Спектрорадиометры CAS 125
Технические характеристики

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CAS 125 Fast Array Spectrometer

High-end spectroradiometer with CMOS sensor, time-optimized control and high production efficiency

Introduction

CAS 125 array spectroradiometer – with recipe mode geared to production efficiency
In the design of its new CAS 125 spectroradiometer, Instrument Systems opted for a CMOS sensor that is activated by specially developed readout electronics. This combination enables minimum measurement times of 0.01 ms while offering optimum long-term stability. The spectrograph block is based on the established high-end instrument CAS 140D, thereby ensuring that the CAS 125 has an optical performance comparable to the CAS 140D with regard to stray light and optical throughput.

Main fields of application
For the new CAS 125 spectroradiometer, Instrument Systems placed the focus on production-related applications for LEDs in the spectral range between 200 and 1100nm. In so doing, Instrument Systems rises to the challenge posed by production lines that are increasingly complex, faster and yet more convenient in operation. With the new CAS 125 we offer an attractively priced measuring system for quality inspection in mass production that can be individually aligned to customer requirements with modular, flexible components.

Features

- Minimum measuring times as low as 10 µs
- 2048 pixel CMOS sensor with thermal stabilization
- Recipe mode for the fast sequence of measurement
- Max. scan rate of 4500/s
- Robust housing with a footprint that is smaller than other CAS models

Typical applications:

Time-of-flight use of VCSEL arrays

If laser diodes and VCSEL arrays are to be used for time-of-flight applications, their characterization must be spectral and performance-related, and additionally in terms of emissions and the generated pulses. For this purpose, Instrument Systems offers absolutely calibrated, high-speed spectroradiometers such as the CAS 125 with diverse accessories. Widely used in the production environment is a system that couples the emitter into an integrating sphere and measures it instantaneously with the aid of photodiodes and a spectrometer of the CAS series. Thanks to a fast photodiode and the emitter's specially developed control electronics, this VCSEL measurement solution from Instrument Systems guarantees the characterization of pulses in the single-digit nanosecond range and capture of the LIV curve.

Specifications

Principal Specifications of the CAS 125

Model	UV/VIS	UV/VIS/NIR	VIS
Spectral range [nm]	200 - 830 nm	220 - 1020 / 300 - 1100 nm	360 - 830 nm
Detector	CMOS		
Number of pixels	2048		
Spectral resolution 100 µm slit width	3.0 nm	3.7 nm	2.2 nm
Data point interval	0.7 nm	0.9 nm	0.5 nm
Wavelength measurement accuracy	± 0.2 nm		
Integration time	10 µs – 10 s		
Shortest time interval SOT/EOT	< 230 µs		
Dynamic range	6500:1		
Max. scan rate	4500 /s		
Linearity	< ± 1 %		

Spectrograph	
Focal length, luminous intensity, grating	approx. 120 mm, f/ 3.5, plane reflection grating
Slit	Standard 100 µm; optional 50 µm or 250 µm
Filter wheel / shutter	Standard for all models: density filter OD 1-4; model UV/VIS with UV density filters; position monitoring with encoder
Electrical data	
AD converter	16-bit resolution
PC interface	Ethernet
Triggering	Input: 5V TTL input with ascending slope; Output: 2 TTL outputs
Miscellaneous	
Dimensions (H, W, T)	136,5 mm x 233 mm x 325 mm
Power supply	Wide range input (external) 100 - 240 VAC, 50/60 Hz

Ambient temperature	15 - 35 °C; relative humidity 70 % max., non-condensing
Weight	approx. 6.6 kg
Applicable standards	Conforms to EN 61010-1:2002-08 (safety requirements governing electrical devices for measurement, control and laboratory use

Measurement accuracy	Luminance / radiance	Luminous intensity / flux	Irradiance / illuminance	Color coordinates (x, y)	Dominant wavelength
Instrument precision	± 0.3 %			0.0002	0.1 nm
Accuracy	± 3 %	± 4 %	± 3.5 %	0.002	0.5 nm

Accessories

Together with the appropriate accessories, Instrument Systems offers a highly flexible system solution that is ideal for the comprehensive measurement of LEDs and SSL light sources or displays during the development process or in quality control.

Accessories for precise characterization of SSL/LED light sources

- Integrating spheres of the ISP series
- Auxiliary light source for performing a self-absorption correction
- Calibration LEDs of the ACS series
- Luminous intensity measurement adapter in accordance with CIE 127
- LED test sockets
- SpecWin Pro software package

Accessories for display production tests

- Imaging colorimeters of the LumiTop series
- Calibration LEDs of the ACS series
- Calibration traceable to the PTB or NIST
- LED test sockets
- LumiSuite software package

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