

XP Series

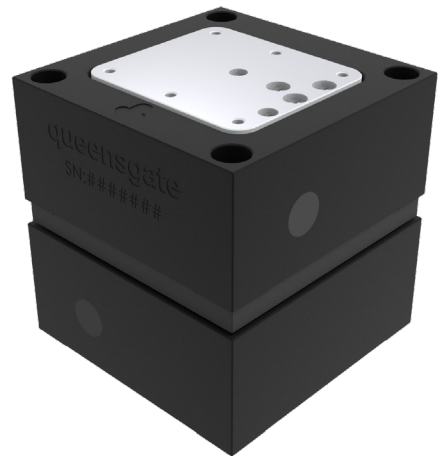
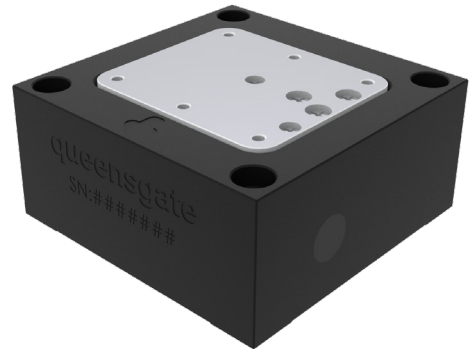
Medium-duty piezo stages

The Queensgate XP series offers cost-effective, medium-duty single axis (X) nanopositioning stages with low noise and highly repeatable motion. The series each have very good stiffness for their range giving better mechanical stability when a load mass is attached, ideal for OEM integration.

The series utilizes a proven amplifier mechanism to provide 200 μm , 400 μm and 800 μm travel ranges and is suitable for use in the horizontal orientation (X) or vertical orientation (Z).

All models use Queensgate's dual-plate NanoSensor capacitive displacement sensor with low nanometer positional noise and high measurement bandwidths for high accuracy and repeatability measurement.

Stacked XY configurations are available as systems supplied with adapter plate and NPC-D-6330 controller.



Key Features

- 200, 400 and 800 μm travel ranges
- Robust lever amplification mechanism
- Load capacity up to 50N
- Cost-effective design
- Capacitive displacement sensors
- User selectable tuning pre-sets

Typical Applications

- Interferometer optical delay stage
- Lightsheet microscope objective lens positioning
- Precision industrial automation
- Fiber positioning

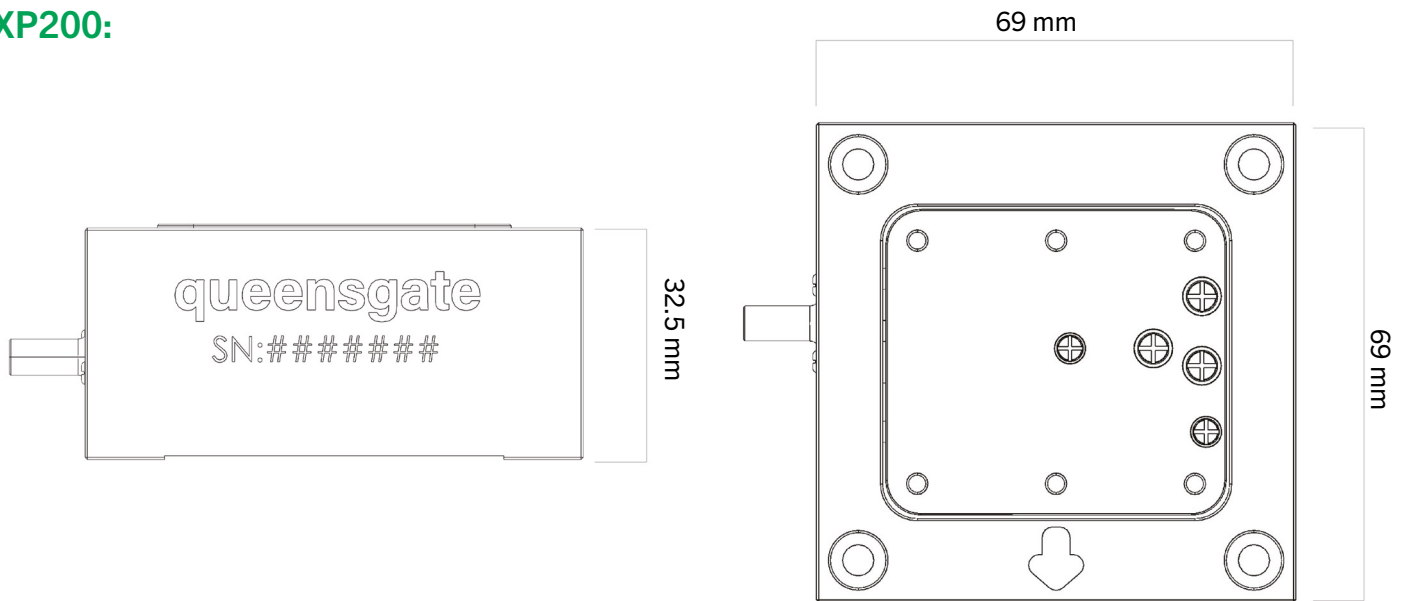
Specifications

Model		XP200	XP400	XP800	Units	Comments
Static Physical						
Material		Aluminum, Stainless steel				
Size (L x W x H)		69 x 69 x 32.5	78 x 78 x 32.5	90 x 90 x 32.5	mm	
Stage mass		450	550	675	g	Excludes cable and connector
Cable length		2			m	
Close-loop range		200	400	800	μm	
Static Stiffness		1.1	0.35	0.12	Nμm ⁻¹	Typical
Resonant frequency	0 g	490	235	135	Hz	Typical
	200 g	290	165	95		
	500 g	195	110	70		
	800g	170	80	50		
Maximum load	Horizontal	50	30	10	N	Static equivalent
	Vertical	50	30	10		
	Pull	10	10	10		
Dynamic Physical						
2 μm step-settle	Fast (200 g) / Medium (500 g) / Slow (800 g)	7.5 / 14 / 15.5	10.5 / 13.8 / 20	14 / 17.5 / 22.5	ms	Typical, +/- 2% settle window
100 μm step-settle		18 / 22 / 23	22 / 23 / 35	23 / 33 / 44		
Position noise (1 σ)		0.5	1	1.5	nm _{rms}	Typical
Unidirectional repeatability		0.6	1.5	2	nm	Typical with fast default and 200 g load
Error Terms						
Linearity error (peak)		0.005			%	Typical

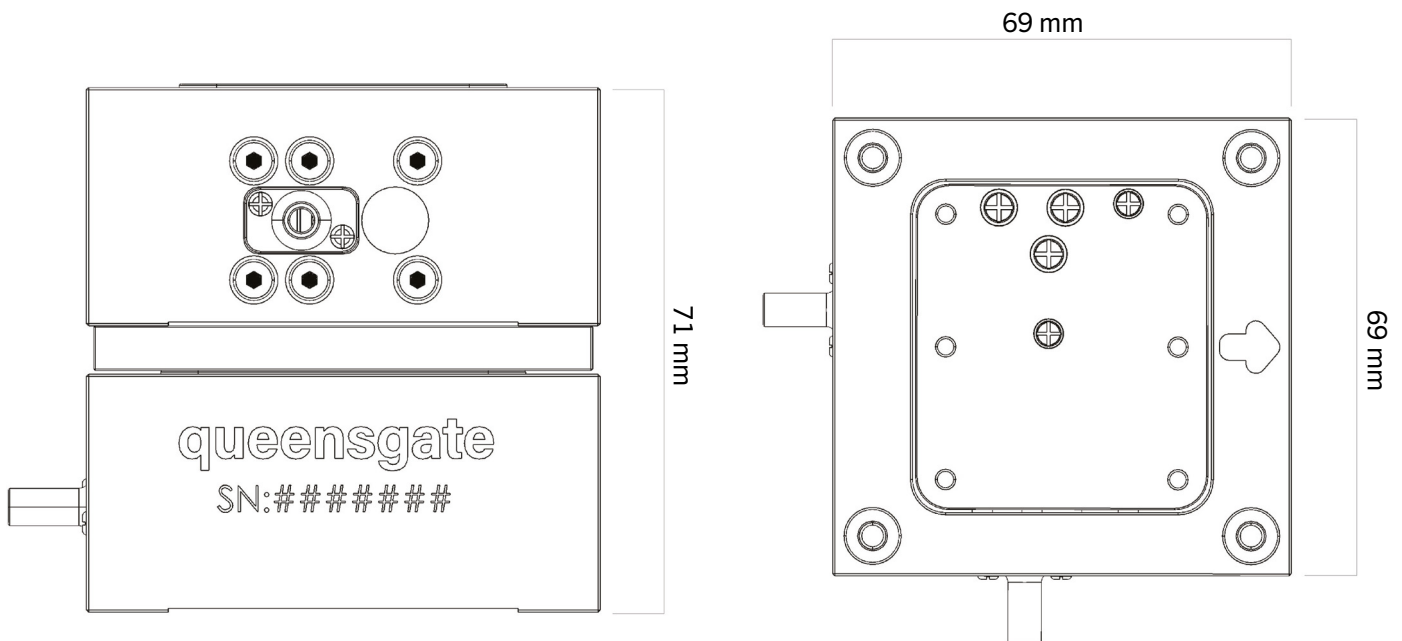
Specifications subject to change without notice.

Dimensions

XP200:



XP200-YP200:



Please refer to the [XP Series Installation Drawing](#) for complete dimensions and install guide. Full installation drawings are also available on the Queensgate website. 3D CAD available on request.

Model	Size (L x W x H)
XP200	69 mm x 69 mm x 32.5 mm
XP400	78 mm x 78 mm x 32.5 mm
XP800	90 mm x 90 mm x 32.5 mm
XP200-YP200	69 mm x 69 mm x 71 mm
XP400-YP400	78 mm x 78 mm x 71 mm
XP800-YP800	90 mm x 90 mm x 71 mm

Ordering Information: single-axis configurations

Model Designation	Part Number	Description
XP200	QGXP200-D1	200 µm medium duty piezo X stage with a NPC-D-6110 controller.
XP400	QGXP400-D1	400 µm medium duty piezo X stage with a NPC-D-6110 controller.
XP800	QGXP800-D1	800 µm medium duty piezo X stage with a NPC-D-6110 controller.

Ordering Information: multi-axis configurations

Model Designation	Part Number	Description
XP200-YP200	QGXP200-YP200-D3	Two XP200 stacked in XY 200µm configuration with a NPC-D-6330 controller.
XP400-YP400	QGXP400-YP400-D3	Two XP400 stacked in XY 400µm configuration with a NPC-D-6330 controller.
XP800-YP800	QGXP800-YP800-D3	Two XP800 stacked in XY 800µm configuration with a NPC-D-6330 controller.

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