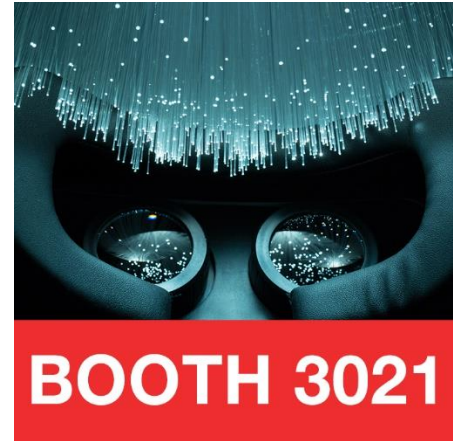


For Immediate Release

Radiant Demonstrates Solutions for Measuring Visual Experiences in XR Headsets at Photonics West Exhibition

REDMOND, Wash. – January 6, 2022 – Radiant Vision Systems, a leading provider of test and measurement solutions for light sources and displays, announces that it will demonstrate its full line of test and measurement solutions for ensuring the visual quality of XR (augmented, virtual, and mixed reality) displays at the upcoming [Photonics West Exhibition](#). Live product demonstrations from booth 3021 will debut the company’s novel optical designs for imaging metrology, which enable [ProMetric® Imaging Colorimeters and Photometers](#) to capture and evaluate the full field of view (FOV) of virtual images from the intended position of the user’s eye inside XR headsets. The Photonics West Exhibition is free to attend with registration and takes place from January 25-27, 2022, at Moscone Center in San Francisco, California.



The visual experience of virtual elements within an XR headset can only be qualified accurately by emulating the viewing parameters of the human user. These parameters encompass the FOV of the user, the sensitivity of the human eye to light and its properties, and the position of the human pupil (or, entrance pupil) within the headset form factor. Test and measurement systems used to qualify XR displays meet these parameters using wide-FOV optics, photometric or colorimetric filters, and optical designs that enable systems to fit within the headset at the intended position.

Imaging colorimeters and photometers have been proven for characterization and inspection of XR displays, just as they have been proven to qualify displays outside of headsets. Metrology tools like Radiant’s [ProMetric Imaging Photometers and Colorimeters](#) capture images with the same sensitivity as the human eye by applying universally accepted spectral sensitivity functions from CIE that describe the standard human eye’s response to visible light. These principles enable ProMetric systems to quantify accurate brightness (luminance) and color (chromaticity) values for each pixel in an image of a display and compare these values in spatial context to ensure a display has proper contrast, uniformity, sharpness, focus, and more.

Paired with wide-FOV lenses, imaging colorimeters and photometers capture values of light across a display at angular positions, just as XR displays are visualized in the headset. Radiant’s XR display test solutions employ wide-FOV optics with angular FOVs up to 120° horizontal, 80° vertical and resolutions up to 80 pixels per degree (PPD) (using 61-megapixel imaging systems).

SEE THE DIFFERENCE

These systems match the approximate 120° FOV of binocular human vision and exceed the generally accepted human eye resolution of 60 PPD—enabling Radiant’s imaging systems to acquire extremely precise values across the headset FOV.

While these parameters of XR display measurement (imaging, photometry, and wide-FOV) are met with relatively standard optical designs, the final parameter of measurement from the human pupil position is less straightforward. XR headsets have unique form factors (headgear, lenses, interpupillary distance (IPD), dual displays, foveated or varifocal optics, glasses, etc.) creating challenges for common imaging equipment to achieve the proper entrance pupil position for display measurement. Traditionally, this challenge has been met with bespoke optical designs that adapt each imaging system to fit each headset. This process is costly for XR manufacturers in both financial investment and development time, and ground-up redesigns of test equipment may be required if measurement parameters change.

From booth 3021 at Photonics West, Radiant will demonstrate its award-winning XR display test solutions for measurement inside XR headsets. These include its [AR/VR Lens](#) as well as a novel optical design concept for XR display testing to meet various headset form factors. Radiant will demonstrate advantages of this new optical design concept from its booth, including electronic-focus optics that enable imaging at multiple focal distances (without changing the entrance pupil location or the length of the imaging system’s lens barrel), optional folded optics (for imaging at 90° when headset hardware prevents a direct path to the entrance pupil position), and consistent imaging performance across configurations as shown through XR display analyses in Radiant’s [TT-ARVR™ Software](#) platform.

Photonics West takes place January 22-27 and includes a full technical program, courses, and industry events, as well as the Photonics West Exhibition from January 25-27. Proof of vaccination is required to attend all events. Information and free registration to the Photonics West Exhibition are available at <https://spie.org/conferences-and-exhibitions/photonics-west/photonics-west-exhibition>

About Radiant Vision Systems

Radiant Vision Systems works with world-class brands and manufacturers to deliver creative visual inspection solutions that improve quality, reduce costs, and increase customer satisfaction. Radiant’s legacy of technology innovation in photometric imaging and worldwide install base date back more than 30 years and address applications from consumer electronics to automotive manufacturing. Radiant Vision Systems product lines include TrueTest™ automated visual inspection software for quality control, and ProMetric® imaging colorimeters, photometers, and light source measurement systems. Radiant is headquartered in Redmond, Washington, USA, with strategic offices in California, Michigan, China, South Korea, and Vietnam. Radiant has been a part of Konica Minolta’s Sensing Business Unit since August 2015. For more information, visit www.RadiantVisionSystems.com.

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