

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 time.

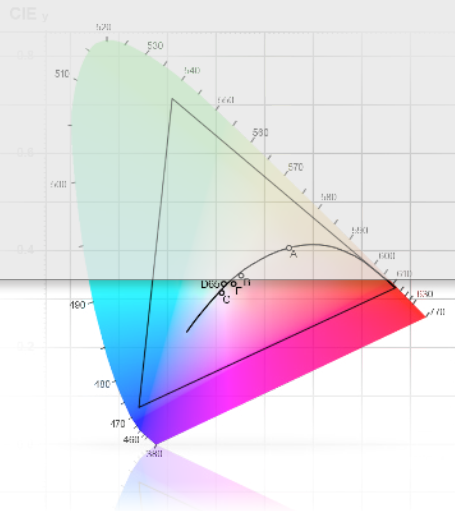
The PM-1000 uses a 10-bit (1,024 gray levels) interline transfer CCD for imaging. This allows using an electronic shutter, which increases its measurement speed and provides long-term reliability.

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.





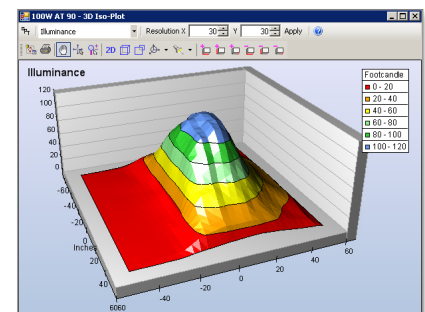
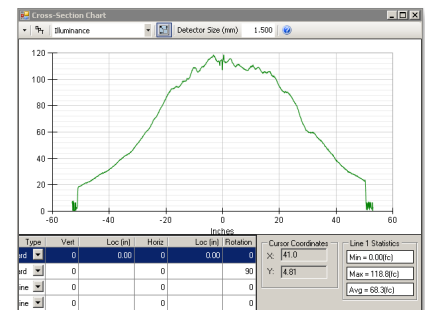
Key Features

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

Specification*

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	0.5 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® 2000, XP or Vista
- USB 2.0 interface

1 Based on Illuminant A, D 65, 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.