

Accessories

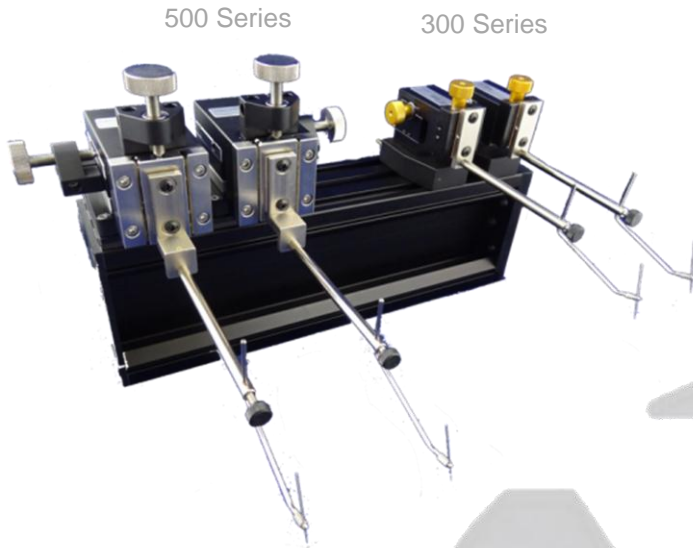
Data Sheet

microXact, inc.

In addition to our SPS and MPS lines of probe systems, MicroXact Inc. offers several accessories to customize any application-specific station that will meet your needs.



Micropositioners



Available with any of MicroXact's probe stations are a wide range of micropositioners designed to make precision positioning and alignment of probe tips easy and reliable.

For features 5 microns or larger we offer very affordable 3-axis positioners with 0.025" resolution per turn. These positioners have 0.300" of available travel in X, Y, & Z. These positioners can be configured with magnetic or vacuum-lock bases.

For features smaller than 5 microns we offer a premium positioner with 0.500" of available travel in X, Y, & Z. These positioners are available in three resolutions ranging from 0.025" per turn to 0.010" per turn. They also have the option of being configured with either magnetic (left) or vacuum-lock bases (right).

Specifications:

Model	300 Series	500 Series
Height	1.750"	4.00"
Shipping Weight	<1 lb.	<2 lb.
Base	Vacuum	Magnetic
Base Footprint	2.50" x 1.00"	1.5" x 1.00"
Travel	X, Y, Z axis = .300"	X, Y, Z axis = .500"
Resolution	0.025" per turn	0.0125" or 0.010" per turn

DC Probes, Probe Arms & Probe Tips



To go along with our line of micropositioners, we also offer DC probe arms, and probe tips that will meet any required specification. Along with custom length probe arms, we offer a variety of probe tips including, but not limited to:

- Tungsten probes ranging from 0.1µm to 5µm radius tips
- BeCu probes ranging from 2.5µm to 50µm radius tips
- Gold plated probes ranging from 2.5µm to 50µm radius tips
- Tungsten Carbide probes ranging from 5µm to 25µm radius tips



Thermal Chuck System



The TC-SYS-150 system includes a thermal controller with USB interface and Windows-compatible control software as well as a liquid nitrogen cooling system with 6-stage pump and 10-liter dewar.

Features:

- Precision Temperature Control from -100 °C to 310 °C
- Low surface temperature gradients
- Independent vacuum channels for small or large wafer sizes
- Thin design for easy probe integration
- Lift pin access holes available
- Triaxial option available for very low leakage/ noise measurements
- Electrically floating chuck surface with ground points
- Controlled fast heating and cooling rate
- Options for on chuck and off chuck independent vacuum channel control available
- Wafer size from 12 mm to 304 mm



Specifications:

Temperature

Resolution	0.1°C with STC200 0.01°C with mK1000
Stability	±0.1°C at 100°C with STC200 ±0.01°C at 100°C with mK1000
Uniformity	±0.1°C per cm (better temperature uniformity available)

Minimum Heating and Cooling Rate

±0.1°C per hour

Temperature Control

Method	Switching PID (PID with Linear Variable DC optional)
Sensor	100 Ω Platinum RTD

Surface Flatness

10 μm at ambient temperature

The new mK1000 High Precision Temperature Controller from Instec represents a leap in performance and ease of use to meet our customers' requirements. It provides temperature control resolution and precision to 0.001°C, accommodates both Platinum RTDs and individually calibrated thermistors as temperature sensors, and can optionally control up to four (4) Instec hot and cold stages, plates, or chucks. The mK1000 features dual PID control loops for heating and cooling, built-in temperature protection, and inputs for sample temperature monitoring. The front panel interface with 192 x 128 pixel graphic display allows easy standalone programming and control, while the standard USB2.0 communication port and included software provides for simple computer control. Optional RS232 and IEEE488 communication ports are also available. The mK1000 is the choice for truly demanding thermal control applications



mK1000 Series High Precision Temperature Controller

mK1000 Features:

- Milli-Kelvin (0.001°C) Temperature Resolution and Precision
- Dual PID Outputs for Both Heating and Cooling
- Fully Programmable without Host Computer
- USB2.0 Communication Port with WinTemp Software
- Optional RS232 or IEEE488 Communication Port
- Compatible with All Instec Hot and Cold Stages, Chucks, and Plates
- Optional Secondary Sensor for Sample Temperature Monitoring
- Options to Independently Control Up To Four (4) Hot and Cold Stages, Chucks, or Plates
- Up to 20 Calibration Points
- Built-in Over Heat Power-off Protection



LN2-P Liquid Nitrogen Cooling System

Instec's LN2-SYS liquid nitrogen cooling systems provide fast and accurate cooling for Instec stage, chuck, or plate. Each system consists of a liquid nitrogen pump, a Dewar, and necessary tubing. The pump is used to generate suction to pull the liquid nitrogen from the Dewar and through the hot and cold stage, chuck, or plate. The pump is PID controlled by an Instec temperature controller with a 0.1% resolution. This means when the stage, chuck, or plate is heating, the pump is off; when the pump is on, heating is off. The liquid nitrogen cooling systems are available with either a 2, 4, 6, or 8-stage pump and either a 2 or 10 liter dewar.

LN2-P Features:

- Capable of Cooling Hot and Cold Stages, Chucks, and Plates Down to -190°C
- System Consists of an LN2-P (Pump), and an LN2-D (dewar)
- 4 Pump Sizes and 2 dewark Sizes Available
- PID Control Provided by Instec Temperature Controller



C300WU Industrial Chiller

The C300WU chiller is used to chill the transition plate under the thermal chuck. This greatly reduces the amount of heat absorbed by the rest of the probe system which increases thermal stability of the chuck and the mechanical stability of the probe system.

C300WU Specifications:

Voltage	AC100-240V
Frequency	50Hz
Current	0.4A
Cooling Capacity	60W/°C
Max. Pump Lift	100M
Net Weight	12kg

Vibration Isolation Table

For high precision testing of the smallest features, vibration isolation is a necessity. We offer a full line of vibration isolation tables which we will customize for each probe station and application.



Features/ Benefits:

Table top options include Granite, Steel, Composite & Honeycomb.

The MinusK vertical isolator uses a stiff spring and negative-stiffness mechanism to achieve a low net vertical stiffness without affecting the static load supporting capability.

Horizontal vibration isolation is provided by beam columns connected in series with the vertical-motion isolator.

Adjusted to a 1/2 Hz natural frequency, the workstation achieves 93% isolation efficiency at 2 Hz, 99% at 5 Hz and 99.7% at 10 Hz.

Specifications:

Model:	MK26	Model :	2800 Series
Max. Load Capacity:	650 lbs	Max. Load Capacity:	200 lbs
Max. Width of Tabletop:	48"	Max. Width of Tabletop:	30"
Max Depth of Tabletop:	36"	Max Depth of Tabletop:	30"
Vertical Natural Frequency:	0.5 Hz	Vertical Natural Frequency:	1.4 Hz
Horizontal Natural Frequency:	0.5 Hz	Horizontal Natural Frequency:	1.1 Hz
Isolation Efficiency @ 2Hz:	93%	Ver. Isolation Efficiency @ 10 Hz:	96%
Isolation Efficiency @ 5 Hz:	99%	Hor. Isolation Efficiency @ 10 Hz:	97%
Isolation Efficiency @ 10Hz:	99.7%		

Available Accessories:

- Additional Rear Shelf (12" x 36")
- Additional Rear Shelf (12" x 48")
- Additional Side Shelf
- Class 10 Clean Room Finish
- **Enclosure (30" x 36" Plexiglas)
- **Enclosure (36" x 48" Plexiglas)
- Electrical Outlet Strip (US Plugs only)
- **Faraday Cage (30" x 36" Copper)
- **Faraday Cage (36" x 48" Copper)
- Fixed Shelf for 30" Table
- Fixed Shelf for 36" Table
- 36" Guard Rail Pair
- 48" Guard Rail Pair
- Height Extension 5" (integral)
- Height Extension 5" (retrofit)
- *Keyboard Shelf (10" x 24")
- Monitor Support
- Double Monitor Support
- Overhead Rear Equipment Shelf (36" w)
- Overhead Rear Equipment Shelf (48" w)
- Wire Overhead Rear Equipment Shelf (36" w)
- Wire Overhead Rear Equipment Shelf (48" w)
- Overhead Side Equipment Shelf (30" w)
- Overhead Side Equipment Shelf (36" w)
- *Padded Arm Rest Pair
- Retractable Caster Set
- *Sliding Custom Shelf
- *Side Rail Pair
- *Sliding Shelf (10" x 30" white laminate)
- *Sliding Shelf (12" x 30" white laminate)
- *Sliding Shelf (14" x 30" white laminate)

**Requires Guard Rail Pair*

***Requires Guard and Slide Rail Pairs*

Seiwa Precision Microscopes

Seiwa microscopes offer a broad range of capabilities, all of which are the result of Seiwa's unparalleled engineering and craftsmanship. Whether your system requires an application-specific microscope, such as a multi-wavelength laser compatible scope (above), or a standard stereo zoom microscope, we can integrate any of these microscopes with a MicroXact probe station



Model	PS-888	PS-888L
Name	Microscope for Prober M/C	Microscope for Laser Cutter
Optical Tube Type	Visible Light	Infrared Ultraviolet light
Erect Triangle Tube	Sidedentopf Type, Adjustment Distance: 50-75mm	
Interpupillary Distance	23mm	
Field of View	23mm	
Optical Path	T:R=70:30 Simultaneous Observation	0:100/100:0 Switch Path
Main Body		
Tube Lens (Image Formation Lens)	1 x (486nm-656nm) 2 x (visual) (486nm-656nm) Turret Changeover System	1 x (355nm-532nm) 1 x (532nm-1064nm) 2X (486nm-656nm) Use only for visual YAG Laser (basic, Second & Third Height)
Laser	-	
Camera Mount	C-mount	Laser Mount (N/W)
Coaxial Vertical Illumination	Bright Field Koelher Illumination with Field & Aperture Stop	
Revolver	Back tilted 4 noses bright field type (per Center & Par Focal adjustable)	
Eyepiece	10X 2pcs. Set (FWF10X) Standard Accessory	
Available	Objective Lens Infinity Corrected Objective Lens (M.Plan APO Lenses)	
Weight	6.8kg (14.99 lbs.) w/ manual focus block	7.5kg (16.50lbs) w/ manual focus block

Focus Unit

Load Capacity	45kg (99.1lbs)
Operation	Coarse and Fine manual operation (Coarse: 1 round/ 4mm, Fine: 1 round/0.1mm)
Stroke	+/- 25mm

Model	Magnification	Working Distance	Focal Distance(f)	N.A.	Resolution	Focal Depth	Weight
M. Plan APO2.5X	2.5X	32.5mm	80.0mm	0.06	5.6μm	76.4μm	232g
M. Plan APO5XSB	5X	36.1mm	40.0mm	0.16	2.1μm	10.7μm	238g
M. Plan APO10XSB	10X	38.9mm	20.0mm	0.23	1.5μm	5.2μm	215g
M. Plan APO20XSB	20X	22.22mm	10.0mm	0.35	1.0μm	2.2μm	289g
M. Plan APO50XSB	50X	18.3mm	4.0mm	0.40	0.8μm	1.7μm	321g
M. Plan APO100XSB	100X	14.1mm	2.0mm	0.52	0.6μm	1.0μm	340g
M. Plan APO50XLCD	50X	17.2mm	4.0mm	0.40	0.8μm	1.7μm	321g
M. Plan APO50XSBN	50X	20.5mm	4.0mm	0.42	0.8μm	1.6μm	300g

Ultra Violet Objective Lens

Model	UV PlanAPO 20X		UV PlanAPO 50X	
Magnification	20X		50X	
Working Distance	12mm		10mm	
Focal Length	10mm		4mm	
N.A.	0.5		0.5	
Resolution	0.6μm		0.6μm	
Depth of Focus	1.1μm		1.1μm	
Wavelength	345-1064nm			
Transmission	55%<(355nm)	60%<(540nm)	50%<(355nm)	70%<(540nm)
Max. Allowable Laser Energy	0.1J/cm2@532nm Pulse width 10nsec 0.047J/cm2@355nm Pulse width 10nsec		0.1J/cm2@532nm Pulse width 10nsec 0.028J/cm2@355nm Pulse width 10nsec	
Glass Correction	-1.0mm (LCD)		-1.0mm (LCD)	
Weight	435g		510g	



Illuminators & Shutters

MicroXact offers a wide variety of microscope illuminators for each probe station. Depending on the microscope selected for each system, there are several LED-based or halogen with light guide illuminators which can be added to the system.



AM Scope's HL-150B Haloid Lamp Cold Light Illuminator

Features:

- 150W halogen variable intensity fiber optic light source
- Great for discriminating lighting
- Perfect for evenly illuminating a specimen without heating
- High intensity 21V/150W quartz halogen bulb
- Forced air cooling system
- 3200 degree kelvin lamp color temperature
- Durable metal construction
- Manufactured under ISO 9001 standards.

Features:

- Premium illuminator to be used with Seiwa optical microscopes.
- 175W halogen fiber optic light source
- Forced cooling fan



Correct's FA-150EN Fiber Illuminator

Features:

- DC regulated 150 watt-halogen light source.
- Electronic current limiting protects the unit from overheating due to defective and aging lamps.
- Indicator on the front panel of the unit alerts the user of impending lamp failure due to an open or partly shorted filament.
- Transient protection allows for remote location of the lamp, which enables the use of the DCR III Remote Light Source Kit.
- The electronically stabilizes internal switching power supply accepts universal input voltage from 90-265 VAC.
- The DCR III Light Source will fully illuminate active bundle diameters up to 16mm (.63")



Schott's DCR III Illuminator

Shutter system designed and built by MicroXact for the fiber optic ring light and halogen light source. System is integrated with the software for fully automated use.

Makes automated testing of photosensitive devices easy while protecting halogen sources from the wear & tear of constant on/off switching.

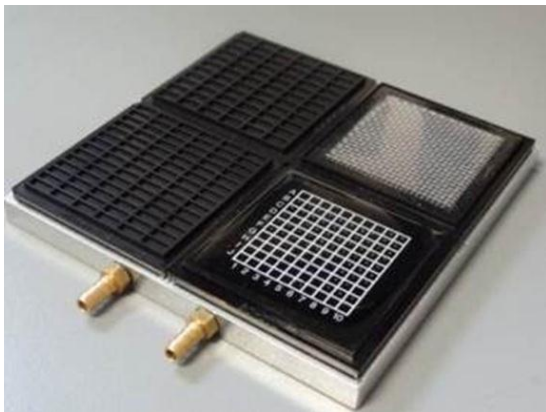
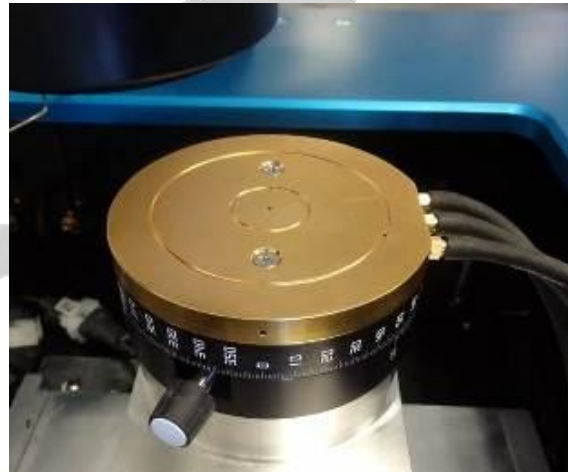


Chucks

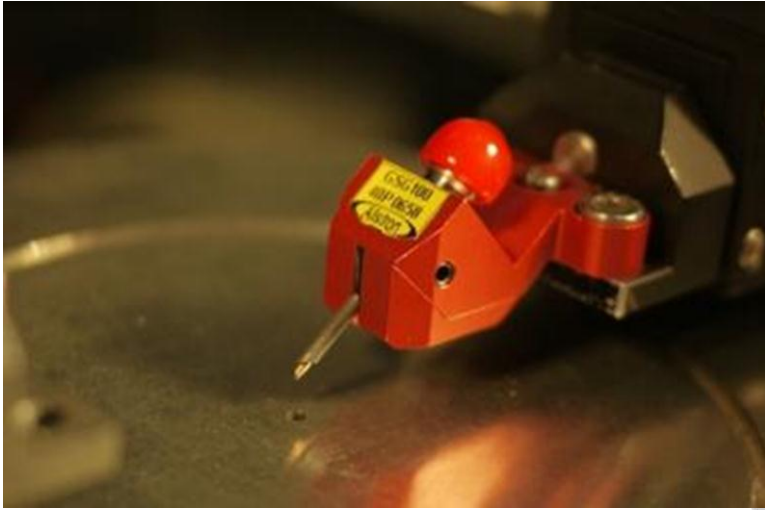
MicroXact offers a wide variety of wafer chucks to handle standard and custom wafers, chips, or devices.

Some of the options we offer are:

- Conductive or insulated chucks
- RF-specific chucks with Triax BNC connections
- Vacuum-hold or clamping chucks
- Conductive glass chucks for downward emitting photonic devices
- Reconfigurable vacuum chuck for holding 1 or more GelPaks or waffle paks.



RF Probes



Specifications:

Electric Performance:

Model:	ASP-GS-150-26-C
Characteristic Impedance:	50 Ω
Frequency Range:	DC~26GHz
DC Voltage:	max. 100V
DC Current:	max. 1A
RF Power @ 10GHz max:	5W
Contact Resistance On Au:	0.05 Ω
Return Loss to 20GHz:	max -18dB
Insertion Loss to 20 GHz:	-0.6dB

Model:	ASP-GSG-150-40-P
Characteristic Impedance:	50 Ω
Frequency Range:	DC ~ 40GHz
DC Voltage:	max 1A
RF Power at 10 GHz max:	5W
Contact Resistance on Au:	0.05 Ω
Return Loss to 40 GHz:	max. -18dB
Insertion Loss to 40 GHz:	-0.6 dB

Model:	ASP-GSGSG-100-67-P
Characteristic Impedance:	50 Ω
Frequency Range:	DC ~ 67GHz
DC Voltage:	max. 100V
RF Power at 10 GHz max:	max. 1A
Contact Resistance on Au:	0.05 Ω
Return Loss to 67 GHz:	max. -14dB
Insertion Loss to 67 GHz:	-0.7dB
Cross Talk:	-28dB

Mechanical Performance:

Model:	ASP-GS-150-26-C
Cantilever Needle Material	Nickel Alloy
Body	Aluminum Alloy
Contact Pressure at 2 mils over travel	~20g
Contact Cycles	Min. 1 million touch downs in auto probing mode
Ground and Signal Alignment Error	Max. 15um
Planarity	Max. 15um
Scribing Mark Width	30 um
Connector	SMA connector
Available Pitch	50 um to 1250 um in 50 um steps
Available Configuration	SG, and GS
Available Connector Angle	C series is for 90 degree connector angle

Model:	ASP-GSG-150-40-P
Cantilever Needle Material	Nickel Alloy
Body	Aluminum Alloy
Contact Pressure at 2 mils over travel	~20g
Contact Cycles	Min. 1 million touch downs in auto probing mode
Ground and Signal Alignment Error	Max. 15um
Planarity	Max. 15um
Scribing Mark Width	30 um
Connector	2.92 mm connector
Available Pitch	50 um to 1250 um in 50 um steps
Available Configuration	GSG, SG, and GS
Available Connector Angle	45° (P series) or 90° (C series)

Model:	ASP-GSGSG-100-67-P
Cantilever Needle Material	Nickel Alloy
Body	Aluminum Alloy
Contact Pressure at 2 mils over travel	~20g
Contact Cycles	Min. 1 million touch downs in auto probing mode
Ground and Signal Alignment Error	Max. 15um
Planarity	Max. 15um
Scribing Mark Width	30 um
Connector	1.85 mm connector
Available Pitch	100 to 500 um
Available Connector Angle	45° (P series)

Sales

U.S. Sales

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