

PHOTO RESEARCH®, Inc.

The PR-810 / PR-805 Pritchard® and Spotmeter®

New Instrument, Traditional Excellence

For over 60 years, Photo Research has had a reputation of manufacturing world class photometers that serve mar-



PR-810 Pritchard Photometer

kets ranging from aerospace to agriculture. The new PR-810/805 are one in a new family of filter photometers that further extends and enhances our reputation. As with all our photometers, the PR-810/805 feature the Pritchard optical system for unparalleled target alignment. With the Pritchard system, the alignment and measuring optics are one in the same, so there is no misrepresentation of what is being measured.

New Design

The PR-810/805 is unlike any of our previous photo-multiplier tube (PMT) based photometers - it's battery powered! The Lithium-ion battery provides more than 12 hours of continuous operation provid-

ing the ultimate in portability. It also features a full color touch screen display, and 75 mm objective focusable from 14" (355 mm) to infinity (see lens specifications on following page).

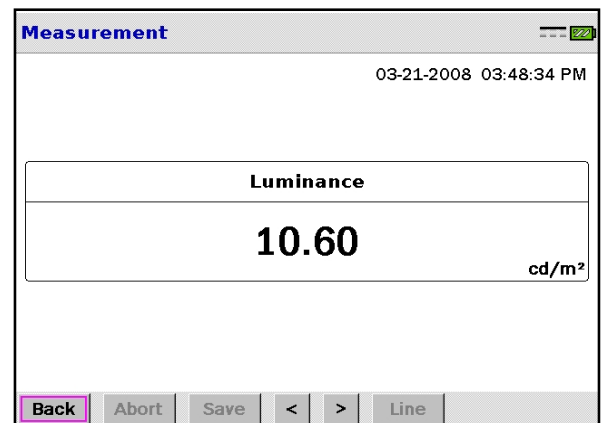
Sensitivity

Low light applications are no problem for the PR-810/805. Using the largest of the 4 fully automated apertures, the PR-810 can measure 1E-4 (0.0001) footlamberts, the PR-805 can measure down to 9E-4 (0.0009) footlamberts with the standard 1° aperture. A fully automated Neutral Density (ND) filter turret provides 3 decades of source attenuation (10X, 100X and 1000X attenuation) resulting in 9 Million:1 dynamic range in any aperture - wide enough for any contrast measurement task.

Connectivity

For help in communicating with the outside world, the PR-810/805 are supplied with a USB interface and driver. The driver establishes a virtual COM port making control of the PR-810/805 as easy as communicating over RS232. If a traditional RS232 interface is a

must, it can be supplied to complement the USB I/F. Want to go wireless? A Class 1 Bluetooth interface can be added for control of the PR-810/805 up to 100 meters away. For control of the PR-810/805, an on-board protocol - Remote Mode Software - allows you to make measurements and get the data you need by sending and receiving simple ASCII text commands making integration into an ATE or other environment a snap.



Measurement Result Screen

Applications

Display luminance and color	Medical / dental color testing
Contrast	Reflectance / transmittance
Automotive and Aerospace Display Testing	Human factors

Features	Benefits
Full Color Touch Screen Display	Easy-to-use menu based software
Wide Dynamic Range	Address almost any display measurement requirement
USB Interface	Connects to virtually any PC
Bluetooth ready (optional)	Wireless, remote data transfer
Long lasting rechargeable Li-Ion battery	Excellent for field use
SD Card Storage	Save thousands of measurements

PR-810/805 Specifications

Detector	Photomultiplier Tube (PMT)
Optics	Pritchard optical system.
Digital Resolution	16 bits
PR-810 Standard Apertures	3°, 1°, 1/4°, 1/8°
PR-810 Optional Apertures	2°, 1°, 0.2°, 0.1° 1°, 1/2°, 1/4°, 1/8° 1°, 1/2°, 1° x 1/3°, 1/4°
PR-810 Luminance Range	0.0001 to 518,400 fL [†]
PR-805 Standard Apertures	1°
PR-805 Optional Apertures	3°, 2°, 1/2°
PR-805 Luminance Range	0.0009 to 8,100
Luminance accuracy (Against NIST luminance standard)	± 2%*
Luminance repeatability	≤ 1%*
Display	3.5" Color Touch Screen Display
Battery	Rechargeable Lithium-ion. (≥ 12 hours continuous operation)
Weight	3.75 lbs (1.7 kg)
Operating Temperature	34° to 95° F (1° to 35° C)

* Stated luminance accuracy and repeatability at 0.0025 fL with the 3° aperture.

Notes:

1. All specifications are subject to change without notice.

PR-810/805 Measurement Spot Size

Accessory	Working Distance	Aperture			
		3°	1°	1/4°	1/8°
MS-75 (355 mm to infinity)	355 mm to 305 m	15.75 mm 15.96 m	5.25 mm 5.32 m	1.315 mm 1.33 m	0.656 mm 66.5 cm
SL-0.5X	94.1 mm to 137 mm	4.5 mm to 7.62 mm	1.50 mm to 2.54 mm	0.375 mm to 0.635 mm	0.188 mm to 0.318 mm
SL-1X	46 mm to 66 mm	2.67 mm to 3.96 mm	0.89 mm to 1.32 mm	0.226 mm to 0.330 mm	0.111 mm to 0.165 mm
MS-2.5X	46 mm	1.53 mm	0.51 mm	0.128 mm	0.064 mm
MS-5X	28 mm	0.78 mm	0.26 mm	0.065 mm	0.033 mm
MS-7.5	100 mm 30.5 m	74.4 mm 15.96 m	24.8 mm 5.3 mm	12.4 mm 1.33 m	6.19 mm 66.5 cm
LA-800	Contact	13.2 mm	13.2 mm	13.2 mm	13.2 mm
FP-800	Contact	3.17 mm	3.17 mm	3.17 mm	3.17 mm

PR-810/805 Sensitivity Chart (fL) †

Access.	Aperture				
	3°	1°	1°(PR-805)	1/4°	1/8°
MS-75	1.00E-4 900	9.00E-4 8,100	9.00E-4 8,100	1.44E-2 129,600	5.76E-2 518,400
SL-0.5X	1.00E-4 900	9.00E-4 8,100	9.00E-4 8,100	1.44E-2 129,600	5.76E-2 518,400
SL-1X	1.00E-4 900	9.00E-4 8,100	9.00E-4 8,100	1.44E-2 129,600	5.76E-2 518,400
MS-2.5X	2.50E-4 2,250	2.25E-3 20,250	2.25E-3 20,250	3.60E-2 324,000	1.44E-1 1,296,000
MS-5X	4.00E-4 3,600	3.60E-3 32,400	3.60E-3 32,400	5.76E-2 518,400	2.30E-1 2,073,600
MS-7.5	1.00E-4 900	9.00E-4 8,100	9.00E-4 8,100	1.44E-2 129,600	5.76E-2 518,400
LA-800	1.00E-4 900	9.00E-4 8,100	9.00E-4 8,100	1.44E-2 129,600	5.76E-2 518,400
FP-800	2.50E-4 2,250	2.25E-3 20,300	2.25E-3 20,300	3.60E-2 324,000	1.44E-1 1,296,000
CR-800 (footcandles)	2.00E-4 1,800	1.80E-3 16,200	1.80E-3 16,200	2.88E-2 259,200	1.15E-1 1,036,800

† Luminance values are for 10:1 signal to RMS noise against an Illuminant A based (2856K) NIST traceable luminance standard



PHOTO RESEARCH, Inc.

9731 Topanga Canyon Place
Chatsworth, CA 91311-4135 USA
Phone: 818-725-9750 Ext. 1 Fax: 818-725-9770
sales.pr@photoresearch.com
www.photoresearch.com