The **EddyCus® CF map 4040** is a desktop device especially designed for the mapping of carbon fiber texture. The testing system utilizes the electrical conductivity of the carbon fibers to gain structural information such as fiber orientation and fiber distribution. The high resolution EC-scans also enable defect detection, e.g. gaps, fuzzy balls, misalignment, wrinkles, overlaps, and often impurities, cracks and delamination.

The EddyCus® system can be used at any stage in the production: for example for carbon fiber textiles, stacks, preforms or composites. Simply flat to slightly curved parts or preforms can be checked by the table top system. Therefore, it particularly helps process engineers or R&D focused groups to evaluate the results of individual production steps.

The **software** allows to filter differently oriented layers or highlight anomalies such defects. The user can classify the results to deepen the understanding of the material.
DATA SHEET
EddyCus® CF map 4040 – Textural Analysis & Defect Detection

Parts geometries
Scan area
Min. pitch
Speed
Mode
Materials
Add-ons
Device size (w/h/d)

EddyCus® CF map 4040

Flat or slightly curved
400 x 400 x 150 mm³
0.025 mm
100 – 300 mm/sec
Sliding contact or non-contact
CF fabric, textile, stack, prepreg, preform, composite
Camera for positioning, distance sensor
820 x 680 x 600 mm

CHARACTERIZATION & APPLICATION

Textural Analysis
- Fiber orientation of individual layers & hidden layers
- Fiber spacing & fiber distribution

Defects & Errors
- Gaps
- Overlaps & wrinkles
- Misalignments & undulations
- Delaminations
- Fuzzy balls

Application Fields
- Automotive & aircraft structures
- Energy sector (pipes & tanks)
- Civil engineering (bridges)
- And many more

LAYER SEPARATION

Individual plies can be separated when differently oriented within the stack. Therefore, the user marks an area of the EC-Scan (see above figure) and then filters the particular orientation in the polar diagram, which shows the histogram per angle.

EC-Scan with marked area for advanced image processing.

Anomalies within the texture can be characterized by the user.

EC-Scan filtered regarding four dominant ply orientations for textural analysis.

Original EC-Scan as measurement result