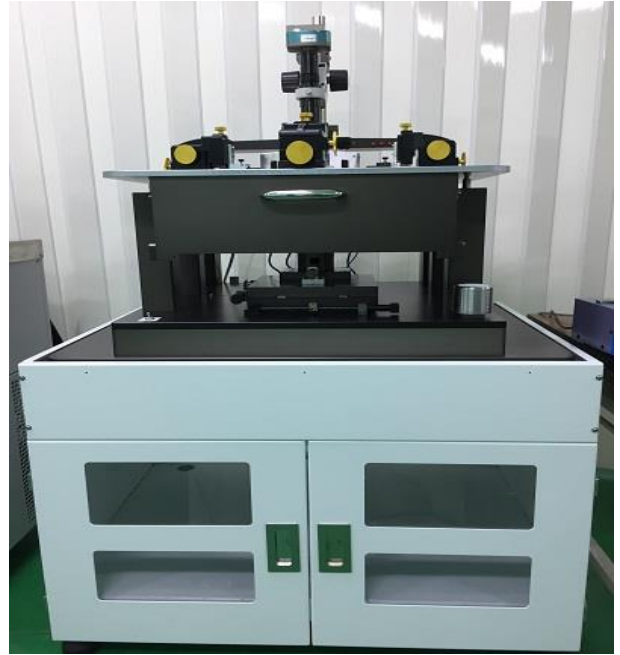


SEMI-200MC | 200 mm Semi-Automatic Probe Station **For True DC/CV and RF Characterization & Testing of Semiconductor Wafers Devices**

✚ FEATURES / BENEFITS

- ✚ *Motorized X-Y stage assembly with up to 200mm x 200mm range of motion*
- ✚ *Motorized Z stage assembly with up to 10mm range of motion.*
- ✚ *Software Capabilities:*
 - *Screen navigation, wafer mapping, vacuum actuation,*
 - *Wafer map synchronization,*
 - *Image capturing through microscope in JPEG format,*
 - *Feature for setting the separation, contact and over travel for safe probing distance, Automated wafer level measurement of semiconductor devices,*
 - *Integrable with semiconductor device analyzer*
- ✚ *Ready for temperature range -70 °C to 300 °C*
- ✚ *High quality stereo zoom/compound microscopes with high-intensity LED lighting provide outstanding vision at magnifications. Includes camera port*
- ✚ *Manual/Motorized Microscope Stage with up to X-Y-Y- 50mm/50mm/50mm travel.*
- ✚ *Automatic prevention of mechanical contact between lens and probes*
- ✚ *High resolution Micropositioners*
- ✚ *Vibration Isolation Table and EMI Shield*
- ✚ *RF options available (Up to 67 GHz) include customizable RF probes, RF biasable chuck, and shielding enclosures*



✚ SPECIFICATIONS

Chuck XYZ Stage Travel: Motorized

| | |
|-------------------------------------|-------------------------|
| X-Y Travel range | : Up to 200 mm x 200 mm |
| X-Y Stage Speed | : 50mm/Sec (Max) |
| X-Y Stage Resolution | : 1.0 μm |
| X-Y Stage Accuracy | : ±2μm |
| X-Y Stage Repeatability | : <3μm |
| Chuck Z axis adjustment | : 10 mm |
| Z Stage Speed | : 20mm/Sec(Max) |
| Z Stage Resolution | : 0.5μm |
| Z Stage Accuracy | : ±2μm |
| Z Stage Repeatability | : <3μm |
| Motorized Chuck Theta travel | : ±18° |
| Theta Resolution | : 0.0018 mm |

✚ MICROSCOPE MOVEMENT

| | XYZ Programmable | XY manual, Z programmable | XYZ manual |
|-----------------------|------------------|------------------------------|------------|
| Travel range | 50 x 50 mm | 50 x 50 mm | 50 x 50 mm |
| Resolution | 1 μm | < 5 μm | < 5 μm |
| Repeatability | < 2 μm | N/A | N/A |
| Accuracy | < 5 μm | N/A | N/A |
| Z Travel range | 50 mm | 50 mm | 50 mm |
| Resolution | 0.05 μm | 0.05 μm | N/A |
| Repeatability | < 2 μm | < 2 μm | < 2 μm |
| Accuracy | < 4 μm | < 4 μm | N/A |

✚ PLATEN:

Specifications:

| | |
|-------------------------------------|--|
| Platen Material | : Stainless Steel |
| Manual Platen Travel | : 10 mm |
| Max. No of Micro-Positioners | : 10, (Up to 6 DC and 4 RF) or 4.5" Probe Card |
| Clearance space | : ≥ 5mm (between probe card holder and platen) |
| 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 200 mm |
| Chuck Material | : Stainless Steel. Chuck made of other material is available as optional |
| Chuck surface | : Planar with centric engraved vacuum grooves |
| Vacuum actuation | : Manual/Software Actuation |
| Sample Size | : Min 5mm x 5mm up to 200 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 200 mm 2 AUX chuck as optional |
| Chuck Material | : Nickel Plated aluminum |
| 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 200 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 20 mm |
| Chuck Material | : Derlin, RF absorbing material |
| Chuck Sample actuation | : Separate vacuum control switches for auxiliary chucks |
| Sample Size | : Min 5mm x 5mm up to 200 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 |
|--------------------------------------|-------------------|---------------------------------|
| Operation Voltage /Breakdown Voltage | Up to 1.5K V DC | Up to 1.5K 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 |
|------------------------|--|----------------------------------|
| Temp. Control Method | Resistive type heating | Resistive type heating |
| Thermal Management | Air cooling/Water cooling | Air cooling/Water cooling |
| Temperature Range | RT - 200°C, Optional up to 600°C | RT - 200°C, Optional up to 600°C |
| Temperature Control | Linear DC/PID | Linear DC/PID |
| Heating & Cooling Time | Heating and cooling from RT to 200 °C and 200 to 20 °C ≤ 50 min Heating and cooling from RT to 300 °C and 300 to 20 °C ≤ 70 min | |
| Temperature Sensor | Thermal couple | Thermal couple |
| Temperature Stability | ±0.5 °C | ±0.5 °C |
| Temperature Accuracy | ±1 °C | ±1 °C |
| Temperature Uniformity | < 1.5 °C | < 1.5 °C |
| Connection Interface | RS485 | RS485 |
| Chuck Surface Plating | Nickel/Gold | Nickel/Gold |
| Surface Flatness | ±10µm@RT & ≤ 30µm@ ≥300° | ±10µm@RT & ≤ 30µm@ ≥300°C |
| Leakage Current | < 100pA | <100fA |
| Capacitance | ≤ 800pF | ≤ 100pF |

✚ TRIAXIAL HOT&COLD CHUCK

| | |
|-------------------------------------|---|
| Temperature Range | -70 °C to 300 °C |
| Connectivity | Kelvin Triax |
| Temperature control Method | Air Cooling / Water cooling/ Resistive heater |
| Smallest temperature Selection step | 0.1 °C |
| Temperature resolution | 0.01 °C |
| Temperature stability | ±0.08 °C |
| Temperature accuracy | 0.1 °C |
| Interfaces | RS232C |
| Chuck surface plating | Nickel plated |
| Temperature Accuracy | <±0.5 °C at ≤ 100 °C <±1.0 °C at > 100 °C |
| Surface flatness | < ±10 µm at ≤ 200 °C |
| -70°C | < 30 fA |
| -40°C | < 30 fA |
| -10°C | < 30 fA |
| 25°C | < 15 fA |
| 200°C | < 30 fA |
| 300°C | < 50 fA |
| Capacitance | ~pF |

MICRO CHAMBER

| | |
|----------------------|----------------------|
| EMI shielding | : >20 dB 0.5-20 GHz |
| Spectral noise floor | : < -150 dBVrms/rtHz |
| System AC noise | : < 15 mVp-p |

MICROPOSITIONERS:

| Model | Description | Electrical Specifications |
|--------------|--|---|
| MH100 | Fixed Magnet Base Switchable Magnet Base Vacuum Base | |
| MH100 | Foot dimension 70 x 50mm Travel range X,Y 12mm Travel range Z 12mm Feature Resolution 1μm/0.8μm TPI resolution 80 TPI/100TPI | <ul style="list-style-type: none"> • Operation voltage up to 3KV • Current measurement PA to A Pulsed • Capacitance measurement pF to μF |
| MH200 | Fixed Magnet Base Switchable Magnet Base Vacuum Base | |
| MH200 | Foot dimension 70 x 50mm Travel range X,Y 12mm Travel range Z 12mm Feature Resolution 0.83μm TPI resolution 85 TPI | <ul style="list-style-type: none"> • Operation voltage up to 3KV • Current measurement PA to A Pulsed • Capacitance measurement pF to μF |
| MH300 | Fixed Magnet Base Switchable Magnet Base Vacuum Base | |
| MH300 | Foot dimension 70 x 35mm Travel range X,Y 12mm Travel range Z 12mm Feature Resolution 5μm | <ul style="list-style-type: none"> • Operation voltage up to 3KV • Current measurement PA to 40A Pulsed • Capacitance measurement pF to μF |
| 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 | <ul style="list-style-type: none"> • Operation voltage up to 3KV • Current measurement PA to A Pulsed • Capacitance measurement pF to μF |

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) |

+ Luxury Anti-vibration table

Vibration isolation Table

Active Vibration Isolation**Antistatic surface****Come with retractable casters****Could sit in front of table****Screen holder for two monitor and keyboard drawer****Natural frequency 3-5Hz****Dimension W1200xD1200xH750mm****Load Capacity: $\geq 300\text{Kg}$**
