

Update Notes LuQY-Control v1.7

Changes of the LuQY-Control software v1.7 against previous versions include:

1) Extended background noise filtering functions

In this version of the software, the threshold of the noise filtering is displayed in the spectrum live view as a blue dashed line. Signal below this line becomes zero when being transformed to photons/s/cm²/nm.

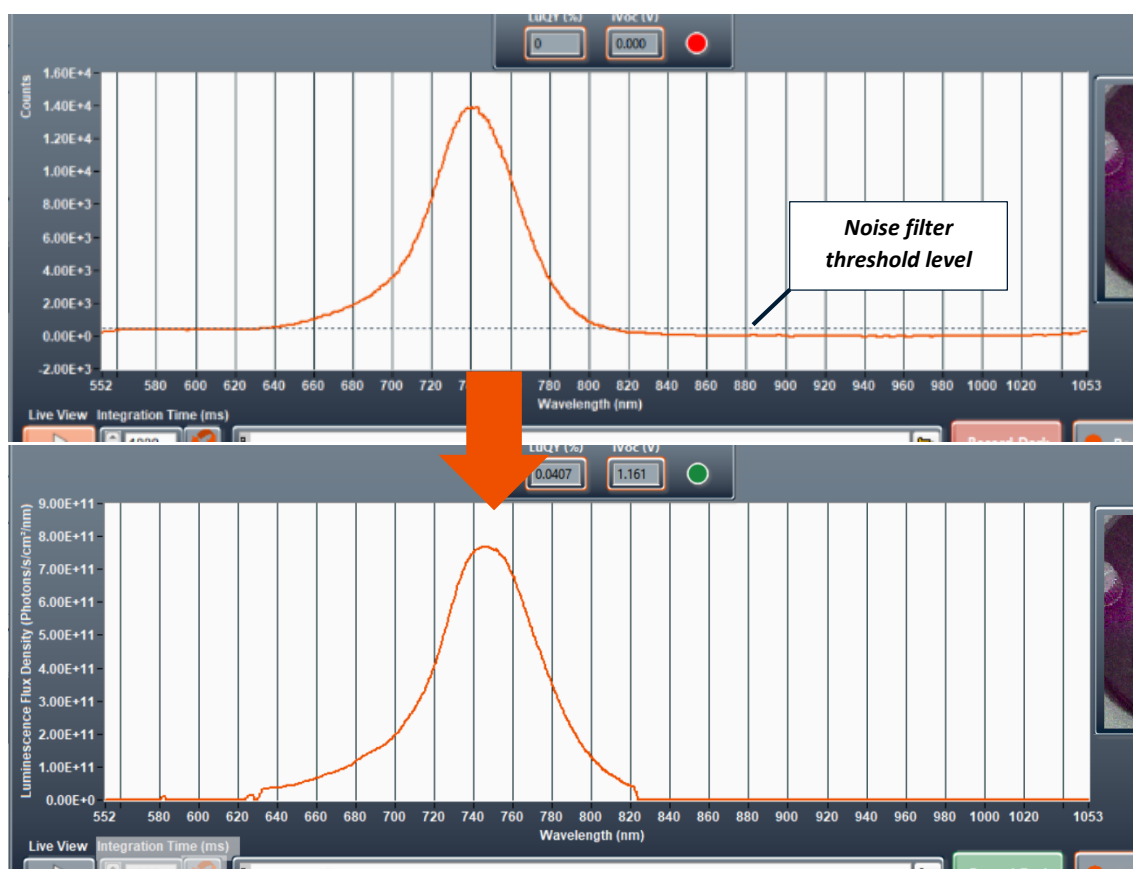


Figure 1: Top: spectrometer signal in live view showing the noise filter threshold level as dashed blue line; Bottom: resulting absolute luminescence flux with signal below the noise filter threshold being zeroed.

Also, besides the options 'Off', 'Low', 'Medium' and 'High', the background noise filter can now be adjusted manually. For this, go to **'Tools'** in the top menu → **'Application Settings'** and select **'Manual'** in the **'Noise filter spectrometer'** section. When the noise filter is set to **'Manual'**, the dashed blue threshold line in the live view graph can simply be dragged and dropped with the mouse to your desired filtering level.

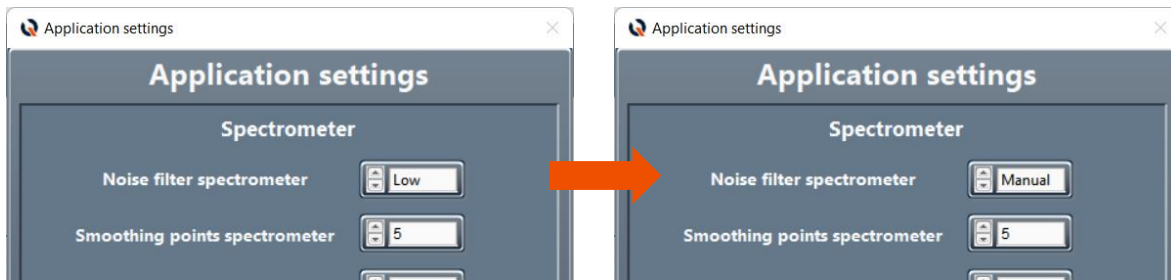


Figure 2: Section of the 'Application settings' window showing 'Low' and 'Manual' noise filter mode.

2) Save & Load Measurement Settings

Go to **'Tools'** in the top menu → **'Save Measurement Settings'** to save the current settings entered in the GUI. This includes all button settings, entry fields and selector boxes in the sections 1 (sample) to 5 (measurement settings). The settings are stored as a .qyb file.

To load a set of pre-saved measurement settings, go to **'Tools'** in the top menu → **'Load Measurement Settings'** and select the respective '.qyb' file in the file dialog.

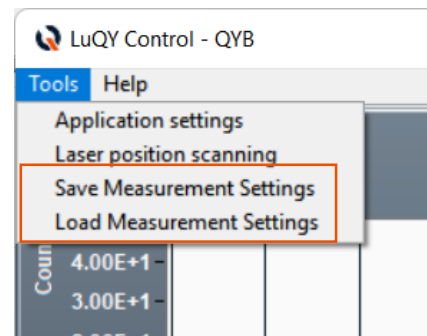


Figure 3: Screenshot of 'Tools' menu showing the new save and load measurement settings functions

3) Enhanced Sweep Functionalities

If a voltage or intensity sweep has been selected, the software will perform individual measurements at the given setpoints. On default, the software will now **automatically adjust the integration time and will do a dark reference measurement at each setpoint**. If you want to turn this functionality off, go to **'Tools'** in the top menu → **'Application Settings'** and deactivate **'Record dark measurement during sweeps'** and/or **'Auto-adjust integration times during sweeps'** (Figure 4).

4) Disabling auto-integration time on saturation

When the spectrometer saturates due to a too intense signal, the software by default will automatically re-adjust the integration time. If you want to turn this function off, you can now deactivate the button **'Auto-adjust integration time on saturation'** in the application settings menu (Figure 4).

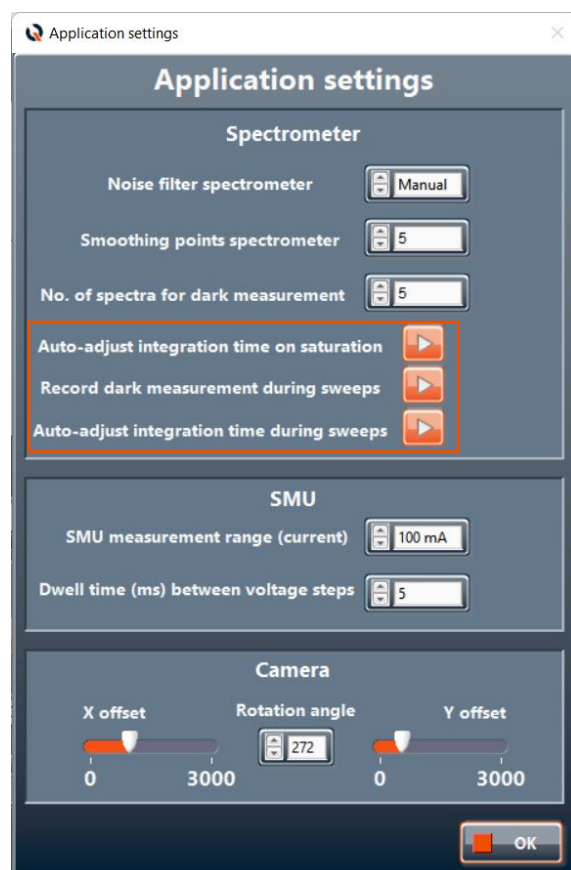


Figure 4: Updated application settings window

5) Added log plot functionality

In the results view (not live view mode), the recorded photon flux density can be displayed on a logarithmic scale. For this, enable the 'Log' button appearing in this view mode.

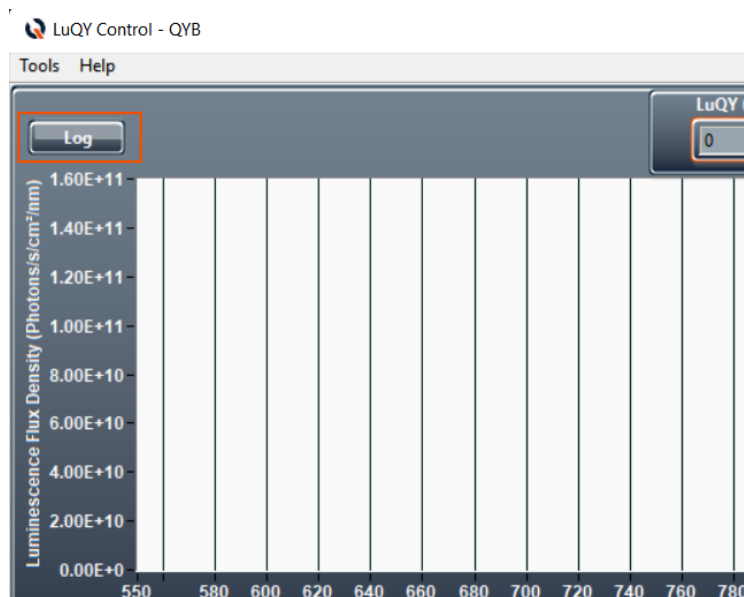


Figure 5: 'Log' button appearing in results view mode which allows to plot the photon flux density on a logarithmic scale.

6) Minor bugfixes

This update includes a number of minor bugfixes and small design changes (e.g. live button on main window). The bugfixes include a more resilient auto-integration time functionality when clicking the two arrows next to the integration time entry field. Also a fix restoring the communication with certain SMU firmware versions.