

# Multiwavelength Photometry Release Notes

TVM

**MWPHT Version 1.1**

**May 24, 2022**

## Software Changes

### 1. New LED Test Mode

Section 4.6. of Multi-Wavelength Photometry User Guide describes LED test mode implemented in the Version 1.0 of the software. This test mode has been designed to help users to measure and adjust LED output power.

The power output of the system also depends on how concentric the bundle of fibers with the output beam is. The beam's intensity is the strongest in its center, and tapers down radially. If the bundle of fibers is not concentric with the output beam, there will be power variations between the branches, and they may not get maximum power. For more detail, please take a look at "Patch cable alignment.pdf" located in

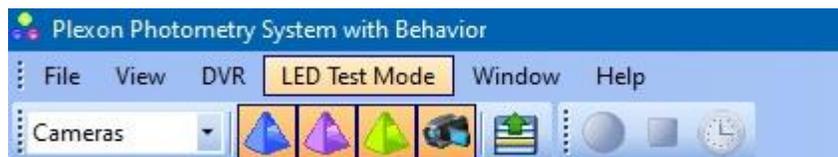
"c:\Program Files (x86)\Plexon Inc\Photometry V1\Documents".

New LED Test Mode can be used to:

- a) Measure output power for each LED;
- b) Adjust the bundle position relative the output beam.

Mechanical part of the procedure is described in "Patch cable alignment.pdf".

LED Test Mode can be turned on using "LED Test Mode" from the main menu of the software:



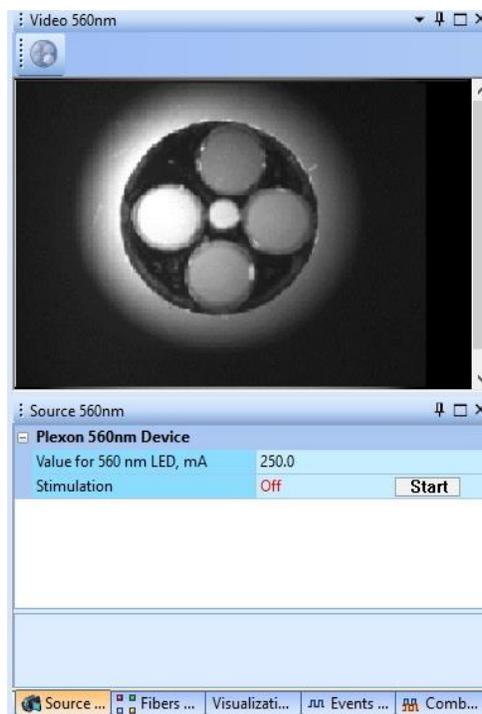
The Test mode works on a per-LED basis.

## Example for 560 nm

For example, to turn the test mode on for 560 nm LED, use corresponding sub-menu from the LED Test Mode menu:



All videos will be turned off except “560 nm” video stream. In addition, all software options will be disabled except for “Plexon 560 nm Device” controls in “560 nm Source” tab:



Test modes for 465 nm and 410 nm in the LED Test menu will be disabled as well:



All stimulation stops, and you only will be able to turn 560 nm LED on. It will be ON continuously, versus pulsing 30 fps during regular operation.

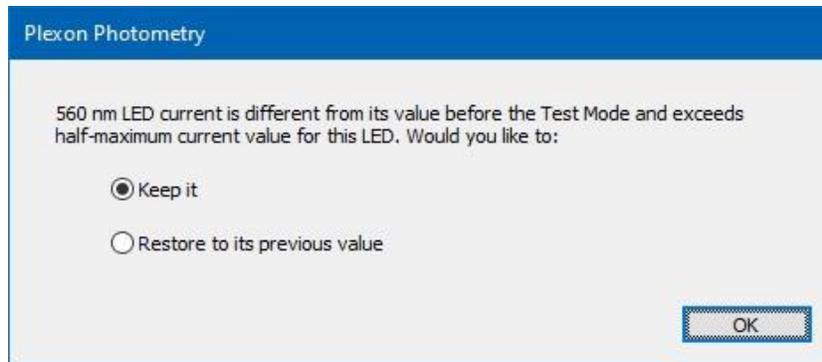
When test mode started, green blinking bar at the status bar indicates for which LED it has been started:



To stop test mode for 560 nm and go back to the normal software operation click on “560 nm” menu item again:



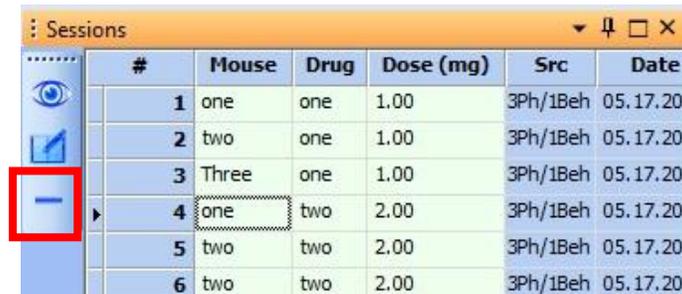
If the LED current has been set at the value higher than half of the max power for this LED, the software will give a warning offering either to keep this value or revert to the value before the test mode was started:



## 2. Possibility to delete sessions

In the Sessions tab, select the session you would like to delete and press “-” button in the Sessions toolbar:

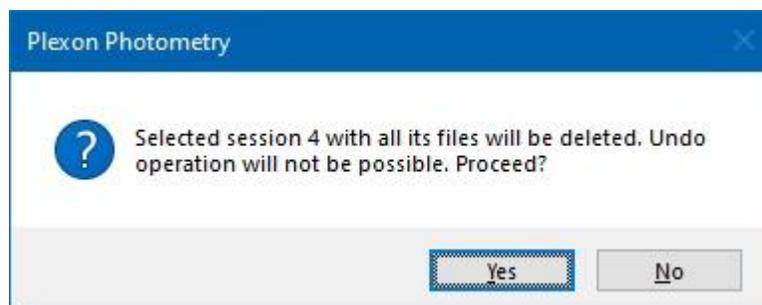
“Delete Session” button in Camera mode, Session 4 is selected:



“Delete Session” button in File mode, Session 4 is selected:



After you click the Delete button, the message will pop-up with a warning the operation is final, and undo will not be possible – in case the Delete button has been pressed accidentally or the mind changed:



Please note:

- a) If you delete the very last session, the next recorded session will have the number of the deleted session + 1.

For example, if you have five sessions

Session 1, Session 2, Session 3, Session 4, Session 5

and deleted Session 5. The next session you record will be Session 6.

- b) If you deleted all sessions in the experiment, the numbering of the new recorded sessions will start from "1". In addition, after you have deleted all sessions from the experiment, you will be able to change its options disabled for non-empty experiments. For example, you will be able to change Tracking mode, add/remove fibers, *etc.* – until you record new session for this experiment.

**MWPHT Version 1.2**  
September 30, 2022

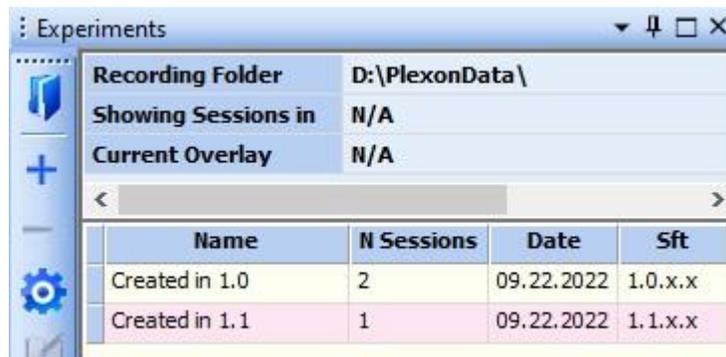
## Software Changes

### 1. Issue with Brightness value for Photometry cameras.

Due to a mistake, capturing photometry signal at cameras brightness = 0, was in version 1.1. It resulted in the raw data signal being around value 1, when Stimulation is OFF. In PHT ver 1.0 (non-zero brightness) raw signal typically varies around 14-15 when Stimulation OFF. This issue has been fixed in the software version 1.2. Photometry cameras operate at the same non-zero brightness as version 1.0.

Several changes have been added to 1.2 to help users to differentiate between brightness levels used to record experiments.

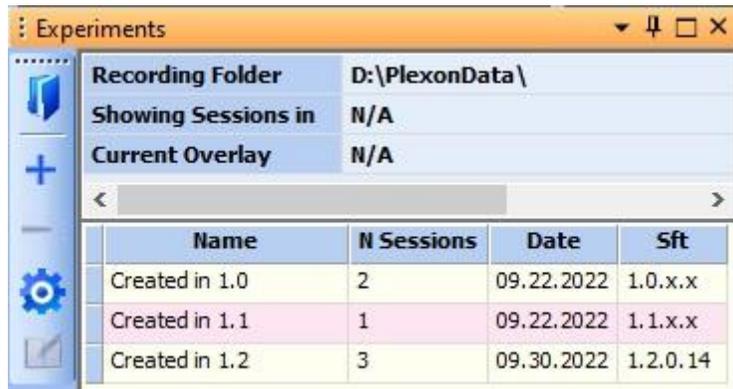
Experiments recorded with Brightness = 0 are highlighted in pink in the Experiment list. In addition, software version used to create each experiment and sessions is showing. If an experimental folder contains experiments created by MWPHT version 1.0 and 1.1, the Experiments tab will look like this:



Name	N Sessions	Date	Sft
Created in 1.0	2	09.22.2022	1.0.x.x
Created in 1.1	1	09.22.2022	1.1.x.x

Experiment “Created in 1.1” is highlighted in pink, which means it has been created in 1.1 software and all its sessions has been recorded with brightness value 0 for photometry cameras.

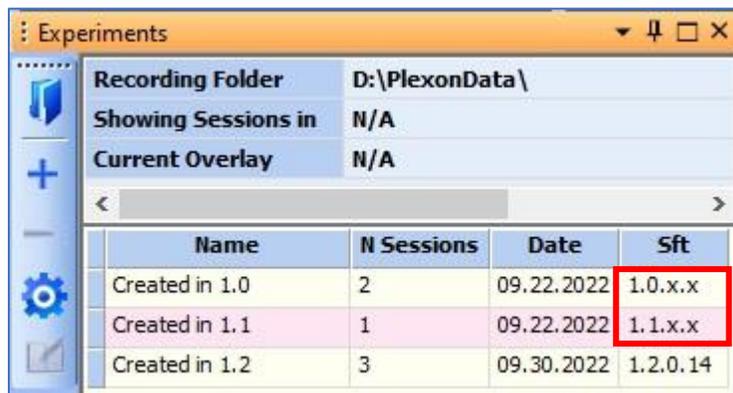
Experiments created in MWPHT 1.2 have non-zero brightness (same as in 1.0) and thus are not highlighted:



Name	N Sessions	Date	Sft
Created in 1.0	2	09.22.2022	1.0.x.x
Created in 1.1	1	09.22.2022	1.1.x.x
Created in 1.2	3	09.30.2022	1.2.0.14

## 2. Showing software version used to create each experiment.

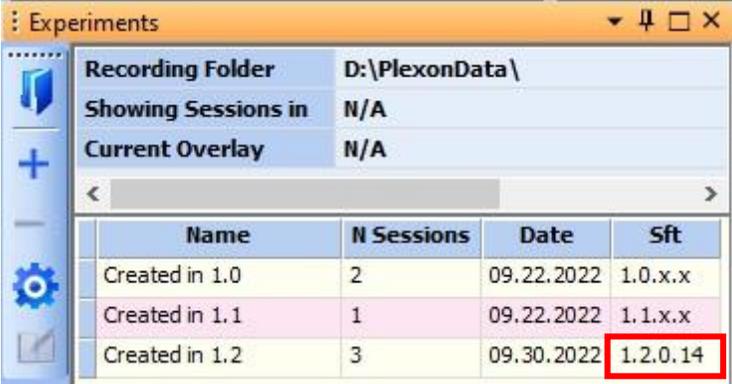
Unfortunately, right now it is only possible to differentiate between experiments created in 1.0 and experiments created in 1.1 by the brightness value. We cannot tell precisely the bug fix or build for these versions. So, software version for MWPHT 1.0 and 1.1 will be showing as 1.0.x.x and 1.1.x.x, correspondingly, in the “Sft” column of Experiments table:



Name	N Sessions	Date	Sft
Created in 1.0	2	09.22.2022	1.0.x.x
Created in 1.1	1	09.22.2022	1.1.x.x
Created in 1.2	3	09.30.2022	1.2.0.14

To save room, version 1.2 doesn't show time when each experiment has been created.

For all experiments and sessions recorded by MWPHT ver. 1.2 or later the exact software version number will be stored in the database and shown in the “Sft” column.



Name	N Sessions	Date	Sft
Created in 1.0	2	09.22.2022	1.0.x.x
Created in 1.1	1	09.22.2022	1.1.x.x
Created in 1.2	3	09.30.2022	1.2.0.14

### 3. Compatibility between experiments and sessions created in 1.0, 1.1 and 1.2.

All experiments and their sessions are readable between versions 1.0, 1.1 and 1.2, no matter which software version was used to create them. However, please note the brightness value for photometry cameras is a property of each experiment.

Examples below demonstrate how it works.

For example, if an experiment was created in version 1.2 (non-zero brightness), and then opened in software ver. 1.1 – the system will keep the same non-zero brightness for photometry cameras. All new sessions will be recorded at non-zero brightness there as well.

However, if an experiment was created in 1.1 is then opened in 1.2 or 1.0 – the system will operate with Brightness = 0 for this experiment. All new sessions will be recorded at Brightness = 0.

If new experiment is created in 1.2 based on an overlay from 1.0 – it will have non-zero brightness set for photometry cameras. However, if an experiment is created in 1.2 based on an overlay from 1.1 – brightness will be set to 0 for photometry cameras for this experiment.

#### 4. List of Experiments.

If an experiment folder contains experiments created by Plexon CineLyzer®, obsolete one-wavelength photometry or other incompatible software - these experiments will be ignored and not shown in the experiments list of the 1.2 version. The software will give a corresponding message:

