

Sol™ 1.7

900 - 1700nm NIR TE Cooled InGaAs Array Spectrometer



The Sol™ 1.7 is a high performance linear InGaAs array spectrometer, featuring 512 pixels with TE cooling down to -5°C, all while providing high throughput and large dynamic range.

Each spectrometer features an SMA 905 fiber optic input, a built-in 16-bit digitizer, and is USB 2.0 plug-and-play compatible. With our spectral acquisition software, you can select between High Sensitivity and High Dynamic Range mode within your pre-configured spectral range. Customized spectral resolution and application support are available.

Applications:

- Process monitoring
- NIR spectroscopy
- Quality control
- On-line analyzer
- Material identification

Features:

- 900nm - 1700nm spectral range
- Resolution as fine as 0.35nm
- Built-in 16-bit digitizer
- -20°C thermoelectric cooling available
- Two gain modes for specific application needs
- 256 & 1024 pixel configurations available

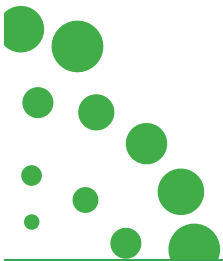
Accessories:

- Light sources
- Fiber patch cords
- Fiber sampling probes
- Fiber sample holders

Thermoelectric Cooler

Cooling an array detector with a built-in thermoelectric cooler (TEC) is an effective way to reduce dark current and noise, as well as to enhance the dynamic range and detection limit.

When the InGaAs array detector is cooled from a room temperature of 25°C down to -10°C by the TEC, the dark current is reduced by 12.25 times and the dark noise is reduced by 3.5 times. This allows the spectrometer to operate at longer exposure times and to detect weaker optical signals.



Specifications:

DC Power Input	5V DC @ 3.5 amps
AC Power Input	100 - 240VAC 50/60 Hz, 0.5A @ 120VAC
Detector Type	Linear InGaAs Array
Pixels	512 x 1 @ 25 μ m x 500 μ m per element
Spectrograph f/#	3.5
Spectrograph Optical Layout	Crossed Czerny-Turner
Dynamic Range	High Dynamic Range mode: 13,000:1 High Sensitivity mode: 6,250:1
Digitizer Resolution	16-bit or 65,535:1
Readout Speed	500 kHz
Data Transfer Speed	>200 spectra per second via USB 2.0
Integration Time	200 μ s to >= 64 Seconds
External Trigger	Aux port
Operating Temperature	0°C - 35°C
TE Cooling	-5°C @ relative humidity = 90% (-20°C option available)
Weight	~ 3.1 lbs (1.4 kg)
Dimensions	7.8in x 4.3in x 2.7in (197mm x 109mm x 68mm)
Computer Interface	USB 2.0 / 1.1
Operating Systems	Windows: 7, 8, 8.1 (32-bit & 64-bit)

Entrance Slit

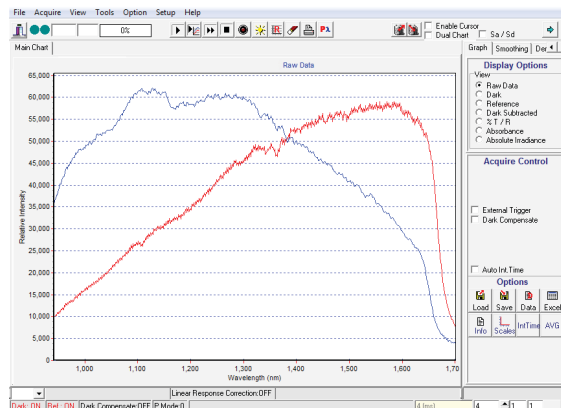
Slit Option	Dimensions	Approximate Resolution 900 - 1700nm
25 μ m	25 μ m wide x 1mm high	~4.0nm
50 μ m	50 μ m wide x 1mm high	~5.0nm
100 μ m	100 μ m wide x 1mm high	~8.4nm
Custom slit widths available		

Diffraction Grating

Spectral Coverage (nm)	Grating	Approximate Resolution 25 μ m Slit
1500-1600	1000/1310	0.35nm
1260-1355	1000/1310	0.4nm
1450-1650	600/1200	0.8nm
1200-1400	600/1200	0.7nm
900-1300	300/1200	1.5nm
1200-1600	300/1200	1.5nm
900-1700	150/1250	4.0nm
Custom configurations available		

Software:

BWSpec[®] is a spectral data acquisition software with a wide range of tools that are designed to perform complex measurements and calculations at the click of a button. It allows the user to choose between multiple data formats and offers optimization of scanning parameters, such as integration time. In addition to powerful data acquisition and data processing, other features include automatic dark removal, spectrum smoothing, and manual/auto baseline correction.



Spectrograph

