

Press Release

Stray light corrected array spectrometer reliably determines blue light hazard

At Light + Building 2018 Instrument Systems will be presenting its latest stray light corrected array spectrometer CAS 140D for reliable testing of the blue light hazard emanating from white LEDs.

Munich, January 2018 – At Light + Building 2018 in Frankfurt visitors to the Instrument Systems stand 4.1/ K89 will be able to experience advanced measuring stations for spectroradiometric and photometric measurement tasks. With the stray light corrected CAS 140D Instrument Systems – as a technical pioneer – is the first to offer an array spectrometer that can reliably assess the blue light hazard from light sources within the prescribed limiting values. Hitherto only double monochromators were recommended for this task, as an underestimation of the blue light hazard was possible in measurements with a spectroradiometer on array spectrometer basis due to stray light. The CAS 140D avoids this in two ways: The optics and mechanics used in the spectrograph block are optimized with regard to disturbing stray light. Additionally, a unique stray light correction matrix is integrated in the calibration procedure. Both innovations combined ensure an up to now unachieved precision in the determination of the blue light hazard with an array spectrometer.

In conformance with standards IEC 62471 and IEC 62778, extremely high quality requirements are placed on spectroradiometers when used for assessing the blue light hazard from light sources. In addition to the stray light behavior, sensitivity and wavelength accuracy are also relevant, since some of the assessment spectra used have extremely steep gradients. Through a new form of calibration the CAS 140D achieves a wavelength accuracy of measurements below the value of ± 0.2 nm prescribed in IEC 62471. The improved mechanical and optical design significantly increases throughput. The stray light corrected CAS 140D thus satisfies the required standard limiting values for examining the blue light hazard and is a low-cost and easy-to-operate alternative to scanning systems.

Further application setups at the Instrument Systems stand are devoted to the following current topics:

(1) Energy-efficient lighting solutions in buildings call for highly accurate and fast testing of medium-sized LED modules according to the EU Ecodesign Directive. Instrument Systems presents its LGS 1000 goniophotometer that enables extensive ErP tests for generating test reports with an add-on module of the established SpecWin Pro software.

(2) A live demonstration of the calculation of the unified glare rating will be provided using the smaller LGS 350 goniospectroradiometer, with which the angle-dependent spatial radiation properties of small to medium-sized SSL luminaires and LED modules can be determined. At this measuring station visitors will also have an opportunity to test the new DSP 200 photometer for ultrafast “on-the-fly” measurements of spatial light distribution.

(3) In view of the increasing importance of the assessment of color stimulus, the test laboratories of Instrument Systems have received accreditation to ISO 11664 for colorimetric quantities. At the measuring station with an ISP 2000 integrating sphere the correlated color temperature CCT and color rendering index CRI can be determined with unique measurement accuracy.

The sales engineers of Instrument Systems will be demonstrating measurement solutions at Light + Building, Stand 4.1 / K89.

Further product information can be found at the website of Instrument Systems:

www.instrumentsystems.com



Figure 1: The stray light corrected CAS 140D array spectrometer is ideally suited to the assessment of blue light hazard from light sources.

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. Since 2012 Instrument Systems has been a wholly-owned subsidiary of the Konica Minolta Group.

For further information or photos / illustrations:

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