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Blood Pressure Sensor

Product Number: ENBLD098



Overview

The heart is essentially a pump using pressure to move blood through our circulatory system of veins and arteries. The Blood Pressure Sensor measures the intensity of this pressure on our arteries. While the heart needs pressure to circulate blood, too much can damage the arteries.

Blood pressure readings consist of two parts - the systolic reading which measures pressure as the heart contracts and forces blood through the system and the diastolic, taken when the heart is at rest. The systolic is always the higher of the two readings.

Blood pressure varies from person to person and can be affected by factors such as age, height, gender, and diet.

The Blood Pressure Sensor can be connected to all einstein™ data loggers. It can be used for various Biology experiments.

Typical experiments



Human Physiology

- Measure blood pressure before or after exercising
- See the difference in blood pressure between different age groups and genders
- Investigate how blood pressure changes during the day
- Study how certain foods affect blood pressure

How it works

Blood pressure readings are usually taken from a person's upper arm using a cuff and are expressed in terms of the systolic pressure over diastolic pressure. For example a reading of 120/80 is often generally considered normal.

Sensor specification

Heart Rate

Range: 36 to 200 bpm

Accuracy: 1 bpm

Blood Pressure

Range: 0 to 375 mmHg

Accuracy: ± 3 mmHg

Typical Response Time: 90 seconds

Units: mmHg

Temperature Compensation: 0 °C to 50 °C

Maximum pressure without permanent damage: 1030 mm Hg

Note: sensor cables sold separately

Technical Notes

The Blood Pressure sensor was designed only for educational purposes and should not be used for industrial, medical, or research applications.

Calibration

The Blood Pressure Sensor is shipped fully calibrated.

Data logging and analysis

MiLAB™

1. Take your einstein™ Tablet OR pair your einstein™ LabMate with your Android or iOS tablet via Bluetooth
2. Insert the sensor cable into one of the sensor ports

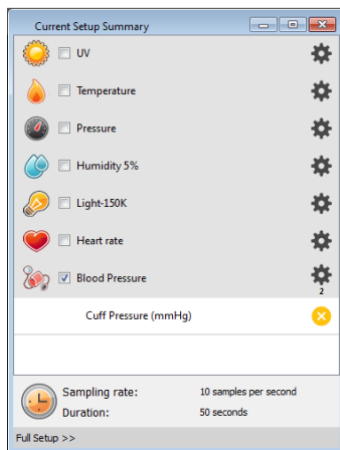
3. Launch MiLAB
4. MiLAB will automatically detect the sensor and show it in the Launcher View



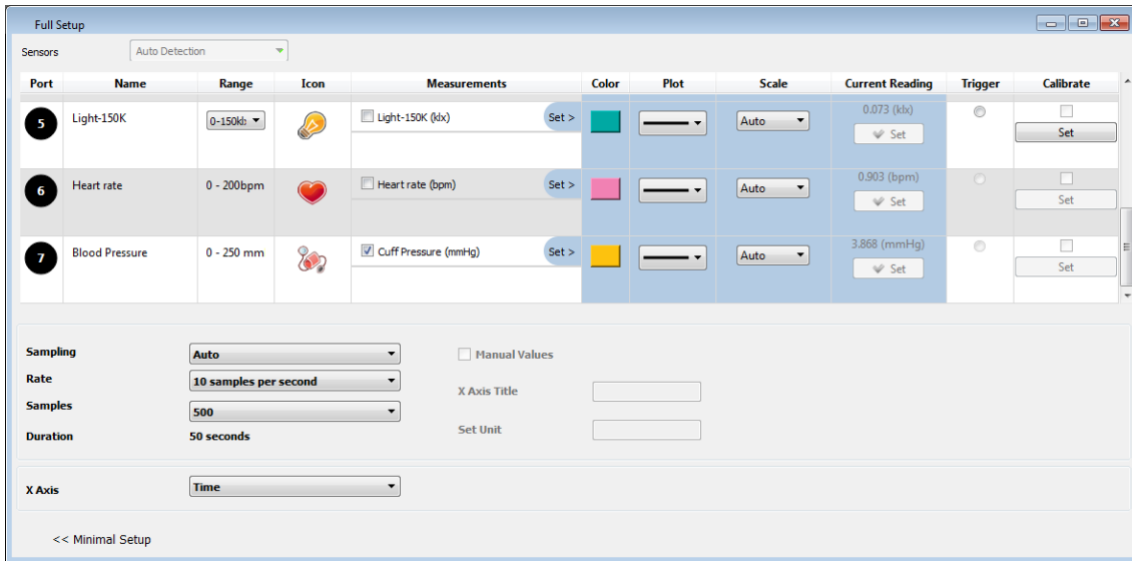
5. Check the icon next to the sensor (✓) to enable it for logging

MiLAB™ Desktop

1. Pair your einstein™LabMate™ with your PC, MAC, or Linux machine via Bluetooth, or connect it via the USB cable (found in the einstein™LabMate™ box)
2. Insert the sensor cable into one of the sensor ports
3. Launch MiLAB
4. MiLAB will automatically detect the sensor and show it in the Current Setup Summary window



5. Click Full Setup, located at the bottom of the Current Setup Summary window to program the data logger's sample rate, number of samples, units of measurement, and other options




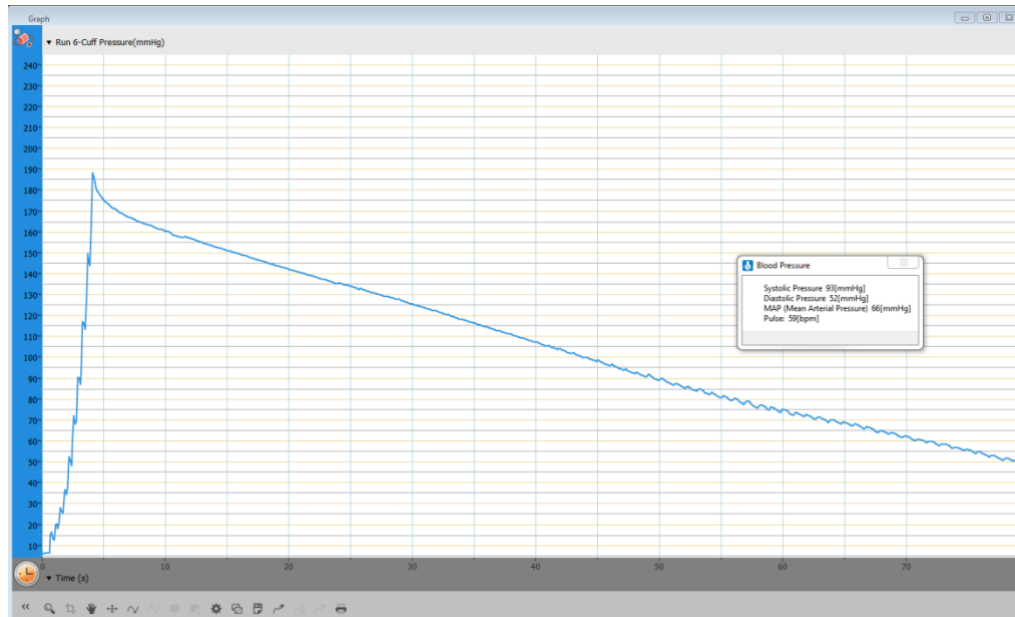
Click the Run button () to start logging

An example of using the Blood Pressure Sensor

1. Set the sample rate :
2. Put the cuff on the upper arm :



3. Click the Run button () to start logging.
4. Pump the cuff till it very tight. Stop pumping and wait until the reading decreases to 50 mmHg. Measurement will stop automatically and a result window will appear:



Note: A video detailing use of the Blood Pressure sensor can be found at:
<https://www.youtube.com/watch?v=bNjZaNpFkw>

Troubleshooting

If the Blood Pressure Sensor isn't automatically recognized by MiLAB, please contact Fourier Education's technical support.

Technical support

For technical support, you can contact the Fourier Education's technical support team at:

Web: www.einsteinworld.com/support

Email: support@fourieredu.com

Copyright and Warranty

All standard Fourier Systems sensors carry a one (1) year warranty, which states that for a period of twelve months after the date of delivery to you, it will be substantially free from significant defects in materials and workmanship.

This warranty does not cover breakage of the product caused by misuse or abuse.

This warranty does not cover Fourier Systems consumables such as electrodes, batteries, EKG stickers, cuvettes and storage solutions or buffers.

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