PowerLab SENSORS.

PowerLab Sensors Overview

Engage students in active learning in the lab or remotely



PowerLab Sensors make teaching physiology simple and effective with high-performance sampling and streamlined USB connection.

PowerLab Sensors are a purpose-built data acquisition solution for physiology education, compatible with Lt, Lt LabStation, and LabChart 9 software. Our easy-to-use range of sensors enable students to record and analyze their own physiological signals in real time. This active engagement helps students to quickly grasp and understand core physiological concepts.

Effective and flexible

PowerLab Sensors plug directly into the USB port on your computer or PowerLab T1. This offers incredible flexibility for physiology educators and lab staff, enabling any location to be turned into a teaching lab. Together with our software, PowerLab Sensors provides an integrated data acquisition solution that gives students an authentic lab experience.



- Built to last
- Easy to use
- Greater flexibility
- Authentic Lab experience



"Very easy to use — I would 100% recommend PowerLab Sensors for undergraduate physiology."

Dr Mike Gill,
Professional Practice Fellow, Physiology, University of Otago, New Zealand.

ADINSTRUMENTS
making science easier

Combining PowerLab Sensors and Lt

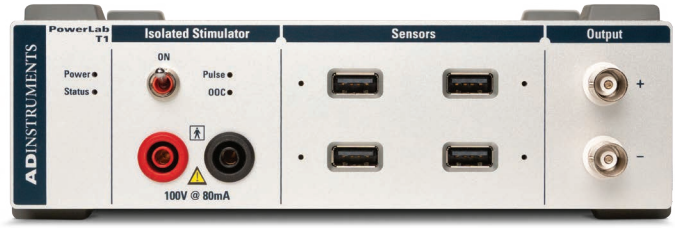
Our Lt content collections have been redesigned to optimize for PowerLab Sensors. More than **90+ modules** are available for use with the sensor range, including a combination of background lesson(s), pre-lab prep(s), and/or lab(s). Students record their own biological signals directly into Lt using PowerLab Sensors, making scientific theory engaging, relevant, and real.

Lt is a fully-customizable lab solution that allows you to:

- Edit **900+** ready-made lessons and labs to suit your curriculum
- Create new labs and lessons from scratch using existing resources
- Record live, authentic biosignals in the lab or use provided example data
- Manage students and staff, including restricting access to labs to specific time periods and granting extensions
- Grade student work via formative and summative assessment

T1 Stimulator PowerLab

PLT1/4



The PowerLab T1 features 4 general-purpose inputs (USB), an isolated stimulator, and analog outputs (non-isolated). The Isolated Stimulator is certified safe for human connection and BF-rated, and can deliver a current of up to 80 mA at 100 V, with duration from 50–200 µs continuous, and a pulse frequency of between 1 pulse per minute and 20 pulses per second.

Biopotential Sensor

SEN2012



Use the biopotential sensor to process a wide variety of biosignals such as ECG/EKG, EMG, EOG, and EEG, as well as high-frequency, low-amplitude animal nerve recordings

Spirometer Sensor

SEN2092



The spirometer sensor employs a pressure sensor that converts the differential pressure across a restriction into an electronic signal.

Finger Pulse Sensor

SEN2021



The finger pulse sensor converts force on the surface of the transducer into an electrical signal that can be recorded in Lt. It is ideal for use in the classroom to study heart rate.

Respiratory Belt

SEN2081



The respiratory belt is designed to measure changes in chest diameter resulting from breathing. The belt produces a linear voltage proportional to changes in length.

Push Button Switch

SEN2161



The Push Button Switch is a momentary action switch that can be used to provide triggering, timing or marker signals (2.5 V Output).

Grip Force Sensor

SEN2041



Students can apply force to the metal bars of this pre-calibrated ready-to-use strain gauge based isometric dynamometer with a linear response in the 0-800 N range.

Cardio Microphone

SEN2061



The cardio microphone accurately converts heart sounds (mechanical vibrations) into electrical signals via an electric (condenser) microphone device.

Skin Temperature Sensor

SEN2071



Skin temperature sensors are specifically designed for continuous temperature monitoring using the skin as an indicator of body temperature.

Force Sensors

SEN2101 (50 g)
SEN2111 (500 g)



Low-cost, strain gauge based force sensors, suitable for measuring muscle contractions or similar forces such as in isolated tissue-organ bath experiments in teaching applications.

Tendon Hammer

SEN2031



Tendon hammers can be used to stimulate muscle spindles which elicit muscle contractions. Tendon hammers also provide triggering, timer, or marker signals.

Blood Pressure Sensor

SEN2051



Demonstrate blood pressure measurements in a lecture, tutorial, or practical class with this phygmomanometer, which is coupled to a pressure transducer.

ECG 12 Lead Switch Box

SEN2141



The ECG 12 Lead Switch Box allows for the mechanical selection of standard lead configurations using 10 standard lead wires.

Goniometer

SEN2151



Our electronic goniometers are bipolar joint angle sensors for single degree of freedom joints, eg., the knee or elbow, used for a range of medical, anatomical and physiological applications.

GSR Sensor

SEN2131



A fully isolated galvanic skin response (GSR) amplifier with low voltage, 75 Hz AC excitation and automatic zeroing.

PowerLab Sensor Bundles

PowerLab Sensors can be purchased individually, or in our Core or Advanced bundles.



Core Bundle PSB002

The Core PowerLab Sensors Bundle enables you to investigate a wide range of biological signals. It contains six sensors, a PowerLab T1, as well as accessories and consumables needed for data acquisition across many of our human physiology labs.

Products included:

- PowerLab T1
- Finger Pulse Sensor
- Skin Temperature Sensor
- Respiratory Belt
- Biopotential Sensor
- Grip Force Sensor
- Tendon Hammer

Labs and Signals in Lt*:

19 Human Physiology DAQ labs, 10 signals

** Available lab content in Lt LabStation and LabChart may differ*



Advanced Bundle PSB003

The Advanced PowerLab Sensors Bundle enables you to investigate all of the biological signals we offer. It contains nine sensors, a PowerLab T1, as well as the necessary accessories and consumables for data acquisition across our human physiology labs.

Products included:

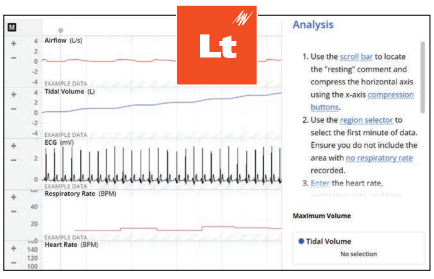
- PowerLab T1
- Finger Pulse Sensor
- Skin Temperature Sensor
- Respiratory Belt
- Cardio Microphone
- Biopotential Sensor
- Grip Force Sensor
- Tendon Hammer
- Blood Pressure Sensor
- Spirometer Sensor

Labs and Signals in Lt*:

27 Human Physiology DAQ labs, 13 signals

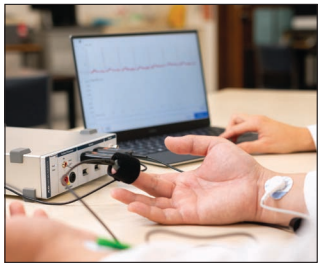
** Available lab content in Lt LabStation and LabChart may differ*

Creating a custom education system is easy:



Active learning software

+



Content Collections

+



PowerLab Sensors (Bundles, kits, or individual sensors)

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