

SideWinder™ NIR Spectrometer

A rugged, high-performance NIR spectrometer for long-wavelength applications and OEM integration

The SideWinder™ spectrometer delivers high-performance near-infrared spectral analysis using high-sensitivity InGaAs linear array sensors in a rugged optical platform. Its Czerny–Turner design provides strong stability against temperature, vibration, and environmental variations while supporting a wide wavelength range from 900 nm to 2500 nm. Available in both non-cooled and TEC-cooled configurations, the SideWinder is designed for reliable NIR measurements in laboratory, industrial, and OEM applications.



APPLICATIONS

- NIR spectroscopy and optical metrology
- Film thickness inspection and material analysis
- Food, pharmaceutical, and biochemical analysis
- Fabric and polymer analysis
- Environmental and agricultural sensing
- Process control, quality monitoring, and material identification

KEY PERFORMANCE

Wavelength Range: 900-2500 nm (model dependent)

Optical Resolution: 2 – 22 nm (slit/grating dependent)

Signal-to-Noise Ratio: up to 6000

Dynamic Range: up to 13000

Integration Time:

- SW5/8: 100 μ s – 24 sec
- SW9: 100 μ s – 200-300 ms (model dependent)

Stray Light: <0.1 - 0.45 % (model dependent)

Thermal Stability: <0.1 – 0.2 nm / °C

Interface: USB 2.0, 6x programmable digital I/O

SideWinder™ Specifications

		SW2520	SW2560	SW2570	SW2860	SW2870	SW2930	SW2960	SW2970
Wavelength Range		900 nm – 1700 nm					910 nm – 2200 nm	900 nm – 2500 nm	
Sensor Type		InGaAs (uncooled)			InGaAs (TEC, 1-stage)	InGaAs (TEC, 2-stage)	InGaAs (TEC, 1-stage)		InGaAs (TEC, 2-stage)
Pixels		128	256	512	256	512	256	256	512
SNR	High Gain	2000	2400	2500	3200		2800	2500	
	Low Gain	4000	4500	4000	4500		5300	4500	
Dynamic Range	High Gain	6500	6000		8000	7200	6000	7000	6000
	Low Gain	8200	9300		13000	9300		12000	9300
Thermal Stability		<0.2 nm / °C	<0.1 nm / °C				<0.2 nm / °C		<0.1 nm / °C
Dark Noise (avg)	High Gain	10	11	11	8	9	11	8.5	11
	Low Gain	8	7	8	5	7	7	5.5	7
Integration Time		100 μs – 24 s					100 μs – 300 ms	100 μs – 200 ms	
Operating Temperature		0°C to +50°C							
Grating		Multiple grating options (model dependent)							
Dimensions / Weight		110 (L) × 86 (W) × 32.4 (H) mm 0.9kg			130 (L) × 96 (W) × 57.65 (H) mm 0.9kg				