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Spectrometers

We offer reconditioned compact fiber coupled CCD spectrometers. These spectrometers are crossed Czerny-Turner design, built by B&W Tek (Model BTC-110S). These are OEM instruments formerly used in a medical device.



Our spectrometers are available through eBay, or can be purchased directly from us using PayPal. Please contact us at info@science-surplus.com for information.

One of our customers made the following video highlighting the use of the spectrometer:

<https://www.youtube.com/watch?v=QYhpttexAyM>

Aligned Units

We install a new grating, re-align the optics, and place the OEM unit in a new custom enclosure as shown in the photo. We also install a basic order sorting filter to reduce stray light from higher diffraction orders. A fiber optic collection cable (SMA) is included. The unit operates on 5 volts DC, and a power supply is included. Spectra are read out through serial port communication (D9 communication cable included).

Aligned spectrometers are available for \$500, typically with a 3 week lead time. We offer a modest educational discount for educators using the spectrometers for classroom purposes. Contact us for details.

Unaligned Units

For the DIY optics specialist we also offer the hardware in the original (unaligned) configuration. The enclosure, power supply, SMA cable, communications cable and software are all included. We also provide [instructions for carrying out the alignment procedure](#).

DIY kits cost \$200. We often have these kits available through ebay, or you can contact us for availability. DIY kits come with an 1800 l/mm grating. We can provide a different grating for an additional charge of \$100, but many people choose to purchase their own replacement gratings directly from a grating reseller (Thorlabs, Edmund Optics, Optometrics etc.).

Gratings

The spectrometers can be configured for different wavelength ranges and different spectral resolutions. If your spectral range is not listed below, please contact us.

Grating	Wavelength Range	Resolution
1800 l/mm	365 - 600 nm	1 nm
1800 l/mm	500 - 700 nm	1 nm
900 l/mm	365 - 910 nm	2 nm
600 l/mm	365 - 1100 nm	3 nm



The grating in the default spectrometer is not sensitive to UV much below 300 nm.

System Characteristics

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These spectrometers are slower than state-of-the-art units on the market. They require an external 5V dc power supply (included with purchase).

- 16 bit Digitizer (65535 counts)
- RMS read noise of 50 counts (typical)
- Sony ILX511 linear CCD detector array
- 350 ms readout time (20 Hz analog output possible)
- external 5 V power supply
- overall dimensions: 5.75 x 3.75 x 1.75 inches

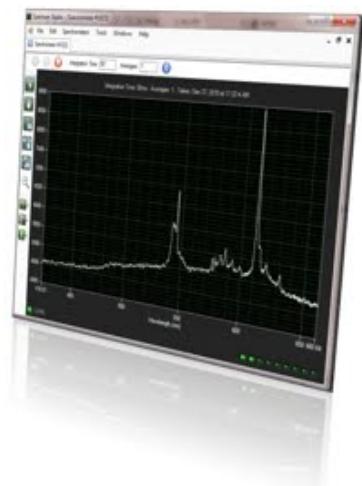
Software

These spectrometers come complete with Spectrum Studio, a software package written by Science-Surplus.com. It is Windows XP and Windows 7 compatible. It uses the Windows .NET framework 3.5, which is standard on all current Windows machines.

- Integration time from 50 to 65535 ms
- Average 1 to 1,000,000,000 scans
- Single scan or continuous scanning
- Save and load spectra (csv file format)

The software help file includes instructions for building your own custom software interface.

Spectrum Studio includes a line identification utility. Using wavelengths compiled and critically evaluated by scientists at the National Institute of Standards and Technology, this utility lets you identify spectral lines with the click of a mouse. You can add molecular lines or other spectral features to the database using the simple step-by-step instructions in Spectrum-Studio's help file.



System Requirements

The spectrometers use serial communication. Your computer will need either a 9-pin com port OR a usb-to-serial adapter. If you have multiple ports, you can run multiple spectrometers simultaneously!

What's in the box

When you order your spectrometer, your package will arrive with:

- Compact CCD Spectrometer
- SMA fiber optic patch cable, 0.5 m length
- 5V wallplug power supply
- Software CD
- 9-pin Serial Communication Cable

Subpages (1): [Spectrometer Resources](#)

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