

The CGS CCD OEM Spectrometer offers a compact solution for fast UV-NIR acquisition. The unit contains the Zeiss CGS optical engine with the Hamamatsu S11156 detector chip and the tec5 USB electronics, all packed into an OEM-style aluminum housing. With high sensitivity, robustness and a small size, the CGS offers the best compromise between performance and cost.

Main Features

- Wide spectral range
- High spectral resolution
- High sensitivity
- Large dynamic range
- Compact and robust
- Low straylight

Spectrometer Module

The CGS optical engine covers a wide spectral range from 190 to 1000 nm, with a resolution between 1.0 nm and 2.5 nm depending on slit size. Its superior optical imaging quality combined with a back-thinned 2048 active pixels CCD detector provides high UV sensitivity. The excellent thermal stability and robustness ensure reliable measurement results, even in rough environments. The unit's compact size make it the ideal device for portable/handheld instruments.



USB Electronics

The tec5 SEU electronic converter/interface board is the ideal counterpart to the CGS. It covers all the necessary functions to perform spectroscopy: analog-to-digital conversion, interface to a host computer and controlling of peripheral devices, such as stepping motors and flash lamps. The 16-bit A/D-conversion electronics provides a large dynamic range with a high signal-to-noise ratio. The precise control electronics enables integration times between 25 μ s to 1.6 s. A trigger input can be used to accurately synchronize data acquisitions to outside events.

Software Support

- MultiSpec Pro II – application with add-on features for color analysis, chemometrics, data preprocessing, etc.
- Software Development Kit – C++, Visual Basic, Delphi
- LabVIEW library – versatile tool for the creation of complex applications

Systems

CGS CCD OEM Spectrometer Unit

This unit is designed as an OEM spectrometer for integration into a larger system.

Technical Data

Optics:

- Spectral range: 190 to 1000 nm
- Spectral resolution: approx 2.5 nm (slit width 50 μm)
approx. 1 nm (slit width 14 μm)
custom resolutions (slit widths) possible
- Dispersive element: grating, flat-field corrected, 534 lines/mm at center
- Optical interface: SMA, up to $\varnothing 600 \mu\text{m}$ fiber accepted
- Numerical aperture: 0.22

Electronics:

- Chip: Hamamatsu S11156 with 2048 active pixels
- Readout frequency: 1 MHz
- Readout time: 2.1 ms
- Integration time range: 25 μs to 1.6 s (longer times on demand)
- A/D conversion: 16 bit
- USB interface: high-speed 2.0 and 3.0
- Power requirements: +6 V to +36 V DC, < 0.5 A
- External power supply included

Weight: 0.56 kg

Standard Dimensions* (H x W x D): 102 x 108 x 69 mm³



*Other housing / packaging possible