

Technical Details

ROBOT FRAME

External dimensions (incl. lens and DUT jig): (w, d, h)	700x800x1400mm
Total weight	~30kg + imaging solution
Robot working area (x, y, z)	150x130x150mm
Cabinet type: Stand-alone full enclosure: (w, d, h)	840x960x2000mm
Robot max. velocity (x,y)	200mm/s
Robot max. velocity (z)	200mm/s
Motion repeatability	±10µm

LENS DIMENSIONS

Length (from aperture to image plane)	306.6mm
Max diameter	72.0mm
Weight	1250g
External pupil diameter	3.6mm (interchangeable 2-4mm)

OPTICAL PARAMETERS

Focus distance	software controllable between 1m to infinity
RMS spot radius in image center	1.93µm
Numerical aperture (NA)	0.24
F-number	2.0
Sensor options	
• Monochrome	
• Resolution	From 12.4MP to 16.8MP
• Field of View (FOV)	100x75deg to 120deg
• PDD	29-41
• Color	
• Resolution	5Mpix
• FOV	60deg
• PDD	41

DEVICE UNDER TEST (DUT) JIG

Head shaped DUT jig is to support all head mounted displays

SENSOR AND CAMERA BASED DUT POSITIONING

DUT positioning accuracy (x,y)	25µm
DUT positioning accuracy (z)	1µm

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
CHINA: Chengdu, Chongqing, Dongguan, Kunshan, Nanjing, Shanghai, Shenzhen, Yantai, Zhengzhou, Zhuhai
Hong Kong

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
linkedin.com/company/optofidelity
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OptoFidelity™ HMD IQ

For measuring Image Quality of Head Mounted Displays





HMD IQ

OptoFidelity™ HMD IQ

*Complete station to test
HMD image quality*

OptoFidelity™ HMD IQ is a complete station to test and measure near eye displays (NED) with an image source (display) and projection optics (lens). HMD IQ is designed to provide repeatable results of the assembled near eye display at production or RnD. System can be configured to support early development version of near eye displays with possible adapter board as well as fully integrated HMDs. OptoFidelity™ HMD IQ enables high UPH production testing and is designed to enable measurements listed below.

HMD IQ TEST FEATURES

- Eyebox
- Field of view (FOV)
- Uniformity
- Checkerboard contrast
- Modulation transfer function (MTF)
- Color uniformity
- Interpupillary distance
- Geometric distortion
- Relative luminance
- Chromatic aberration
- Color

CONTENT OF DELIVERY

- Robot and motion control
- HMD Eye calibrated camera and lens
- Sensor and camera assisted DUT positioning
- Cabinet
- Software for system control and HMD IQ test configuration

OptoFidelity™ HMD IQ
is a complete station
to test and measure
near eye displays (NED).

OptoFidelity™ HMD Eye

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

OptoFidelity™ HMD Eye is a combined motorized 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, OptoFidelity™ HMD Eye features an external entrance pupil with the same size as the human eye and controllable focus. External pupil allows to position 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. Controllable focus mimics human eye focusing to objects in different distances.

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

Our products are all
equipped with easy-to-use
software tools for test
configuration, results
analysis and reporting.

HMD Eye

