

NWS6300 Spectrometer

Description:

NWS6300 Series Miniature Fiber Optic Spectrometer: High Sensitivity, Compact Design

The NWS6300 series represents a new generation of high-sensitivity, compact fiber optic spectrometers. Featuring a back-thinned, cooled detector, the NWS6300 is ideally suited for demanding applications such as fluorescence and Raman spectroscopy.

Advanced circuit design allows the detector to be cooled to 20°C below ambient temperature, effectively suppressing dark current noise and maximizing signal-to-noise ratio. The NWS6300 offers an exceptional balance of price and performance, making it an ideal choice for integration into high-end instrumentation.

Key Features:

High Signal-to-Noise Ratio: Ensures accurate and reproducible measurements, even for low-light samples and long integration times. **Two-Stage Cooling**: Thermoelectric cooling stabilizes the detector at temperatures up to 20°C below ambient, minimizing dark current and enhancing sensitivity.

Back-Thinned CCD Detector: Provides exceptional quantum efficiency across a broad spectral range, maximizing light collection and improving overall performance.

High Precision Spectroscopic Performance: Delivers reliable and accurate spectral data for demanding analytical applications.

Enhanced UV Response: Enables measurements down to the UV region, expanding the range of applications supported.

Low Stray Light: Minimizes background noise and improves the accuracy of measurements, especially in complex samples.

Superior Low-Temperature Stability: Ensures consistent performance even under varying temperature conditions.

Application

Raman Spectroscopy: Ideal for material identification, chemical analysis, and process monitoring through the analysis of molecular vibrations.

Life Science Instrumentation: Well-suited for integration into instruments used in genomics, proteomics, and drug discovery.



General Scientific Research: A versatile tool for a wide range of spectroscopic experiments and analyses.

Environmental Monitoring: Enables the detection and quantification of pollutants in water, air, and soil samples.

Materials Characterization: Analyze the composition and optical properties of various materials, including thin films and coatings.

Laboratory Standard Instrumentation: Provides reliable and accurate measurements for quality control and research applications.

Microscopy Spectroscopy: Characterize microscopic samples and features with high spectral resolution.

Angle-Resolved Spectroscopy: Study the angular dependence of optical properties in materials and devices.

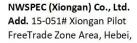
Resolutions:

Spectral	Wavelength	าSlit	Slit	Slit	Slit	Slit	Slit	Slit	Slit
Range	Resolution	Width:	Width:						
(nm)	(nm)	30 µm	40 µm	50 µm	60 µm	70 µm	100 µm	ո150 µm	1200 µm
200 - 500	0.2	0.7	0.9	1	1.1	1.2	1.9	2.8	3.7
380 - 800	0.26	0.9	1.2	1.5	1.7	2	3	4	6
350 - 1100	00.4	1.4	1.6	1.8	2.1	2.5	3.5	5	7

Note: Optical resolution is determined based on the full width at half maximum (FWHM) at 435.8 nm.

Specification:

Item	Specification					
Spectral Range	200 - 1100 nm (Model Dependent)					
Wavelength Resolution	Up to 0.03 nm					
Optical Resolution	Up to 0.10 nm FWHM (Model Dependent)					
Order-Sorting Filter	Optional					
Stray Light	< 0.1%					
Detector						
Detector Type	Hamamatsu CCD array					
Spectral Coverage	200 - 1100 nm					
Number of Pixels	2048					
Pixel Size	14 μm (H) x 14 μm (V) * Pixel Height : 64pixels *					
Sensitivity	7 μV/e-					
Optical Platform						
Optical Design	f/4, Symmetrical Czerny-Turner					





Focal Length 100; 110 mm

Entrance Slit Standard 70 µm (optional sizes available)

Fiber Optic Connector SMA905 0.22NA

Electrical Specification

Signal-to-Noise Ratio 500:1 Linearity >99%

Integration Time 12 ms - 4 min

Dynamic Range 4500:1

A/D Converter 16-bit, lossless

Acquisition Speed 12 ms + integration time

Communication Interface USB 2.0

Expansion Port 16-PIN external trigger port

General

Operating System Support Windows, Android, Linux, WinCE

Power Consumption 450 mA @ 5V DC Cooling 2 A @ 5 V DC

Dimensions 182 mm x 110 mm x 50 mm

Weight 1600 g

Mounting Standard 3-point mounting holes