

Technical Details

PROJECTED APERTURE

- Enables measurement within Eye box
- Multi aperture support: 2, 3, 3.6, 4 mm
- Available in folded or non-folded form factor

OPTICAL PARAMETERS

- Focus distance: from 1 m to infinity
- Motorized focus adjustment: ± 1 diopter from nominal focus
- RMS spot radius in image center: 1.93 μm
- Numerical aperture (NA): 0.24
- F-number: 2.0
- Full imaging circle FOV 120°

LENS DIMENSIONS

- Folded: W: 72 mm H: 137 mm L: 245 mm
- Non-Folded: W: 72 mm H: 72 mm L: 307 mm
- Weight: 1250 g

PRISM BASED 3CMOS CAMERA

- Test cases: All
- FOV: H: 50° V: 38°
- CPD: 41
- OPTION: Integrated spectrometer for enhanced color accuracy

About OptoFidelity

At OptoFidelity we thrive for the ultimate user experience by simulating and testing user interactions for smart devices.

We work with the world's largest device manufacturers. We are globally recognized pioneers in test solutions, and our humanlike robot assisted technology platforms are widely used in product development, production and quality assurance. Our products are all equipped with easy-to-use software tools for test configuration, results analysis and reporting.



LOCATIONS

USA: Cupertino, Redmond
FINLAND: Helsinki, Oulu, Tampere
SOUTH KOREA: Seoul
CHINA: Chengdu, Chongqing, Dongguan, Kunshan, Nanjing, Shanghai, Shenzhen, Yantai, Zhengzhou, Zhuhai
Hong Kong, Taipei

HEADQUARTER

OptoFidelity Oy
Visiokatu 3
FI-33720 Tampere
Finland

SALES

sales@optofidelity.com
+358 44 430 0100

WWW

optofidelity.com

SOCIAL MEDIA

youtube.com/user/OptoFidelity
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OptoFidelity™ HMD Eye

Calibrated lens and camera system
for image quality testing of head
mounted AR/VR displays





OptoFidelity™ HMD Eye

*Calibrated lens and camera system
for image quality testing
of head mounted AR/VR displays*

OptoFidelity™ HMD Eye is a lens and camera system for mimicking the performance of the human eye, with the purpose of characterizing head-mounted augmented and virtual reality displays in both R&D and production environments.

Contrary to standard lenses, HMD Eye features an external entrance pupil with the same size as the human eye. This allows for positioning the lens in the eye relief location, where it can capture with a single shot the full field of view of the tested device, exactly as the user would perceive it.

OptoFidelity™ HMD Eye has been optimized for high UPH production testing and designed to enable measurements such as mura, uniformity, modulation transfer function, distortion and contrast.

The instrument is delivered fully characterized and comes with a camera optimized for the application. As part of a complete OptoFidelity robotics and software platform for precision mechanical alignment and image analysis, it becomes an unbeatable solution for automated near-eye display testing.

TEST CASE EXAMPLES

- Eyebox location and size
- Interpupillary distance (IPD)
- Field of view (FOV)
- Geometric distortion
- Chromatic aberration
- Modulation transfer function (MTF)
- Checkerboard contrast
- Mura
- Luminance
- Luminance uniformity
- Pixel defects
- Row and column defects

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HIGH RESOLUTION, MONO

- Test Cases: Eyebox, IPD, FOV, Distortion, MTF, Luminance, Contrast, Uniformity
- FOV: H: 100° V: 75°
- CPD: 41

HIGH FIELD OF VIEW, MONO

- Test Cases: Eyebox, IPD, FOV, Distortion, Luminance, Contrast, Uniformity
- FOV: Full imaging circle, 120° diameter
- CPD: 29

EVERY HMD EYE IS CALIBRATED FOR FOLLOWING PARAMETERS

- Nominal focus distance
- Luminance
- Flat field
- Distortion
- Color Aberration
- Color (if color camera selected)

OptoFidelity™ HMD Eye has been optimized for high UPH production testing and designed to enable measurements such as mura, uniformity, modulation transfer function, distortion and contrast.