

TECHNICAL COMPARISON: OL 770 VS LABSPHERE LED-1100



The LabSphere LED-1100 combines CIE Condition B for averaged LED intensity with a goniometer. Although it is advertised as a spectroradiometer, the CCD spectrograph is only used for chromaticity. A filtered photodiode is used for Condition B measurements and a raw photodiode is used for goniometric measurements. This is a cumbersome configuration that can yield significant errors and should be avoided. Other points to consider are:

System Limitations

The LED-1100 is a fixed design that is not versatile, and Condition A measurements are not possible. If a user wants to do LED intensity and total flux, both the LED-1100 and the LED-202 must be purchased. The OL 770-LED includes both of these measurements as standard, as well as Condition A.

Color Measurements

These apply to the LED axial direction only. With modern LEDs, especially white LEDs, showing strong color changes with angle this can lead to misleading results that confuse users. The OL 700-30 Goniometer makes spectral measurements at all angles, so color information is not lost.

Small Rotational Radius

At only 10 cm, the LED-1100's radius of rotation is too small for reliable results. For instance, the measurement cone angle with a 1 cm² detector is about 6.5°, resulting in the loss of fine detail and incorrect calculated LED viewing angles. The OL 700-30 Goniometer has a viewing cone angle of <1° and provides fine detail and accurate LED viewing angles. The angular range of the LED-1100 is limited to +/-80°. The sensor aperture angle is 1.5°.

Sensitivity

Despite using a filtered photometer instead of a spectroradiometer, Labsphere's specified minimum sensitivity for Condition B is 0.1 mcd. The OL 770-LED has a sensitivity of 0.025 mcd for Condition B.

Power Supply

A power supply is built into the LED-1100, which has a current range of 0.1mA - 500mA and a current accuracy of $\pm 0.1\%$ or $\pm .016\text{mA}$. The OL 700-10 Power Supply has a wider current range of 0.1mA - 2A, and a 10x better current accuracy of $\pm .01\%$ of FS. It can either be integrated to the OL 770-LED or operated separately as a stand-alone unit. ActiveX controls allow for custom programming.

Communications Speed

The LabSphere system is limited to communication with RS-232 at 9600 baud. The OL 770-LED communicates with USB, which is faster by a factor of 1250 and is presently considered the standard PC communications interface.

COMPARISON CHART OF THE OL 770-LED TO THE LABSPHERE LED-1100

FEATURE	LABSPHERE 1100	OPTRONIC LABORATORIES OL 770
No warm-up time before beginning measurements		★
Twenty millisecond integration times		★
Internal optical shuttering		★
Multiple cursors that can show spectral variations		Rectangular
Zooming full color CIE plots that track history and dominant wavelength		★
Report generation directly into MS Word and MS Excel		★
Autodetect device on RS232 COM port or USB		★
USB communications		★
Chromaticity based upon 5 predefined illuminants plus a user definable illuminant		★
ActiveX Control / LabVIEW Software Development Kit		★
View Angle Percentage	50%	User Defined
Number of CCD or Diode Array Pixels	512	1024
Spectral scanning speed	1 per 10 sec	20+ per sec.
Spectral Angular Goniometric Measurements		★
Polar plots of Angle vs. Chromaticity, Dominant Wavelength, Purity, etc.		★
Angular measurements in under 15 seconds		★



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As part of our policy of continuous product improvement, we reserve the right to change specifications at any time.