

EPS-4 | 100 mm Manual Probe Station System for Characterization and testing of Semiconductor Material/Wafers

✦ FEATURES / BENEFITS

- ✦ *Manual stage assembly with 100mm x 100mm range of motion*
- ✦ *Powder-coated steel platen holds up to 10 magnetic or vacuum-based positioners.*
- ✦ *High quality stereo zoom/compound microscopes with high-intensity LED lighting provide outstanding vision at magnifications. Includes camera port*
- ✦ *Standard boom mount assembly for full-range XYZ positioning of microscope. XY range of 15mm x15mm (higher range available). Bridge mounted scopes are also available on customers request.*
- ✦ *Available high resolution micropositioners*
- ✦ *RF options available (Up to 67 GHz) include customizable RF probes, RF bias-able chuck, and shielding enclosures*



✦ SPECIFICATIONS

Chuck XYZ Stage Travel:

Total travel range	: 100 mm x 100 mm
Travel resolution	: < 1.0 μm
Planarity	: ≤ 10 μm, Optional available on request
Chuck Z axis adjustment	: 10 mm
Chuck Theta travel	: ±30°

PLATEN:**Specifications:**

Material	: Stainless Steel
Chuck to platen height	: Min. 10 mm
Platen lift control	: Fixed, Platen lift of up 40 mm available on request(Optional)
Max. No of Micro-Positioners	: Up to Ten DC and 4 RF Positioners
Micropositioners Mounting	: Compatible for both Magnetic as well as Vacuum base micropositioners
RF Micro-Positioner mounting	: Magnetic/Vacuum base with guided rail
DC Micro-Positioner mounting	: Magnetic/Vacuum base

NON-THERMAL CHUCKS**Standard Wafer Chuck:**

Chuck Connections	: Coaxial(BNC)/ Triaxial
Chuck Diameter	: Up to 100 mm
Chuck Material	: Stainless Steel. Chuck made of other material is available as optional
Chuck surface	: Planar with centric engraved vacuum grooves
Chuck Sample actuation	: Vacuum actuation with three zone vacuum holes
Sample Size	: Min 5mm x 5mm up to 100 mm wafer
Chuck Surface Planarity	: 10 μ m, Optional down to \pm 3 μ m

RF Wafer Chuck:

Chuck Connections	: Coaxial(BNC)
Chuck Diameter	: Up to 100 mm 2 AUX chuck as optional
Chuck Material	: Nickel Plated aluminum, Ceramic etc
Chuck surface	: Planar with centric engraved vacuum grooves
Chuck Sample actuation	: Vacuum actuation with three zone vacuum holes
Sample Size	: Min 5mm x 5mm up to 100 mm wafer
Chuck Surface Planarity	: 10 μ m, Optional down to \pm 3 μ m

Auxiliary Chuck:

Quantity	: 2 Nos of AUX Chuck
Chuck Diameter	: Up to 100 mm
Chuck Material	: Derlin, Ceramic, RF absorbing material
Chuck Sample actuation	: Separate vacuum control switches for auxiliary chucks
Sample Size	: Min 5mm x 5mm up to 100 mm wafer
Chuck Surface Planarity	: 10 μ m, Optional down to \pm 3 μ m

ELECTRICAL SPECIFICATIONS:

Standard Chuck @10 V:

Parameter	Coaxial Chuck	Triaxial Chuck
Maximum voltage between chuck and GND	500 V DC	500 V DC
Isolation	> 2 G Ω	Chuck isolation > 100G Ω Force to guard > 100G Ω Guard to shield > 10 G Ω Force to shield > 50 G Ω
Leakage current	< 50pA	\leq 50fA
Capacitance	< 800pF	< 100fF
Chuck Flatness	\leq 10 μ m	\leq 10 μ m

THERMAL CHUCK:

Parameter	Coaxial Chuck	Triaxial Chuck
Temperature Control Method	Resistive type heating	Resistive type heating
Cooling	Air cooling/Water cooling	Air cooling/Water cooling
Temperature Range	RT - 200 $^{\circ}$ C, Optional up to 600 $^{\circ}$ C	RT - 200 $^{\circ}$ C, Optional up to 600 $^{\circ}$ C
Temperature Control	Linear DC/PID	Linear DC/PID
Temperature Sensor	(RTD) Pt100/ /3DIN, 4-line wired	(RTD) Pt100/ /3DIN, 4-line wired
Temperature Stability	\pm 0.5 $^{\circ}$ C	\pm 0.5 $^{\circ}$ C
Temperature Accuracy	\pm 1 $^{\circ}$ C	\pm 1 $^{\circ}$ C
Connection Interface	RS232	RS232
Chuck Surface Plating	Nickel/Gold	Nickel/Gold
Surface Flatness	\pm 10 μ m@RT & \leq 30 μ m@ \geq 300 $^{\circ}$	\pm 10 μ m@RT & \leq 30 μ m@ \geq 300 $^{\circ}$ C

Leakage Current	< 100pA	<100fA
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✚ Micropositioners:

Model	Description
MH100	Fixed Magnet Base Switchable Magnet Base Vacuum Base
MH100	Foot dimension 70 x 50mm Travel range X,Y 12mm Travel range Z 8mm Feature Resolution 1µm
MH300	Fixed Magnet Base Switchable Magnet Base
MH300	Foot dimension 70 x 35mm Travel range X,Y 12mm Travel range Z 12mm Feature Resolution 3µm
MH500	Switchable magnet base Vacuum Base
MH500	Foot dimension 80 x 90mm Travel range X , Y ±15 mm Travel range Z ±15 mm Feature Resolution 3µm

✚ Probe Tip Holders with Connecting Cable:

Model	Description
Coaxial Tip Holder with Coaxial Cable	
SHC15	Spring Holder/1.5m coax cable/BNC male
THC15	Tube Holder/1.5m coax cable/BNC male
NHC15	Nut Holder/1.5m coax cable/BNC male
Triaxial Tip Holder with Triaxial Cable	
THT15	Tube Holder/1.5m Triax cable/Triax male
NHT15	Nut Holder/1.5m Triax cable/Triax male
High Frequency Probe Arms	
MWA-EW	HF probe arm (east-west)
MWA-NS	HF probe arm(north - south)

System Dimensions: 580mm wide x460mm deep x 245mm high

Weight: 42kg to 50kg depending on options selected