# Simple spectrophotometer

*A comprehensive guide on how to use the spectrophotometer*

The spectrophotometer doesn’t require any computer to display data. It is fully autonomous and connected to a battery, a LED indicates the battery level and turns green when fully charged.

The device can be connected to a computer through a micro USB port. On a terminal, it is possible to display the data or change the settings but it’s faster to do it on the device directly. Three LEDs are used for the absorption (RGB), as well as 2 perpendicular blue LEDs used for fluorescence.

Here are the options of the spectrophotometer :

1. Acquire : This option allows you to measure the absorbance of a sample compared to a reference blank. A blank measure is initially done, and after a delay, put the sample into the hole. The screen will display the relative absorbance (compared to the blank) of the solution.
2. Kinetics : The 1st option is the best tool to measure the absorbance of a sample, but if you want to study a change in the colour of a solution over time, this option allows you to proceed multiples measures with a defined time laps between each.
3. Results : Displays the results of the kinetics experiment. The format goes like this

|  |  |  |
| --- | --- | --- |
| #Measure | Time(s) | Absorbance |

1. Settings : Allows you to define the parameters of the experiment.

*Before delay* : delay before the blank measure

*First delay* : delay between blank and sample measures

*Inter exp. delay* : delay between kinematics measures (note that the measure duration is around 10s, so if you pick 10s in this option, the actual time laps will be around 20s).

*Number exp* : the number of measures you want to do for the kinetics

*Result colour* : the screen can only display the kinetics results for one colour, chose between 1,2 and 3 as R,G and B.

1. Status : displays the latest data recorded from the “Acquire” menu.
2. Utilities : different options such as LED test, switch on/off the backlight, reset the data…