



SPECTROPHOTOMETRY

USER MANUAL

Manual version: 1.0.0

Product code: G3000A1/G3000B1

Product Version: 1.0

Software version: 1.0

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1. Requirements

Table 1.1 details the minimum computer requirements for Ossila Spectrophotometry.

Table 1.1. Ossila Spectrophotometry minimum computer requirements.

Operating Systems	Windows 11 (64-bit)
Processor	Dual Core 2 GHz
Memory	8 GB
Storage	270 MB
Monitor Resolution	1920 x 1080
Connectivity	USB-C 2.0

2. Installation

A Windows installer is provided on the USB drive supplied with the system and can be downloaded from our website at www.ossila.com/pages/software-drivers.

To install the software simply run the installer and follow the on-screen instructions.

3. Operation

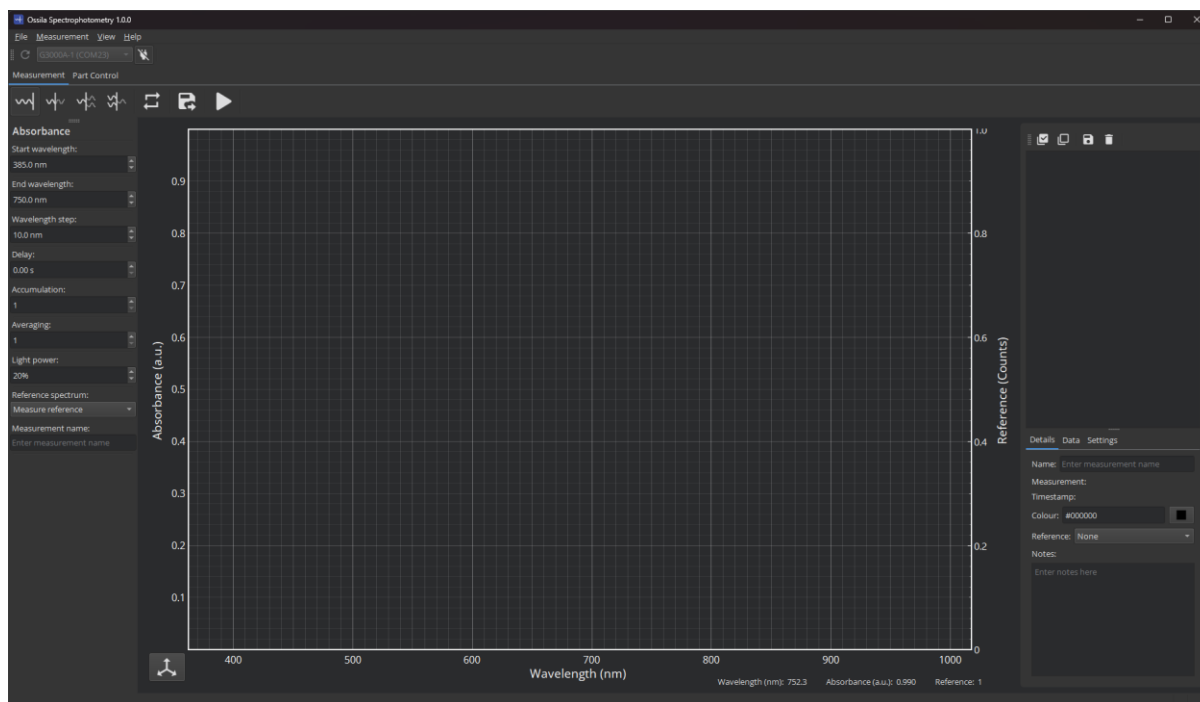
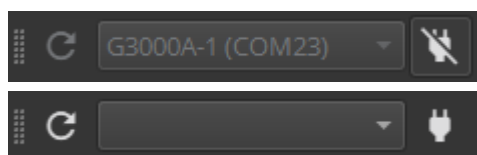


Figure 3.1. Ossila Spectrophotometry.


Ossila Spectrophotometry enables users to easily perform absorbance, transmission, fluorescence emission, and fluorescence excitation measurements using an Ossila Spectrophotometer or Spectrofluorometer, as well as allowing control of individual parts of a device.

3.1 Connection Bar



The drop-down box lists the serial numbers and addresses of any connected Ossila Spectrophotometers and Spectrofluorometers.

To connect to the selected device, click the  button. To disconnect click the  button.








To search for connected devices, click the  button. If only a single device is detected the software will automatically connect to it.

4. Measurement Tab

4.1 Measurement Controls



Figure 4.1. Measurement controls tool bar.

	Switch to absorbance measurement.
	Switch to transmission measurement.
	Switch to fluorescence emission measurement (only available when connected to a Spectrofluorometer).
	Switch to fluorescence excitation measurement (only available when connected to a Spectrofluorometer).
	Toggle periodic measurements and show or hide the settings.
	Toggle automatic saving of data and show or hide the settings.
	Start or stop a measurement.

4.2 Measurement Settings

4.2.1 Shared Settings

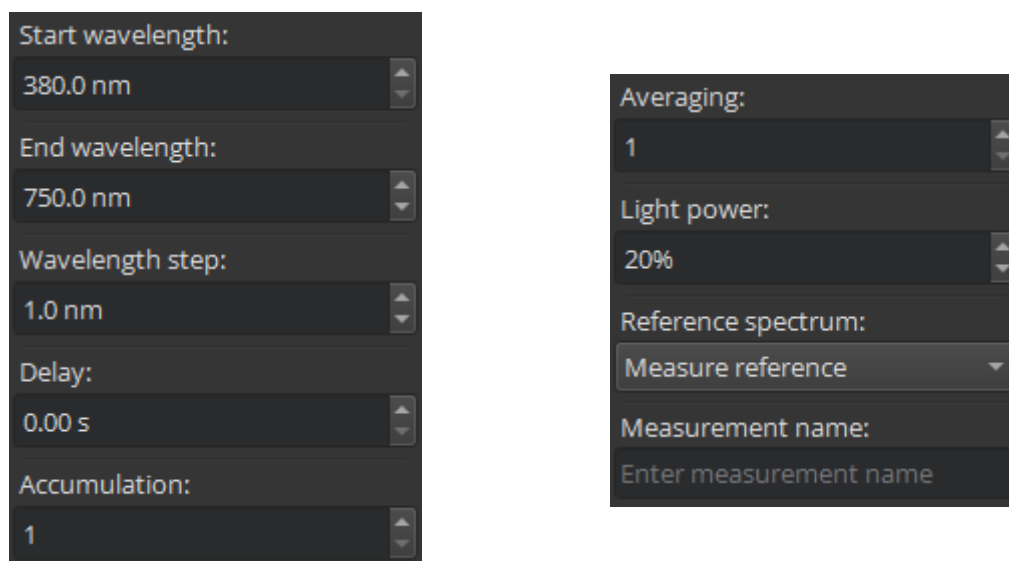


Figure 4.2. Shared measurement settings.

Most measurement settings are the shared between all measurement types, these are explained below.

Start wavelength	The wavelength to start a measurement at in nm. Can be between 380 and 1000 nm.
End wavelength	The ending wavelength for a measurement in nm. Can be between 380 and 1000 nm.
Wavelength step	The step size between data points in nm.
Delay	The delay between changing wavelengths and taking a measurement in seconds.
Accumulation	How many measurements to sum for each data point.
Averaging	How many measurements to average for each data point. If accumulation and average are set, measurements are accumulated before the mean is calculated.
Light power	The power level of the light source as a percentage.

Reference spectrum	<p>Can be set to:</p> <p>None – raw counts will be measured.</p> <p>Measure reference – raw counts will be measured and the spectrum registered as a reference.</p> <p>Measured reference spectrum – the selected spectrum will be used as the reference for the measurement. A reference spectrum can only be used if it contains the same number of data points as the measurement to be taken.</p>
Measurement name	An optional name for the measurement, if empty, the measurement type will be used as the name.

4.2.2 Fluorescence Emission Settings

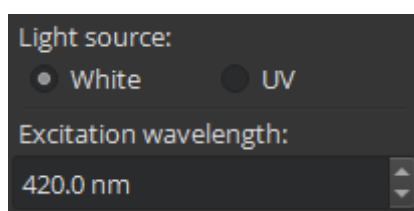


Figure 4.3. Settings specific to fluorescence emission measurements.

Light source	Whether to illuminate the sample using the broadband white light source or UV light source.
Excitation wavelength	If the broadband white light source is selected, sets the wavelength of light to illuminate the sample with.

4.2.3 Fluorescence Excitation Settings

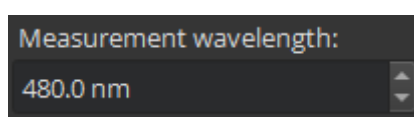


Figure 4.4. Settings specific to fluorescence excitation measurements.

Measurement wavelength	The wavelength at which to measure fluorescence.
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4.3 Periodic Measurement Settings

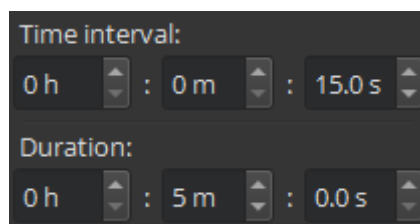


Figure 4.5. Periodic measurement settings.

Time interval	The time to wait after completing a measurement before starting a new measurement.
Duration	How long to perform periodic measurements for. This is the total duration including measurement time and the time interval.

When performing periodic measurements, the remaining duration and the time until the next measurement is displayed in the status bar.

4.4 Autosave Settings

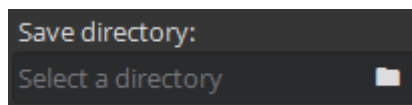


Figure 4.6. Autosave settings.

Save directory	The file directory to save data to. Clicking the folder icon will open a file browser dialog to select a directory.
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4.5 Results Panel

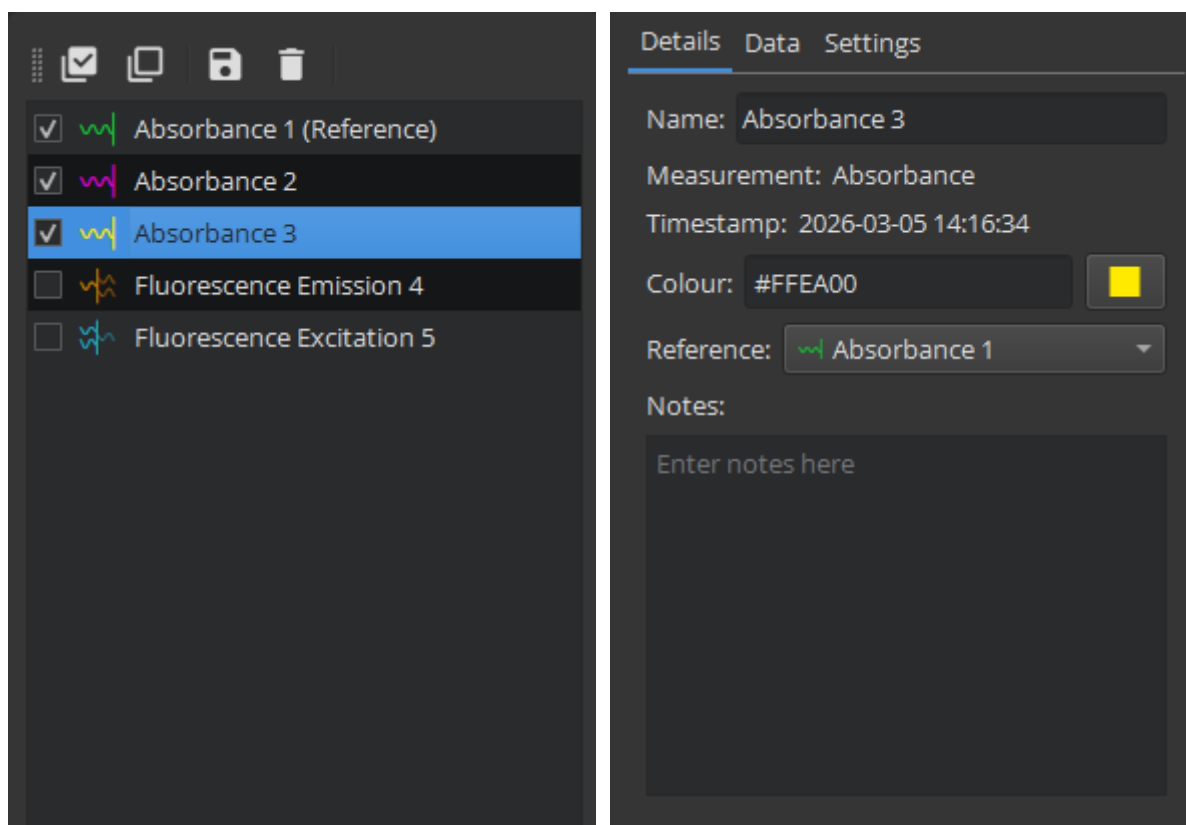


Figure 4.7. Results panel. Left: measurement list; right: measurement details.





4.5.1 Measurement List

When a measurement is performed, it is added to the measurement list in the results panel. Each measurement has a checkbox, an icon denoting the measurement type, and the name of the measurement. For reference measurements "(Reference)" is appended onto the name.

The checkbox controls whether the measurement is displayed in the plot. Measurements are automatically removed from the plot when a different type of measurement is started.

Clicking on a measurement in the list or plot will select it. When selected, it will be highlighted in the plot with a thicker line, and its information will be displayed in the measurement details. Multiple measurements can be selected by clicking and dragging or holding down the control or shift keys and clicking. When selecting multiple measurements, the last measurement to be clicked will be displayed in the measurement details.

The toolbar at the top of the measurement list has the following buttons.

	Select all measurements.
	Unselect all measurements.
	Save selected measurements. Opens a dialog box to select the directory to save data to.
	Delete selected measurements. Displays a confirmation dialog when clicked.

These options can also be selected from the context menu that appears when right-clicking on the measurement list.

4.5.2 Measurement Details

The measurement details section has 3 tabs containing all the information of a measurement.

(I) Details

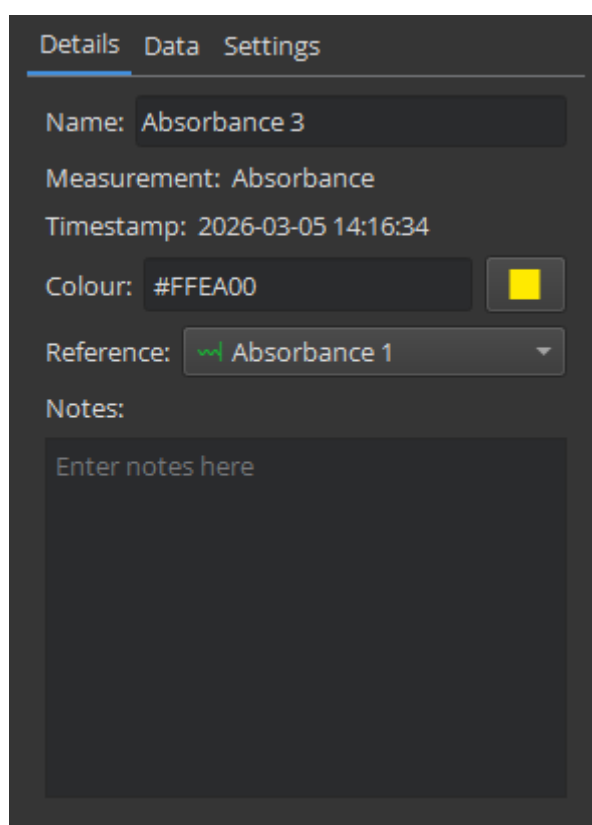
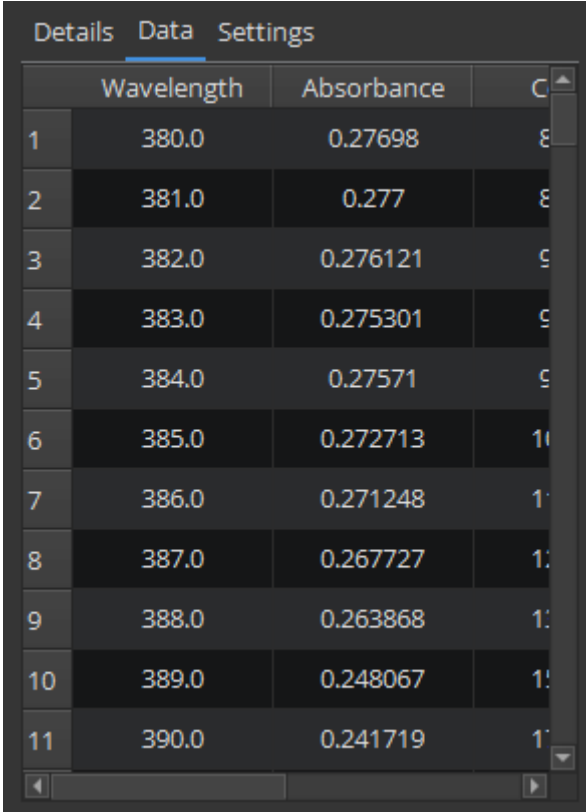


Figure 4.8. Measurement details tab.

Name	The name of the measurement, can be changed.
Measurement	The type of measurement (absorbance, transmission, fluorescence emission, or fluorescence excitation).
Timestamp	The date and time the measurement was performed in the format YYYY-MM-DD hh:mm:ss.
Colour	The colour of the data in the plot in hex format. Clicking on the colour button will open a colour picker dialog to change the colour.
Reference	The reference spectra being used for the measurement. Can be changed or removed. If selecting a new reference, it must have the same number of data points as the measurement.
Notes	Allows for notes to be attached to and saved with the measurement.

(II) Data



	Wavelength	Absorbance	
1	380.0	0.27698	8
2	381.0	0.277	8
3	382.0	0.276121	9
4	383.0	0.275301	9
5	384.0	0.27571	9
6	385.0	0.272713	10
7	386.0	0.271248	10
8	387.0	0.267727	10
9	388.0	0.263868	10
10	389.0	0.248067	10
11	390.0	0.241719	10

Figure 4.9. Measurement data tab.

The data tab contains a table of the measurement data (and the reference data if any) to allow for inspection. Data can be copied from the table by right-clicking and selecting copy, or using CTRL + C.

(III) Settings

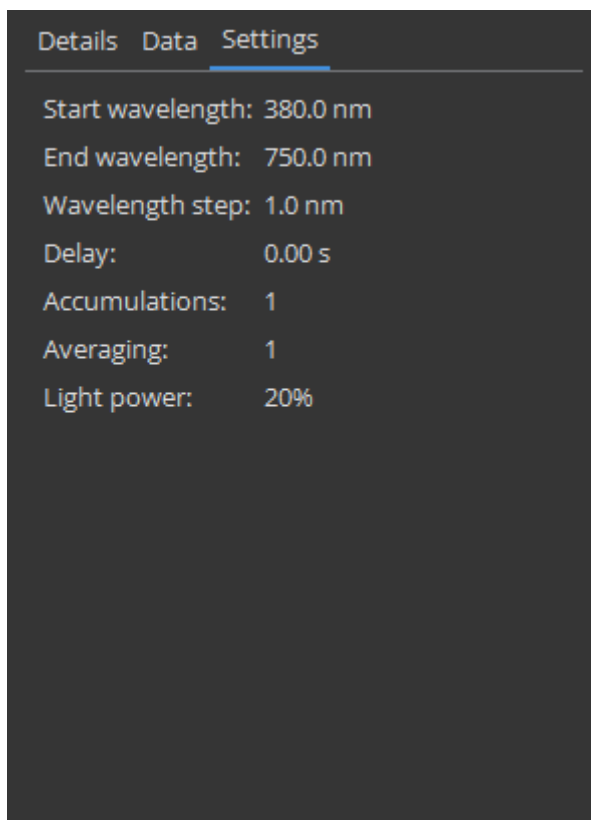


Figure 4.10. Measurement settings tab.

The settings tab contains the settings used for the measurement. If period measurements were enabled, these settings will also be listed.

4.6 Data Plot

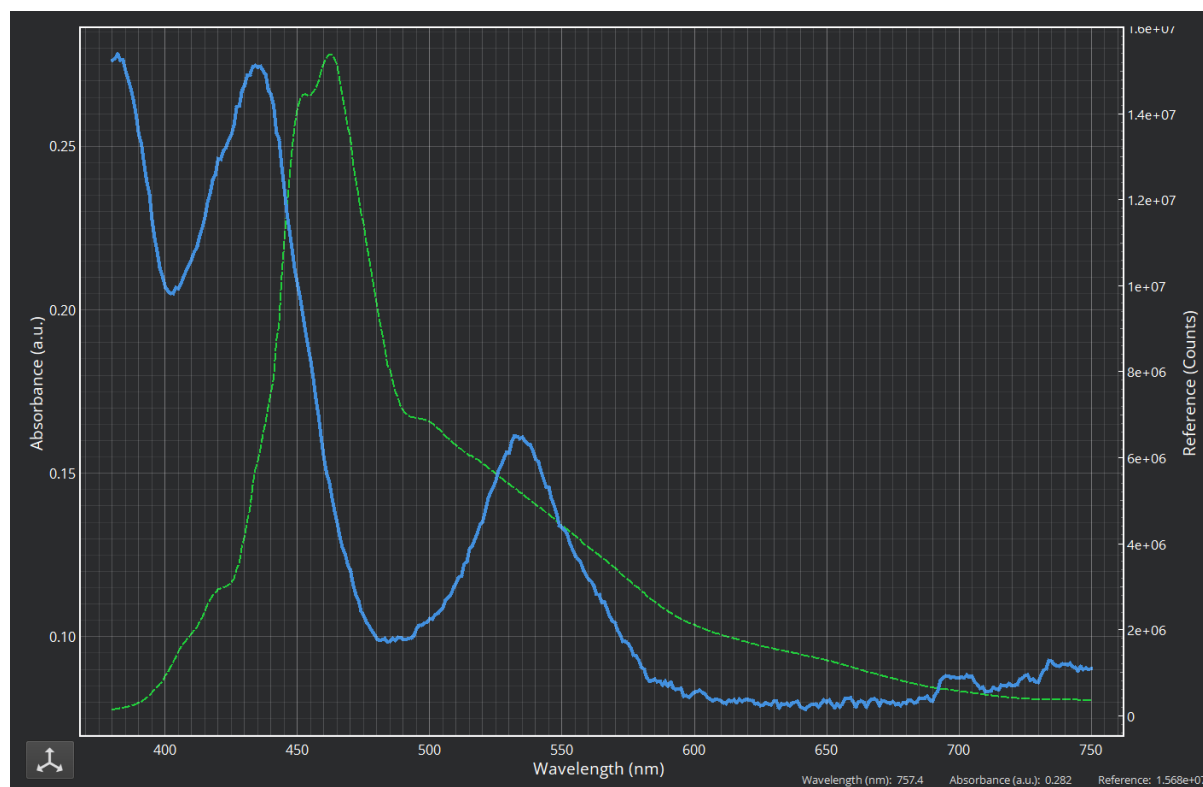


Figure 4.11. Central data plot.

Measurement data is displayed in the central plot, with reference measurements plotted on the right axis with a dashed line, and absorbance, transmittance, and fluorescence plotted on the left axis with a solid line.


The label of the left axis will change based upon the most recent measurement displayed in the plot.

4.6.1 Plot Controls

By default, the plot will automatically scale the axes to display all the data within it. The view of the left and bottom axes can be controlled manually using the following mouse controls:

- Left or middle click and drag – pan the axes.
- Right click and drag – scale the axes.
- Scroll wheel – scale the axes.

A specific axis can be controlled by using these controls on the axis labels, and the right axis can only be controlled in this way.

Clicking the  button in the bottom right of the plot will reset all axes to display all data.

Axis scales and automatic scaling can also be set by right-clicking on the plot or an axis and selecting the appropriate options in the context menu.

4.7 Save Data Format

Each measurement is saved to an individual comma-separated value (.csv) file with the name “timestamp measurement name.csv”, e.g., “2026-03-25_14-00-00 Absorbance 1.csv”. Reference measurement files names are appended with “(Reference)”, e.g., “2026-03-25_14-00-00 Absorbance 1 (Reference).csv”.

The first 2 to 4 columns contain the measurement data, then there is an empty column, then the measurement details and settings in the next column. An example data file is shown in **Figure 4.12**.

	A	B	C	D	E	F	G	H
1	Wavelength	Absorbance	Counts	Reference Counts				
2	380	0.275665	81099	152996		Name	Absorbance 2	
3	381	0.279974	83799	159666		Measurement Type	Absorbance	
4	382	0.281931	89462	171226		Timestamp	23/03/2026 10:03	
5	383	0.284307	94431	181728		Colour	#A70BEE	
6	384	0.281607	98691	188749		Notes		
7	385	0.286193	105711	204321		Reference	Absorbance 1	
8	386	0.284983	113808	219359		Measurement Type	Absorbance	
9	387	0.270135	127003	236564		Start Wavelength (nm)	380	
10	388	0.276383	133708	252662		End Wavelength (nm)	750	
11	389	0.265807	150721	277959		Step Wavelength (nm)	1	
12	390	0.271115	167791	313245		Delay (s)	0	
13	391	0.252133	184167	329113		Accumulation	1	
14	392	0.245213	216236	380313		Averaging	1	
15	393	0.261849	234641	428798		Light Power (%)	15	
16	394	0.259586	257562	468239				
17	395	0.2527	304893	545566				
18	396	0.246232	344540	607396				
19	397	0.242185	383365	669573				
20	398	0.237437	434056	749864				
21	399	0.212033	487924	795033				
22	400	0.228051	548873	927946				
23	401	0.214228	616517	1009656				

Figure 4.12. Example data file of an absorbance measurement.

5. Part Control Tab

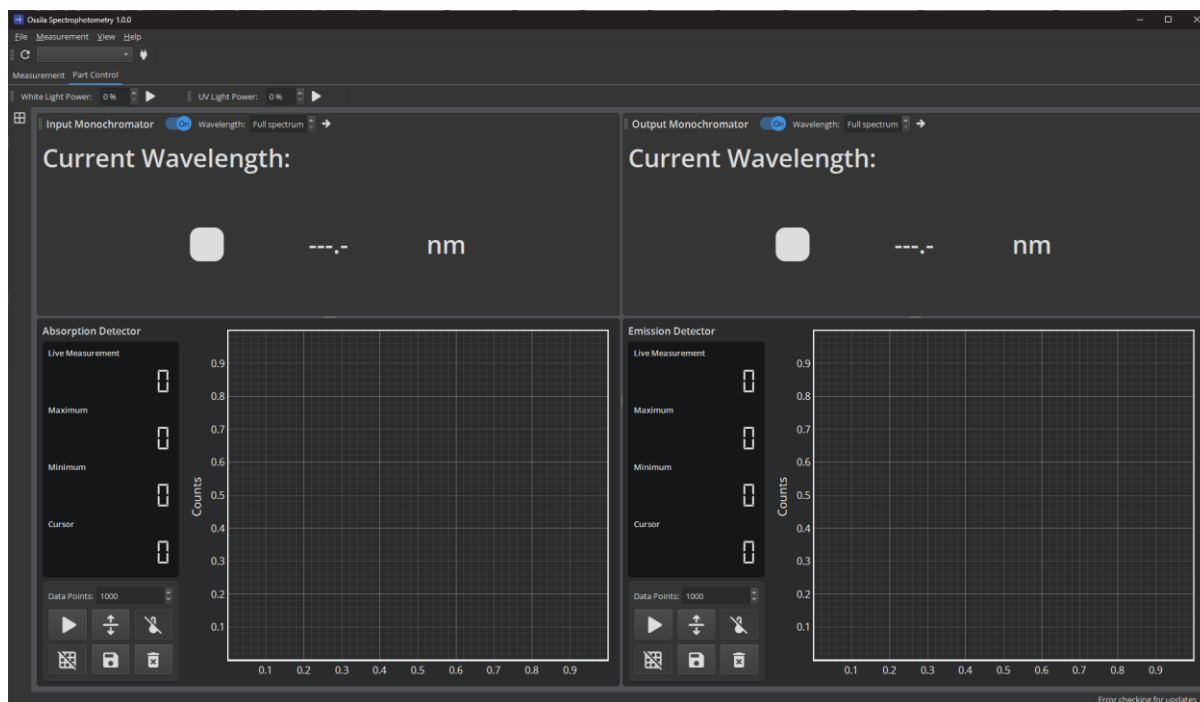


Figure 5.1. Part Control tab.

The part control tab allows you to directly control each part of the Spectrophotometer or Spectrofluorometer. If connected to a Spectrophotometer, only the White Light Power, Input Monochromator, and Absorption Detector panels will be visible.

5.1 Light Controls



Figure 5.2. Light control tool bar.

Power Set the power level of the light source as a percentage. The output will be changed when the ► button is clicked or the **Enter** or **Return** key are pressed.



Set the output power level entered in the power box.



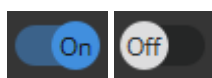
The visibility of this icon indicates the current power level of the light source. When the light source is off the icon is not visible.

Hovering the mouse over will display the currently set power and clicking it will read the current power level from the connected device and update the power box.

5.2 Monochromator Controls



Figure 5.3. Monochromator controls.



Turn monochromator output on or off.

Wavelength

Set the output wavelength of the monochromator. The output will be changed when the → button is clicked or the **Enter** or **Return** keys are pressed.



Set the output wavelength entered in the wavelength box.

5.3 Photodetector Controls

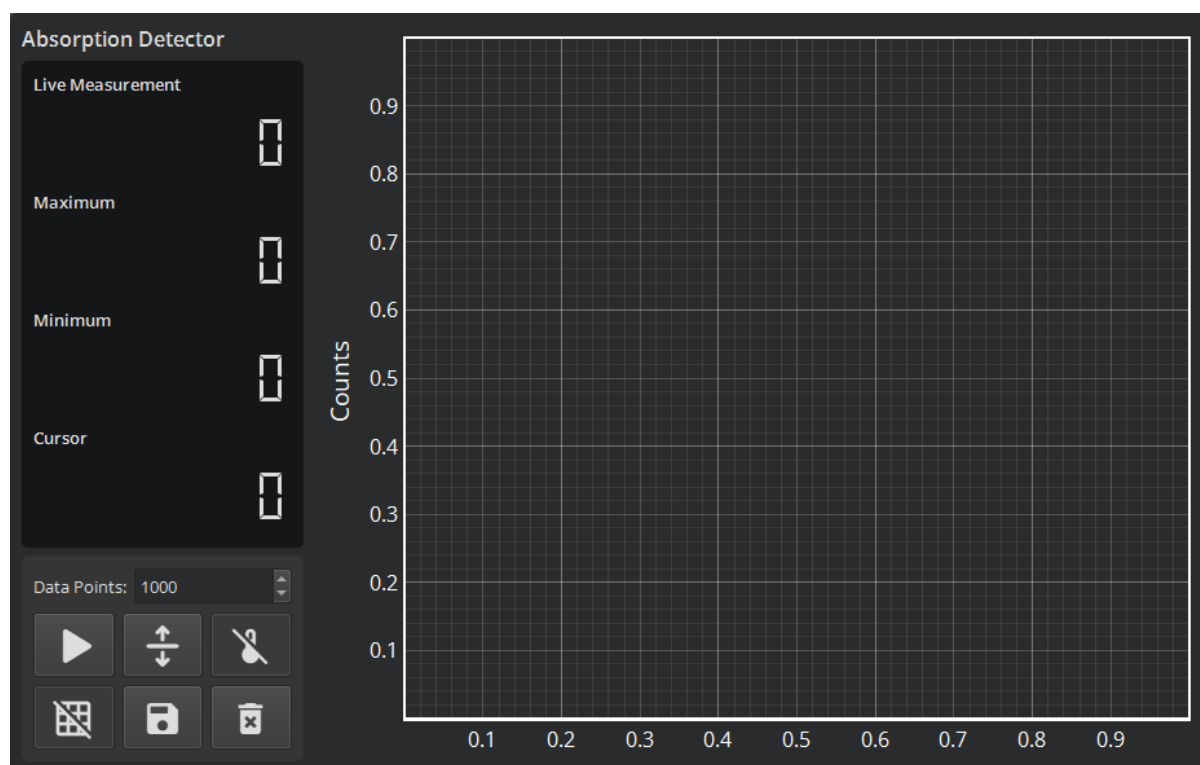








Figure 5.4. Photodetector controls.

5.3.1 Plot Controls

Data Points	Set the number of data points to display in the plot.
	Start or stop reading data from the photodetector.
	Automatically sets the baseline to make the current reading approximately 0.02% of the full scale.
	Toggle temperature compensation on or off.
	Toggle displaying a grid on the plot.
	Save the data in the plot to a .csv (comma-separated value) or .txt (text) file.
	Clear all data from the plot.

Plot Display Controls

By default, the plots will automatically scale the axes to display all the data within it. The view can be controlled manually using the following mouse controls:

- Left or middle click and drag – pan the axes.

- Right click and drag – scale the axes.
- Scroll wheel – scale the axes.

A specific axis can be controlled by using these controls on the axis labels. The axes can be reset by clicking the 'A' button in the bottom-left of the plot, shown in **Figure 5.5****Error! Reference source not found.** (note, this button will only appear whilst the mouse cursor is over the plots).

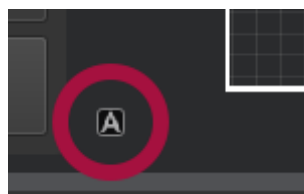


Figure 5.5. Button to reset plot axes.

Axis scales and automatic scaling can also be set by right-clicking on the plot and selecting the appropriate options in the context menu.

6. Menu Bar

6.1 File Menu

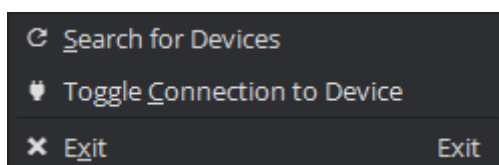


Figure 6.1. File menu.

Search for Devices	Search USB ports for connected Spectrophotometers and Spectrofluorometers.
Toggle Connection to Device	Connect or disconnect to the selected device.
Exit	Close the software.

6.2 Measurement Menu

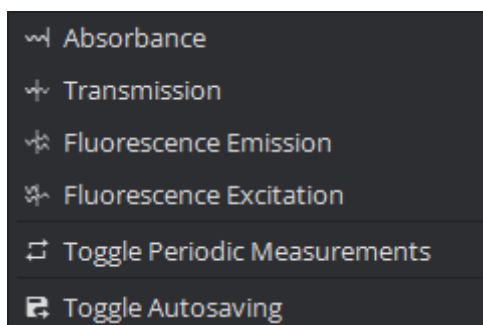


Figure 6.2. Measurement menu.

Absorbance	Switch to absorbance measurement.
Transmission	Switch to transmission measurement.
Fluorescence Emission	Switch to fluorescence emission measurement (only available when connected to a Spectrofluorometer).
Fluorescence Excitation	Switch to fluorescence excitation measurement (only available when connected to a Spectrofluorometer).
Toggle Periodic Measurement	Toggle periodic measurements and show or hide the settings.
Toggle Autosaving	Toggle automatic saving of data and show or hide the settings.

6.3 View Menu

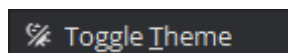


Figure 6.3. View menu.

Toggle Theme	Switch the software between light and dark themes.
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6.4 Help Menu

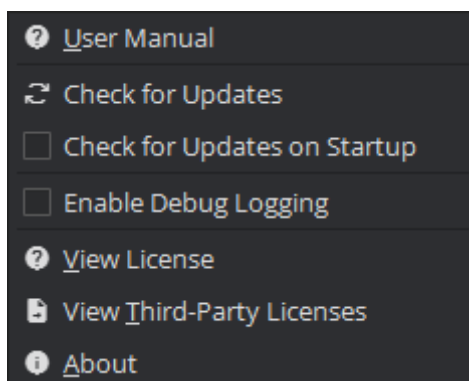


Figure 6.4. Help menu.

User Manual	Open the user manual in your default web browser.
Check for updates	Check whether a newer version of the software is available to download and install. If an update is available a message will be displayed in the status bar with the latest version number. Clicking the message will take you to Ossila's website where you can download the new version.
Check for Software Updates on Startup	When checked the software will automatically check for software updates each time it starts.
Enable Debug Logging	When checked, the software will write more detailed and additional information to the log file.
View License	Display software license information.
View Third Party License	Display the license information of third-party software that has been used in the software.
About	Display information about the software.

7. Troubleshooting

Most of the issues that may arise will be detailed here. However, if you encounter any issues that are not detailed here, then contact us by email at info@ossila.com. We will respond as soon as possible.

Problem	Possible Cause	Action
Software does not start	The wrong version of Windows is installed on the computer.	Install the software on a computer with Windows 11.
	The software has not installed properly.	Try reinstalling the software.
Cannot connect to the system via USB	The USB cable may not be connected properly.	Ensure the USB cable is firmly plugged in at both ends.
	The USB cable may not be connected to a working USB port.	Try connecting the unit to a different USB port on the computer.
	The USB drivers may not be installed or may not have installed properly.	Try installing or reinstalling the USB drivers. If the drivers on the USB provided are not working, try following the Windows 7 installation instructions found in the Installation Guide.
	The USB cable is defective.	Try using a different USB-B cable, contact Ossila if necessary.