Instrument Systems
KONICA MINOLTA Group

CAS 120B-HR

High Resolution Array Spectroradiometer

Key features at a glance

- High resolution down to 0.12 nm FWHM, 0.05 nm data point interval
- High-performance and cost-effective for production and laboratory
- Down to 4 ms integration time
- Integrated density filter wheel

The high resolution CAS 120B-HR is the successor of Instrument Systems' very successful CAS 120-HR with enhanced spectral resolution. Particularly designed for the measurement of narrow band emitters, e.g. laser diodes, the CAS 120B-HR combines high spectral resolution and short testing times for sophisticated and price-sensitive production and laboratory applications.

\\ VERY HIGH SPECTRAL RESOLUTION

The CAS 120B-HR achieves very high spectral resolutions down to 0.12 nm (0.05 nm data point interval) for a spectral measuring range of 80 nm. Further spectral ranges in the NIR and VIS are available upon request.

\\ BACK-ILLUMINATED CCD SENSOR

A back-thinned and back-illuminated CCD array sensor with 2048 x 16 pixels is used for detection in the CAS 120B-HR. This sensor design in combination with hardware binning of the vertical pixels offers a high level of sensitivity and large dynamic range (6300 : 1). The CCD allows capturing the spectrum of an optical emitter in a single exposure. Additionally, short integration times down to 4 ms make the CAS 120B-HR particularly suitable for the measurement of emitters with pulsed and continuous operating modes.

\\ TECHNICAL SPECIFICATIONS

CAS 120B-HR High Resolution Array Spectroradiometer	
Spectral range [1]	800 – 1000 nm
Detector	Back-thinned back-illuminated CCD
Number of pixels	2048 x 16
Gratings	1800 lines/mm
Measuring ranges (typical)	80 nm
Spectral resolution (typical)	0.12 nm
Data point interval (typical)	0.05 nm
Wavelength accuracy [2]	±0.05 nm
Integration time	4 ms – 20 s
Sensor dynamic range [3]	6300 : 1
Non-Linearity	±0.6%

Instrument Systems
KONICA MINOLTA Group

\\ TECHNICAL SPECIFICATIONS

CAS 120B-HR High Resolution Array Spectroradiometer	
Spectrograph	
Focal length, f number, grating type	Approx. 120 mm, f/3.5, plane reflection grating
Filter wheel	Available density filters: OD 0.5, 1, 1.5, 2, 2.5
Electrical data	
AD converter	16 bit resolution
PC interface	USB 2.0
Triggering	1 TTL input with ascending slope; 2 software-controlled TTL outputs; 1 TTL output with flash pulse
Baseline noise [4]	±400 counts, or ±2.5 %
Miscellaneous	
Dimensions (H, W, D)	147 mm x 343 mm x 317 mm
Power supply	Wide-range input 100 VAC to 240 VAC 50/60 Hz
Power consumption	Max. 35 VA
Ambient temperature	15 – 35 °C; relative humidity 70 % max., non-condensing
Weight	Approx. 7 kg
Valid standards	In conformity with EN 61010-1:2002-08 (safety requirements governing electrical equipment for measurement, control and laboratory use)

\\ ORDERING INFORMATION [1]

Order number			**Product code options**				
Product code			Central wavelength	Interface	Slit	Filter wheel	Grating
CAS120B[Central wavelength][Interface][Slit][Filter wheel][Grating] e.g. CAS120B0941U2K1			e.g. [0941] with grating [1]: 902-982 nm	[U] USB	[2] 50 µm	[K] OD 1/1.5/2/2.5 [L] OD 0.5/1/1.5/2/2.5	[1] 1800 lines/mm
Available models			**Model product code**				
Spectral range (typical)	Spectral resolution (typical)	Data point interval (typical)	Central wavelength	Interface	Slit	Filter wheel	Grating
902 - 982 nm	0.12 nm	0.05 nm	[0941] 941 nm	[U] USB	[2] 50 µm	[K] OD 1/1.5/2/2.5 [L] OD 0.5/1/1.5/2/2.5	[1] 1800 lines/mm

[1] Further spectral ranges upon request.
[2] Applies to Penray lamp or laser.
[3] For a single acquisition with 4 ms integration time.
[4] At shortest integration time, without averaging and at 30,000 counts signal level. When averaged, this value improves (e.g. averaged over 9 times equals a threefold noise reduction).

Instrument Systems GmbH | Kastenbauerstr. 2 | 81677 Munich, Germany | ph: +49 (0)89 45 49 43-58
fax: +49 (0)89 45 49 43-11 | info@instrumentsystems.com | www.instrumentsystems.com