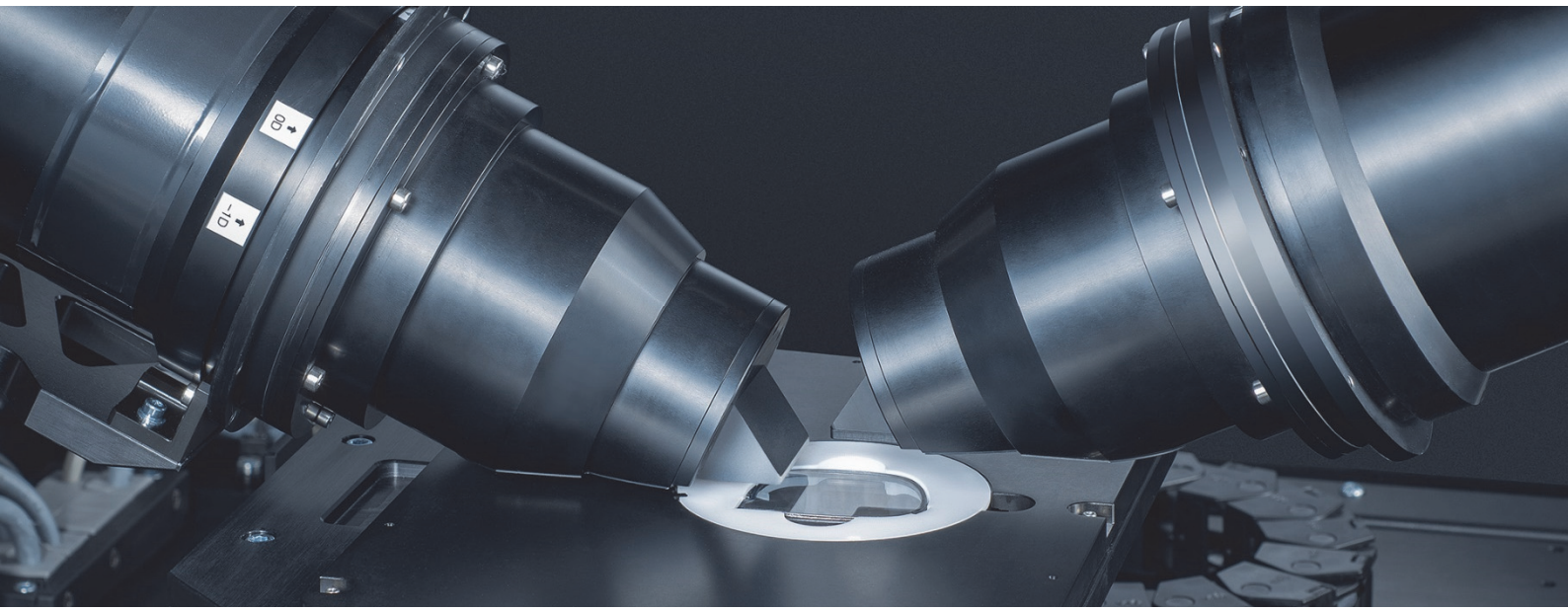
TRIOPTICS
See the Difference



ImageMaster® PRO AR Reflection

AR waveguide testing solution for high volume production

TRIOPTICS
See the Difference

ImageMaster® PRO AR Reflection

The ImageMaster® PRO AR Reflection offers manufacturers and integrators a comprehensive solution for the image quality validation of optical components for augmented reality (AR) applications. The instrument sets new standards with widefield diffraction-limited optics for unmatched accuracy and productivity in AR waveguide testing. Using a conoscope as core technology, the image details are captured using a wide field of view. This approach achieves very short cycle times down to 1.5 seconds. As the optics used in the system are diffraction-limited over the entire field of view, a high level of accuracy is guaranteed in this FOV. Its wide range of measurement parameters includes Modulation Transfer Function (MTF), Effective Focal Length (EFL), Virtual Image Distance (VID), Distortion, Uniformity, and Chief Ray Angle (CRA).

Key features

- The only solution with diffraction-limited optics for accurate MTF measurement across wide FOV (70° x 52.5°).
- Easy alignment and correlation across production lines and R&D instruments.
- Covers testing from individual components to module level.
- Easily upgradeable for various production environments and measurement parameters.
- 7+ Degrees of Freedom for thorough Eye-box, FOV, and Eye-relief analysis.
- Ideal for manufacturers, integrators, and independent testing labs.

Technical data

	ImageMaster® PRO AR Reflection
Sample under test	Reflection type AR waveguide, diffractive optical element, surface relief grating type, volume phase holographic type combiner, AR wafer, NED, AR/VR module
Object distance	Infinity to 1 m, motorized
Maximum field of view	70° x 52.5° (H x V), 82° (diagonal)
System performance	Diffraction limited operation over the full field of view
Detector/illumination side pupil size	1 mm to 5 mm diameter, in front of first element, user-exchangeable and for virtual aperture it is up to 4 mm
Brightness range	Maximum 2 million nits and minimum 0.1 nits (can be reduced with different exposure settings)
Spectral range	Visible range wavelength optimized for 3 narrow band RGB illumination sources sequentially; non-standard wavelengths*
Measurement parameter	MTF, CRA, Homogeneity, Distortion, FOV, VID (virtual image distance), Dioptre, Efficiency, Color* (color coordinates, CRI), and Luminance*, ANSI Brightness, Flare*, Haze*

*optional

93-009-116-EN Version 000

TRIOPTICS GmbH | Strandbaddamm 6 | 22880 Wedel | Germany | +49 4103 18006-0
sales@trioptics.com | www.trioptics.com