

CAS 125 Array Spectrometer

Productivity and Versatility

Key features at a glance

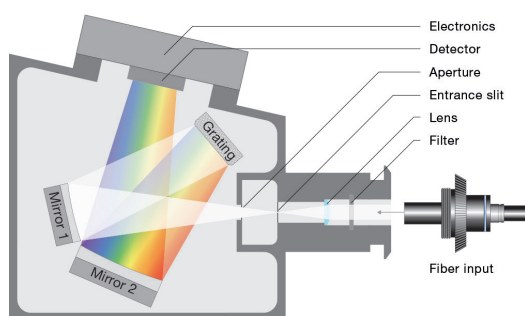
- ▲ Very short integration times down to 10 μ s
- ▲ 2048 pixels CMOS sensor with thermal stabilization
- ▲ Recipe Mode for ultrafast measurement sequences
- ▲ Max. scan rate of 4500/s
- ▲ Robust housing with smaller footprint



The new CAS 125 extends the series of well-established high-performance spectroradiometers from Instrument Systems into the field of price-sensitive applications such as LED production testing and quality assurance. The “plug & play” function allows a high degree of process reliability. The system automatically recognizes the connected accessories and ensures that only current and valid calibrations are used. The novel recipe mode significantly increases productivity in time-critical high-throughput applications.

\\ PROVEN OPTICAL SETUP

A crossed Czerny-Turner spectrograph forms the core of the CAS 125. The optical setup is adopted from the proven CAS 140D which is the undisputed industry standard for laboratory applications. This design guarantees maximum optical precision with exceptionally good stray light rejection.



\\ EXTENSIVE SOFT- & HARDWARE PACKAGE

The CAS 125 is equipped with Ethernet interface and hardware trigger. The integrated density filter wheel and the dark-current shutter additionally facilitate fully automated measurements over an extremely broad detector signal range. A software development kit (SDK) with DLL driver allows fast and easy integration of the CAS 125 into production environment. In addition, SpecWin Pro and SpecWin Light provide an extensive range of spectral analysis tools and hardware interfaces for diverse laboratory tasks.

\\ VERSATILE IN APPLICATION

Unique technical innovations integrated in the CAS 125 result in a high level of reliability and speed. A thermal stabilization of the sensor ensures operation independent from changing environmental conditions. Model variants ranging from 200 nm up to 1100 nm and the high-quality optical setup guarantee precise results for diverse measurement tasks. The economic design with a robust housing and smaller footprint is specially designed for the demanding conditions experienced in 24/7 operation.

The new CAS 125 satisfies the high requirements on accuracy and versatility from high-volume production applications to diverse laboratory tasks.

\\ “RECIPE MODE” FOR ULTRAFAST MEASUREMENT SEQUENCES

The DLL enables the merging of several thousand measurements into combined recipes, which are loaded onto the CAS 125 upon execution. The subsequent measurements are carried out step-by-step in a hardware-triggered mode avoiding long communication times with the computer between successive measurements. The test results are stored on the internal buffer and transferred to the computer only after completion of the full recipe. In this way, the recipe can be carried out with minimum delay time, which drastically enhances the units-per-hour in production environments.

\\ TECHNICAL SPECIFICATIONS & MODEL INFORMATION

CAS 125 Array Spectrometer			
Model	UV/VIS	VIS	UV/VIS/NIR
Spectral range	200 – 830 nm	360 – 830 nm	220 – 1020 nm / 300 – 1100 nm
Detector	CMOS		
Number of pixels	2048		
Spectral resolution 100 µm slit width	3.0 nm	2.2 nm	3.7 nm
Data point interval ¹⁾	0.7 nm	0.5 nm	0.9 nm
Wavelength accuracy	±0.2 nm		
Integration time	10 µs – 10 sec		
Max. scan rate ²⁾	4500 scans/sec		
Dynamic range ³⁾	6500:1		
Non-Linearity	< ±1 %		
Spectrograph			
Focal length, f number, grating	Approx. 120 mm, f/3.5, plane reflection grating		
Slit	Standard: 100 µm; optional: 50 µm, 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: TTL ascending slope; output: 2 TTL outputs		
Miscellaneous			
Dimensions (H x W x D)	136.5 mm x 233 mm x 325 mm		
Power supply	Wide-range input 100 VAC to 240 VAC 50/60 Hz		
Ambient temperature	15 – 35°C; relative humidity 70% max., non-condensing		
Weight	6.6 kg		
Valid standards	In conformity with EN 61010-1:2002-08 (safety requirements governing electrical equipment for measurement, control and laboratory use)		
Model Information			
Model	Slit	Filter wheel	
[151] VIS (360 - 830 nm) [153] VIS/NIR (380 - 1040 nm) [154] UV/VIS/NIR (220 - 1020 nm) [156] UV/VIS/NIR (300 - 1100 nm) [157] UV/VIS (200 - 830 nm)	Options are 50µm, 100µm and 250µm	Various filter-wheel combinations are available (OD 0.5 to OD 4; max. 7 filters)	

¹⁾ Binned to 1024 data points.

²⁾ Depends on integration time, device settings and performance of operating computer / system.

³⁾ Estimated.

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