

# LITEMATE®/SPOTMATE® SYSTEM 500

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# LITEMATE/SPOTMATE SYSTEM 500

## With Autoranging.

You can now buy a low-cost, hand-held, autoranging digital photometer and spotmeter combined into a simple, convenient system. The LiteMate™ III is a fully color-corrected (eye response) and cosine-corrected illuminance photometer. The Model 504 will perform measurements previously associated only with higher priced instruments. You get equivalent accuracy and much more convenience at the lowest possible price.

Combining the SpotMate™ Model 502 with the LiteMate gives you a superior spotmeter with a 1° acceptance angle. The SpotMate can be attached to the Model 504 LiteMate in a few seconds. You can't afford to be caught needing an important measurement without the right meter. With the LiteMate/SpotMate system, you can have them both available at all times.

The LiteMate/SpotMate System 500 is in reality two complete photometric instruments in one. The system provides the capability of both luminance and illuminance measurements under a variety of conditions. The LiteMate can be purchased alone if illuminance is the only requirement.

The System 500 features a high contrast, direct-reading 5½-digit liquid crystal display (LCD) with floating point decimal to prevent reading errors. The correct units are automatically identified by an arrow on the display to further reduce possible reading errors. Another arrow serves as an automatic indicator of low battery condition. The extremely low power drain of the electronics and readout extends battery life through thousands of readings before battery replacement is required. A convenient thumb push-button is the ON control. This button is spring loaded to return to the OFF condition upon releasing thumb pressure. When the button is released, a 12 second hold of the final reading is activated. This 12 second hold allows that "second look" you have often wished you could make to be certain you made the right reading. At light levels below 0.1 foot-candles, where the LCD display may be unreadable, the 12 second hold allows time to shine a penlight on the display to take the reading.

The LiteMate is photopically corrected (to match the CIE eye response) and the silicon blue detector is superior in its stability and lack of hysteresis.



The LiteMate III (PR-504) is a truly pocket-sized photometer that can be ordered separately. It's a precision autoranging photometer with full color and cosine correction that offers superlative performance at an extremely low price. Its range is from .01 foot-candles to 20,000 foot-candles (0.1 Lux to 200,000 Lux).

## APPLICATIONS

### Task/Ambient Lighting

The LiteMate/SpotMate System makes taking Task Lighting measurements simple and quick. The target diameter of the SpotMate will be well within an 8½" x 11" rectangle on desk or table tops at distances from 18 inches to 4 feet. These measurements can thus be made at distances that eliminate unwanted shadows. The LiteMate used alone provides illuminance values for the surrounding lighting.



### Lamp Brightness

This often-made measurement is handled with ease by the LiteMate/SpotMate System; at a distance of 4-6 feet the target diameter is less than 3.00 inches (76mm), the nominal diameter of fluorescent tubes. Lamps with larger emitting areas can be measured from greater distances. Either the accessory Fiber Optic Probe or the MicroReader Probe can also be used in conjunction with the LiteMate if the end of the Probe can be placed in contact with the lamp surface.



### Indoor Ambient Lighting

The LiteMate or LiteMate/SpotMate combination goes wherever you go and is instantly ready to make accurate readings to determine compliance to OSHA or other requirements. School rooms, hallways or stairways all lend themselves to fast surveys by using the LiteMate.



### Outdoor Illumination

The fully cosine- and color-corrected reception of the LiteMate provides accurate outdoor area measurements. It is as easy as walking to the desired location to make the measurement. The 12 second hold allows ample time to carefully take the digital meter reading. The LCD digital display is visible down to 0.1 foot-candle. Should measurements be taken at levels lower than this, a penlite can be used during the 12 second hold period to obtain readings.



### Screen Brightness (Background Reflectance)

The 1° angle of acceptance of the SpotMate lets you see what you are measuring. An internal reticle assures no unwanted areas intrude to cause measuring errors. Screen brightness measurements are among the typical reflected brightness applications that are simple and easy with the LiteMate/SpotMate System.

### CRT and Large-Area Display Brightness

Either the SpotMate, the MicroReader Probe or the Fiber Optic Probe can be used with the LiteMate for luminance measurements of CRTs and other self-luminous large-area displays. The Fiber Optic and MicroReader Probes require contact with the display while the SpotMate can be used at distances from 18 inches to infinity.

### TYPICAL TARGET DIAMETERS FOR THE SPOTMATE

Distance	Target Diameter
1.5 feet (0.46 m)	1.2 inches (30 mm)
2 feet (0.61 m)	1.6 inches (40 mm)
2.5 feet (0.76 m)	1.7 inches (42 mm)
3 feet (0.91 m)	2.0 inches (51 mm)
4 feet (1.22 m)	2.4 inches (60 mm)
7.5 feet (2.29 m)	3.0 inches (76 mm)
30 feet (9.14 m)	12.6 inches (320 mm)
100 feet (30.5 m)	42.0 inches (1067 mm)

## SPECIFICATIONS

**Sensitivity Range:** 0.01 to 19,990 foot-candles (or 0.01 to 19,990 foot-lamberts with SpotMate attached). Metric (SI) calibration; 0.1 to 199,900 Lux (or 0.1 to 199,900 Cd/m<sup>2</sup> with SpotMate attached).

The new autoranging gives you four full-scale ranges that are automatically available within the above total dynamic range.

### English Calibration

Range 1 0.01 to 19.99 foot-candles\*  
Range 2 0.1 to 199.9 foot-candles\*  
Range 3 1 to 1999 foot-candles\*  
Range 4 10 to 19,990 foot-candles\*  
\* or foot-lamberts with SpotMate attached

### Metric (SI) Calibration

Range 1 0.1 to 199.9 Lux\*\*  
Range 2 1 to 1999 Lux\*\*  
Range 3 10 to 19,999 Lux\*\*  
Range 4 100 to 199,900 Lux\*\*  
\*\* or Cd/m<sup>2</sup> with SpotMate attached

### Accuracy (LiteMate alone or LiteMate/SpotMate System 500):

**Absolute Photometric Accuracy:**  
±5% of full-scale on any range (when measuring blackbody sources).

**Repeatability:** ±1% of full-scale on any range (at constant temperature).

**Readout:** Direct reading measurement values are presented on a large 5½ digit liquid crystal display with floating decimal. The LCD display is readable down to 0.01 foot-candles. A 12 second hold is provided on the final reading. Correct luminance units (either foot-lamberts or Cd/m<sup>2</sup>) are automatically indicated when the SpotMate is attached.

**Power:** One 6-volt silver-oxide battery (Eveready 544 or equivalent). Low battery condition is automatically indicated on the display.

**Operating Temperature Range:**  
32°F to 130°F (0°C to 55°C)

**Carrying Case:** This foam-lined 11" x 9" x 4¼" (28 x 23 x 11 cm) impact-resistant plastic case with handle, to hold the LiteMate, SpotMate and all accessories.

## ACCESSORIES

**SpotMate (Model 502)** when attached to LiteMate completes a LiteMate/SpotMate System for remote luminance measurements; parallax correction from 1.5 ft. (0.46 m) to infinity. Bright, life-size viewfinder clearly defines 1° measuring field.



**Fiber Optic Probe (FO-500)** when attached to the LiteMate, this 2-foot (0.6 m) long flexible probe facilitates measurements in inaccessible locations. The Probe is calibrated to read surface luminance (within ±15%) of backlighted or self-luminous objects, such as CRTs and lighted displays, whose diameter is greater than 0.12 inches (3 mm).



**Microscope Adapter (MA-500)** used to measure changes in transmitted or reflected light using a microscope as the resolver.



### MicroReader™ Probe (MR-500)

similar in use and application to the Fiber Optic Probe, it can be used where the length and flexibility of the Fiber Optic Probe is not required. Length is 1 inch (25 mm) and the measuring aperture diameter is 0.22 inches (5.5 mm).



### The LiteMate Family

The LiteMate product line also includes LiteMate II and TV-Mate. For details, see Bulletin #575.

### ORDERING INFORMATION

To order a complete LiteMate/SpotMate System, specify "System 500" (includes carrying case and battery). To order LiteMate *only* (application is only *illuminance* measurements) specify LiteMate III, PR-504 (includes carrying case and battery). Should you decide later to add the SpotMate, specify SpotMate 502. (In this case your LiteMate should be returned to the factory for precise calibration with SpotMate.) Always specify either English calibration (foot-candles and foot-lamberts) or SI Metric calibration (Lux and Cd/m<sup>2</sup>).

For further information, contact:

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