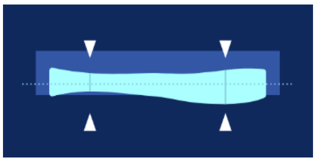
E+H Metrology

QES
Assuring you our best, always!

Contactless Wafer Measurement with Capacitive Distance Sensor

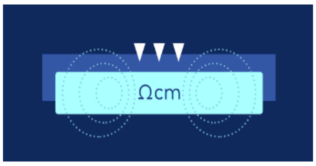
Geometrical



- Thickness
- TTV (Total Thickness Variation)
- Bow, Warp/SORI
- Film Stress

Electrical

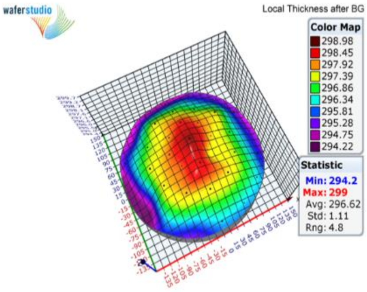
- Resistivity
- Sheet Resistance
- P/N Dotation Type



Manual Systems – MX10 Series

Thickness | **Flatness / TTV**

A pair of capacitive sensors samples four radial profiles (45 degrees) on every. Higher measuring coverage and be increased with number of sensors.



Models	MX102-6	MX102-8	MX1012	MX1018
Wafer Diameter	4", 5", 6"	6", 8"	8" 12"	12", 18"
Accuracy	±0.1 um	±0.1 um	±0.1 um	±0.3 um
Resolution	10 nm	10 nm	10 nm	10 nm
Spartial Resolution	1 mm	1 mm	1 mm	1 mm
Scans	4	4	up to 8	up to 8
Dynamic Range	100 or 350 um	100 or 350 um	100 or 350 um	100 or 350 um
Software	MXNT	MXNT	MXNT	MXNT

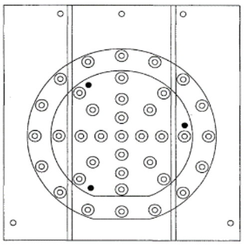
Manual Systems – MX20 Series

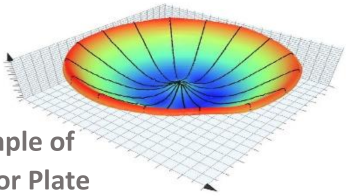
Thickness | **Flatness / TTV** | **Bow** | **Warp**

Film Stress (Optional)

Measures wafer with Sensor Plates that consist of 21, 33, 37, 69 or 73 capacitor points within time range of 5s to 50s for wafer diameters 2” up to 12” or 18”.

Customizable to cater for Framed wafer, Taiko wafer, Solar wafer, Non-Conductive and Semi-Insulating wafers





Example of Sensor Plate Capacitor Points

MX203
Manual Loading Series

MX2018-W
Measures 18” Wafer

MX2012-H
Measures 8” or 12” Wafer
(Semi-Auto Loading)

MX2012 Measure Wafer in Upright Position to Minimize Gravity-Induced Sag

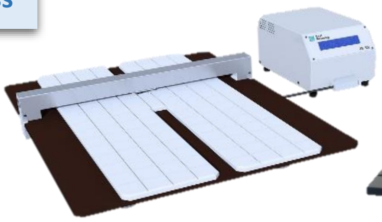
For More Info, visit *www.qesnet.com* or email to *marketing@qesnet.com*

Contactless Wafer Measurement with Capacitive Distance Sensor

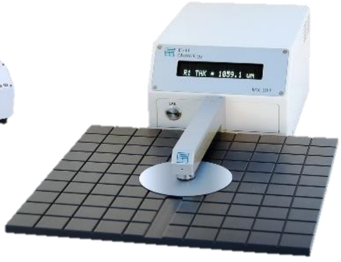
Manual Systems – MX30Series

Thickness

Robust and stable instrument for quick and simple manual thickness gauge. Made for a large variety of silicon and solar wafers and pieces of semiconducting or metallic materials. Fully self-calibrating without the need for gauge blocks nor reference wafers. With integrated 5-digit display. Can be connected to PC for Data Collection.



MX3012
Famed Wafer Series



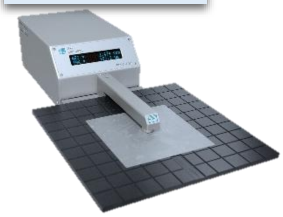
MX301 Series
2” to 8” Wafer

Manual Systems – MX60 Series

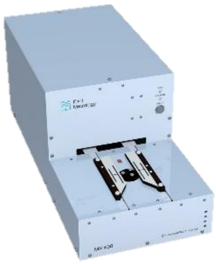
Thickness **Resistance** **Sheet Resistance**

P/N Dotation

Capable of combining contactless thickness, resistivity and P/N dotation sensors depending on user request. Gauges sheet resistance of semiconducting wafers and conductive films on high-ohm substrates with eddy current method. Surface Photovoltage (SPV) technology for Dotation (P/N). Fully self-calibrating, thus temperature and humidity changes are negligible.



MX604 Series
Thickness & Resistivity
for Square Wafers



MX608 Series
Thickness, Resistivity, P/N
Dotation (Semi-Auto Loading)

MX6012 Series
Thickness, Resistivity, P/N
Dotation with Center + 15
Rotated Wafer Side Measured

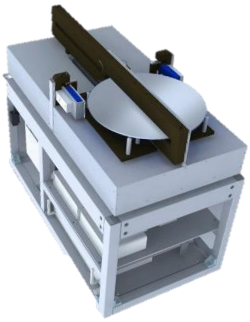
Manual Systems – MX70 Series

Thickness **Waviness** **Roughness**

Nanotopography

Capacitive sensors scan a diagonal cut through the center of the wafer (Ingot). On the sides where the saw wire enters and exits, thickness and roughness are measured simultaneously. (The latter with an opto-electronic measuring system.)

MX7012 Series
Etched 12” Wafer



MX7018 Series
Etched 18” Wafer

Automated Measurement Integration Options:

Belt Sorters **Robot Arm Sorters**

SECS/GEM **Wafer ID Reader**

Ex: Belt Sorters & Robot Sorters Integrated with MX20 & 60 Series

For More Info, visit *www.qesnet.com* or email to *marketing@qesnet.com*