GS-1164 Multi-Angle Spectroradiometer

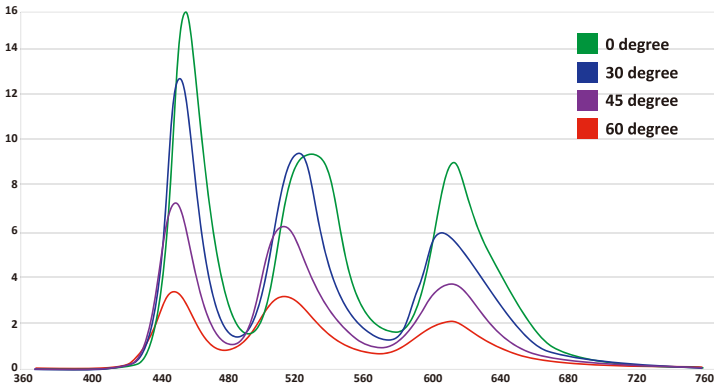
The GS-1164 display spectrometer system is designed to measure color and luminance at four simultaneous viewing angles and one flicker sensor. The platform's cutting edge technology is superior to filter based colorimeters and not susceptible to filter matching errors. It delivers true spectral based measurement accuracy required for high color saturation and wide color gamut OLED, micro LED and quantum dot displays.

The GS-1164 integrates four GS-1160B spectrometers into one module. All four spectrometers operate at the same time during measurement. It delivers the accuracy of spectrometers that are greater than four times the cost, while having the ability to measure at a much higher speed compared to other spectrometers.

Rapid, Accurate and Repeatable Display Characterization

Features

- Simultaneous luminance and color measurements at four different angles
- Integrated flicker sensor: 100K samples/second
- Luminance, CCT, CIE x, y, u', v' and spectrum
- Contrast, white balance and color gamut determination
- Auto darkness correction
- USB 2.0 and RS232 SCPI command compliant and SDK/API library support



Simultaneous 4 angle spectral measurement of an OLED display

In addition to our exceptional technical and functional capabilities, Gamma Scientific is ISO/IEC 17025 accredited by NVLAP (NVLAP lab code 200823-0).

GS-1164 Multi-Angle Spectroradiometer

GAMMA SCIENTIFIC

Measurement System		
Sensor	CMOS Linear Image Sensor	
Wavelength Range	380 to 780 nm	
Wavelength Data Increment	1 nm	
Numbers of Angles	4 angles , 0/30/45/60 degrees	
Measurement Spot Size	12 mm at 65 mm distance at 0 degrees	
Wavelength Reproducibility	± 1 nm*6	
Spectrum- Single Angle Measurement Specifications		
Luminance*1*2	Measurement range	0.005~5,000 cd/m²
	Accuracy	± 1.5% 100 to 5,000 cd/m²
		± 2% 0.2 to 100 cd/m²
		± 4% 0.05 to 0.2 cd/m²
		± 8% from 0.005 to 0.05 cd/m²
	Repeatability (2σ)*3	± 0.2% 100 to 5,000 cd/m²
		± 0.5% 0.2 to 100 cd/m²
		± 0.8% 0.05 to 0.2 cd/m²
		± 8% from 0.005 to 0.05 cd/m²
Color*1*2	Measurement range	0.01 ~ 5,000 cd/m²
	Accuracy	±0.002 in CIE1931 x, y for white 100 to 5,000 cd/m²
		±0.002 in CIE1931 x, y for white 0.2 to 100 cd/m²
		±0.003 in CIE1931 x, y for white 0.05 to 0.2 cd/m²
		± 0.006 in CIE 1931 x,y for white from 0.01 to 0.05 cd/m²
	Repeatability (2σ)*3	0.0005 in CIE1931 x, y for white 100 to 5,000 cd/m²
		0.001 in CIE1931 x, y for white 0.2 to 100 cd/m²
		0.002 in CIE1931 x, y for white 0.05 to 0.2 cd/m²
		± 0.006 in CIE 1931 x,y for white from 0.01 to 0.05 cd/m²
Stray Light	-25 dB max*4	
Polarized Error	< 2%	
Integration Time Range	100 μs to 5,000 ms (fast mode/normal mode)	
Measurement Speed*5	1 to 2 samples/sec for Y at 0.5 cd/m²	
	15 to 30 samples/sec for Y at 10 cd/m²	
	20 to 30 samples/sec for Y at 50 cd/m²	
	20 to 30 samples/sec for Y at 100 cd/m²	
Digital Resolution	16 bits	
Flicker		
Measurement Range	5 to 5,000 cd/m²	
Sampling Rate	100k samples/sec (adjustable)	
Contrast	Accuracy	±1% (30 Hz AC/DC 10% sine wave)
		±2% (60 Hz AC/DC 10% sine wave)
	Reproducibility	1% (20 to 65 Hz AC/DC 10% sine wave)
JEITA	Accuracy	±0.5 dB (30 Hz AC/DC 10% sine wave)
	Reproducibility	±0.3 dB (30 Hz AC/DC 10% sine wave)

Features	
Capture Function	One time/Continuous
Operation Mode	1. USB 2.0: High speed device , using LightTouch uSpectrum library.
	2. RS-232: For PC and embedded purposes, using SCPI command.
Integration Mode	Auto/Manual
Dark Calibration	Yes (Auto)
Measuring Parameters (Flicker)	Max/Min, Average, RMS, Frequency, JEITA, VESA, Flicker Percentage (IES) and Flicker Index (IES)
System Configuration	
Dimensions	247 x 194 x 64 mm (H x W x D)
Weight	2.5 ±0.2 kg

*1. Luminance and color testing are based on standard light source at 2856K, 6500K and 9300K.
*2. Measure in normal mode with temperature 23 ±2° C and relative humidity 50% or less.
*3. Repeatability test is based on the status of shutter opening
*4. Input the 550 nm monochromatic light and measure the stray light ratio at 550 nm ± 40 nm.
*5. Testing condition: Sync mode at 60 Hz. Sample speed depends on the measured sample. If the sample uses PWM, it will take longer
*6. Input source must be a stable light source.
Specifications are subject to change without notice.

Rev. 12.07.20

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