



WEBINARS

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Addressing the Measurement Challenges of XR Device Optics: Displays, Lenses, and Waveguides

Thursday, May 4, 2023 1:00 PM - 2:00 PM EDT

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Presented by



.: About This Webinar

Today's AR/VR/MR, collectively XR, developers and manufacturers are working with a wide array of devices such as headsets, helmets, goggles, and smart glasses. New technologies and innovative optics continue to emerge, from micro-LED displays to waveguides, and from metasurfaces to liquid lenses. Combinations of these components have yielded an array of device architectures. Different optics, form factors, and imaging systems are used to address multiple different use cases, yet all near-eye devices (NEDs) share a single goal, to enable high-performance visualization for the human user. Optical defects and deviations at any point in the component architecture must be tested out to ensure this goal is met.

To achieve visual quality performance, XR display makers need quality measurement solutions that are flexible enough to enable rapid prototyping and design iterations, yet are also highly accurate and capable of production-line inspection speeds. A variety of display test approaches are needed to address more diverse viewing conditions, including different angular fields of view (FOVs), resolutions, focus ranges, and hardware form factors that determine how each display is experienced. While a display module may require inspection of pixel-level defects, projected images must be evaluated for brightness, sharpness of focus, distortion, aberration, and other qualities. At the final stages of production, measurement equipment must be able to evaluate the complete FOV as it will be seen by the user within a headset. Mike Caputo of Radiant Vision Systems provides guidance on XR optical performance testing.



Attendees will learn about:

- XR displays' visualization parameters and quality considerations.
- Test and measurement systems that emulate the human eye in XR headsets.
- Measurement challenges posed by new and emerging XR device designs and capabilities.
- Flexible measurement optics that simplify display testing across XR devices.

Who should attend:

Engineers, technicians, scientists, consultants, managers, and others who use, design, build, or integrate XR device optics. Anyone involved in light applications who is interested in human-centric optical metrology and its industrial uses. Those who utilize displays, imaging, LEDs, and optical components in industries such as aerospace, automotive, consumer, defense, machine vision, medicine, and semiconductors.

About the presenter:

Mike Caputo is regional sales manager for western U.S. at Radiant Vision Systems where he works with leading brands in consumer electronics, augmented and virtual reality, and emerging devices. He focuses on supporting developers and manufacturers with advanced metrology solutions for optical design and sensing, utilizing his background in automated visual inspection coming from 10 years in the machine vision field. His experience spans the electronics, aerospace, medical device, and packaging industries, where he has helped companies meet a range of quality and production challenges by applying automated measurement and inspection solutions. He earned a Bachelor of Science degree in electrical engineering from the University of Cincinnati.

About Radiant Vision Systems:

Radiant Vision Systems engineers photometric imaging systems to evaluate the quality of light sources, displays, and components. These measurement systems are designed to match human visual perception, employing scientific-grade imaging and CIE-matched photopic filters. Imaging colorimeters and photometers pair with unique optical components enabling the visual quality of XR headsets to be evaluated as they are experienced by users, while capturing objective and actionable values for quality control in development and production testing.

.: Mark Your Calendar

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- External Light Sources for Co-Packaged Optics: Applications and Beyond, 5/9/2023 1:00:00 PM EDT

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