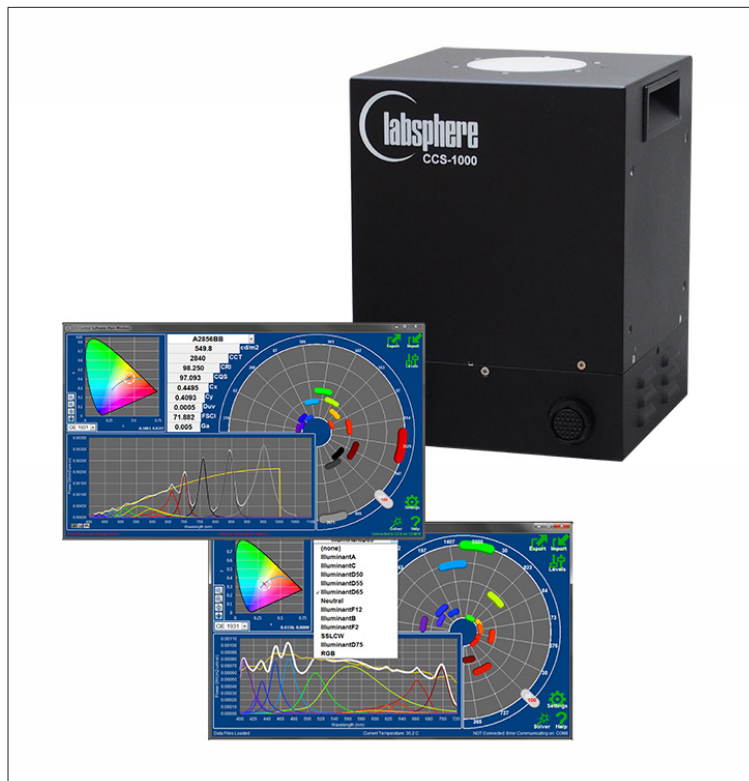


# Color Tunable Sources for Image Sensor Characterization



## Highly Uniform Illumination

The 7.5 cm diameter port enables test and calibration with highly uniform illumination.

## Trusted Test Data

Labsphere is a recognized leader in image sensor calibration sources. Our Tunable Image Sensor Characterization Sources are engineered for the high performance requirements in image sensor production testing and calibration.

## Save Money, Save Space

One instrument produces multiple spectrums. Large area uniform luminance field in a compact and robust instrument. The sources are designed to easily mount in a production test station with active spectral feedback loop and user recalibration features.

## Repeatable, Reproducible Results

With Labsphere's diffuse reflectance material, Spectralon®, and thermal-controlled LED module, long term repeatability and reproducibility are ensured.

# Specifications

Light Source:

Integrating Sphere  
 Tunable LED light engine and discrete color channels  
 Current regulated DC driver control  
 Spectral Range:  
 CCS-1000: Visible, 850 nm and 940 nm  
 CCS-1100: Visible, 850 nm and calibration lamp

Typical Spectral Output CIE 1931 Illuminants and more:

CCS-1000	CRI (Typical)	Duv Tolerance
Illuminant A	98	± 0.001
Illuminant B	98	± 0.002
Illuminant C	98	± 0.002
Illuminant D50	98	± 0.002
Illuminant D55	98	± 0.002
Illuminant D65	98	± 0.002
Illuminant D75	98	± 0.002
Illuminant F2	64	± 0.002
Illuminant F12	81	± 0.003
Neutral E	96	± 0.002
SSL-VWW	81	± 0.003
840 nm		
950nm		

Luminance Spatial Uniformity:

>97%

Output Port:

75 mm diameter

Luminance Range:

50 to 1000 cd/m<sup>2</sup>

Long Term Stability:

+/- 1%

Short Term Stability:

+/- 0.1% COV after 500 msec

Initial Warm-Up Time:

500 msec between spectra

Control: Software Development Kit  
 and LabVIEW User Software

Individual Light Channel Control  
 Preset Functions for Illuminant Spectrums  
 Luminance, x, y, CCT, CRI, Duv  
 Stability Indicator  
 Active Spectral Feedback Loop  
 Embedded User Recalibration Process

With Spectrometer Monitor Option

Spectral Radiance ( $\mu\text{W}/\text{cm}^2\text{-sr-}\mu\text{m}$ )  
 Luminance ( $\text{cd}/\text{m}^2$ )  
 Illuminance (lux) (optional)  
 CRI  
 Duv

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 (H x W x L)  
 13 cm x 23 cm x 37 cm (H x W x L)

Weight: Integrating Sphere Source Module  
 Power Module

8 kg  
 6 kg

## Ordering Information

Order Number	Model Number	Description
AA-01367-000	CCS-1000	Tunable LED Source Without Spectrometer Includes Visible, 850nm and 940nm LEDs
AA-01367-100	CCS-1100	Tunable LED Source With Spectrometer Includes Visible, 850nm LED and calibration lamp