Спектрорадиометры CAS 140 CT
Технические характеристики

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CAS 140CT IR array spectrometer

High-performance array spectrometers from Instrument Systems for precise measurements of all photo- and spectroradiometric quantities in the infrared spectral range.

Introduction

CAS 140CT IR series – Worldwide reference spectrometer guaranteeing high-performance measurement in the infrared spectral range

The CAS 140 portfolio of Instrument Systems is regarded worldwide as a benchmark for precision and reliability in spectral measurement. The array spectroradiometers master in perfection the growing quality demands and increasing complexity of spectral measurement tasks within a broad wavelength range, e.g. in the IR range.

Our two CAS 140CT models IR1 (780 nm – 1650 nm) and IR2 (1500 nm – 2150 nm) are available for measuring wavelengths up to 2150 nm. In the IR1 range a model for the measurement of particularly low radiant flux (high sensitivity option) is additionally available. All devices offer a unique combination of high accuracy with ruggedness and reliability and can be used very flexible and application independent, both in the laboratory and in production. Like all spectrometers from Instrument Systems, the infrared models come with a calibration traceable to the PTB or NIST.

Main fields of application
The CAS 140CT infrared models are among the key measuring instruments in the complex system solutions from Instrument Systems. By virtue of their long service life and reliability, they are employed in the development and quality control of broadband light sources and infrared LEDs. In combination with other CAS models, the spectroradiometer system results in an extraordinary measuring scope (MultiCAS system). Thus, the CAS 140CT spectroradiometer for IR results in an extremely wide application spectrum in established brands and new challenges, e.g. in transmission, reflection or photovoltaics.

Features

Features

- Model versions from 780 nm to 2150 nm
- In IR1 with additional high-sensitivity option
- Cooled detector down to -20° C for minimum dark current
- Spectrograph with excellent stray light suppression
- Integral density filter wheel
- Extensive SpecWin Pro spectral software

Fields of application:

SWIR measurements
Short wavelength infrared light (SWIR) is usually defined as light with a wavelength between 0.9 µm and 1.7 µm, sometimes also as the spectrum between 0.7 µm and 2.5 µm. The number of applications with sources in this wavelength range has increased considerably in recent years. It enables numerous applications that would be difficult or impossible with visible light. SWIR is used as the light source in various applications such as wearable devices, food analysis, drug discovery and healthcare. The industry is continuously working on increasing the optical output power and efficiency of SWIR LEDs to enable further fields of applications. With the CAS 140CT IR series models IR1 and IR2, Instrument Systems offers two spectrometers to cover the full SWIR spectral range. A broad range of accessories is additionally available for multiple measurement tasks. The high-sensitivity option facilitates measurement of low optical power light sources.

Transmission and reflection measurementsDue to high stability and stray light suppression, the CAS 140CT IR is also optimally suited to transmission and reflection measurements. Combined with the appropriate measurement adapter, the CAS 140CT IR is the ideal measurement system for the respective application. In addition to measurement tasks in the range of directional transmission, such as the examination of optical filters and lenses, it permits the examination of the diffuse transmission and reflection of scattering samples and solar cells.

Specifications

Principal Specifications of the CAS 140CT IR

	IR1	IR2
Spectral range	780 – 1650 nm	1500 – 2150 nm
Detector	InGaAs	ext. InGaAs
Pixel number	512	256
Spectral resolution (100 µm split)	9 nm	15 nm

	IR1	IR2
Data point interval	2,1 nm	3 nm
Wavelength accuracy	+/-0,5 nm	+/-1,5 nm
Stray light (broadband for standard illuminant A)	1·10E-3	1·10E-3
Stray light at LED	1·10E-3	-
Integration time	10 msec – 65 sec	10 – 200 msec
Linearity	1 %	1 %
Cooling	-10°C	-20°C

Accessories

In combination with the correct accessories, the array spectroradiometer of the CAS 140CT IR series are the perfect solution for all spectral measurement tasks within the IR range.

- SpecWin Light: Spectral software for routine applications in the lab and in quality assurance
- SpecWin Pro: Powerful software for the acquisition and evaluation of spectral measurement data
- EOP series of optical probes with different light throughput and angular response characteristic
- ACS-570 series of LED calibration standards
- ISP Integrating spheres
- MultiCAS hardware trigger box

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