



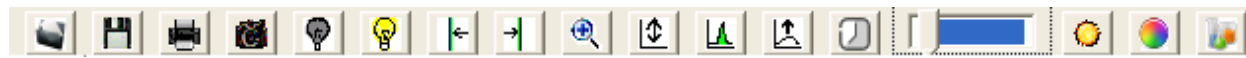
SpectraWiz Quick Start Guide

Connect spectrometer and computer

Connect the spectrometer and the accessories to be used to your computer with previously installed spectrometer drive and SpectraWiz software. Turn them on. The spectrometer's green light should be on if the drivers have been installed correctly. Refer to setup diagrams found at <https://www.stellarnet.us/wp-content/uploads/SpectroSetups.pdf>

On your PC, navigate to SpectraWiz software and open.

Toolbar Icons



File open

- Click to open saved file, this is the same as menu, File->Open->Sample



Save sample spectrum

- Click to save the spectra, this is the same as menu File →Save →Sample (to disk)



Print graph

- Left click to print graph.



Snapshot spectra

- Left click here to freeze graph trace; Left click again to resume; Right click to copy graph to Windows clipboard



Save dark spectrum (used for Absorbance, Transmittance, and Irradiance modes).

- Left Click after turning off light source;

- Right Click to release previous dark (zero)



Save reference spectrum (used for Absorbance and Transmittance modes).

- Left Click after turning light on without sample in place or with white reference.
- When viewing Irradiance → watts per square meter, clicking here starts the UV monitor application.



Move Data Cursor Left



Move Data Cursor Right

- After placing the data cursor (by pointing and clicking the right button), each subsequent click, using the left button, will move 1 pixel in direction selected. To remove data cursor click to left of graph. Clicking the right button on these icons will seek to the next peak in the selected direction, and place the data cursor there.



Zoom wavelength

- A reminder on how to X- and Y-zoom.
- Left click here again to un-zoom.
- Left click on the left side of graph to un-zoom.
- Right click to enable Y-zoom mode.



Re-scale Y axis

- Left click to auto scale Y-axis.
- Right Click to undo auto scale Y-axis.
- Also use View → Y set scale menu to override auto scale with selected scale.



Compute Area

- Left click to show the AreaPSD, Centroid, Peakwave, FWHM, and Centbase of a peak. If the data cursor is not on a peak, the icon will seek to a peak in the closest direction.
- Right Click to start dual data cursor measurement as outlined below.
- This information is printed in the graph title (concatenated to end of line) when printing a graph.



Auto-Integration

- Left Click to automatically adjust detector integration time and averaging using reference light source in scope mode



Detector Integration Time

- Left click to set detector integration time



Integration Time Bar

- Slide bar with mouse to manually configure the integration time.
- Moving the bar to the left, decreases the integration time.
- Moving the bar to the right, increases the integration time.

Application Icons



Solar Monitor

- Starts Solar/UV light monitor Application



CIE Color Measurement

- Starts CIE color measurement Application



ChemWiz Chemistry

- Starts ChemWiz Chemistry Application

Scope AU %T:R Watts Lux | Solar/UV Color Chem

Click on these words to quickly switch modes; this is equivalent to selecting the View menu options:

- Scope = View → Scope mode
- AU = View → Absorbance
- %T:R = View → Transmission (or reflectance)
- Watts = View → Radiometer -> watts
- Lux = View → Radiometer -> Lumen
- Solar/UV = Application → Light Monitor (Solar/UV)
- Color = Application → CIE Color Measurement
- Chem = Application → ChemWiz Methods

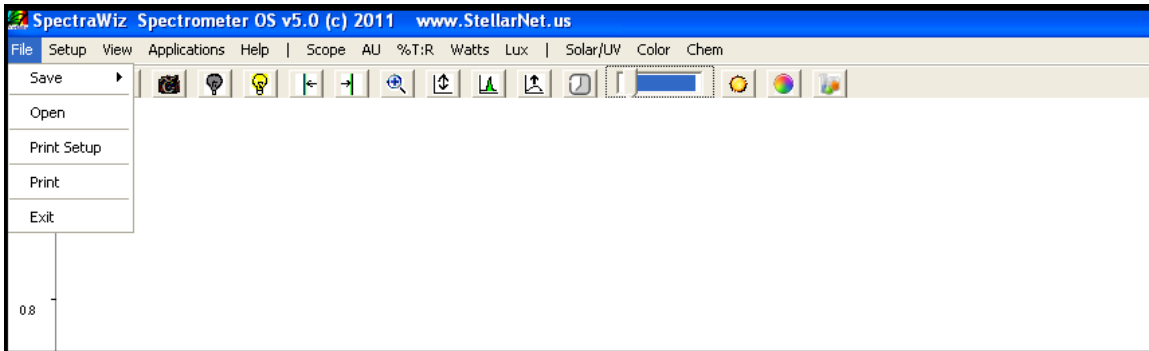
Status Bar

Observe the system indicators appearing below the graph in the status panel.



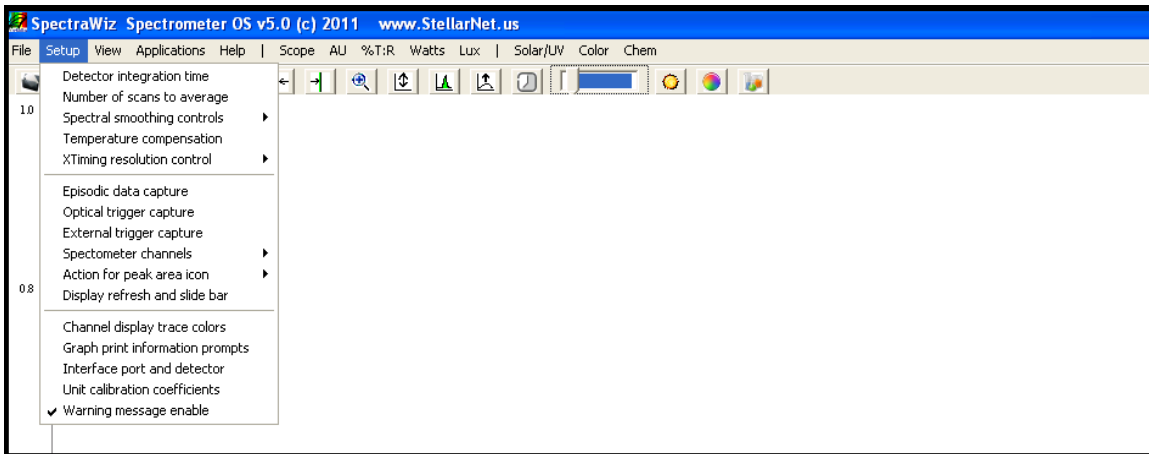
- **SCOPE:** Currently selected mode (also TRANS/ABSOR/REFS/IRRAD)
- **Wave:** Wavelength at the data cursor location
- **Pix:** Location of the data cursor (0-2050 pixels)
- **Val:** Magnitude/value at the data cursor
- **Time:** Detector integration period in milliseconds (ms)
- **Avg:** Number of samples averaged
- **Sm:** Pixel smoothing
- **Z:** An x-axis zoom has been performed
- **Y:** A Y-rescale or Y-zoom has been performed
- **Y:** Y-zoom mode has been enabled
- **Tc:** Temperature compensation on/off
- **Xt:** XTiming resolution control selected
- **Ch:** Shows which channel is selected

SpectraWiz File Menu



- Save: Save current spectra sample data to disk file
- Open: Open spectra file for graph display & print
- Print Setup: Allows page layout selections for graph
- Print: Print current graph sample data to print device
- Exit: Terminate SpectraWiz program

SpectraWiz Setup Menu



- Detector integration time: Sets new detector integration period
- Number of scans to average: Y axis smoothing improving S/N ratio
- Spectral smoothing controls: X axis smoothing improving S/N ratio
- Temperature compensation: Periodic baseline shift compensation
- XTiming resolution control: Selects modes for Standard/Extended
- Episodic Data capture: Collect spectral data over time

- Optical Trigger: Select wavelength and trigger level
- Spectrometer channel: Enable drift correct or mapping
- Actions for peak icon: Auto find and continuous mode
- Display Refresh rate: Scan request speed
- Channel display trace: Color selections
- Graph Print Info Prompts: Allows customization of title line
- Interface Port and detector: Hardware setup for instrument
- Unit cal coefficients: Setup for wavelength readout

Detector integration time

- Warning message Enable: Disable/enable new dark save needed

This should be adjusted for each experiment to maximize the detector output and signal to noise ratio. The integration time is reported in the status bar message at the bottom of the graph (as Time: xx milliseconds). The toolbar slide bar can be used to dynamically set the appropriate level without

Number of scans to average (1...999)

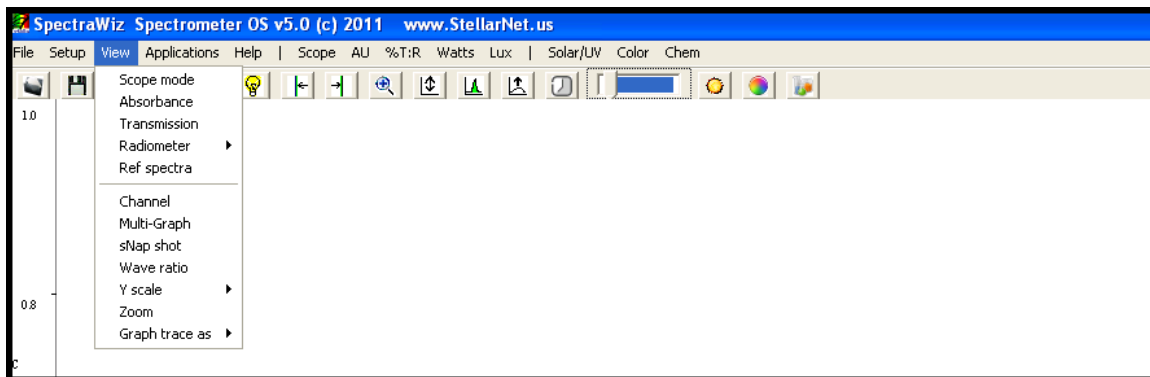
saturation at the graph top.

Sets the number of spectra to signal average. Please note that the real-time display is updated AFTER these numbers of spectra have been acquired. This option provides a smoothing in the Y-axis, effectively increasing the system signal to noise by the square root of the number of scans being averaged. Set the averaging to the highest number tolerable when there is sufficient light signal and the detector integration time is short. Even when you have a moderate level of signal, it is best to wait a few seconds to improve the measurement quality.

Recommendations:

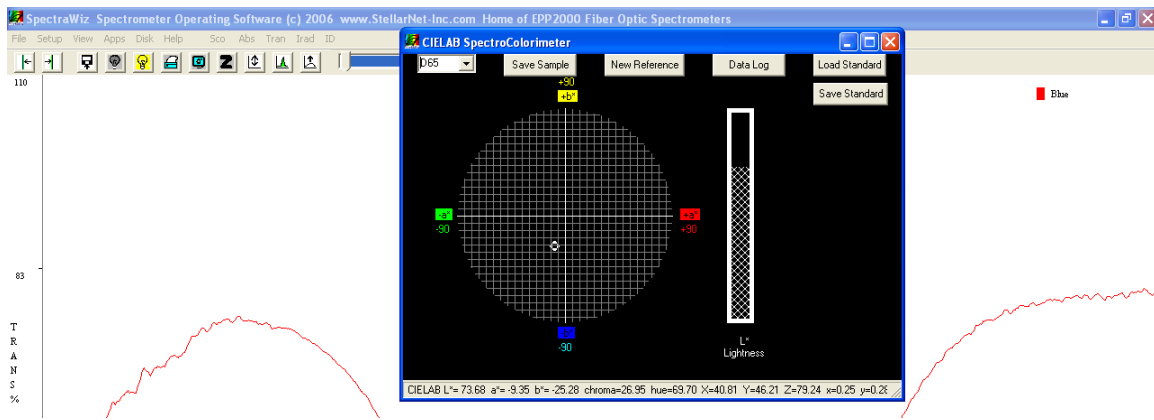
Integration Time	Sample Average
1-100 ms	10
100-500 ms	5
500+ ms	3

SpectraWiz View Menu



- Scope mode: Displays uncompensated/relative spectral data
- Absorbance mode: Requires dark & reference for AU
- Transmission mode: Requires dark & reference for %T also used for reflectance, etc....
- Irradiance mode: Requires dark & Displays Watts, Micro-Watts, Lumens, Moles, fc
- Ref spectra: Display of reference spectra minus dark
- Channel: Switches between multiple spectrometers when connected
- Multi-Graphs: Display all channels on one spectral graph
- Snapshot: Freeze display or run in real-time
- Wave Ratio: Select 2 wavelengths for ratio display
- Y scale: Setup max y-axis or set Y to log scale
- Zoom: X- and y-axis area to be displayed
- Graph Trace as: Overlay, 1st, or 2nd Derivative, and more options

SpectraWiz Applications Menu



- CIE Color Monitor: For SpectroColorimeter
- Light Monitor: For UVabc and Solar measurements
- Irradiance Calibration: For SpectroRadiometer calibration
- ChemWiz Methods: For single wavelength Chemical concentrations
- ChemoMetric Predictor: For multi-component %c or IDs >requires builder
- Neural Net Predictor: For multi-component %c or IDs >requires trainer
- Spectral ID: For elemental identification (used with Porta-LIBS)

Permission Settings, File Extensions, and Locations

Run as Administrator

SpectraWiz software and the StellarNet drivers are located in your->

`C:\Program Files\StellarNet\SpectraWiz` directory and often need to be accessed by running as administrator. Be sure you have proper administrative settings turned on for successful access.

Virtual Directory

Some versions of Microsoft create a virtual directory when NOT running as administrator located->

`C:\Users\yourcomputername\AppData\Local\VirtualStore\Program Files\StellarNet\SpectraWiz`

File Extensions

- SSM = SCOPE mode file
- TRM = Transmission mode file
- ABS = Absorbance mode file
- IRR = Irradiance mode file
- EPX = Episodic mode file
- .cal = Calibration mode file
- .icf = Irradiance Calibration File = Calibration mode file in use
- sw.ini = main software settings configuration file

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