

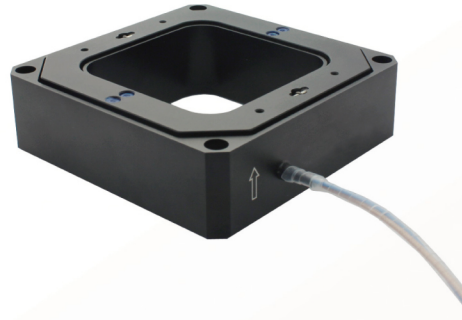


## Piezo Nanopositioning Scanners

### P78.Z

#### Features

- Z axis
- Max travel range 300μm
- Aperture: 64×64mm
- Open/closed loop



#### Applications

- Microscopic imaging
- Interference measurement
- Biotechnology
- Surface inspection
- Precision positioning
- Micro operation

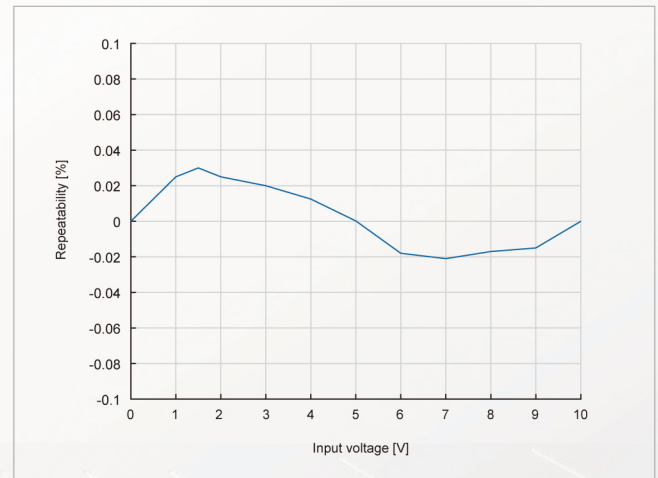
#### Large aperture, large displacement high resolution, high precision

P78 series piezo nanopositioning scanner adopts mechanism amplification design principle, it can realize Z axis 210μm or 300μm displacement. The excellent flexible hinge guiding mechanism uses finite element analysis to optimize nanometer resolution and millisecond response time.

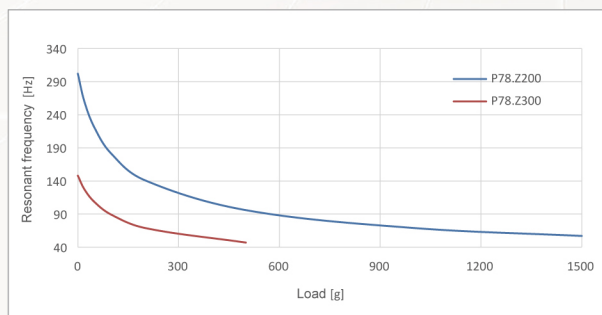
The aperture is 64×64mm, which is suitable for applications such as interference, scanning, and surface inspection.

#### High Repeatability of closed-loop

The repeatability of P78 is 0.05% F.S. in 300μm.



#### Frequency vs Loading



#### Recommend Controllers

E00/E01	XE-709	E72
1 channel Computer software, Analog input, Rotary knob Open/closed loop Ave. power: 35W/7W	1 channel Computer software, Analog input Open/closed loop Ave. power: 15W	1 channel Computer software, Analog input Open/closed loop Ave. power: 6W

## Technical data

Models	End with S: Closed-loop End with K: Open-loop	P78.Z200S P78.Z200K	P78.Z300S P78.Z300K	Units
Active axes		Z	Z	
Nominal travel range(0~120V)		150	210	$\mu\text{m}\pm 20\%$
Max travel range(-20~150V)		210	300	$\mu\text{m}\pm 20\%$
Integrated sensor		SGS/-	SGS/-	
Aperture		64×64	64×64	mm
Closed/open loop resolution		7/3	10/5	nm
Closed-loop linearity		0.1/-	0.15/-	%F.S.
Repeatability		0.04/-	0.05/-	%F.S.
Pitch/Yaw/Roll		<20	<30	$\mu\text{rad}$
Push/pull force capacity		50/8	30/5	N
Stiffness in motion direction		0.35	0.15	$\text{N}/\mu\text{m}\pm 20\%$
Unloaded resonant frequency		300	150	$\text{Hz}\pm 20\%$
Closed/open-loop unloaded Step time		15/3.2	30/3.2	$\text{ms}\pm 20\%$
Closed-loop Unloaded operating frequency	10% Travel	80	50	$\text{Hz}\pm 20\%$
	100% Travel	15	10	
Load capacity		1.5	0.5	kg
Electrical capacitance		7.2	7.2	$\mu\text{F}\pm 20\%$
Material		Aluminum	Aluminum	
Mass		340	340	$\text{g}\pm 5\%$

The technical data are measured by Coremorow E00 series piezo controller.

## Drawings

P78.Z

