

## Press Release

### Instrument Systems becomes a member of the MicroLED Industry Association MIA

Instrument Systems supports the development of  $\mu$ LED technologies with its active membership of the MIA.

**Munich, August 2023** – *Instrument Systems, one of the leading manufacturers of high-end light measurement technology, has become a member of the MicroLED Industry Association (MIA). With its active membership, Instrument Systems is supporting the development and implementation of  $\mu$ LED display technologies. Instrument Systems has been setting global standards for high-precision spectroradiometric measurements in the LED industry since 1986. It is involved in standardization committees and associations (e.g., DIN, CIE) and cooperates with the leading metrology institutes. For CEO Dr. Markus Ehbrecht, joining the MIA is a logical continuation of these activities for the purpose of sharing knowledge and advancing new technologies worldwide.*

$\mu$ LEDs are known as a challenging new technology. They are smaller than 100 microns and have exceptional optical properties, enabling the production of displays with a large color gamut, high contrast and very high resolution. New adaptive front lighting systems (AFS) for vehicles also use  $\mu$ LED arrays with some 10,000 individual light sources. This allows precise control of the light beam, as each  $\mu$ LED can be controlled individually.

For many years, Instrument Systems has been an important partner to the largest LED and  $\mu$ LED manufacturers. With its high-quality light meters and spectrally optimized cameras, Instrument Systems offers innovative and efficient solutions for the precise optical measurement of  $\mu$ LEDs. The camera-based 2D systems LumiTop 4000 and LumiTop X150 enable fast, highly accurate and traceable optical measurements for various  $\mu$ LED arrays and displays. In combination with a high-precision CAS 140D spectroradiometer, adaptive live calibrations can be realized, based on the spectral properties of the test specimen. In addition, the measurement can be synchronized with the power source of the  $\mu$ LED to achieve high speeds and reproducibility.

The LumiTop 4000 has a resolution of 12 MP and can detect the smallest defects and inhomogeneities. Thanks to a 100 mm macro lens, the camera enables fast parallel inline analysis of all  $\mu$ LEDs on a wafer at a single test station. With a field of view (FOV) of about 10 x 14 mm, it can simultaneously measure many thousands  $\mu$ LEDs with a minimum pixel size up to 30  $\mu$ m.

The LumiTop X150 has a 150 MP sensor that can be extended to 600 MP via optional pixel shifting. Various industrial-grade lenses are available for testing the smallest micro-

displays, smart watches, mobile phones, tablets and wafers up to large video walls. One-shot wafer tests are also possible with the LumiTop X150.

The MicroLED Industry Association was founded in 2022 to accelerate the implementation of  $\mu$ LED display technologies. The association brings together companies, researchers and organizations active in the  $\mu$ LED industry, and provides the ideal forum for solving common technology problems, promoting collaboration and sharing information, resources and tools. The association aims to ensure that the  $\mu$ LED display industry communicates uniformly and jointly solves technology problems.

[www.microledassociation.com/members/instrument-systems/](http://www.microledassociation.com/members/instrument-systems/)



**Figure:** Compared to the single measurement of each LED of the wafer, the simultaneous measuring LumiTop system is orders of magnitude faster and still provides spatial and spectral information for each individual emitter.

**Text material and images:**

<https://instrumentsystems.owncloud.online/s/fF4g1wGVfjG61xs>

**Company portrait of Instrument Systems GmbH**

Instrument Systems GmbH, founded in Munich in 1986, develops and manufactures high-end light measurement applications that are indispensable to the manufacturers of consumer electronics, AR/VR displays, MicroLED wafers, VCSEL laser systems, automotive lighting and LED/SSL modules. Its core products are array spectrometers and imaging colorimeters. All solutions profit from our CAS series of high-precision spectroradiometers that are recognized and in use worldwide. In combination with 2D imaging colorimeters, integrating spheres and goniometer systems, they enable high-precision and accurate measurements in the entire range from UV to IR, traceable to the PTB or NIST. Today, Instrument Systems is one of the world's leading manufacturers of light measurement technology. The Optronic Line of products for the automotive industry and traffic technology is developed and marketed at its Berlin facility. Our subsidiary in Korea complements the product portfolio with the 'Kimsoptec Line' for the Korean light & display market. Since 2012, Instrument Systems has belonged to the Konica Minolta Group.

[www.instrumentsystems.com](http://www.instrumentsystems.com)

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