

Technical Data

Model	P-587.6CD	Tolerance
Active axes	X, Y, Z, θ_x , θ_y , θ_z	
Motion and positioning		
Integrated sensor	Capacitive	
Closed-loop travel X, Y	800 μm	
Closed-loop travel Z	200 μm	
Closed-loop tip/tilt angle	± 0.5 mrad	
Closed-loop θ_z angle	± 0.5 mrad	
Open-loop / closed-loop resolution X, Y	0.9 / 2.2 nm	typ.
Open-loop / closed-loop resolution Z	0.4 / 0.7 nm	typ.
Open-loop / closed-loop resolution θ_x , θ_y	0.05 / 0.1 μrad	typ.
Open-loop / closed-loop resolution θ_z	0.1 / 0.3 μrad	typ.
Linearity X, Y, Z	0.01%	typ.
Linearity θ_x , θ_y , θ_z	0.1%	typ.
Repeatability X, Y	± 3 nm	typ.
Repeatability	± 2 nm	typ.
Repeatability θ_x , θ_y	± 0.1 μrad	typ.
Repeatability θ_z	± 0.15 μrad	typ.
Flatness	<15 nm	typ.
Mechanical properties		
Stiffness X / Y / Z	0.55 / 0.55 / 1.35 N/ μm	
Unloaded resonant frequency in X / Y / Z	103 / 103 / 235 Hz	$\pm 20\%$
Resonant frequency @ 500 g in X / Y / Z	88 / 88 / 175 Hz	$\pm 20\%$
Resonant frequency @ 2000 g in X / Y / Z	65 / 65 / 118 Hz	$\pm 20\%$
Push/pull force capacity in motion direction	50 / 10 N	Max.
Drive properties		
Ceramic type	PICMA®	
Electrical capacitance in X / Y / Z	81 / 81 / 18.4 μF	$\pm 20\%$
Dynamic operating current coefficient (DOCC) in X, Y, θ_z	12.6 $\mu\text{A}/(\text{Hz} \cdot \mu\text{m})$	$\pm 20\%$
Dynamic operating current coefficient (DOCC) Z, θ_x , θ_y	11.5 $\mu\text{A}/(\text{Hz} \cdot \mu\text{m})$	$\pm 20\%$
Miscellaneous		
Operating temperature range	-20 to 80 °C	
Material	Aluminum	
Dimensions	240 x 240 x 50 mm	
Mass	7.2 kg	$\pm 5\%$
Cable length	1.5 m	± 10 mm
Sensor / voltage connection	2 x Sub-D Special	
Recommended controller / amplifier	E-710.6CD (p. 2-128) or E-712.6CD (p. 2-140) digital controller	

The maximum rotational angle in θ_z is 8 mrad, the tilt angles around X and Y rate 3 mrad.
Due to parallel kinematics linear motion is not possible when the stage is in extreme position.

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