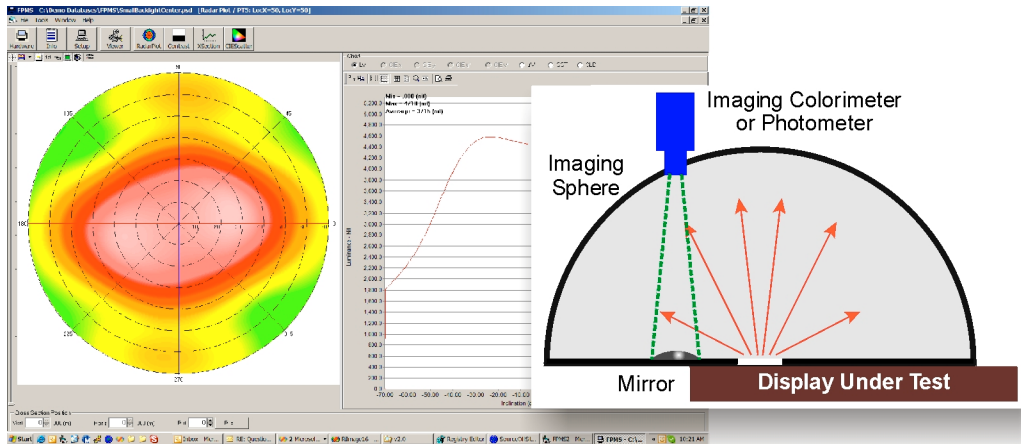


Imaging Sphere – View Angle Performance (IS-VA)

High speed, low cost, view angle performance measurement system for LCDs, PDPs, OLEDs and Backlights



RADIANT

Radiant Imaging's new Imaging Sphere™ (IS-VA) is the first display metrology instrument to provide high-speed measurements of color, luminance (brightness) and contrast as a function of view angle for flat panel displays and display components. Based on patented technology developed jointly with Royal Philips Electronics, the IS-VA provides a lower cost alternative to traditional conoscopes and goniometric view angle measurement devices while delivering excellent performance, flexibility, and reliability. The combination of high speed and high resolution makes the IS-VA ideal for both R&D projects as well as real-time production QC tasks. It is well suited to a wide range of display types including those based on LCD, PDP, and OLED technologies, as well as backlights.

The turnkey IS-VA system consists of a 20" (550 mm) diameter, hemispherical measurement chamber, mated with our PM-1400 Series Imaging Colorimeter (with a 1024x1024 pixel detector). Other imagers offering different dynamic range and resolution are available as well. The IS-VA also is offered with an optional illuminator arm that allows the ambient light scattering properties of a display to be fully characterized. The Illuminator is equipped with a collimated tungsten halogen lamp and can be moved in a light tight slot in the chamber, allowing the illumination angle to be varied at will. The IS-VA also comes with a full software suite, which enables manual and fully automated control of all system hardware, as well as complete data analysis and display. Data can be displayed as isometric plots, cross-sectional graphs, radar plots, bit maps and color graphs. For technical or sales support contact us at sales@radiantimaging.com or call us at 425-844-0152.

IS-VA Advantages

- Captures all angles at once for high speed operation.
- Produces high angular resolution results.
- More economical than alternative technologies.
- Not sensitive to stray light.
- Consistent spot size over all measurement angles.

Performance Specifications

Luminance range	
Minimum (10 mm DUT)	4 nits
Maximum (w/ND and 10 mm DUT)	4×10^7 nits
Minimum (20 mm DUT)	1 nit
Maximum (w/ND and 20 mm DUT)	1×10^6 nits
Angular accuracy	
10mm DUT	1.2°
20mm DUT	2.4°
Angular resolution	
	0.5°
Angular range	
	Azimuth: 0° - 360° Inclination: 0° - 85°
Dynamic range	
	14 bits (16,384 gray scale levels)
System accuracy	
Luminance	±5%
Chromaticity coordinates [x,y]	±0.005
Short term repeatability	
Luminance	±0.5%
Chromaticity coordinates [x,y]	0.0006
Minimum measurement time	
Photopic	1 sec
Color	4 sec
Dimensions (LxWxH)	552 mm x 635 mm x 673 mm
Weight	30 kg

Testing Capabilities

View angle performance of

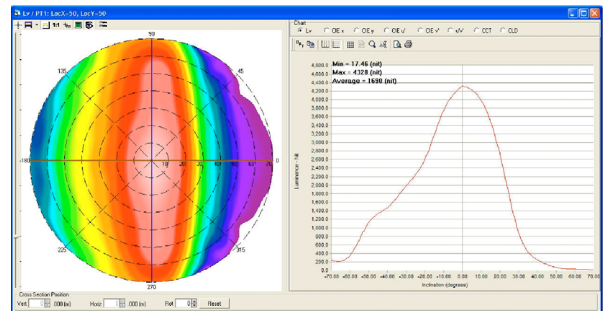
- Luminance
- Radiance
- Contrast Ratio
- CIE chromaticity coordinates
- Correlated color temperature (CCT)

Host Computer Requirements

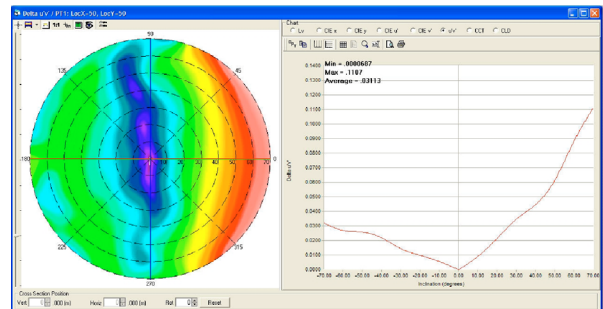
Pentium IV
512 MB RAM
Windows® 2000/XP
USB 2.0 Interface

Imaging System Compatibility

The Imaging Sphere is normally configured with a Radiant Imaging PM-1400 series Imaging Colorimeter and a 1024x1024 detector. However, any of the Radiant Imaging PM Series™ Imaging Photometers and Colorimeters are compatible with the Imaging Sphere, offering the user an expanded range of performance and cost options. Contact Radiant Imaging Technical Support for camera recommendations specific to your application.



Luminance Plot



Color Variation Plot