PHOTO RESEARCH SpectraScan® PR-1050 Spectroradiometer

Ultra-Extended Dynamic Range Spectroradiometer
Proven technology when accuracy, speed, and flexibility matters

The Photo Research PR-1050 SpectraScan Spectroradiometer combines decades of engineering expertise and builds upon the industry-leading Photo Research 7 Series. The PR-1050 features the two most critical attributes of any spectral based photometric and colorimetric light measurement instrument—superior sensitivity and speed. And to meet the demands of measuring near-eye displays, the PR-1050 also works with an Augmented & Virtual Reality (AR/VR) lens that attaches directly to the device, allowing the user to measure light from AR/VR target areas.

Designed for applications requiring precise light measurements from a range of light sources, such as display monitors and projectors, reflective surfaces, and industrial applications, the industry-leading 500,000,000:1 dynamic range of the PR-1050 provides the optimal solution for measuring the output of your device. From black to full white, without the need for external attenuation or any changes to the optical geometry.

An optional special Augmented & Virtual Reality (AR/VR) lens attaches to the PR-1050, allowing the user to measure light from AR/VR target areas.

Features & Benefits:

Augmented (AR) & Virtual Reality (VR) testing: Available AR/VR Aperture Diameters: 3mm, 4mm & 5mm.

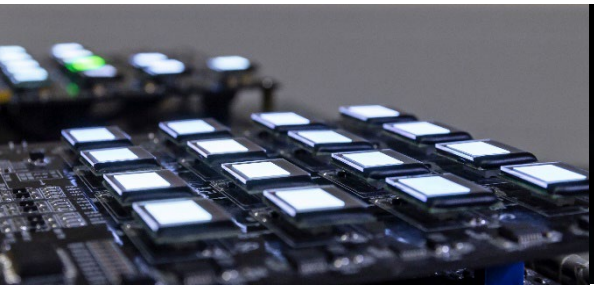
Wide Dynamic Range: Test any display/backlight without adding external filtration or changing apertures.

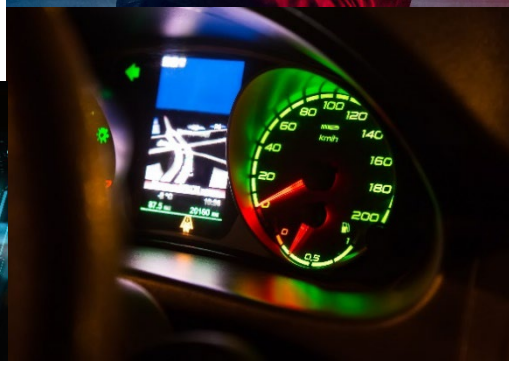
Variable Spectral Bandwidth: Spectral resolution capability for any display technology from OLED to laser sources.

High speed cycle times: Dramatic reduction of total time required to test / calibrate display products.

Typical Applications:

- OLED, LCD, microLED Screens
- Augmented and Virtual Reality Devices
- Automotive & Aerospace Displays
- Laser Projector Calibration
- Display Backlight Testing





80 YEARS OF INNOVATION PHOTO RESEARCH

Novanta

PHOTO RESEARCH SpectraScan® PR-1050 Spectroradiometer

Specification	Value	Specification	Value
Detector Elements	Back-thinned CCD – 512 element cooled	**Color Accuracy ***	±0.0015 for CIE 1931 x, y for Illum. A (2856K) at 5.14E-4 cd/m²
Spectral Bandwidth	2, 5 or 8 nm or Automatically Switchable 2, 4 and 8 nm	**Color Repeatability ***	±0.0005 for CIE 1931 x, y for Illum. A (2856K) at 1.19E–2 cd/m²
Exposure Time Range	7 ms - 2 min.	**Polarization Error**	< 0.2%
Measurement Time @ 3.34 cd/m2 with 2° aperture	300 ms	**Stray Light**	< 0.06%
Wavelength Accuracy	< 0.4 nm	**Storage**	Secure Digital (SD) Card
Spectral Resolution	1 nm	**AutoSync Range**	20 to 2000 Hz
Digital Resolution	16 bits	**Interfaces**	USB, RS232
Available Apertures	2 °, 1° , 0.5° , 0.25° , 0.2°, 0.125°, 0.1° , 0.1° x 1° (Ver. Slit), 0.5° x 1.5° (Hor. Slit)	**Power**	Li-ion battery or AC Adapter (90- 240 VAC)
Luminance Sensitivity *+	1.71E-5 cd/m²	**Battery Life**	> 8 hours
Luminance Accuracy *	±2% against NIST traceable Illum. A (2856K) Lum. Std. at 5.14E–4 cd/m²	**Weight**	6.01 kg
Luminance Repeatability *	≤1% at 5.14E–4 cd/m2 against NIST traceable Lum. Std. @ 2856K (Illum. A)	**Dimensions**	28.0 x 17.0 x 20.3 cm
		Operating Temperature	1° to 35° C 0-90% RH non-condensing

*Luminance values are calculated using the 2° aperture, and 8 nm bandwidth.
+Minimum sensitivity values are at 10:1 signal-to-noise
Specifications subject to change without notice.

PR-1050 Aperture v.s. Measurement Spot Size

	Aperture					
Accessory	Distance	2°	1°	0.5°	0.25°	0.1°
MS-75 (355 mm to infinity)	355 mm 305 m	10.5 mm 10.64m	5.25 mm 5.23 m	2.63 mm 2.66 m	1.315 mm 1.33 m	0.525 mm 532 mm
SL-0.5X	94.1 to 137 mm	3.0 to 5.08 mm	1.50 to 2.54 mm	0.75 to 1.27 mm	0.375 to 0.635 mm	0.15 to 0.254 mm
SL-1X	46 to 66 mm	1.78 to 2.64 mm	0.890 to 1.32 mm	0.445 to 0.660 mm	0.226 to 0.330 mm	0.089 to 0.132 mm
MS-7.5	100 mm 30.5 m	35.0 mm 10.64 m	17.5 mm 5.32 m	8.75 mm 2.66 m.	4.38c mm 1.33 m	1.75 mm 5.32 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

80 YEARS OF INNOVATION PHOTO RESEARCH

Novanta

PHOTO RESEARCH SpectraScan® PR-1050 Spectroradiometer

PR-1050 Luminance Range Chart (cd/m2)

	Aperture				
Accessory	2°	1°	0.5°	0.25°	0.1°
MS-75	1.71E -05 to 1.71E+04	6.85E -05 to 6.85E+04	2.74E -04 to 2.74E+05	1.10E -03 to 1.10E+06	6.85E -03 to 6.85E+06
SL-0.5X	1.71E -05 to 1.71E+04	6.85E -05 to 6.85E+04	2.74E -04 to 2.74E+05	1.10E -03 to 1.10E+06	6.85E -03 to 6.85E+06
SL-1X	1.71E -05 to 1.71E+04	6.85E -05 to 6.85E+04	2.74E -04 to 2.74E+05	1.10E -03 to 1.10E+06	6.85E -03 to 6.85E+06
MS-7.5	1.71E -05 to 1.71E+04	6.85E -05 to 6.85E+04	2.74E -04 to 2.74E+05	1.10E -03 to 1.10E+06	6.85E -03 to 6.85E+06
LA-730	1.71E -05 to 1.71E+04	6.85E -05 to 6.85E+04	2.74E -04 to 2.74E+05	1.10E -03 to 1.10E+06	6.85E -03 to 6.85E+06
FP-730	4.28E -05 to 1.07E+05	1.71E -04 to 4.28E+05	6.85E -04 to 1.71E+06	2.74E -03 to 6.85E+06	1.71E -02 to 4.28E+07
CR-730 (fc)	1.00E -05 to 3.43E+04	4.00E -05 to 1.37E+05	1.60E -04 to 5.48E+05	6.40E -04 to 2.19E+06	4.00E -03 to 1.37E+07

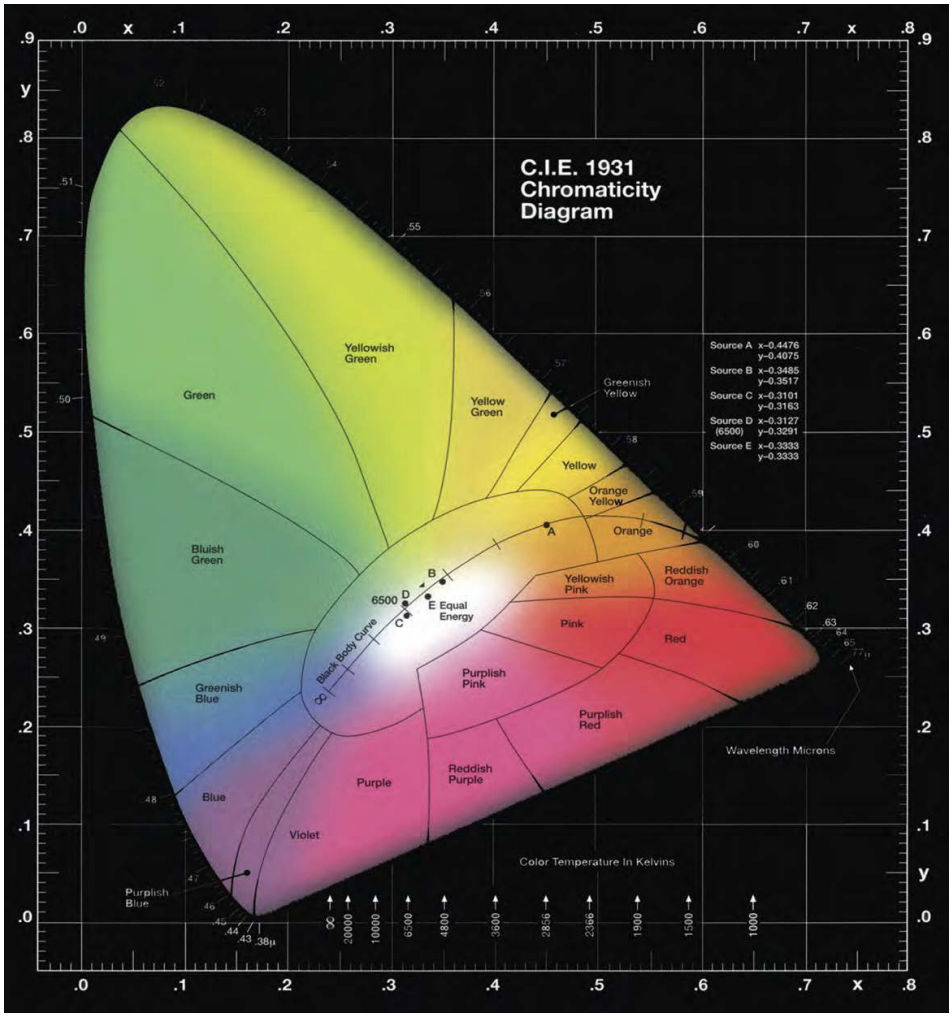


PHOTO RESEARCH SpectraScan® PR-1050 Spectroradiometer

Photo Research products have been the gold standard for the cinema business since the early 1940's. Since that time, the products have won numerous Academy Awards and continued to raise the bar in light and color measurement. Today, Photo Research offers a wide range of photometers and the Photo Research SpectraScan® Spectroradiometer series for spectral based photometric and colorimetric light measurements. The series offers a wide variety of handheld portable models that cover a variety of spectral ranges and resolutions to measure from a range of light sources, such as display monitors and projectors, reflective surfaces, and industrial applications (visual display testing, LED testing, film and video post-production, auto/aerospace displays, and dental color testing). For more information, visit www.jadaktech.com

Novanta is a trusted technology partner to OEMs in the medical and advanced industrial technology markets, with deep proprietary expertise in photonics, vision and precision motion technologies. For more information, visit www.novanta.com

For Photo Research Solutions in the U.S. and Europe, please contact **Mark Lyon, Technical Sales Manager at: mark.lyon@novanta.com or call +1 845-907-2503**

For Photo Research Solutions in Asia, please contact **Johnny Deng, Sales Manager at: johnny.deng@novanta.com or call +86 186-6621-9571**

JADAK
A Novanta Company

USA Office
phone:+1 315.701.0678
email: info@jadaktech.com
web: jadaktech.com

European Office
phone:+49 89 31 707 100
email: info@jadaktech.com

Asia Pacific Office
phone: +86 512.6283.7080
email: info@jadaktech.com

Novanta