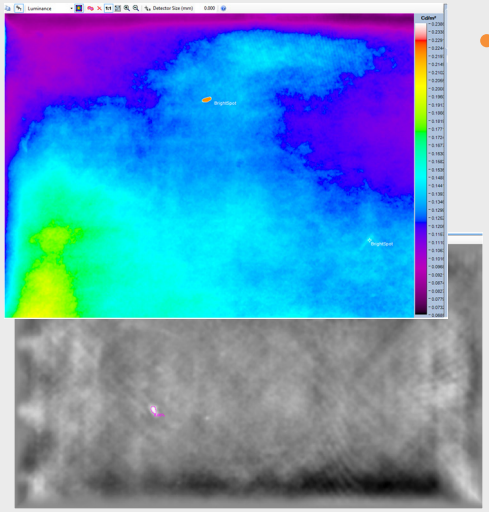
Radiant Zemax

ProMetric® G3

Imaging Colorimeter



High-resolution measurement results for flat panel display mura and pixel defects. The ProMetric G3 imaging colorimeter is ideally suited for the unique demands of high-definition FPD production testing and characterization.

ProMetric G3 Highlights

- The industry standard for measuring high-definition FPDs
- Optimized for accuracy, precision and ease of use
- Color and light measurements that are highly correlated with human visual perception
- Incorporates industry-first Smart Technology™ innovations
- Flexible system, capable of addressing multiple applications now and in the future
- Works seamlessly with Radiant Zemax TrueTest™ automated optical inspection systems

Ultra-high resolution color and light measurement for the most demanding applications.

ProMetric G3 is an ultra-high resolution imaging colorimeter for applications in engineering, quality assurance and production environments where precise measurements are essential. It is ideally suited for finding FPD pixel defects, measuring the brightness and color of individual LED or OLED pixels or sub-pixels and resolving small features on instrument panels and illuminated keyboards.

Built on the next-generation ProMetric G platform, you can rely on ProMetric G3 for repeatable measurement accuracy and unmatched ease of use. It offers an excellent balance of wide dynamic range, high spatial resolution, large field of view, and speed. It provides 14-bit measurements using a scientific grade thermoelectrically cooled full-frame CCD sensor with a 3072 x 2048 pixel resolution. The ProMetric G3 is available with a variety of electronically controlled lenses. Each lens is calibrated over a wide range of working distances and aperture settings.

ProMetric G3 incorporates industry-first **Smart Technology**™ innovations, including:

Smart Touch™ for full control at the imaging colorimeter
Located on the back panel, this new touchscreen interface provides the option to complete your measurement setup and acquisition, and review measurement results at the imaging colorimeter.

Smart Control™ for fast, precise setup
Now you can electronically adjust both the focus and aperture settings for your lens. This eliminates the need to make manual adjustments, and allows for precise measurement setup.

Smart Calibration™ for automatic high-accuracy results
The ProMetric G3 system monitors focal distance and aperture settings and automatically applies the correct image calibration. This greatly simplifies setup and ensures accurate measurement results.

Every ProMetric G3 system includes Radiant Zemax ProMetric software with API support, which provides complete measurement control and an extensive suite of image analysis functions. In addition, ProMetric G3 is backed by the industry's best product warranty, including direct access to the Radiant Zemax technical support team to maximize the benefits for your application.

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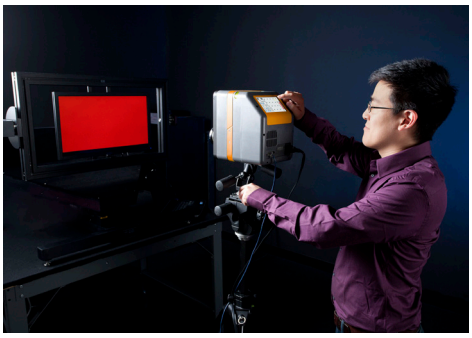
Key Features

- 14-bit, full frame, thermoelectrically cooled 3072 x 2048 CCD sensor
- CIE matched color filters and neutral density filters
- Supports a range of different lenses with different FOV
- Smart Calibration provides accurate results over a wide range of distance and aperture settings
- Smart Touch user interface
- ProMetric control and analysis software

Specifications

CCD resolution	3072 x 2048 pixels
CCD Type	Cooled, Full-Frame
CCD A/D dynamic range and full well capacity	14 bits = 16,384 gray scale levels 100,000 electrons
Luminance range	0.001 cd/m^2 minimum 10^{10} cd/m^2 maximum with optional ND filters
System accuracy*	Illuminance ± 3% Luminance (Y) ± 3% Color Coordinates (x,y) ± 0.003
Short-term repeatability**	Illuminance ± 0.5% Luminance (Y) ± 0.5% Color Coordinates (x,y) ± 0.0006
Lens Type	Automated. Electronic focus and aperture
Camera field of view*** (Full Angle, H x V degrees)	35 mm lens - 40° x 27° 50 mm lens - 30° x 20° 100 mm macro - 15° x 10°
Measurement time (for 100 cd/m^2)	Photopic = 6 seconds Color = 19 seconds
Spatial measurement capabilities	Luminance, Radiance, Illuminance, Irradiance, Luminous Intensity, Radiant Intensity, CIE Chromaticity Coordinates, L*a*b* Color Scale, Correlated Color Temperature (CCT), Dominant Wavelength
Units	footlambert, cd/m^2, nit, W/sr/m^2, footcandles, lux, lx•s, W/m^2, W•s/m^2, candela, W/sr, CIE (x,y) and (u', v'), Kelvin (CCT)
Communication Interface	USB 2.0, 3.0 Ethernet 100/1000
LCD Touch panel	Resolution: 800 x 600 Diagonal: 125 mm
Dimensions (H x W x D)	181 mm x 238 mm x 230 mm
Weight	4.9 kg
Operating temperature	0 - 30° C
Operating humidity	20 - 70% non-condensing



Smart Touch user interface on the ProMetric G3 imaging colorimeter enables quick setup.

System Requirements

- 2.0 GHz or faster processor
- 4GB or greater RAM
- Windows 7
- USB 2.0, 3.0 or Ethernet

* Based on Illuminant A, D 65, or user calibration for specific spectra. Based on a virtual detector size of 1% of FOV. Specification is for every point within the field of view of the camera.

** At every point within the field of view of the camera, based on a virtual detector size of 1% of FOV.

*** Other lenses are also available. Contact Radiant Zemax for more information.

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