Manufacturing Supply Chain, LLC

(*Current product portfolio & pricing list*)

Current focus: Semiconductors

January 12th, 2026

MSC's goal is to Prevent Supply Chain Disruption in Semiconductor Manufacturing…

I

AI enabled platform that controls and manages raw materials and equipments - Currently active

II

This will help to prevent supply chain disruption – Not active

Best Pricing
W/worldwide vendors

On-time delivery
(Superior logistics)

Best Quality
(Quality metrics)

Adv. (AI) Analytics For Risk Mitigation

Automated Inventory Management
(RFID & IOT)

E-COMMERCE STORE

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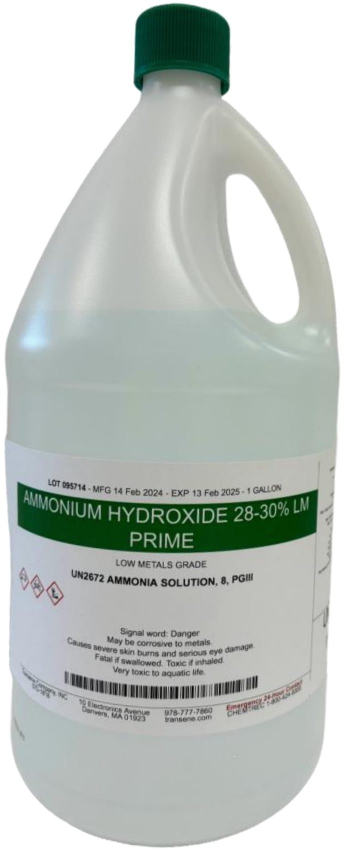
Manufacturing Supply Chain

PRESENTATION INDEX

ELECTRONIC GRADE CHEMICALS

ACIDS



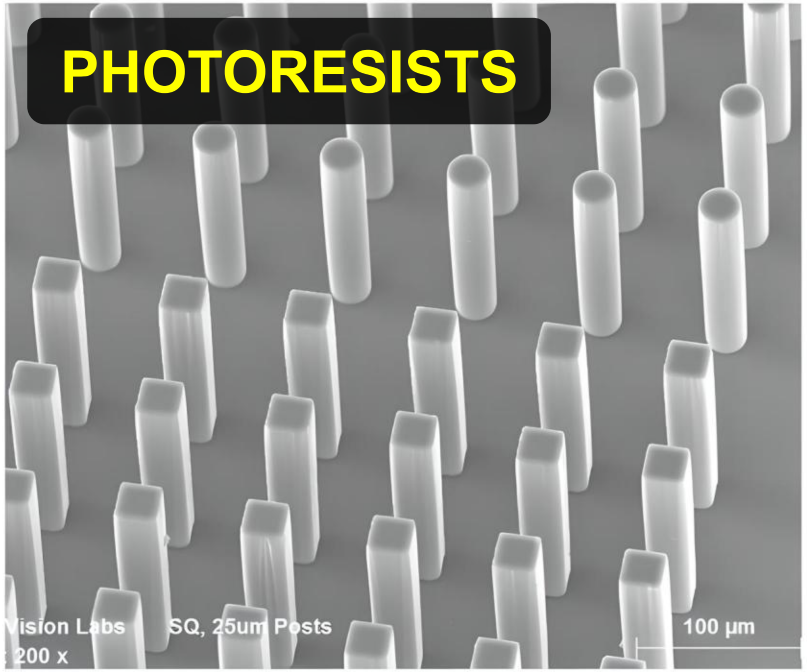
BASES

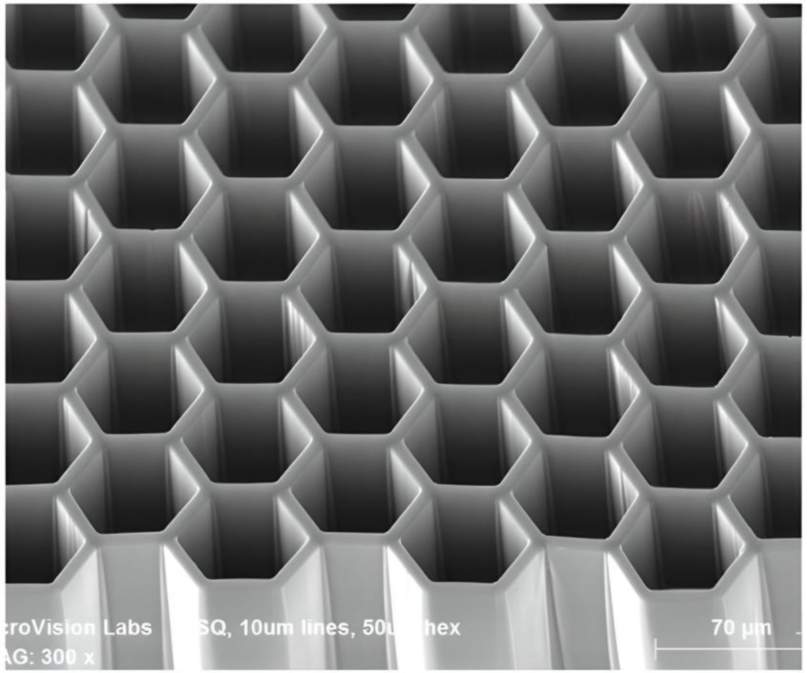
SOLVENTS

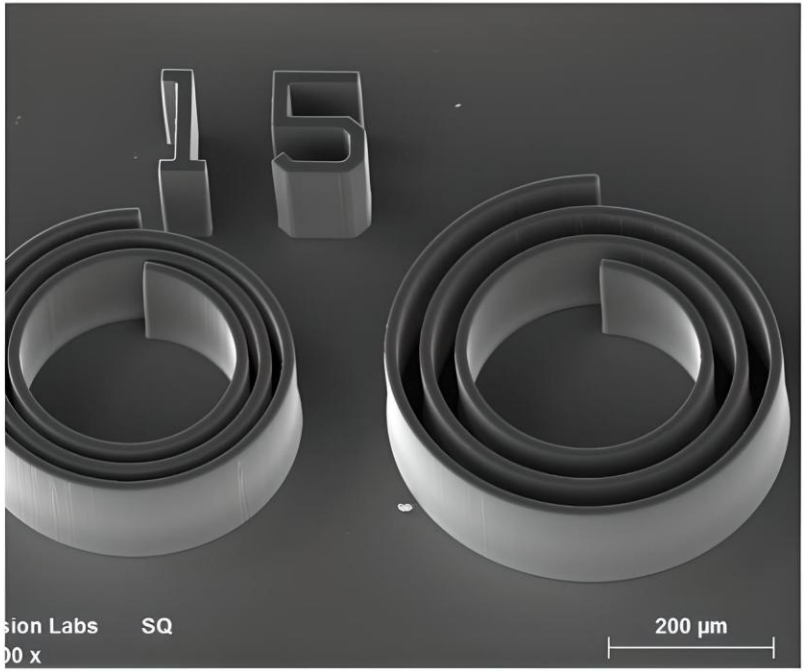
ETCHANTS

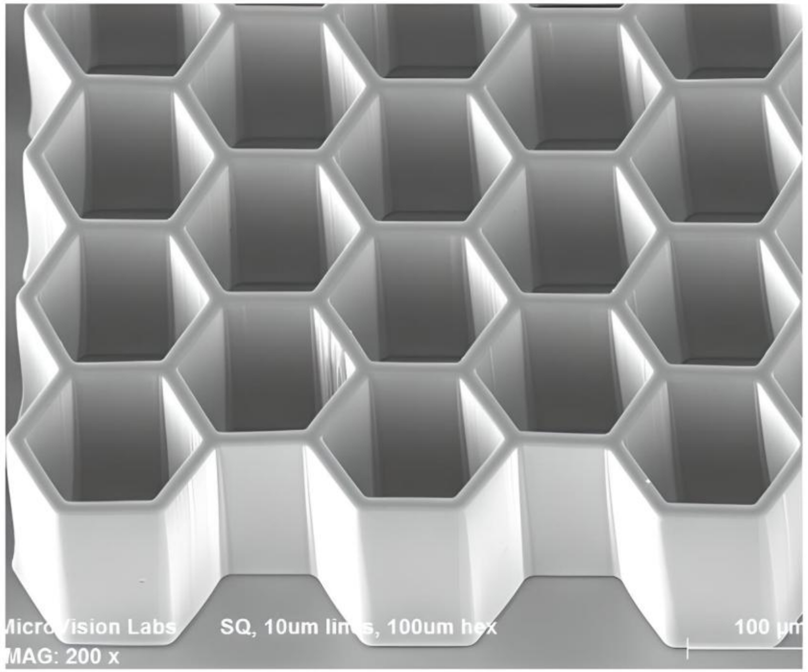
Vendor: Transene

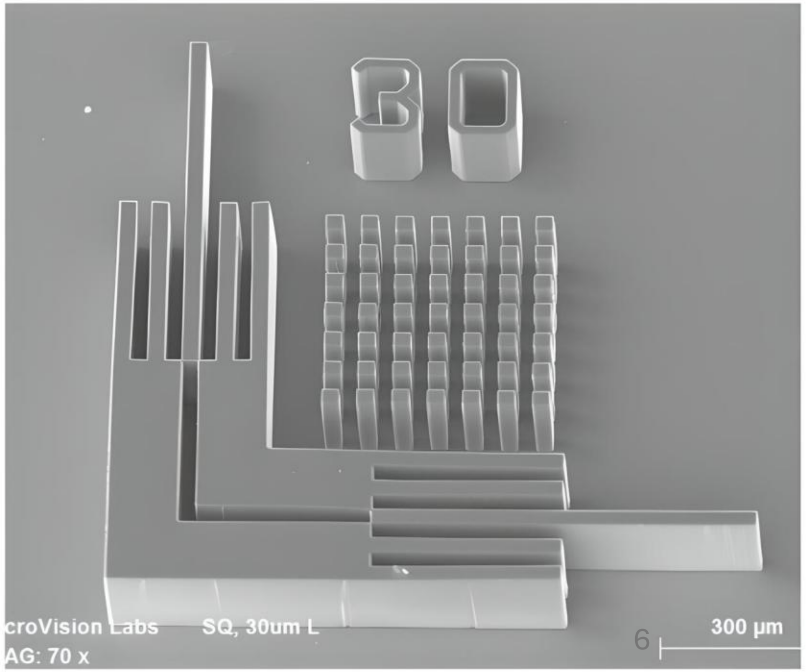
PHOTORESISTS











Vendor: Kemlab

EVAPORATION MATERIALS

Vendor: Kurt Lesker

SPUTTERING TARGETS

Vendor: Kurt Lesker

Si, SiC, GaN, III-V & Others

Vendor: D&X, Wafer Pro

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MEMS - OPTOELECTRONIC - HIGH FREQUENCY - HIGH POWER - VACUUM - MICROFLUIDIC - MAGNETIC STIMULATION

APPLICATION-SPECIFIC WAFER PROBING SOLUTIONS FROM SEMIPROBE

www.mansupplychain.com

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PROBE SYSTEM FOR LIFE – PS4L

MODULAR

All component parts are interchangeable

CUSTOMIZABLE

Open hardware and software designs enable simple integration of custom options and capabilities

UPGRADEABLE

Field retrofit upgrades from a manual to semiautomatic through to fully automatic system

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WAFER PROBING SOLUTIONS: MEMS

WAFER PROBING SOLUTIONS: MEMS

Manual 200 mm Probe Station:

- Test Multiple Technologies in One System
- Customized to Specific User Requirements
- Image Capture of Devices Under Test
- High Accuracy Rapid Align Wafer Stage
- Test Devices Ambient, Heated, or Cooled
- Test Die and Wafers from 50 to 200 mm
- Handle Wafers on Frames
- Use individual Manipulators or Probe Cards

WAFER PROBING SOLUTIONS: MEMS

Manual 200 mm Vacuum Chamber Probe Station:

- Test Multiple Technologies in One System
- Semiautomatic or Fully Automatic Configurations
- Customized to Specific User Requirements
- Adaptive Vacuum Chamber Architecture
- Gas-Backfill and Overpressure Capability
- Test Die and Wafers from 50 to 200 mm
- Test at Ambient, Heated, or Cooled Temperatures
- Integrate a Range of Third-Party Instrumentation

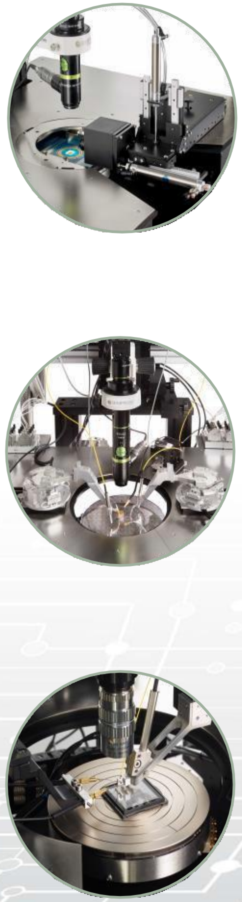
WAFER PROBING SOLUTIONS: MEMS

Manual 200 mm Probe Station:

- Test Multiple Technologies in One System
- Customized to Specific User Requirements
- Integrate a Range of 3rd Party Instrumentation
- Field Upgradeable as Requirements Develop
- High Accuracy Rapid Align Wafer Stage
- Equipped with a Polytec Motion Analyzer
- Test Die and Wafers from 50 to 200 mm
- Use Individual Manipulators or Probe Cards

WAFER PROBING SOLUTIONS: OPTOELECTRONIC / SILICON PHOTONIC

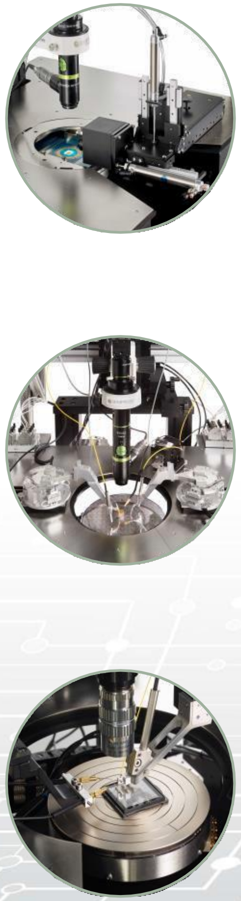
WAFER PROBING SOLUTIONS: OPTOELECTRONIC / SILICON PHOTONIC



Fully Automatic 200 mm Probe Station:

- Test LEDs VCSELs C Silicon Photonic Devices
- Customized to Specific User Requirements
- High Accuracy Fiber Alignment Positioners
- Programmable Hexapod Manipulators
- Cassette Load/Unload with Robot Handling
- Dual End Effector Robot for 150 C 200 mm Wafers
- Test at Ambient or Heated Temperatures
- Manual Wafer Load-Unload Capability

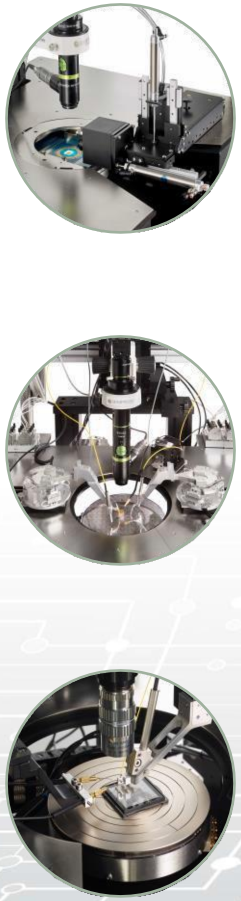
WAFER PROBING SOLUTIONS: OPTOELECTRONIC / SILICON PHOTONIC

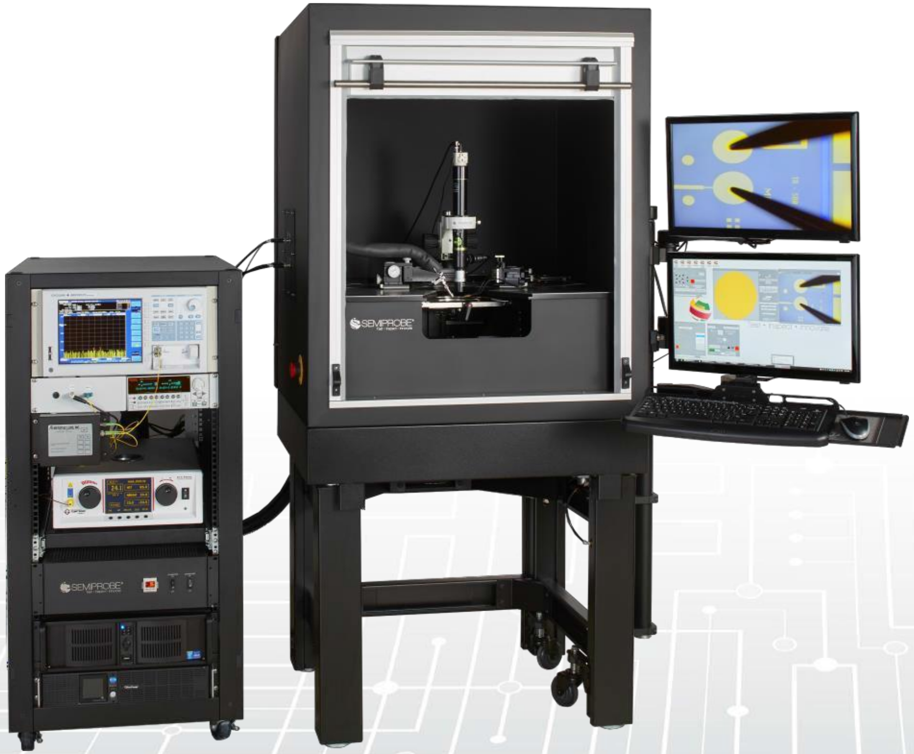


Semiautomatic 100 mm Probe Station:

- Test LEDs, VCSELs C Silicon Photonic Devices
- Customized to Specific User Requirements
- Programmable Gantry to Switch Optics
- High Accuracy Fiber Alignment Positioners
- Test Die and Wafers from 50 to 100 mm
- Integrating Sphere Options
- Non-Contact Wafer Height Measurement
- Equipped with SemiProbe PILOT Software Suite

WAFER PROBING SOLUTIONS: OPTOELECTRONIC / SILICON PHOTONIC





Semiautomatic 200 mm Probe Station:

- Turnkey Integrated Optoelectronic System
- Single- or Double-Sided Probing Capability
- Customized to Specific User Requirements
- Test Die, Partial Wafers C Wafers up to 200 mm
- Dark Environment with Custom Feed-Throughs
- Customized Chip Carrier for Double Side Probing
- Probing by Individual Manual Manipulators
- Image Capture of Devices Under Test

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WAFER PROBING SOLUTIONS: HIGH FREQUENCY

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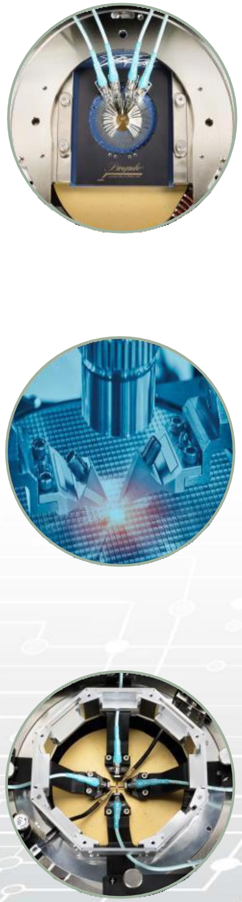
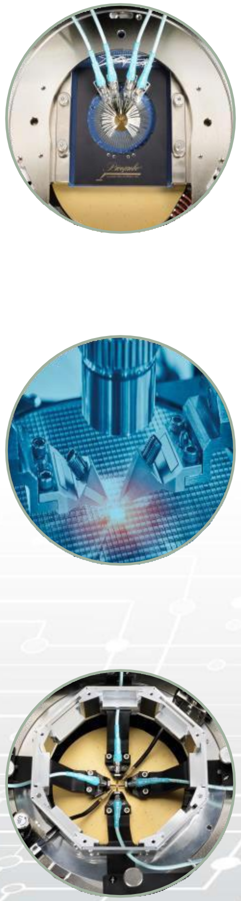
WAFER PROBING SOLUTIONS: HIGH FREQUENCY



Semiautomatic 200 mm Probe Station:

- DC to Over 750 GHz
- Keysight Vector Network Analyzer
- Chuck with separate Calibration Substrates
- High Frequency and DC Manipulators
- Test Die and Wafers from 50 to 200 mm
- Test at Ambient, Heated or Cooled Temperatures
- Customized to Specific User Requirements
- Field Upgradable

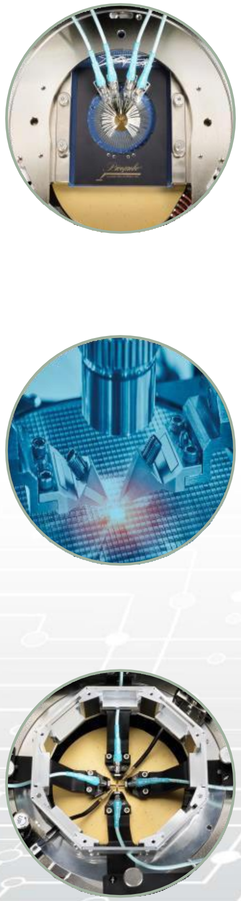
WAFER PROBING SOLUTIONS: HIGH FREQUENCY

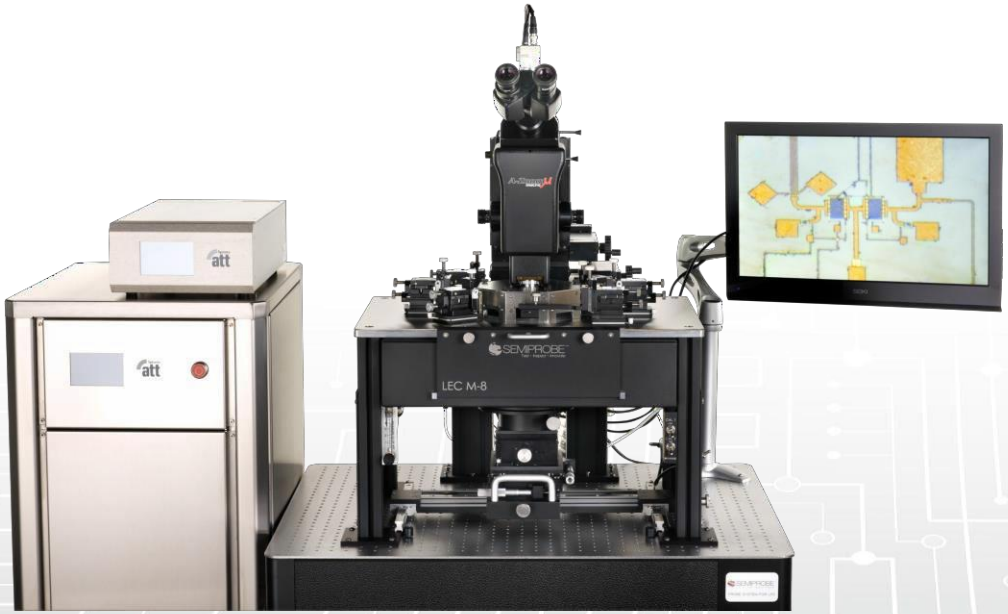


Manual 150 mm Probe Station:

- High Accuracy Rapid Align Wafer Stage
- Customized to Specific User Requirements
- Test Die and Wafers from 50 to 150 mm
- High Accuracy, HF/MW Positioners
- Test at Ambient or Heated Temperatures
- Low Cost of Ownership
- Field Upgradable to Semiautomatic Configuration
- Platen Allows up to 20 Individual Manipulators

WAFER PROBING SOLUTIONS: HIGH FREQUENCY





Manual 150 mm Probe System:

- Test Devices Heated Up to 400°C
- Test Devices Cooled Down to -65°C
- Localized Environment Prevents Frosting
- Liquid and Air-Cooled Chillers Available
- Top-Hat Allows Multiple Manipulator Access
- Customized to Specific User Requirements
- Test Die and Wafers up to 150 mm
- Multi-Contact Wedges

WAFER PROBING SOLUTIONS: HIGH POWER

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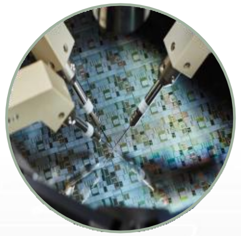
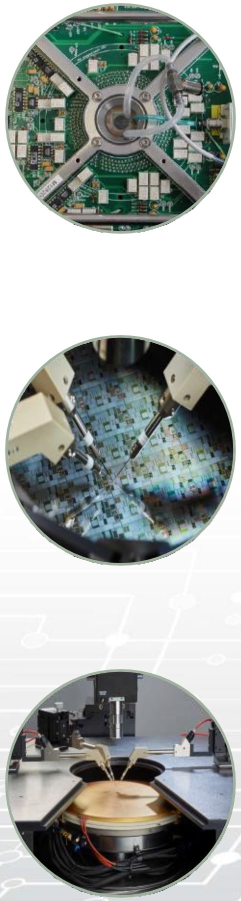


Semiautomatic 300 mm Probe Station:

- Test Power Devices up to 10 KV, 200 A
- Integrated Keysight B1505A Instruments
- Fully Guarded with Interlocked Safety
- Light Curtain or Dark Box Configurations
- Customized to Specific User Requirements
- Test at Ambient, Heated or Cooled Temperatures
- High Stability Manipulators
- Manual or Programmable Manipulator Options

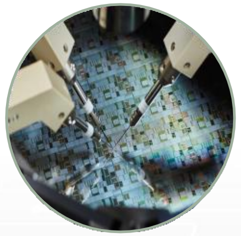
WAFER PROBING SOLUTIONS: HIGH POWER



Vacuum Chamber 300 mm Probe Station:

- Test Power Devices up to 10 KV, 200 A
- Vacuum Chamber or Open-Air Test Modes
- Manual or Programmable Manipulator Options
- Semiautomatic Configuration
- Test Die and Wafers from 50 to 300 mm
- Fully Guarded with Interlocked Safety
- Custom Feed-Throughs and Interconnects
- Integrate a Range of Third-Party Instrumentation

WAFER PROBING SOLUTIONS: HIGH POWER



Manual 150 mm Probe Station:

- Test Power Devices up to 3 KV
- High Stability Manual Manipulators
- Customized to Specific User Requirements
- Test Die, Partial Wafers C Wafers up to 150 mm
- Fully Guarded Using a Dark Box Enclosure
- Interlocked for Operator Safety
- Wide Range of Optics Available
- Interface with Multiple Brands of Test Instruments

WAFER PROBING SOLUTIONS: VACUUM

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Semiautomatic 150 mm MEMS Vacuum Probe Station:

- High Vacuum to 10^{-4} Torr
- Customized to Specific User Requirements
- Turn-Key Probing C Test Solution
- Test Die and Wafers from 50 to 150 mm
- Long Working Distance Optics
- Use Probe Cards or Individual Manipulators
- Image Capture of Devices Under Test
- Equipped with SemiProbe PILOT Software Suite

WAFER PROBING SOLUTIONS: VACUUM

Semiautomatic 200 mm MEMS Vacuum Probe Station:

- Turn-Key Probing & Test Solution
- Programmable Gantry for Multiple Optics
- High Vacuum to 10^{-4} Torr
- Integrated Chamber View Port
- Test Die and Wafers from 50 to 200 mm
- Thermal Options from -65 to 300°C
- Ideal for MEMS, Sensors & Microbolometers
- Programmable Manipulators

WAFER PROBING SOLUTIONS: VACUUM

Fully Automatic 200 mm Vacuum Probe Station:

- High Vacuum to 10^{-4} Torr
- For Testing Thin Wafers using Carrier Plates
- Dual End Effector for 150 mm and 200 mm
- Integrated Test Instrumentation
- Manual or Programmable Manipulators
- Long Working Distance Optics
- Patented PS4L “Adaptive Architecture”
- Interchangeable Modules for all Applications

WAFER PROBING SOLUTIONS: MICROFLUIDIC

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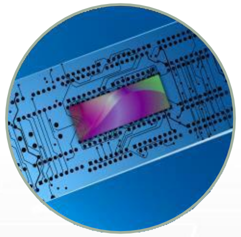
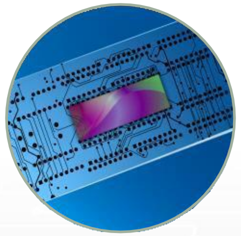


Fully Automatic 300 mm Probe Station:

- Multi-Functional Probing Solution
- Test Multiple Technologies in One Device
- Environmentally Controlled Environment
- FOUP Port Loading and Unloading
- Test Wafers from 200 to 300 mm
- Thermal Options from -65 to 300°C
- Custom Dispense Solution
- Individual Programmable Manipulators

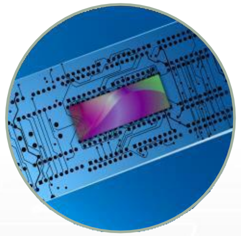
WAFER PROBING SOLUTIONS: MICROFLUIDIC



Microfluidic 200 mm Probe Station:

- Semiautomatic System
- Interfacing with Keithley S-500
- Customized Microfluidic Dispense System
- Pump with Two Dispense Units
- Test Die and Wafers from 50 to 200 mm
- Fine Theta Adjustment Probe Card Holder
- Long Working Distance Stereo Microscope
- Manual or Programmable Manipulators

WAFER PROBING SOLUTIONS: MICROFLUIDIC



Manual 150 mm Probe Station:

- Test MEMS and Sensors Devices
- Upgradable to Semi or Fully Automatic Systems
- Customized According to User Requirements
- Individual Manual Manipulators
- Test Die and Wafers from 50 to 150 mm
- High Accuracy Rapid Align Wafer Stage
- Integrate a Range of Third-Party Instrumentation
- Thermal Probing at Elevated Temperatures

WAFER PROBING SOLUTIONS: MAGNETIC STIMULATION

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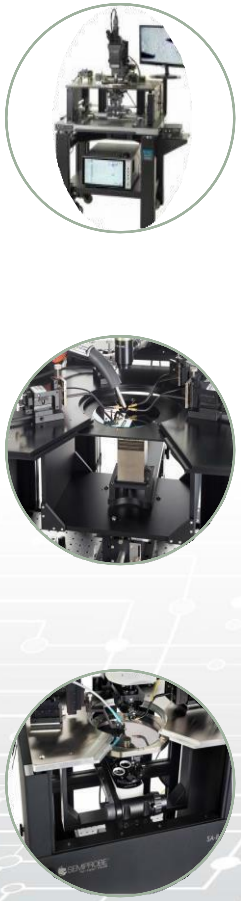
WAFER PROBING SOLUTIONS: MAGNETIC STIMULATION



Manual 150 mm MSS Probe Station:

- Turnkey Magnetic Stimulation Solution
- Integrated OEM Magnets
- Vertical Projected Magnet
- Interchangeable Poles
- Topside and Bottomside Magnet Mounting
- Customized to Specific User Requirements
- Thermal Stream System, Ambient to 255°C
- Test Die and Wafers from 50 to 150 mm

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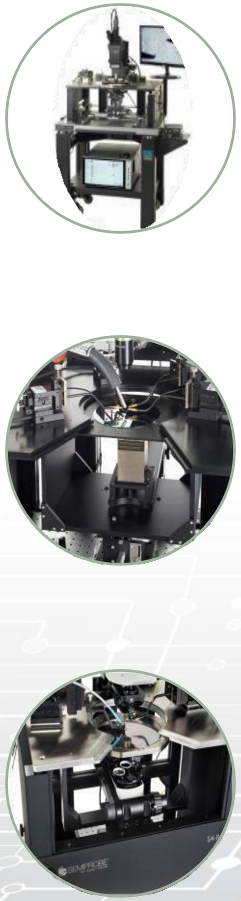
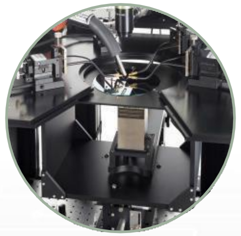
WAFER PROBING SOLUTIONS: MAGNETIC STIMULATION



Semiautomatic 150 mm MSS Probe Station:

- Magnetic Stimulation and High Voltage Solution
- Integrated OEM Magnets
- Vertical Projected Magnet
- Interchangeable Poles
- Topside and Bottomside Magnet Mounting
- Customized to Specific User Requirements
- Low and High Voltage Triaxial Probe Arms
- Test Die and Wafers from 50 to 150 mm

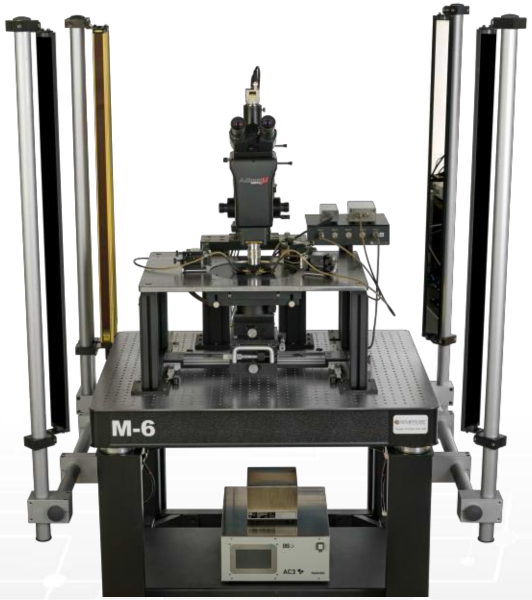
WAFER PROBING SOLUTIONS: MAGNETIC STIMULATION



Manual 100 mm MSS Probe Station:

- Small Footprint Manual System
- Customized to Specific User Requirements
- Low cost of ownership
- Test Small Samples C Wafers up to 100 mm
- Interchangeable Carrier Plates
- Vertical Magnetic Field
- Manipulators with Vacuum Bases
- Magnet Cooling Unit

WAFER PROBING SOLUTIONS: MANUAL PROBE STATIONS



WAFER PROBING SOLUTIONS: MANUAL PROBE STATIONS

Manual 200 mm PS4L Probe Station:

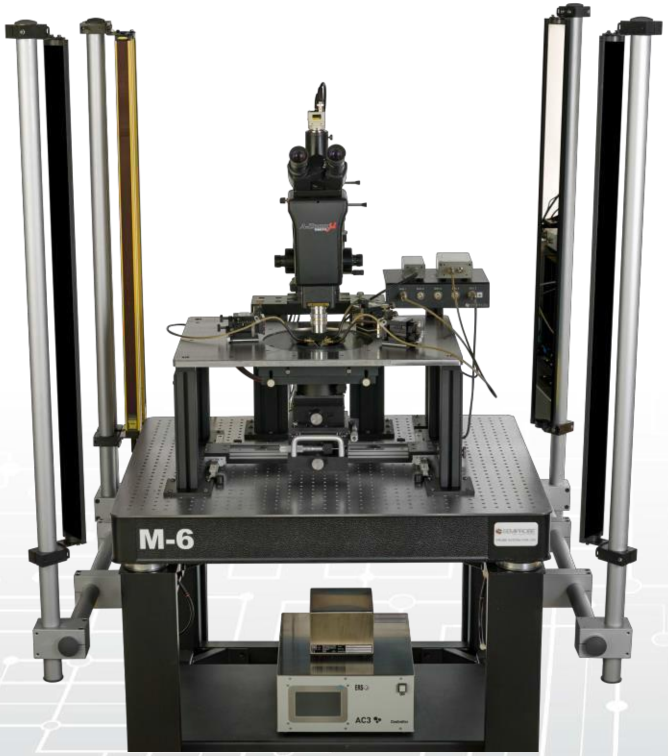
- Perpetual Field Upgrade Path
- High Accuracy Rapid Align Wafer Stage
- Customized to Specific User Requirements
- Thermal Options from -65 to 300°C
- Test Die and Wafers from 50 to 200 mm
- Manual or Programmable Manipulators
- Vacuum or Mechanical Wafer Chucks
- 360^{o} Manipulator Placement

WAFER PROBING SOLUTIONS: MANUAL PROBE STATIONS

Manual 200 mm PS4L Probe Station:

- Dark Box for Controlled Environment
- Test Die and Wafers from 50 to 200 mm
- Thermal Options from -65 to 300°C
- Customized to Specific User Requirements
- Modular Design for Easy Upgrade
- Manual or Programmable Manipulators
- Suitable for Low Volume Test Requirements
- Course / Fine Rapid Align Wafer Stage

WAFER PROBING SOLUTIONS: MANUAL PROBE STATIONS



Manual 150mm PS4L Probe Station:

- High Power Probing up to 3KV
- Customized to Specific User Requirements
- Test Die, Wafers and Packaged Parts to 150mm
- Compound Optics with CCTV System
- Laser Light Curtain (LLC) as a Safety Enclosure
- Fully Guarded with Interlocked Safety
- High Accuracy Rapid Align Stage System
- 360º Manipulator Placement

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WAFER PROBING SOLUTIONS: SEMIAUTOMATIC PROBE STATIONS

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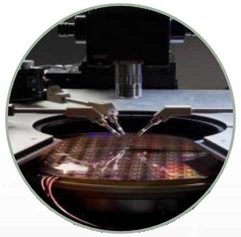
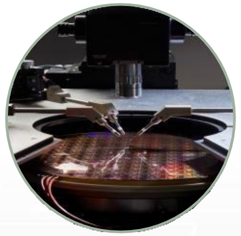


Semiautomatic 200 mm PS4L Probe Station:

- DC to Over 750 GHz
- Keysight Vector Network Analyzer
- Chuck with Separate Calibration Substrates
- High Frequency and DC Manipulators
- Test Die and Wafers from 50 to 200 mm
- Test at Ambient, Heated or Cooled Temperatures
- Customized to Specific User Requirements
- Perpetual Field Upgrade Path

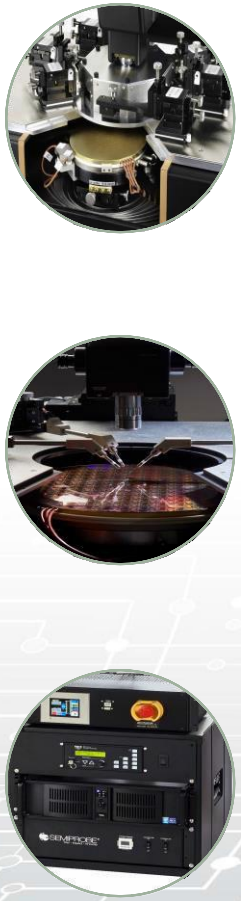
WAFER PROBING SOLUTIONS: SEMIAUTOMATIC PROBE STATIONS



Semiautomatic 300 mm Probe Station:

- A-Zoom Compound Microscope
- Customized to Specific User Requirements
- Probe Card Holder or Individual Manipulators
- High Accuracy Fiber Alignment Positioners
  - Test Die and Wafers from 50 to 300 mm
- Equipped with SemiProbe PILOT Software Suite
- Device Characterization and Failure Analysis
- Perpetual Field Upgrade Path

WAFER PROBING SOLUTIONS: SEMIAUTOMATIC PROBE STATIONS



Semiautomatic 150 mm PS4L Probe Station

- Test LEDs, VCSELs C Silicon Photonic devices
- Customized to Specific User Requirements
- Programmable Gantry to Switch Optics
- Ambient to 200^{o}C Testing
- Test Die and Wafers from 50 to 150 mm
- Integrating Sphere Options
- Non-Contact Wafer Height Measurement
- Hexapod Manipulators for Fiber Placement

WAFER PROBING SOLUTIONS: FULLY AUTOMATIC PROBE STATIONS

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Fully Automatic 200 mm PS4L Probe Station:

- Test LEDs, VCSELs & Silicon Photonic devices
- Customized to Specific User Requirements
- High Accuracy Hexapods For Fiber Alignment
- Manual DC & RF Manipulators
- Cassette Load/Unload with Robot handling
- Dual End Effector Robot for 150 & 200 mm Wafers
- Test at Ambient or Heated Temperatures
- Manual Wafer Load-Unload Capability

WAFER PROBING SOLUTIONS: FULLY AUTOMATIC PROBE STATIONS

Fully Automatic 300 mm PS4L Probe Station:

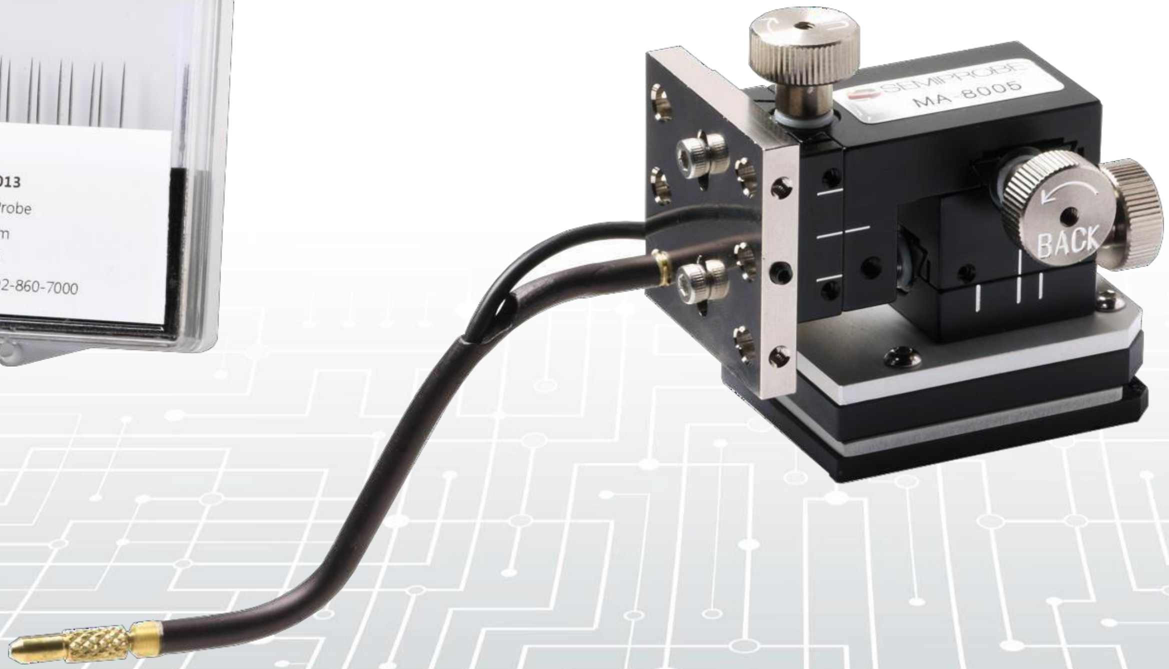
- Single- or Double-Sided Probing
- Customized to Specific User Requirements
- High Accuracy Bottom Side Fiber Alignment Stage
- Test from –20 to 225°C Inside an LEC
- FOUP Load/Unload with Robot Wafer Handling
- Dual End Effector Robot for 200 C 300 mm Wafers
- Fully Certified SEMI System
- Manual Wafer Load-Unload Capability

WAFER PROBING SOLUTIONS: FULLY AUTOMATIC PROBE STATIONS

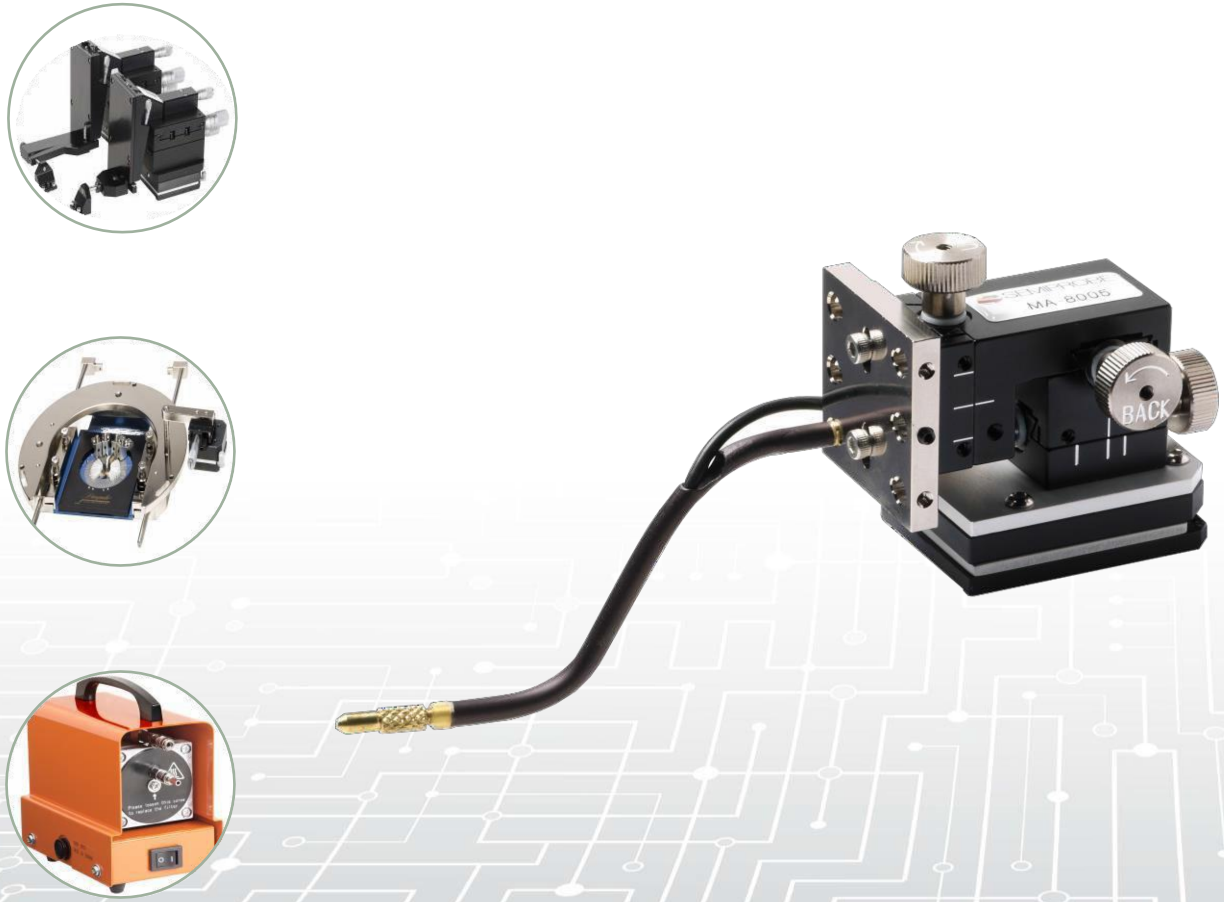
Fully Automatic 200 mm PS4L Probe Station:

- Device Characterisation and Failure Analysis
- Customized to Specific User Requirements
- Cassette Load/Unload with Robot handling
- Test at Ambient, Heated or Cooled Temperatures
- Dual End Effector Robot for 150 C 200 mm Wafers
- Manual Wafer Load-Unload Capability
- High Power Testing up to 3 KV
- Fully Guarded with Safety Interlocks

WAFER PROBING SOLUTIONS: ACCESSORIES



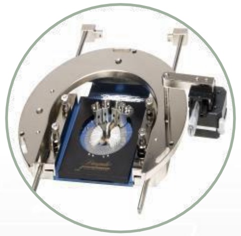
WAFER PROBING SOLUTIONS: ACCESSORIES – MANIPULATORS s PROBE ARMS



Small Footprint Manipulators:

- Axis Control by Micrometers or Thumbscrews
- Control of X, Y, Z, Pitch, Roll and Yaw
- 40, 80, or 100 or Threads per inch (TPI)
- Motorized Programmable Versions Available
- Magnetic, Vacuum or Bolt-down Bases
- Universal Face Plate
- Multiple Probe Arm Compatible
- Fiber Optic, HF C Multi-Contact Wedge Adaptors

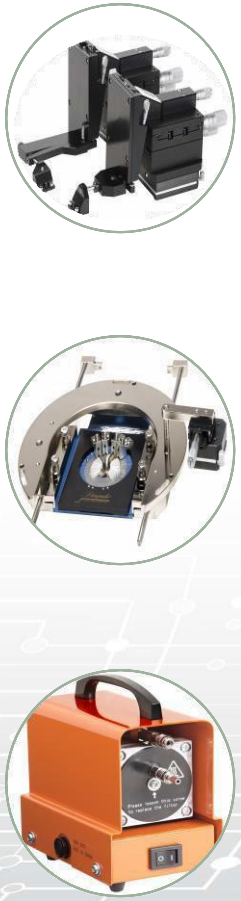
WAFER PROBING SOLUTIONS: ACCESSORIES – PROBE TIPS



Probe Tips:

- Multiple Materials available:
- Tungsten, Beryllium Copper, Gold Plated Tungsten
- Tip Radius Options from 0.1 to 50.0 µm
- Range of Taper Styles and Shapes
- Typically Packs of 10 Probe Tips
- Tip Length to Meet Customer Requirements

WAFER PROBING SOLUTIONS: ACCESSORIES – WAFER CHUCKS



Wafer Chucks:

- Round or Square Chucks
- 50 - 450 mm with Vacuum Rings or Vacuum Holes
- Nickel or Gold plated
- Thermal Chucks from -65 to 400°C
- High Frequency with Calibration Pads
- High Voltage up to 3 KV or 10 KV
- Lift Pin Chucks for Automation
- Double Side Probing Chucks and Carriers

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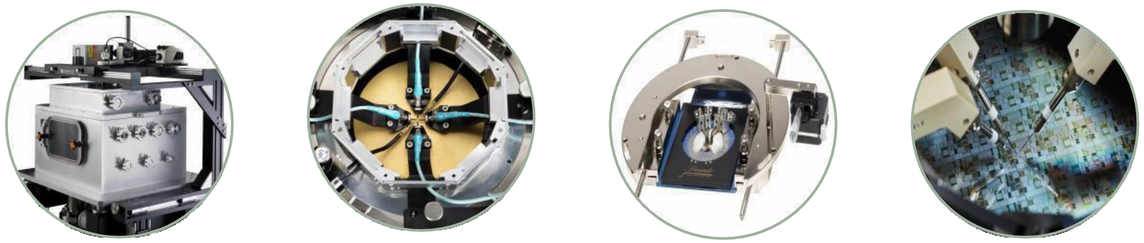

MODULAR

CUSTOMIZABLE

UPGRADEABLE

WAFER PROBING SOLUTIONS FROM SEMIPROBE

CONTACT

www.mansupplychain.com (*click on the icon*)

Saurabh Mookerjea

sam@mansupplychain.com

+1 (518) 819-9507