

Press-Release

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New compact high-speed test system for displays and lighting

The newly developed WP512 imaging spectral colorimeter from our partner Westboro Photonics features a high-resolution camera and an internal reference spectrometer for fast, accurate testing of displays and lighting in production.

High-quality displays and lighting modules with optimal brightness distribution and color representation require precise measurement technology in the production. The new WP512 is designed for fast and reliable quality control on in-line and end-of-line test benches in the production process. The measurement system combines a fast 12.3-megapixel CMOS color sensor (RGB-filtered) and a spot reference spectrometer in a compact housing.

Another key component is an integrated high-speed linear stage. It enables rapid switching between optical paths to direct all incident light to either the camera sensor or the spectrometer. This design and measuring principle allow a large light throughput with elevated measuring sensitivity. It enables faster measurement times and shorter cycle times than comparable camera systems, which divide the incident light into two or more optical paths by means of an integrated beam splitter. The WP512 camera and reference spectrometer allow exposure times of less than one millisecond. Light attenuation, using neutral density filters up to ND1 in the camera path and up to ND2 in the spectrometer path, is available as standard. Exposure times can, thus, be flexibly adjusted. Conveniently, the spectrometer is closed when the camera is recording and vice versa. Therefore, automatic dark current measurement is possible without affecting the cycle time.

Thanks to a large selection of lenses, the WP512 can be optimally adapted to the inspection requirements of different display technologies. Besides wide-angle, telephoto and microscope lenses; there is also a conoscopic lens for examining viewing angle dependencies up to +/- 80 degrees. In addition, the new XR1 near-eye-display lens enables the analysis of AR and VR displays. The entrance pupil aperture can be adjusted according to human visual accommodation at the different brightness levels, from 1.5 to 5.0 mm.

With the help of the associated Photometrica® software and optional software packages, comprehensive tests are available, for example for the analysis of luminance, color homogeneity, gamma, contrast, but also various defects. The user can adapt the system for different testing requirements in quality control with minimal technical effort.

For more information, please contact SphereOptics on www.sphereoptics.de or email us info@sphereoptics.de