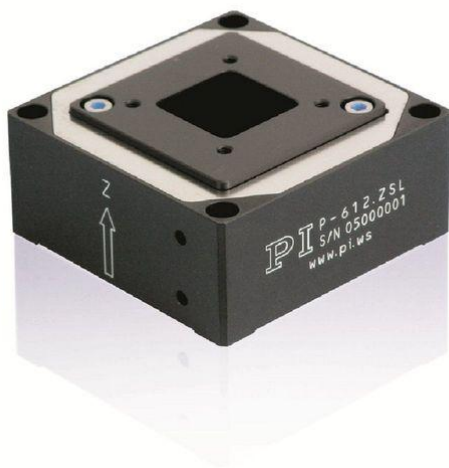


Piezo Z Stage

COMPACT NANOPOSITIONING STAGE WITH APERTURE



P-612.Z

- + Travel range 100 μm
- + Resolution to 0.2 nm
- + Linearity error 0.2 %
- + Compact: Footprint 60 mm x 60 mm
- + Very cost- effective controller / piezomechanics systems
- + Frictionless, high- precision flexure guiding system
- + Outstanding lifetime due to PICMA[®] piezo actuators

Specifications

	P-612.ZSL	P-612.Z0L	Unit	Tolerance
Active axes	Z	Z		
Motion and positioning				
Integrated sensor	SGS	-		
Open- loop travel, -20 to +120 V	110	110	μm	min. (20 % / -0 %)
Closed- loop travel	100	-	μm	
Open- loop resolution	0.2	0.2	nm	typ.
Closed- loop resolution	1.5	-	nm	typ.
Closed- loop linearity error	0.2	-	%	typ.
Repeatability	± 4	-	nm	typ.
Runout θ_x, θ_y	± 10	± 10	μrad	typ.
Crosstalk in X, Y	± 20	± 20	μm	typ.
Mechanical properties				
Stiffness in motion direction	0.63	0.63	N/ μm	± 20 %
Unloaded resonant frequency	490	490	Hz	± 20 %
Resonant frequency under load	420 (30 g)	420 (30 g)	Hz	± 20 %
Load capacity	15 / 10	15 / 10	N	max.
Drive properties				
Ceramic type	PICMA [®] P-885	PICMA [®] P-885		
Electrical capacitance	3	3	μF	± 20 %
Dynamic operating current coefficient	3.8	3.8	$\mu\text{A} / (\text{Hz} \times \mu\text{m})$	± 20 %
Miscellaneous				
Operating temperature range	-20 to 80	-20 to 80	$^{\circ}\text{C}$	
Material	Aluminum	Aluminum		
Mass	0.28	0.275	kg	± 5 %
Cable length	1.5	1.5	m	± 10 mm
Sensor / voltage connection	LEMO	LEMO (no sensor)		

The resolution of PI piezo nanopositioners is not limited by friction or stiction. Value given is noise equivalent motion with E-503 amplifier.

Recommended controller / amplifier

E-610 servo controller / amplifier, E-625 servo controller (bench- top), E-665 powerful servo controller (bench- top) , E-660 bench- top for open-loop systems

Order Information

P-612.Z0L

Vertical Nanopositioning Stage, 100 µm, 20 mm × 20 mm Aperture, Open- Loop

P-612.ZSL

Vertical Nanopositioning Stage, 100 µm, 20 mm × 20 mm Aperture, SGS Sensor

Ask about custom designs!

Controllers / Drivers / Amplifiers

[E-610 Piezo Amplifier / Controller](#)

[E-625 Piezo Servo- Controller & Driver](#)

[E-836 Compact Piezo Amplifier / OEM Module](#)

[E-665 Piezo Amplifier / Servo Controller](#)

[E-621 Piezo Servo- Controller & Driver](#)

Related Products

[P-612.2 XY Piezo Nanopositioning System](#)

[P-620.Z – P-622.Z PIHera Precision Z- Stage](#)

[P-733.Z High- Dynamics Z- Nanopositioner / Scanner](#)

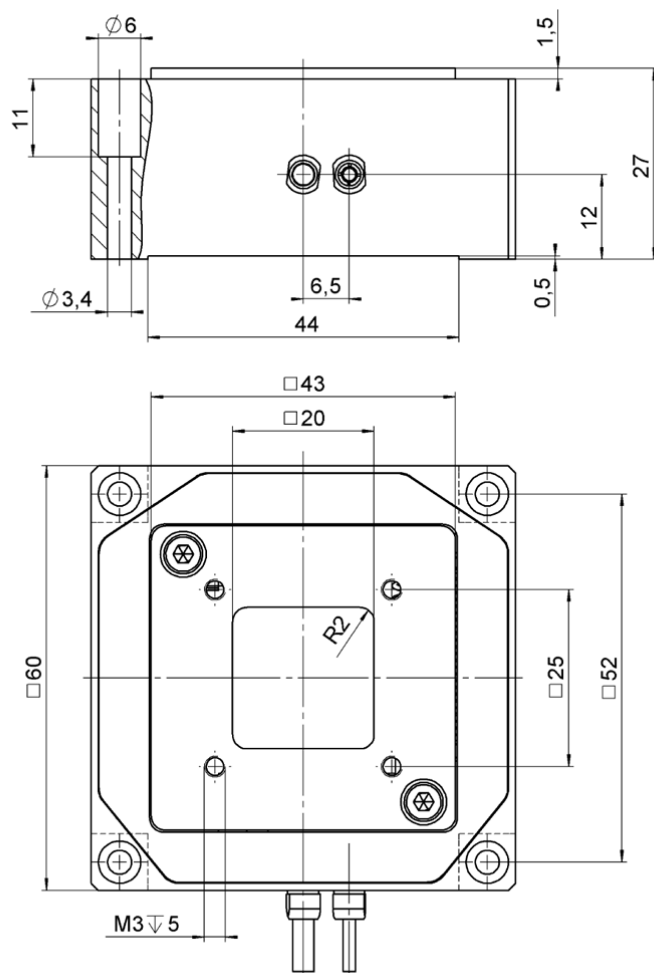
[P-518 • P-528 • P-558 Piezo Z / Tip / Tilt Stage](#)

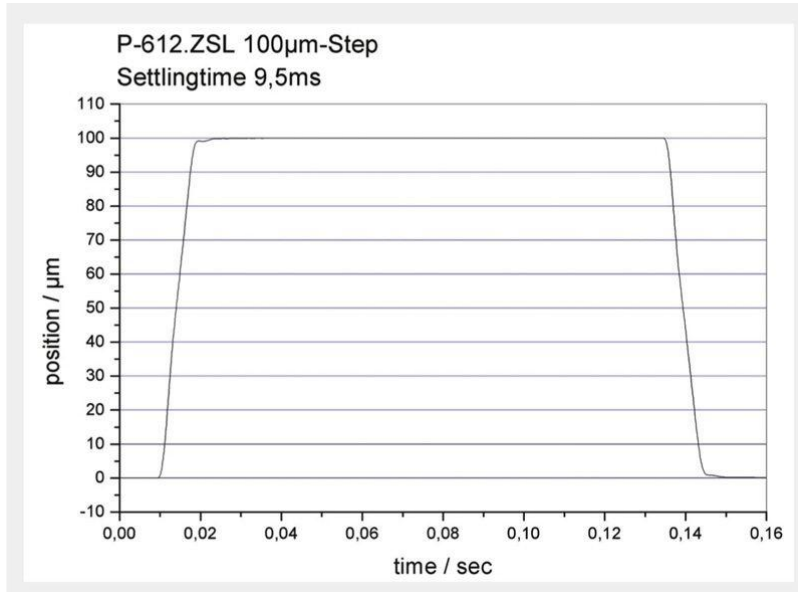
[P-541.2 • P-542.2 XY Piezo Stage](#)

[P-541.Z Piezo Z and Z / Tip / Tilt Stages](#)

Drawings / Images

P-612.Z Abmessungen
in mm





Settling takes less than 10 ms over the entire travel range in closed-loop operation