

## Getting Started

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### About this user guide

The aim of this user guide is to provide basic instructions on how to use the GoSpectro.

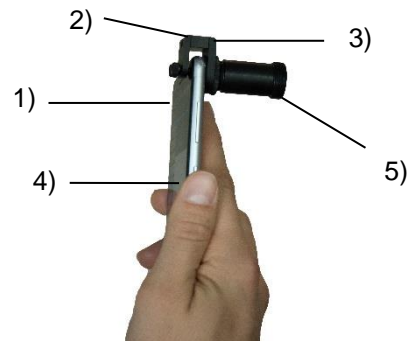
### Safety & care

Do not introduce any liquids or dust in the GoSpectro. Avoid touching the inside of the device and the entrance slit of the spectrometer with your fingers.

### Components

The GoSpectro is a system comprised of a mobile app and an optical device that attaches to the smartphone camera.

1. Plastic mounting screws (x2)
2. Spacer (2 sizes available)
3. Mounting bracket (2 sizes available)
4. Smartphone
5. Spectrometer



Before continuing to setup, you will need to download the “GoSpectro” mobile app on the Apple **App Store** or the **Google Play Store**.

### Set up

1. Choose the right mechanical parts (2 spacers and 2 mounting brackets) to adapt the GoSpectro to your own smartphone, depending on your smartphone thickness and the camera sensor position on the smartphone case.
2. Loosen the two mounting screws.
3. Attach the mounting bracket to the smartphone camera so that the spectrometer and the sensor of the camera are on the same axis.
4. Tighten the two plastic mounting screws so the GoSpectro remains fixed.
5. Start the mobile app “GoSpectro” on your Smartphone. For Android smartphones, on the first use of the app, you will be required to enter the license number given.



*Note: You may need to restart the smartphone once the installation of the app is complete.*

### Main menu of the app



Calibration of the system in wavelength and intensity



Parameters of the app



Real-time observation and backup of the data



Reading and analysis of the recorded data

## Calibration process

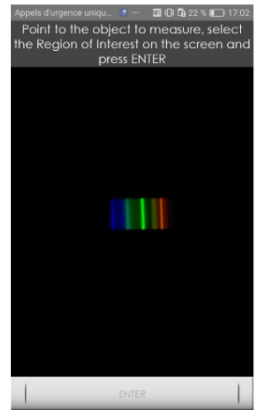
1. Once you are on the home menu, press the **CALIBRATE** icon to start the calibration of the device.
2. Select **WAVELENGTH CALIBRATION**, then tap on **VALIDATE**
3. If the calibration is performed for the first time on the smartphone, select **INITIAL CALIBRATION**. You should see the screen presented on the left. Ensure that:

- a. The spectrum displayed on the screen is horizontal and the spectrum goes from the blue (on the left) to the red (on the right)

*Note: If it is not the case, loosen the locknut, turn the tube until you obtain the blue line on the left and the red line on the right*

- b. The spectrum visible on the screen is not clipped (see illustrations below)

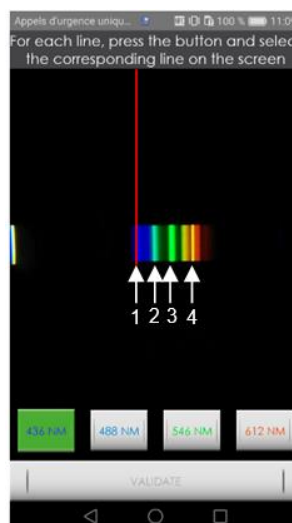
*Note 2: If it is clipped, loosen a quarter turn on the left the plastic screw, then move the GoSpectro step by step until having the complete spectrum. Once it is complete, tighten the screw to lock the position.*



4. Once the GoSpectro is correctly fixed on the smartphone, point it in the direction of a compact fluorescent lamp or a fluorescent tube (see pictures on the left). A 4-ray spectrum must be seen (see example below). Then tap **ENTER**.

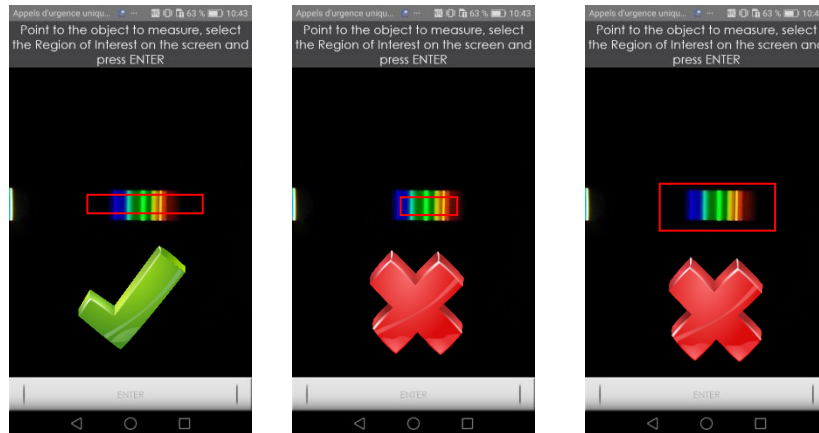


5. First, tap on **436nm** button, then tap on the far-left blue line. A red line must be superimposed with the blue ray. Next, tap on the **488nm** button, then tap on the second ray in order to superimpose the red line with the turquoise ray. Repeat the process for the **green** and **red** rays. To Finish, tap on **VALIDATE** once the calibration is performed for the 4 wavelengths.



6. Select the Region of Interest using your finger. Then tap on **VALIDATE**

*Note: Be sure that the ROI exceeds both on the left and on the right, but not above and below as presented in the figures below.*

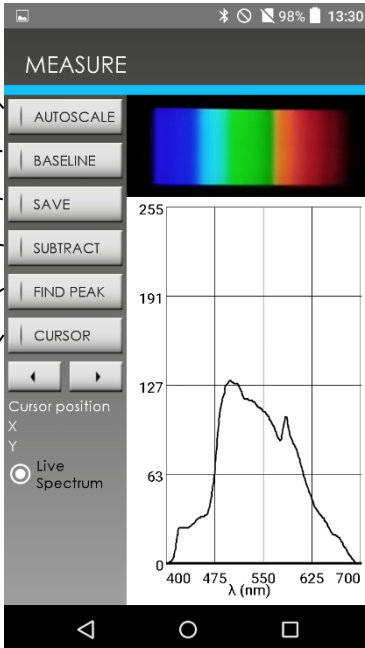


*Note 2: The wavelength calibration step must be performed after each time the GoSpectro has been removed from your smartphone.*

Your device is now ready for use. From the home screen, press the icon **MEASURE** to make a spectrum measurement. The spectra measured can be recorded in the .txt format and are available in the **ANALYZE** menu.

## Use

The different functionalities of the measuring software are available from the buttons on the left side of the main screen:



**AUTOSCALE:** Scales the spectrum on the vertical axis

**BASELINE:** Corrects the baseline

**SAVE:** Saves the spectrum data in .txt format

**SUBTRACT:** Subtracts a reference spectrum selected in ANALYZE

**FIND PEAK:** Places the cursor on the peak with the highest intensity

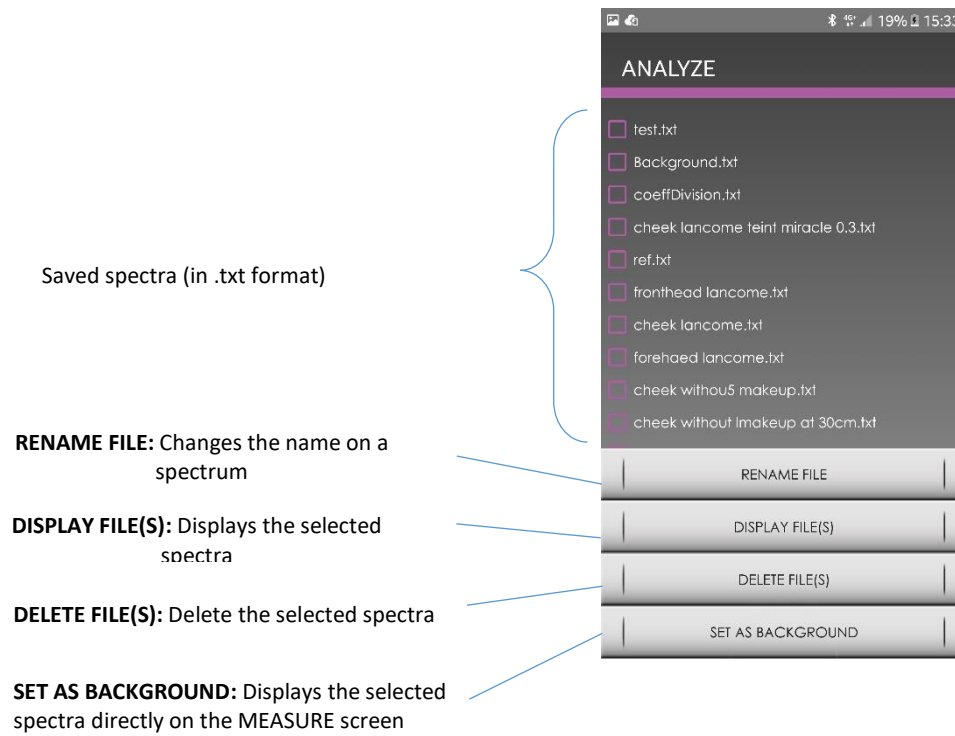
**CURSOR:** Places the cursor on the spectrum, which can then be repositioned with the arrows

Cursor position  
X  
Y  
 Live Spectrum

Wavelength $\lambda$ (nm)	Intensity
400	0
475	127
550	191
625	127
700	0

## Analyze

The different functionalities of the **ANALYZE MENU** are described hereinafter:



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For any request concerning GoSpectro, please contact Goyalab:

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