

PHOTO RESEARCH[®], INC.

PR-730 / PR-735 SpectraScan[®]



Introduction

We have taken our decades of experience and built it into the ultimate spectral measurement instrument - **the cooled detector PR-730/735 SpectraScan Spectroradiometers**. The PR-730 covers the visible spectrum sampling from 380 to 780 nm, while the PR-735 measures from 380 to 1080 nm for near IR testing. We've made them more sensitive, with virtually no polarization error or stray light, given them more apertures, put in twice as many detectors, added USB, RS232 and Bluetooth wireless interfaces, a full-color touch screen display and SD card measurement storage.

Features

Bluetooth wireless communication frees you from being tethered to a PC.

Pritchard through the lens optics means 100% target alignment accuracy.

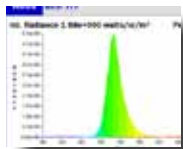
The PR-730 can be configured to trigger a source, such as a strobe or flash.

The hi-res, full color touch screen display provides effortless menu navigation and enhanced data display including the SPD of the measured sample.

When a traditional RS232 interface is required, the PR-730 can be equipped accordingly..

The standard USB interface makes connecting to any PC a snap.

Automatically save thousands and thousands of measurements on a Secure Digital (SD) card.



A new feature to the SpectraScan line - **variable spectral bandwidth** - is available on the PR-730. One of 3 bandwidth settings (2, 4 or 8 nm for the PR-730 -- 4, 8 or 14 nm for the PR-735) can be selected automatically.



The PR-730 / 735 provides unsurpassed flexibility with the world's largest selection of **optical accessories**. It is the only instrument in it's class that can measure radiance/luminance, irradiance/illuminance, radiant flux/lumens and radiant intensity/candelas simply by changing accessories.



The patented **AutoSync** feature insures accurate results regardless of the refresh characteristics of the device under test by first measuring the temporal characteristics, then making sure the measurement is optimized for the device.



When you need to take the PR-730 out in the field, an optional **Li-ion battery** is available that provides more than **8 hours of continuous use**. The PR-730 is the only instrument in it's class that offers this capability.

Measurement Capabilities

- **Luminance** - Footlamberts and cd/m²
- **Chromaticity** - CIE 1930 x,y - CIE 1976 u', v' - CIE 1960 uv
- **Correlated Color Temperature (CCT)** in Kelvins
- **Dominant Wavelength** - 0.1 nm resolution
- **CIE Pass / Fail** - Use the PR-730 / 735 as a GO / NO GO colorimeter.
- **Spectral Power Distribution (SPD)** graph
- **Display White Point calibration**
- **L*a*b*, L*u*v* and ΔE***

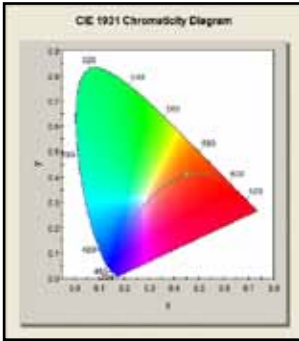


Color Rendering Index	1	2	3	4	5	6	7	8	Average
1	99	9	99						
2	99	10	98						
3	97	11	98						
4	99	12	95						
5	100	13	99						
6	98	14	99						
7									99

As lighting technologies move from traditional incandescent, HID / HMI and florescent lamps to LED technologies, an important tool to help determine the color rendering capability of the lamp is the CIE **Color Rendering Index (CRI)**. This is especially important when multiple lighting technologies are utilized in the same environment. The PR-730 / 735 features an on-board CRI measurement mode that calculates all 14 CRI indices and the average CRI (using indices 1 - 8) based on user specified parameters.

Software

Remote Mode Software makes it possible to control the PR-730/735 from a custom application as easily as sending and receiving text characters over any of the available interfaces.



SpectraWin® is a full Windows based executable that makes measurements, graphically displays results and has powerful data manipulation capabilities and is compatible with XP, Vista or Windows 7 (32 or 64 bit).

An **RGB Display Cal Module** automates the process of calibrating displays or digital projectors.

User Self Calibration Software is available if you wish to calibrate your instrument in-house.

Applications

Aerospace - Aerospace displays, regardless of the model, present unique challenges in that required capabilities range from very low (0.1 fl) to very high (10,000 fc) photometric levels of small areas. The PR-730/735 meets these challenges by providing multiple apertures, variable bandwidth and excellent sensitivity



Automotive - SpectraScans have been used in the automotive industry world wide since their inception. Auto makers and their suppliers favor them because unlike other models, they are able to meet requirements very similar to aerospace applications - low level measurements of small areas. The PR-730/735 enhances these capabilities by offering small spot size capabilities with better sensitivity characteristics than its predecessors.

Displays / HDTV's - Photo Research SpectraScans have been providing solutions to the computer display and TV markets for decades. The PR-730/735 now makes it possible to easily address one of the toughest tasks, spectral contrast measurements, without having to rely on a second instrument.



Components - The PR-730/735 is not just a luminance meter. It's wide range of accessories can address virtually any light measurement application. For example, the LR-127 LED Analyzer is designed to measure discrete LED's for conformity to the *CIE 127 Technical Report - Measurement of LED's*. An integrating sphere can be added to provide

Wavelength Range	PR-730 - 380 - 780 nm PR-735 - 380 - 1080 nm
Detectors	512 Cooled Detectors
Spectral Bandwidth ³	Opt. 1 - 3, 5 or 8 nm (PR-730) 5, 9 or 14 nm (PR-735) Opt. 2 - Switchable - 2, 4 and 8 nm (PR-730) 4, 8 and 14 nm (PR-735)
Wavelength Accuracy	PR-730 - < 0.4 nm PR-735 - < 0.8 nm
Spectral Resolution	PR-730 - 1 nm, PR-735 - 2 nm
Digital Resolution	16 Bits
Available Measuring Apertures (Select up to 8 per instrument)	2°, 1°, 1/2°, 1/4°, 1/8°, 0.2°, 0.1°, 0.1° x 1° (Hor. Slit), 0.1° x 2° (Ver. Slit), 0.5° x 1.5° (Hor. Slit)
Standard Lens	MS-75 - 75 mm
Luminance Sensitivity for Illum. A (2856K) ^{1 2}	0.0001 fL (0.0003 cd/m ²) with 2° aperture
Luminance Accuracy ^{1 2}	±2% against NIST traceable Illum. A (2856K) Lum. Std. at 0.003 fL (0.009 cd/m ²) with 2° aperture
Luminance Repeatability ^{1 2}	≤1% at 0.0031 fL (0.009 cd/m ²) with 2° aperture against NIST traceable Lum. Std. @ 2856K (Illum. A)
Color Accuracy ^{1 2}	±0.0015 for CIE 1931 x, y for Illum. A (2856K) at 0.003 fL (0.009 cd/m ²) with 2° aperture
Color Repeatability ^{1 2}	0.0005 for CIE 1931 x, y for Illum. A (2856K) at 0.003 fL (0.009cd/m ²) with 2° aperture
Polarization Error	<0.2%
Stray Light	< 0.06%
Storage	Secure Digital (SD) Card
AutoSync Range	20 to 2000 Hz
Interfaces	USB, Bluetooth, RS232
Power Requirements	Rechargeable Li-ion battery or AC Adapter (90 - 240 VAC)
Battery Life	> 8 hours
Weight	13.25 lbs. (6.01 kg)
Dimensions	11.03 in. x 6.69 in. x 8.0 in. (28.0 cm x 17.0 cm x 20.3 cm)
Operating Temperature	34° to 95° F (1° to 35° C)
Humidity	0 - 90% non-condensing

Aperture vs Measurement Spot Size

Access.	Distance	Aperture				
		2°	1°	0.5°	0.250°	0.10°
MS-75 (355 mm to infinity)	355 mm	10.5 mm	5.25 mm	2.63 mm	1.315 mm	0.525 mm
	305 m	10.64 m	5.32 m	2.66 m	1.33 m	532 mm
SL-0.5X	94.1 mm to 137 mm	3.0 mm to 5.08 mm	1.5 mm to 2.54 mm	0.75 mm to 1.27 mm	0.375 mm to 0.635 mm	0.15 mm to 0.254 mm
	SL-1X	46 mm to 66 mm	1.78 mm to 2.64 mm	0.890 mm to 1.32 mm	0.445 mm to 0.660 mm	0.226 mm to 0.330 mm
MS-2.5X	46 mm	1.02 mm	0.51 mm	0.225 mm	0.128 mm	0.051 mm
MS-5X	28 mm	0.578 mm	0.289 mm	0.145 mm	0.072 mm	0.0289 mm
MS-7.5	100 mm	35.0 mm	17.5 mm	8.75 mm	4.38 mm	1.75 mm
	30.5 m	10.64 m	5.32 m	2.66 m	1.33 m	532 mm
LA-730	Contact	13.2 mm	13.2 mm	13.2 mm	13.2 mm	13.2 mm
FP-730	Contact	3.17 mm	3.17 mm	3.17 mm	3.17 mm	3.17 mm

Luminance Sensitivity *

Access.	Aperture				
	2°	1°	0.5°	0.250°	0.10°
MS-75 fL (cd/m ²)	0.0001 (0.00034)	0.0004 (0.0014)	0.0016 (0.0055)	0.0064 (0.022)	0.041 (0.14)
SL-0.5X	0.0001 (0.00034)	0.0004 (0.0014)	0.0016 (0.0055)	0.0064 (0.022)	0.041 (0.14)
SL-1X	0.0001 (0.00034)	0.0004 (0.0014)	0.0016 (0.0055)	0.0064 (0.022)	0.041 (0.14)
MS-2.5X	0.00025 (0.0009)	0.001 (0.0034)	0.004 (0.0137)	0.016 (0.055)	0.10 (0.34)
MS-5X	0.0004 (0.0014)	0.0016 (0.0055)	0.0064 (0.022)	0.026 (0.089)	0.16 (0.55)
MS-7.5	0.0001 (0.00034)	0.0004 (0.0014)	0.0016 (0.0055)	0.0064 (0.022)	0.041 (0.14)
LA-730	0.0001 (0.00034)	0.0004 (0.0014)	0.0016 (0.0055)	0.0064 (0.022)	0.041 (0.14)
FP-730	0.00025 (0.0009)	0.001 (0.0034)	0.004 (0.0137)	0.016 (0.055)	0.10 (0.34)
CR-730 fc (lux)	0.0002 (0.002)	0.0008 (0.008)	0.0032 (0.032)	0.0128 (0.128)	0.08 (0.80)

* Stated sensitivities are for a precision of 10:1 against an Illuminant A (2856 K) source

- 1 - Luminance values are for the PR-730 with 8 nm bandwidth. For the PR-735, divide luminance values by 2.0.
- 2 - Luminance values are with the 8 nm bandwidth.
- 3 - For the PR-735, multiply bandwidth values by 2.
Specifications subject to change without notice.



PHOTO RESEARCH, Inc.

© 2010 PHOTO RESEARCH, Inc. All rights reserved.

PHOTO RESEARCH, Inc.
9731 Topanga Canyon Place
Chatsworth, CA 91311
TEL: 818-725-9750
FAX: 818-725-9770
email: sales.pr@photoresearch.com
www.photoresearch.com