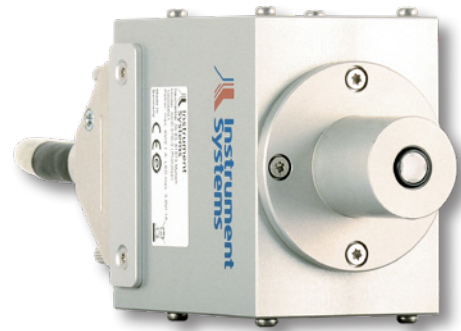


ACS 570-24b/26b/28

UV LED Calibration Standard

Key features at a glance

- ▲ Reference value for radiant flux in ultraviolet (UV) region
- ▲ Available for typical peak wavelengths 285, 308, and 365 nm
- ▲ Extremely low measurement uncertainties ($k=2$) with 4.5 % (UVC), 3.5 % (UVB) and 2 % (UVA)
- ▲ Maximum operational reliability by use with ACU-100 unit

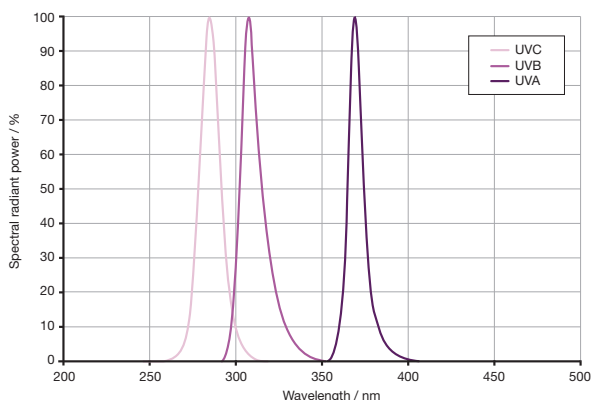


The ACS 570 UV LED Calibration Standard from Instrument Systems is a highly stable ultraviolet source based on LED technology. It is available in three versions with typical peak wavelengths 285 nm (ACS-570-24b), 308 nm (ACS-570-26b), and 365 nm (ACS-570-28). Instrument Systems provides reference values for radiant flux as a service. UV LED Standards can be used for absolute calibration and monitoring of UV measurement equipment, such as integrating spheres.

\\ FUNCTIONALITY

The UV LED inside the ACS 570-24b/26b/28 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. The UV 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 (registration number D-PL-19052-01-00) provide reference values for radiant flux. Reference values, the spectrum, and all relevant operating parameters are stored inside the ACS 570. In addition, the expired operation time is tracked and logged in the device.

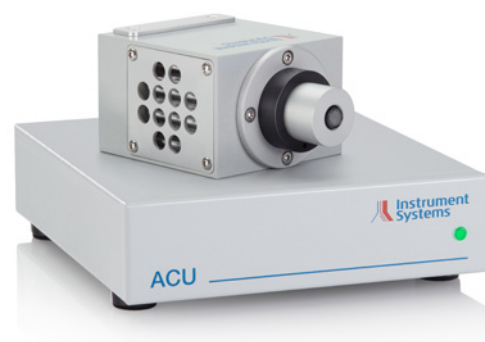


▲ Typical spectral curves for UV LED calibration standards

\\ ACU CONTROL UNIT

The UV LED Calibration Standard is best operated with the ACU 100 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. It is controlled by 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 on both Windows and OS X operating systems.



▲ ACU 100 control unit

\\ TECHNICAL SPECIFICATIONS

ACS 570 UV calibration standard	ACS-570-24b	ACS-570-26b	ACS-570-28
Typical irradiance @ 300 mm distance [mW/m ²]	52 – 57	72 – 77	670 – 690
Typical radiant flux [mW]	3.8 – 5.6	5 – 7.6	54 – 56
Expanded measurement uncertainty (k=2)	4.5 %	3.5 %	2 %
Typical peak wavelength	285 nm ± 5 nm	308 nm ± 5 nm	367 nm ± 3 nm
Typical centroid wavelength	287 nm ± 4 nm	313 nm ± 4 nm	369 nm ± 3 nm
Operating current and accuracy	250 mA ± 0.1 mA		
Operating temperature at control point and accuracy	35 °C ± 0.05 °C		
Maximum relative change over the ON time	< 0.2 % / 12 h and 1 % / 100 h		
Temperature dependency of the calibration value	< 0.3 % / 10 K	< 0.2 % / 10 K	< 0.2 % / 10 K
Turn-on stabilization time	< 240 s		
Recommended recalibration interval	One year after the last calibration		
Connections	D-sub, 25-pin (ACS 570 to ACU-100); USB (ACU-100 to PC). Alternative with adapter cable ACS-570-9 to Keithley / Arroyo		

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
UV LED calibration standard	
ACS-570-28	UVA-LED calibration standard (~365 nm) in socket with 25 mm Ø
ACS-570-26b	UVB-LED calibration standard (~305 nm) in socket with 25 mm Ø
ACS-570-24b	UVC-LED calibration standard (~280 nm) in socket with 25 mm Ø
ACS-570-9	Adapter cable for connecting ACS-570-x series of high-power LED calibration standards to current source and TEC control unit (Keithley/Arroyo)
Power sources and temperature controllers	
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
W-110	Keithley 2400 Sourcemeter
W-210	Arroyo Instruments TEC Source temperature controller, model 5305
Determination of reference values	
CAL-523	Factory calibration of radiant flux of UV-LED calibration standards with certificate