VENUSLAB
OPTOELECTRONICS

Precision
Meets
Simplicity

Fiber Spectrometers

SensUVIS3 Spectrometer

SensUVIS3 is an industrial-grade high-resolution fiber optic spectrometer with a Hamamatsu CMOS detector. Featuring high UV-VIS sensitivity, stability and cost-effectiveness, it is ideal for industrial integration and scientific analysis.

- Superior Detector
- Industrial Connectivity
- Ultra-Stable
- Versatile Functionality

One Platform Many Possibilities

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SensUVIS3 Spectrometer

Overview

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.

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.

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)
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
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 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

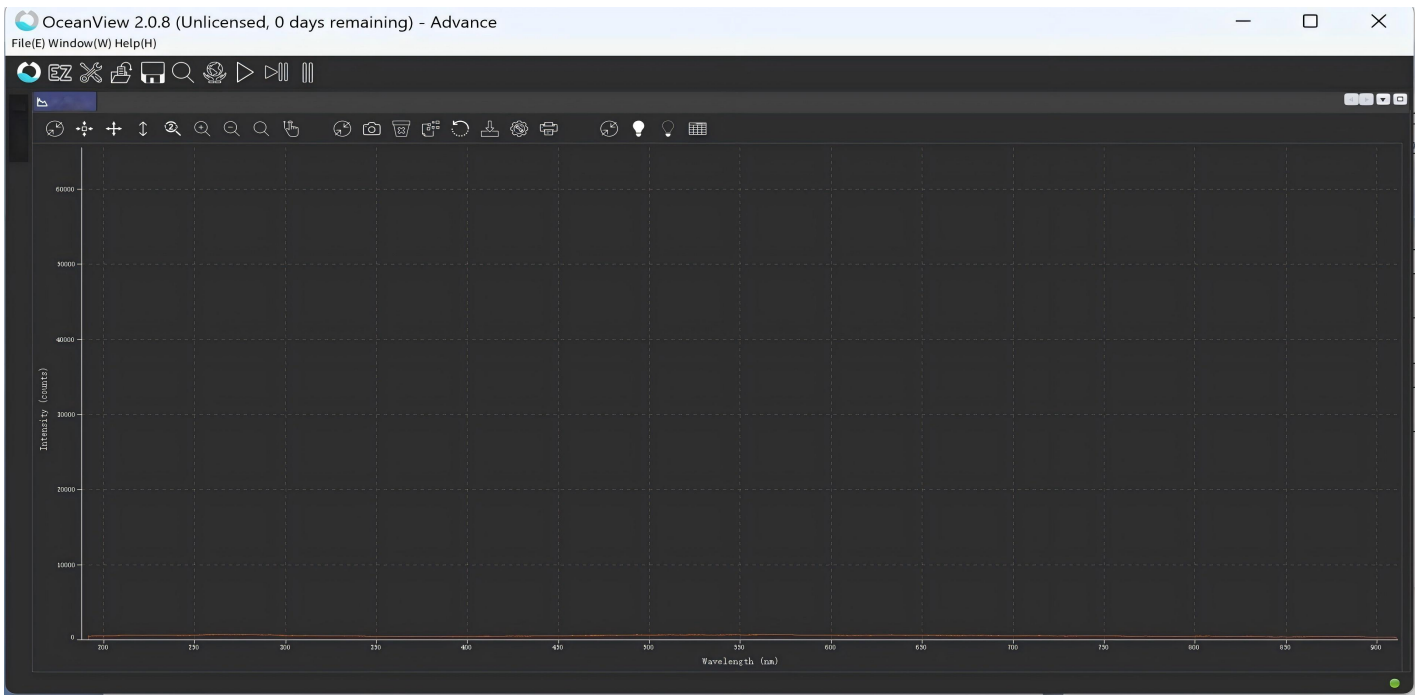
Parameter	Specification
Model	SensUVIS3-350-950
Wavelength Range	350-950nm
Applicable Application	Partial visible light application
Recommended Light Source	Halogen lamp
Grating	600gl/mm 12.5mm*12.5mm (Effective Size); Blazed Wavelength 500nm
Eliminate High Order Diffraction	High-order diffraction elimination 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

SensUVIS3 Spectrometer

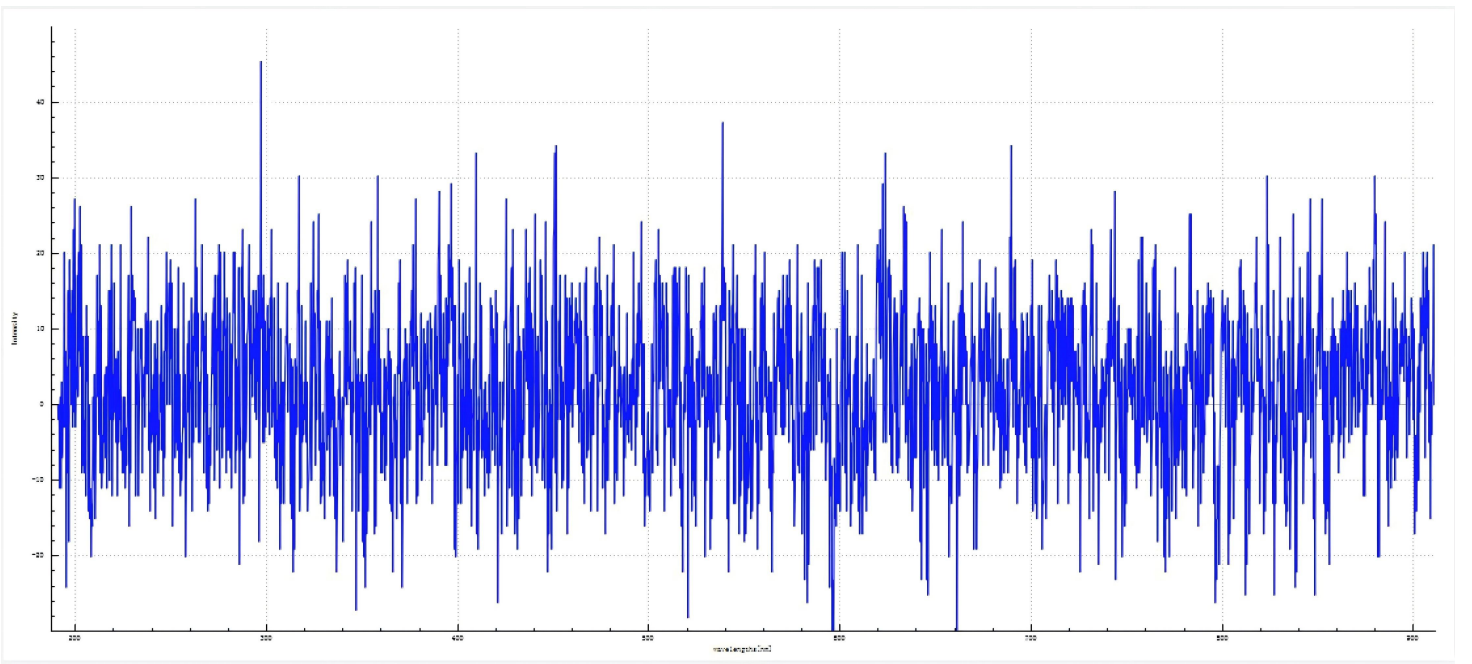
Dark Noise	1ms integration time, average < 20cnts
AD Conversion Chip	16-bit, 2MHz (Max)
Exposure Time	0.06 ms - 65 s
Optical Slit	25um (Default) / 50um / 100um, 200um
Fiber Interface	SMA905
Data Transmission	100 frames/sec (Max)
Digital Input/Output	4 Programmable Digital Outputs GPIO; 1 Analog Output (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

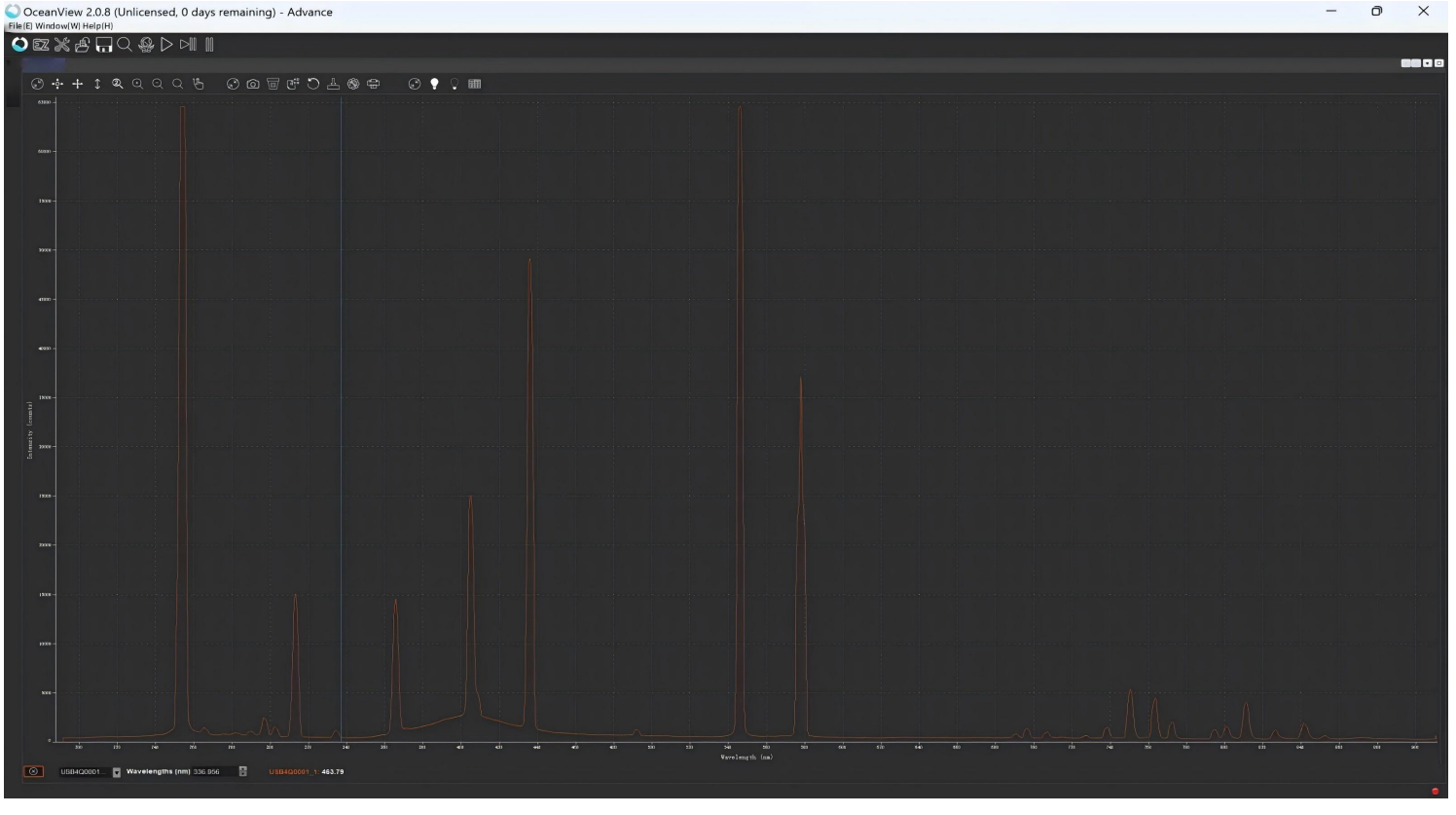


Noise below 20counts



SensUVIS3 Spectrometer

Mercury lamp



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

Serivce & Support

We are dedicated to delivering exceptional optoelectronic solutions to every client. From precision manufacturing and secure delivery to full-lifecycle technical support, we are here to ensure a seamless and reliable experience at every step.

1. Warranty Policy

Quality First, Worry-Free Operation

Warranty Period: We offer a **two-year** warranty service for all of our core optoelectronic products, effective from the date of shipment.

Coverage: We provide free repair or replacement services for malfunctions caused by material defects or workmanship errors under normal operating conditions.

Rapid Response: Upon receiving a warranty claim, we guarantee to initiate the assessment process within **24 hours** to minimize your equipment downtime.

2. Technical Support

Expert Team, Full-Process Guidance

Technical Consultation: Our team of senior optical engineers provides **24/7 online support** to assist with installation, commissioning, optical path alignment, and parameter optimization.

Scheduled Maintenance: We offer full-lifecycle maintenance recommendations, including firmware upgrades, optical component cleaning guidelines, and precision calibration services.

Training Services: We provide customized remote or on-site operational and safety training to ensure your team can operate the equipment efficiently and safely.

3. Logistics & Delivery

Precision Packaging, Global Reach

Professional Packaging: Given the fragile nature of optical instruments, we utilize industrial-grade shockproof, anti-static, and moisture-proof vacuum packaging to ensure zero damage during transit.

Logistics Partners: We partner with top-tier global logistics providers **(DHL / FedEx / UPS / SF Express)** to offer reliable shipping with real-time tracking.

Shipping Insurance: All shipments are fully insured to eliminate logistics risks.

4. Compliance & Certification

Strict Standards, Total Compliance

Quality Certification: Our manufacturing process is **ISO 9001 certified**, and our products comply with international standards such as **CE** and **RoHS.**

Export Compliance: "Committed to environmental responsibility, all our products comply with **RoHS 2.0** and **REACH** standards, ensuring safety and global compliance."

Explore Series

Model	Data Transmission	Dimensions	Dynamic Range	Wavelength Range
SensUVIS3-200-1100	100 frames/sec (Max)	89 x 64 x 31 mm	3000:1	200-1100nm
SensUVIS3-200-800	100 frames/sec (Max)	98 x 81 x 25 mm	3000:1	200-800nm
SensUVIS3-350-950	100 frames/sec (Max)	100 x 105 x 54 mm	3000:1	350-950nm

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

Let us help you moves cience forward—faster and smarter.