# Press Release

## Fast production test of UV-LEDs

Measurement system consisting of an integrating sphere with PTFE-coating and a highly precise spectroradiometer for fast 24/7 quality control

**Munich, December 2018** – Numerous applications, for example in the medical area or in material testing, are based on precisely specified UV radiation. For UV-B and UV-C emitters, the measurement of their spectrum between 325 nm down to 200 nm is generally only possible with extended measurement times due to their low radiant flux. As such, a condition for fast testing within production is high reliability in conjunction with high optical throughput of all participating system components. Within its well-established CAS-series of premium spectroradiometers over many years, Instrument Systems has developed a novel series-type CAS 140D-157. This new system measures precisely and reliably not only within the visible spectrum, but also in the UV. Coupled with a PTFE-coated integrating sphere, the system permits for fast 24/7 production tests of UV emitters to be run.

With the new CAS 140D-157, Instrument Systems presents a very flexible array spectroradiometer that measures precisely and reliably in the visible as well as in the UV spectral range between 200 and 830 nm. The spectroradiometer is based on the CAS 140D, which is internationally accepted as standard in light measurement. The CAS 140D possesses excellent measurement accuracy due to a very effective suppression of stray light. Additionally, stray light effects can be improved even further by an optional stray light correction. Moreover, the novel UV-model is equipped with a customized diffraction grating, which assures twice the optical throughput at 200 nm in comparison to the previous model.

In combination with spectroradiometers, integrating spheres serve as coupling optics for optical emitter. At Instrument Systems, the ISP 50-UV with an inner diameter of 50 mm has been developed especially for this application in the UV. The interior is coated with the highly reflective material PTFE (Polytetrafluoroethylen). In contrast to the commonly used Barium sulphate coating, PTFE generates a higher optical throughput in the UV within the integrating sphere.

The combined measurement system of CAS 140D-157 and ISP 50-UV allows for simultaneously precise and fast measurements in the UV spectrum. UV radiant flux as well as further spectral parameters of UV-LEDs can be determined within a 24/7

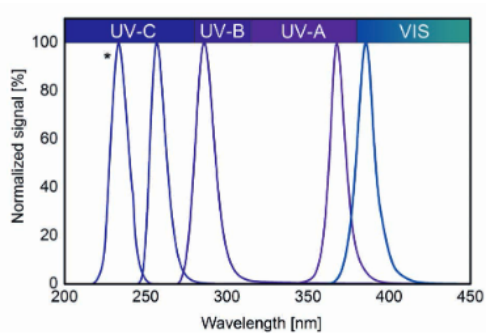
production control or during laboratory applications. All UV measurement systems provided by Instrument Systems come with traceable calibration according to PTB.

https://www.instrumentsystems.com/applications/uv-messtechnik/

**Caption 1:**
The ISP 50-UV integrating sphere is especially suitable for UV-measurements in production. In combination with spectroradiometers of the CAS-series, the ISP 50-UV guarantees an extremely high optical throughput and therefore, allows for stable and precise measurements of wavelengths down to 200 nm.


**Caption 2:**
Normalized spectra of different UV-LEDs with peak wavelengths at 235, 255, 285, 365 and 385 nm measured with CAS 140CT/D and PTFE integrating spheres at Instrument Systems.

*UV-LED spectra (220-260 nm) used with kind permission from TU Berlin and Ferdinand-Braun-Institute Berlin.




**Company profile**

Instrument Systems, founded in 1986 and based in Munich, Germany, develops, manufactures and markets turnkey solutions for light measurement. Its main products are high-performance array spectroradiometers, imaging photometers and colorimeters. Key applications are LED/SSL and display measurement, as well as spectroradiometry and photometry. Today Instrument Systems is one of the world's leading manufacturers in this area. Products of the Optronics line for the automotive industry and transport sector are developed and marketed at the Berlin location. Since 2012 Instrument Systems has been a wholly-owned subsidiary of the Konica Minolta Group.

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