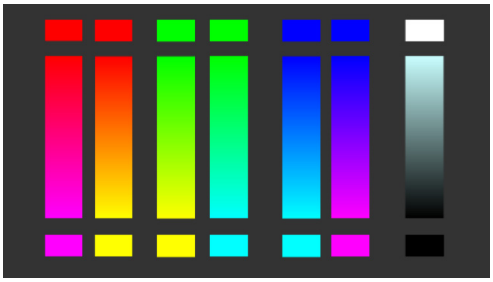
SPECTRAL IMAGING

TESTING WITH SPECIM FX10

Farewell to point spectrometers and RGB cameras in display and light source inspection

REACH 100% PRODUCT TEST COVERAGE!

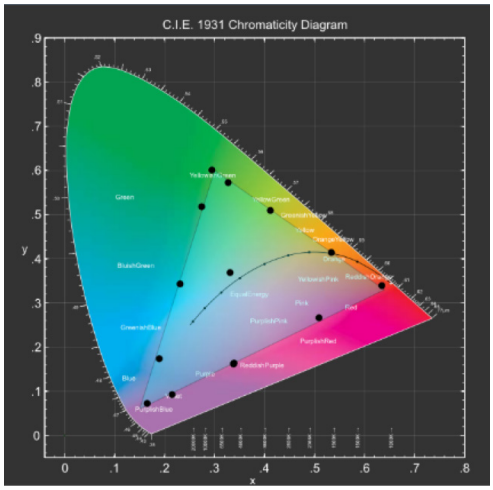


SPECIM SOLUTION – FX10

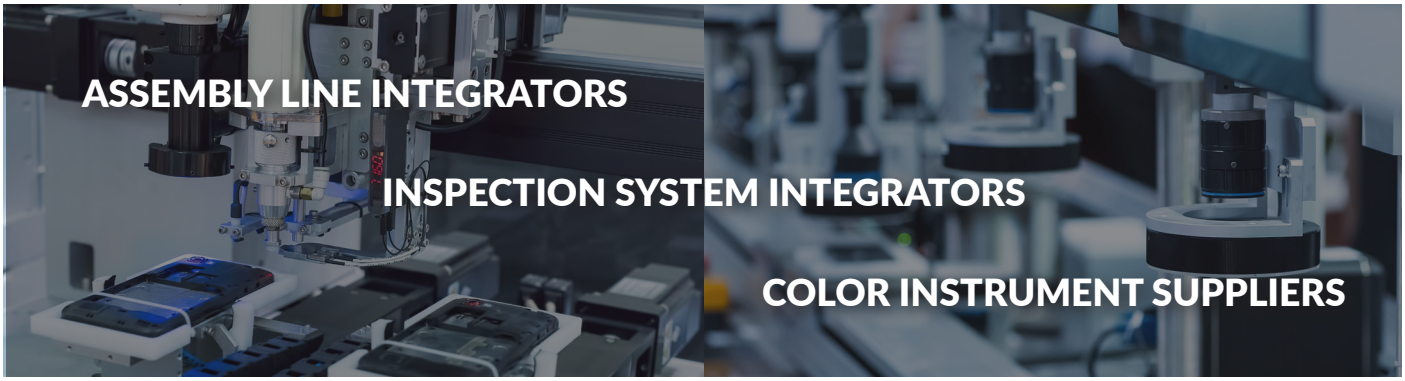
- **True** colorimetric and radiometric inspection of the entire surface in seconds
- **Accurate** dominant and peak wavelength results based on true spectrum
- **Simultaneous** visible and infrared (400-1000 nm) measurement

IMMEDIATE BENEFITS

- **Boost** your end-customers' production quality and throughput
- **Reduce** waste, rework and customer complaints - 100% on-line inspection -
- **Harness** more quality information from the products at once



Measuring colour gamut from mobile phone



WHY SPECIM FX10 OUTPERFORMS POINT SPECTROMETERS AND RGB CAMERAS?

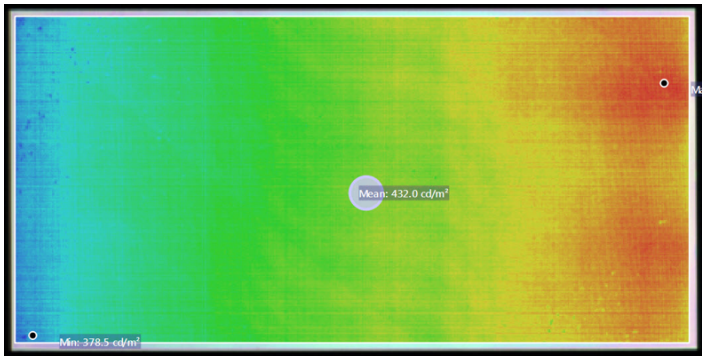
FX10 works as a high-speed imaging spectroradiometer.

Most current display panels and light sources are based on LED backlights. They produce inconsistent spectra and therefore their accurate color measurement is only possible by measuring the actual spectrum. Traditionally it is done by point spectrophotometers, which in production, limit the inspection to a few discrete points on the display surface, because of limited inspection time.

The challenge with current imaging photometers is, that they are based on RGB tricolour cameras. They suffer from limited colour gamut and measurement accuracy, as the broad band RGB filter responses do not match standard colour coordinates XYZ.

An advanced imaging solution is needed for rapid and accurate inspection of the entire surface.

SPECIM FX10 is the first camera on the market which can measure the spectral radiance image of entire display fast enough for quality inspection in production and assembly lines. Spectral data provides most accurate colorimetric and luminance values for the entire DUT surface for both narrow and broadband sources characterizing display color gamut, luminance level and uniformity.



Inspecting phone display luminance uniformity. Measurement time < 5s.

SPECIM FX10 makes it possible to measure simultaneously in both visual and near infrared region (400-1000 nm) facilitating testing of systems like virtual reality solutions, that use LEDs in the 800-900 nm region.

Working as an on-line imaging spectroradiometer, SPECIM FX10 allows **100% inspection at production**, minimizing rework and complaints in later phases. As FX10 collects real spectral data from entire product flow, it enables analyzing production quality statistics, and in case of issues, helps to find the root causes.

FX10 performance in display and light source inspection

Measurement time	<10s (typical 70x130mm size display)
Luminance range **Variance**	(0.01-) 0.1 – 10000 cd/m2 (nits) <0.5%
Luminance accuracy	± 2% (@2856 K Illuminant A)
Colour accuracy (x, y)	± 0.002 (@2856 K, NIST traceable)
Colour temperature accuracy	±0.8 % @2856 K (Illuminant A)
Measurement values	Luminance (cd/m²) and luminance spatial uniformity, standard colour values (XYZ, colour gamut Yxy), colour temperature (T), deviation from reference value
Operating temperature range	0-40 ºC (0-95% humidity, non-condensing)
Operational mode	FX10 is a line imaging spectral camera, perfectly fitting to assembly lines, inspection stations and robot arms

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