

# H105/HE05

### High precision motorized stages for upright microscopes

The H105/2U and HE05/2U stages are designed for upright industrial microscopy and are compatible with Nikon microscopes. The H105/2OL and HE05/2OL stages in the series are compatible with Evident/Olympus MX series.

The H105 and HE05 stages have 154 x 154 mm travel specifically to enable complete imaging of 6-inch semiconductor wafers. The slim design simplifies integration into customized microscopes and other optomechanical assemblies, and enables the use of this stage for transmitted light applications.

Featuring Prior's patented Intelligent Scanning Technology (IST) to optimize stage accuracy, linearity and other performance characteristics in combination with a 2 mm ballscrew for speed, the H105 and HE05 are optimized for scanning industrial samples reliably and efficiently. The HE05 also uses 0.1  $\mu m$  linear encoders to provide enhanced repeatability and accuracy.



### **Key Features**

- Easy to integrate into customized imaging solutions.
- Excellent combination of speed and accuracy.
- Travel range supports 6-inch wafers.
- Intelligent Scanning Technology™ (U.S. Patent 7,330,307).

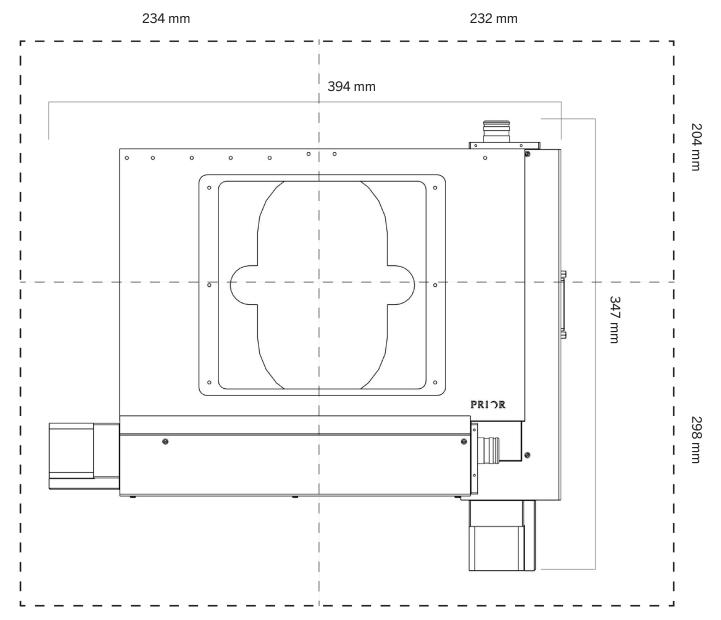
### **Applications**

- Industrial microscopy
- Metrology
- Semiconductor inspection

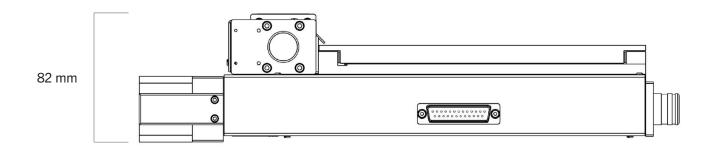
H105-V3-1124-EN prior.com



## **Dimensions\***



 $<sup>{}^{\</sup>star}\text{Outer}$  dimensions are the maximum footprint of the stage when at the limits of travel.





### **Specifications**

Travel range $154 \times 154 \text{ mm}$ $154 \times 154 \text{ mm}$ Unidirectional repeatability1 $<1.0  \mu m$ $<0.9  \mu m$ Bidirectional repeatability1 $<3.3  \mu m$ $<1.1  \mu m$ Metric accuracy1 $0.13  \mu m/mm$ $0.09  \mu m/mm$ Full travel metric accuracy $<19.3  \mu m$ $<16.8  \mu m$ Resolution2 $0.04  \mu m$ $0.1  \mu m$ Squareness1 $<50  arcsec$ $<40  arcsec$ Maximum velocity3 $60  mm/s$ $60  mm/s$ Maximum load $<10  kg$ $<10  kg$
Bidirectional repeatability1<3.3 μm<1.1 μmMetric accuracy1 $0.13  \mu m/mm$ $0.09  \mu m/mm$ Full travel metric accuracy<19.3 μm
Metric accuracy $^1$ 0.13 μm/mm0.09 μm/mmFull travel metric accuracy<19.3 μm
Full travel metric accuracy <19.3 $\mu$ m <16.8 $\mu$ m Resolution <sup>2</sup> 0.04 $\mu$ m 0.1 $\mu$ m Squareness <sup>1</sup> <50 arcsec <40 arcsec Maximum velocity <sup>3</sup> 60 mm/s 60 mm/s
Resolution2 $0.04  \mu m$ $0.1  \mu m$ Squareness1<50 arcsec
Squareness1<50 arcsec<40 arcsecMaximum velocity360 mm/s60 mm/s
Maximum velocity <sup>3</sup> 60 mm/s 60 mm/s
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Maximum load 10 kg 10 kg
Maximum load
Encoders No 0.1 µm linear encoder
Motor type 200 step 200 step
Screw pitch 2 mm 2 mm
Weight 5 kg 5 kg

<sup>1.</sup> As per Prior Scientific's test methodology, typical value.

### **Ordering Information**

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Part Number	Description
H105/2U	Motorized stage, $154\mathrm{x}154\mathrm{mm}$ travel, $2\mathrm{mm}$ pitch ball screw and $200\mathrm{step}$ motors, generic model.
HE05/2U	Motorized stage, $154\mathrm{x}154\mathrm{mm}$ travel, 2 mm pitch ball screw and 200 step motors, encoded, generic model.
H105/20L	Motorized stage, $154\mathrm{x}154\mathrm{mm}$ travel, $2\mathrm{mm}$ pitch ball screw and $200\mathrm{step}$ motors, Evident/Olympus MX series.
HE05/20L	Motorized stage, 154 x 154 mm travel, 2 mm pitch ball screw and 200 step motors, encoded, Evident/Olympus MX series.

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<sup>2.</sup> Defined as the minimum motor step resolution for non-encoded stages, defined as the encoder resolution for encoded stages.

<sup>3.</sup> Defined as 2.5x the default velocity, true maximum velocity is dependent on sample mass.