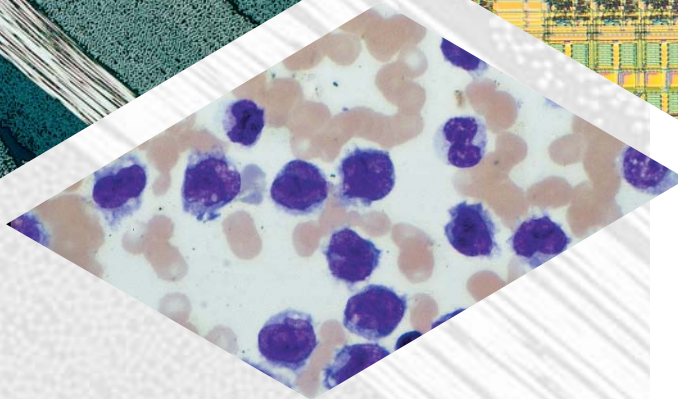
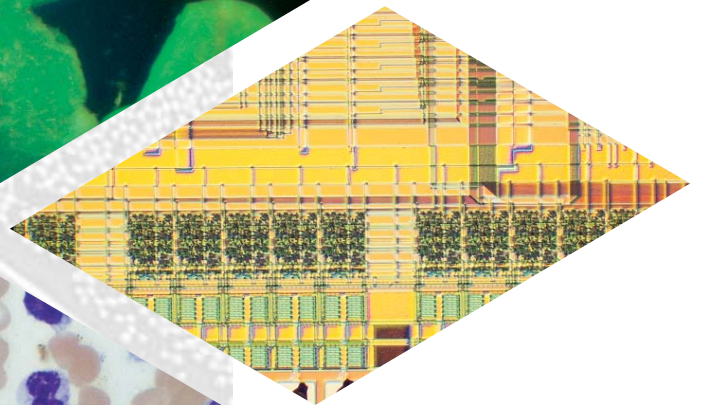
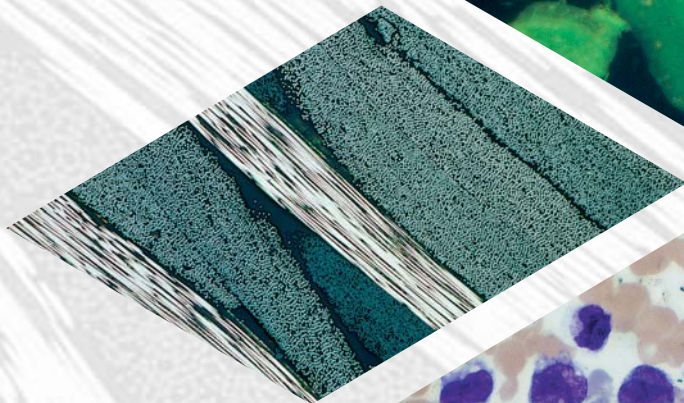
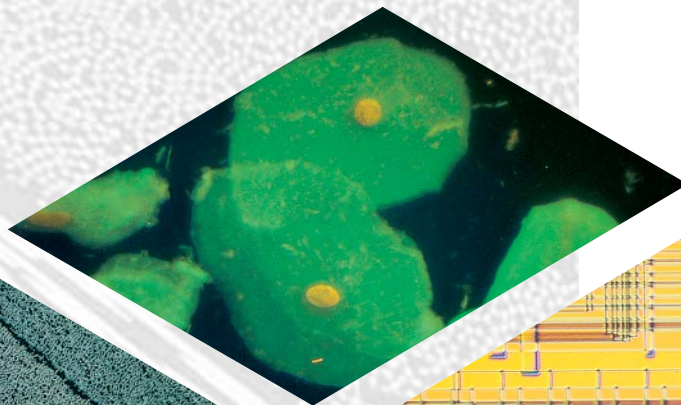


ProScan™ II

PRIOR
Scientific

**High Performance
Motorized Stage Systems**



ProScan II Advanced Microscope Automation



Prior Scientific has been designing and manufacturing precision optical systems, microscopes and related accessories since 1919. This wealth of experience is matched by a commitment to customer service that has earned Prior an enviable reputation for excellent support. These values, plus our understanding of microscopy, provide a unique foundation for the development of an advanced range of motorized stage systems for microscopy and image analysis applications.

Prior proudly introduces the ProScan II system which sets new standards in automated microscopy. Modular by design, a wide range of stages is available for most modern upright and inverted microscopes. Stages may also be adapted to fit other optical inspection systems. The ProScan II controller represents the latest in motor control technology and provides a wide range of advanced features designed for the most demanding applications; not least of which is the capability to control a stage, focussing motor, up to 3 filter wheels and 3

shutters all from a single controller.

Add to this USB and

serial communications,

4 TTL inputs and outputs, encoder feedback for closed loop operation, an optional 4th axis, an advanced autofocus routine and a comprehensive high level software command set including dll's and you can see, the standard is very high indeed. Filter wheels, shutters plus a variety of control accessories such as joysticks and digipots complete the ProScan II product range.

ProScan II is ideally suited to the most demanding imaging applications. A modular design means that systems are easily configured for any combination of stage, focus, filter wheel and shutter options. System performance and reliability are second to none. Furthermore, Prior's flexible, problem solving approach is why the world's leading microscope companies and imaging software manufacturers choose ProScan II.



H101

Stage for upright microscopes providing a travel range of up to 112 x 75mm. Available with a choice of specimen holders, ideally suited to single and four slide applications.



H117

Flat-top stage for inverted microscopes providing a travel range of up to 115 x 77mm. Suitable for slides, multiwell plates, petri dishes, flasks and mounted metallurgical specimens.



H105

Ideal for larger specimens, this stage provides up to 153 x 153mm of travel. Ideal for 150mm semiconductor wafers, photo masks and printed circuit boards.

ProScan II Advanced Controller



Like the ProScan II range of motorized stages, this advanced controller is designed and manufactured by Prior Scientific. The compact unit enables control of a motorized stage, motorized focus, three filter wheels and three shutters with the speed, accuracy and precision demanded by advanced imaging applications. A fourth axis is also available to enable sample rotation or other custom applications. For triggering camera shutters, relays, linescan cameras or other peripheral devices the unit offers four TTL inputs and outputs. The controller is designed with simplicity in mind. System control using high-level software commands is possible via one of two RS232 ports or the new high speed USB interface. The ProScan II controller has been specifically designed for control by third party software products and the new DLL ensures simple integration. For stand-alone use, without software, the system can be fully programmed and controlled via the Touch Screen Keypad



Digipot Focus Only Control

The digipot is ideal for focus only systems. It provides a tactile feel for fine focus adjustments while separate buttons offer immediate control of focus speed and fast movements up and down, for coarse focussing.



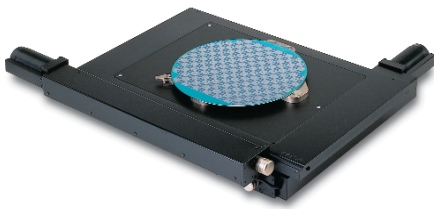
Motorized Focus Control

ProScan II is ideal for applications where motorized focus control is needed. Step sizes as small as 0.002µm give excellent resolution for precise focus and repeatable positioning in the Z-axis. For large movements when speed is required, the ProScan II focus motor can be driven at speeds of up to 20 revs/s. An optional probe style encoder feedback system provides the highest accuracy and repeatability available.



Ergonomic Joysticks

Two or three axis joysticks are available with all stage systems to provide fast, responsive control of the stage. Two programmable Hot Keys are provided which can be used to put a variety of system controls at your fingertips.



H116

Provides a travel range of up to 255 x 215mm. The H116 is suitable for large specimens such as 200mm semiconductor wafers and flat panel displays. As with all Prior stages, a range of specimen holders is available.



H112

One of Prior's larger stages, the H112 provides up to 302 x 302mm of travel, ideal for 300mm semiconductor wafers.



HT5050

One of a range of solid frame stages with X and Y travel of up to 250mm x 150mm respectively, the HT5050 provides 50 x 50mm of travel. Designed for hardness testing machines, the HT stages can withstand loads of up to 100Kg.

with easy to use, menu driven functionality. All system components feature "plug and play" compatibility, allowing the system to automatically detect and configure the attached accessories on start up.

For the most demanding applications ProScan II is compatible with encoders and linear scales to offer the highest repeatability available. These can be fitted to most stages and motorized focus units, after which their output provides a closed-loop capability. This enables use of the system for direct measurement applications where the Touch Screen Keypad becomes a digital read out display.



Other options include autofocus, which uses a unique software algorithm for fast and accurate focussing of specimens. This option is available in both PAL and NTSC formats with six autofocus settings to perfectly match the algorithm with the specific objective lens in use. For specimens that are not uniform the area that the system uses for focus adjustment can be selected from pre-defined quadrants or a user specified focus zone. To ensure that the ProScan II controller is as "future proof" as it possibly can be, the system uses Flash Technology to facilitate software and firmware upgrades.



Touch Screen Programmable Keypad

The Programmable Keypad features touch screen technology and a comprehensive yet intuitive software package which provides complete programmability and control of the whole ProScan II system. A range of menus allow for programming of raster, snake and user-defined patterns which can be input, stored and recalled. Information on the current stage position is always available and points of interest can be saved for later review. Patterns and saved points can be downloaded to a PC for further analysis.

High Speed Filter Wheels and Shutters

The Filter Wheel system delivers smooth, high speed operation and changes filters in as little as 55ms. Two wheels are available to accept ten 25mm or eight 32mm diameter filters. The filter wheel can be fitted to the excitation and emission ports of your microscope and up to 3 filter wheels and 3 shutters can be operated from 1 controller under PC control or an optional filter wheel keypad. The unique design of this filter wheel allows filters to be changed with ease. A stand to support the illuminator and reduce vibration effects is standard.

An optional sliding filter holder can be fitted for neutral density or infrared filters.



Precision Motorized Stages

Features

Adjustable Limit Switches

Provide the flexibility to reduce the travel range of the stage to match your application and to avoid damaging collisions with your microscope. The limits also provide a precision reference point.

Wide Range of Specimen Holders

ProScan II stages are available for a variety of applications involving specimens such as slides, multiwell plates, petri dishes, metallurgical samples and semiconductor wafers. Specimen holders are black anodized to provide excellent wear resistance. Custom designs are always considered.

Linear Encoders

ProScan II stages can be fitted with optional linear encoders for applications requiring greater precision. Encoder output can be fed to a digital read out for measurement applications. In closed loop mode, the encoder output is fed back to the controller to provide the highest repeatability available.

Precision Ball Screws

High accuracy ground ball screws provide smooth and maintenance free motion. The pre-loaded recirculating ball screw nuts ensure zero backlash. The whole ball screw assembly is connected to the motor with an anti-backlash coupling.

Cast Aluminium Plate

Prior stages are precision machined out of special cast aluminium plates which are lightweight and provide excellent dimensional stability.

Precision Stepper Motors

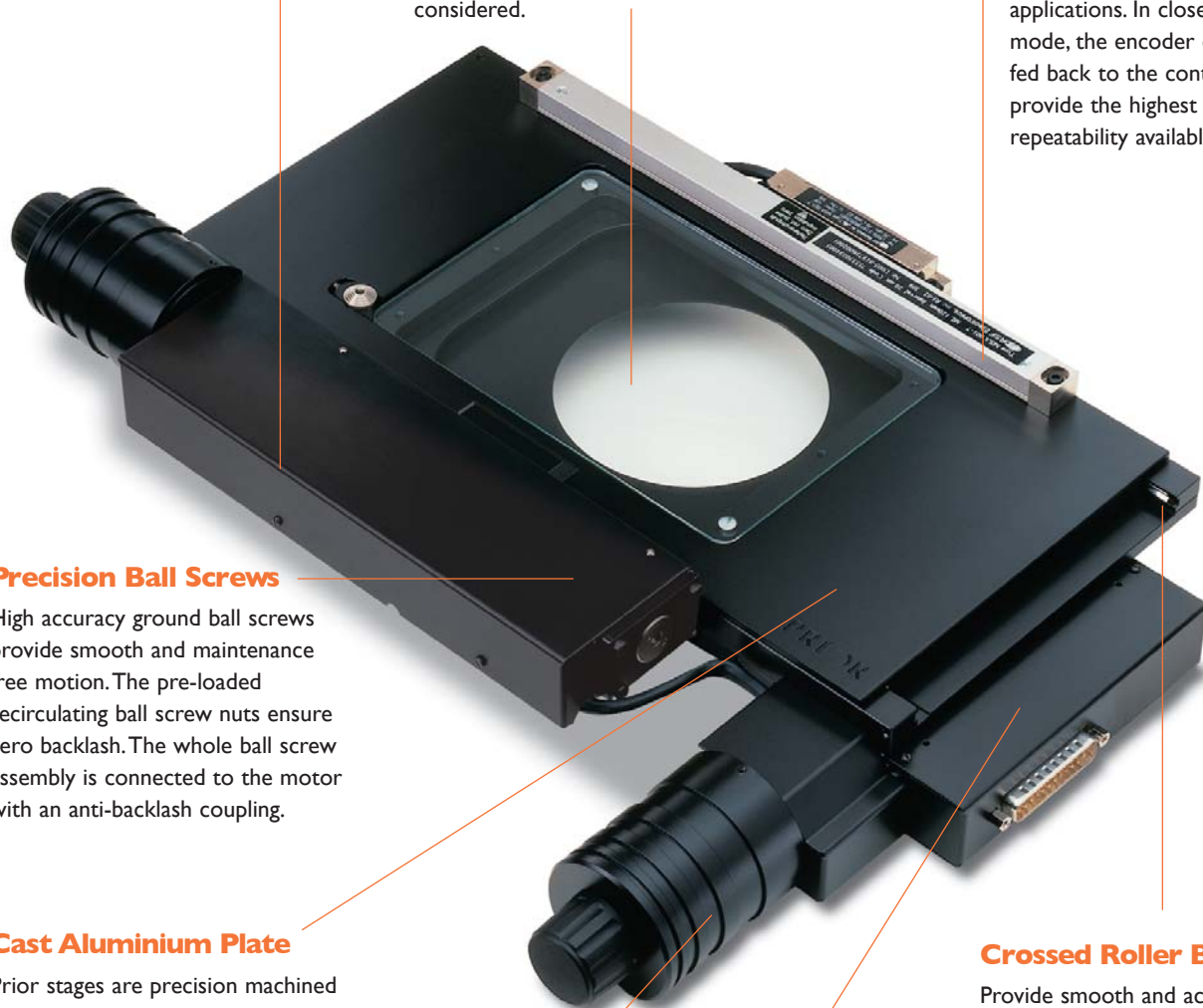
Quiet and precise stepper motors ensure precise positioning of the stage while the use of micro-stepping provides very smooth motion even at low speeds. Motor characteristics offer high acceleration and speeds up to 30 mm/s with 2mm pitch screws.

Intelligent Scanning Technology (IST)

This new and unique facility allows the controller to electronically interrogate the stage for a range of key performance characteristics and subsequently modify its control output to get the very best stage performance available. The stage model and serial number are also made available to assist with GLP compliance.

Crossed Roller Bearings

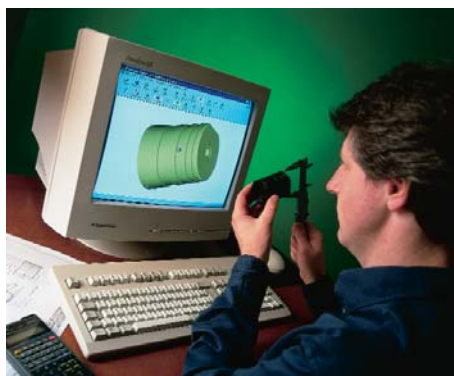
Provide smooth and accurate linear motion for loads of up to 2Kg on open frame stages and 100Kg on solid stages.



Specifications

| | | | |
|-----------------------|--|----------------|--|
| Power | Universal mains input 115/230 VAC, 50-60Hz 200VA | Step Size | As small as 0.01µm in X and Y and 0.002µm in Z |
| Computer Interface | RS-232C and USB | Repeatability | Typically +/- 1µm depending on stage |
| RS232 Protocol | 8 bit word, 1 stop bit, no parity, no handshake, baud rate of 9600, 19200 or 38400 | Linear Slides | Crossed roller bearings |
| Controller Dimensions | Width 320mm; Height 90mm; Depth 260mm; | Drive Screws | Zero backlash, ground recirculating ball screws, 1, 2 or 5mm pitch |
| Controller Weight | 2.2Kg (5 lbs) | Limit Switches | Adjustable in x and y axes (optional in z) |
| Stage Speed | up to 150mm/s (dependant on specifications of stage) | Accuracy | As good as 8µm depending on stage |
| | | Flatness | 5µm |

Specials and OEM Systems



At Prior Scientific we control the design and manufacturing process for all our automated microscopy products. This way, we can be sure of offering the most flexible service. This approach along with our commitment to customer service means that Prior Scientific is uniquely positioned to provide complete systems to match your exact specifications.

The Design Engineering Department employs the latest in Computer Aided 3D modelling along with many years experience in the design and manufacture of scientific instruments. It is here that quality and reliability are designed into our products.

Advanced CNC machines and Computer Aided Manufacture

systems are used to produce high quality components.

In assembly, experienced instrument makers build complete stage and controller assemblies with care and attention to detail.

It is this blend of skills, experience and flexibility that have established Prior as one of the world's leading manufacturers of automated microscopy products. Whether you need a standard product or a custom design, a single unit or OEM quantities Prior Scientific is the right choice!



ProScan II

Advanced Microscope Automation



CERTIFICATE NO: FM 61600
STANDARD: BS EN ISO 9001:2000



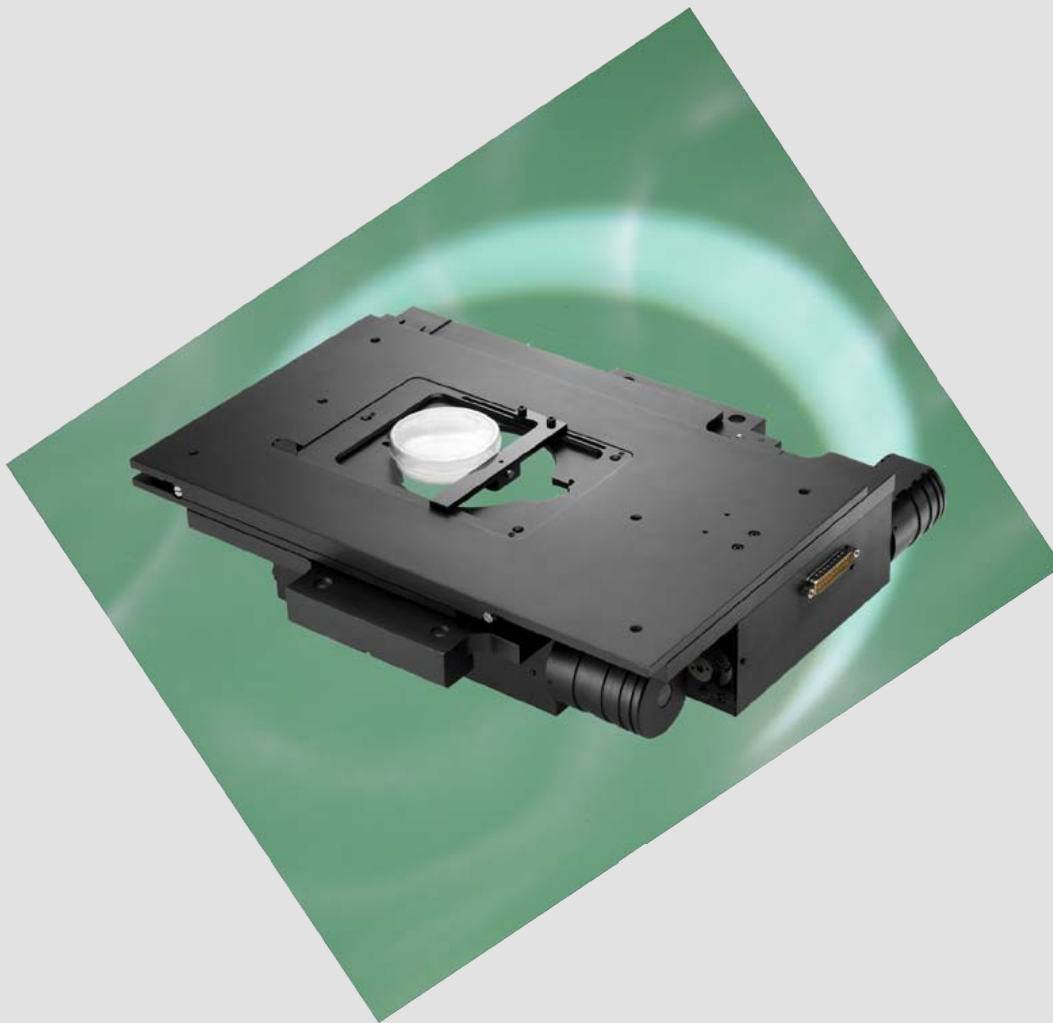
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Specifications subject to change without notice.

H117 ProScan Inverted Stage

114mm x 75mm Travel, Flat Top Motorised Scanning Stage for Inverted Research Microscopes.



The H117 family of Flat-Top Stages for inverted research microscopes set new standards for convenience and performance. Designed to seamlessly integrate with other items such as micro-manipulators and incubation chambers the top surface of the stage is completely free of obstruction. This provides a highly ergonomic platform with exceptionally easy access to their samples.

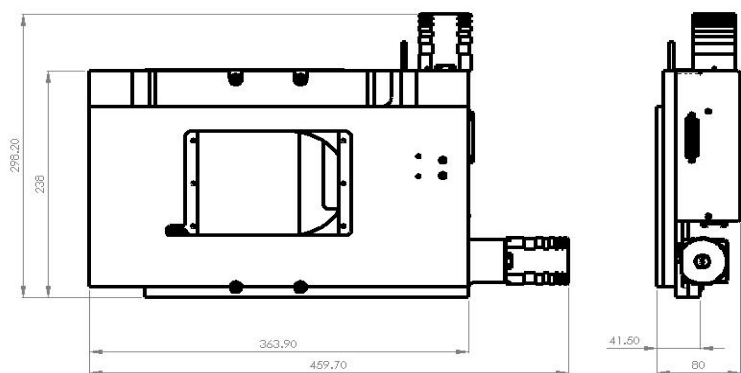
The H117 has been designed to utilise the range of specimen holders from Prior's ProScan stages. This enables examination of the widest range of specimen types including glass slides, multi-well plates, Petri-dishes and polished metallurgical samples.

H117 Features:

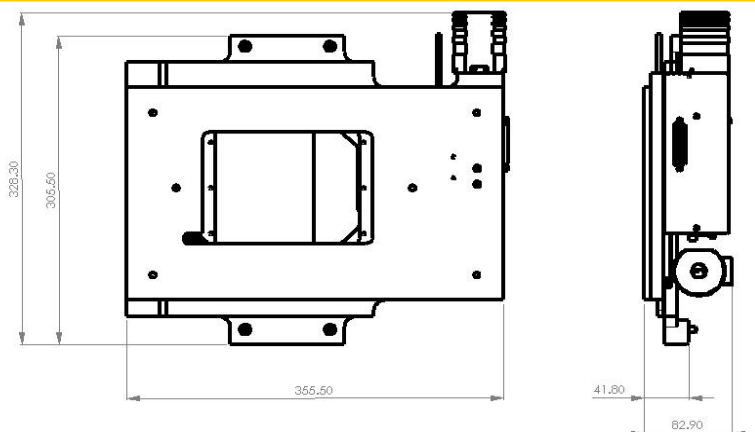
- Travel range 114mmx75mm
- Flat-Top design
- <1um Resolution
- +/-1um Repeatability
- Interchangeable Sample Holders
- High Precision Ball Screw
- Anti-Backlash Mechanism
- Adjustable Limit Switches

Prior motorised stages have a reputation for quality and performance. As an ISO 9001:2000 accredited company Prior equipment is designed and manufactured to the highest quality standards. Prior provides full support and service both direct and indirect —through a professional, knowledgeable and extensive global dealer network.

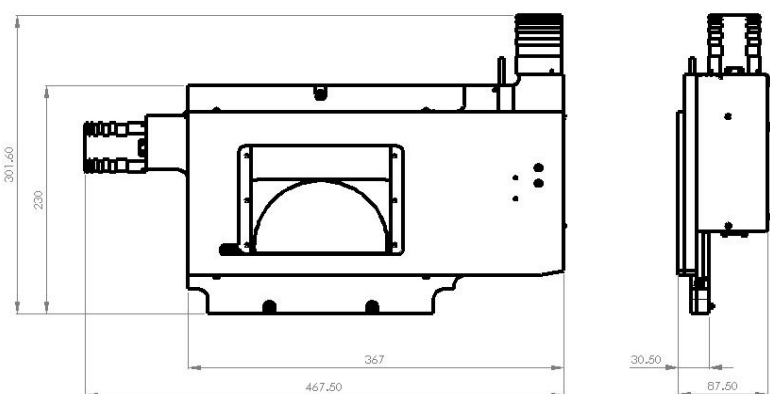
H117 Variants and Dimensions



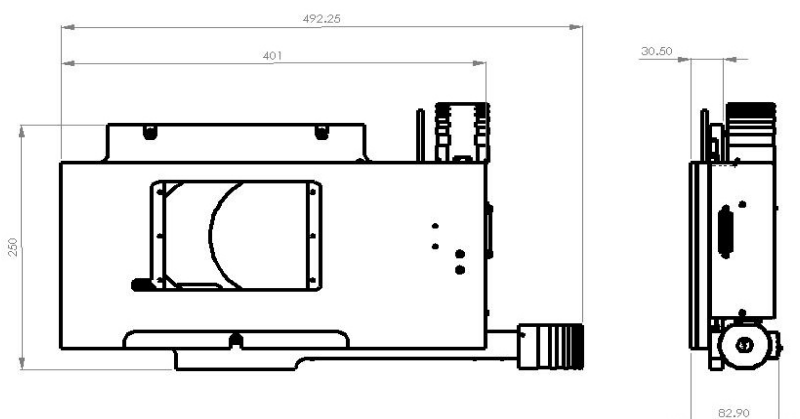
H117 for Olympus IX81 & IX71



H117 for Nikon TE2000



H117 for Zeiss Axiovert 200



H117 for Leica DMI6000B, DMIRB & DMIRM



CERTIFICATE NO: FM 61400
STANDARD: BS EN ISO 9001:2000

Prior Scientific Instruments Limited

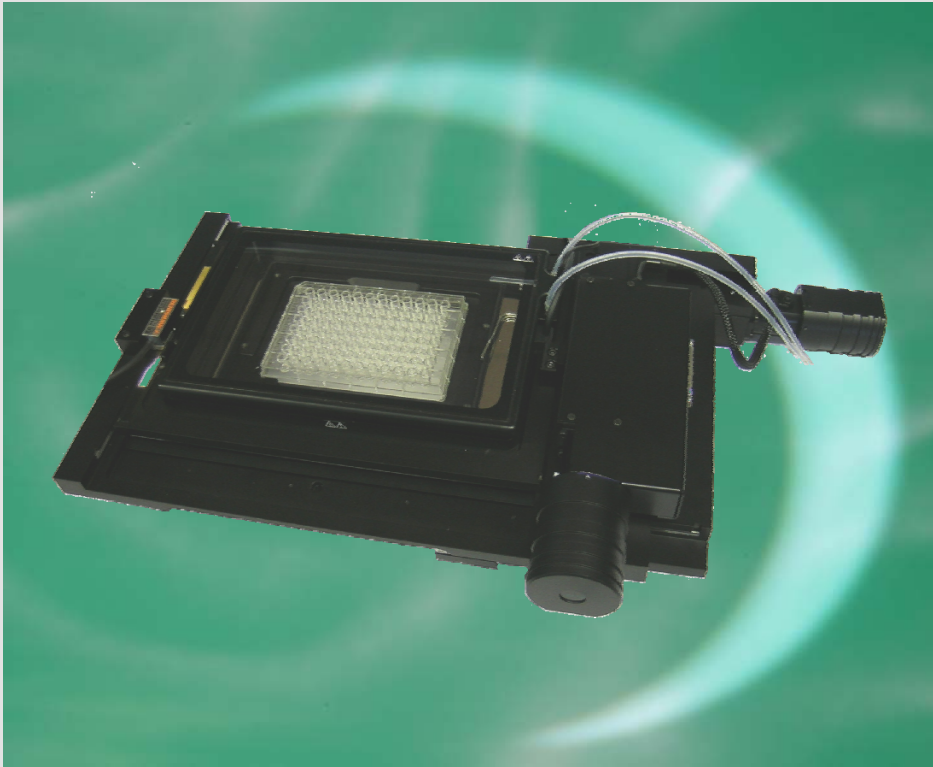
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VISIT PRIOR ON THE WEB AT **WWW.PRIOR.COM**

HTHE2 ProScan Incubated Stage

114mm x 75mm Travel, Incubated Motorised Scanning Stage for Inverted Research Microscopes.



Continuous, even heating of the whole multi well plate no matter which well you are studying.

Options available:

| Stage: Part Number | Ball Screw size | Encoded | Microscope Compatibility |
|---------------------------|--|-----------------------|----------------------------------|
| HTHE2IX | 2mm | 0.1um Linear Encoders | Olympus IX 71 and IX81 |
| HTHE2TE | 2mm | 0.1um Linear Encoders | Nikon TE2000 and TI2000 |
| HTHE2X2 | 2mm | 0.1um Linear Encoders | Zeiss AxioObserver, AxioVert 200 |
| Incubator: Part Number | Description | | |
| W3700 | Incubator with heating only, objective heater, stage heater and extra 35mm dish holder. | | |
| W3701 | Incubator with premix gas control, objective heater, stage heater and extra 35mm dish holder. | | |
| W3702 | Incubator with digital gas mixing, objective heater, stage heater and extra 35mm dish holder. For 110V. (US) | | |
| W3703 | Incubator with digital gas mixing, objective heater, stage heater and extra 35mm dish holder. For 240V (EU) | | |

All controllers include an objective heater.

Total and Even Heating

The HTHE2 family of stages has been designed to incorporate a heating plate and incubator. This heating plate is of sufficient size to ensure a multi-well plate in the incubator is continually and evenly heated.

The HTHE2 utilises a full range of specimen holders. This enables examination of the widest range of specimen types including glass slides, multi-well plates and Petri-dishes.

Incubator Features:

- Long term stability
- No large box around microscope
- Objective heater as standard

Stage Features:

- Travel Range 114mmx75mm
- Incorporated Incubator Heater
- <1um Resolution
- +/-0.7um Repeatability
- Interchangeable Sample Holders
- Anti-Backlash Mechanism
- Adjustable Limit Switches
- Linear Encoded

Prior motorised stages have a reputation for quality and performance. As an ISO 9001:2000 accredited company Prior equipment is designed and manufactured to the highest quality standards. Prior provides full support and service both direct and indirect through a professional, knowledgeable and extensive global dealer network.

Incubator Features

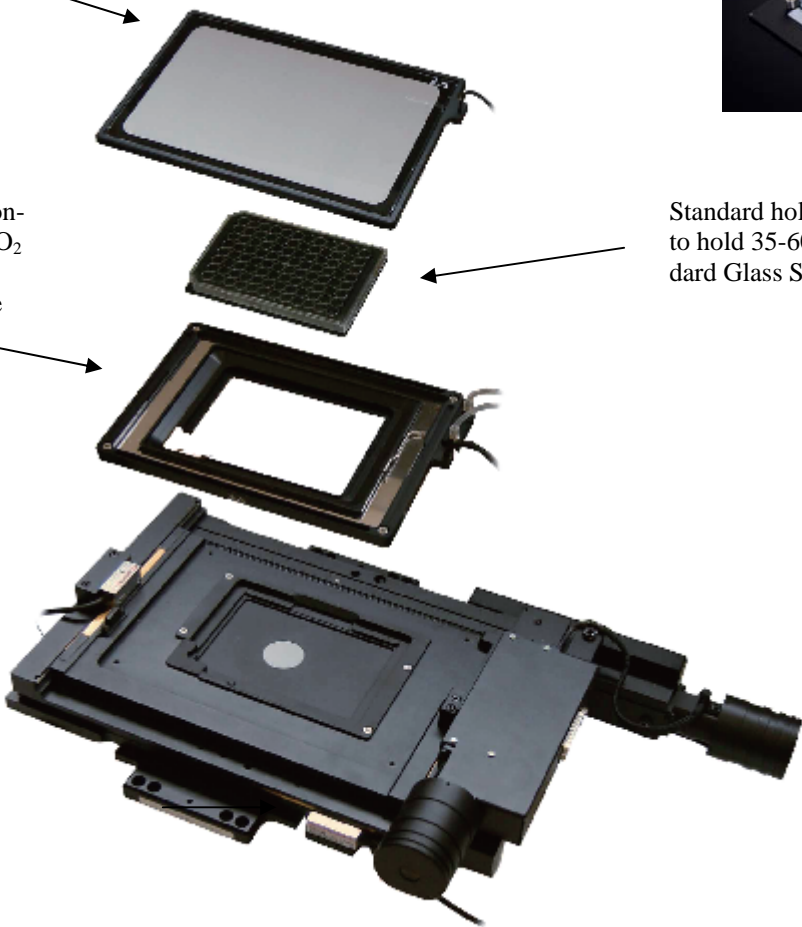
Clear glass heater prevents condensation formation to ensure optimum illumination. A definite requirement for time-lapse experiments.

A bath heater maintains constant high humidity and CO₂ supply. Essential for cell cultures and long term live cell experiments.

Stage includes a large stage heater, which minimises focus drift and provides heating for a microtitre plate. Every well in the microtitre plate is held at an even temperature wherever they are positioned in a multipoint experiment. (Suits objectives up to 40mm diameter).



Standard holder for well plates with optional inserts to hold 35-60mm Petri Dishes , Chamber, and Standard Glass Slides.



Incubator Controllers.
Temperature Range: Ambient to 50°C

W3700
Controller with No gas supply function.
Dimensions: W160xD260XH200(mm)

W3701
Controller with float type gas flowmeter for use with premix gas at 5% concentration.
Dimensions: W160xD260XH200(mm)

W3702/3
Controller with built-in digital gas mixer to create 5% CO₂ and 95% air mix from 100% CO₂.
Dimensions: W175xD260XH282(mm)

Objective heater control as standard.

Stage Specifications

| **Part No. | *Specifications | | | |
|------------|---|--------------|-------------------|---------------------|
| | ***Uni –Directional Repeatability in X and Y. | Travel Range | Minimum Step Size | Recommend Speed**** |
| HTHE2## | +/- 0.7um | 114x75mm | 0.04um | 24mms ⁻¹ |

* Requires the use of a Prior ProScan II or above controller and are based on Prior method of testing.
** Part Numbers are 8 characters long, the microscope specific digits have been removed and replaced with #.
*** Using a Prior ProScan controllers with backlash correction enabled, all repeatability is Uni-directional.
**** Recommended speed can be increased by up to a factor of 2.



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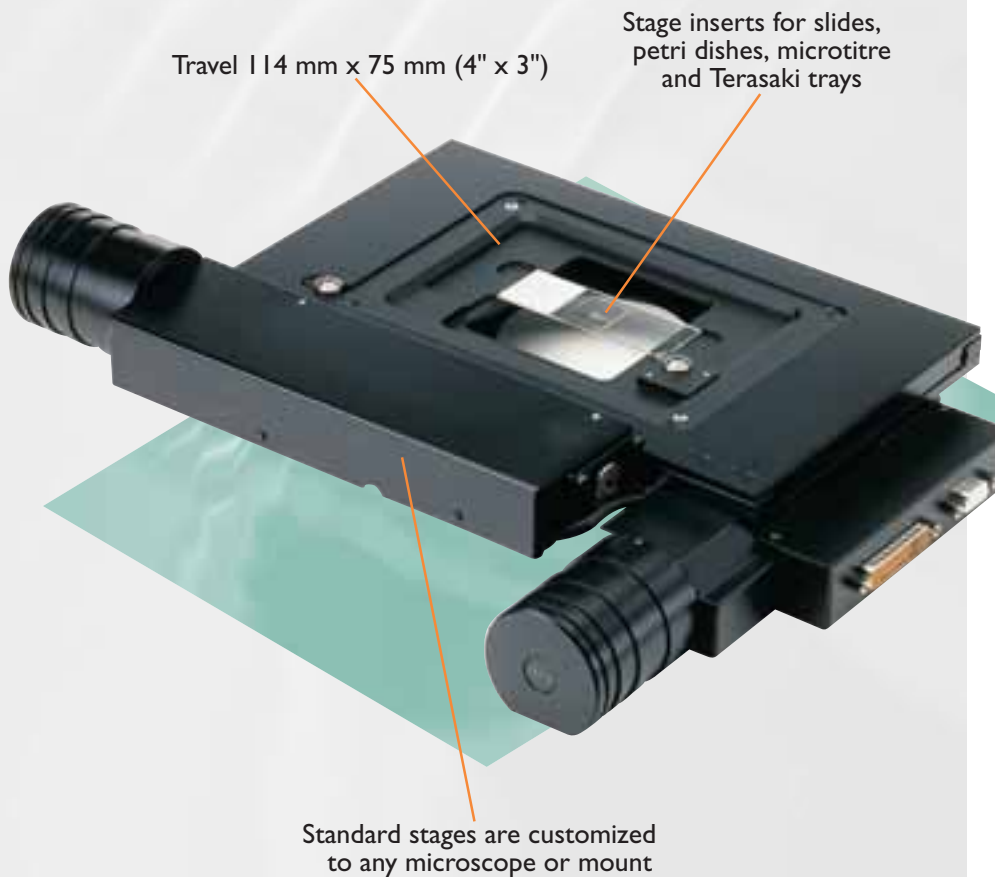
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H101A Stage

4"x3" Travel, Programmable, Motorized Stepper Stage for Upright Microscopes

Features



Now add the highest quality, precision motorized stepper stage to your upright laboratory microscope: the Prior ProScan. The H101A is one of a full range of ProScan motorized stages from Prior Scientific adaptable to virtually any microscope or optical system. With the H101A, you can increase your labor efficiency by automatically scanning your specimens and storing points for later recollection and inspection with unmatched repeatability. Perform scanning or inspection of slides, microtitre trays, semiconductor wafers, or metallurgical specimens in any sort of pattern, including raster, snake and random.

The H101A features:

- Travel 114 mm x 75 mm (4" x 3")
- Repeatability to ± 0.3 micron with optional linear scales
- Minimum step size (resolution) of the stage is 0.04 microns
- Standard stages are customized to any microscope or mount
- Stage inserts for slides, petri dishes, microtitre and Terasaki trays

Prior stages have a well-deserved reputation for quality and repeatability. They are manufactured using the highest quality components: crossed roller ways, zero backlash recirculating ball screws, X and Y limit switches, two high precision stepper motors even a tough scratch resistant coating. They are available with standard and custom sample holders to suit the user's application and requirements. Stages can be driven by the Prior series of motor controllers or compatible systems in existing OEM configurations. The controller can be accessed via RS-232 serial port or with an optional joystick or keyboard. For the H101A and all its products, Prior provides full support and service both direct and indirect – through a professional, knowledgeable and extensive dealer network.

H101A Stage



**4"x3" Travel, Programmable,
Motorized Stepper Stage for
Upright Microscopes**

Standard Sample Holders



Glass Plate



**Single Slide
Holder**



**Four Slide
Holder**



**Motorized
Rotating Holder**



**Custom
Configurations**

Ordering Information

Stage:

500-H101A Specify Microscope Make
and Model

Sample Holder:

500-H220 Glass Plate

500-H224 Single Slide 1"x3"

500-H237 Single Slide 2"x3"

500-H234 Four Slide

500-H240 Motorized Rotating Holder

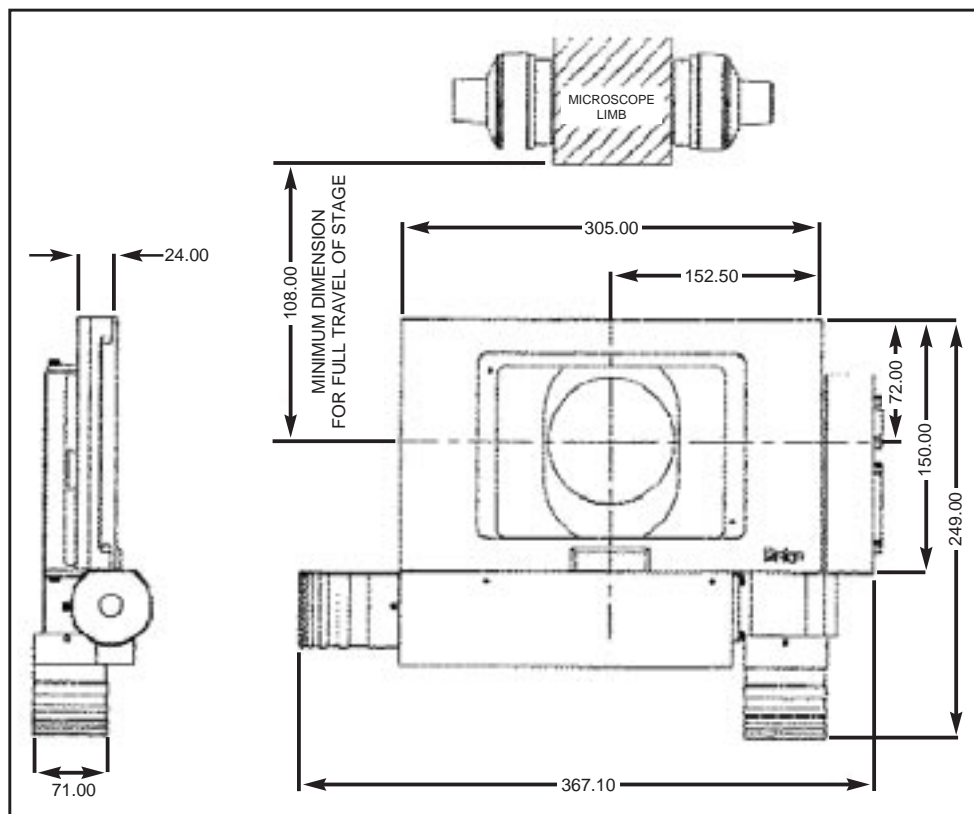
500-H2xx Custom Sample

500-H230 Aluminum Plate

Options:

500-HK01 Manual Override Knobs

500-H101JENK Linear Encoders



Dimensions in millimeters.

General Specifications

| | | | |
|---------------------------------------|--|----------------------|--|
| Travel Range | 114 mm x 75 mm (4" x 3") | Stage Profile | Approximately 25mm (1.0") with glass plate installed |
| Repeatability* | ±1 µm (micrometer) ±0.3 µm with linear scales | Weight | 3.0 kg (6.6 lbs) |
| Minimum Step Size (Resolution) | 0.04 µm | Finish | Electrophoretic black plate |
| Load Capacity | 10 kg | | |
| Stepper Motor | 4 phase, 1 amp per phase, micro stepping | | |
| Linear Slides | Crossed 3 mm roller bearings | | |
| Drive Screws | Zero backlash, recirculating ball screws; 2 mm pitch | | |
| Limit Switches | X and Y standard | | |

*Specifications valid only if used with Prior Controller.

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VISIT PRIOR ON THE WEB AT www.prior.com

Specifications subject to change without notice.

H138 Stage

9"x3" Travel, Programmable, Motorized Stepper Stage for Upright Microscopes

Features



Increase your specimen handling and speed efficiency with the H138 motorized stage from Prior Scientific. The H138 stage allows you to work more productively by having the capability to load up to eight 1"x3" specimen slides onto one stage and processing them together. Sample holders can be released quickly and easily interchanged to increase processing speed. The stage also allows you to also scan specimens that won't fit on standard sized stages. The H138 features:

- Travel of 240mm x 71 mm (9" x 3")
- Repeatability to ± 1.0 micron
- Step size (resolution) of the stage is from 0.02 microns, depending on the controller configuration
- Stages customized to any microscope or mount
- Stage insert for eight slides

Prior stages have a well-deserved reputation for quality and repeatability. They are manufactured using the highest quality components: crossed roller ways, zero backlash recirculating ball screws, X and Y limit switches, two high precision stepper motors even a tough scratch resistant coating. They are available with standard and custom sample holders to suit the user's application and requirements. Stages can be driven by the Prior series of motor controllers or compatible systems in existing OEM configurations. The controller can be accessed via RS-232 serial port/USB or with an optional joystick or keyboard. For the H138 and all its products, Prior provides full support and service both direct and indirect – through a professional, knowledgeable and extensive dealer network.

H138 Stage



**9"x3" Travel, Programmable,
Motorized Stepper Stage for
Eight Slides or Large Samples**

Standard Sample Holders

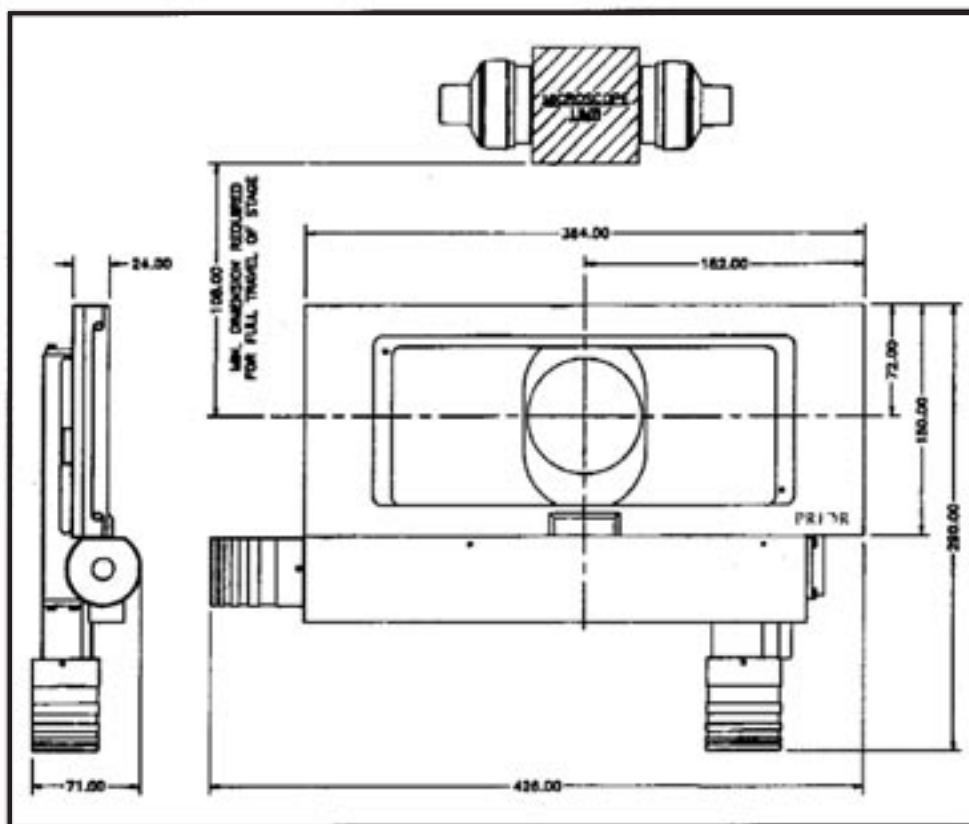
| | |
|-----------------|----------------------|
| 500-H238 | Eight Slide Holder |
| 500-H239 | Solid Aluminum Plate |
| 500-H288 | Glass Plate |

Custom Samples are available
upon request

Ordering Information

Stage:

| | |
|---------------------|--|
| 500-H138ANNN | 9"x3" travel stage |
| 500-H138ANNI | 9"x3" travel stage, with 0.1 μ m linear scales |



Dimensions in millimeters.

General Specifications

Travel Range

240 mm x 71 mm (9" x 3")

Repeatability*

$\pm 1 \mu$ m (micrometer)

Minimum Step Size (Resolution)

0.02 μ m

Load Capacity

10 kg (22 lbs)

Stepper Motor

4 phase, 1 amp per phase,
micro stepping

Linear Slides

Crossed 3 mm roller bearings

Drive Screws

Zero backlash, recirculating ball screws;
2 mm pitch standard

Limit Switches

X and Y standard

Stage Profile

Approximately 25 mm (1.0") with
glass plate installed

Weight

4.0 kg (8.8 lbs)

Finish

Electro-phoretic black plate

* Specifications valid only if used with Prior controller.

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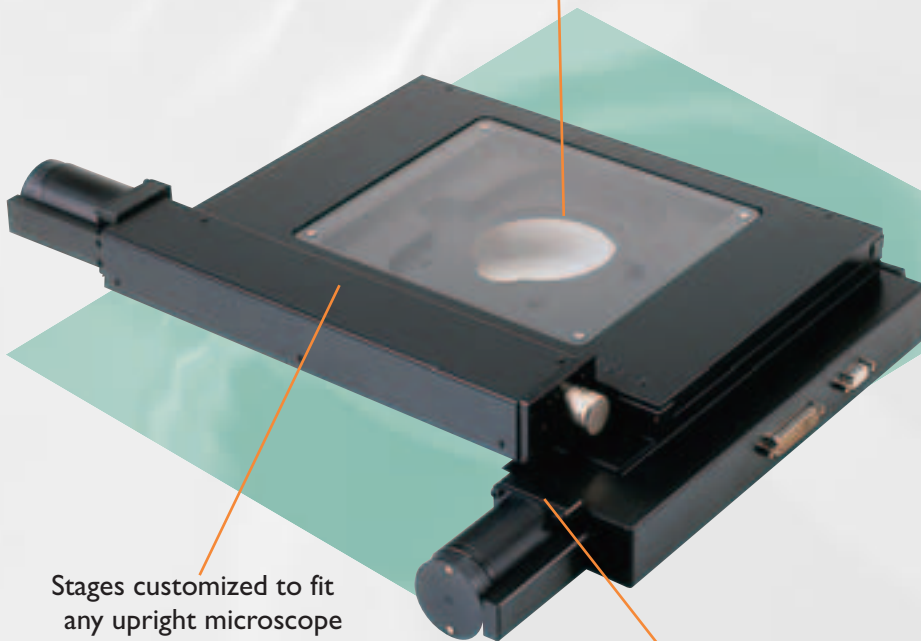
Specifications subject to change without notice.

H105 Stage

6"x6" Travel, Programmable, Motorized Stepper Stage for Upright Microscopes

Features

Travel 154 mm x 154 mm (6" x 6")



Stages customized to fit any upright microscope or optical system

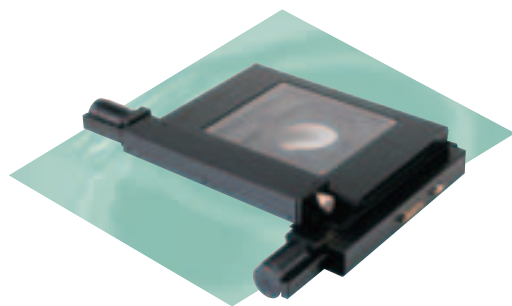
Minimum step size (resolution) of the stage is 0.04 microns

Now add the highest quality, precision motorized stepper stage to your upright microscope: the Prior Model H105. The H105 is one of a full range of motorized stepper stages from Prior Scientific, adaptable to virtually any microscope or optical system. The H105 is especially well-suited for applications that typically involve large specimens. For example, the H105 is perfect for performing scanning of a wide range of semiconductor wafers, photo masks, and printed circuit boards. The H105 can easily accommodate 6" wafers. A variety of sample holders are available and stage inserts can be customized for any application. The H105 features:

- Travel 154 mm x 154 mm (6" x 6")
- Repeatability to ± 0.3 micron with optional linear scales
- Minimum step size (resolution) of the stage is 0.04 microns
- Stages customized to fit any upright microscope or optical system
- Closed loop capability with optional rotary or linear encoders

Prior stages have a well-deserved reputation for quality and repeatability. They are manufactured using the highest quality components: crossed roller ways, zero backlash recirculating ball screws, X and Y limit switches, two high precision stepper motors even a tough scratch resistant coating. They are available with standard and custom sample holders to suit the user's application and requirements. Stages can be driven by the Prior series of motor controllers or compatible systems in existing OEM configurations. The controller can be accessed via RS-232 serial port or with an optional joystick or keyboard. For the H105 and all its products, Prior provides full support and service both direct and indirect – through a professional, knowledgeable and extensive dealer network.

H105 Stage



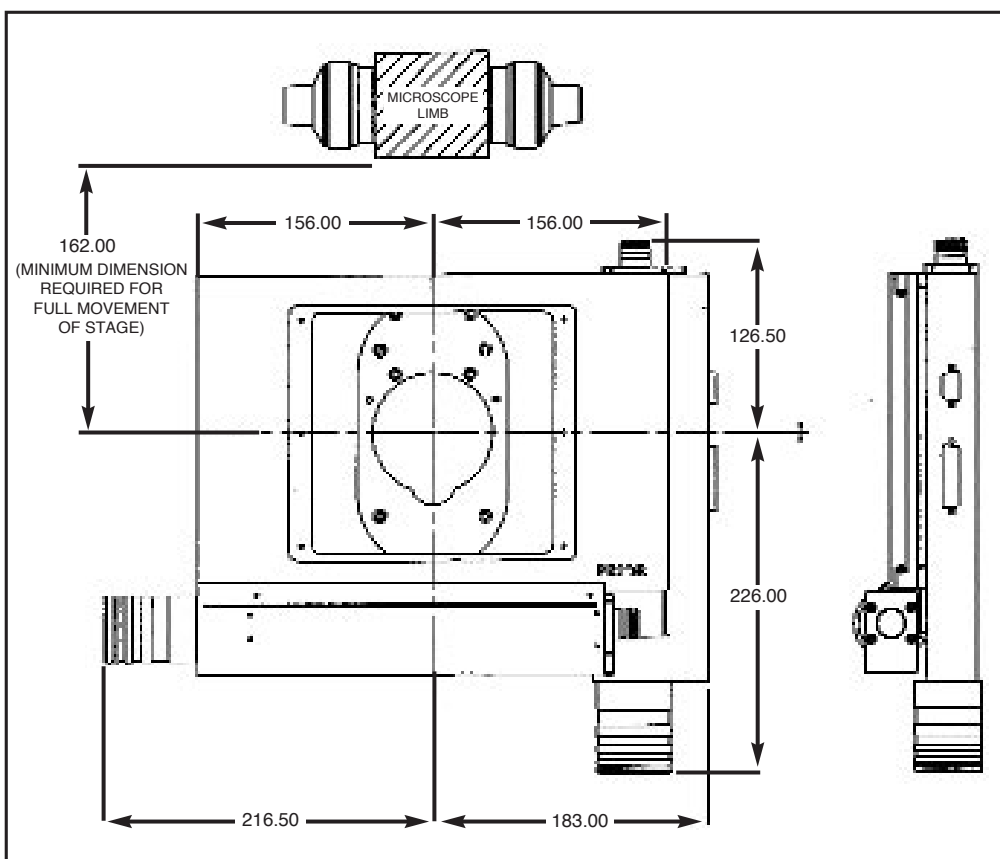
**6"x6" Travel, Programmable,
Motorized Stepper Stage for
Upright Microscopes**

Standard Sample Holders

| | |
|-------------------|--|
| 500-H226 | Slide Holder, Holds One 1" x 3" Slide |
| 500-H227 | Glass Plate |
| 500-H231 | Solid Aluminum Plate |
| 500-H143 | Chuck, Wafer, Spring Loaded for 75 mm Wafers |
| 500-H146 | Chuck, Wafer, Spring Loaded for 150 mm Wafers |
| 500-HWC155 | Chuck, Wafer, Rotatable with Steps for 100 and 150 mm Wafers |
| 500-HWC15V | Chuck, Wafer, Rotatable, with Vacuum for 150 mm Wafers |
| 500-HWC105 | Chuck, Wafer Pod, Vacuum |
| 500-H246 | Motorized Rotating Holder, 71 mm Diameter Table |

Ordering Information

| | |
|---------------------|------------------------------|
| 500-H105/2 | Stage with 2 mm pitch screws |
| 500-H105/5 | Stage with 5 mm pitch screws |
| 500-H105JENK | Add linear encoders |
| 500-H105/S | Add rotary encoders |
| 500-HK05 | Add manual override knobs |



Dimensions in millimeters.

General Specifications

Travel Range

154 mm x 154 mm (6" x 6")

Repeatability*

±2 µm (micrometer), open loop
±0.3 µm with linear scales

Minimum Step Size (Resolution)

0.04 µm

Load Capacity

20 kg (44 lbs)

Stepper Motor

4 phase, 1 amp per phase,
micro stepping

Linear Slides

Crossed 3 mm roller bearings

Drive Screws

Zero backlash, recirculating ball screws;
2 mm pitch or 5 mm pitch

Limit Switches

X and Y standard

Stage Profile

Approximately 30 mm (1.2") with
glass plate installed

Weight

5.0 kg (11 lbs)

Finish

Electro-phoretic black plate

* Specifications valid only if used with Prior controller.

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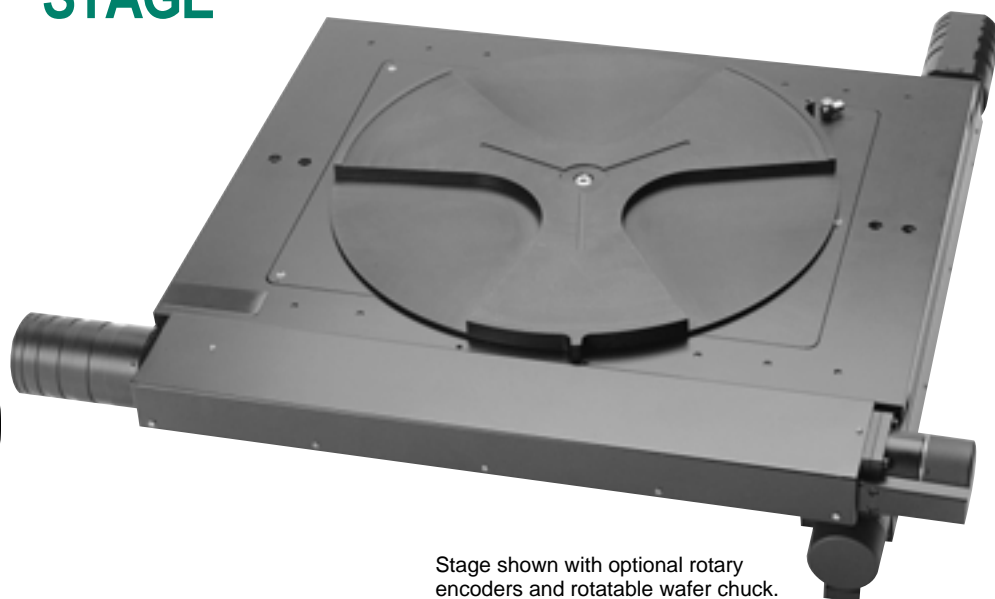
PRIOR SCIENTIFIC INC.,
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VISIT PRIOR ON THE WEB AT www.prior.com

Specifications subject to change without notice.

March 1, 2006

PRIOR H112 12" x 12" TRAVEL, PROGRAMMABLE, MOTORIZED STAGE



Stage shown with optional rotary encoders and rotatable wafer chuck.

Precision Programmable Stages For Semiconductor Wafers

Now add the highest quality, precision motorized stage to your semiconductor inspection microscopes: the Prior H112. The H112 is perfect for scanning a wide range of semiconductor wafers, photo masks, flat panel displays, and printed circuit boards. The H112 can easily accommodate 12" (300 mm) wafers, and works with many robot arm wafer loaders. The H112 can also be used for transmitted light applications with a 250 x 250mm transmitted light travel area. A variety of sample holders are available and stage inserts can be customized for many applications.

The H112 features:

- Travel 302 mm x 302 mm (12" x 12")
- The H112 is available with stepper motors or D.C. servo motors for high speed applications
- Optional linear scales or rotary encoders provide precise and exact positioning, with repeatabilities to 0.1 μm and accuracies to 1 μm
- The step size (resolution) of the H112 stage can be as small as 0.1 μm , depending on stage and controller configuration
- The H112 is available with a 2 mm or 5 mm pitch ball screw
- Stages customized to fit virtually any 300 mm upright microscope or optical system

Prior Stages have a well-deserved reputation for quality and repeatability. They are manufactured using the highest-quality components: crossed roller ways, zero backlash recirculating ball screws, X and Y limit switches, two high-precision stepper or servo motors even – a tough, scratch-resistant coating. Stages can be driven by the Prior ProScan series of motor controllers or compatible systems in existing OEM configurations. For the H112 and all its products, Prior provides full support and service – both direct and indirect – through a professional, knowledgeable and extensive dealer network.

H112

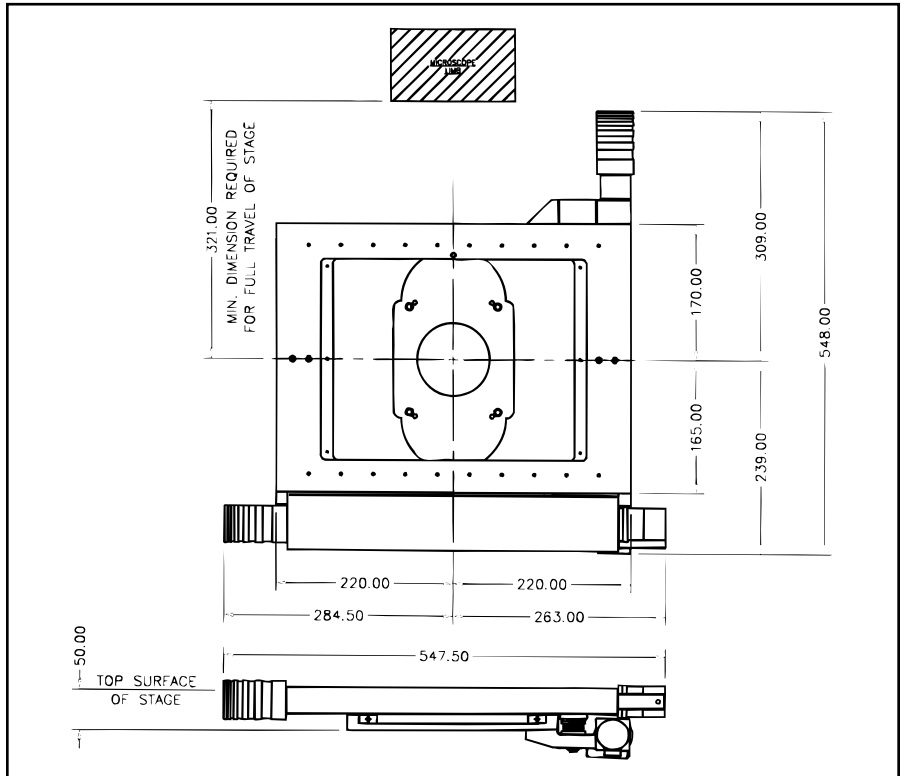
12" x 12" PROGRAMMABLE, MOTORIZED STAGE FOR UPRIGHT MICROSCOPES

Standard Sample Holders

| | |
|-------------|---|
| 500-H221 | Glass Plate |
| 500-H233 | Solid Aluminum Plate |
| 500-H149 | Chuck, Wafer, Spring Loaded for 300 mm Wafers |
| 500-HHWC30S | Chuck, Wafer, Rotatable with steps for 200 and 300mm Wafers |
| 500-HWC30V | Chuck, Wafer, Rotatable, with Vacuum for 300 mm Wafers |
| 500-HWC112 | Chuck, Wafer Pod, Vacuum |

Ordering Information

| | |
|--------------|--|
| 500-H112/2ST | Stage with 2 mm pitch screws and step motors |
| 500-H112/5ST | Stage with 5 mm pitch screws and step motors |
| 500-H112/2DC | Stage with 2 mm pitch screws and DC servo motors |
| 500-H112/5DC | Stage with 5 mm pitch screws and DC servo motors |
| /S | Add linear scales |
| /E | Add rotary encoders |



Dimensions in millimeters. Drawings shown with optional rotary encoders.

General Specifications

Travel Range

302 mm x 302 mm (12" x 12")

Repeatability*

± 4 µm
± 0.3 µm with linear scales

Step Size (Resolution)

0.04 through 10µm

Load Capacity

25 kg (55 lbs)

Motors

High precision stepper or D.C. servo

Linear Slides

Crossed 4mm roller bearings

Drive Screws

Zero backlash, recirculating ball screws; 2mm or 5mm pitch

Limit Switches

X and Y standard

Stage Profile

Approximately 50 mm (2.0") with solid plate installed

Weight

14.5 kg (32 lbs)

Finish

Electrophoretic black plate

Accuracy

± 20 µm to ± 1 µm with linear scales

Speed*

Up to 400mm/sec.

Flatness

5µm

Angular Accuracy

±3 arc seconds

**Specifications valid only if used with Prior motor controller.
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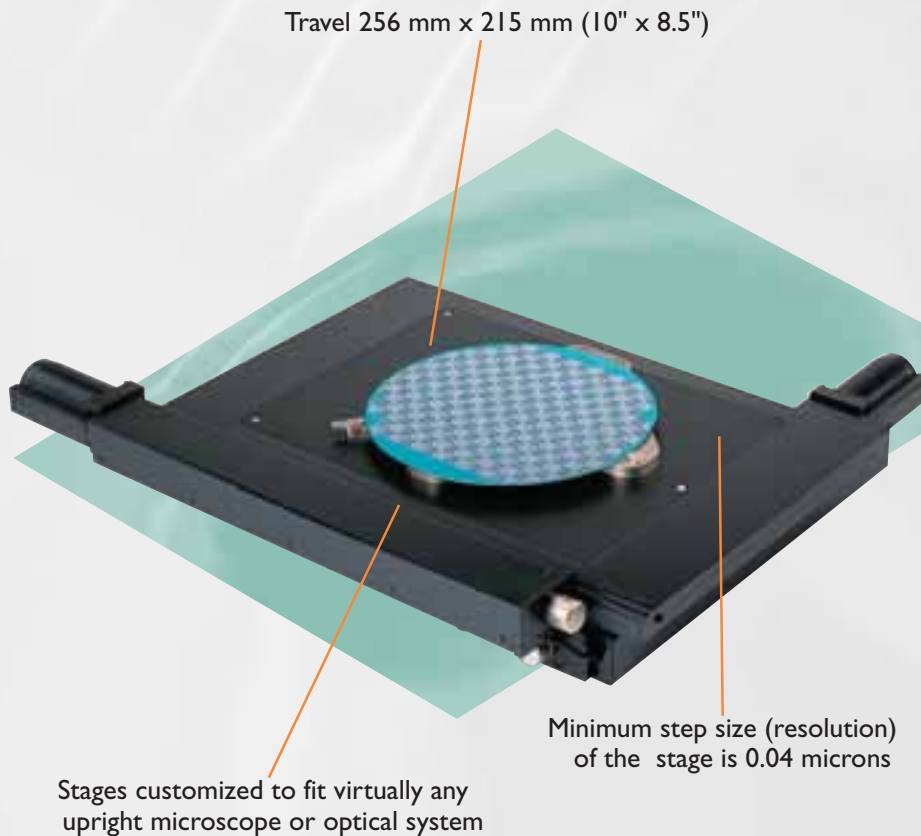
Prior Scientific Instruments, Ltd.
Unit 4, Wilbraham Road, Fulbourn
Cambridge CB1 5ET, UK
Tel. (0 1223) 881711
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PRIOR
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H116 Stage

10"x8.5" Travel, Programmable, Motorized Stepper Stage for Semiconductor Microscopes

Features



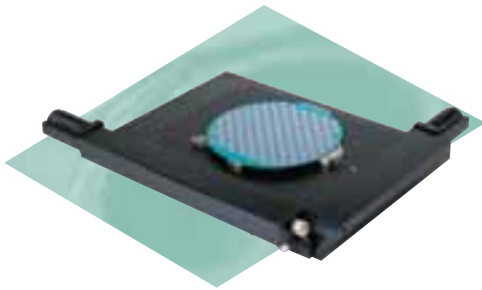
Now add the highest quality, precision motorized stepper stage to your semiconductor inspection microscope: the Prior H116. The H116 is one of a full range of motorized stepper stages from Prior Scientific, adaptable to virtually any microscope or optical system. The H116 is especially well-suited for applications that typically involve large specimens. For example, the H116 is perfect for performing scanning of a wide range of semiconductor wafers, photo masks, flat panel displays, and printed circuit boards. The H116 can easily accommodate 8" (200mm) wafers. A variety of sample holders are available and stage inserts can be customized for any application.

The H116 features:

- Travel 256 mm x 215 mm (10" x 8.5")
- Optional linear scales provide precise and exact positioning, with repeatabilities to 0.3 microns and accuracies to 1 micron.
- Minimum step size (resolution) of the stage is 0.04 microns
- H116 is available with a 2 mm or 5 mm pitch ball screw
- Stages customized to fit virtually any upright microscope or optical system

Prior stages have a well-deserved reputation for quality and repeatability. They are manufactured using the highest quality components: crossed roller ways, zero backlash recirculating ball screws, X and Y limit switches, two high precision stepper motors even a tough scratch resistant coating. They are available with standard and custom sample holders to suit the user's application and requirements. Stages can be driven by the Prior series of motor controllers or compatible systems in existing OEM configurations. The controller can be accessed via RS-232 serial port or with an optional joystick or keyboard. For the H116 and all its products, Prior provides full support and service both direct and indirect – through a professional, knowledgeable and extensive dealer network.

H116 Stage



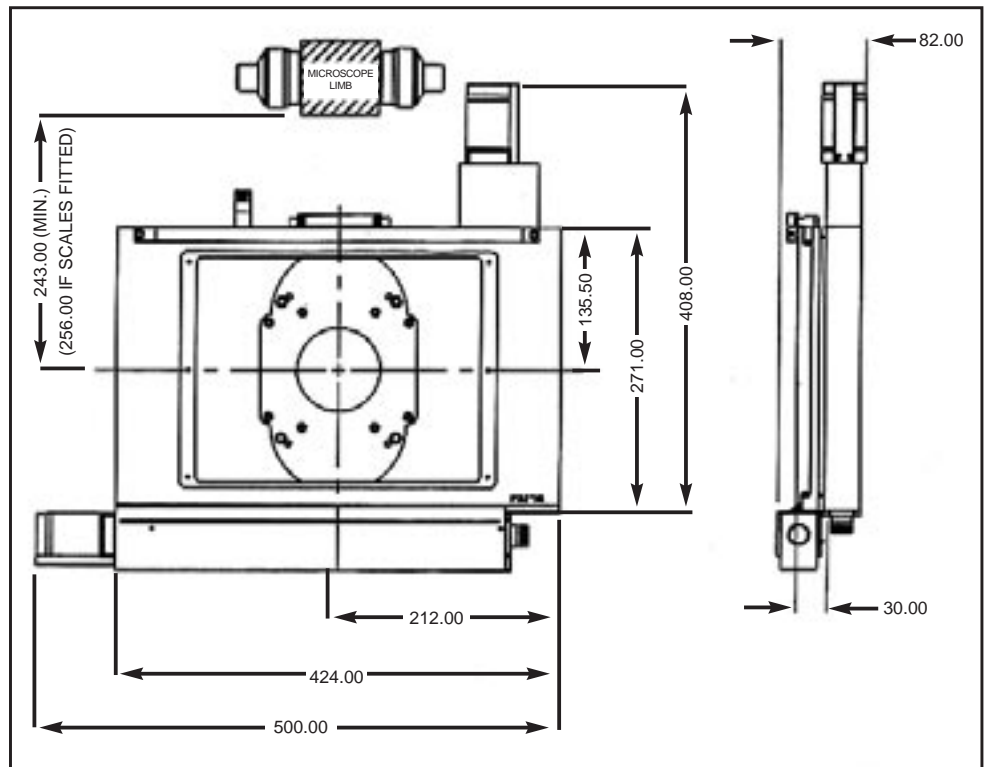
**10"x8.5" Travel,
Programmable,
Motorized Stepper Stage
for Semiconductor
Microscopes**

Standard Sample Holders

| | |
|-------------------|--|
| 500-H225 | Glass Plate |
| 500-H232 | Solid Aluminum Plate |
| 500-H148 | Chuck, Wafer, Spring Loaded for 150 mm Wafers |
| 500-H149N | Chuck, Wafer, Spring Loaded for 200 mm Notched Wafers |
| 500-HWC20S | Chuck, Wafer, Rotatable with Steps for 150 and 200 mm Wafers |
| 500-HWC20V | Chuck, Wafer, Rotatable, with Vacuum for 200 mm Wafers |
| 500-HWC116 | Chuck, Wafer Pod, Vacuum |

Ordering Information

| | |
|---------------------|------------------------------|
| 500-H116/2 | Stage with 2 mm pitch screws |
| 500-H116/5 | Stage with 5 mm pitch screws |
| 500-H116JENK | Add linear encoders |
| 500-H116/S | Add rotary encoders |
| 500-HK16 | Add manual override knobs |



Dimensions in millimeters. Drawings shown with optional linear scale.

General Specifications

Travel Range

256 mm x 215 mm (10" x 8.5")

Repeatability*

± 4 µm (micrometer), open loop
± .3 µm with linear scales

Minimum Step Size (Resolution)

0.1 µm

Load Capacity

25 kg (55 lbs)

Stepper Motor

4 phase, 1 amp per phase,
micro stepping

Linear Slides

Crossed 3 mm roller bearings

Drive Screws

Zero backlash, recirculating ball screws;
2 mm or 5 mm pitch

Limit Switches

X and Y standard

Stage Profile

Approximately 30 mm (1.2")
with solid glass plate installed

Weight

7.7 kg (17 lbs)

Finish

Electrophoretic black plate

Accuracy

± 8 µm open loop to ± 1 µm
with linear scales

Flatness

5 µm

Angular Accuracy

±2 arc seconds

*Specifications valid only if used with Prior Controller.

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ProScan Hardness Testing Stages

Solid Stages With a Selection of Travel Ranges to Suit Hardness Testing or Micro-positioning of Heavy Loads.



The HT family of Solid Top Stages for Hardness Testing microscopes set new standards for convenience and performance. Designed to operate with point load forces of up to 100Kg these stages are ideal for hardness testing or applications that require micro-positioning of heavy loads.

The ProScan HT stages are available with the following movement ranges;

50 x 50mm (HT5050)

100 x 100mm (HT1010)

110 x 110mm (HT1111)

150 x 150mm (HT1515)

150 x 66mm (HT1566)

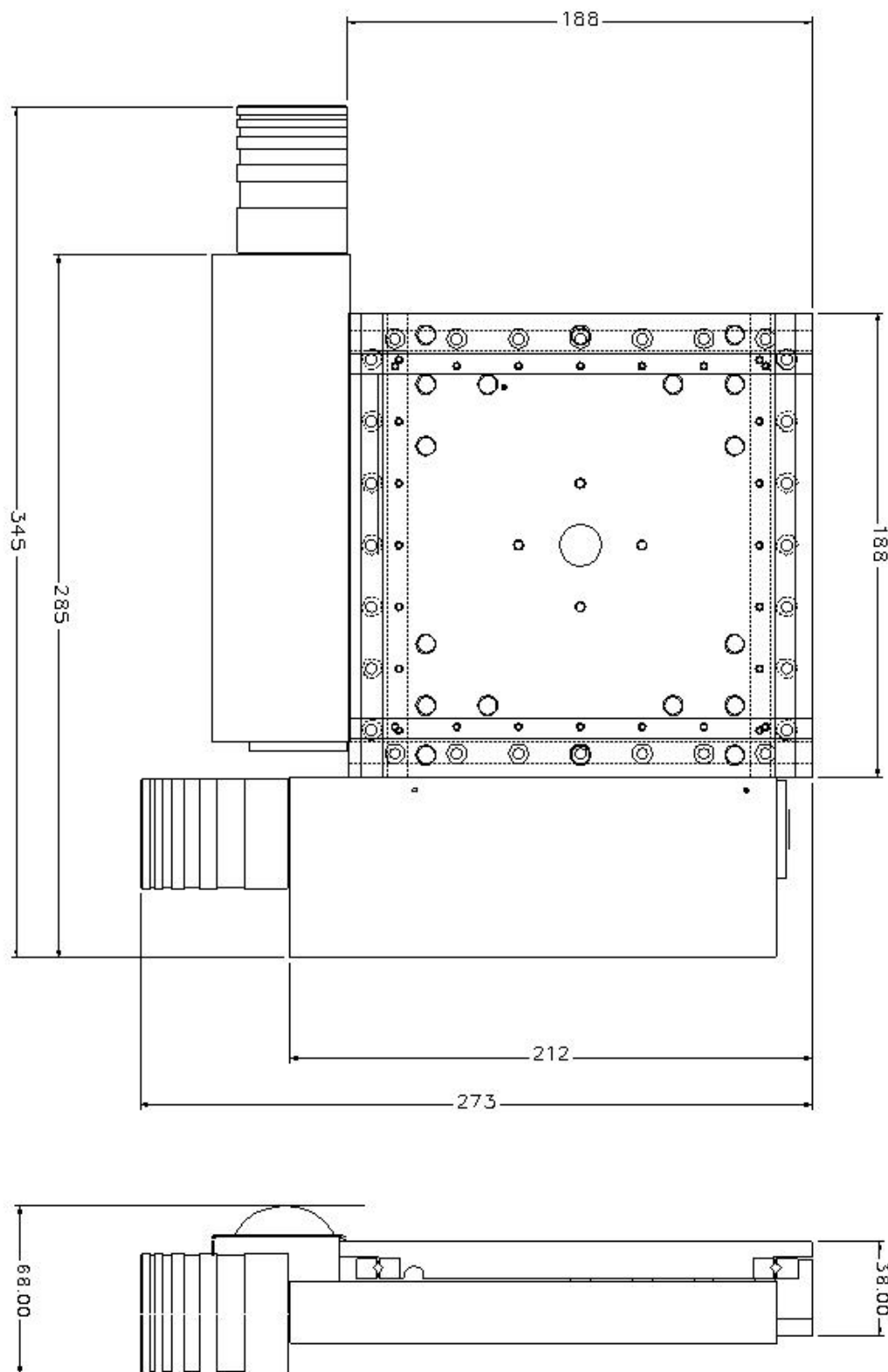
250 x 150mm (HT2515)

HT Stage Features:

- Selection of Travel Ranges
- Solid design
- <1um Resolution
- +/-1um Repeatability
- Designed for 100Kg Point Loads
- High Precision Ball Screw
- Anti-Backlash Mechanism
- Adjustable Limit Switches

Prior motorised stages have a reputation for quality and performance. As an ISO 9001:2000 accredited company Prior equipment is designed and manufactured to the highest quality standards. Prior provides full support and service both direct and indirect — through a professional, knowledgeable and extensive global dealer network.

HT Stage Dimensions (HT1010)



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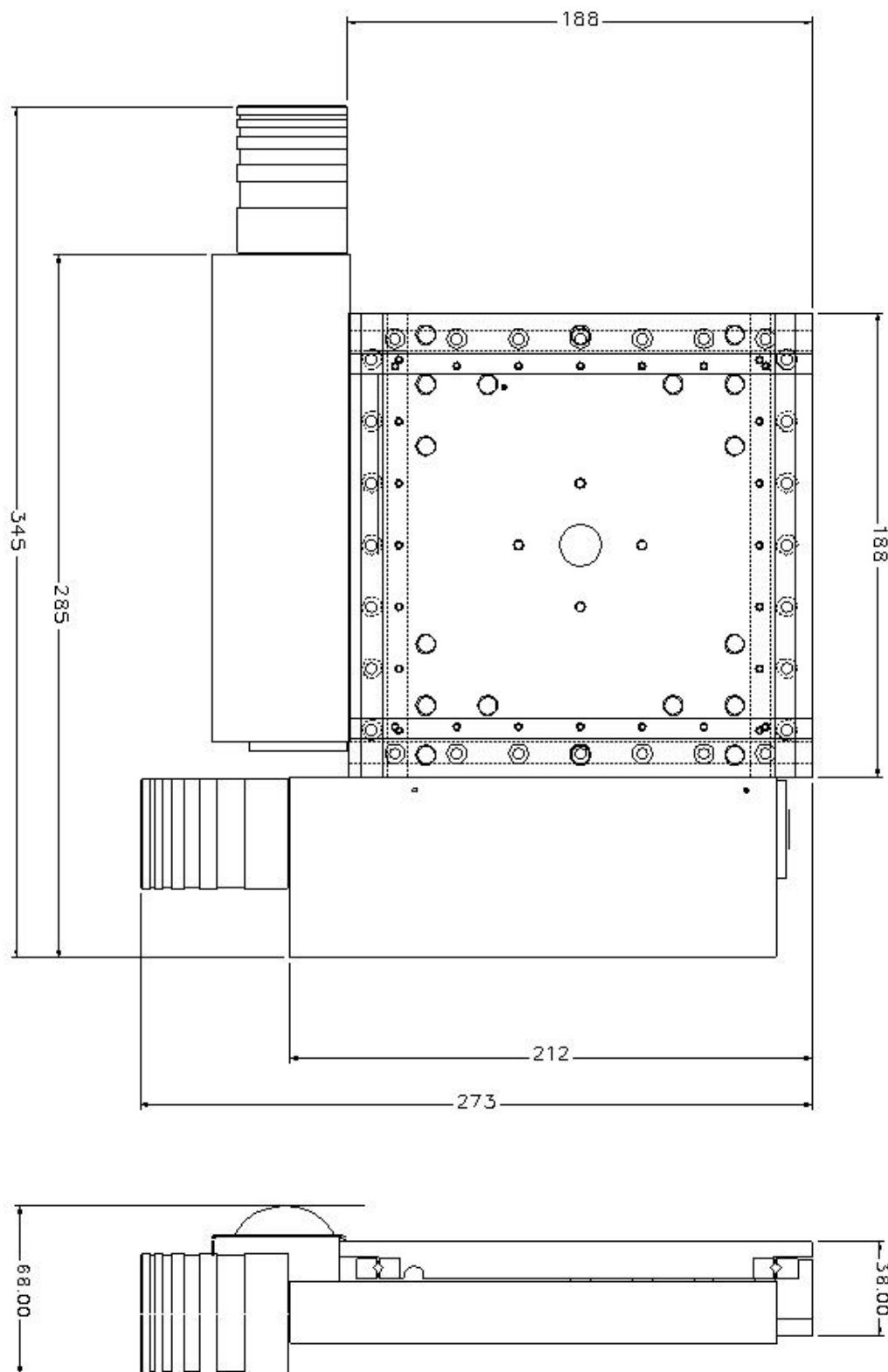
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HT Stage Dimensions (HT1010)



CERTIFICATE NO: FM 61600
STANDARD: BS EN ISO 9001:2000

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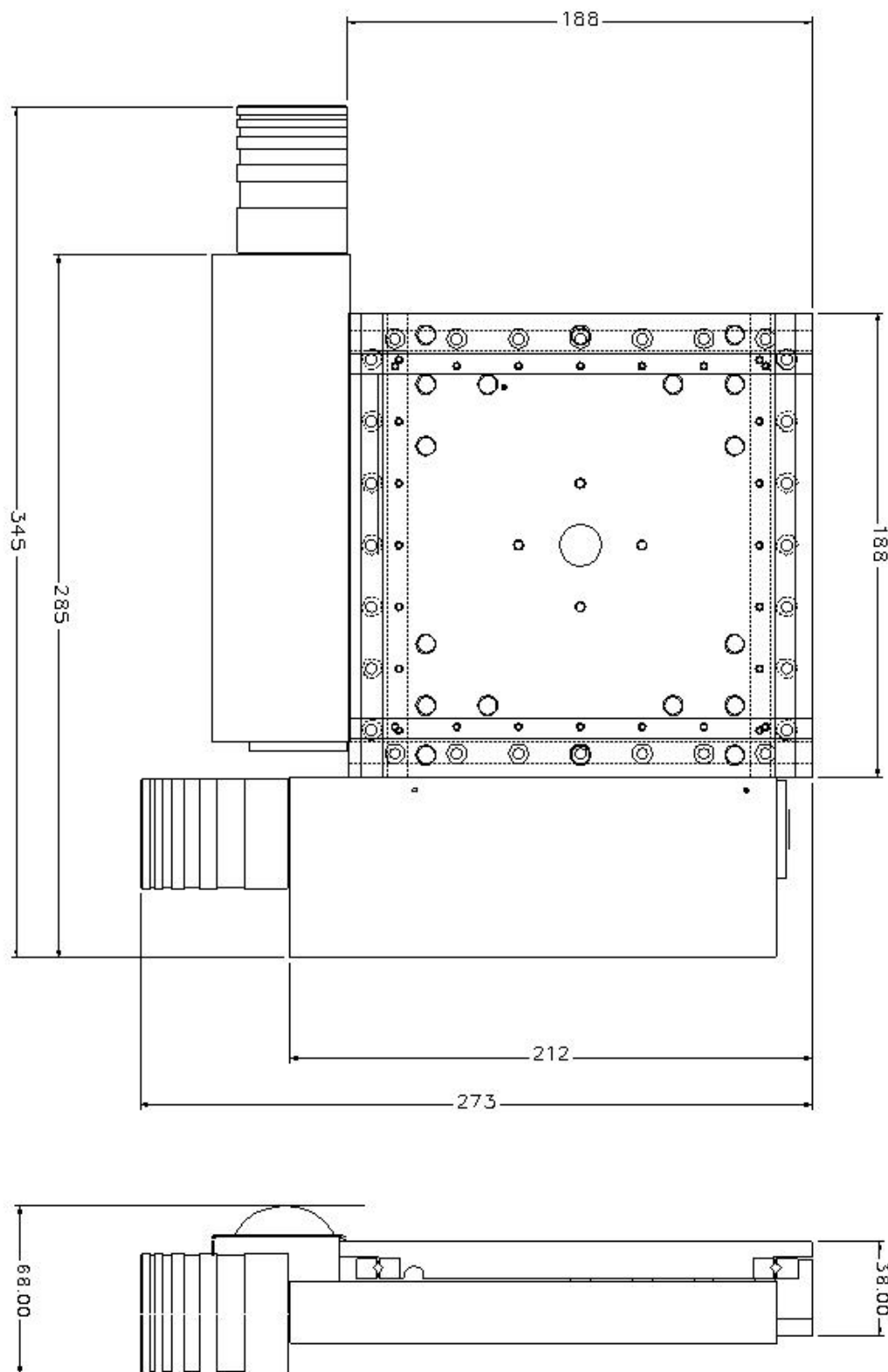
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