Measurements With MAVOSPHERE

Integrating Sphere

1/07.14

This document describes the measurement procedure for MAVOSPEC in combination with MAVOSPHERE 205, MAVOSPHERE 500, MAVOSPHERE 1100 and MAVOSPHERE 2000.

1 Configuration of measurement workplace

Equipment used for the measurement consists of:

- MAVOSPHERE together with spectrometer MAVOSPEC
- USB source controller (sphere controller)
- PC with installed and configured GL Spectrosoft

During factory calibration process, the calibration profile for MAVOSPHERE had been stored in memory of spectrometer used for calibration. MAVOSPHERE gives correct results only when used together with the spectrometer containing the valid profile for this specific sphere.

Before executing measurements the sphere adapter must be mounted on MAVOSPEC and then spectrometer must be installed in an appropriate port of the sphere. Afterwards the spectrometer has to be connected to the PC via USB cable.

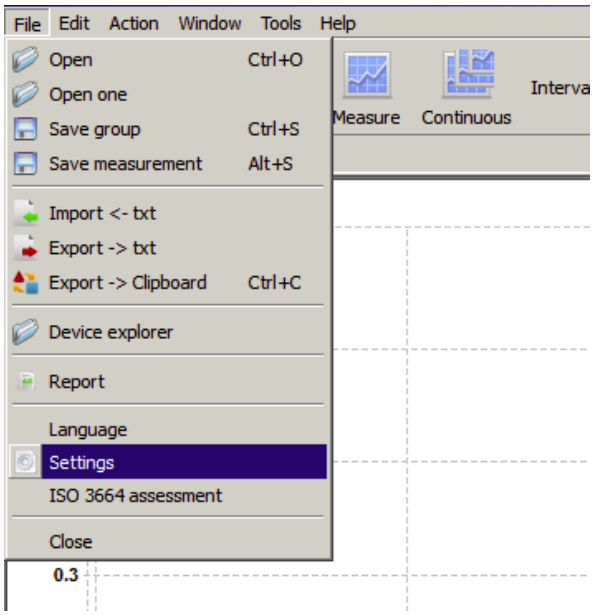
The auxiliary light source, which is part of the MAVOSPHERE, should be connected to the sphere controller with the Jack connector. The sphere controller must be connected to the PC with USB cable as well as to the power. The power switch should be turned on.

Please check the number of COM port on PC which is associated with the sphere controller. This number must be configured in GL SpectroSoft as described in chapter 2 before the measurements could be executed.

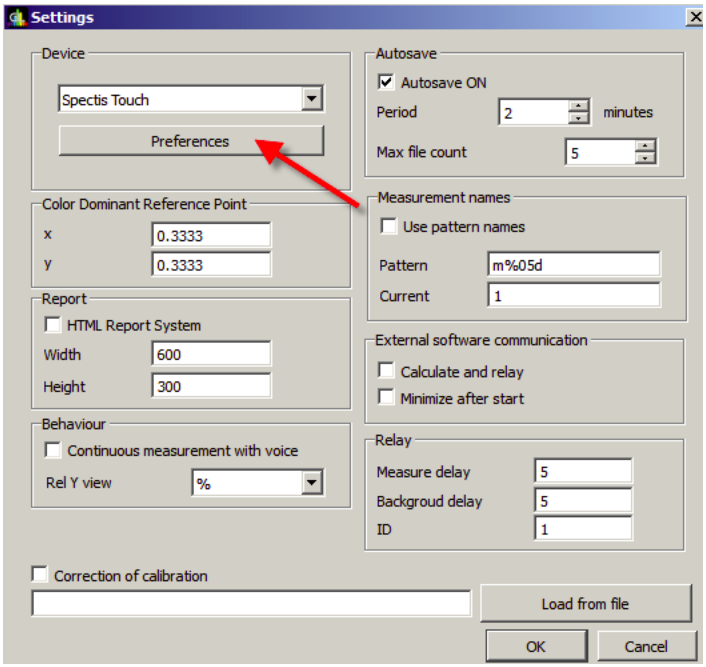
Before actual measurementscan be executed, the dark current calibration procedure must be done. The dark current procedure is described in the MAVOSPEC manual.

2 The calibration of the self absorption

Before further steps, the support for the sphere controller must be enabled in the MAVOSPEC settings.

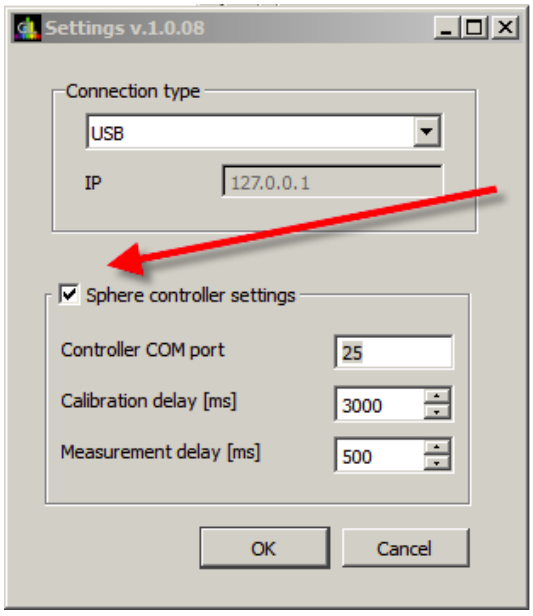


Press device preferences button to edit device settings.



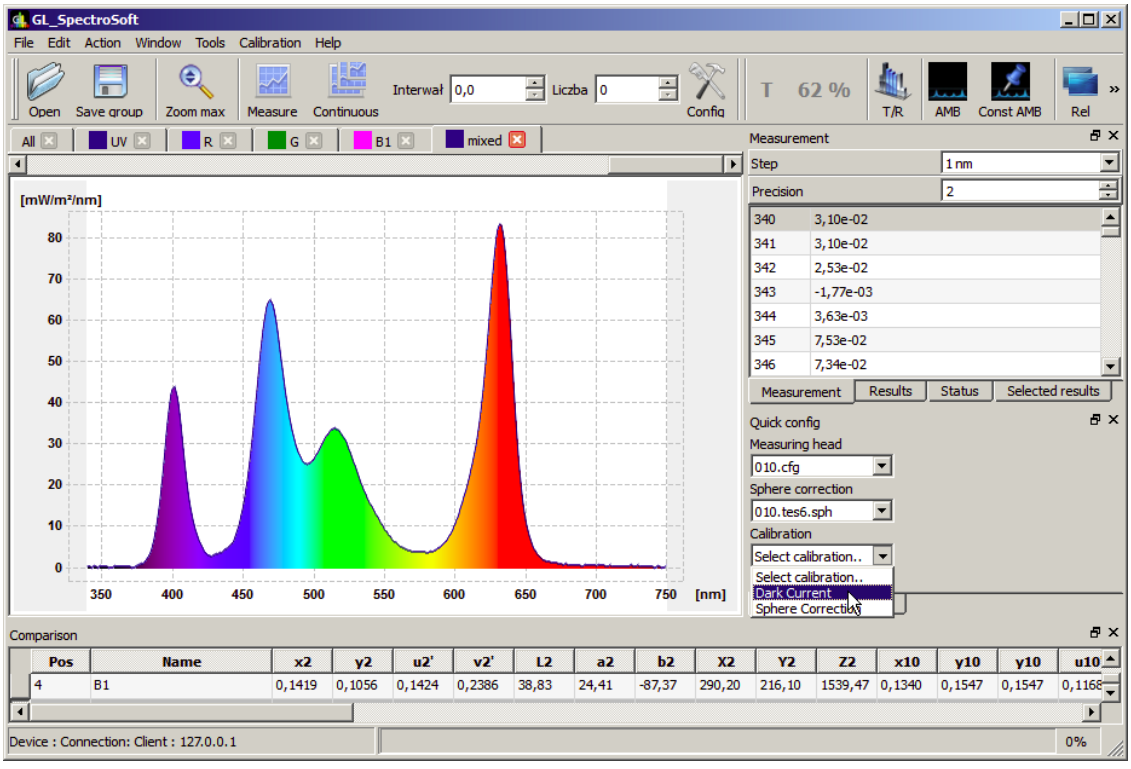
In order to enable sphere controller port click the box "Sphere controller settings" and then type in the proper COM port number.

NOTE: If you do not know the port number of COM port, run Windows Control Panel/ Devices and Printers and check the USB <-> Serial COM port No.

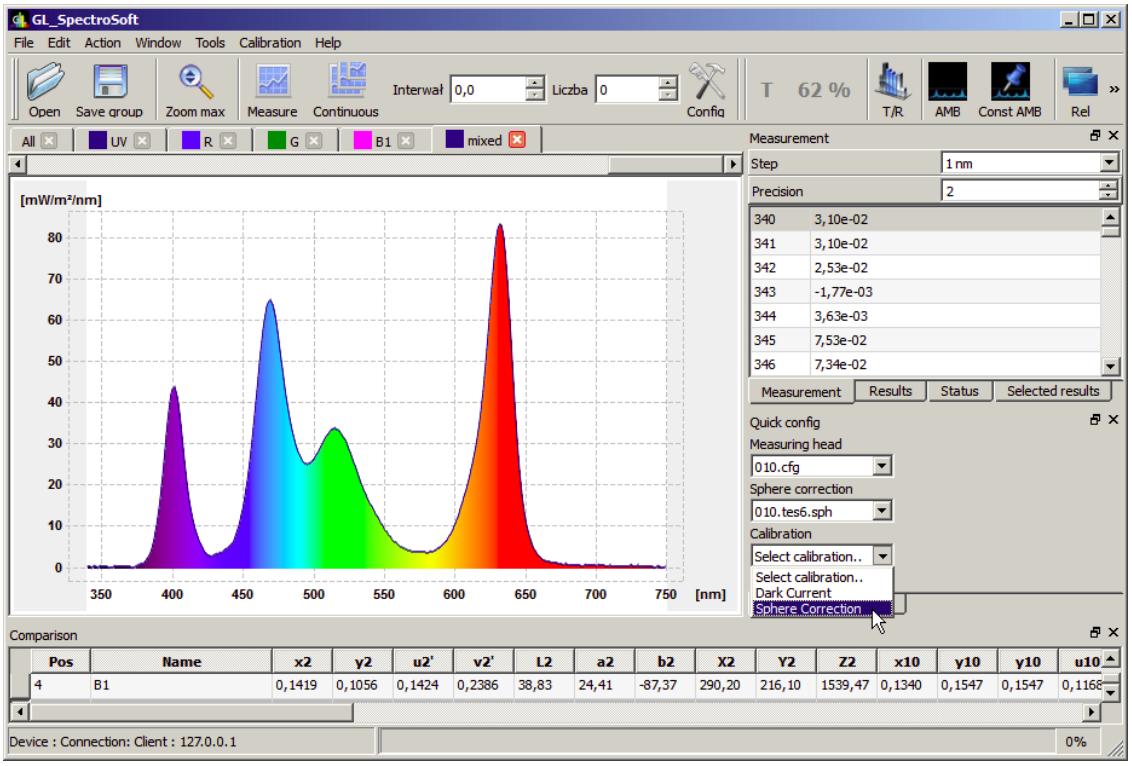


Make sure that the dark current calibration has been done.

NOTE: When making dark current calibration, cover the entrance aperture in the sphere to cut off the ambient light.



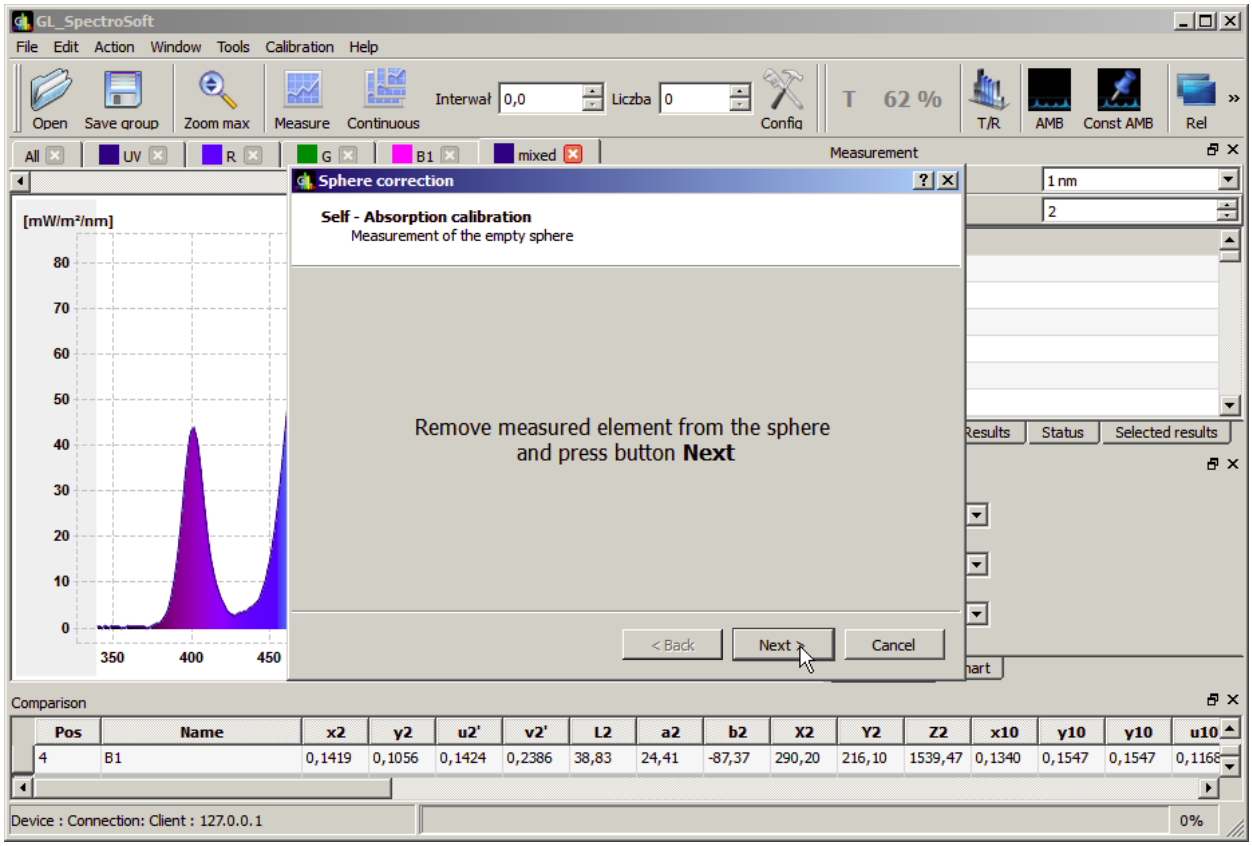
When the proper adapter is mounted to the MAVOSPEC, the Menu "Sphere Correction" will be displayed in Quick config panel.



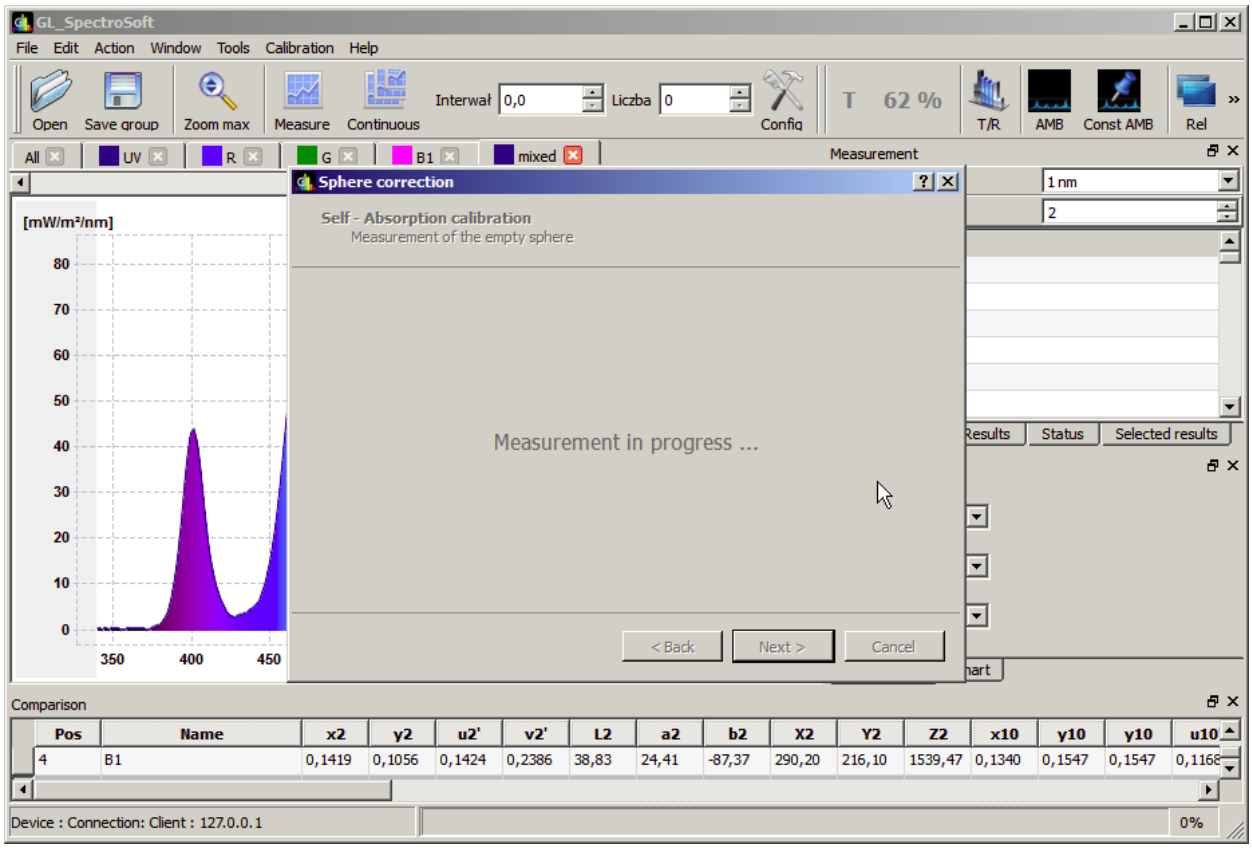
Before performing the actual self-absorption procedure, start the procedure with the open sphere and check if the auxiliary light source is being turned on during the measurement, as well as the yellow diode on Sphere Controller. If not, the wiring of Sphere Controller as well as settings of COM port has to be checked.

When the auxiliary light source works correctly, remove the DUT (Device Under Test) from the sphere together with the post, open Sphere correction dialog once again and click the Next button.

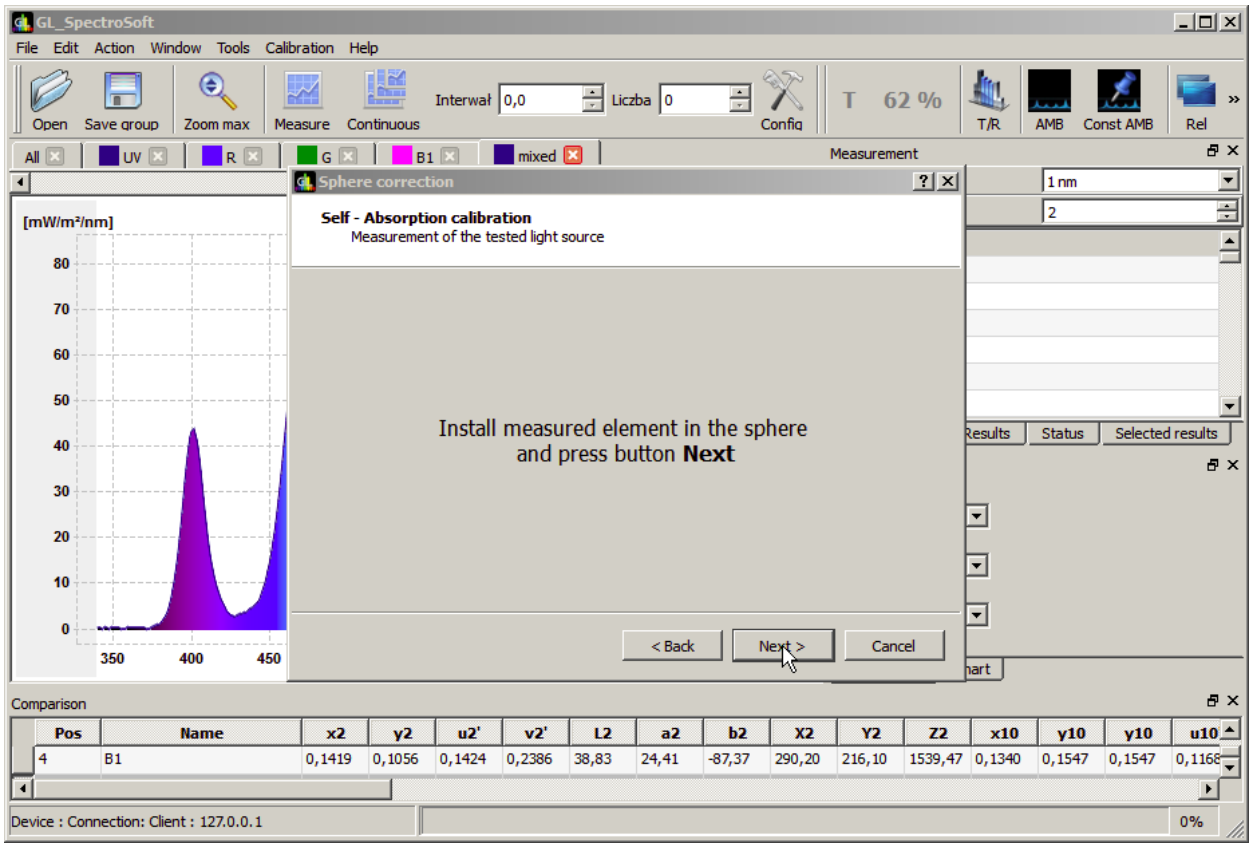
NOTE: Cover the entrance aperture to cut off the ambient light.



Measurement screen.

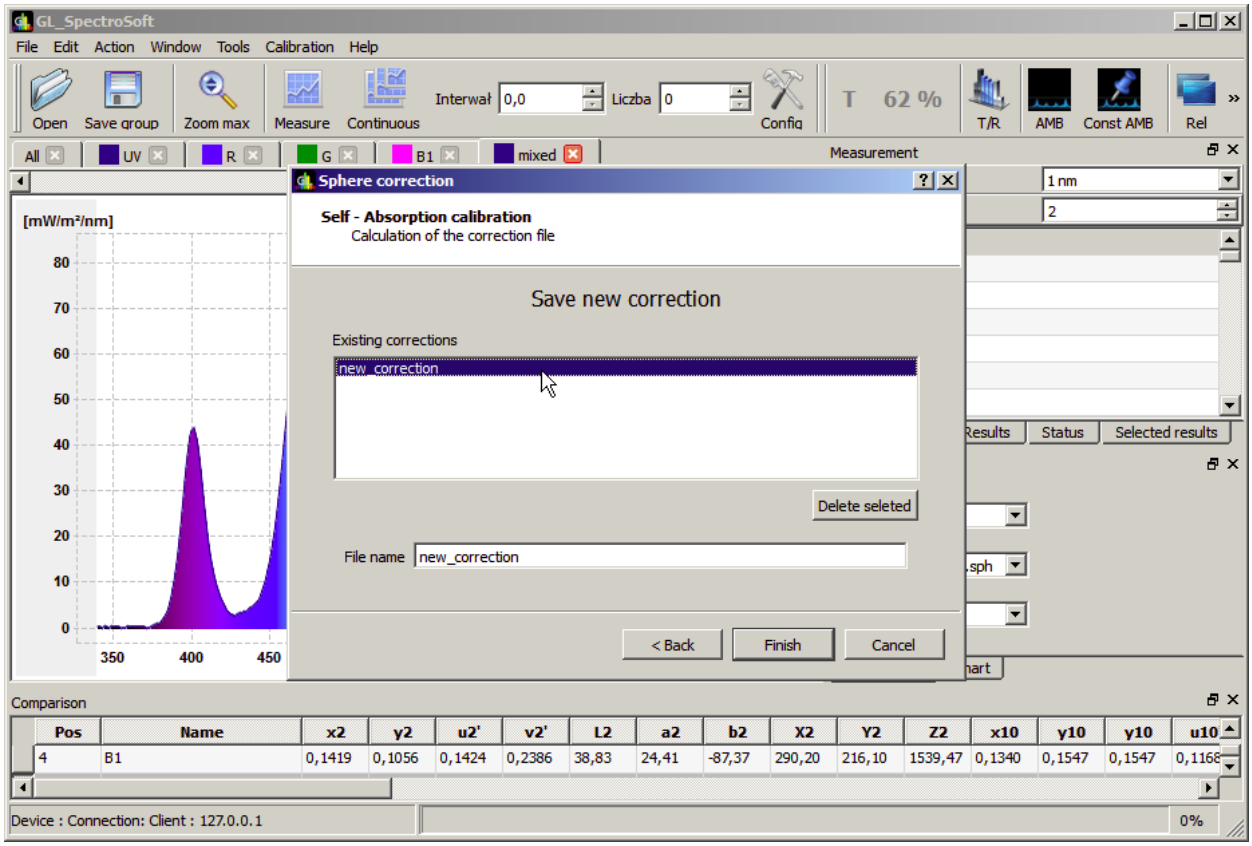


In the second step install the DUT. The measured light source (DUT) has to be switched off. Only the auxiliary light source mounted in MAVOSPHERE will be used for this measurement. Run the measurement by clicking the Next button.

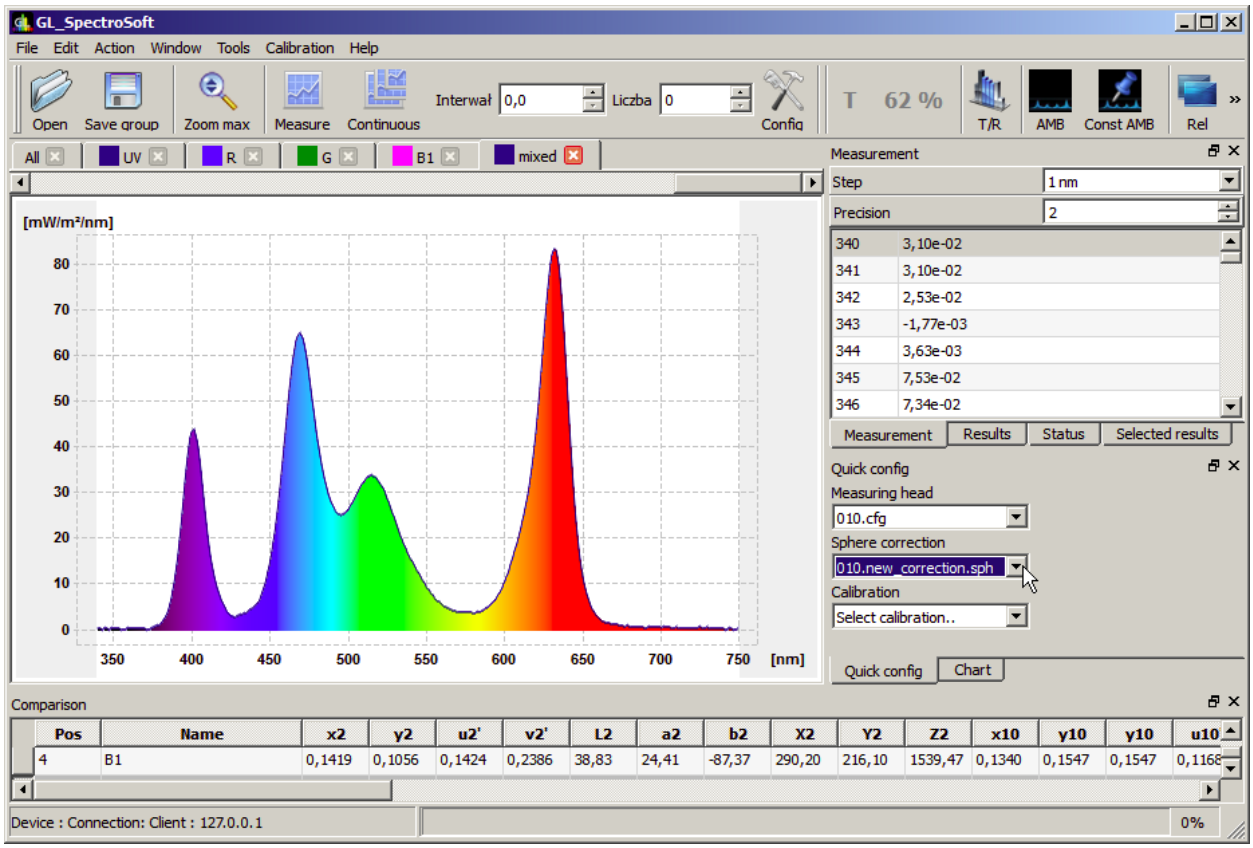


The next step is to specify the name of the correction file. The software by default is suggesting the existing name from the list. You can copy the name of the correction file by clicking the existing name. When the name is set click the Finish button.

At this stage it is also possible to remove unwanted existing correction files. Select the file and click Delete selected button.



The new correction file will be available on the Sphere correction list in Quick Config panel.



3 The actual measurement of light source

Now the device is ready for the actual measuring of the light source (DUT). Connect measured light source to the power, check if the right correction is selected in Sphere correction list and start the measurements.

The self absorption procedure should be carried out each time when the absorption of elements mounted in MAVOSPHERE is changing, e.g. another light source is mounted, or position of measured light source in the sphere is significantly changed.

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