

# Scanning Spectrometer



## SIR-3400 Compact, Extended Range Spectrometer

The SIR-3400 Mid-Infrared Fiber Optic Analyzer is a first for optical-based infrared spectrometers. This SIR scanning spectrometer collects spectral data over the 1-3.4  $\mu\text{m}$  wavelength range and features a fiber-based system for rapid spectral scans over its entire range. It can also provide real-time data from several discrete wavelengths.

The SIR-3400 uses a single point detector and a high angular resolution-tunable grating system. The zero-backlash mechanical design provides superior accuracy and repeatability. This combination, along with an innovative 24-bit A/D converter, provides high spectral resolution and very high signal-to-noise data.

An optional filter wheel provides optical order sorting of diffracted orders.

The SIR-3400 is designed with a rugged aluminum housing that is robust enough to withstand the rigors of chemical processing applications.

The USB 2.0-compliant interface provides fast data transfers and our included software can be used to control all of the SIR-3400's functions as well as analyze data.

### Specifications

Range:	1-3.4 $\mu\text{m}$
Detector:	InAs with 3 stage cooler
Diffraction grating:	300 lines/mm 2.0 $\mu\text{m}$ blaze
Optical design:	Czerny-Turner F/3
Slits available:	10 $\mu\text{m}$ , 50 $\mu\text{m}$ , 100 $\mu\text{m}$ , 200 $\mu\text{m}$ , 500 $\mu\text{m}$
Optical input:	SMA-905/906 with optional lensed input
Analog resolution:	24 bits 16,777,216 counts
Triggering options:	Internal and external synchronization, pulse width control and phase delay
Additional digital outputs:	2 channel selectable 3.3V/5V output
Additional digital inputs:	2 channels 3.3V/5V compatible inputs
Grating steps in range:	16,800
Step accuracy:	+/- 10 steps
Data interface:	USB 2.0
Scan time:	As quick as 20 seconds
Resolution based on optical slits:	10 $\mu\text{m}$ .22 nm 50 $\mu\text{m}$ 1.1 nm 100 $\mu\text{m}$ 2.22 nm 200 $\mu\text{m}$ 5 nm 500 $\mu\text{m}$ 11 nm