

PIHera Precision Z- Stage

VARIABLE TRAVEL RANGES AND AXIS CONFIGURATION

P-620.Z – P-622.Z



- + Travel ranges 50 μm to 250 μm
(400 μm open-loop)
- + Resolution to 0.1 nm
- + Positioning accuracy 0.02 %
- + Direct metrology with capacitive sensors
- + X, XY, Z, XYZ versions

Specifications

	P-620.ZCD / P-620.ZCL	P-621.ZCD / P-621.ZCL	P-622.ZCD / P-622.ZCL	Unit	Tolerance
Active axes	Z	Z	Z		
Motion and positioning					
Integrated sensor	Capacitive	Capacitive	Capacitive		
Open- loop travel, -20 to 120 V	65	140	400	μm	min. (20 % / -0 %)
Closed- loop travel	50	100	250	μm	
Open- loop resolution	0.1	0.2	0.5	nm	typ.
Closed- loop resolution	0.2	0.3	1	nm	typ.
Linearity error	0.02	0.02	0.02	%	typ.
Repeatability	± 1	± 1	± 1	nm	typ.
Runout θ_x, θ_y	<20	<20	<80	μrad	typ.
Mechanical properties					
Stiffness	0.5	0.6	0.24	N/ μm	± 20 %
Unloaded resonant frequency	1000	790	360	Hz	± 20 %
Resonant frequency @ 30 g	690	500	270	Hz	± 20 %
Push / pull force capacity	10 / 5	10 / 8	10 / 8	N	max.
Load capacity	10	10	10	N	max.
Lateral force	10	10	10	N	max.
Drive properties					
Ceramic type	PICMA® P-883	PICMA® P-885	PICMA® P-885		
Electrical capacitance	0.7	3	6.2	μF	± 20 %
Dynamic operating current coefficient	1.8	3.8	3.1	$\mu\text{A} / (\text{Hz} \times \mu\text{m})$	± 20 %
Miscellaneous					
Operating temperature range	-20 to 80	-20 to 80	-20 to 80	$^{\circ}\text{C}$	
Material	Aluminum	Aluminum	Aluminum		
Dimensions	30 mm \times 30 mm \times 15 mm	40 mm \times 40 mm \times 17.5 mm	50 mm \times 50 mm \times 17.5 mm		
Mass	0.12	0.17	0.24	kg	± 5 %
Cable length	1.5	1.5	1.5	m	± 10 mm
Sensor / voltage connection	CD versions: Sub- D special CL versions: LEMO				

Versions without sensor are available as P-62x.Z0L; operating temperature range -20 to 150 $^{\circ}\text{C}$. Sensor / voltage connection LEMO.

Order Information

P-620.ZCD

Precise PIHera Vertical Nanopositioning Stage, 50 µm, Capacitive Sensor, Sub- D Connector(s)

P-620.ZCL

Precise PIHera Vertical Nanopositioning Stage, 50 µm, Capacitive Sensor, LEMO Connector(s)

P-620.ZOL

Precise PIHera Vertical Nanopositioning Stage, 65 µm, Open- Loop, LEMO Connector(s)

P-621.ZCD

Precise PIHera Vertical Nanopositioning Stage, 100 µm, Capacitive Sensor, Sub- D Connector(s)

P-621.ZCL

Precise PIHera Vertical Nanopositioning Stage, 100 µm, Capacitive Sensor, LEMO Connector(s)

P-621.ZOL

Precise PIHera Vertical Nanopositioning Stage, 140 µm, Open- Loop, LEMO Connector(s)

P-622.ZCD

Precise PIHera Vertical Nanopositioning Stage, 250 µm, Capacitive Sensor, Sub- D Connector(s)

P-622.ZCL

Precise PIHera Vertical Nanopositioning Stage, 250 µm, Capacitive Sensor, LEMO Connector(s)

P-622.ZOL

Precise PIHera Vertical Nanopositioning Stage, 400 µm, Open- Loop, LEMO Connector(s)

Controllers / Drivers / Amplifiers

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

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

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

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

[E-753 Digital Piezo Controller](#)

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

Accessories

[P-895.1DLC Adapter Cable, Fits Motion Controllers with LEMO Connectors](#)

[P-895.1LDC Adapter Cable](#)

[P-891.xx Extension Cable for LVPZT Piezo Translators](#)

[P-892.xx Sensor Extension Cable](#)

[D-892.0x Extension Cable Set](#)

Related Products

[P-611.Z Piezo Z Stage](#)

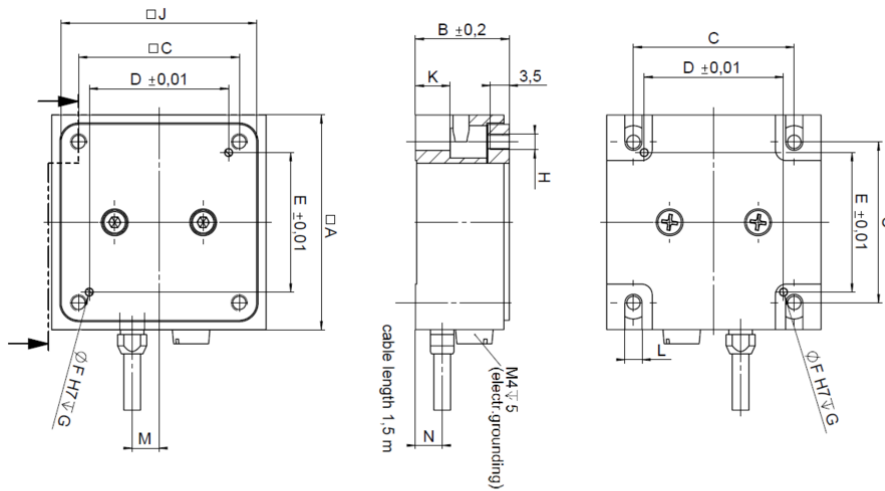
[P-620.1 – P-629.1 PIHera Piezo Linear Stage](#)

[P-620.2 – P-629.2 PIHera XY Piezo Stage](#)

[P-612.Z Piezo Z Stage](#)

[P-601 PiezoMove Flexure- Guided Linear Actuator](#)

Drawings / Images



P-62x.ZCD / .ZCL / .ZOL
dimensions in mm

	A	B	C	D	E	$\varnothing F$	G	H	J	K	L	M	N
P-620.ZCD / ZOL	30	15	24	19	24	1,01	2	M2	28	5	2,2	4,5	6
P-621.ZCD / ZOL	40	17,5	30	26	26	1,51	2,5	M3	36,5	6,5	3,2	5	5
P-622.ZCD / ZOL	50	17,5	40	35	35	1,51	2,5	M3	46,5	6,5	3,2	5	5