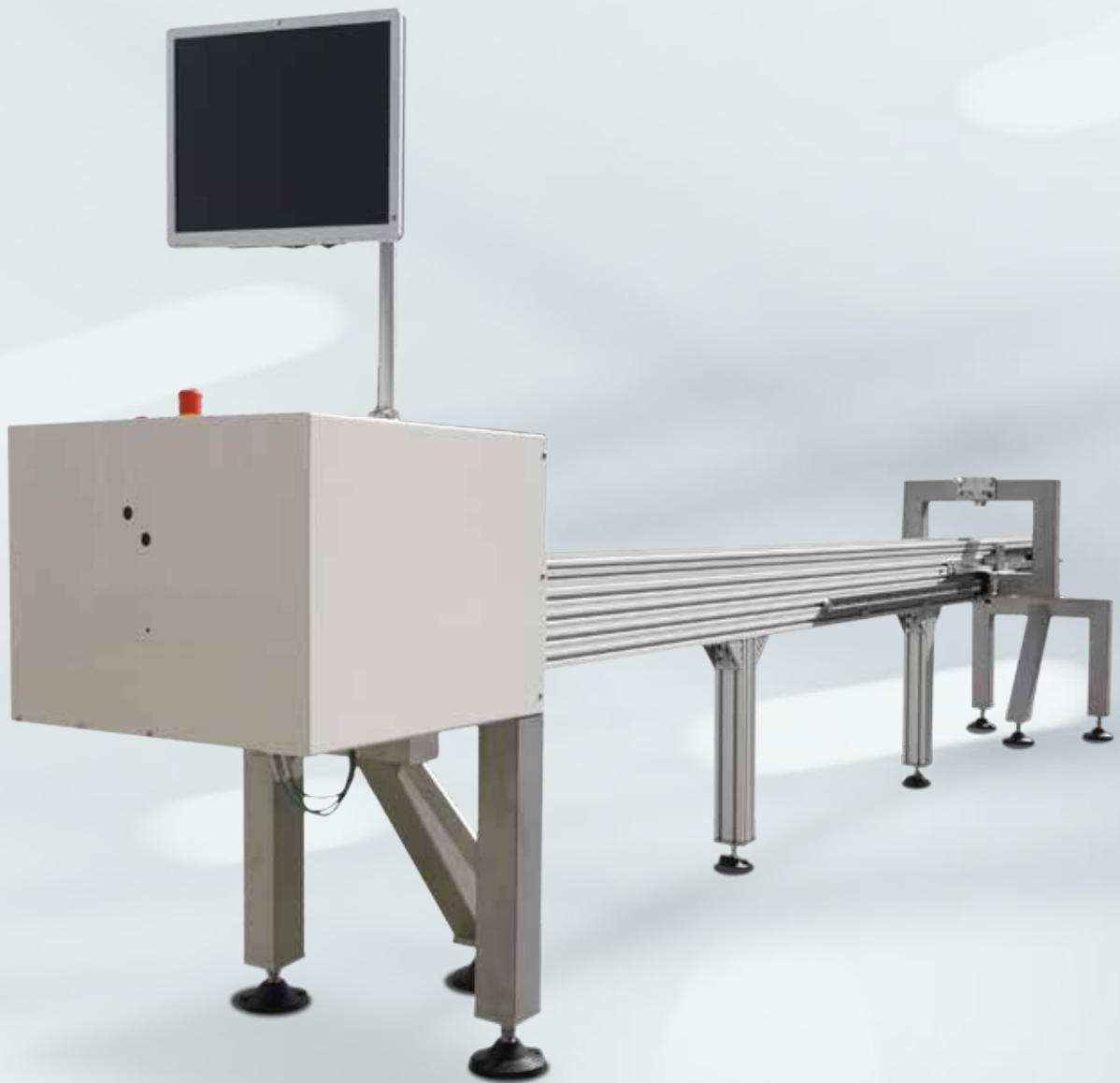




m-cat
by matesy

Magnetron & Magnet Bar Analysis for Sputtering Units

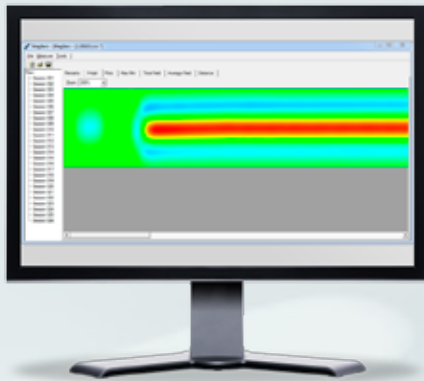


Rotating magnetrons and adjustable magnet bars can be measured and analyzed exactly within the sputtering process for float glass coating. Defective magnetrons and magnet bars are identified early and reliably. The homogeneity of the layer thickness can be increased and a sputtering-through can be avoided.

Coating

Sputtering on glass or silicon requires high quality standards. Even small fluctuations in thickness of the deposited layers could influence the layer properties considerably.

Float glass for window and façade constructions can be subject to certain changes in color and transmission properties. Changes in the thickness of coatings of glass, as a basis for solar cell production, could lead to asymmetries of the electrical properties.



Layer properties

can be changed by the partial pressure of the sputtering gas or the magnetic field. Since changes in the gas composition affect the layer composition likewise, for adjustments of the layer thickness solely the control and modification of the magnetic field can be applied.

The m-cat system characterizes tubular magnetrons with high precision, what allows the operator to control the magnetic components in sputtering units. Besides the exact measurement and analysis of the magnet configurations the m-cat provides help for adjustable magnetrons, regardless of the manufacturer. To ensure high reliability the magnetrons' geometries (e.g. deflection) are determined.

The m-cat improves

- the process reliability, since new magnetrons are subject to an incoming inspection to identify material defects
- the homogeneity of the layer thickness, since adjustable magnetrons can be controlled and finished magnetrons can be easily combined
- the life-time of the targets, since expensive targets can be prevented from sputtering-through

Properties & parameters

- Determination of the entire magnetic field shape
- Complete measurement within 1 minute
- Geometry recognition with the maximum deflection of the magnetron
- System length between 0.4 and 4.0 meters
- Available for circular and plane cathode magnetrons
- Rigid and soft magnetrons
- Adjustable to the measurement task
- Measurable with target (optional)
- Target parameters available (diameter, deflection)
- High user- friendliness
- Magnetic field config.: 33 channels (X,Y,Z) +/- 1%
- Determination of the minimum and maximum magnetic field strength
- Trimming function for trimmable magnetrons
- Graphic visualization of the field profile
- Geometry of the magnetron (Location of the magnetic functioning part): +/- 0.1 mm
- Geometry of the target (diameter, deflection): +/- 0.1 mm
- Software with life cycle management, various views and setup Options
- Save and export function for single sets of measurement in CSV format

