UVA and UVB Sensor

UVA 315 to 400 nm

UVB 280 to 315 nm

Product Number: ENUVAB063

Overview

The UVA / UVB Sensor measures the intensity of incident UVA and UVB radiation at three different ranges and is ideal for a wide variety of experiments in Physics and the Environmental Science.

The UV sensor can be connected to all types of einstein™ data loggers.

Typical experiments

Physics

- UV protection of clothing
- Investigating the UV variations along a fluorescent tube
- Investigating the invisible light from different sources
- Testing suntan creams and sunglasses
- Investigating the effect of cloud cover on UV measurements
- Compare ultraviolet transmission of various plastics and glasses
- Fluorescent rocks and dyes

Sensor specification

Range UVA:	320nm to 400nm
	1 W/m2
	10 W/m2
	200 W/m2
Range UVB:	280nm to 320nm
	100mW/m2
	1 W/m2
	10 W/m2

Note: sensor cables sold separately

Technical Note

The UVA/B sensor was designed only for educational purposes and shouldn't be used for industrial, medical, or research applications.

Calibration

There are two ways to calibrate the UV sensor – Set as Zero and Two-Point calibration.

Android
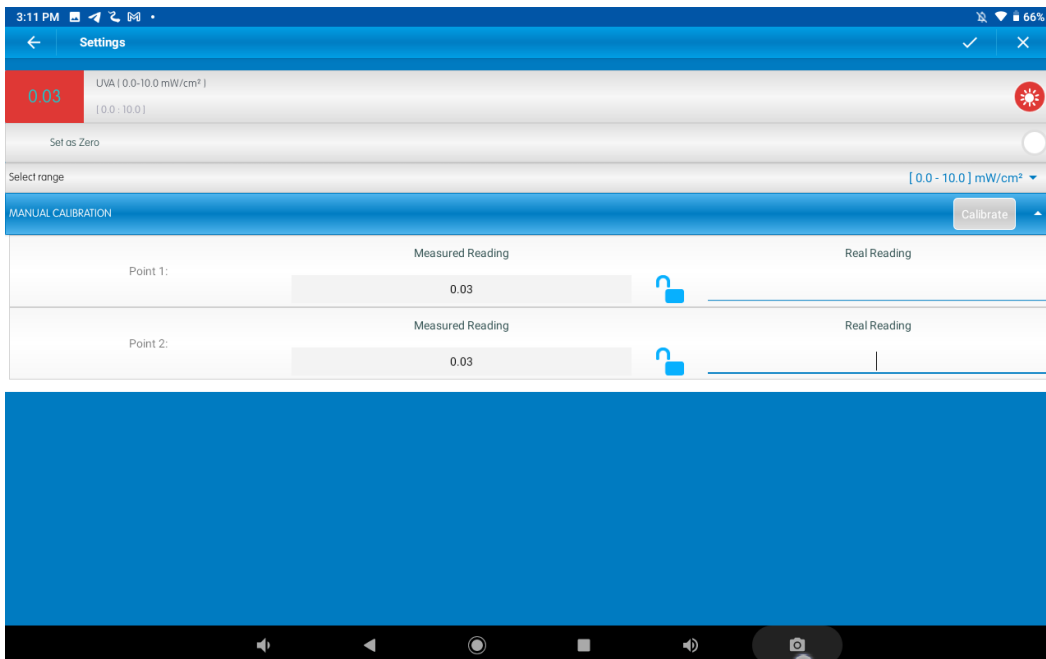1. Tap Sensors
2. Tap the arrow icon

Set Zero Calibration

3.   Tap Set as Zero switch to set the current value as the zero or base value.

Two Point Calibration

3.   Tap Manual Calibration

4. Prepare something with a known value (e.g., 1 W/m^2). Enter this known value in the Point 1, Real Reading field

5. Measure and wait for the readings to stabilize.

6. Tap the lock icon

7. Prepare something with a known value (e.g., 10 W/m^2). Enter this known value in the Point 2, Real Reading field

8. Measure and wait for the readings to stabilize.

9. Tap the Lock icon

10. Tap Calibrate.

Note: For the most accurate results try to calibrate the sensor with one Real Reading under the expected results and one Real Reading over the expected results.
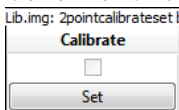
Desktop

Set Zero Calibration

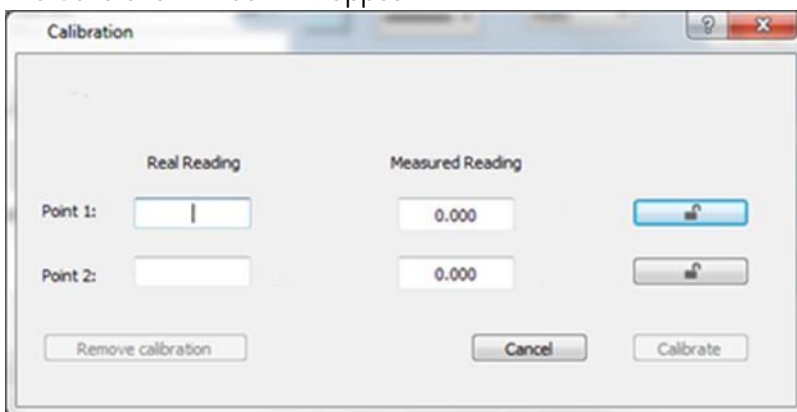In the Current Reading column, click Set to set the current value as the zero or base value.

Reset cancels this action.

Two Point Calibration

1. Go to the Full Setup window and in the Calibrate column click Set

Lib.img: 2pointcalibrateset k

Calibrate
☐
Set

2. The Calibration window will appear

3. Prepare something with a known value (e.g., 1 W/m^2). Enter this known value in the Point 1, Real Reading field

4. Measure and wait for the readings to stabilize.

5. Click the Lock icon

6. Prepare something with a known value (e.g., 10 W/m^2). Enter this known value in the Point 2, Real Reading field

7. Measure and wait for the readings to stabilize.

8. Click the Lock icon

9. Click Calibrate

Note:

For the most accurate results try to calibrate the sensor with one Real Reading under the expected results and one Real Reading over the expected results.

Data logging and analysis

Android

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 MiLABEx and then Tap on LAB start an Experiemnt

4. MiLABEx will automatically detect the sensor

5. To Select the sensor you wish to measure with go to Sensors and ensure that the sensor you wish is checked.
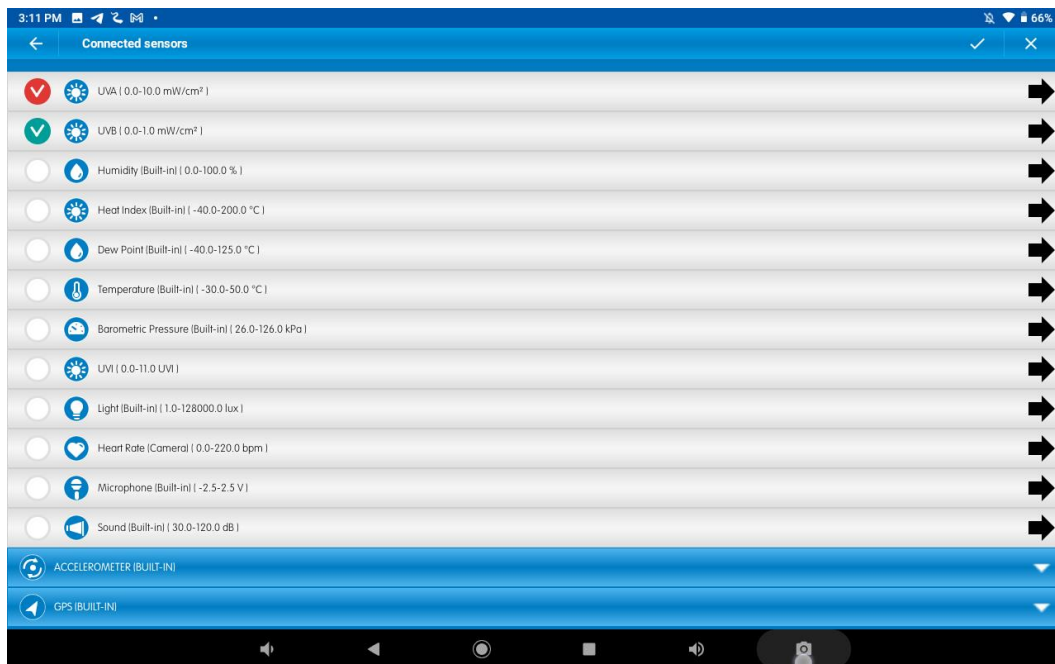

**Note that you can choose measure UVA or UVB or both**

6. To change the range tap on the arrow icon
7. Select the range from the list
8. Tap V to save the settings
9. Tap V to save the sensors and go back to the LAB

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 MiLABEx amd tjem LAB start an experiment

4. MiLABEx™ will automatically detect the sensor and show it in the Current Setup Summary window
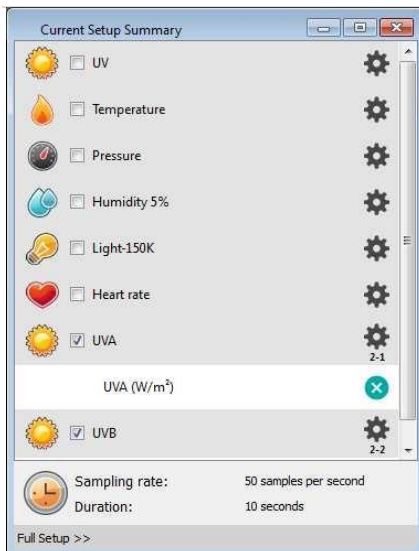
5. Click Full Setup, located at the bottom of the Current Setup Summary window to program the data logger's sample rate, number of samples, units of measurement, and other options
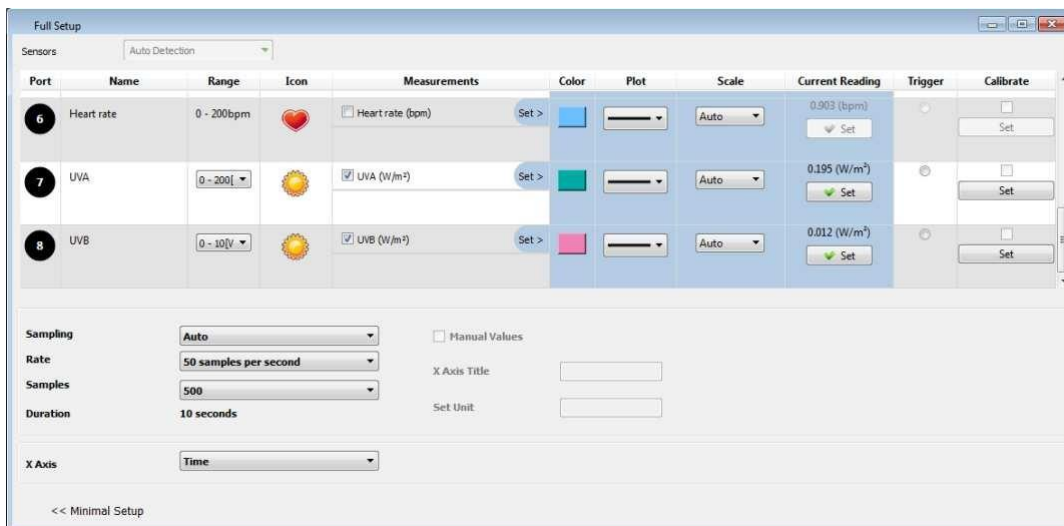

6. minimize the setup
7. you are ready to start an Experiment.

An example of using the UV Sensor

Test Your Sunglasses

Test to see how effective your sunglasses are in protecting against dangerous UV rays.

1. Connect the UV sensor to your einstein™ device.
2. Select the UV sensor
3. Point the sensor at the sun and then press the Run button for thirty seconds
4. Place your sunglasses over the sensor for several seconds then press Stop.
5. Note the difference between the two measurements.
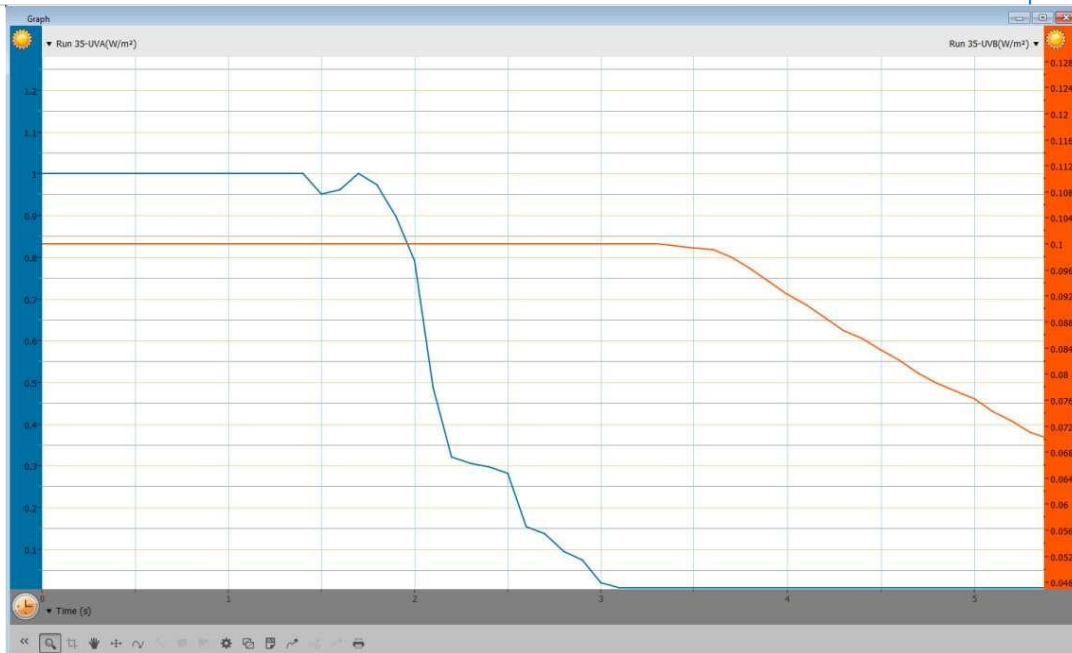
Troubleshooting

If the UV 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 material 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.