Press release

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**Precise 3D surface inspection and defect detection**

**The 3D reflectCONTROL sensors from Micro-Epsilon offer an innovative solution for surface inspection and defect detection on highly reflective and transparent surfaces. Due to phase-measuring deflectometry, they can be used for full-surface measurements and deliver precise measurement results. Depending on the application, models are available for 2D and 3D evaluation.**

In reflectCONTROL sensors from Micro-Epsilon use phase-measuring deflectometry to precisely analyze reflective surfaces. A stripe pattern is projected onto the surface and its reflection is captured by two cameras. The sensor calculates a 3D point cloud of the surface structure from the images, making unevenness, scratches and other defects visible. The sensor can be integrated in a stationary manner or moved over the target on the robot. Localized abnormalities or defects are evaluated and displayed in the CAD data.

The RCS130-160 3D HLP is specially designed for measurement and inspection tasks in production lines and has a GigE Vision interface. This provides GenICam-compliant data, enabling seamless integration into existing image processing systems.

Due to the improved camera arrangement, the sensor delivers sharper 2D images than its predecessor model as well as a 3D representation of highly reflective surfaces. It can be used to determine the topology of the components (e.g. flatness, deflection and curvature). The high z-axis resolution in the nanometer range and the excellent repeatability of < 1 µm allow the sensor to output up to 5 million 3D data points.

reflectCONTROL sensors can be used in semiconductor production, for example – where they can detect the exact shape of a wafer. The sensors are also ideal for the automotive industry: Even the smallest surface defects of less than 1 μm can be detected precisely and reliably during the surface inspection of painted attachments.

Furthermore, the reflectCONTROL sensors can be used together with the Micro-Epsilon 3DInspect software. The software transmits the measurement data from the sensor to a PC via Ethernet and visualizes it in 3D. These 3D data are processed further, evaluated and assessed with 3DInspect and, if necessary, logged and transmitted to a control unit. The 3D data can also be saved.

approx. 2,300 characters



(PR622\_reflectCONTROL\_Sensor\_Pressefoto\_18x13.jpg)