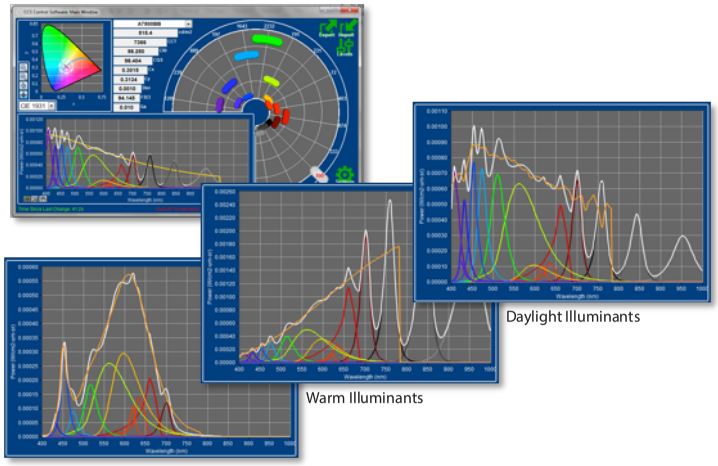
Simplify and enhance calibration of your smart ambient light sensors

TruLume Tunable Ambient Light Sensor Calibration Sources



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

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 simplifies and enhances 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.

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 75 mm 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.

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Specifications

Luminance Spatial Uniformity:	>97%	
Typical Spectral Output CIE 1931 Illuminants and more:	3000K BB	NIR
	Illuminant A	750 nm
	Illuminant B	840 nm
	Illuminant C	950 nm
	Illuminant D50	
	Illuminant D55	
	Illuminant D65	
	Illuminant D75	
	Illuminant F2	
	Illuminant F12	
	Neutral E	
	SSL-CW	
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^2	
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^2-sr-nm)	
	Luminance (cd/m^2)	
	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	18 cm x 18 cm x 24 cm	
Power Module	43 cm x 37 cm x 5 cm	
Weight: Integrating Sphere Source Module	8 kg	
Power Module	6 kg	

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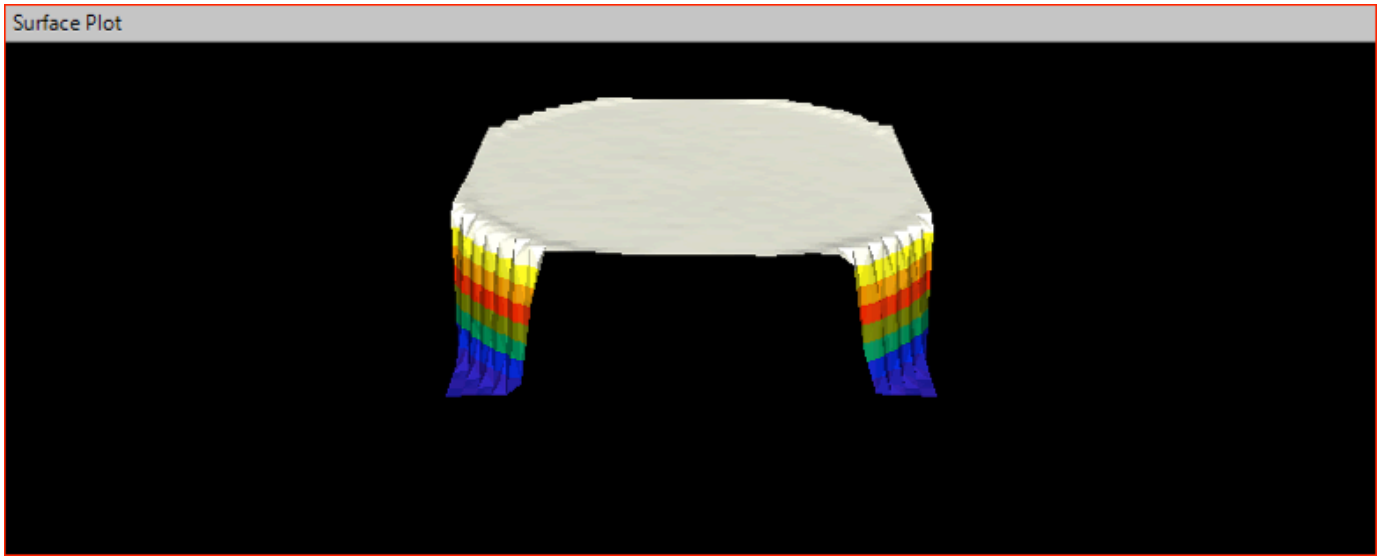
Color Performance

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

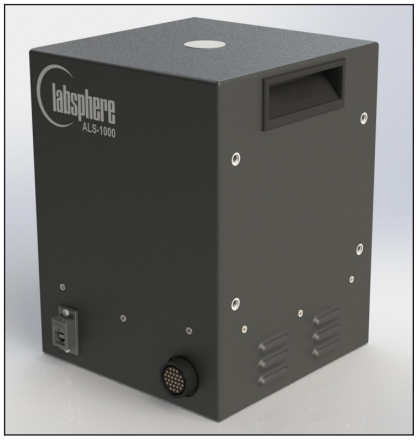


Luminance Uniformity Chart of Typical ALS

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

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