

# $\theta_x, \theta_y$ axes | P35A.T40S/K Piezo Tip/Tilt Platform



## Introduction

P35A piezo tip/tilt platform is  $\theta_x, \theta_y$  two-dimensional deflection platform, and its stroke can reach 43mrad. Its square structure design provides a fixed interface on the side, making it easier to integrate.

### Characteristics >>

- $\theta_x, \theta_y$  tilt
- Tilt range to 43mrad
- Resolution to 1.2 $\mu$ rad
- Optional closed-loop sensor

### Applications >>

- Laser scanning
- Image processing and stabilization
- Beam deflection
- Interlacing scanning, dithering
- Interference
- Light filter/optical switch
- Laser micromachine
- Active and adaptive optics



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## Technical Data >>

| Type                                           | S - closed loop<br>K - open loop | P35A.T40S                      | P35A.T40K                   | Units                 |
|------------------------------------------------|----------------------------------|--------------------------------|-----------------------------|-----------------------|
| Active axes                                    |                                  | $\theta_x, \theta_y$           | $\theta_x, \theta_y$        |                       |
| Driving channels                               |                                  | 3                              | 3                           |                       |
| Tilt angle(0~120V)                             |                                  | 35( $\approx 7219^\circ$ )     | 35( $\approx 7219^\circ$ )  | mrad $\pm 10\%$       |
| Tilt angle(0~150V)                             |                                  | 43( $\approx 8869^\circ$ )     | 43( $\approx 8869^\circ$ )  | mrad $\pm 10\%$       |
| Integrated sensor                              |                                  | SGS                            | -                           |                       |
| Resolution                                     |                                  | 1.2( $\approx 0.25^\circ$ )    | 0.4( $\approx 0.08^\circ$ ) | $\mu\text{rad}$       |
| Closed-loop linearity                          |                                  | 0.05                           | -                           | %F.S.                 |
| Closed-loop repeatability                      |                                  | 0.02                           | -                           | %F.S.                 |
| Unloaded resonant frequency                    |                                  | 1300                           | 1300                        | Hz $\pm 20\%$         |
| Resonant frequency (@12.7 $\times$ 3mm mirror) |                                  | 1050                           | 1050                        | Hz $\pm 20\%$         |
| Closed-loop operating frequency(-3dB)          |                                  | 50 (@12.7 $\times$ 3mm mirror) | -                           | Hz $\pm 20\%$         |
| El. capacitance                                |                                  | 7.2/axis                       |                             | $\mu\text{F}\pm 20\%$ |
| Step time                                      |                                  | 1.4                            | 1                           | ms $\pm 20\%$         |
| Operating temperature <sup>[1]</sup>           |                                  | -20~80                         |                             | $^\circ\text{C}$      |
| Material                                       |                                  | Titanium                       |                             |                       |
| Mass                                           |                                  | 223                            |                             | g $\pm 5\%$           |
| Cable length <sup>[2]</sup>                    |                                  | 1.5                            |                             | m $\pm 10\text{mm}$   |

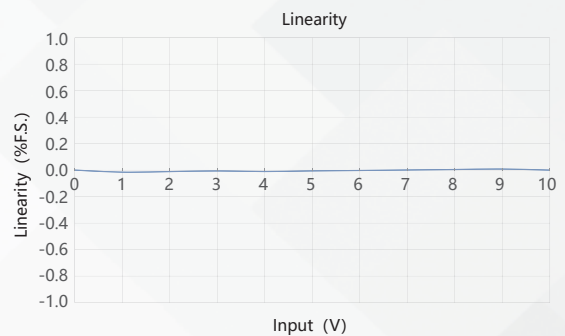
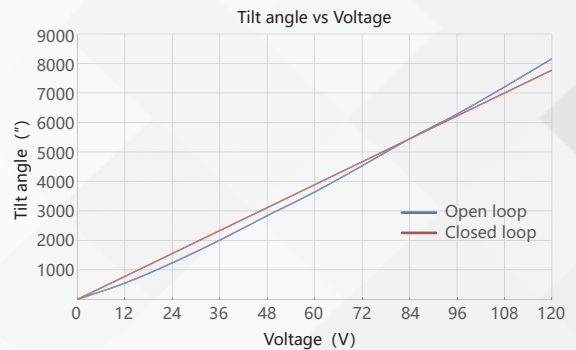
Note: Technical data are measured by CoreMorrow E00/E01 series piezo controller. Max driving voltage could be -20V~150V, 0~120V is recommended for long-term and high-reliable operation. Unless otherwise specified, the above parameters are measured at room temperature about 25 $^\circ\text{C}$ .

[1] Custom ultralow temperature and ultrahigh vacuum versions are available.

[2] Custom cable length and connector is available.

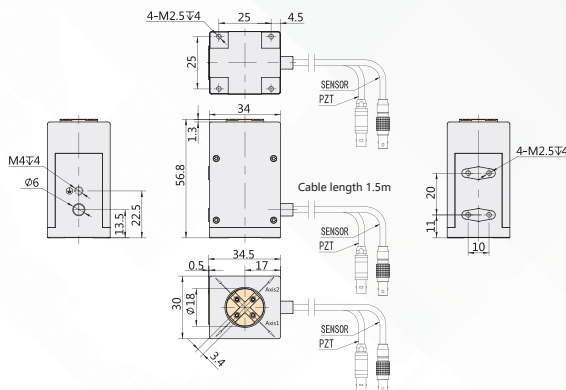
Note: The parallelism of the moving platform is about 20 $\mu\text{m}$ , and the roughness is about 1.6 to 3.2. Please contact the sales engineer for confirmation before purchase.

## Curves >>



Disclaimer: The data here are typical, only for reference. Some variations will occur for different batch.

## Drawing >>



## Recommended Controllers >>



**E01.D3**  
LCD, membrane button, up to 625mA  
RS-232/RS-422/USB interface  
Software secondary development



**E70**  
Small size, ave current 70mA/channel  
RS-232/RS-422/USB interface  
Software secondary development



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