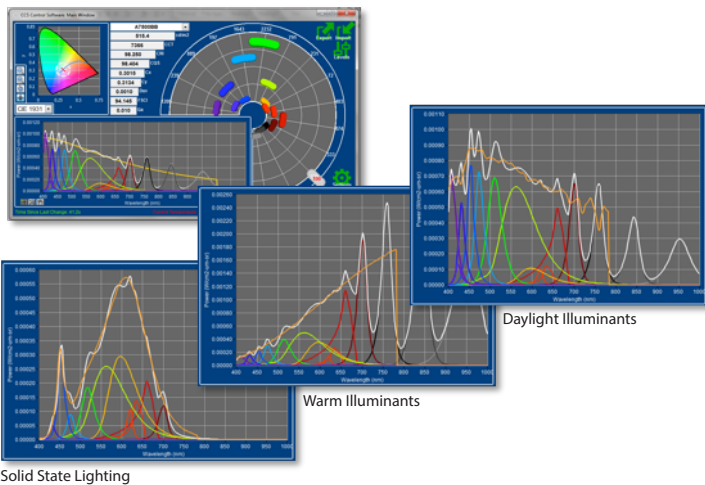


Simplify and enhance calibration of your smart ambient light sensors

# TruLume Tunable Ambient Light Sensor Calibration Sources



## Smart Source for Smart Sensors

Ambient light sensors are designed to detect brightness on the same way as human eyes do. They are used wherever the settings in a system have to be adjusted to the ambient conditions as perceived by humans. Smart sensors can predict the indoor or outdoor lighting condition and make the appropriate corrections. This requires a smart calibration source. The TruLume Tunable Ambient Light Sensor Calibration Sources are the newest addition to Labsphere's growing line of sensor calibration solutions. The tunable sources simplify and enhance production testing of ambient sensors by eliminating multiple steps and sources in the spectral response optimization and correction process with a selection of uniform standard illuminants and colors to choose from one compact and robust system.

## Multi-Sourced Solution

The TruLume Tunable Ambient Light Sensor Calibration Sources are engineered with multiple step dc controlled LEDs, each characterized and calibrated with the integrating sphere source. It is nearly every visible light source in one device plus NIR spectra to correct for undesirable noise. With the software controlled LED channels it is possible to generate the spectrum of standard indoor and outdoor illuminants such as A, B, C, D50, D55, D65, D75, F2, Neutral E, SSL-CW, with very high reproducibility. Not only does the user have the option to select from predefined spectrums, the sources also allow one to create their own spectral arrangement and save them to recall at any time for user defined test methods. With the integrated spectrometer option, one can monitor the broad range of the VIS-NIR spectra as well as the sources radiometric and photometric performance.

## VALUE

Multiple integrated illuminant spectrums from one source save time and space

Reproduce indoor and outdoor lighting conditions to calibrate your RGB ALS for mobile applications

NIR sources for filter leakage and dark corrections

High illuminance and color stability for reliable results

## APPLICATIONS

Ambient light sensor calibration

Auto white balancing

NIR dark correction

Filter leakage

## Compact and Robust for Production Environments

The TruLume Tunable Ambient Light Sensor Calibration Sources are engineered for the high performance requirements in the field of display and tablet test and calibration for ambient light sensor response to indoor and outdoor lighting conditions. The source is engineered to easily mount in a production test station or on a bench. The 2.54 cm diameter window enables test and calibration over a large variety of active areas and fields of view with highly uniform illumination. With Labsphere's highly diffuse reflectance material, Spectralon®, and a seasoned LED module long term repeatability and reproducibility are ensured in the application environment. The power control module is tethered to the source module by way of a detachable 2 m cable.

## Options

### Spectral Monitor

When seeing the spectral radiance and photometric performance in near real time is important, Labsphere offers the ALS-1100 option. The ALS-1100 has the same high performance and light output control of the ALS-1000 with the added benefit of a spectral monitor that allows one to capture and verify the spectral output.

### OSC-1000 Optimization Solution Creator Option

This option allows users to upload their desired spectral output target, which will optimize the LED inputs for the best match. With this program, users can create and save custom spectra for future use.

# Specifications

Luminance Spatial Uniformity:	>97%	
Typical Spectral Output CIE 1931 Illuminants and more:	3000K BB Illuminant A Illuminant B Illuminant C Illuminant D50 Illuminant D55 Illuminant D65 Illuminant D75 Illuminant F2 Illuminant F12 Neutral E SSL-CW	NIR 750 nm 840 nm 950 nm
Light Source:	Integrating Sphere LED Module: filter white channels and discrete color channels controlled with direct current Spectral Range: 380 nm to 1000 nm Current Regulated DC Drivers 25 mm diameter Exit Ports	
Luminance Range:	50 to 500 cd/m <sup>2</sup>	
Illuminance Range:	160 - 1570 lux	
Stability:	COV ≤ 0.2% after 5 minute warm up	
Typical Warm Up Time:	5 minutes	
Control: Software Development Kit and LabVIEW User Software	Individual Light Channel Control On, Off Preset Functions for Illuminant Spectrums Illuminance, x, y, CCT, CRI, Duv All Off Stability indicator	
With Spectrometer Monitor Option	Spectral Radiance (mW/cm <sup>2</sup> -sr-nm) Luminance (cd/m <sup>2</sup> ) Illuminance (lux) CRI Duv Source Calibration	
Operating Temperature:	20 - 40 degrees C, 0 - 70% RH	
Computer Requirements:	Windows®, 32 bit RS-232 DB9 or USB	
Power Input:	110/220 VAC, 50/60 Hz	
Dimensions: Integrating Sphere Source Module Power Module	18 cm x 18 cm x 24 cm 43 cm x 37 cm x 5 cm	
Weight: Integrating Sphere Source Module Power Module	8 kg 6 kg	

# Color Performance

Illuminant	Illuminant CRI	CCS CRI (Typical)	Illuminant Duv	CCS Duv Tolerance
A*	100	96	0.0000	± 0.002
B*	98.7	99	-0.0013	± 0.002
C*	97.5	98	-0.0022	± 0.002
D50*	100	98	0.0032	± 0.002
D55*	100	97	0.0032	± 0.002
D65*	100	97	0.0032	± 0.002
D75*	100	97	0.0032	± 0.002
F2*	64.1	65	0.0018	±0.002
F12*	83.0	82	0.0001	±0.005
Neutral E*	95.3	97	-0.0044	± 0.002
SSL-CW	86.1	86	-0.0018	±0.002

\*CIE 15:2004 Colorimetry

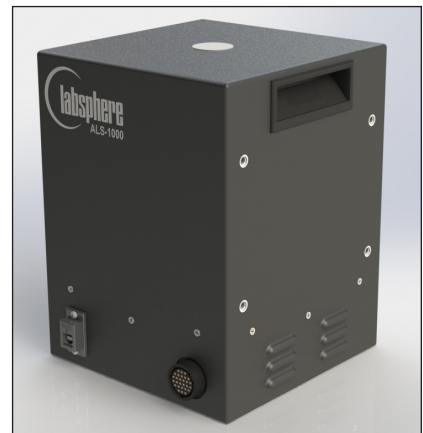


Luminance Uniformity Chart of Typical ALS

## Order Information

Model Number	Order Number	Description
ALS-1000	AA-01271-000	Ambient Light Sensors Tunable Calibration Source
ALS-1100	AA-01272-000	Ambient Light Sensors Tunable Calibration Source with Integrated Spectrometer
OSC-1000	AS-03025-100	Optimization Solution Creator Option

Accessories Include:  
 Quick Start Guide  
 Calibration Certificate  
 Uniformity Report



ALS-1000