NWSPEC (Xiongan) Co., Ltd.
Add. 15-051# Xiongan Pilot
FreeTrade Zone Area, Hebei,

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 Range (nm)	Wavelength Resolution (nm)	Slit Width: 30 µm	Slit Width: 40 µm	Slit Width: 50 µm	Slit Width: 60 µm	Slit Width: 70 µm	Slit Width: 100 µm	Slit Width: 150 µm	Slit Width: 200 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	0.4	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