

## Overview

### Multicolour indicator

Colour corresponds to the sensor channel on the computer screen and flashes when logging

### Stainless steel probe

The Tip is the most sensitive part  
Use within range -10°C to 110°C  
Software offers alternative scales  
*Take care of eyes near probe tip*

### Locking bay

Locks to other uLog sensors

### Single button operation

Press once to start logging  
Press again to mark events  
Press & hold to stop logging



•Sensors can lock together



•Fit direct to stand



•Cable storage



## Getting started with uLog

- 1 **Insert the CD and install SensorLab**  
(see last page for more information)



- 2 **Run SensorLab and plug your uLog sensor into a free USB port**  
You should see live readings from your sensor on the screen



- 3 **Press the uLog button to start logging**  
You should see a graph recording your live readings

- 4 **To mark an event, press the button again**  
You will add a small arrow marker at the top of the graph



- 5 **To stop logging, press and hold the button**  
Your graph will show the complete set of data

**Congratulations, you have recorded your first sensor data using uLog!**

## More with SensorLab

You can use SensorLab to do much more than display live readings and a graph. Just hover the pointer over any icon to see what it does. Full details of all SensorLab functions are in the comprehensive user guide on the CD - here are a few of the extra features you can explore:

- **Change range or calibration of a sensor:** Click the icon above the gauge when you start
- **Change logging type: SensorLab defaults to automatic logging**
- **Switch a sensor display on or off:** Click on gauge display or when graphing click on tick
- **Zoom in on a graph:** Draw a box around where you wish to zoom or click Magnifier icon
- **Take precise readings from graph:** Click on graph & position cursor with mouse or arrows
- **Label different points on the graph:** Click **IA** icon or Graph / Annotate
- **Change SensorLab complexity level:** Click level icon bottom right of screen to increment
- **Find information about the experiment:** Click on the *i* icon
- **To print graph:** Click on the Printer icon or select menu File / Print menu
- **Save SensorLab file onto your computer:** Click Disc icon or use File / Save As menu
- **Export data in a different format for use in another program or share:** File / Export menu

## Using multiple uLog sensors

You can connect several uLog adapters and sensors to the same computer for multi channel logging on the same graph. The multicolour LED on each uLog will show which sensor is displayed on which channel (especially useful if using several sensors of the same type). Note that the number of uLog sensors you can use is dependant on the computers processing power, number of USB ports available and the USB power available (particularly limited on smaller computers). Use a high quality **powered** USB hub to increase both number of USB ports and power capacity. You can move uLog sensors further away from the computer by using a USB extension cable.

## Other SensorLab functions

As well as graphs, SensorLab can also display data from some sensors in different ways.

**Oscilloscope:** Some analogue sensors which respond quickly (such as sound, light, voltage) can also be displayed as a live oscilloscope waveform on your computer screen - to view the output of a sensor as a waveform click the oscilloscope icon on the home screen. You can also store and transfer the screen data onto the normal graph for later analysis.

**Setup:** The setup icon on the home screen (cog wheel) enables you to change the types of logging. You can also select Timing from this option to use with sensors such as Light Gates etc. Full details of the scope & all SensorLab functions are in the comprehensive user guide on the CD.

## Selecting an alternative scale

With the uLog Temperature probe, you can select between Celsius, Fahrenheit or Kelvin. To do this, start the SensorLab software and connect the uLog temperature probe. Then, click on the arrow above the sensor to select which scale is required.

- *Take care to protect eyes, ears etc from accidents with the probe tip*



## Ideas for experiments

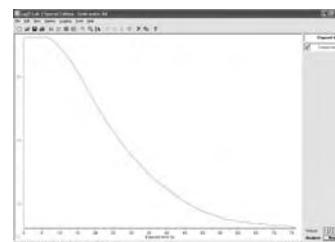
The uLog Temperature probe can be used for a variety of experiments from simple air and soil temperature analysis to chemical reactions.

Below are a few of examples.

### Endothermic reactions

There are a few reactions in Chemistry where energy is absorbed from the surroundings during the reaction. When this happens, the temperature of the reactants drops and an endothermic reaction has taken place. This simple experiment can be used to show the difference between a chemical or physical change. It can also be adapted to become a basic rate of reaction experiment in that you can vary the starting temperature of the water, size and shape of the antacid.

Simply place the uLog temperature probe into a small amount of water, start logging and then drop in an antacid tablet. Observe what happens.

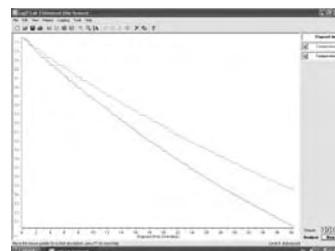


### Keeping warm

A human 'body' keeps warm in all sorts of ways using different materials. This experiment will compare everyday materials and see why some might be used for clothing. It can also show that some materials are better thermal insulators than others.

Obtain 2 small plastic bottles which allow the uLog temperature sensor to be inserted. Wrap one of the bottles in your first test material and then pour in hot water (no hotter than 55°C to prevent scalding).

Insert the uLog probes and start logging. Use other materials and find out which type of material is the best insulator.



### Why do animals huddle?

Often when you see pictures of penguins they are standing close together, huddling. The same behaviour can be found in other animals especially small animals such as mice and woodlice. The question is why? This experiment is designed to investigate why animals, including humans, huddle together. Using a rubber band, place 10 test tubes together and mount them using a stand or similar as shown.

Fill each tube with hot water (no hotter than 55°C to prevent scolding) and insert a uLog temperature probe into the middle tube and an external tube as shown. Start the SensorLab software and observe what happens.



### Further experiment ideas

Full details of these and many other experiments using LogIT probes can be found on the CD supplied with uLog or from [www.logitworld.com](http://www.logitworld.com)

