

EddyCus[®] TF map 2530HF – High Frequency Imaging Device

P_T_2530HF_21



Highlights

- ▶ Contact-free imaging
- ▶ High resolution imaging
- ▶ Fast integrity assessment and defect imaging
- ▶ Complex impedance analysis for separation of electric, dielectric and magnetic properties using EddyEva analysis software

Applications

- ▶ Composition assessment of electric, dielectric, magnetic properties
- ▶ Printing
- ▶ Impregnation
- ▶ Drying
- ▶ Curing
- ▶ Chemical reaction monitoring
- ▶ Mixing
- ▶ Sorting
- ▶ Defect analysis (anomalies, hot spots)

Device Series

- ▶ Wet thickness (μm) / weight (g/m^2)
- ▶ Drying status (%)
- ▶ Permittivity (F/m) *Beta*
- ▶ Conductivity / resistivity (mOhm cm)
- ▶ Permeability (H/m) *Beta*
- ▶ Sheet resistance (Ohm/sq)
- ▶ Electrical anisotropy (%)
- ▶ Metal thickness (nm, μm)

Materials

- ▶ Wet thin films and surfaces
- ▶ Wet components and structures
- ▶ Liquids, slurries, inks, resins, dispersions, chemicals
- ▶ Powders and particle films (cosmetics and medicines)
- ▶ Bulk materials (plastics, ceramics)
- ▶ Composites (prepregs, impregnated fibers and tapes, CFRP)
- ▶ Compounds (casting compounds)

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Engineered and Made in Germany 



Working Principle

- ▶ EddyCus® sensors generate electromagnetic fields (EMFs)
- ▶ EMFs change when material with electric, dielectric and /or (ferro)magnetic properties is present
- ▶ The evaluation of the resulting change in the EMF provide

information on

- ▶ Conductivity (e.g. metals, semiconductors, graphite)
- ▶ Permeability (e.g. Co, Ni, Fe)
- ▶ Permittivity (e.g. water, solvent, polymers, chemicals)
- ▶ Complex impedance analysis is used to separate properties

Device Characteristics

| | |
|---|--|
| Measurement technology | Non-contact high frequency eddy current sensor |
| Substrates | Foils, glass, various containers |
| Max. scanning area | 12 inch / 300 mm x 300 mm (larger upon request) |
| Max. sample thickness / sensor gap | Transmission setup: 3 – 50 mm (defined by the thickest sample) Reflection setups: infinitive (only surface area is analyzed) |
| Measurement types | Wet thickness (μm) / weight (g/m^2) / drying status (%) / conductivity (MS/m) / resistivity (mOhm cm) / permeability (H/m) Beta |
| Measurement range / accuracy | Depends on the measurement task and the material composition and test object volume. Please consult the SURAGUS team |
| Scanning pitch | 1 / 2.5 / 5 / 10 / 25 mm (other upon request) |
| Measurement points per time (square shaped samples) | 100 measurement points in 0.5 minutes 10,000 measurement points in 5 minutes 1,000,000 measurement points in 30 minutes |
| Device dimensions (w/h/d) / weight | 31.5" x 19.1" x 33.5" / 799 mm x 486 mm x 850 mm / 90 kg |
| Further available measurements | Sheet resistance, metal thickness and anisotropy imaging |

Device Control and Software

- ▶ Pre-defined measurement and product recipes (sizes, pitches, thresholds)
- ▶ Line scan, histogram and area analysis
- ▶ Black and colored image coding
- ▶ Csv & pdf export
- ▶ SPC summary and export
- ▶ 3 user levels
- ▶ Material database for parameter conversion
- ▶ Edge effect compensation
- ▶ Storage and import of data
- ▶ Export of data sets (eg. to EddyEva, MS Excel, Origin)

