SDD Surface Defect Detection

ZM

SPATTERS, HOLES

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Principle

The optical measurement system SDD is designed for quality control of thermal coatings. It captures the illuminated surface of the coating in a high frame rate to detect small defects —such as spatter or holes. If defects are detected, the user is notified.

The system is designed for measurements to be taken either after the coating process is complete or between individual layers of the coating.

All data regarding these defects are stored for subsequent analysis. This enables the user to quickly locate the defects on the component surface and take appropriate measures to rectify them.

Features

- SDD© software package for controlling and visualizing all functions
- compact camera system with integrated lighting
- high frame rate with immediate image analysis
- flexible definition of the equivalent area (defect size threshold)
- automatic image storage for detected defects
- integrated position tracking for rapid defect tracing
- output of all defect results via an Excel-compatible database

Technical description of the measurement system

- robust metal housing with integrated lighting
- smart industrial camera with a macro lens
- measurement resolution: equivalent area of defects > 30 µm
- 80 W LED lighting with controlled cooling airflow
- dimensions (L × W × H): 450 × 135 × 240 [mm]
- weight: ~ 2 kg
- operating temperature: 10–65 °C

System requirements

- planar or nearly planar surfaces (rollers with a diameter of D = 250 mm or greater are considered planar)
- manipulator system capable of movement speeds up to v = 500 mm/s
- standard Windows PC (operating system Win 10 or 11)