

# PM-1400E Series

CCD Imaging Photometer and Radiometer

NEW AND IMPROVED



- Millions of photopic or radiometric data points in seconds
- Fast data acquisition times
- Measure 2-D distribution of Luminance (Radiance), Illuminance (Irradiance), Luminous (Radiant) Intensity
- Cooled scientific grade CCD camera with 14 bits of dynamic range
- Field of View: 1 degrees to 68 degrees plus micro and macro capabilities
- Fully Integrated Windows Software with Active-X controls for easy Production and Automated Test Sequence Interface Development

## NEW TO THE "E" SERIES

- Patent pending mechanical shutter shortens exposure times and provides increased lifetime and repeatability
- Internal ND filters now included
- New shutter design, motors and circuitry. Change from magnetic to optical positioning of new filter wheel

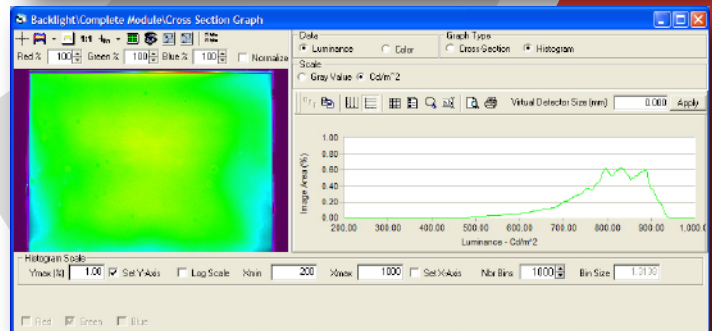
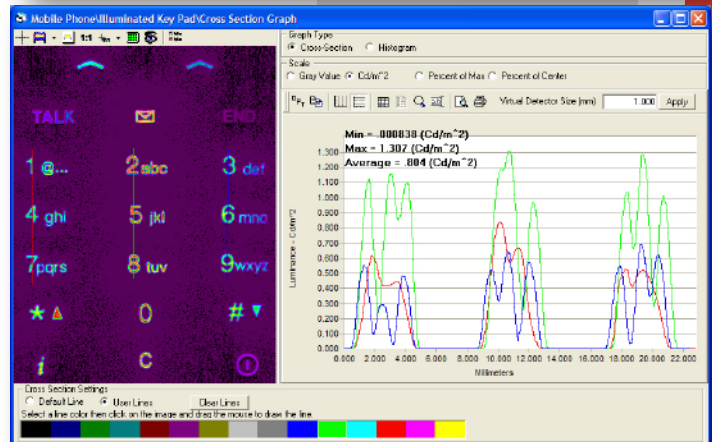
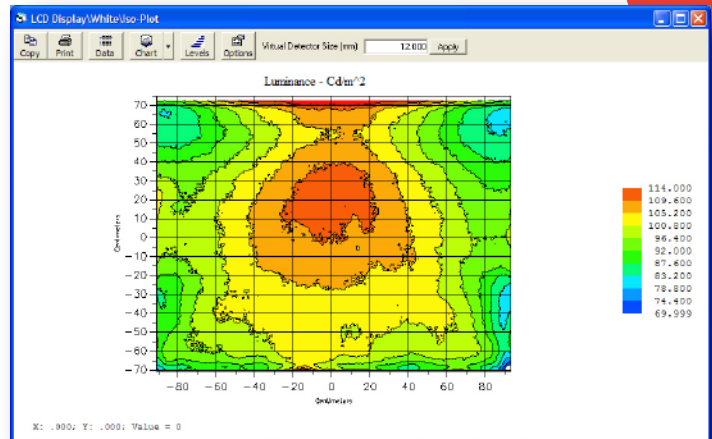
## DESCRIPTION

ProMetric® 1400 Series is a **USB 2.0** computer controlled CCD-based imaging photometer / radiometer, system capable of capturing images and quantitatively analyzing these images for luminance and illuminance (radiance and irradiance). ProMetric® 1400 system consists of:

- 2-stage Peltier cooled 14-bit CCD camera
- Precisely designed photopic filter  
*(custom filters available upon request)*
- Standard lenses from 14mm to 300mm  
*(Microscope objectives 4x to 50x also available)*
- ProMetric® v. 8.5 software for camera control, data acquisition, data analysis and test report generation.
- Illuminance calibration light source or factory luminance calibration included

## APPLICATIONS

- CRT, LCD, PDP, LED, OLED, and Backlight Display Testing of Luminance, Luminance Uniformity and Mura Inspection
- Projection System Testing of Luminance, Illuminance, and Illuminance Uniformity
- Roadway and Scene Illumination Evaluations
- NVIS/NIR Display Testing of Radiance Uniformity
- Illumination System Beam Pattern Testing of Luminous (Radiant) Intensity and Illuminance (Irradiance)



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# PM-1400E Series

## CCD Imaging Photometer and Radiometer



### TYPICAL SPECIFICATIONS\*

<b>2-Dimensional Measurement Capabilities</b>	Luminance Radiance Illuminance Irradiance Luminous Intensity
<b>Units</b>	Footlambert, Cd/cm <sup>2</sup> , Cd/m <sup>2</sup> , Nit, Mnit, mnit W/sr/m <sup>2</sup> , W/sr/ft <sup>2</sup> , W/sr/cm <sup>2</sup> , mW/sr/m <sup>2</sup> Footcandles, Lux, mLux, Mlux, Lux-Sec W/m <sup>2</sup> , W/ft <sup>2</sup> , W/m <sup>2</sup> , mW/m <sup>2</sup> , MW/m <sup>2</sup> , W-Sec/m <sup>2</sup> Candela W/sr
<b>CCD Resolution (px)</b>	512x512, 768x512, 1024x1024, 1536x1024 or 3072x2048 Custom CCD resolutions are also available
<b>CCD Camera A/D Dynamic Range</b>	14 bits = 16,384 grayscale levels
<b>Luminance Range</b>	0.005 nit minimum 10 <sup>10</sup> nit maximum with ND filters
<b>System Accuracy</b>	Illuminance ± 3% <sub>1</sub> Luminance (Y) ± 3% <sub>1</sub>
<b>Short Term Repeatability</b>	Illuminance ± 0.5% <sub>2</sub> Luminance ± 0.5% <sub>2</sub>
<b>Interface</b>	USB 2.0
<b>Minimum Measurement Time for 100 cd/m<sup>2</sup></b>	1.0 seconds (512x512) 1.1 seconds (768x512) 2.2 seconds (1024x1024) 2.8 seconds (1536x1024) 9.1 seconds (3072x2048)
<b>Camera Field of View (FOV)</b>	512x512 CCD: 1 to 30 degrees 768x512 CCD: 1 to 20 degrees 1024x1024 CCD: 3 to 62 degrees 1536x1024 CCD: 2 to 40 degrees 3072x2048 CCD: 3 to 68 degrees
<b>Dimensions:</b>	242mm (H) x 154mm (W) x 100mm (D)
<b>Weight:</b>	8 lbs. (3.6 kg.)

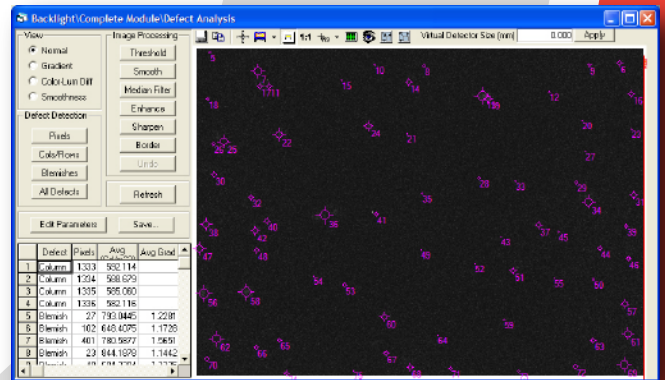
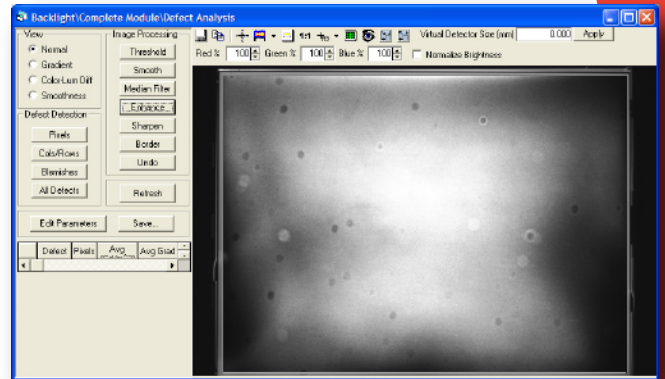
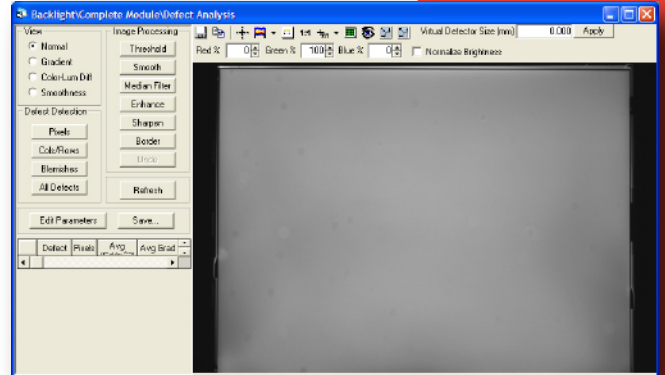
1. Based on Illuminant A, D 65, or user calibration for specific spectra. Based on a virtual detector size of 40 pixels. Specification is for every point within the field of view of the camera.
2. At every point within the field of view of the camera, based on virtual detector size of 40 pixels.

\* Specifications subject to change without notice.

### SYSTEM REQUIREMENTS

Pentium IV, 1.3 GHz Processor or faster, 512 MB RAM  
Windows® 2000 or XP  
USB 2.0 Interface

### DEFECT DETECTION (advanced capabilities)



SEE THE DIFFERENCE™

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