



WESTBORO
PHOTONICS

Multi Camera Imaging Colorimeter, MCIC

KEY FEATURES

Rapid Measurements

High Dynamic Range
Imaging

Fast USB 3.0 Interface

Up to 12 MP Resolution

Spectrometer

Flicker Tester



The MCIC delivers unmatched speed, high accuracy and reliability when inspecting, balancing and tuning the light emission qualities of displays and luminaires.

APPLICATIONS

Production Testing of:

Flat Panel Displays

Backlights

LED Arrays

Luminaires

Production managers expect high throughput, reliable measurements and no downtime. When measurement speed is important to production, the MCIC shines: taking 1 second for color measurements, the MCIC is several times faster than comparable filter wheel colorimeters. The MCIC is supported by Westboro Photonics' Photometrica® software and its complementary Software Development Kit (SDK), for automation.

RELIABILITY

Having no moving parts, the MCIC helps to ensure production line uptime, scheduled downtimes and operational reliability requirements.

SENSITIVE

Luminance levels as low as 0.04 cd/m^2 can be reliably measured at full resolution in four seconds. Levels down to 0.0025 cd/m^2 can be measured in four seconds at 16 times lower resolution, for example, a 9.1 Megapixel image is reduced to 0.56 Megapixels.

HARDWARE CUSTOMIZATION

Mix and match sensors — often only the Y-channel needs high resolution. Most tiny defects such as pixel and line defects can be reliably identified with a luminance measurement alone. The X- and Z- channels contribute only to the chromaticity computations, which may not require such high resolution. Westboro Photonics can configure a mixed imager MCIC to match the measurement requirements with the lowest financial outlay.

More capabilities can be integrated into the MCIC. A reference spectroradiometer can be added, which corrects the imaging colorimeter and provides the most accurate white point, gamut chromaticity and luminance values. Another option is to add the Optical Waveform Digitizer WP50T to measure flicker and response time. The WP50T and spectrometer share the same optical path and can measure in parallel with the MCIC imagers for optimal throughput.

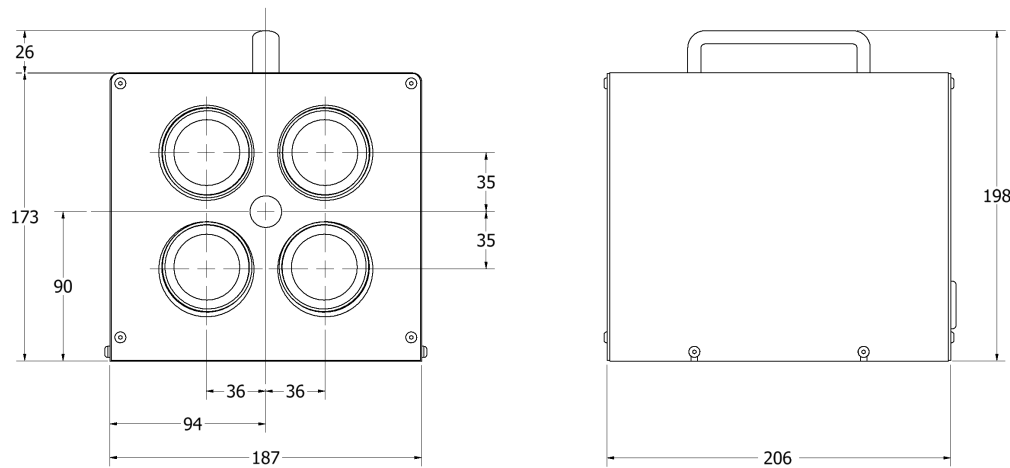
SPEED

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.

SPEED METRICS

WP4280 2.8 Megapixel 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	1.04 s	1.17 s	1.11 s	1.54 s	9.65 s



All specified dimensions in units of mm.
Custom system configurations available.

Model	Resolution	Sensitivity*
WP4280	1928 x 1448	0.04 to 65,000 cd/m ²
WP4501	2448 x 2048	0.08 to 100,000 cd/m ²
WP4910	3376 x 2704	0.06 to 100,000 cd/m ²
WP41200	4240 x 2824	0.1 to 100,000 cd/m ²
General		
Weight	11.4 lbs. / 5.1 kg	
Power	5 V, 0.9 A per imager, over USB	

*Sensitivity can be 4x or 16x improved with 2x2 or 4x4 binning. Image size is proportionally reduced with binning.

