
Release: Nr. 734, 22.11.2018

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The 3D sensor range offers versatile application possibilities for various industries from consumer electronics to precision mechanics

Free forms with reflective surfaces – 3D sensor offers solutions for challenging measurement of curved display and cover glass

A new 3D sensor offers versatile and high-precision measurement technology for a wide range of applications. Direct from a single source, users have at their disposal a sensor for the highly precise measurement of reflective surfaces for capturing free forms. The result is a Wi-Fi-enabled sensor range with a great variety of applications that can be used in the inspection of glass products, electronics and displays.

SpecGAGE3D is the reliable measurement system for the detection of reflective surfaces, combining phase-measuring deflectometry in stereo mode with fringe pattern lighting. The sensor measures glossy and reflective surfaces, such as progressive bifocal lenses or deflection mirrors of head-up displays, with high-precision height and curvature measurements down to the nanometer or millidiopter. In addition, SpecGAGE3D quickly and reliably detects cosmetic errors during shape measurements, so that the defective parts can be rejected early in the process. In its latest version, it is now equipped with four cameras and measures several parts simultaneously, thus reducing the cycle time.

Billions of tablets, smartphones and smartwatches are sold worldwide every year. To ensure that touch surfaces look immaculate and work correctly, every single display has to be checked for defects. New versions of a deflectometry system for measuring reflective surfaces now offer precise inspections of curved display and cover glass.

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Further applications include housing components, curved car interior elements and painted components.

The new system versions of the SpecGAGE3D now measure reflective and transparent surfaces using reflected (curved type) and transmitted (transmission type) light processes. Up to twelve cameras observe the stripe images that are projected onto the test surface by an LCD display to see how they are reflected and distorted on the object. The recorded image sequence and photogrammetric methods are all that are required to reconstruct the object geometry. These methods are particularly useful for inspecting curved displays all the way to the edges.

Connected 3D Quality Control: Versatile, networked, easy to use

All sensors are equipped with Wi-Fi as standard. The systems are very easy to use and can even be controlled from a tablet using the "Remote Desktop" function. Network capability and embedded technology are general development objectives that ISRA is already pursuing with its SmartCam solution, a camera with integrated computing power and "Touch & Automate" portfolio of network-enabled sensors. At the same time, ISRA is offering new management software with which the systems can share collected data with one other or with a database. The Enterprise PROduction Management Intelligence Software, ^EPROMI uses the production line's entire data set to provide users with a fully transparent overview of their manufacturing processes. Combined with network-enabled inspection technology, ^EPROMI provides the basis for closely networked and INDUSTRY 4.0 compatible production.

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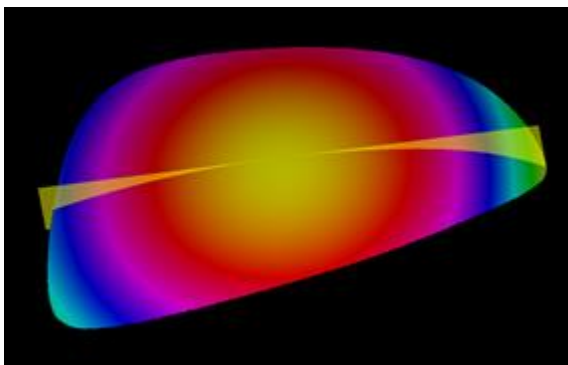
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Images



734_1.jpg

Deflectometric detection of the shape and rippling of mobile devices (front and back).



734_2.jpg

Measurement result of the SpecGAGE3D: As a height map and section of a vehicle rear-view mirror.

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734_3.jpg

SpecGAGE3D systems check the surface quality of display glass for defects and correct curvature.



734_4.jpg

Thanks to the embedded PC and Windows touch operation, the systems are very easy to use and can even be controlled from a tablet using the "Remote Desktop" function.

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