3D SHAPE GmbH

3D Sensors – 3D Software – Metrology Services

Press Release/Product Information

Erlangen, October 29th 2004

New techniques for the measurement of reflective surfaces

With the help of phase measurement deflectometry (PMD) progressive addition lenses for customized eyeglasses can be tested. In order to measure the exact shape, or form of the surface, a stripe pattern with sinusoidal intensity distributions is projected from a light source onto a ground-glass plate. The pattern reflected onto the surface of the progressive addition lens is then recorded by a camera. The local surface curvature of the lens can be calculated from the observed distortion of the stripes. This process is less sensitive to noise corruption than conventional altimetric procedures. PMD enables better quality assurance in the production of progressive addition lenses for eyeglasses. This allows for the avoidance of errors in production and thereby a reduction in production costs. The procedure is fast and highly precise. The testing of a lens only requires a maximum of 20 seconds and its measurement uncertainty is limited to 1/100 dpt.
In the context of a project of the Institute for Optics, Information and Photonics of the University of Erlangen-Nuernberg together with Zeiss, Rodenstock and Rupert&Hubrach, the physical capabilities of PMD were optimized and a laboratory prototype based on this procedure was built in co-operation with 3D-SHAPE GmbH.

For more information, please visit our webpage. www.3D-Shape.com.

3D-Shape GmbH is an offshoot of the Institute for Optics, Information and Photonics of the Friedrich Alexander University Erlangen-Nuremberg and develops and markets optical sensors for the three-dimensional measurement of a wide variety of objects and surfaces.

Yours sincerely

Your 3D-Shape-Team

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