



ImageMaster® PRO AR Reflection

AR waveguide testing solution
for high volume production



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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, Chief Ray Angle (CRA), Color, Luminance, and Efficiency.

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 with automatic sample alignment.
- 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	AR waveguide (+ prescription lens), AR module – diced & wafer (300 mm)
Measurement parameters	MTF, CRA, Efficiency, Virtual image distance, Color*, Luminance*, Homogeneity, Uniformity, Checkerboard contrast, etc.
Focus adjustment	Motorized focus: -1 dpt to + 3 dpt
Maximum field of view	Horizontal: 70° / Vertical: 52.5°
Resolution	13400 (H) x 9528 (V)
Optical performance	Diffraction limited operation upto 30 lp/° over the full field of view
Pupil size (detector)	1 mm to 5 mm diameter, in front of first element of the detection optics → User exchangeable
Pupil size (illumination)	1 mm to 5 mm diameter, Circular or Rectangle → User exchangeable
Light source type	White LED with narrow band filters (customizable)
Light source polarization	Linear or circular polarizer can be added on request (fixed)
Upgrades	Virtual aperture in illumination unit, Color & Luminance upgrade, Robotic sample loading

*optional