HR2000+CG Application-ready Spectrometer

Preconfigured for High Resolution over Extended Range

HR2000+CG

The HR2000+CG Composite Grating Spectrometer is preconfigured with our HC-1 Grating. This proprietary variable-blazed grating was specifically designed to provide full spectral output throughout the 200-1100 nm range.

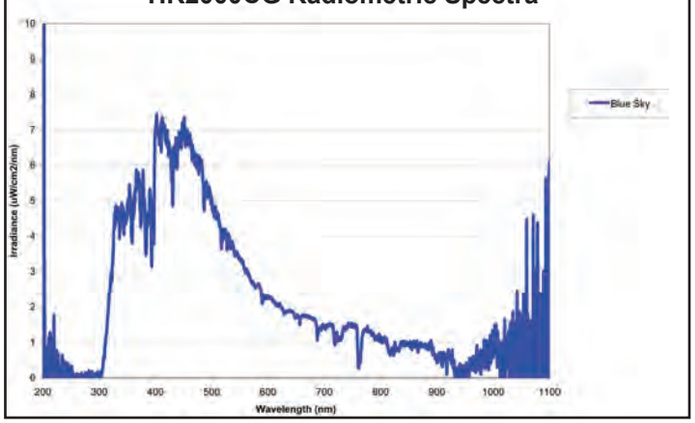
Also, the HR2000+CG optical bench is preconfigured with a 5 µm slit for excellent optical resolution and our OFLV-200-1100 Variable Longpass Order-sorting Filter to eliminate second- and third-order effects.

The HR2000+CG is ideal for biological and chemical applications where fast measurements and high resolution are needed.

Features

- Wide range from 200-1100 nm
- High resolution (1.0 nm FHWM) over entire available range
- Captures 1,000 full scans per second
- Programmable microcontroller

HR2000CG Radiometric Spectra



Physical	
Dimensions:	148.6 mm x 104.8 mm x 45.1 mm
Weight:	570 g
Detector	
Detector:	Sony ILX511B linear silicon CCD array
Detector range:	200-1100 nm
Pixels:	2048 pixels
Pixel size:	14 µm x 200 µm
Pixel well depth:	~62,500 electrons
Sensitivity:	75 photons/count at 400 nm; 41 photons/count at 600 nm
Optical Bench	
Design:	f/4, Symmetrical crossed Czerny-Turner
Focal length:	101.6 mm input and output
Entrance aperture:	5 µm wide slit
Grating:	HC-1
OFLV filter:	OFLV-200-1100
UV enhanced window:	Yes, UV2 quartz window
Fiber optic connector:	SMA 905 to 0.22 numerical aperture single-strand fiber
Spectroscopic	
Optical resolution:	1.0 nm FWHM
Signal-to-noise ratio:	250:1 (at full signal)
A/D resolution:	14 bit
Dark noise:	12 RMS counts
Dynamic range:	2 x 10^9 (system); 1300:1 for a single acquisition
Integration time:	1 ms to 65 seconds
Stray light:	<0.05% at 600 nm; <0.10% at 435 nm
Corrected linearity:	>99.8%
Electronics	
Power consumption:	220 mA @ 5 VDC
Data transfer speed:	Full scans into memory every 1 ms with USB 2.0 port; every 15 ms with USB 1.1 port
Inputs/outputs:	10 onboard digital user-programmable GPIOs
Analog channels:	One 13-bit analog input and one 9-bit analog output
Trigger modes:	4 modes
Strobe functions:	Yes
Connector:	30-pin connector

Technical Tip

The HC-1 Grating is a variable blazed grating that provides our HR Spectrometers with broad wavelength coverage (200-1050 nm). That extended range can be illuminated with a combination deuterium-tungsten halogen source like our DH2000-BAL, but an optical fiber for your system is a different matter. Because no single fiber covers the entire UV-NIR range, we suggest using a "mixed" bifurcated fiber assembly. A bifurcated assembly has two fibers, each of which can be configured for a different range – UV-VIS for one leg and VIS-NIR for the other leg.