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

NWS6500 Spectrometer

Description:

NWS6500 Spectrometer: Precision Spectroscopy for Demanding Applications

The NWS6500 series represents a new standard in miniature fiber-optic spectrometers, combining exceptional sensitivity and stability for a wide range of demanding analytical and research applications. Featuring a low stray light optical bench, low-noise electronics, and a high quantum efficiency back-illuminated CCD detector, the NWS6500 delivers superior performance across the UV-Vis-NIR spectrum.

Its deep-cooled CCD, capable of thermoelectric cooling up to 40°C below ambient, significantly reduces dark current and thermal noise, enabling extended integration times and improved detection limits. This makes the NWS6500 ideal for low-light level applications and environments with fluctuating temperatures.

Key Features & Benefits:

High Signal-to-Noise Ratio (SNR): Ensures accurate and reproducible measurements, even for weak signals.
Deep-Cooled CCD Detector: Minimizes thermal noise, enabling longer integration times and enhanced sensitivity.
Back-Illuminated CCD: Maximizes light collection efficiency, providing superior sensitivity across the spectral range.
Enhanced UV Response: Extends spectral coverage into the UV region for a broader range of applications.
Low Stray Light Optical Design: Reduces background noise, improving accuracy in complex spectral environments.
Compact and Robust Design: Provides portability and reliable performance in both laboratory and field settings.
Versatile Software Suite: Offers comprehensive tools for data acquisition, processing, analysis, and instrument control.

Resolution:

slit width μm	30	40	50	60	70	100	150	200
Optical Resolution nm	2.60	2.90	3.30	3.70	4.10	4.70	5.80	6.80
	1.60	1.80	2.00	2.20	2.50	3.00	4.00	5.00
	2.60	2.90	3.30	3.70	4.10	4.70	5.80	6.80

Typical Applications:

Fluorescence Spectroscopy: High-sensitivity detection and quantification of fluorophores in diverse samples.
Raman Spectroscopy: Molecular fingerprinting for material identification, structural analysis, and chemical process monitoring.
Microscopy Spectroscopy: Spectral characterization of microscopic features in materials and biological samples.
Astronomy: Low-light level detection and spectral analysis of celestial objects.
Environmental Monitoring: Detection and quantification of pollutants in water, air, and soil.
Materials Science: Characterization of optical properties, thin film analysis, and material composition determination.
General Spectroscopy: A versatile platform for absorbance, transmission, reflection, and emission measurements in a wide variety of laboratory applications.

Items	Specification
Spectral Range	200 - 1100 nm (Model Dependent, specify range for each model)
Optical Resolution	Up to 0.50 nm FWHM (Model Dependent, specify for each model)
Wavelength Resolution	Up to 0.30 nm
Stray Light	< 0.1%
Order-Sorting Filter	Optional
Detector Type	Back-thinned CCD array (Hamamatsu)
Spectral Coverage	200 - 1100 nm
Number of Pixels	1024
Pixel Size (H)	24 μm
Pixel Size (V)	24 μm
Pixel Height	24um * 128
Sensitivity	2.2 μV/e-
Optical Design	f/4, Symmetrical Czerny-Turner
Focal Length	100; 110 mm
Entrance Slit	Standard 70 μm (optional sizes available)
Fiber Optic Connector	SMA9050, 0.22 NA
Electrical Specification	
Signal-to-Noise Ratio	1200:1
Linearity	>99%
Integration Time	6 ms - 30 min
Dynamic Range	8000:1
A/D Converter	16-bit, lossless

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Acquisition Speed	6 ms + integration time
Communication Interface	USB 2.0
Expansion Port	16-pin external trigger port
Operating System Support	Windows, Android, Linux, WinCE
Power Consumption	450 mA @ 5V DC
Cooling	4 A @ 5 V DC
Dimensions	182 x 110 x 50 mm
Weight	1600 g
Mounting	Standard 3-point mounting holes