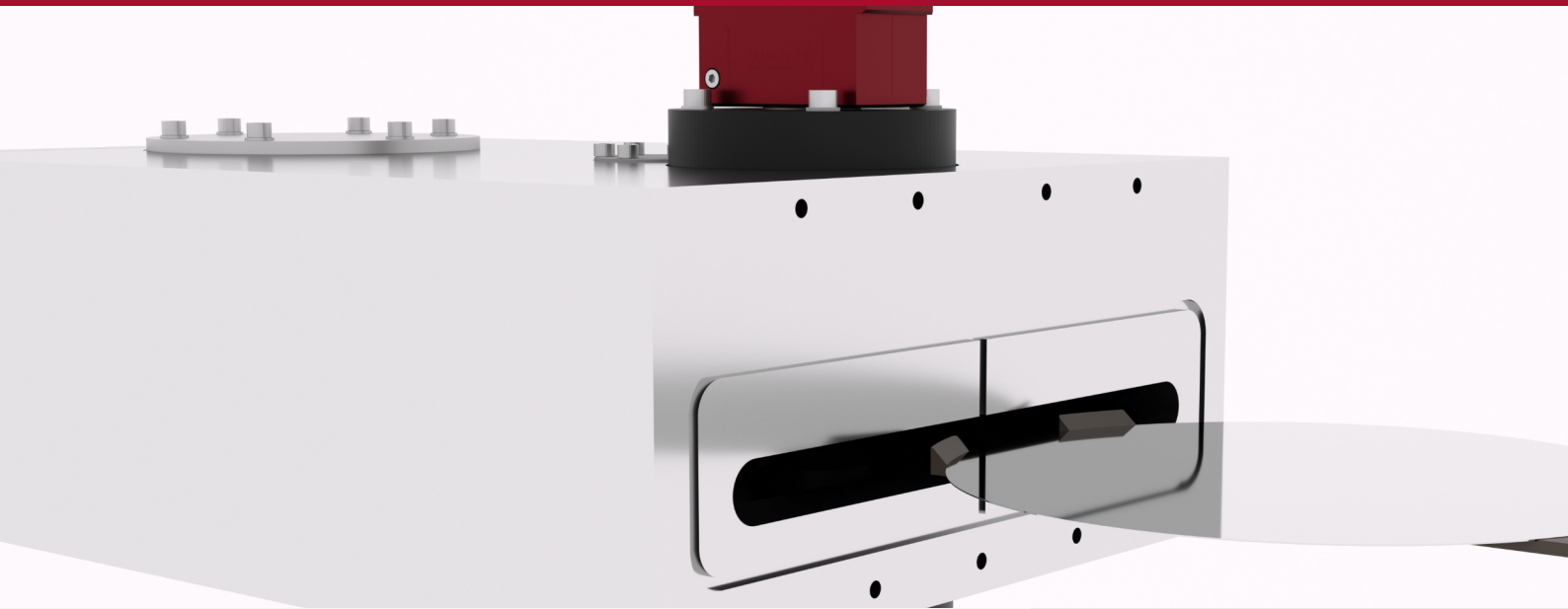


EddyCus® inline MCM – Metrology Chamber Module

P_MCM_22



Highlights

- ▶ Non-contact and non-destructive
- ▶ Near-process monitoring
- ▶ High-speed and accurate
- ▶ High repeatability and long term stability
- ▶ Test directly on product wafers
- ▶ Easy integration into tools

Sensor Series

- ▶ Sheet resistance (Ohm/sq)
- ▶ Resistivity (mOhm·cm)
- ▶ Metal layer thickness (nm, µm)
- ▶ Metal substrate thickness (µm)
- ▶ Uniformity / homogeneity
- ▶ Defects and effects

Applications

- ▶ Wafer testing
- ▶ Thin film layer characterization
- ▶ Material characterization
- ▶ Imaging and mapping
- ▶ Defect detection
- ▶ Integrity assessment
- ▶ Material sorting
- ▶ Sputter target wear level monitoring

Materials

- ▶ Semiconductors
 - ▶ Si
 - ▶ WBG – SiC, SiSiC, GaN
 - ▶ GaAs, GaP, InP, GaAsP etc
- ▶ Metals
- ▶ Alloys
- ▶ Graphite
- ▶ Graphene
- ▶ Compounds
- ▶ Composites

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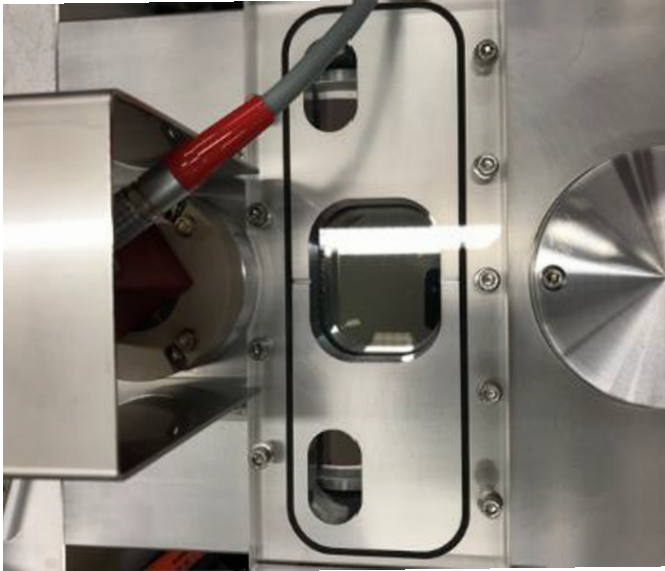
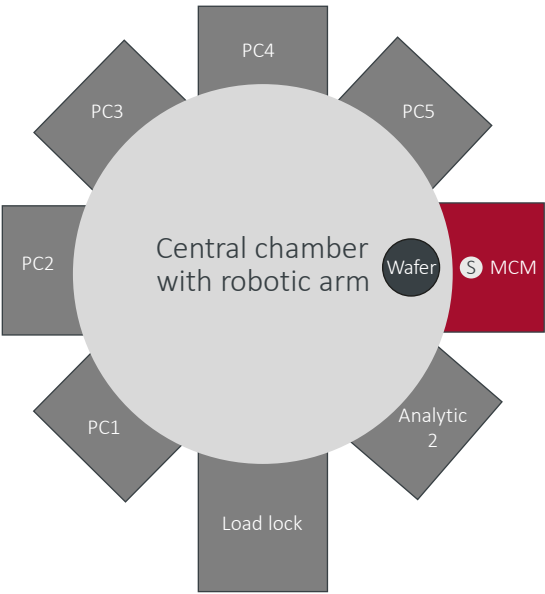
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Visit us at:
www.suragus.com
www.suragus.com/calculator
www.suragus.com/EddyCusInline

Engineered and Made in Germany 





Measurement technology	Non-contact high frequency eddy current sensor
Place of measurement	In-vacuo in dedicated metrology chamber
Substrates	Wafer, glass etc.
Substrate sizes	150 / 200 / 300 mm (different sizes of MCM are available)
Measurement gap size	5 – 50 mm (depending on wafer handler)
Sensor sizes (L x W x H) in mm	Sensor S SemiVac: 80 x 100 x 65
Conductive layers	Metals, alloys and other conductive layers
Sheet resistance measurement range	0.001 – 1,000 Ohm/sq
Thickness measurement of metal films (e.g. Cu, Al, Ag, Au, Ni, Ti, Ta, Pt, W)	1 nm – 2 mm (in accordance with sheet resistance)
Measurement types	Sheet resistance, metal thickness, resistivity, wafer temperature
Environment	In-vacuo, wafer temperatures up to 500°C
Sample rate	1 / 10 / 50 / 100 / 1,000 measurements per second
Interfaces	UDP, .Net libraries, TCP, Modbus, Profinet, analog/digital

Motivation for Near-Process Sensor Integration

Obtain relevant information on deposition process as early as possible

- ▶ Sheet resistance (metal thickness by conversion)
- ▶ Wafer temperature (by temperature sensor)
- ▶ Reduce cost and increase throughput
 - ▶ Gain of tool time due reduction of test wafer runs
 - ▶ Reduce tool time for test wafer validation (target material, equipment time, offline testing, operator time)
- ▶ Fine-tune quality by enhanced process control
 - ▶ Direct measurement on process wafer
 - ▶ Instant process feedback and enhanced R2R Control
 - ▶ Effect of target life time changes
 - ▶ Understand chamber to chamber effects and first wafer effects
- ▶ Faster ramp-up / setup of new tools / targets / processes
 - ▶ Direct uniformity measurement and power adjustment
 - ▶ Control of sputter power for compensation target changes

