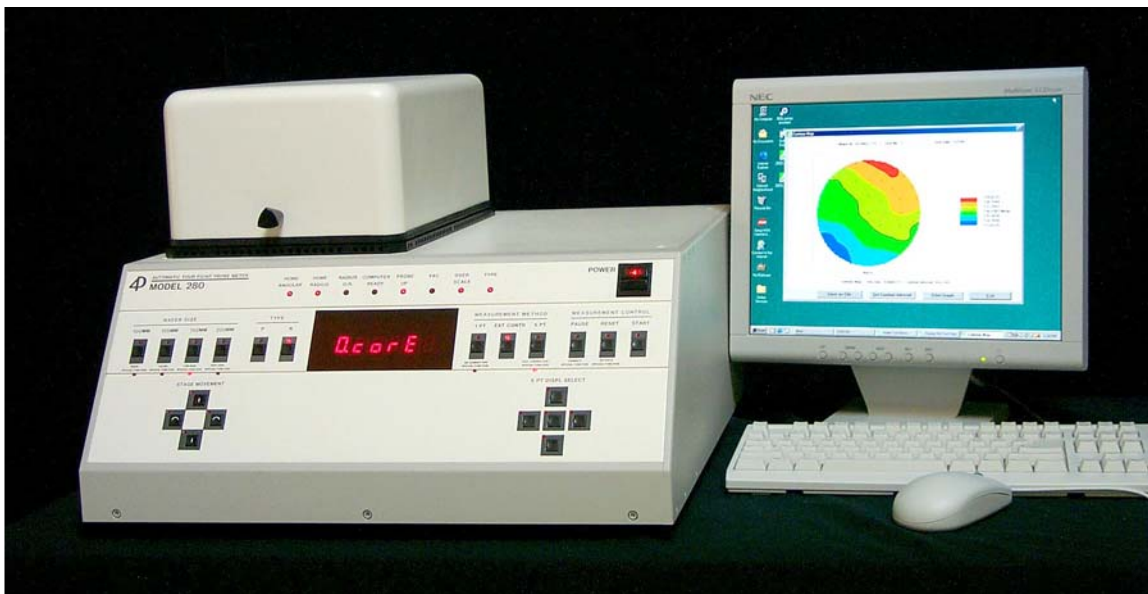
Automatic

Four-Point Probe

Model 280I Series



Model 280SI

Many Models to Meet Your Budget and Measurement Needs

280PI This is the most basic model in this series. It can automatically measure 1, 5, and 9 sites and then print the measured data, mean, and range on a 2 1/4 inch tape. The measurement range is 1mΩ/sq. to 800 kΩ/sq.

280PCI It has the function of 280PI plus ability to display in V/I, ohm-cm, and standard deviation. It stores up to 15 user-defined measurement programs and comes with a small external computer with keypad and LCD display.

280SI This model is PC controlled with Windows based powerful software which includes operation administration, recipe set-up, Librarian data storage, increased storage capacity, contour and 3D mapping, trend charts, pn type detection, SECS-II, diagnostics, and many other convenient features.

280TSI It has the same function as 280SI plus temperature compensation.

280TCI It has the same function as 280TSI, in addition, it has Statistical Process Control (SPC)

280DI It has the same function as 280SI, but with an extended measurement range up to 8E9 Ω/sq., or 8E11 Ω/sq..

280HCI It has the same function as 280TCI plus an easily controllable hot chuck and high temperature chamber.

Other Four-Point Probe Series:

120 Series………Manual Four-Point Probe for Wafers, Ingots and Slugs
233AC……..…..Four-Point Probe System for up to 200mm Wafers with C2C Handling Capability
300 Series………Including Models 300, 333A, 333AC and 333AF for Mapping and/or C2C Handling of 300mm Wafers
680I Series……..Sheet Resistivity Mapping System for Compound Semiconductors such as GaAs and SiC
1100I Series……Sheet Resistivity Mapping for Flat Panels

Model 233AC

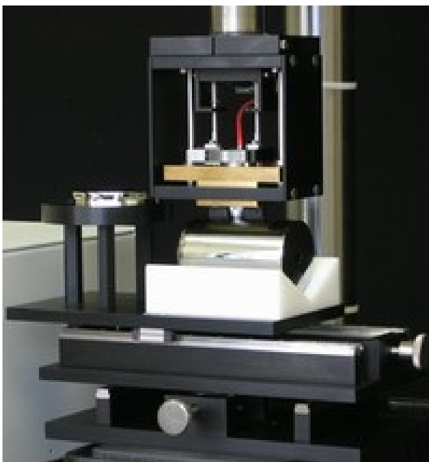
Options to Fulfill Various Measurement Requirements

- Tests High-Resistivity thick Si Substrate
- Tests Wafer Within 0.3ºC of Room Temperature (Temperature compensation option available for the case of unstable room temperatures.)
- Measure Resistivity in wide Temperature range, Features Room Temperature to 100 ºC within 0.5ºC Temperature Uniformity
- SECS II Communication
- Statistical Process Control
- Adopting Solar Cell Sized Wafers

Windows Based Powerful Software

- Convenience of Windows
- Friendly User-Interface
- Data Storage for Millions of Data Sets
- Librarian Data Searching Program for Quick and Easy Retrieval
- LAN, Excel & Many Other Great Features !
- Individual Site Multiplier
- Measurement Unit Conversion from the stored data
- Site dependent Geometric correction
- Detecting P-N Type
- Cartesian-Arrayed Mapping
- Polar Coordinated Mapping
- Diameter Scan
- Custom Test Sites
- Automatic Thickness Compensation
- Thin Metal Film Corrections
- Personalized Recipe Options

Reliable and Easy to Maintain


A probe stage for Model 120

- Capable of Making Measurements without Computer
- Standard Resistor Network and Firmware Allowing Easy and Quick Electronic Calibration
- Assembled with Easily Replaceable Modules
- Optional Trouble Shooting Kits Available for Quick and Easy On-Site Trouble Shooting
- Diagnostic Program Available for Hardware and Software
- Low Price Precision Durable Probe Head

Systems installed worldwide exceeding MTBF of 5,000 hours

Specifications

Measurement

Wafer Sizes Accommodated	50, 75, 100, 125, 200 (mm)
Test Diameter	Up to 3mm from wafer edge
Quick-checks	1, 5, 9 sites, 5, 6, 9, 10, 13 site ASTM/SEMI X-patterns or custom sites
Cartesian Maps	Any site-interval ≥0.1 mm, up to 6000 sites
Polar Map Site Number	9,25,45,49,65,81,121,169,225,289,361,441,529,625
Diameter Scans	Any site interval to nearest mm
Measurement range	1mΩ/sq. to 800kΩ/sq. or 8E9 Ω/sq.
Measurement units	Ω/sq., Ω-cm, V/I, μ [T], Å[T]
Measurement Repeatability	<0.2% (typical)
Electronic Accuracy	<0.1% (precision resistor)
Current resolution	16 Bit A/D
Compliance Voltage for Measurement	125V

Computer System

Computer Type	Windows based PC
Monitor Type	LCD-FPD
Printer Type	HP Color Deskjet
Data Transfer	RS232, SECS I, II

Analysis Capabilities: Automap Model 280I Software under Windows

- Color Contour Map
- 3D Surface Map
- P/N Type Testing
- Bulk Resistivity Measurement
- Diameter Scan
- Partial Wafer
- Numerical Data Printout
- Data Transfer to Spread Sheet
- Statistical Process Control (SPC)
- Measurement Data Comparison
- Thickness, Temperature and Edge Correction
- Trend Chart, by Wafer/Day/Month

Facility Requirements

Power	100/115/230VAC, 50/60Hz, 200W
Vacuum	20 in. Hg
Tabletop Footprint	21.5" depth x 20" width x 25" height

Probes

Probe Spacing	1mm (Standard)
Probe Force Range	90g –180g (Standard) other ranges available

Type	**Tip Radius (μ)**	**Material**	**Application**
A	25	WC	Bulk, Thick Epi, Metals
B	100	WC	General
M	300	WC	Implant, Diffusion,
N	500	WC	Shallow Implant, Thin Epi

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