WESTBORO PHOTONICS

MULTI CAMERA IMAGING COLORIMETER

MCIC

MCIC

KEY FEATURES

- Rapid Measurements
- High Dynamic Range
- USB3
- Up to 12 MP Resolution
- Spectrometer
- Flicker Tester

APPLICATIONS

- Flat Panel Displays
- Backlights
- LED Arrays
- Luminaires

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Utmost speed, accuracy and reliability for production

Fast measurements are essential in production and it is here where the MCIC shines. With takt times of 1 second for color, it is much faster than comparable filter wheel colorimeters. The instrument may be configured with up to four Smart Series USB3 CMOS photometers, where each one is individually filtered for luminance, XRed, XBlue and Z tristimulus.

RELIABILITY

High volume production test environments demand minimal downtime and long-lasting equipment. With no moving parts, the MCIC is inherently more reliable than filter wheel colorimeters. Improving reliability further, the Smart Series CMOS photometers in the MCIC do not have integrated Peltier coolers.

MIX AND MATCH SENSORS

Normally the MCIC is configured with four identical image sensors. As an option, the 2.3 and 5.1 megapixel instruments may be configured with a 12.3 megapixel photometer as a substitute in the Y-channel (luminance). In this configuration, the high-resolution luminance measurements can be used to analyze for the smallest defects.

SPECTRUM AND FLICKER OPTIONS

A spot spectroradiometer can be integrated into the MCIC to automatically correct the chromaticity and luminance values. A flicker sensor can also be included. The spectral and flicker measurements may be executed in parallel with the MCIC photometers. Contact Westboro for customization options.

SPEED

The MCIC's imagers measure up to four tristimulus channels, spectrum and flicker simultaneously, whereas filter wheel systems measure each tristimulus image one after another. With no moving parts in the MCIC, there is no need to wait for a filter wheel to rotate and settle at each filter position, making the MCIC 4X faster than a filter wheel colorimeter. Threaded functions are supported by Photometrica® and its SDK when using multi-core PCs for fast data processing. Parallel high speed USB 3.0 connections from the host PC to each of the tristimulus imagers maximizes data throughput.

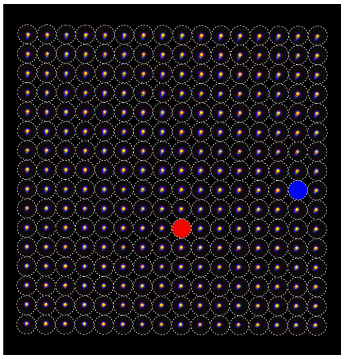
SOFTWARE

The MCIC is fully supported by Westboro's Photometrica software. Production test solutions for LED displays, flat panel displays and keyboards are available.

LENS OPTIONS

Westboro Photonics offers lens choices with fields of view ranging from 10 to 82 degrees. See the Smart Series USB3 CMOS Photometer datasheet for details.

Mura and defect identification



LED array uniformity

Sample Luminance and Chromaticity Takt Times for OLED Display using a 5 MP MCIC

Display Setting	White	Red	Green	Blue	Black
Luminance	250 cd/m^2	51 cd/m^2	146 cd/m^2	22 cd/m^2	0.1 cd/m^2
Total Measurement Time	813 ms	828 ms	875 ms	1.19 s	9.23 s

Model	Resolution	Sensitivity*
WP4230	1920 x 1200	.003 to 30,000 cd/m^2
WP4501	2448 x 2048	.003 to 60,000 cd/m^2
WP4890	3376 x 2704	.003 to 60,000 cd/m^2
WP41230	4096 x 3000	.003 to 60,000 cd/m^2
General		
Weight	11.4 lbs. / 5.1 kg	
Power	5 V, 3.6 A (110-240V AC power adapter is included)	

*Values are typical for F2.8 and without neutral density filters.

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