

11 REASONS TO UPGRADE YOUR DISPLAY COLOR MEASUREMENT TOOL.

Introducing the SLS 9400 from UDT Instruments, a revolutionary hand held colorimeter that sets new standards in display measurement accuracy, portability and affordability.

1. Dual LCD/CRT Measurement Capability. No need to buy two expensive instruments when one portable provides superior accuracy and flexibility.

2. Lab-Grade Accuracy. Calibrated to NIST-traceable color standards. Rivals the performance of many lab-grade instruments that sell for thousands more.



Non-contact measurement of FPDs for maximum measurement accuracy.

3. Portable. Lightweight, hand held and battery operated. Ideal for production quality control or in the field. Operates continuously for over 7 hours on a single charge.

4. Contact and Non-Contact Measurement. Solves contact measurement issues associated with touch screen FPDs.

5. Affordable. Priced hundreds less than competing systems that measure only FPDs or CRTs.

6. Rich Graphical Interface. Features a large, easy to read, backlit, numerical and graphic LCD display. Provides a bar graph of RGB or xyY, u'v'Y and XYZ, as well as CCT and Delta E values.

7. Unique Reflectance and Projection Measurement Capability. Reflectance measurement size to infinity, reflectance measurement area to infinity. Limited only by size of display and installation.



Unprecedented portability and ease of use.

8. No Polarization Correction Required. Special light collection geometry eliminates polarization error from display.

9. Field Calibration. Easily recalibrate the instrument via the "Learn Mode". This allows users to create new calibration standards as required.

10. Custom Calibration. Custom calibrations are available for unique measurement requirements, further enhancing the accuracy of your applications.

11. Ideal Complement to Gamma Scientific's RadOMA DMS Spectroradiometer. Team the SLS 9400 with Gamma Scientific's industry-renowned RadOMA DMS Spectroradiometer for unbeatable laboratory measurements and quality control.



Gamma Scientific's RadOMA DMS lab-grade traceable spectroradiometer.

Get more information. Redefine your color measurement applications with the revolutionary SLS 9400 from UDT Instruments. Call for more information today at 800-637-2758. Or visit www.UDTInstruments.com

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SLS 9400

Colorimeter SLS 9400 Specifications

Color sensor configuration:

- Four detectors matched to CIE 1931 Color Functions
- Acceptance angle of the Optical Detector Head (full angle): 9.5°
- Measurement Distance: 0" (In contact) for CRT displays
0" - 36" for Flat Panel Displays

Capabilities of handheld unit:

- Built-in display: 128 x 128 Liquid Crystal Graphics with backlight function
- Display modes (Numeric and CIE Plot):
CIE 1931 x, y, Y, CCT, ΔE
CIE 1931 Δx, Δy, Y, CCT, ΔE
CIE 1976 u', v', Y, CCT, ΔE
CIE 1976 Δu', Δv', Y, CCT, ΔE
- Display modes (Numeric only): CIE 1931 X, Y, Z, CCT
- Display modes (Analog Bar Graph): RGB color balance with regard to the reference
- Luminance units: cd/m², fL, nit
- Display ranges:
Luminance: 0.10 - 10,000 cd/m² (for white light stimuli)
Chromaticity x, y (u', v'): 0.0048 - 0.8338 (0.0159 to 0.6233)
CCT: 2,500 - 30,000 K
Color Error (ΔE): 0.0 - 25.0
- Displayed precision:
Color (x, y, u', v') 4 Decimal places
Color XYZ 2 Decimal places
CCT 1 Kelvin
Luminance 0.01 (0.10 to 0.99 cd/m²) 0.1 (1.0 to 99.9 cd/m²)
1 (100 cd/m² and above)
RGB Bars 1%

Accuracy:

- Chromaticity, (CIE 1931 x,y):
at luminance levels, cd/m² (±)
(0.75 - 1.49) 0.010
(1.50 - 2.99) 0.005
(3.00 - 4.99) 0.003
(5.0 and above) 0.002
- Luminance:
at luminance levels, cd/m² (1.0 and above) < 2% ±1 digit
- RGB Bars: < 1 %

Repeatability:

- Chromaticity, (CIE 1931 x,y):
at luminance levels, cd/m² (0.75 - 0.99) 0.003
(1.00 - 2.99) 0.001
(3.0 and above) 0.0005
- Luminance:
at luminance levels, cd/m² (1.00 and above) < 1.0%
- RGB Bars (in Bar Graph Mode): < 1 %

Inter-instrument agreement:

- At luminance levels 3 - 350 cd/m²:
Chromaticity, CIE 1931 Δx, Δy, maximum: ±0.002
Luminance, difference (%): ±2.0
- For white:
Chromaticity, CIE 1931 Δx, Δy, typical: ±0.0015
Luminance, difference (%): ±1.5

Polarization error/sensitivity:

(% of CIE 1931 x, y and Luminance) < 0.5%

Typical f1' (%) of Color Sensors (more accurate color sensors can be installed upon request):

X < 3.6 (combined accuracy of x1 and x2 detectors)
Y < 2.0
Z < 4.0

Remote Interface: RS-232 (fixed rate @ 9600 baud)

Diameter of measurement area vs. measurement distance, mm (inches):

- All measurements except reflectance:

Distance	Spot Diameter
0	40 (1.6")
25 (1")	44 (1.7")
76 (3")	53 (2.1")
152 (6")	65 (2.6")
305 (12")	91 (3.6")
610 (24")	141 (5.6")
914 (36")	192 (7.6")

- Reflectance measurements:

Distance	Spot Diameter
Infinity*	Infinity*

*Measurement distance is only limited by the actual size of the display (screen measurement area) and the size of the installation (distance from the screen to the instrument).

Internal memory locations for storing data:

- Custom calibration matrixes (color and luminance): 5
- Setups: 5
- White references: 6 (pre-programmed with D65, 9300K, D50, 3200K)
- Color standards: 6 (pre-programmed with SMPTE-C, EBU, ITU REC.709, ADOBE RGB, DCI-P3)
- Measurements: 9

Standard calibrations:

- Colorimeter comes pre-programmed with calibration matrixes for CRT, FPD -CCFL, FPD-LED backlit displays. Custom calibrations can be performed upon request.

Internal power source (DC): Rechargeable NiCd battery pack

- Recharge Time: < 4 Hours
- Battery Life (for new battery):
- Backlight Off: ~ 14 Hours
- Backlight On: ~ 7 hours

Optical detector head assembly:

- Diameter of rubber cup: 78mm (3.05")
- Length: 218 mm (8.57")
- Diameter of the Optical Head Tube: 63.5mm (2.50")
- Thread size in the mounting plate: 1/4"-20 (for mounting on a tripod)
- Weight: 680g (1.5 lb)
- Cable Length (standard): 1.3m (5')
- Cable Length (optional): up to 3m (or 12')

Display (handheld) unit:

- Height: 130mm (5.10")
- Width: 100mm (3.90")
- Length: 280mm (11.0")
- Weight: 750g (1.65 lb)

