



KestrelSpecTM nu200

Real-Time Imaging Spectroscopy Software



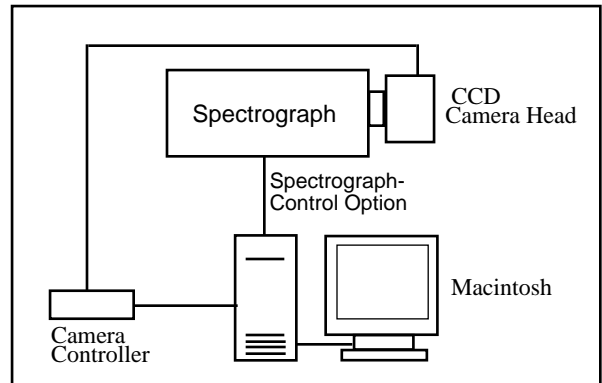
KestrelSpecTM nu200 software is designed for data acquisition and analysis in CCD imaging spectroscopy applications with the **nu200 CCD Camera** (NuBus interface) from Photometrics, Ltd., and your Macintosh[®] computer.

□ Data Acquisition

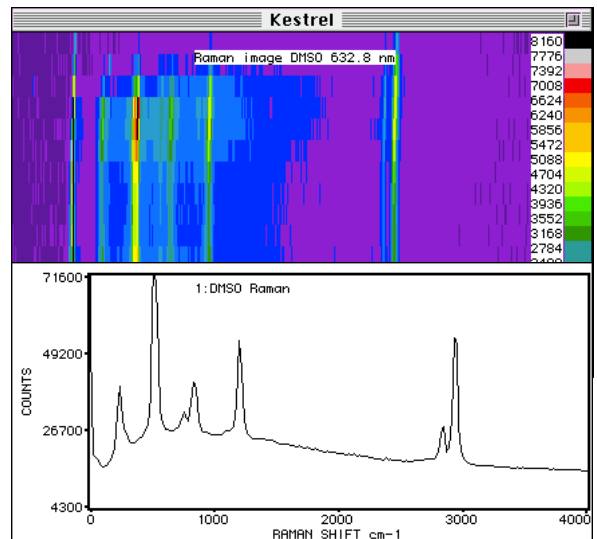
- Real-time-, dark-background- and flat-field- image buffers.
- Up to 30000 curves memories in RAM for spectral plotting and analysis.
- Select arbitrary areas from the CCD for spectral curves.
- Select CCD pixel-grouping (binning) modes.
- Synchronous camera-readout mode for maximum possible speed during multiple-frame acquisitions.
- 14- or 16- bits per pixel image digitizer precision, depending on hardware configuration.
- Programmable exposure sequence with adjustable delay intervals. Sum multiple image exposures into curve memories.
- Automatic background subtraction, flat-field correction of images and curves.
- * Auto-flip image horizontal (for reverse spectral dispersion).
- Conversion of data to log or absorbance scales.
- Auto-save images, curves to disk or RAM disk.
- Auto-scan λ , auto-calibrate spectra in nm, Raman cm-1 shift with fully integrated spectrograph control (optional extra).
- *KestrelScriptTM* Apple-Event scripting for sophisticated process control. Real-time controllable from National Instruments' LabView[®] using *DoScript VI*.

□ Data Display

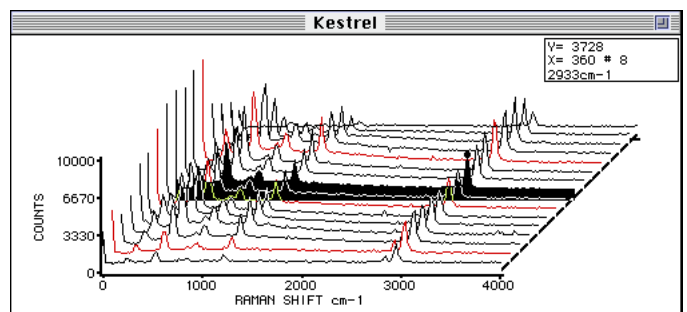
- Image display: 256 grays, 23-level pseudocolor.
- Quantitative color-coded legend for image display.
- 2-D and 3-D overlay curve plots.
- Channel profile Y(t)-type plot (Z axis slice).
- Line, bar and scatter plot styles with color fill.
- Drag plot handles to control 3D perspective, size.
- Graphic curve directory with "mini-curve" plots.
- Spectral calibration using spline fits, or accurate "one-point" *KestrelCalTM* for grating spectrographs.
- Auto-join curves at points of wavelength overlap.
- Live "laser-beam profiler" display.
- Monitor real-time counts of any point in an image or plot.
- Real-time peak finder determines centroid and width. Adjustable peak threshold discriminates against noise.



Add a spectrograph and a Macintosh to complete your Kestrel nu200 CCD spectroscopy system. (Spectrograph-control option uses RS-232 or GPIB connection.)



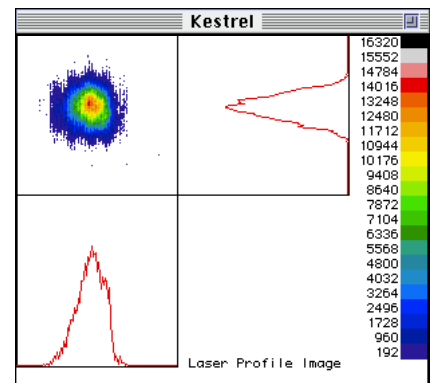
DMSO Raman spectrum image, plot created by KestrelSpec. Exc: 4.0 mW 632.8 nm laser. E.T. 120 s.



KestrelSpec nu200 has versatile graphing and data-analysis options. Control Palette (bottom) yields quick access to numeric keypad and other tools.

❑ Other Kestrel nu200 Features

- Use the mouse to zoom and pan the curve-plot displays in "live action" (even in 3D). Zoom display while scanning the CCD.
- Run curve-movies, live scans as animated 3D waterfall graphs.
- Export curve data as ASCII text or Igor™ text format. Import curves in standard ASCII spreadsheet format. Export images in 16-bit, binary integer or 8-bit PICT® formats. Import images from PICT, or binary integer-data files. "Swap-byte" setting for importing 16-bit images created by IBM-type (Intel CPU) PCs.
- Print plots and images in grayscale or color on any Mac printer, including popular color-inkjet printers. Copy plots or images to the clipboard for pasting into other documents.

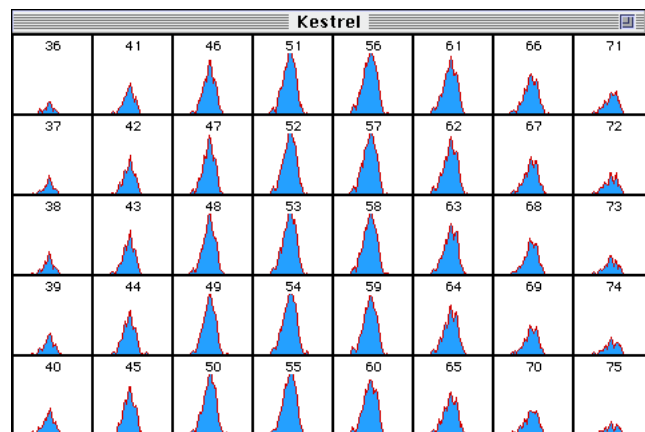


Above: "Laser-beam profiler" display.

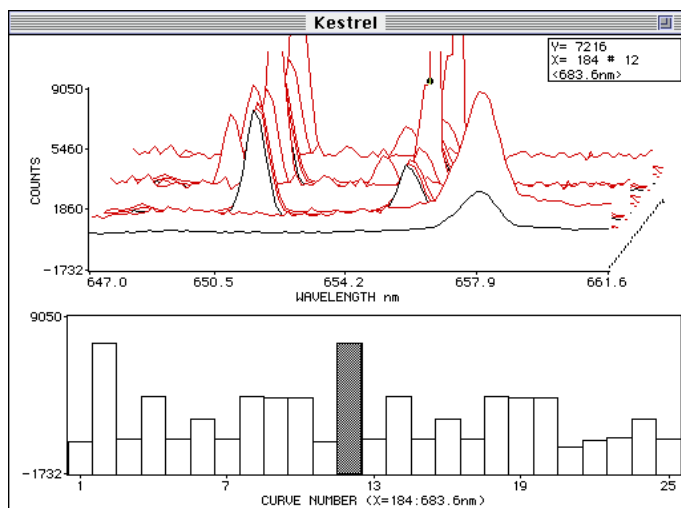
❑ Compatibility

- Recommended CPUs for real-time camera control include Mac II series, Quadra®, and Centris®. Color-capable Macintosh required for image display.
- CCD camera connects via NuBus (Macintosh II) interface card supplied with nu200 system by Photometrics.
- System 6.0.5 or later and minimum 2 MB RAM required. System 7.0 or later and 8 MB RAM recommended.
- Spectrograph-control option available for popular spectrographs. (Contact Rhea Corp. for an up-to-date list of supported spectrograph models.)
- Works with all models of the nu200 CCD camera system from Photometrics, Ltd. All CCD chips and digitizer resolutions supported.

Below: Curve Catalog displays many "curve icons" in one window to give quick overview of spectral curve memories. You can cut and paste icons or drag them to the curve trash can. Double-click on an icon to plot it.



Below: Channel-profile graph (bars) shows a slice at constant wavelength along Z-axis (time) of 3D spectral curve plot.



For a demo disk, or more information on KestrelSpec nu200 imaging-spectroscopy software contact:

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