

Metrology solution for centration measurement and surface shape validation of double-sided asphere

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To reduce the size and weight of VR lens systems and significantly increase the optical quality at the same time, a variety of optical components have been developed. One currently very promising candidate for widespread use in VR is pancake lenses. Due to their complexity these elements confront manufacturers with a whole range of challenges in testing and fabrication.

A key to reach the high optical quality of pancake lenses is the verification of the opto-geometric parameters of the individual lenses. Here, TRIOPTICS does not only offer systems for measuring the intrinsic centering error of single- and double-sided aspheres, but also solutions for validating the surface shape of aspheric surfaces. Non-contact and highly precise metrology for the characterization of the distance between optical surfaces – be it center thicknesses or air spacings – is an essential tool for the testing of single components and the finished pancake lens.

In addition to the characterization of the elements, the respective orientation of the aspheric axes as well as the spacing between the lens elements are also the key parameters for TRIOPTICS' automated active alignment and assembly solutions. Furthermore, TRIOPTICS' world-renowned expertise in MTF is also applied to pancake lenses and enables the qualification of the imaging performance of the VR lens systems.

Our experience in active alignment and our expertise in various field of optical metrology enable our customers to create better pancake lenses for the challenges of tomorrow.