100 and MMC-110 controllers.

## KEY FEATURES

- Travel range of 18 x 18 mm
- Open aperture
- 2 nm closed loop encoder resolution
- Load capacity up to 1 kg
- Crossed roller bearings
- Low profile, 14mm height
- Vacuum and non-magnetic versions available

## TECHNICAL DATA

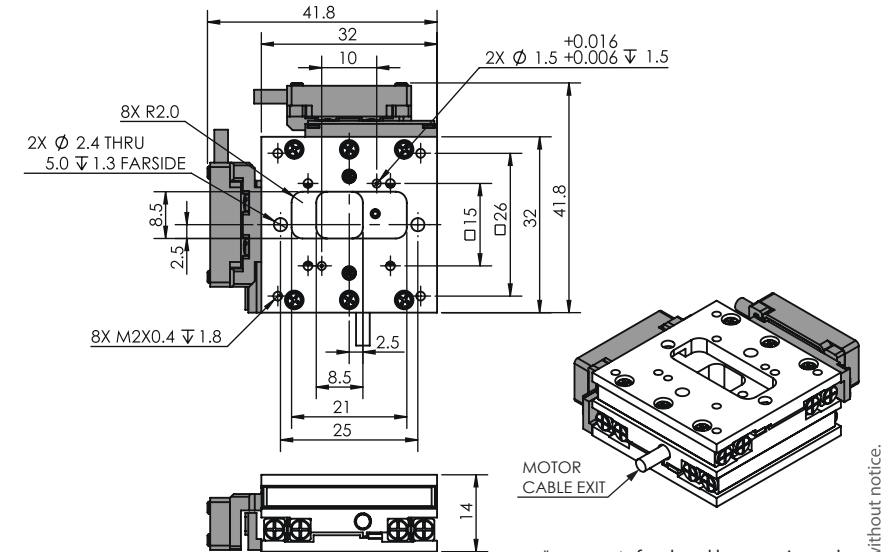
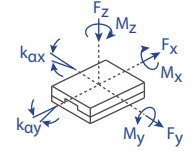
|                                     |   |                      |                  |
|-------------------------------------|---|----------------------|------------------|
| Travel range [mm]                   | 18 x 18   |                      |                  |
| Straightness / Flatness [ $\mu$ m]  | $\pm 2.5$   |                      |                  |
| Pitch [ $\mu$ rad]                  | $\pm 200$   |                      |                  |
| Yaw [ $\mu$ rad]                    | $\pm 100$   |                      |                  |
| Weight [g], Open Loop               | 50  |                      |                  |
| Weight [g], Closed Loop             | 60  |                      |                  |
| Motor option                        | Piezo Motor   |                      |                  |
| Speed, max [mm/s]                   | 2 (MMC-100), 10 (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   | $\pm 50$             | $\pm 50$         |
| Repeatability, uni-directional [nm] | n/a   | 50                   | 50               |
| Materials                           | aluminum body, steel bearing<br>(other materials i.e. stainless steel, titanium, etc. available upon request) |                      |                  |

## ORDERING INFORMATION

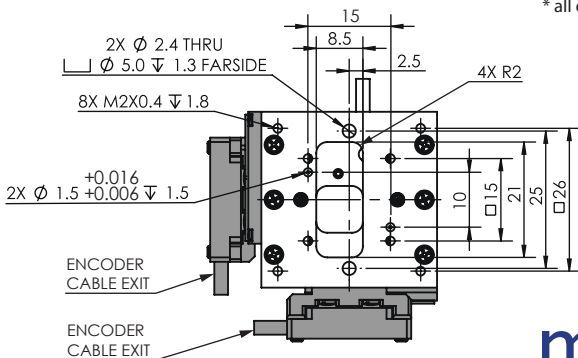
PPX-32CR- 1 1 0

|                                 |   |   |
|---------------------------------|---|---|
| <b>DRIVE</b>                    | Piezo Motor, PM-002 .....               | 1 |
| <b>TRAVEL</b>                   | 18 x 18 mm .....                        | 1 |
| <b>ENCODER</b>                  | None .....                              | 0 |
|                                 | Analog (1 $V_{pp}$ ) .....              | 2 |
|                                 | Digital (RS-422) .....                  | 3 |
| <b>LIMIT SWITCH ENVIRONMENT</b> | None .....                              | 0 |
|                                 | Atmospheric .....                       | 0 |
|                                 | High Vacuum, $10^{-6}$ mbar .....       | 6 |
|                                 | Ultra High Vacuum, $10^{-9}$ mbar ..... | 9 |
|                                 | Non-Magnetic .....                      | M |

| Load, max | $F_x$ [N] | $F_y$ [N] | $F_z$ [N] | $M_x$ [N-m] | $M_y$ [N-m] | $M_z$ [N-m] | $k_{ax}$ [ $\mu$ rad/N-m] | $k_{ay}$ [ $\mu$ rad/N-m] |
|-----------|-----------|-----------|-----------|-------------|-------------|-------------|---------------------------|---------------------------|
| PM-002    | 2         | 2         | 10        | 0.6         | 0.6         | 0.6         | -                         | -                         |



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



Specifications are subject to change without notice.