

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.

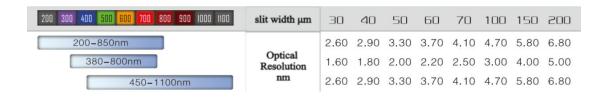
Enhanced UV Response: Extends spectral coverage into the UV region for a broader range of applications.

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:





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





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