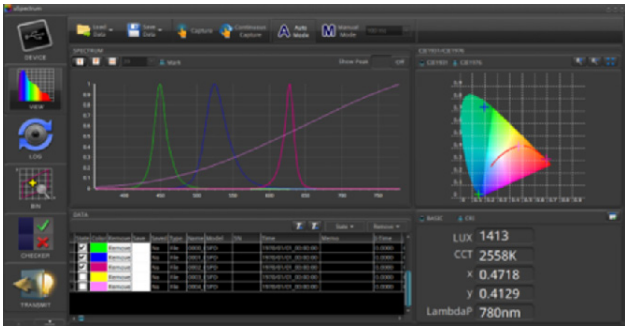
# VDU 65-CF Macro 2D Spectral Imaging Colorimeter

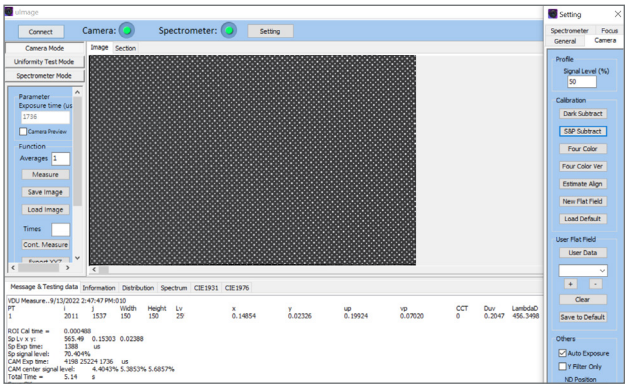

The VDU 65-CF Macro is the next generation in our family of 2D spectral imaging colorimeters that includes a 65M 2D CCD image sensor, CIE matching filters and high performance spectroradiometer (optional) for acting as a live reference, which are used to minimize the uncertainty due to spectral mismatch for DUT with highly saturated colors. This results in a rapid, highly accurate, and repeatable measurements system covering luminance, CIE chromaticity (XYZ value, x, y, u', v'), correlated color temperature (CCT), dominant wavelength, peak wavelength, spectral power distribution, and uniformity. The system is particularly well suited for test and characterization of high-resolution LCD, Mini LED, OLED and quantum dot displays, as well as backlighting, automotive applications, and lighting. Laboratory grade accuracy and flexibility are combined with high speed and durability for demanding production environments.

## High Resolution, Rapid, and Repeatable Display Characterization

### Features and Applications

- Optimized for the high resolution and single pixel characterization of high definition displays plus exceptional low light sensitivity on a subpixel level
- Rapid, highly accurate, and repeatable measurement system
- Measures luminance, CIE chromaticity, CCT, dominant and peak wavelength, SPD, and uniformity
- Testing for LCOS, mini- and micro-OLED, mini- and micro-LED, and micro displays with quantum dot technology
- Capability to test and measure rigid, flexible, rollable, and stretchable displays



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GAMMA SCIENTIFIC

| Camera Specifications | | |
|---|---|---|
| Active Image (H x V) | 9,344 x 7,000 (65 MP) | |
| Pixel Size | 3.2 µm | |
| Sensor Size | 37.36 mm Diagonal | |
| Measurement Range | 0.01 cd/m² to 50,000 cd/m² | |
| Luminance*1*4 | Accuracy | ±1% compared to external spectroradiometer |
| | Repeatability | 0.10% |
| Color*1*4 | Accuracy | ±0.001 in CIE1931 x, y compared to spectroradiometer |
| | Repeatability | 0.0005 in CIE1931 x, y |
| Measurement Parameters | Luminance (cd/m²)<br>Correlated color temperature (CCT)<br>CIE chromaticity coordinates (1) CIE 1931 x,y coordinates (2) CIE 1931 XYZ value<br>CIE (1) CIE 1931 x/y; (2) CIE 1931 XYZ<br>Delta uv (Duv)/CIE 1960 uv<br>Dominant Wavelength LambdaD<br>Uniformity | |

| Spectroradiometer Specifications | | | |
|---|---|---|---|
| Wavelength Range (nm) | 380 to 780 | | |
| Wavelength Data Increment (nm) | 1 | | |
| Wavelength Reproducibility | ± 1 nm | | |
| Stray Light | -25 dB max. | | |
| 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 | |
| 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 | | |

## Field of View (FOV) with Different Lens Options

| Lens Option | 25 mm Macro Lens (mm) | | 25 mm Macro Lens (mm) with Enhanced Lens | 100 mm Macro Lens (mm) | |
|---|---|---|---|---|---|
| Magnification | 2.5X | 5X | 10X | 0.5X | 2X |
| Field of View (FOV) Horizontal | 11.96 (H) | 5.98 (H) | 2.99 (H) | 59.80 (H) | 14.95 (H) |
| Vertical | 8.96 (V) | 4.48 (V) | 2.24 (V) | 44.80 (V) | 11.20 (V) |
| Diagonal | 14.94 (DIAG) | 7.47 (DIAG) | 3.74 (DIAG) | 74.72 (DIAG) | 18.68 (DIAG) |
| Working Distance (mm) | 45 | 39 | 36 | 174 | 72 |

*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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