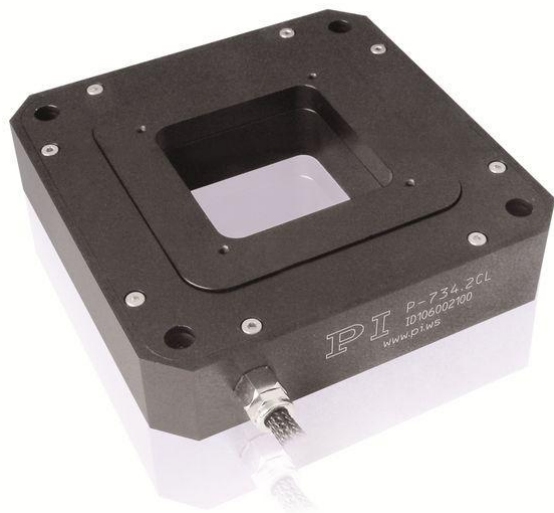


XY Piezo Scanner

HIGH- DYNAMICS SYSTEM WITH MINIMUM RUNOUT AND CLEAR APERTURE



P-734

- + Ultra- Precision Trajectory Control, Ideal for Surface Analysis and Scanning Microscopy
- + Enhanced responsiveness & multi- axis precision: Parallel kinematics / metrology
- + Travel range 100 μm \times 100 μm
- + Clear aperture 56 mm \times 56 mm
- + Capacitive sensors for resolution <0.4 nm
- + Outstanding lifetime due to PICMA[®] piezo actuators

Specifications

	P-734.2CL	P-734.2CD	Unit	Tolerance
Active axes	X, Y	X, Y		
Motion and positioning				
Integrated sensor	Capacitive	Capacitive		
Open- loop travel, -20 to 120 V	110 μm \times 110 μm	110 μm \times 110 μm		min. (20 % / -0 %)
Closed- loop travel	100 μm \times 100 μm	100 μm \times 100 μm		
Open- loop resolution	0.2	0.2	nm	typ.
Closed- loop resolution	0.3	0.3	nm	typ.
Linearity error	0.03	0.03	%	typ.
Repeatability	<2.5	<2.5	nm	typ.
Pitch	<3	<3	μrad	typ.
Yaw	<10	<10	μrad	typ.
Flatness	typ. <5 max. 10	typ. <5 max. 10	nm	
Mechanical properties				
Stiffness	3	3	N/ μm	± 20 %
Resonant frequency, no load	500	500	Hz	± 20 %
Resonant frequency at 200 g	350	350	Hz	± 20 %
Resonant frequency at 500 g	250	250	Hz	± 20 %
Push / pull force capacity in motion direction	300 / 100	300 / 100	N	max.
Load capacity	20	20	N	max.
Drive properties				
Ceramic type	PICMA [®] P-885	PICMA [®] P-885		
Electrical capacitance	6.2	6.2	μF	± 20 %
Dynamic operating current coefficient	7.8	7.8	$\mu\text{A} / (\text{Hz} \times \mu\text{m})$	± 20 %
Miscellaneous				
Operating temperature range	-20 to 80	-20 to 80	$^{\circ}\text{C}$	
Material	Aluminum	Aluminum		
Mass (with cables)	1.04	1.04	kg	± 5 %
Cable length	1.5	1.5	m	± 10 mm
Sensor connection	2 \times LEMO	Sub- D Special		

Voltage connection	4 × LEMO	Sub- D Special
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Dynamic Operating Current Coefficient in μA per Hz and μm . Example: Sinusoidal scan of $10\ \mu\text{m}$ at 10 Hz requires approximately 7.8 mA drive current.

Recommended controller / amplifier

P-734.2CL: E-500 modular piezo controller system with E-503 amplifier module (multi- channel) or E-505 (1 per axis, high performance) and E-509 controller

P-734.2CD: Multi- channel digital controllers: E-710 / E-725 bench- top, E-712 modular, E-725 high- power, E-761 PCI board

Order Information

P-734.2CD

High- Precision XY Nanopositioning System with Minimum Runout, $100\ \mu\text{m} \times 100\ \mu\text{m}$, Capacitive Sensors, Parallel Metrology, Sub- D Connector(s)

P-734.2CL

High- Precision XY Nanopositioning System with Minimum Runout, $100\ \mu\text{m} \times 100\ \mu\text{m}$, Capacitive Sensors, Parallel Metrology, LEMO Connector(s)

Controllers / Drivers / Amplifiers

[E-725 Digital Piezo Controller](#)

[E-712 Digital Piezo Controller](#)

[E-761 Digital Piezo Controller](#)

[E-500 • E-501 Modular Piezo Controller](#)

[E-503 Piezo Amplifier Module](#)

[E-505 Piezo Amplifier Module](#)

[E-509 Signal Conditioner / Piezo Servo Module](#)

Related Products

[P-541.2 • P-542.2 XY Piezo Stage](#)

Drawings / Images

