PRIOR®
Scientific

H1P4A / HEP4

Motorized high resolution stages for upright microscopes

The H1P4A and HEP4 are motorized XY stages for upright microscopes and are fully customizable for integration into OEM devices.

These stages use a 1 mm pitch ballscrew and 400 step motor drive configuration to provide four times the resolution of the H101A stage, making them ideal for applications that require precise short movements. Off-axis movements while in motion are also minimized, and bidirectional repeatability without encoding is improved.

Prior's patented Intelligent Scanning Technology (IST) optimizes stage accuracy and linearity.

The H1P4A and HEP4 accommodate a variety of specimen types including glass slides, multiwell plates, semiconductor wafers, and metallurgical samples. Alternative drive configuration and encoder options may be available depending on your region.

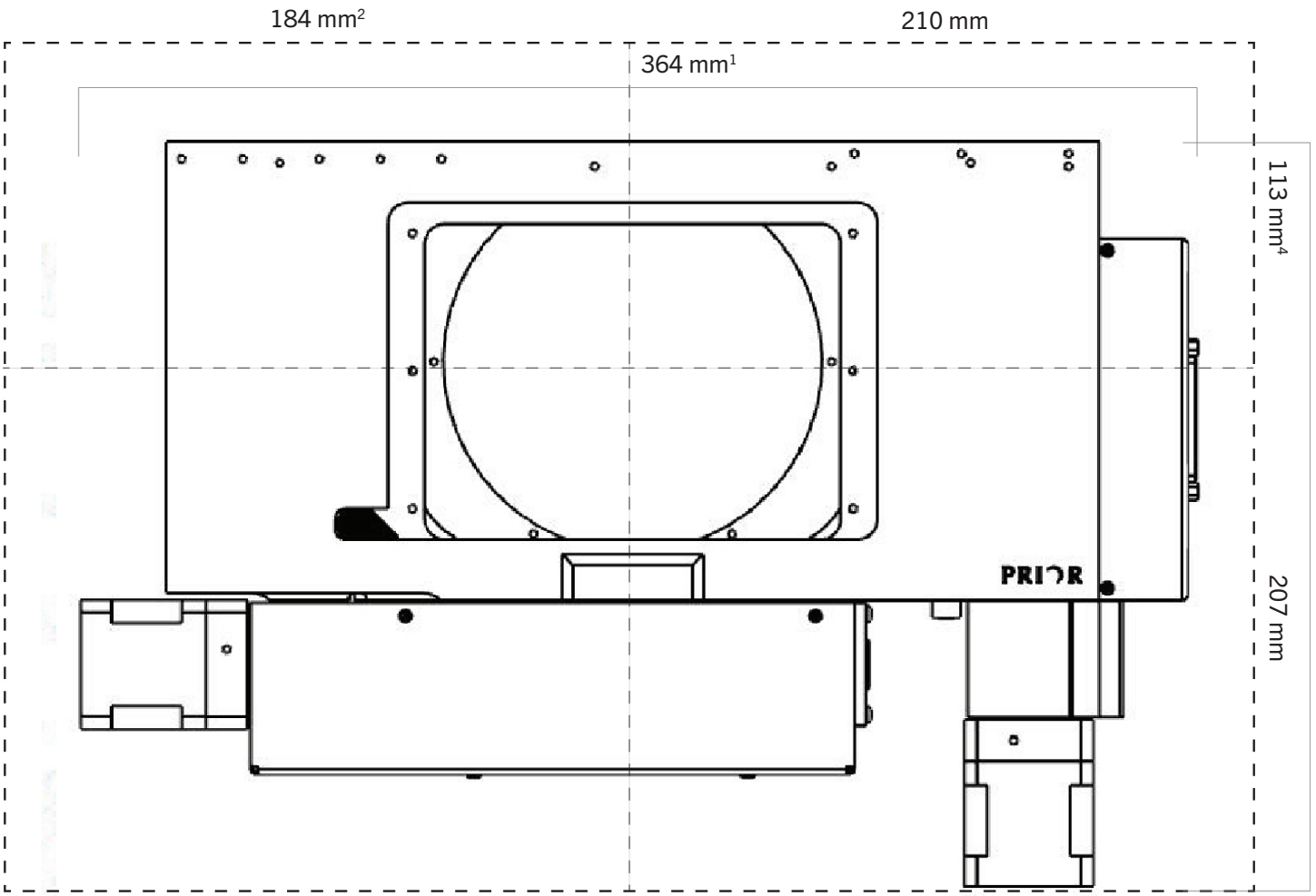
Key Features

- Compatible with most brands of upright microscopes and fully customizable for use in OEM projects.
- High step resolution.
- Quiet and reliable.
- Wide range of sample holders.
- Intelligent Scanning Technology™ (US Patent 7,330,307).

Applications

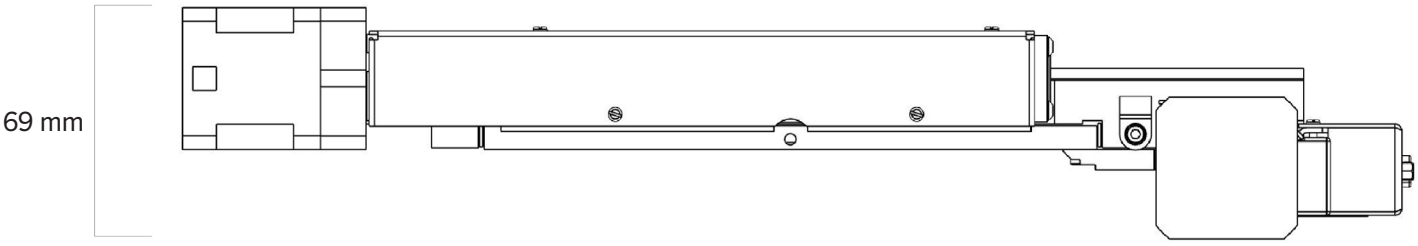
- Confocal and super-resolution microscopy
- Metrology
- Slide scanning

Dimensions*



*Outer dotted line shows the maximum footprint of the stage when at the limits of travel.

1. Increases to 393 mm with HEP4
2. Increases to 268 mm with HEP4
3. Increases to 251 mm with HEP4
4. Increases to 123 mm with HEP4



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Specifications

	H1P4A	HEP4
Travel range	114 mm x 75 mm	114 mm x 75 mm
Unidirectional repeatability[1]	< 0.6 µm	< 0.4 µm
Bidirectional repeatability[1]	< 1.9 µm	< 1.1 µm
Metric accuracy[1]	0.13 µm/mm	0.09 µm/mm
Full travel metric accuracy[1]	<12.6 µm	< 7.6 µm
Resolution[2]	0.01 µm	0.1 µm
Squareness[1]	< 35 arcsec	< 35 arcsec
Maximum velocity[3]	15 mm/s	15 mm/s
Maximum load	10 kg	10 kg
Encoders	No	0.1 µm linear encoders[4]
Motor type	400 step	400 step
Screw pitch	1 mm	1 mm
Weight	3.5 kg	3.5 kg

1. As per Prior Scientific's test methodology, typical value.
2. Defined as the minimum motor step resolution for non-encoded stages, defined as the encoder resolution for encoded stages.
3. Defined as 2.5x the default velocity, true maximum velocity is dependent on sample mass.
4. 0.05um linear encoders also available. Contact Prior for more information.

Ordering Information*

Part Number	Description
H1P4A	Ultra High Accuracy ProScan® stage for upright microscopes, with travel range of 114 x 75 mm, 1 mm pitch ball screw and 400 step motors.
HEP4	Ultra High Accuracy ProScan® stage for upright microscopes, with travel range of 114x75 mm, 1 mm pitch ball screw and 400 step motors. Provided with 0.1 µm linear encoders.
H1P1A	Ultra High Accuracy ProScan® stage for upright microscopes, with travel range of 114 x 75 mm, 1 mm pitch ball screw and 200 step motors.
HEP1	Ultra High Accuracy ProScan® stage for upright microscopes, with travel range of 114 x 75 mm, 1 mm pitch ball screw and 200 step motors. Provided with 0.1 µm linear encoders.

*These stages can be adapted to numerous commercial microscopes. See our website, or contact Prior, for a full list of options.

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bsi ISO 9001 Quality Management Systems CERTIFIED | ISO 14001 Environmental Management CERTIFIED | ISO 45001 Occupational Health and Safety Management CERTIFIED | CYBER ESSENTIALS