

Press Release

Create the perfect user experience with high-end light measurement technology

At Display Week 2021, Instrument Systems will showcase an extraordinary portfolio of light measurement technology with unprecedented accuracy for the perfect user experience with displays of all types.

Munich, May 2021 – *At Display Week 2021, held as virtual conference from May 17 – 21, Instrument Systems GmbH will put spotlight on applications representing the major trend in the display industry. Within its LumiTop series, Instrument Systems developed test systems with high-resolution camera and high-end spectroradiometer for unprecedented accuracy and high-speed 2D measurements. Different models are tailored to e.g. AR/VR applications, quality control, automotive applications, or production testing.*

Meet the complete characterization of AR/VR devices

Perfect user experience for AR/VR headsets calls for extensive, fast and highly accurate optical tests during production. In order to meet this specific challenge, Instrument Systems has developed the LumiTop AR/VR 2D imaging colorimeter. The LumiTop's AR/VR lens simulates the human eye and measures color and luminance exactly as seen by the user. The unique periscope design enables synchronized two-eye measurements, and the proven LumiTop principle guarantees fast, traceable, and highly accurate measurements. Besides the virtual display, AR/VR headsets contain several more types of light sources and sensors that enable users to immerse themselves in the virtual world. Also for those, Instrument Systems offers testing solutions, e.g. for the IR sources (NIR LED, VCSEL) often used for gesture and object recognition within an AR/VR headset.

- ▲ Virtual image test with LumiTop AR/VR
- ▲ Image source pixel test with LumiTop X150 up to 600 MP
- ▲ Angular resolved spectra with DMS goniometer
- ▲ 3D gesture recognition sensor test with far-field emission camera
- ▲ Time-of-flight sensor testing for pulses down to 1 ns

Take a Preview on LumiTop X20

A special highlight at Display Week 2021 will be the preview of the new LumiTop X20, upcoming in autumn 2021. Building on the established 2700 and 4000 models, the LumiTop X20 will offer a high-resolution camera, a flexible field of view and a high dynamic range for both high and low luminance measurements. Target applications for the X20 are the measurement of homogeneity (particularly high/low luminance) and defect detection.

Short Course S-2: Fundamentals of Display Metrology

As part of the virtual Display Week Program, Dr. Reto Häring, Vice President Customer Solutions, will co-present a Short Course with members from Radiant Vision Systems and Konica Minolta. The course "Fundamentals of Display Metrology" will cover the principles and applications of display metrology, and introduce measurement equipment and techniques. Topics include the science of light and color, units of measurement, measurement standards, light measurement devices from spot meters to imaging equipment, test methods to quantify display performance parameters like mura, pixel uniformity, flicker, and the latest metrology solutions for testing emerging displays from μ LED to AR/VR devices. The Short Course S2 will be presented by Dr. Reto Häring (Instrument Systems), Jens Jensen (Radiant Vision Systems), and Yutaka Maeda (Konica Minolta) and is available to view online Thursday 5/20/2021.

Presentation: Color Uniformity of μ LED Displays: New Color Calibration Concept for Fast and Accurate Optical Testing

Displays require a high uniformity of luminance and color for a satisfying user experience. Consequently, most mass produced displays are tested by imaging light measurement devices (ILMD) to assure uniformity. The upcoming μ LED display technology promises high contrast, fast response time, wide color gamut, low power consumption, and long lifetime. On the flip side, the technology is challenging for optical quality control, since μ LED production tolerances with respect to color can currently be much larger than for LC and OLED display technologies. Especially the narrow spectral bandwidth of μ LEDs can introduce large measurement errors due to the unavoidable mismatch between the measurement device's physical color filters and the CIE1931 tristimulus functions. This presentation shows how the superior measurement accuracy of spectroradiometers can be extended to the faster optical quality test methods of imaging light measurement devices. This unique combination of advantages satisfies the μ LED production requirements for speed and color accuracy at the same time. The presentation will be presented by Dr. Tobias Steinel (Instrument Systems) and is available to view online Friday 5/21/2021.

At a glance

We invite you to discuss your special measurement tasks with our experts at our virtual Display Week booth and to listen to Instrument Systems' expert lectures:

Short Course S-2: Fundamentals of Display Metrology

Online on Thursday, May 20, Speaker: Dr. Reto Häring, Instrument Systems

Color Uniformity of μ LED Displays:

New Color Calibration Concept for Fast and Accurate Optical Testing

Online on Friday, May 21, Speaker: Dr. Tobias Steinel, Instrument Systems

More under www.instrumentsystems.com/displayweek/

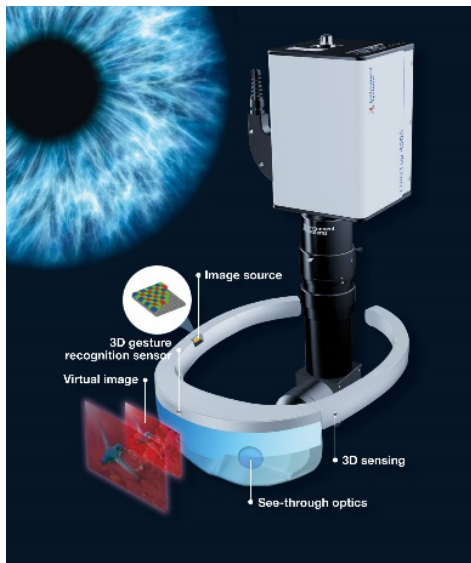


Figure: The unique periscope lens design guarantees easy access to the NED and enables an optimal measurement position, even under the tight spatial constraints of fully assembled headsets.

Company portrait of Instrument Systems GmbH

Instrument Systems GmbH, founded in Munich in 1986, develops, manufactures and markets all-in-one solutions for light measurement applications. Its core products are array spectrometers and imaging colorimeters. The company's main fields of activity are LED/SSL and display metrology, spectral radiometry and photometry, where today Instrument Systems is one of the world's leading manufacturers. The Optronik line of products for the automotive industry and traffic technology is developed and marketed at its Berlin facility. Instrument Systems has been a wholly-owned subsidiary of the Konica Minolta Group since 2012.

Further text material and photos:

<https://services.instrumentsystems.com/owncloud/index.php/s/TTTkCOM3txUJlbf>

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