



Wasatch Photonics WP Series-XL Enlighten User Guide

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Wasatch Photonics WP Series-XL Enlighten



Unpacking the Spectrometer

You should find the following items when you unpack your Series-XL spectrometer:



Unpacked XL components

- The six cables can be identified as follows:



Shutter Power Cable (3-pin connector)



Shutter Power Supply (12V)



Andor Power Supply (5-pin plug, mixed voltages)



Andor Power Cable (standard PC cable)



Shutter Cable



USB 2.0 Cable (standard-A to standard-B)

- Also take a moment to familiarize yourself with the connectors on the spectrometer and Andor camera.



Andor camera connectors (shutter, left; power, right; USB, bottom)



Spectrometer SMA connector and cap



Spectrometer shutter connectors (cable, left; power, right)

Power Supply Compatibility

Note that different models of Andor camera ship with different power supplies, and those are not necessarily interchangeable, even when they share a common connector. For example:

Assembling the Spectrometer

Now that we can identify each of the cables and connectors, let's assemble the system. Start by connecting the two power cables to their respective power supplies.



Assembled Andor Power Cable



Assembled Shutter Power Cable

- Now connect the Shutter Cable from the Andor camera to the spectrometer's shutter.



Connected Shutter Cable



Connected Shutter Cable (camera end)



Connect Shutter Power Cable to spectrometer

- Now let's assemble the system. Connect the assembled Shutter Power Cable to the spectrometer.



Connect Andor Power Cable to camera

- Connect the assembled Andor Power Cable to the camera..



Fully-assembled Series-XL spectrometer

- You now have a fully-connected Wasatch Photonics XL spectrometer ready for connection to mains power and your computer.

Installing ENLIGHTEN

An installer for a compatible version of ENLIGHTEN 3.1 or newer is provided on a thumbdrive with your spectrometer. If you wish to try more recent betas, they may be downloaded from our website.

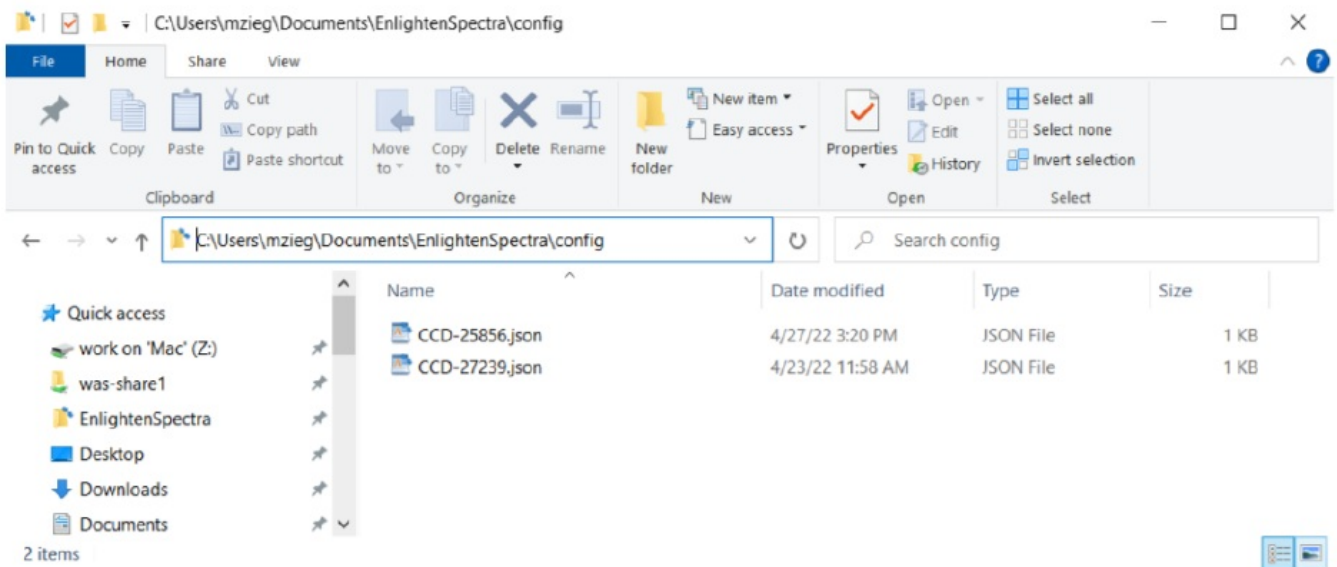
Installing Andor Drivers

Wasatch Photonics Series-XL spectrometers use cameras from Andor, so you'll need to install their driver pack as well. Fortunately it's quick, easy and free!

Andor Driver Pack 2

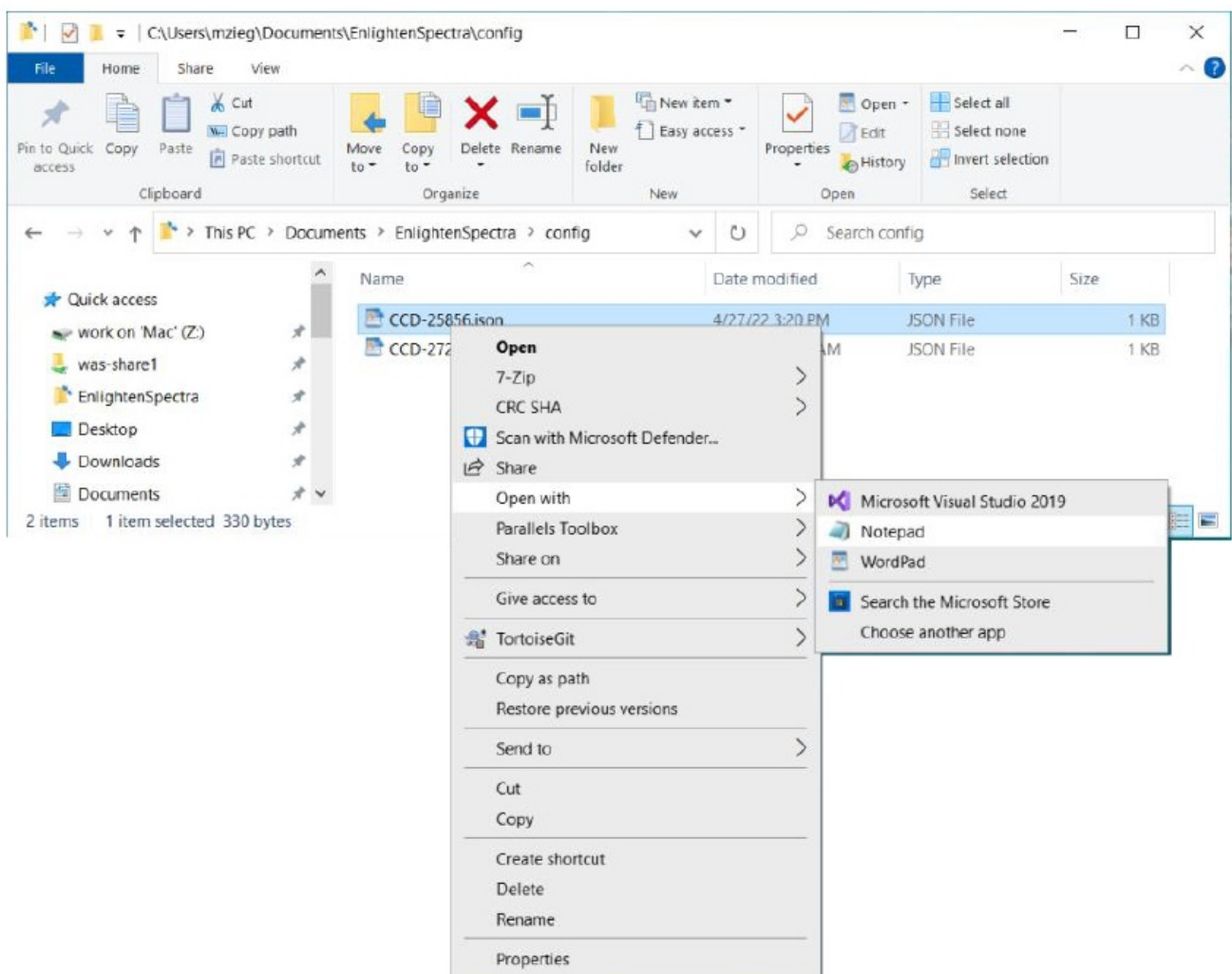
Installing Configuration File

Your Series-XL spectrometer will come with a configuration file on the included thumbdrive. This file contains the wavelength calibration and other factory settings which ENLIGHTEN needs to properly communicate with your spectrometer. The file, which will have a name like "CCD-27239.json", will need to be copied to a "config" directory inside your EnlightenSpectra folder.

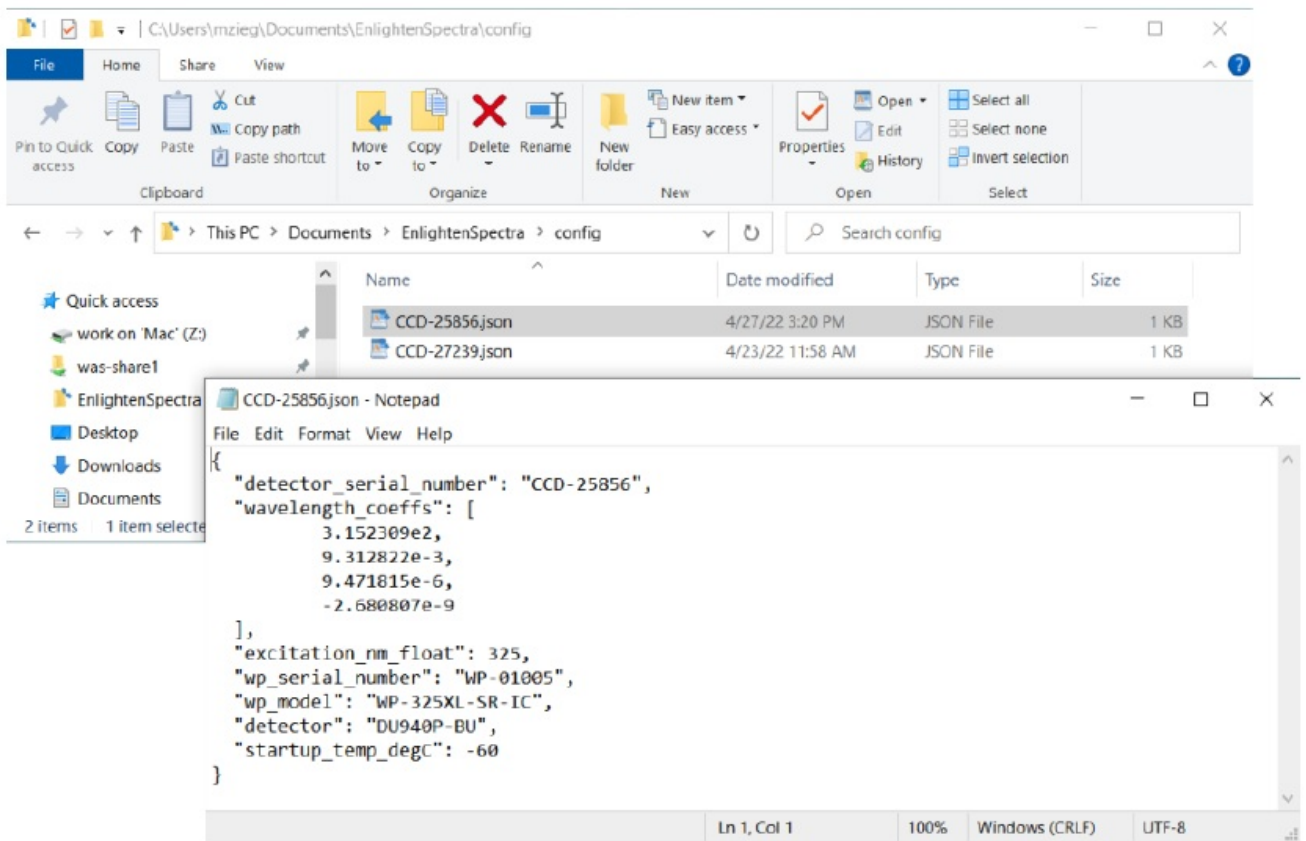


Copy provided configuration file to EnlightenSpectra\config

- The file is straightforward to view if you need to verify or edit its contents.



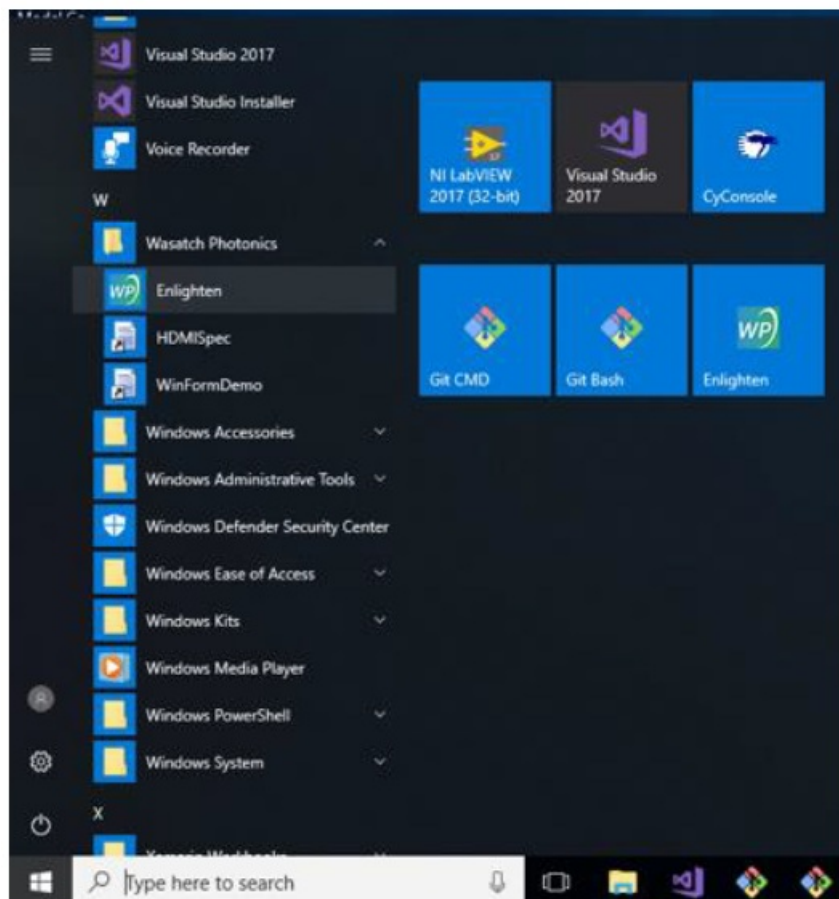
View or edit configuration file



Sample configuration file contents

Launching ENLIGHTEN

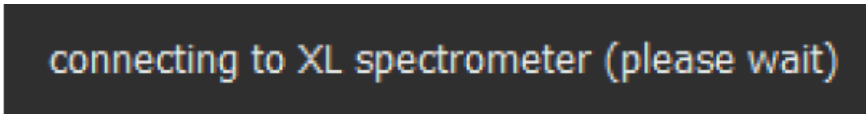
Launch ENLIGHTEN from the desktop shortcut, or using the Start Menu of your Windows computer.



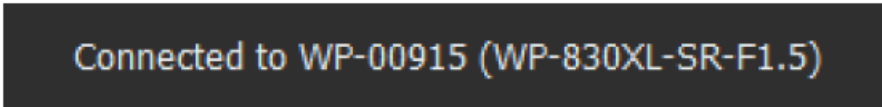
Operating ENLIGHTEN

Temperature Stabilization

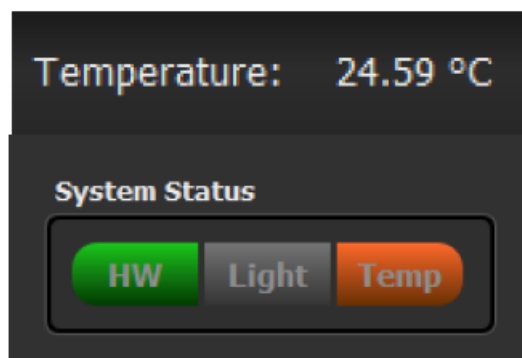
ENLIGHTEN displays a message while connecting to Series-XL spectrometers, as it takes several seconds to fully initialize communications.

A screenshot of the ENLIGHTEN interface showing the text "connecting to XL spectrometer (please wait)" in a stylized, multi-colored font on a dark background.

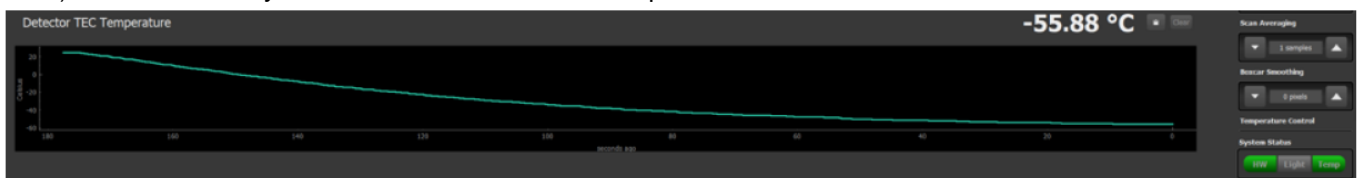
When the connection process is complete, ENLIGHTEN will display the resulting serial number and spectrometer model.

A screenshot of the ENLIGHTEN interface showing the text "Connected to WP-00915 (WP-830XL-SR-F1.5)" in a stylized, multi-colored font on a dark background.

At first connection, the spectrometer temperature will not yet be fully cooled, as indicated by the Status Bar and System Status indicators (orange "Temp" LED).



ENLIGHTEN will automatically configure the detector to cool to the lowest supported temperature (typically -55°C). However, it may take a few minutes for the temperature to stabilize.



Hardware Capture showing TEC stabilized to -55°C over 3min

Raman Mode

Use the "Techniques" menu to change from the default "Scope" mode to "Raman." When you change to Raman Mode, several things happen:

1. You are taken to the Setup Screen to confirm your measurement options
2. The "Wavenumber" field is automatically checked for you under Saved Data Options
3. You are prompted to take a dark measurement

The screenshot shows the 'Raman' setup screen of the WP ENLIGHTEN software. At the top, there is a logo and a dropdown menu set to 'Raman'. Below this are two buttons: 'Setup' (highlighted in red) and 'Capture'. The main area is divided into three sections:

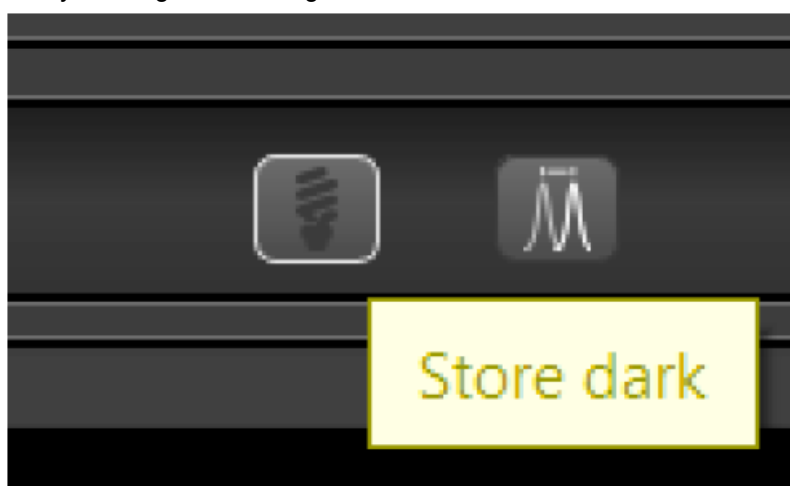
- Saved Data Location:**
 - Directory: C:\Users\mzieg\Documents\EnlightenSpectra
 - Label: {integration_time_ms}ms-{scans_to_average}avg
 - ☐ Load raw spectra and re-process
- Saved Data Options:**
 - File Formats:**
 - ☒ Save CSV
 - ☐ Save XLS
 - ☐ Save TXT
 - ☐ Save JSON
 - ☐ All spectrometers
 - Optional Fields:**
 - ☐ by row ☒ by column
 - ☐ append
 - ☐ cloud upload
 - ☐ Rename files
 - ☐ pixel index
 - ☐ wavelength
 - ☒ wavenumber
 - ☐ raw
 - ☐ dark
- Interpolation:**
 - ☐ Enabled
 - ☒ wavelength
 - ☐ wavenumber
 - Start X: 0.00
 - End X: 0.00
 - X Increment: 0.00

Raman Setup options

When you are content that your settings are correct, click “Capture” to return to the Scope screen.

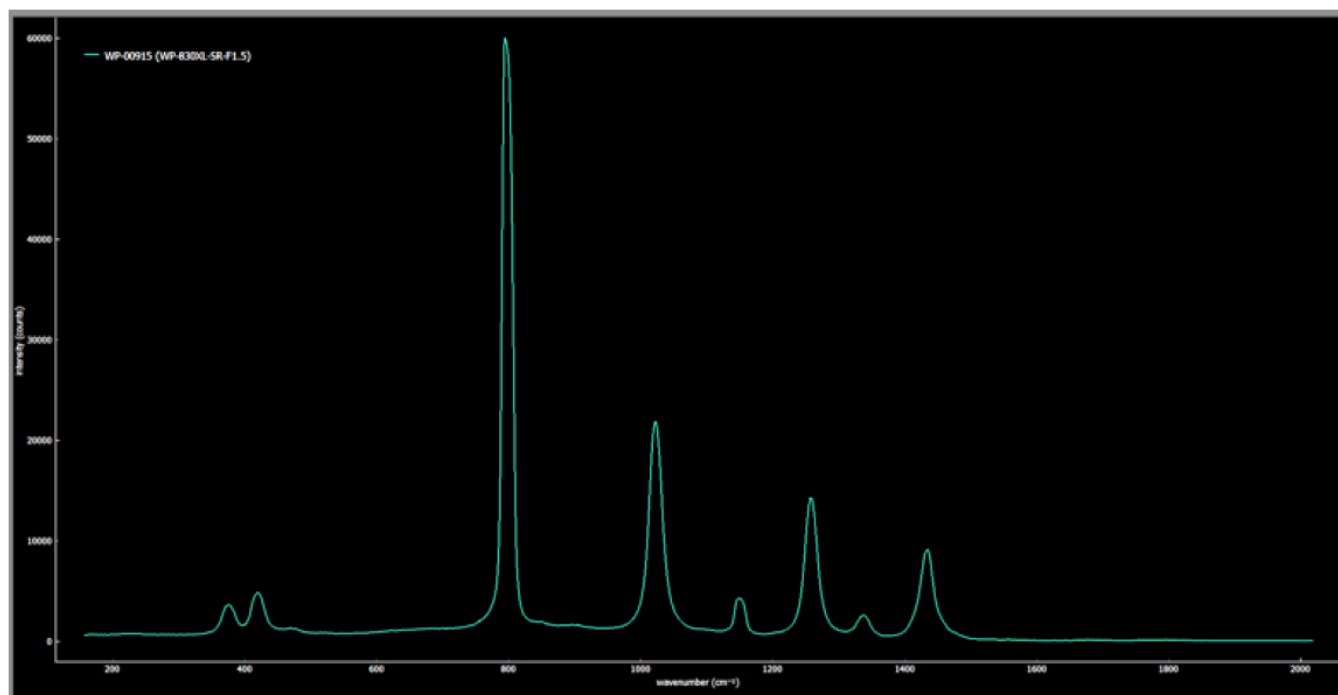
Dark Measurement

Take a dark measurement by clicking the dark “light bulb” icon on the button bar.



Sample Measurement

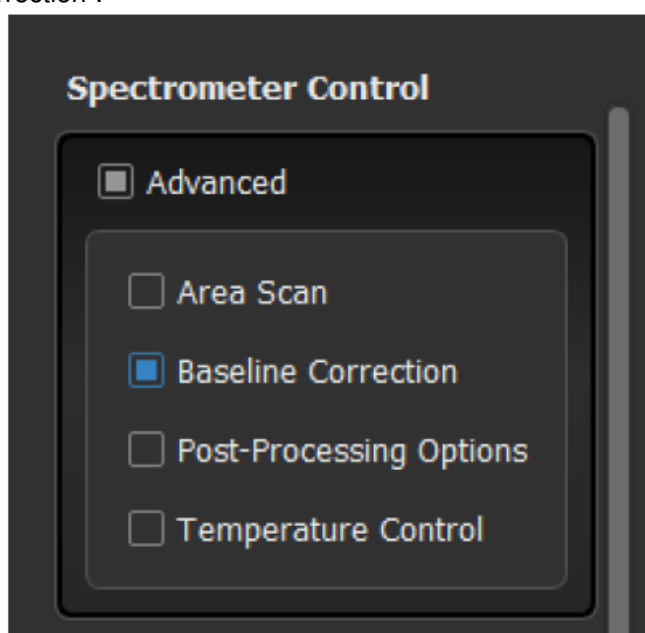
Ensure your sample is safely ensconced in a sealed vial accessory, then turn on your laser.



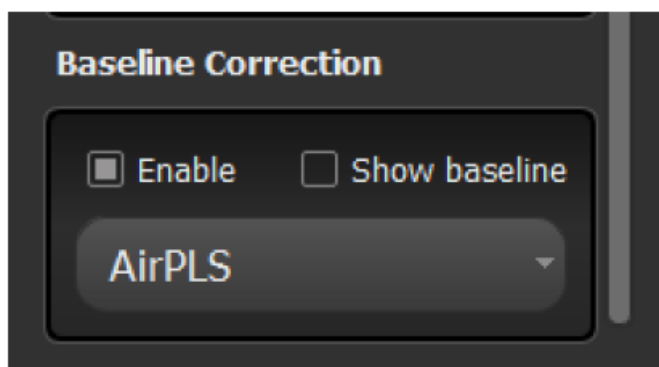
Dark-corrected Raman spectrum (cyclohexane shown)

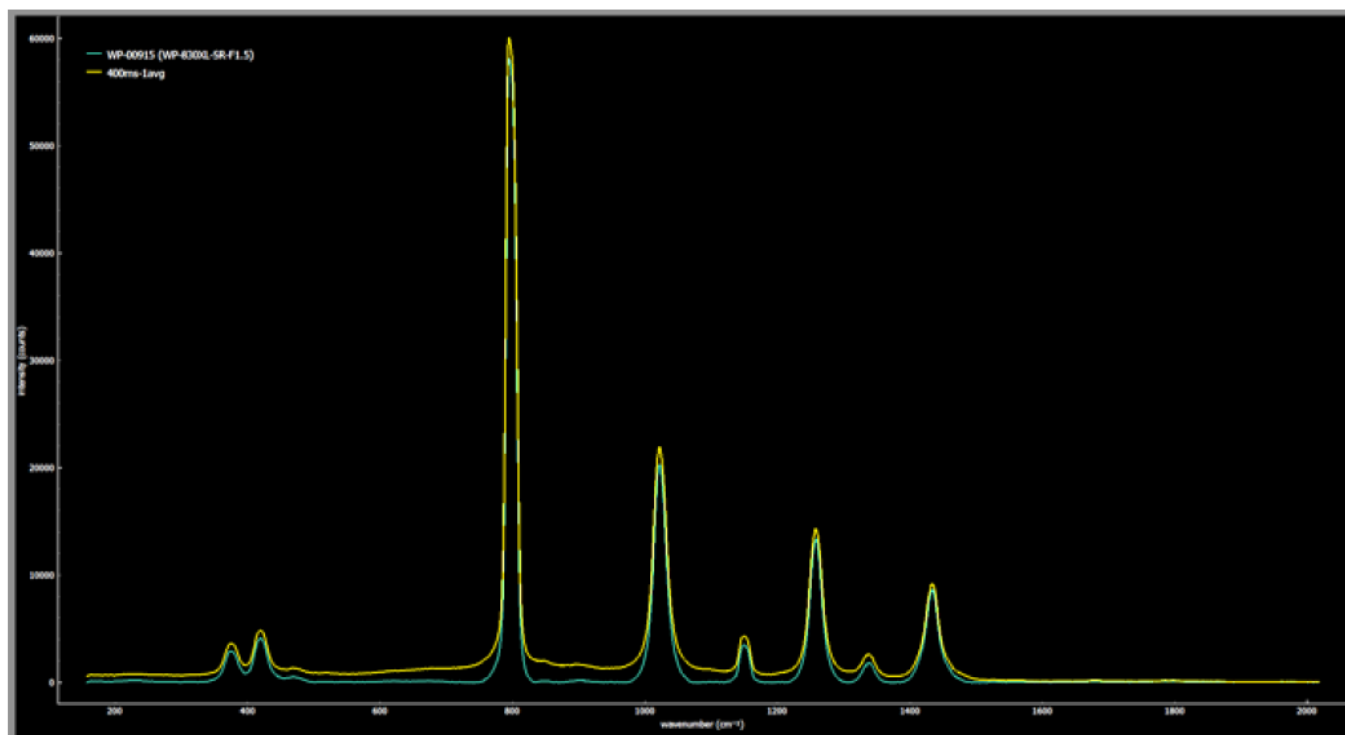
Baseline Correction

ENLIGHTEN will prompt you to “enable baseline correction for better matching.” Do so by enabling “Advanced Features,” then “Baseline Correction”.



Scroll to the newly-exposed Baseline Correction control and click “Enable.”

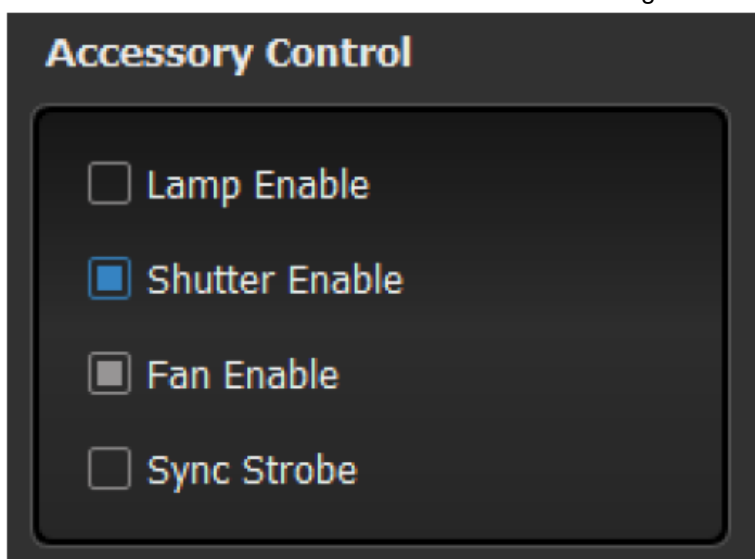




Baseline-corrected Raman spectrum (cyclohexane shown)

Shutter Control

Use the XL spectrometer's built-in shutter to facilitate taking fresh darks. Shutter control ("Enabled" means open, transmitting light) Note that Baseline Correction must be disabled before taking a new dark.




Shutter control ("Enabled" means open, transmitting light)

More information

There is so much more you can do with your Wasatch Photonics Series-XL spectrometer! For additional information, see the following resources.

- ENLIGHTEN 3 Manual
- Wasatch Photonics software drivers
- Andor iDus Hardware Guide

Documents / Resources

	<p>Wasatch Photonics WP Series-XL Enlighten [pdf] User Guide WP Series-XL Enlighten, WP Series-XL, Series-XL, Enlighten</p>
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References

-  [Andor Driver Pack - 2.104.30065.0 \(CCD,ICCD & EMCCD\) - Andor Learning Centre- Oxford Instruments](#)
-  [Index of /binaries/apps/enlighten/beta](#)
-  [Spectroscopy Software | Free | Simple Data Acquisition](#)
-  [Spectroscopy software drivers: Python, C#, Delphi, LabVIEW, MATLAB etc](#)

Manuals+.