

PHOTO RESEARCH®

PR-880 Automated Filter Photometer

Full automation - The PR-880 is the only fully automated filter photometer available today. We've automated the measuring apertures (5 standard sizes), the filter turrets, the measuring (zero) shutter and viewing (eyepiece) shutter. All of these features are controlled by an on-board computer and are accessed via 8 push buttons on the integral control panel. After setting up the measurement from menus on the 4 x 20 back lit LCD display, making a measurement is as easy as pushing a button. The corrected measurement value (e.g. luminance) is automatically displayed following the measurement. There is no need to apply correction factors for optical accessories, the PR-880 does it all for you. This helps remove any possible "cockpit" errors that could yield false results.



Pritchard Optics – The PR-880, like all of Photo Research's photometers and spectroradiometers, utilizes Pritchard measuring and viewing optics. Pritchard optics assures accurate, non-ambiguous target alignment every time, regardless of the sample size.

Remote Mode software – This powerful tool allows you to control the PR-880 measurement and data functions from virtually any computer using simple ASCII (text) commands reports over the built-in RS-232 interface. Combined with the full-automation capabilities of the PR-880, Remote Mode software makes an easy task of creating an Automated Test Environment (ATE) for hands off testing – an ever increasing need to help reduce the time to verify that a product meets stringent international specifications.

Sensitivity / Versatility – Like it's predecessor, the PR-1980A, the PR-880 is the most sensitive filter photometer in it's class. Combined with standard multiple apertures and a wide range of optical accessories, virtually any measurement requirement can be met.

Typical Applications

- Automotive Lighting
- Photometric Reflectance Studies
- CRT Luminance and Contrast
- Photometric Transmittance Studies
- LCD Luminance and Contrast
- LED Measurements
- Military and Commercial Aerospace Display Measurements
- Color Temperature Determination
- Electroluminescent (EL) Panel Evaluation
- Human Factors Testing
- Head-Up Display Measurement
- GO/NO GO Testing
- MIL-SPEC Testing



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Specifications

A/D Resolution	14 bits (1 part in 16.384)
Local Control	8 push buttons
Display	4 x 20 character super-twist LCD (4 levels of back lighting including OFF)
Standard Apertures	Automated 3°, 1°, 1/2°, 1/4°, 1/8° (angular subtense calculated with MS-55 lens focused at infinity)
Optional Apertures	Automated 2°, 1/4°, 1/8°, 0.4' x 40', 2' (angular subtense calculated with MS-55 lens focused at infinity)
Filter Turrets	Two six position turrets (automated)
Standard Filters	Photopic, Red, Blue, Open, ND-1 to ND-4
Interface	RS-232 (IEEE-488 optional)
Analog Output	0 – 10 volt DC @ 50 Ω impedance
Field of View	8.5° with MS-55 lens focused at infinity
Photometric Accuracy	±2% of reading at 2856 Kelvin (Illuminant A) when measuring NIST standard
Colorimetric Accuracy	±.0015 CIE 1931 xy measuring Illuminant A with optional P/N 6880-0006-01
Power	Input: 100 – 230 Volts AC / 50 – 60 Hz
Operating Temperature	33° F (1° C) to 110° F (43° C)
Storage Temperature	0° F (-32° C) to 130° F (54° C)
Humidity	0 – 90% non-condensing
Weight	9.4 lbs. (4.3 kg) with MS-55 lens
Measuring Capabilities	Luminance, illuminance, luminous intensity, tristimulus colorimetry, L*u*v*, correlated color temperature, chromaticity (opt.)

Measuring Field Coverage Chart

ACCESS	DISTANCE	UNITS	APERTURE SIZE IN DEGREES				
			3°	1°	1/2°	1/4°	1/8°
MS-55	1.75 in. to ∞	inches (mm)	0.114 (2.89)	0.038 (0.97)	0.019 (0.48)	0.009 (0.24)	0.005 (0.12)
MS-55	10 ft. (3.05 meters)	inches (mm)	6.3 (160)	210 (53.3)	105 (26.7)	52.5 (13.3)	26.3 (6.6)
MS-1X	3.80 in. (97 mm)	inches (mm)	0.114 (2.89)	0.038 (0.97)	0.019 (0.48)	0.009 (0.24)	0.005 (0.12)
MS-165	6.5 in. (165 mm)	inches (mm)	0.114 (2.89)	0.038 (0.97)	0.019 (0.48)	0.009 (0.24)	0.005 (0.12)
MS-2.5X	1.76 in. (45 mm)	inches (mm)	0.030 (0.76)	0.015 (0.38)	0.008 (0.19)	0.004 (0.10)	0.002 (0.05)
MS-5X	1.11 in. (28 mm)	inches (mm)	0.016 (0.38)	0.008 (0.19)	0.004 (0.10)	0.002 (0.05)	0.001 (0.02)
MS-77	4.25 in. (108 mm)	inches (mm)	0.026 (0.64)	0.013 (0.32)	0.006 (0.16)	0.003 (0.08)	0.002 (0.04)
MS-7X	0.7 in. (17.8 mm)	inches (mm)	0.016 (0.41)	0.0054 (0.138)	0.0027 (0.069)	0.0014 (*0.034)	0.00068 (0.017)
MS-10X	0.6 in. (15.2 mm)	inches (mm)	0.0114 (0.289)	0.0038 (0.097)	0.0019 (0.048)	0.0009 (0.024)	0.0005 (0.012)

Sensitivity Chart

ACCESS	DISTANCE	UNITS	APERTURE SIZE IN DEGREES				
			3°	1°	1/2°	1/4°	1/8°
MS-55	1.75 in. to ∞ (44 mm to ∞)	ft cd/m ²	1x10 ⁻⁴ (3x10 ⁻⁴)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻² (3x10 ⁻²)	1x10 ⁻² (3x10 ⁻³)
MS-1X	3.80 in. (97 mm)	ft cd/m ²	1x10 ⁻⁴ (3x10 ⁻⁴)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻² (3x10 ⁻²)	1x10 ⁻² (3x10 ⁻²)
MS-165	6.5 in. (165 mm)	ft cd/m ²	1x10 ⁻⁴ (3x10 ⁻⁴)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻² (3x10 ⁻²)	1x10 ⁻² (3x10 ⁻²)
MS-2.5X	1.76 in. (45 mm)	ft cd/m ²	1x10 ⁻⁴ (3x10 ⁻⁴)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻² (3x10 ⁻²)	1x10 ⁻² (3x10 ⁻²)
MS-5X	1.11 in. (28 mm)	ft cd/m ²	1x10 ⁻⁴ (3x10 ⁻⁴)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻² (3x10 ⁻²)	1x10 ⁻² (3x10 ⁻²)
MS-77	4.25 in. (108 mm)	ft cd/m ²	1x10 ⁻⁴ (3x10 ⁻⁴)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻² (3x10 ⁻²)	1x10 ⁻² (3x10 ⁻²)
MS-7X	0.7 in. (17.8 mm)	ft cd/m ²	1.2x10 ⁻⁴ (3.6x10 ⁻⁴)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻² (3x10 ⁻²)	1x10 ⁻² (3x10 ⁻²)
MS-10X	0.6 in. (15.2 mm)	ft cd/m ²	2x10 ⁻⁴ (9x10 ⁻⁴)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻³ (3x10 ⁻³)	1x10 ⁻² (3x10 ⁻²)	1x10 ⁻² (3x10 ⁻²)
FP-880 Fiber Probe	Contact	ft cd/m ²	3x10 ⁻³ (9x10 ⁻³)	3x10 ⁻² (9x10 ⁻²)	3x10 ⁻² (9x10 ⁻²)	3x10 ⁻¹ (9x10 ⁻¹)	3x10 ⁻¹ (9x10 ⁻¹)
CR-880 Cosine Receptor	N/A	fc lux	4x10 ⁻⁴ (1.2x10 ⁻³)	4x10 ⁻³ (1.2x10 ⁻²)	4x10 ⁻³ (1.2x10 ⁻²)	4x10 ⁻² (1.2x10 ⁻¹)	4x10 ⁻² (1.2x10 ⁻¹)
IB-880 Incidence Baffle	1.75 in. to ∞ (44 mm to ∞)	fc lux	N/A	1x10 ⁻⁷ (1x10 ⁻⁶)	N/A	N/A	N/A

