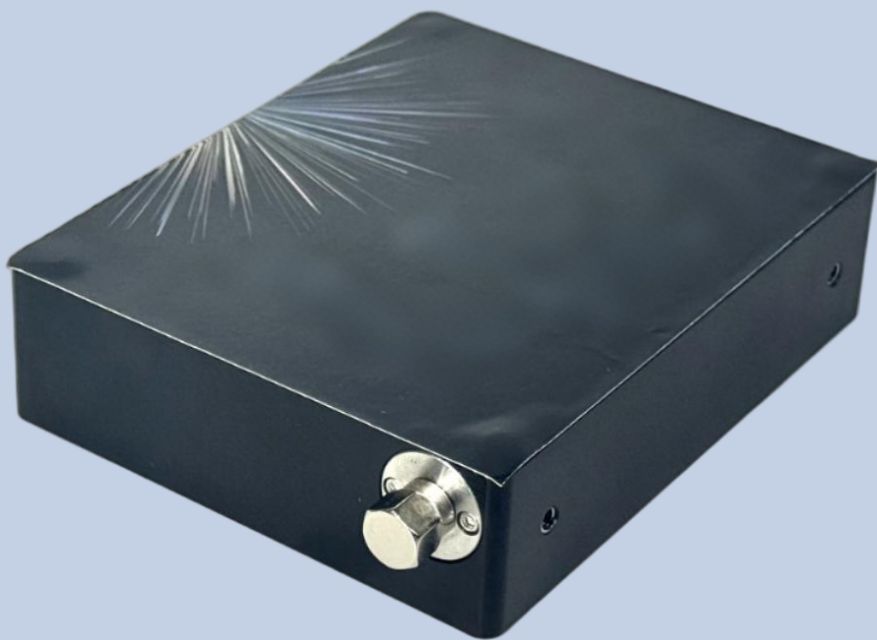


SensUVIS3 Spectrometer



One Platform Many Possibilities

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General Introduction: Industrial Precision & Versatility

The SensUVIS3 series is engineered to provide stable and convenient spectral acquisition for diverse applications. It excels in environments requiring low stray light and high dynamic range (3000:1).

The device supports SDKs for easy integration into custom systems and offers advanced software capabilities for transmission, reflection, Raman, and LIBS analysis.

Product Positioning & Core Highlights

Product Positioning :

The SPM3 is an industrial-grade, high-resolution fiber optic spectrometer designed for stability and cost-effectiveness. Built around a Hamamatsu CMOS detector, it offers high sensitivity across UV and Visible (VIS) bands, making it an ideal turnkey solution for complex industrial integration and scientific analysis.

Core Highlights :

Superior Detector: Equipped with a Hamamatsu CMOS linear array (2048/4096 pixels) and a 16-bit AD converter for high sensitivity.

Industrial Connectivity: Supports a wide range of interfaces including USB, RS232, TTL, 485, and Modbus for convenient system integration.

Ultra-Stable: Features a built-in watchdog for 24/7 continuous operation and exceptional thermal/wavelength stability.

Versatile Functionality: Built-in Xenon lamp control circuit and support for various trigger modes (external, automatic, software).

Application Fields

LIBS Systems: Supports up to 16-channel parallel operation for metal composition analysis.

Optical Analysis: Transmission, absorption, reflection, and irradiance measurements.

Advanced Metrology: Film thickness (5um-100um), color measurement (XYZ, Lab, RGB), and concentration analysis.

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Interface & Integration

Connectors: 24-PIN or 30-PIN connectors including GPIOs and analog output.

Optical Interface: Standard SMA905 fiber connector.

Specifications

Full Spectrum Series Parameters

Parameter	Specification
Model	SensUVIS3-200-1100
Wavelength Range	200-1100nm (Customizable)
Applicable Application	Full Spectrum Application
Recommended Light Source	Flashing Xenon Lamp / Halogen Lamp
Grating	600gl/mm 12.5mm*12.5mm (Effective Size); Blazed Wavelength 300nm
Optical Resolution	< 3.5nm (200um Fiber) (Note: Source text says "3.5mm", corrected to nm based on context)
Wavelength Resolution	2048/4096 Channels
Detector	CMOS Linear Array, 2048/4096 pixels, Linearity >99.8%
Signal to Noise Ratio (SNR)	Normal Mode 500:1, High Speed Averaging Mode 1600:1
Operating Mode	Single Acquisition / Continuous Acquisition / External Trigger
Dynamic Range	3000:1
Dark Noise	1ms integration time, average < 20cnts
AD Conversion Chip	16-bit, 2MHz (Max)
Exposure Time	0.06 ms - 65 s (Note: Source 33 text is garbled "0.06 ms65m-", corrected based on Source 23 "0.06ms-65s")
Optical Slit	25um (Default) / 50um / 100um, 200um
Fiber Interface	SMA905
Data Transmission	100 frames/sec (Max)
Digital Input/Output	4 Programmable Digital Outputs GPIO; 1 Analog Output (Integrated Laser Power Controller)
LIBS System Support	Supports LIBS system, max 16-channel spectrometer parallel operation
Circuit	Built-in Xenon lamp control circuit
External Trigger	5ns low delay external trigger, 5ns-65s programmable external delay, re-trigger exit
Connector and Data	24PIN-Connector, including USB (480Mbps) / TTL (3.3v) / RS232/485
Integration Scheme	Transmittance, absorbance, reflectance, irradiance, etc.
Self-recovery Device	7x24 hours 365 days uninterrupted work, self-contained watchdog
Dimensions	89 x 64 x 31 mm



UV Spectrum Series Parameters

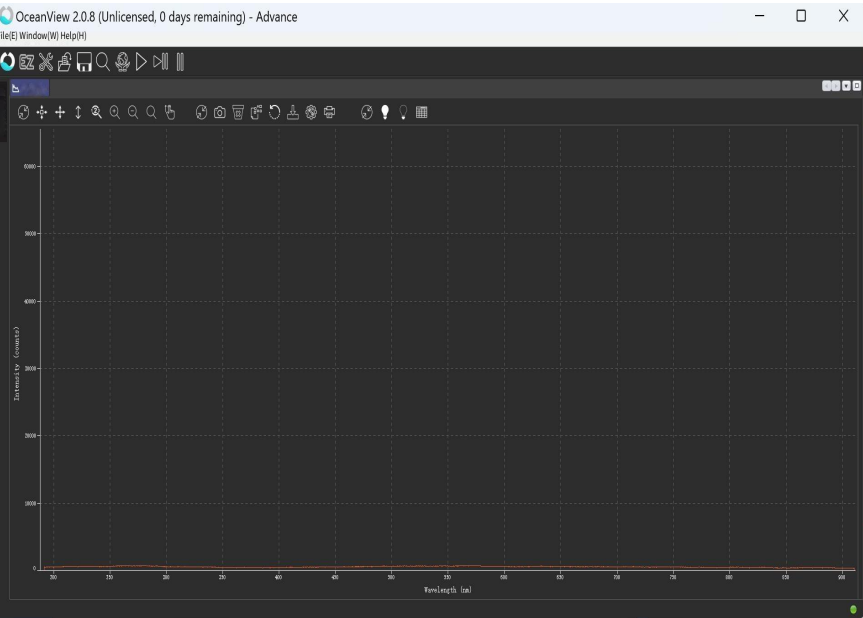
Parameter	Specification
Model	SensUVIS3-200-800 (UV Spectrometer)
Wavelength Range	200-800nm (Customizable), 180-540nm
Applicable Application	Partial UV application
Recommended Light Source	Flashing Xenon lamp
Grating	600gl/mm 12.5mm*12.5mm (Effective Size); Blazed Wavelength 250nm
Optical Resolution	< 2nm (200um fiber)
Wavelength Resolution	2048/4096 Channels
Detector	CMOS Linear Array, 2048/4096 pixels, Linearity >99.8%
Signal to Noise Ratio (SNR)	Normal mode 500:1, High speed averaging mode 1600:1
Operating Mode	Single acquisition / Continuous acquisition / External trigger
Dynamic Range	3000:1
Dark Noise	1ms integration time, average < 20cnts
AD Conversion Chip	16-bit, 2MHz (Max)
Exposure Time	0.06 ms - 65 m (Note: Source 23 indicates unit is seconds/s)
Optical Slit	25um (Default) / 50um / 100um, 200um
Fiber Interface	SMA905
Data Transmission	100 frames/sec (Max)
Digital Input/Output	4 Programmable Digital Outputs GPIO; 1 Analog Output (Integrated Laser Power Controller)
LIBS System Support	Supports LIBS system, max 16-channel spectrometer parallel operation
Circuit	Built-in Xenon lamp control circuit
External Trigger	5ns low delay external trigger, 5ns-65s programmable external delay, re-trigger exit
Connector and Data	24PIN-Connector, including USB (480Mbps) / TTL (3.3v) / RS232/485
Integration Scheme	Transmittance, absorbance, reflectance, irradiance, etc.
Self-recovery Device	7x24 hours 365 days uninterrupted work, self-contained watchdog
Dimensions	98 x 81 x 25 mm

Visible Spectrum Series Parameters

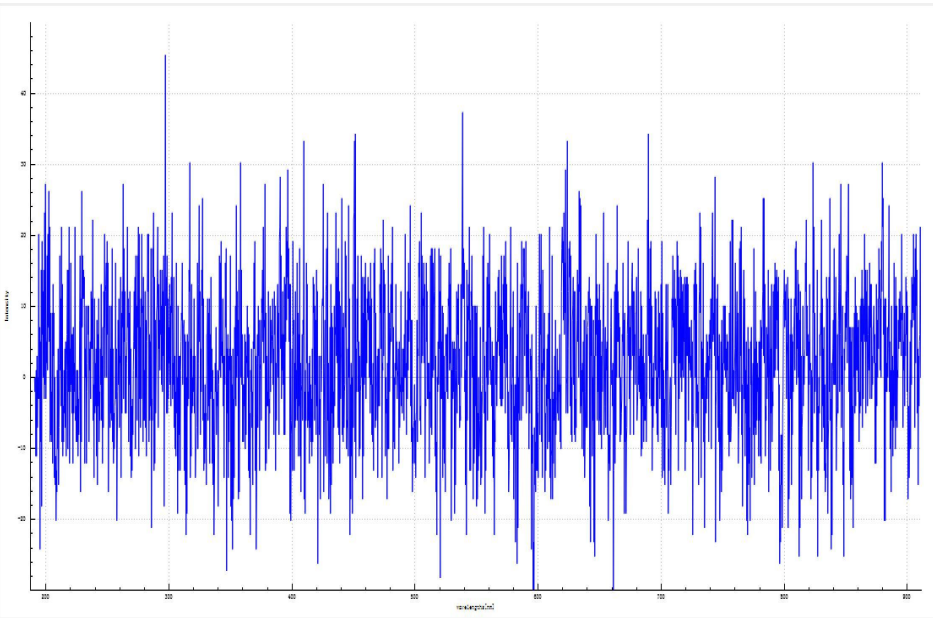
Parameter	Specification
Model	SensUVIS3-350-950 (Benchmarking USB2000)
Wavelength Range	350-950nm
Applicable Application	Partial visible light application
Recommended Light Source	Halogen lamp
Grating	600gl/mm 12.5mm*12.5mm (Effective Size); Blazed Wavelength 500nm
Eliminate High Order Diffraction	High-order diffraction elimination filter (optional), used to eliminate ghost lines in the spectrum
Optical Resolution	< 3.5nm (200um fiber)
Wavelength Resolution	2048 Channels
Detector	CMOS Linear Array, 2048 pixels, Linearity >99.8%
Signal to Noise Ratio (SNR)	Normal mode 500:1, High speed averaging mode 1600:1
Operating Mode	Single acquisition / Continuous acquisition / External trigger
Dynamic Range	3000:1
Dark Noise	1ms integration time, average < 20cnts
AD Conversion Chip	16-bit, 2MHz (Max)
Exposure Time	0.06 ms - 65 m (Note: Source 23 indicates unit is seconds/s)
Optical Slit	25um (Default) / 50um / 100um, 200um
Fiber Interface	SMA905
Data Transmission	100 frames/sec (Max)
Digital Input/Output	4 Programmable Digital Outputs GPIO; 1 Analog Output (Integrated Laser Power Controller)
LIBS System Support	Supports LIBS system, max 16-channel spectrometer parallel operation
Circuit	Built-in Xenon lamp control circuit
External Trigger	5ns low delay external trigger, 5ns-65s programmable external delay, re-trigger exit
Connector and Data	30PIN-Connector, including USB (480Mbps) / TTL (3.3v) / RS232/485
Integration Scheme	Transmittance, absorbance, reflectance, irradiance, etc.
Self-recovery Device	7x24 hours 365 days uninterrupted work, self-contained watchdog
Dimensions	100 x 105 x 54 mm

Spectrogram

Dark Noise



Noise below 20counts



Half-peak width is less than 3.5nm

Peak number	Peak wavelength	Peak Pixels	Peak Raman shift	Half-peak width pixel	Half-peak width nm
1	255.26	365.00	-26437.61	10	1.7292
2	314.29	678.00	-19078.42	19	2.4893
3	366.46	951.00	-14549.61	20	2.7060
4	405.83	1155.00	-11902.17	16	2.7504
5	436.94	1315.00	-10147.65	20	2.9441
6	546.98	1873.00	-5543.25	20	2.9408
7	577.96	2028.00	-4563.27	15	2.0910
8	579.77	2037.00	-4509.43	8	1.2328
9	697.05	2616.00	-1607.40	7	1.0709
10	738.92	2820.00	-794.49	6	1.0637
11	750.66	2877.00	-582.69	16	3.4613
12	763.47	2939.00	-359.29	17	3.4110
13	771.95	2980.00	-215.40	6	1.6984
14	794.34	3088.00	149.74	6	1.7027
15	801.19	3121.00	257.48	16	3.4512
16	810.97	3168.00	407.95	20	3.4640
17	826.39	3242.00	638.07	15	3.4420

📩 Get in touch with our team to explore configurations, request a quote, or learn more about customized solutions tailored to your needs.

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