ALBA Software Notes for the Spirometer Sensor
(Requires ALBA Software V1.86 or Greater)

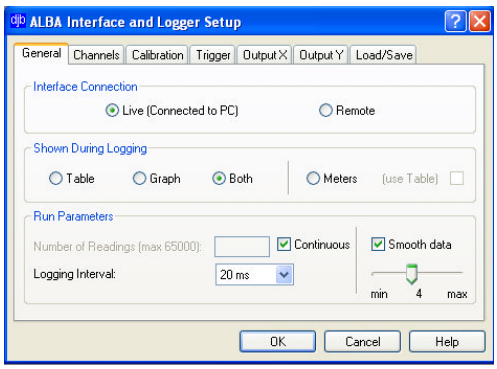
The Spirometer which includes sensor handle and flow head is supplied with:

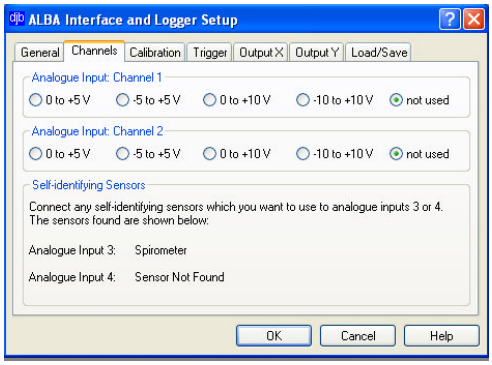
- Disposable bacterial filter
- Pack of five disposable mouthpieces
- Two nose clips.
- Vernier instruction booklet.

Getting Started

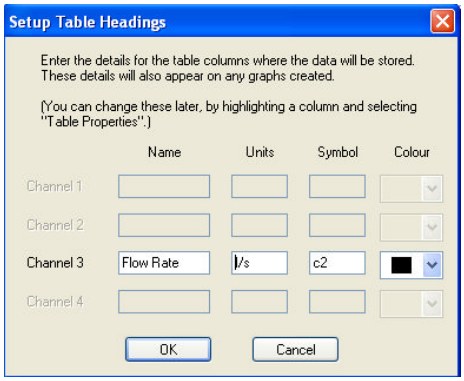
The notes on this sheet should be read in conjunction with the notes from Vernier on their Spirometer sensor.

- Connect the lead from the Spirometer to channel 3 on the ALBA Interface.
- Ensure that the ALBA interface is connected to your PC and that the unit is powered. Launch the ALBA software.
- Select *Setup and Go* from the *Investigator* menu.
- Click the General Tab and make the following selections as shown below: Live, Both, Continuous, 20ms, Smooth data set to 4. When you click the Channels Tab you will see that the software recognizes that the Spirometer is connected to channel 3.





- After you have made your selections click OK.
- The software now directs you to set up the column heading for the Table as shown below. Ensure that the units are l/s and not ml/s - change if necessary.



- Ensure that the unit is held horizontally then click OK. Next click GO to start the experiment. Try to maintain the Spirometer in the horizontal position throughout your experiment.
- Click the Stop icon to end the data capture. The usual graphical and tabular software tools (e.g. zoom, gradient etc) are now available to you.

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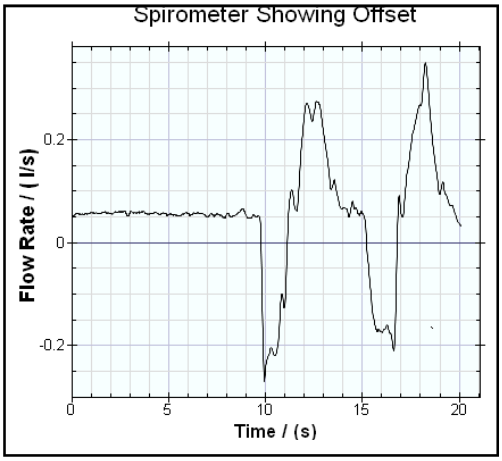
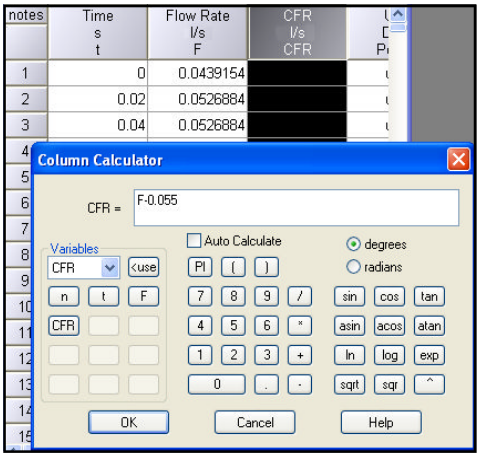
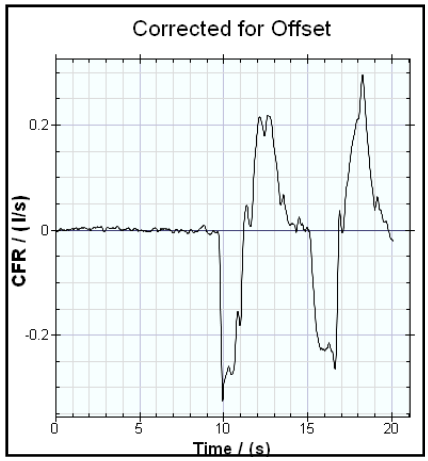
Volume/Time Graph

If you wish to obtain a volume/time graph then you must integrate the flow-rate/time graph. To do this carry out the following steps:

- Set up the spirometer as indicated in the Getting Started section.
- Before clicking OK to start the data capture ensure that the Spirometer is in the horizontal position.
- Let the data capture continue for about 10 seconds without breathing down the tube. Now start your experiment by breathing **in**. A typical graph is shown below.
- Note that when there was no breathing in during the first 10s there was an offset - this is due to the electronics and/or the unit not being horizontal.
- Add a column to your table and using the column calculator subtract the offset from the Flow Rate.
- Label your new column CFR - Corrected Flow Rate
- Draw a CFR/time graph.

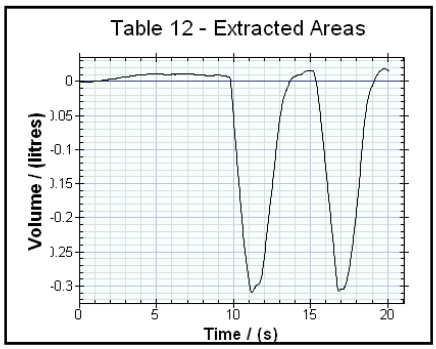






- Click on your new graph to select it and then from the *Graph* menu select *Graph Tools*, *Extract Areas*.
- Select Algebraic and click ok - You are presented with a new Table.
- Select the columns in this new Table and draw a Quick Graph.

notes	Time s t	Volume litres V	Use Data Points
1	0	0	use
2	0.02	-0.000133962	use
3	0.04	-0.000180194	use
4	0.06	-0.000226425	use
5	0.08	-0.000272656	use
6	0.1	-0.000318888	use
7	0.12	-0.000365119	use
8	0.14	-0.000401603	use
9	0.16	-0.000418591	use
10	0.18	-0.000425831	use
11	0.2	-0.000423323	use



Manual Adjustment of Offset

- Identify the small hole in the handle of the unit.
- Obtain a small screwdriver to fit this hole.
- Setup the software is indicated in the Getting Started section.
- Turn the screw while watching your graph until the trace is along the x-axis.