

CCD Imaging Photometer and Colorimeter

PM-1000™ Series



Applications

- Display testing: Brightness and color uniformity measurement of LCDs, PDPs, OLEDs, display backlights and projection systems
- Instrument panel and keypad measurement and illuminated character inspection
- Illumination distribution measurements for luminaires and signage

Benefits

- Economical imaging photometer for production and development
- Fast, accurate luminance measurements
- Fully compatible with ProMetric® control and analysis software

Cost-effective, high speed imaging system for basic measurement applications

The PM-1000™ is an economical imaging photometer or colorimeter optimized for applications in which measurement speed is a critical factor. The PM-1000™ is compact, rugged, and well suited for any testing environment, including the factory floor. Typical applications include relative measurements luminance or chromaticity for quality control, and measurement of changes as a function of time.

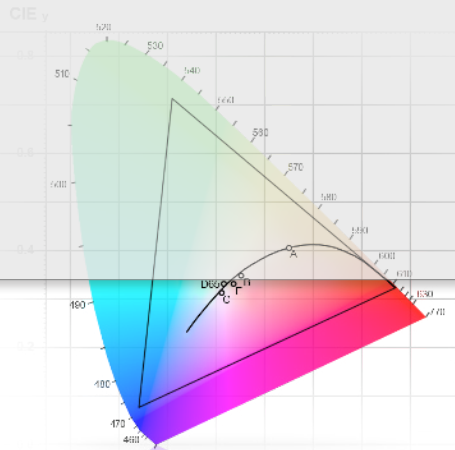
The PM-1000™ uses a 10-bit (1,024 gray levels) interline transfer CCD for imaging. This allows for use of an electronic shutter, which increases its measurement speed and provides long-term reliability.

The imaging system is available in two main configurations: as a photometer that offers luminance measurement only, and as colorimeter for simultaneous luminance and chromaticity measurements. For cost efficiency, the PM-1000™ colorimeter utilizes color filters integrated with the CCD (in a Bayer pattern); this allows greater measurement speed but with less accuracy and effective spatial resolution than Radiant Imaging's color filter based colorimeter models.

Multiple lens choices allow the PM-1000™ to be configured to image almost any size of light source or display. Neutral density filters are also available as an option.

The compact size of the PM-1000™ allows it to be readily integrated into other measurement systems.

The PM-1000™ comes complete with a full version of Radiant Imaging's sophisticated ProMetric® control and analysis software, which provides complete measurement control and an extensive suite of image analysis functions. ProMetric® software functions can be externally accessed through PMEngine™ .NET (Framework 2.0) controls so users can build custom test and analysis sequences.





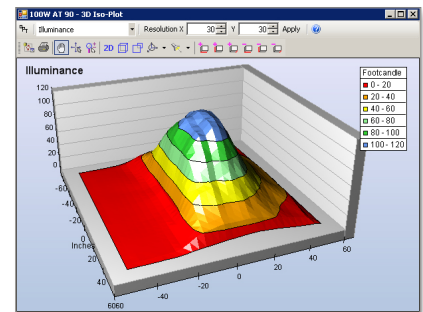
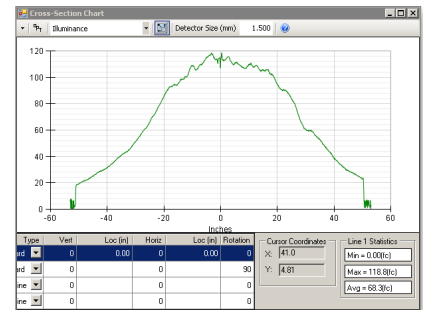
Key Features

- High speed, calibrated photometric measurements
- Complete ProMetric® control and analysis software support
- Multiple configuration options to meet different application needs
- Compact form factor

Specifications*

Spatial measurement capabilities	Luminance, Radiance, Illuminance, Irradiance, Luminous Intensity, Radiant Intensity, CIE Chromaticity Coordinates, Correlated Color Temperature (CCT)	
Units	Footlambert, Cd/cm ² , Cd/m ² , Nit, Mnit, mnit, W/sr/m ² , W/sr/ft ² , W/sr/cm ² , mW/sr/m ² , Footcandles, Lux, mLux, Mlux, Lux-Sec, W/m ² , W/ft ² , W/cm ² , mW/m ² , MW/m ² , W-Sec/m ² , Candela, W/sr, CIE (x,y) and (u', v'), Kelvin (CCT)	
CCD resolution	1,392x1,040 pixels	
CCD A/D dynamic range	10 bits = 1,024 gray scale levels	
Luminance range	0.05 nit minimum, 10 ¹⁰ nit maximum with optional ND filters	
System accuracy (PM-1000-0 imaging photometer)	Illuminance	± 3% ₁
	Luminance (Y)	± 3% ₁
Short-term repeatability	Illuminance	± 1% ₂
	Luminance (Y)	± 1% ₂
Interface	USB2.0	
Minimum measurement time (for 100 cd/m ²)	1.3 seconds	
Camera field of view	1° to 25°	
Dimensions	100mm x 58mm x 63mm (HxWxD)	
Weight	480g	
Operating temperature	0 – 30° C	
Operating humidity	20 - 70% non-condensing	

* Specifications subject to change without notice
 Applicable only for color series



System Requirements

- 2.0 GHz or faster processor
- 1GB or greater RAM
- Windows® XP, Vista or 7 (32-bit)
- USB 2.0 interface

- 1 Based on Illuminant A, D65, or user calibration for specific spectra. Based on a virtual detector radius of 10 pixels. Specification is for every point within the field of view of the camera.
- 2 At every point within the field of view of the camera, based on a virtual detector radius of 10 pixels.
- 3 Uses minimum luminance measurement set-up.