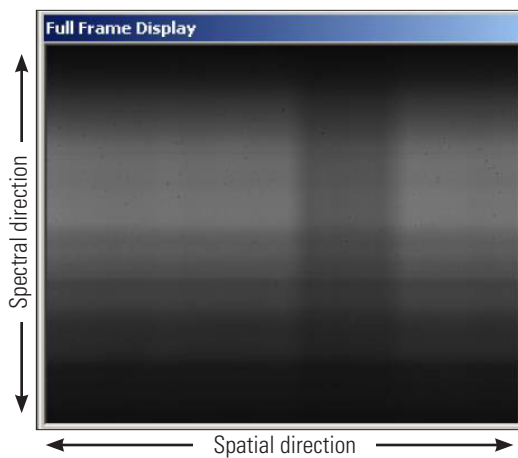
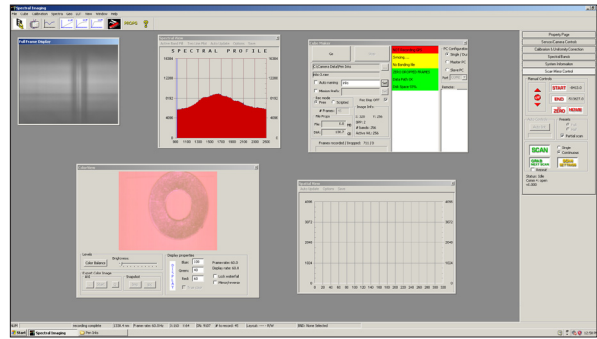
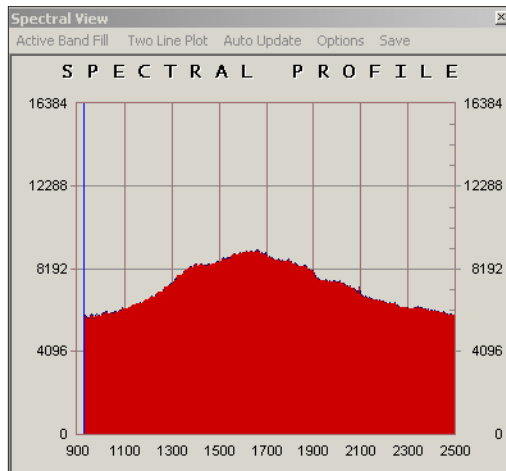


SPECTRALDAQ™

SpectralDAQ is data capture software designed specifically for use with Specim line-scan spectral imaging cameras. The software is designed to control Specim Ltd. cameras with the following interface options: LVDS, CameraLink, USB and IEEE-1394/Firewire. SpectralDAQ includes a user-friendly interface which allows the adjustment of camera and software settings, and provides instant feedback about light saturation and data collection progress. These features allow the user to efficiently capture images and save the hypercube in the industry-standard ENVI-compatible data format. ENVI™ files are easily imported into image analysis software such as Evince™, or read by simple Matlab™ routines.



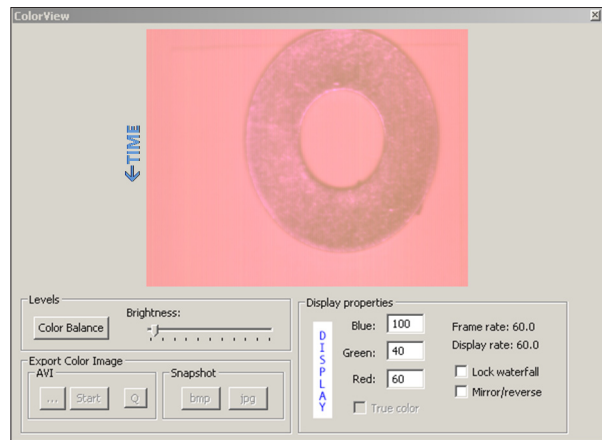
The spatial view (not shown here) displays the spatial profile of a single wavelength, and assists in optimizing the light source and targeting object positions, adjusting lens focus and integration time.



Features

SpectralDAQ allows users to view real-time spatial versus spectral video display to detect saturated pixels (displayed in red) and pixels with zero or less than zero calculated values (displayed in blue). This is shown in the full frame display to the left.

SpectralDAQ includes a real-time "waterfall" color view which is the display of hyperspectral data built in the spatial dimension over time. The display allows users to see the image in user-configurable pseudo-color while it is constructed in real-time. See below.

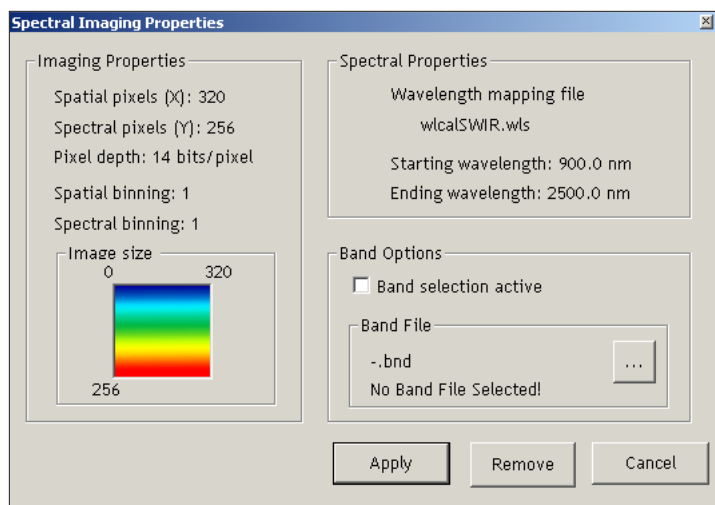
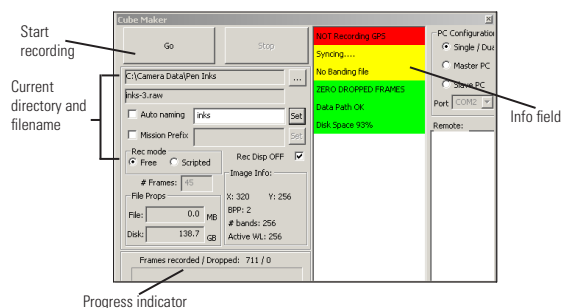


The spectral profile of a selected position, shown on the left, can be set to automatically update while parameters are adjusted. This spectral view is useful to gain insight about the quality of spectra obtained by the camera, and its live update makes illumination and integration adjustments straightforward.



Data Recording Options

SpectralDAQ enables users to optimize image quality and resolution by adjusting frame rate, exposure integration time, non-uniformity correction (NUC), and spectral and spatial binning. Spectral images are easily named, recorded and stored in a chosen location for further analysis. There are two recording styles to choose from: free mode and scripted. In free mode recording, images are continually recorded. In scripted mode, recording stops after a pre-selected number of frames. The user can limit the number of recorded and imaged bands (wavelengths). Bands can also be combined.



Data is stored in an ENVI-compatible format either as raw camera data or as reflectance, corrected with white and dark readings.

With its direct and comprehensive interface, SpectralDAQ allows adjustment of important image and data collection parameters to optimize hyperspectral scans.

System Requirements

- Supported operating systems: MS Windows XP with min SP3
- Processor with large cache memory and adequate speed (Intel Core 2 Quad recommended)
- Minimum system memory requirements: 2 GB RAM (32 bit OS), 4 GB (64 bit OS)
- Graphics card with at least 2D acceleration
- 2 hard drive disks (one drive for OS and SpectralDAQ, one for data recording)
- 1 GB free hard drive space, 2 free USB ports, 1 free RS-232 port or COMM header
- Display : 1280 x 1024 screen resolution with 16 bit colors

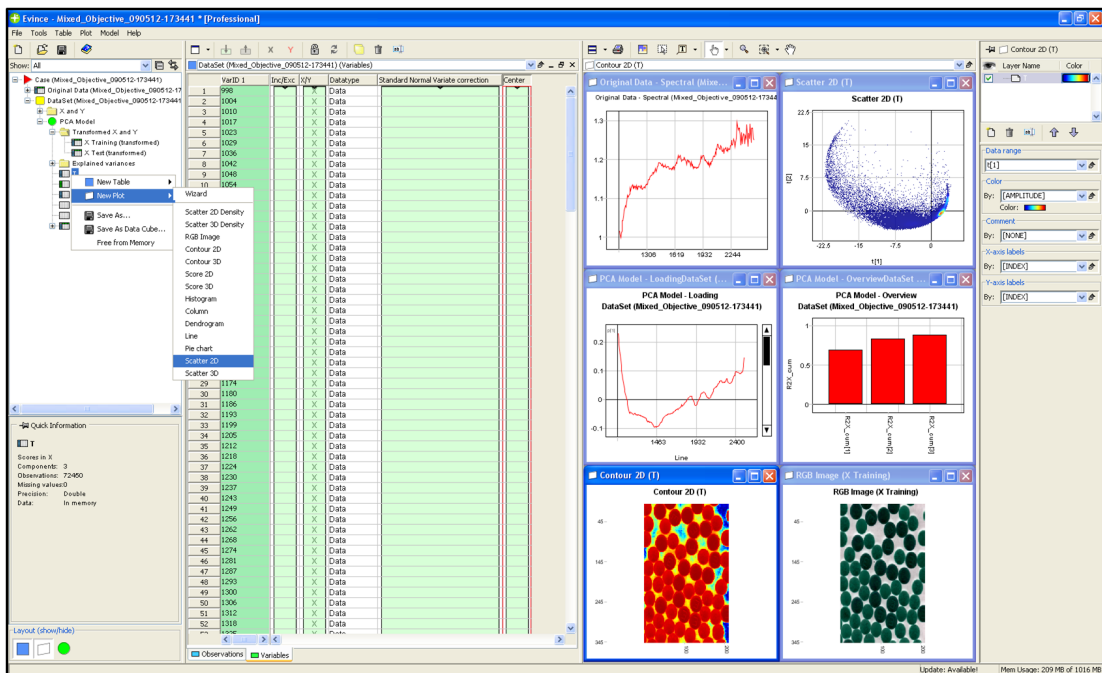
Software Ordering Information		
Part Number	Description	Product Name
MRC-307-001-01	SpectralDAQ data acquisition software for hyperspectral cameras	SpectralDAQ

EVINCE IMAGE™ SOFTWARE

The Evince software package is specifically designed to process hyperspectral images. Many image formats such as ENVI, MAT, SPF, JPG, PNG, DAT and RAW can be easily imported and processed in Evince graphical user interface. Various types of displays for both raw and processed data can be used as analysis tools. Graphical interactions between data and plots facilitate extraction of desired information and exploration of hyperspectral data cubes. Evince also provides numerous calculation and correction tools for multivariate image analysis.

Standard Analysis Calculations

- Spectral derivatives
- Multiple scatter correction
- Standard normal variate correction
- Savitzky-Golay correction

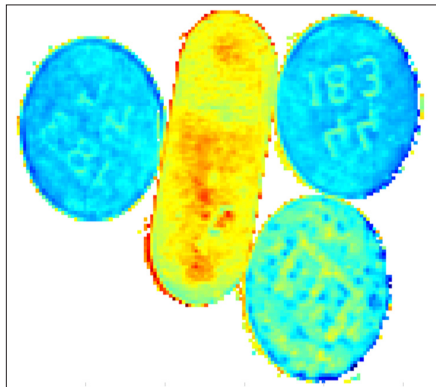


Data Processing Functions

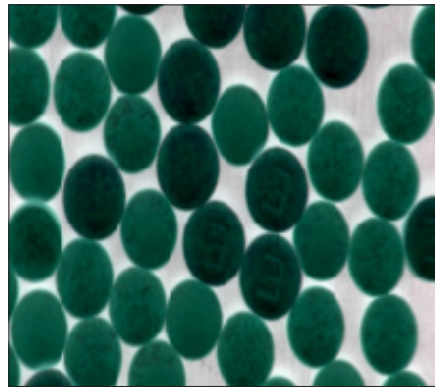
- Detection of important wavelength ranges
- Cropping of spatial data from models and plots
- Exclusion of spectral data or wavelengths from models and plots
- Background removal with spectral segmentation
- Principal Component Analysis (PCA) modeling
- Partial Least Squares (PLS) modeling
- Partial Least Squares Discriminant Analysis (PLS-DA)
- Creation of displays and tables using simple drag-and-drop methods.



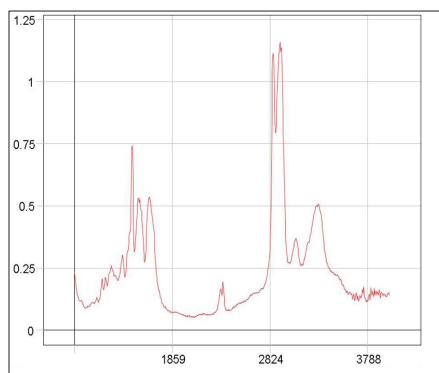
Data Displays



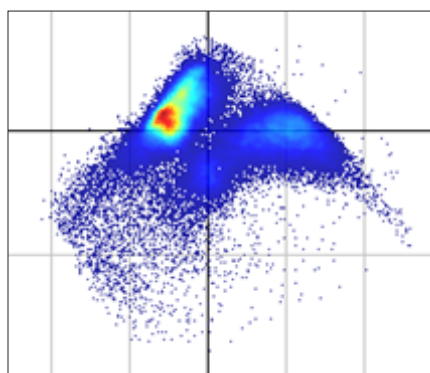
Contour 2D and 3D - spectral 2D and 3D images. 3D contour images can be rotated in three-dimensional space.



RGB image - a color view of the raw image data using three selected wavelengths



Spectral plot - raw or transformed spectra of single or multiple spatial points selected in other plots or images



Scatter 2D and 3D - a spectral density plot of 2 or 3 principal components used to find spectrally similar groups. 3D plot can be rotated in three-dimensional space.

Minimum System Requirements

- Supported operating systems
 - MS Windows XP/Vista, 32- and 64-bit
 - Linux, 32- and 64-bit
 - Mac OS X 10.4, 32-bit
- Intel or AMD dual-core CPU
 - Quad-core CPU recommended
- Memory
 - 2 GB RAM, 32-bit OS
 - 4 GB RAM, 64-bit OS, 8 GB recommended
- Java Runtime Environment, JRE 1.6 installed
- OpenGL 1.5 compliant AGP/PCI Express graphics card
- 4 GB free hard drive space
- 1280 x 1024 screen resolution
 - 1680 x 1050 or greater recommended

Software Ordering Information		
Part Number	Description	Product Name
MRC-930-001	Evince Image Software	Evince