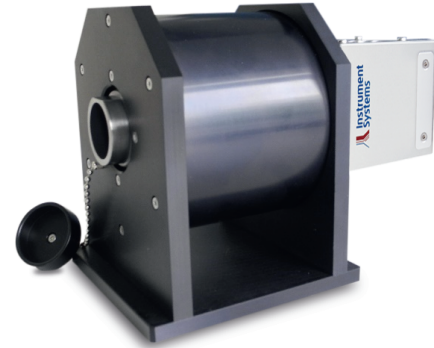


# ACS 591

## LED Calibration Standard for Illuminance

### Key features at a glance

- ▲ Reference value for illuminance [lx]
- ▲ Compatible with EOP146-1/5/6 coupling optics
- ▲ Maximum operational reliability by use with ACU control unit

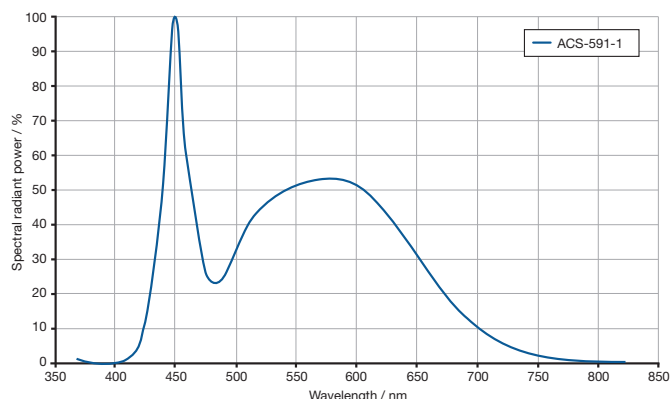


The ACS-591-1 is a cold white LED-based illuminance standard with the purpose to audit the factory calibration of a spectrometer with a coupling optics EOP146-1/5/6. The setup ensures a fixed distance of 100 mm between the LED light emitting surface and the EOP diffuser. As a service, Instrument Systems provides traceable reference values for illuminance [lx] of the ACS-591-1.

### \\ FUNCTIONALITY

The cold white LED inside the ACS-591-1 is actively temperature-stabilized by a TEC element. The generated heat is transferred to the surroundings by a heat sink and an integrated electrical fan. A constant operating temperature ensures stable and reproducible irradiance of the LED. The LED calibration standard is operated at a current of 250 mA and the temperature is regulated to 35 °C. Specially developed software is used for the control.

Instrument Systems ISO 17025 accredited test laboratories provide reference values for illuminance. Reference value, the spectrum, and all relevant operating parameters are stored inside the ACS 591. In addition, the expired operation time is tracked and logged in the device.



▲ Typical spectral curve for ACS-591-1

### \\ ACU CONTROL UNIT

The ACU is a new compact control unit for ACS calibration standards from Instrument Systems. It contains a high-precision constant current source in a compact desktop housing in addition to a TEC controller for accurate temperature stabilization.

The ACU has been developed for both laboratory and production use. The ACU is controlled by means of a computer via USB using the ACS Control software. Both, Windows 10 and OS X operating systems are supported.

Moreover, the relevant program libraries (.dll and .dylib) are available for direct access for both operating systems Windows and OS X.



▲ ACU 100 control unit

## \\ TECHNICAL SPECIFICATIONS

ACS 591 LED Illuminance Standard	
Typical illuminance [lx]	1500 – 2400
Typical irradiance [W/m <sup>2</sup> ]	4 – 9
Typical correlated color temperature (CCT)	5000 – 6200 K
Operating current and accuracy	250 mA ± 0.1 mA
Operating temperature at control point and accuracy	35°C ± 0.05°C
Long-term stability of illuminance	< 0.5 % / 300 h
Long-term stability of chromaticity coordinates x and y	< 0.0005 / 300 h
Turn-on stabilization time	< 240 s
Recommended recalibration interval	After 300 operating hours or one year after last calibration
Typical sensitivity of illuminance to ambient temperature variation	< 0.15% / 10 K
Typical sensitivity of color coordinates x, y to ambient temperature variation	< 0.0001 / 10 K
Connections	D-sub, 25-pin (ACS 591 to ACU); USB (ACU to PC)

Instrument Systems is continually working to develop and improve its products. Technical changes, errors or misprints do not constitute grounds for compensation. The company's terms of delivery and payment apply in all other respects.

## \\ ORDERING INFORMATION

Order number	Description
ACS-591-1	Calibration standard device for illuminance with cold white high-power LED and 15 mm measurement port
<b>Power sources and temperature controllers</b>	
ACU-100	Combined control unit for the operation of LED calibration standards of ACS-series (power supply 0-15 V, 0-1000 mA and TEC controller ±21 V, ±4 A); incl. connector cables and control software
<b>Calibration</b>	
CAL-590	Factory calibration of illuminance with certificate