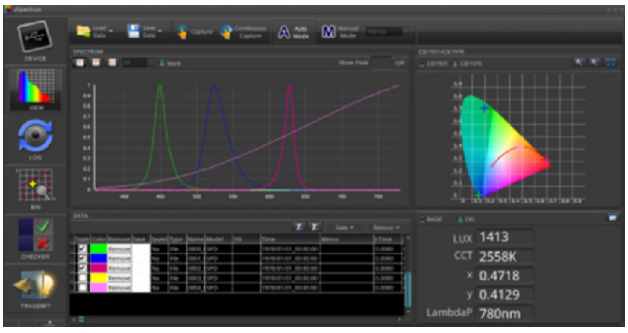
VDU 12-CF 2D Spectral Imaging Colorimeter

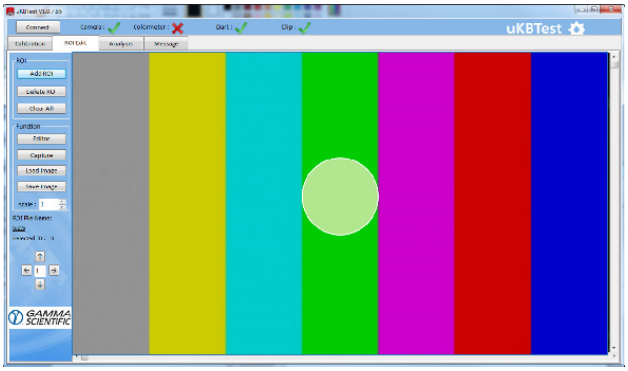
The VDU 12-CF is the next generation family of 2D spectral imaging colorimeters that includes a 2D CCD image sensor, CIE matching filters and high performance spectroradiometer (optional) for the optimization of the performance, which are used to minimize the uncertainty due to spectral mismatch for DUT with highly saturated colors. This results in a rapid, highly accurate, and repeatable measurement system covering luminance, CIE chromaticity (x, y, u', v'), correlated color temperature (CCT), dominant and peak wavelength, spectral power distribution, and uniformity. The system is particularly well suited for test and characterization of LCD, Mini LED, OLED and quantum dot displays as well as back lighting, automotive applications, and lighting. Laboratory grade accuracy and flexibility are combined with high speed and durability for demanding production environments.

Rapid, Accurate and Repeatable Display Characterization

Features and Applications

- Rapid, highly accurate, and repeatable measurement system
- Measures luminance, CIE chromaticity, CCT, dominant and peak wavelength, SPD, and uniformity
- Capability to test and measure rigid, flexible, and stretchable displays
- Testing for LCD, OLED, mini LED, and quantum dot displays
- Optimized testing for back lighting, keyboards, automotive lamps and dashboards, architecture, and luminaire lighting





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GAMMA SCIENTIFIC

Camera Specifications		
Active Image (H x V)	4096 x 3000 (12.29 MP)	
Pixel Size	3.45 µm	
Sensor Size	1.1" Diagonal	
Measurement Range	0.01 cd/m² to 50,000 cd/m²	
Luminance	Accuracy	±1% compared to spectroradiometer
	Repeatability	± 0.10%
Color	Accuracy	±0.001 in CIE1931 x, y compared to spectroradiometer
	Repeatability	0.0005 in CIE1931 x, y
Measurement Time Range	30 µs to 10 seconds	
Measurement Parameters	Luminance (cd/m²) Correlated color temperature (CCT) CIE chromaticity coordinates (1) CIE 1931 x,y coordinates (2) CIE 1931 XYZ value Delta uv (Duv)	

Spectroradiometer Specifications		
Wavelength Range (nm)	380 to 780	
Wavelength Data Increment (nm)	1	
Wavelength Reproducibility	± 1 nm	
Stray Light	-25 dB max. *4	
Polarization	< 3%	
Integration Time Range	100 µs to 5000 ms	
Luminance	Measurement range (for Accuracy and Repeatability)	0.05 ~ 5,000 cd/m²
	Accuracy	±2%
	Repeatability (2σ)	±0.2%
Color	Measurement range (for Accuracy and Repeatability)	0.05 ~ 5,000 cd/m²
	Accuracy	±0.002 in CIE1931 x, y
	Repeatability (2σ)	0.0005 in CIE1931 x, y

System Configuration		
Interface	Ethernet 100/1000, USB 2.0, RS232	
Power	48V 2.5A via an external 110-240V power supply	
Dimensions (mm) with 50 mm lens	270 W x 263.6 L x 170 H	<6.5 kg
Environmental	15 to 35 °C, relative humidity 70% or less without condensation	

Spot Size and Field of View at Selected Working Distances for 35 mm f/1.4 Lens

Working Distance (mm)	300	400	500	600	700	800	850
Spot Size (mm)	13	19	25	31	37	43	46
Field of View,Horizontal (mm)(6)	128	172	214	254	294	333	355
Field of View, Vertical (mm)(6)	94	126	157	186	214	244	260
Field of View, Diagonal (inches)(6)	6.3	8.4	10.4	12.4	14.3	16.3	17.3

*1. Luminance and color testing are based on Gamma Scientific standard light source.
*2. Measure in normal mode with temperature 23 ±2°C and relative humidity 50% or less.
*3. Field of view is calculated. Actual field of view may vary depending upon setup.
*4. Accuracy and repeatability specifications are for 100-5000 nit range.
*5. Specifications are subject to change without notice.

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