

GS-1220-DMS Display Measurement System



GS-1220 Display Measurement Systems can capture spectral measurements of displays in milliseconds with ultra-low uncertainty. Any application that demands high sensitivity in the blue-light region, such as LED backlit displays, will benefit from the system's back-thinned CCD technology. Models are available in three configurations, covering spectral ranges from 250-900 nm, 360-900 nm or 360-1100 nm. Interchangeable system components are available for easy customization and integration. All systems come with our powerful Light Touch™ spectral data acquisition and analysis software package, available in both engineering/R&D and QC/production line versions.

Exceptional Sensitivity and Speed for Display Characterization

- Superior wavelength and color accuracy via low thermal expansion coefficient materials
- Luminance measurements down to 0.0015 cd/m²
- Low polarization error
- Resolution better than 0.3 nm/pixel
- Original system calibration in our NVLAP accredited laboratory using NIST-traceable standards
- Can be field calibrated by the end user if a known standard is present

Original system calibration is performed in Gamma Scientific's NVLAP accredited laboratory (NVLAP Lab Code 200823-0) using NIST-traceable standards.

| Detector & Wavelength Specifications | | GS-1220-DMS-0 | | GS-1220-DMS-1 | | GS-1220-DMS-2 | |
|---|-------------------------------------|--|------------------------------------|------------------------------------|-------------------------------------|------------------------------------|--|
| Nominal Spectral Range | | 250 to 900 nm (UV-VIS) | | 360 to 900 nm (VIS) | | 360 to 1100 nm (VIS-NIR) | |
| Data Point Interval | | 0.32 nm | | 0.32 nm | | 0.35nm | |
| Spectral Bandwidth | | Integrated user-selectable Half-Power-Bandwidth. Highlighted values are factory default settings | | | | | |
| | | 10.0 nm | | 10.0 nm | | 10.0 nm | |
| | | 5.0 nm | | 5.0 nm | | 5.0 nm | |
| | | 2.5 nm | | 2.5 nm | | 2.5 nm | |
| | | 1.4 nm | | 1.4 nm | | 1.4 nm | |
| | | 1.0 nm | | 1.0 nm | | 1.0 nm | |
| Wavelength Repeatability | | 0.02 nm | | 0.02 nm | | 0.02 nm | |
| Wavelength Accuracy | | ± 0.1 nm | | ± 0.1 nm | | ± 0.1 nm | |
| Common Specifications | | | | | | | |
| Stray Light | | < 1.0 x 10-4 | | | | | |
| Polarization Error ⁽¹⁾ | | < 1% | | | | | |
| Measuring Angle | | 5°, 2°, 1°, 0.5°, 0.33°, or 0.1° (user selectable) | | | | | |
| Minimum Measuring Distance | | 69 mm with macro lens. Single calibration valid from 100 mm to ∞ | | | | | |
| Integration Time | | 2 µsec to 2.67 sec | | | | | |
| Control Software | | USB 2.0 interface with Light Touch™ software for Windows® Analysis in CIE1931 XYZ and xy; CIE1976 UCS u'v'; CIE1976 L*u*v* and L*a*b*; CIE 1964 XYZ | | | | | |
| Operating Conditions | | 0 to 35° C at relative humidity , 95% (non-condensing) 100 – 240 VAC at 50/60 Hz | | | | | |
| Dimensions | | 133 mm (5.3 in) H x 305 mm (12 in) W x 260 mm (10.2 in) L 9 kg (20 lbs.) | | | | | |
| Sensitivity and Accuracy ⁽²⁾ | | | | | | | |
| Aperture Size | 5° | 2° | 1° | 0.5° | 0.33° | 0.1° | |
| Sensitivity (cd/m²) | 0.0015 to 1,125 | 0.002 to 1,650 | 0.009 to 6,750 | 0.03 to 28,100 | 0.16 to 120,000 | 0.9 to 675,000 | |
| Chromaticity Accuracy | x,y: ±0.0020 (0.0015-0.05 cd/m²) | x,y: ±0.0025 (0.002-0.07 cd/m2) | x,y: ±0.0025 (0.009-0.3 cd/m²) | x,y: ±0.0025 (0.03-1.1 cd/m²) | x,y: ±0.0025 (0.16-5.1 cd/m²) | x,y: ±0.0025 (0.9-29 cd/m²) | |
| | x,y: ±0.0015 (0.05-1,125 cd/m²) | x,y: ±0.0015 (0.07-1,650 cd/m²) | x,y: ±0.0015 (0.03-6,750 cd/m²) | x,y: ±0.0015 (1.1-28,100 cd/m²) | x,y: ±0.0015 (5.1-120,000 cd/m²) | x,y: ±0.0015 (29-675,000 cd/m²) | |
| Canon 50 mm Compact Macro 1:2.5 | | | | | | | |
| Spot Size @ 69mm | ø 9.83 mm | ø 3.93 mm | ø 1.97 mm | ø 0.98 mm | ø 0.65 mm | ø 0.20 mm | |
| Spot Size @ 100mm | ø 10.49 mm | ø 4.20 mm | ø 2.10 mm | ø 1.05 mm | ø 0.69 mm | ø 0.21 mm | |
| Spot Size @ 279mm | ø 28.26 mm | ø 11.30 mm | ø 5.65 mm | ø 2.83 mm | ø 1.86 mm | ø 0.57 mm | |
| Canon 50 mm Compact Macro 1:2.5 with Life-size Converter EF; MAG = 1.46 | | | | | | | |
| Spot Size @ 69mm | ø 4.83 mm | ø 1.93 mm | ø 0.97 mm | ø 0.48 mm | ø 0.32 mm | ø 0.10 mm | |
| Spot Size @ 100mm | ø 6.86 mm | ø 2.74 mm | ø 1.37 mm | ø 0.69 mm | ø 0.45 mm | ø 0.14 mm | |
| Spot Size @ 279mm | ø 19.37 mm | ø 7.75 mm | ø 3.87 mm | ø 1.94 mm | ø 1.28 mm | ø 0.39 mm | |
| Tamron 180 mm Macro 1:3.5 | | | | | | | |
| Spot Size @ 279mm | ø 10.49 mm | ø 4.20 mm | ø 2.10 mm | ø 1.05 mm | ø 0.69 mm | ø 0.21 mm | |

(1) Measuring linearly polarized light through a Glan-Thompson prism

(2) Sensitivity specifications assume a 10:1 signal-to-noise ratio based on the percent coefficient of variance measuring the luminance of a CIE illuminant A source.

Specifications are subject to change without notice.