

# Model S471-LED Optometer



## FEATURES

- Meets CIE Publication 127
- World-Class Photopic Response
- RS-232 Computer Interface
- Compact and Light-weight
- Rechargeable NiMH Battery
- Temperature Compensated
- Programmable Averaging
- Multiple Calibration Storage Capacity

## ADDITIONAL APPLICATIONS

- Luminous/Radiant Intensity Measurements
- Total Luminous/Radiant Flux Measurements
- Research and Development Testing
- Device Brightness Measurements
- Tunnel Brightness Measurements
- Signal Brightness Measurements
- Equipment and Device Illumination Measurements

## PRODUCT SUMMARY

The UDT Instruments Model S471-LED handheld optometer is specifically configured for all your LED measurement needs. It is designed for use in a laboratory setting or production environment. The Model S471 is microprocessor controlled and has three measurement data-presentation options: direct display measurement with analog bar, RS-232 computer interface, and analog voltage output.

The unit comes standard with a photometric detector and CIE Condition A and B baffle tubes designed to meet the CIE Publication 127 document on measurements of average luminous intensity (candelas) of LEDs. Optional LED holding sockets are available. The sockets accommodate regular, miniature and sub-miniature LEDs and feature a locking flange that snaps firmly into a CIE Condition A or B baffle tube, assuring precise alignment of the LEDs mechanical axis. In addition, the finger clamps and locking flange ensure the distance from LED tip to detector is precisely set and conforms to CIE Publication 127.

The sockets feature banana connectors for use with high-precision power supplies. Extra leads are provided to measure the junction resistance of the diode for monitoring the diode temperature.

For total luminous flux measurements (lumens), UDT offers integrating spheres designed specifically for LED measurements.

The UDT Instruments S471-LED comes with a world-class photopic fit that is unmatched by any other instrument. It can also be configured with a radiometric detector for radiant intensity and total radiant flux measurements.

In addition to its exceptional technical and functional characteristics, this system is fully compatible with all UDT Instruments sensor heads in any configuration, making it easy to configure your S471-LED to a wide variety of applications, including illuminance, irradiance, and fiber-optic measurements.

The system comes with a factory calibration which is traceable to the National Institute of Standards and Technology (NIST).

# UDT INSTRUMENTS

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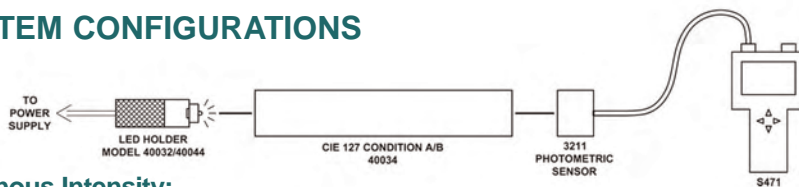
LED Holders with Alignment Tool

## SPECIFICATIONS

Sensor	Silicon detector with photopic correction and 1 cm <sup>2</sup> circular aperture per CIE127
Relative Spectral Response	< 3% f1' CIE spectral luminous efficiency V( $\lambda$ )
Measurement Speed	RS-232 (Display Enabled) > 2 times per second RS-232 (Display Disabled) Up to 53 times per second
Units	candela, lumen, Watts/steradian, and/or Watts
Measurement Accuracy	Average Luminance Intensity $\pm 5\%^*$
Repeatability	$\pm 0.04\%$
Temperature/Humidity Drift	Electronically corrected for temperature drift
Calibration Capacity	9 continuous calibrations or 50 single point calibrations
Calibration Traceability	Traceable to NIST
Display Modes	Linear / Log
Selectable Analog Output	$\pm 4.0$ VDC
Display	Monochrome 128x64 pixel LCD Up to 5-digits of Precision
Data Communication	RS-232; 9600 baud
Power Source	AC: 100-240V, 7A, 50-60 Hz; TUV, CSA, UL, CE Approved; DC: rechargeable integral battery pack; Five NiMH AA, 1800-mAhr batteries
Recharge Time	< 4 hours
Operating Temperature Range	10 to 50°C
Storage Temperature / Humidity Range	-20° to 60°C Relative humidity <80% with no condensation
Dimensions	36 x 114 x 234 mm (1.4 x 4.5 x 9.25 in.)
Weight	590g (1.3 lbs.)

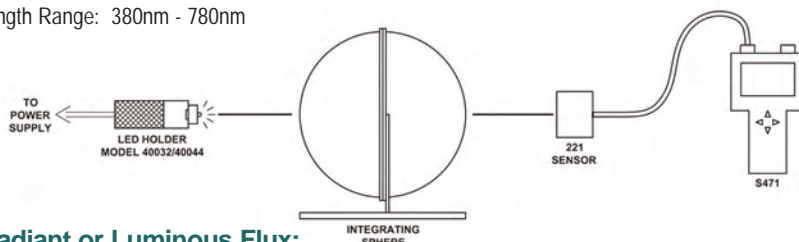
+/- 5% Measurement Accuracy requires photopic filter response of <1.5% f1'.

## SYSTEM CONFIGURATIONS



### Luminous Intensity:

Measurement Range:  
CIE Condition A: 50 e-03 to 80,000 cd  
CIE Condition B: 0.5 e-03 to 8,000 cd  
Wavelength Range: 380nm - 780nm



### Total Radiant or Luminous Flux:

Measurement Range: 100 e-09 watts to 3.5 watts  
Wavelength Range: 350nm - 1100nm

Integrating Sphere for Total Flux

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