

CONOMETER LENS



Measure viewing angle performance of flat panel displays

Westboro Photonics' Conometer® lens is a conoscopic lens using Fourier optics to enable luminance and chromaticity measurements of flat panel displays out to ± 80 degrees from normal (160 degrees full angle). A spectral measurement at the center of the field of view can also be acquired to improve the system's accuracy.

The calibrated system provides accurate and reliable measurements of many parameters as a function of viewing angle including: luminance, chromaticity, contrast, gamma and gamma inversion, and more. Visit our website for more information about [Photometrica® software capabilities](#) to measure and analyze the viewing angle properties of displays.

AR/VR display testing

With an optional 2mm entrance pupil adapter, photometric, the Conoscope lens provides 160 degrees horizontal and 160 degrees vertical measurements of Near Eye Displays (NEDs).

Key Features

- $\pm 80^\circ$ (160° total)
- 0.001 cd/m² sensitivity
- Faster than goniometric measurements
- Spectroradiometer integration

Applications

- Viewing angle measurements of flat panel displays
- 160° NED measurement

Compatible Colorimeters

- WP512
- WP6120E/ES
- WP690E/ES

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TECHNICAL SPECIFICATIONS

WP COLORIMETERS	WP690E / WP690ES	WP6120E / WP6120ES	WP512
Viewing Angle	$\pm 80^\circ$	$\pm 80^\circ$ with clipping to $\pm 70^\circ$ on the horizontal axis	$\pm 80^\circ$
Working distance	2 mm		
Maximum – Minimum Spot Size	2 mm, 1.5 mm and 1 mm standard. As small as 0.1 by special order		
Spectral spot size	8° in center of FOV		
Resolution	0.06°/px	0.05°/px	0.05°/px
2-D Luminance Minimum* (2; 1.5; 1 mm spot sizes)	0.0001; 0.0002; 0.0004 cd/m ²	0.0002; 0.0003; 0.0008 cd/m ²	0.0002; 0.0003; 0.0008 cd/m ²
2-D Luminance Maximum** (2; 1.5; 1 mm spot sizes)	670; 1,700; 2,680 cd/m ²	670; 1,700; 2,680 cd/m ²	67,000; 170,000; 268,000 cd/m ²
System Dimensions LxWxH	381.5 x 185.6 x 179.0 mm, including Colorimeter and lens mounting hardware		
Optical Axis Height	113.3 mm		
Weight	5.0 kg, excluding spectrometer		5.7 kg, including spectrometer
Operating Temperature	5°C to 35°C		
Storage Temperature	-30°C to +45°C		

Specifications are subject to change. Westboro Photonics continually pursues improvements to the instruments. Specification adjustments, errata or omissions do not constitute grounds for compensation.

* Min and max range luminance are for illuminant A at the center of the field of view using a 20x20 pixel diameter spot at a signal to noise of 10:1. Values for WP512 are estimated.

** Sensitivity range of systems can be reduced by 10x or 100x with the addition of a neutral density filter by special order.

