

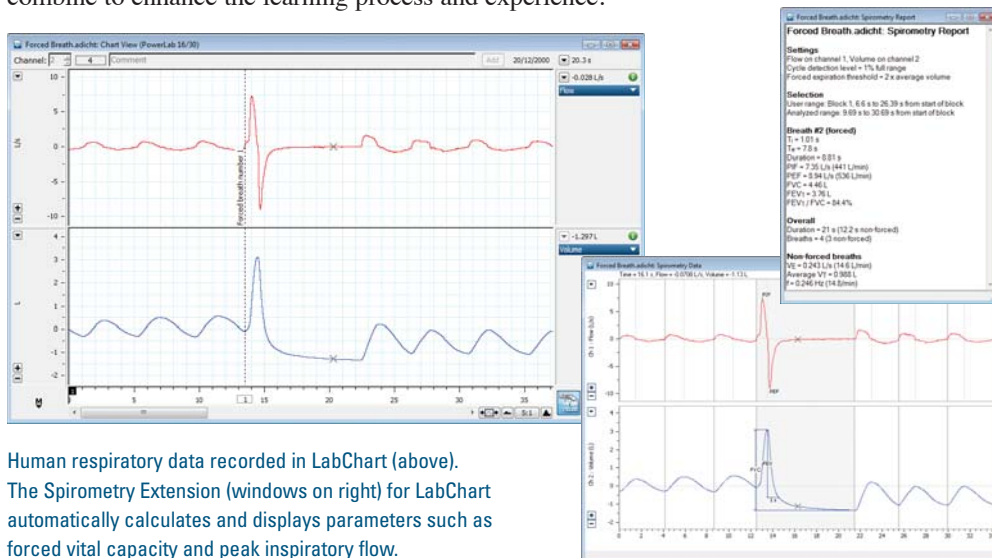
# PowerLab® LabChart® Teaching Systems

## Research-Grade Solutions at Life Science Education Prices



ADInstruments teaching systems provide flexible teaching and learning tools for today's life science laboratories. At the core of the PowerLab LabChart Systems is the renowned PowerLab data acquisition unit with LabChart and LabTutor® software. The powerful and easy-to-use systems allow students to record and analyze data in a wide range of life science experiments including physiology, sports science, biology, psychophysiology and pharmacology. This makes them the preferred system for any classroom setting – from introductory through to advanced curricula.

Experiment setup is quick and straightforward. With the robust, reliable hardware and intuitive software, students can concentrate on the science rather than the equipment. These user-friendly tools develop students' practical skills, promote scientific curiosity and independence, and combine to enhance the learning process and experience.



### Features & Benefits

- Durable, reliable, easy-to-use data acquisition systems
- Suitable for all teaching levels
- Includes easily customized teaching materials
- Wide choice of complete systems for life science classroom curriculums
- Options available for remote student access to experiment data and online submission
- For use with the latest Mac and Windows operating systems and computers

### Quality & Safety

PowerLab systems are manufactured under the ISO 9001:2008 certified quality management system and have a three year warranty.

PowerLab systems meet the European EMC directive, which is equivalent to the FCC Class B standard in the United States.

All biopotential signal conditioners are approved to the IEC 60601-1 patient safety standard, making them safe for use with human subjects.



# Teaching Systems

## 26 Series Teaching Systems



ML826 PowerLab 2/26  
(supplied with LabChart)



ML846 PowerLab 4/26  
(supplied with LabChart)

These units contain either 2 or 4 inputs with two independent analog outputs.

### Features include:

- Software selectable gain ranges
- 100 000 samples per second per channel
- Low pass filters (1 Hz to 2 kHz)
- Adaptive mains filter
- USB interface
- For use with Windows or Mac OS
- Anti-aliasing filter
- LabChart software






















## PTB4262 Intermediate Teaching System

The Intermediate Teaching System features the PowerLab 26T, which is ideal for measuring cardiovascular signals (ECG, pulse, blood pressure), muscle responses (EMG) and breathing.



ML4856 PowerLab 26T with human approved dual bio amp, low-voltage and human isolated stimulator, trigger and two to four general-purpose inputs. (Supplied with LabChart and LabTutor)

-  MLT1010/D Pulse Transducer
-  MLT1132/D Respiratory Belt Transducer
-  MLT1100/D Sphygmomanometer
-  MLA92/D Push Button Switch
-  MLA2540 5 Lead Shielded Bio Amp Cable
-  MLA2505 Shielded Lead Wires
-  MLA700 Reusable ECG Electrodes
-  MLA1010 Disposable ECG Electrodes
-  MLAWBT9 EEG Flat Electrodes
-  MLA1093 Abrasive Gel
-  MLA1090 Electrode Cream
-  MLA1095 Electrode Paste
-  MLAYDG Dry Earth Strap
-  MLA1250 Headphones
-  MLT004/ST Grip Force Transducer
-  MLADDF30 Stimulating Bar Electrode
-  MLT201 Cardio Microphone
-  MLA1094 Alcohol Swabs
-  MLAC22 BNC to DIN Smart Adapter (2)

# Teaching Systems

## PTB4263 Advanced Teaching System





The Advanced Teaching System features a PowerLab 26T which is ideal for conducting human cardiovascular (ECG, pulse, blood pressure), muscle (EMG) and nerve responses as well as respiratory experiments.



ML4856 PowerLab 26T with human approved dual bio amp, low-voltage and human isolated stimulator, trigger and two to four general-purpose inputs. (Supplied with LabChart and LabTutor)

- MLT1010/D Pulse Transducer
- MLT1132/D Respiratory Belt Transducer
- MLT1100/D Sphygmomanometer
- MLA92/D Push Button Switch
- MLA2540 5 Lead Shielded Bio Amp Cable
- MLA2505 Shielded Lead Wires
- MLA700 Reusable ECG Electrodes
- MLA1010 Disposable ECG Electrodes
- MLAWBT9 EEG Flat Electrodes
- MLA1093 Abrasive Gel
- MLA1090 Electrode Cream
- MLA1095 Electrode Paste
- MLAYDG Dry Earth Strap
- MLA1250 Headphones
- MLT004/ST Grip Force Transducer
- MLADDF30 Stimulating Bar Electrode
- MLT201 Cardio Microphone
- MLA1094 Alcohol Swabs
- MLAC22 BNC to DIN Smart Adapter (2)

### PTK10 Human Respiratory Kit

-  ML311 Spirometer Pod
-  MLT1000L Respiratory Flow Head
-  MLA1011A Clean Bore Tubing & Adapter
-  MLA145 Student Respiratory Kit (5 sets)

## PTB4264 Ultimate Teaching System

The Ultimate Teaching System contains all of the items included in the PTB4263 with the addition of the PTK19 Nerve and Muscle Kit II. This extends the experiment list to include studies using isolated animal tissue.









ML4856 PowerLab 26T with human approved dual bio amp, low-voltage and human isolated stimulator, trigger and two to four general-purpose inputs. (Supplied with LabChart and LabTutor)

- MLT1010/D Pulse Transducer
- MLT1132/D Respiratory Belt Transducer
- MLT1100/D Sphygmomanometer
- MLA92/D Push Button Switch
- MLA2540 5 Lead Shielded Bio Amp Cable
- MLA2505 Shielded Lead Wires
- MLA700 Reusable ECG Electrodes
- MLA1010 Disposable ECG Electrodes
- MLAWBT9 EEG Flat Electrodes
- MLA1093 Abrasive Gel
- MLA1090 Electrode Cream
- MLA1095 Electrode Paste
- MLAYDG Dry Earth Strap
- MLA1250 Headphones
- MLT004/ST Grip Force Transducer
- MLADDF30 Stimulating Bar Electrode
- MLT201 Cardio Microphone
- MLA1094 Alcohol Swabs
- MLAC22 BNC to DIN Smart Adapter (2)

### PTK10 Human Respiratory Kit

### PTK19 Nerve and Muscle Kit II

-  MLTF500/ST Teaching Force Transducer
-  MLA0320 Animal Nerve Stimulating Electrode
-  MLA1605 Shielded Lead Wires
-  MLA013 Muscle Holder
-  MLA40 Manipulator & Stand
-  MLT016/B Nerve Chamber with Cables



# Teaching Systems

## PTB4265 Psychophysiology Teaching System

The Psychophysiology Teaching System offers a PowerLab 26T, with signal conditioners and transducers specifically configured for psychophysiology experiments.



ML4856 PowerLab 26T with human approved dual bio amp, low-voltage and human isolated stimulator, trigger and two to four general-purpose inputs. (Supplied with LabChart and LabTutor)

## PTB266 Neurobiology Teaching System

The Neurobiology Teaching System includes the PowerLab 4/26, as well as amplifiers and headstage required for intracellular and extracellular electrophysiology recordings.



ML846 PowerLab 4/26 is a four channel data acquisition system with four BNC or Pod Inputs, trigger and low-voltage stimulator. (Supplied with LabChart)

- |  |           |  |
|--|-----------|--|
|  | FE116     | GSR Amp with MLT116F finger electrodes |
|  | ML309     | Thermistor Pod                         |
|  | MLT1010/D | Pulse Transducer                       |
|  | MLT1132/D | Respiratory Belt Transducer            |
|  | MLT422/A  | Skin Temperature Probe (2 m)           |
|  | MLA2540   | 5 Lead Shielded Bio Amp Cable          |
|  | MLA2505   | Shielded Lead Wires                    |
|  | MLADDF30  | Stimulating Bar Electrode              |
|  | MLA700    | Reusable ECG Electrodes                |
|  | MLA1010   | Disposable ECG Electrodes              |
|  | MLAWBT9   | EEG Flat Electrodes                    |
|  | MLAYDG    | Dry Earth Strap                        |
|  | MLA92/D   | Push Button Switch                     |
|  | MLA1093   | Abrasive Gel                           |
|  | MLA1090   | Electrode Cream                        |
|  | MLA1095   | Electrode Paste                        |
|  | MLA1094   | Alcohol Swabs                          |
|  | MLAC22    | BNC to DIN Smart Adapter (2)           |

- |  |          |                           |
|--|----------|---------------------------|
|  | MLT016/B | Nerve Chamber with Cables |
|  | MLA285   | Differential Pod          |
|  | MLA270   | Stimulator Cable          |
|  | AM3100   | Intracellular Amplifier   |
|  | AM3000H  | Differential Amplifier    |
|  | MLA015   | Alga Chamber              |

PowerLab LabChart Teaching Systems\* are supplied with:

- LabChart Software
- LabChart Teaching Experiments for Windows and Macintosh operating systems
- The LabTutor Software Suite, including LabTutor Server for centralized course and data management, and LabAuthor Software for experiment editing and creation
- LabTutor Experiments: Human, Animal, Exercise Physiology, Biology, Pharmacology, Psychophysiology, Nursing, Medical Laboratories and Problem Based Learning

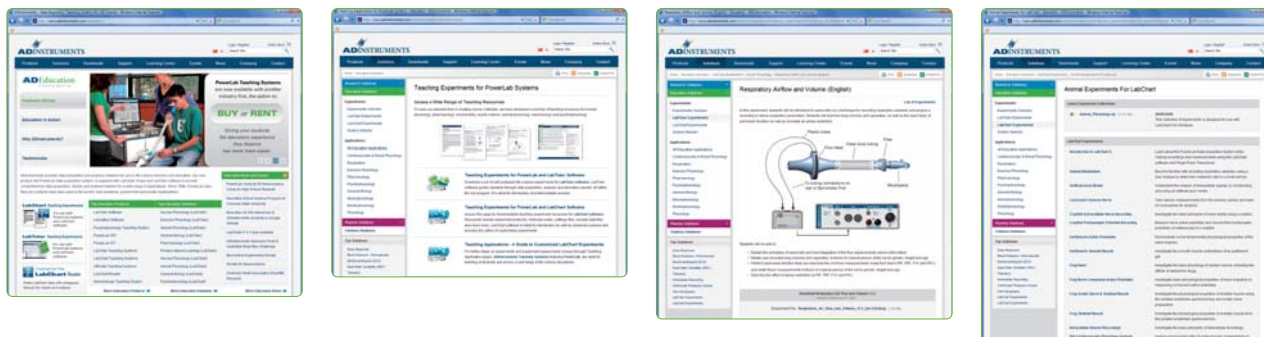
\* Systems PTB4262, PTB4263, PTB4264 and PTB4265



# Teaching Resources

[www.ADIstruments.com/education](http://www.ADIstruments.com/education)

Use this one-stop location for materials and ideas that will help prepare your life science laboratory courses. Browse through the latest equipment and software options, download ready-to-use experiments, read PowerLab teaching case studies and get the most from your ADInstruments Teaching System.



## LabChart Experiments

LabChart experiments allow students to use research-grade software in a structured and easy-to-follow manner. Each experiment contains all the information you and your students need to perform a series of data acquisition and analysis exercises using ADInstruments Teaching Systems with LabChart software. Each experiment includes:

- **Instructor guides:** hardware and software hints, additional exercises and lab report answers
- **Student protocols:** documents containing objectives, background information and step-by-step experimental instructions
- **Settings files:** configured LabChart or software files with selected software and hardware settings; students simply open files and start recording
- **Sample data files:** examples of acquired experimental data
- **Lab reports:** laboratory reports with questions and exercises for students to complete

Pre configured LabChart teaching experiments are available for human and animal physiology, biology and psychophysiology, and can be easily customized to suit individual course requirements if necessary.

## LabTutor Experiments

LabTutor experiments integrate background scientific information and experimental protocols with real-time data acquisition in a single software interface. The functions of a chart recorder, digital oscilloscope, spreadsheet, graph generator and other presentation tools are combined into one seamless laboratory experience. Students follow protocols, record data, analyze recordings, complete laboratory reports and submit their work from a single engaging software interface. New LabTutor experiments are released regularly and are available to download from our website.

**LabAuthor** provides easy-to-use software tools for creating and editing LabTutor experiments. You can make changes to any preconfigured LabTutor experiment, or create a new experiment to suit your students' abilities, your laboratory classroom's facilities and your curriculum's learning outcomes.

## Remote & e-Learning Options with LabChart Reader & LabTutor Online

Educators using both LabChart and LabTutor can provide their students with remote access to experimental data. This allows you to boost your course's online learning content, and set analysis and reporting tasks as home assignments.

**LabChart Reader** software is available as a free download from our website. It allows students to open and analyze LabChart data files from any computer on campus or at home. Educators can upload sample data files to course websites or online learning portals for analysis, revision or discussion, or ask students to take their own data home via email or portable disk.

**LabTutor Online** provides students with access to their LabTutor experiments and data for pre-lab review and post-lab analysis, reporting and submission activities. Students can access LabTutor Online from any computer with an internet connection and Flash-enabled browser. Speak to your ADInstruments representative about the LabTutor Online starter pack.



**"How can I import LabChart data into LabAuthor?"**

Find the answer to this and other questions on our [Software Forum](http://www.adinstruments.com/forum) – [www.adinstruments.com/forum](http://www.adinstruments.com/forum)

# Teaching Kits

Each Teaching Kit extends a Teaching System's experiment range into new subject areas and disciplines.

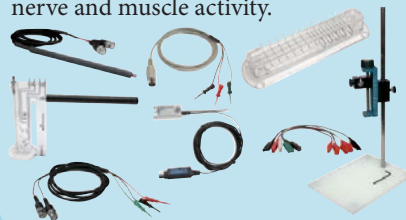
**PTK10 Human Respiratory Kit** Used for measuring respiratory flow and volume.



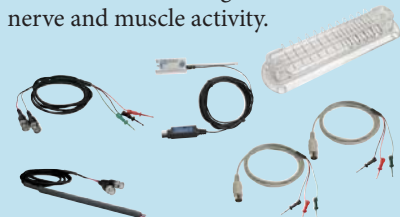
**PTK14 Exercise Physiology Kit** For respiratory gas and metabolic analysis.



**PTK19 Nerve and Muscle Kit II** Allows recording of isolated nerve and muscle activity.



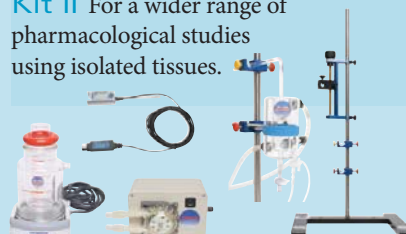
**PTK11 Nerve and Muscle Kit** Allows recording of isolated nerve and muscle activity.



**PTK15 EOG Kit** Configured for recording human eye movements.



**PTK23 Pharmacology Kit II** For a wider range of pharmacological studies using isolated tissues.



**PTK12 Psychophysiology Kit** Measures GSR and skin temperature.



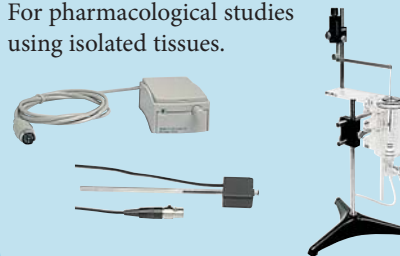
**PTK17 Reflex Kit** Used for stimulating and measuring human reflexes.



**PTK25 Wireless Heart Rate Kit** For recording human heart rate wirelessly.



**PTK13 Pharmacology Kit** For pharmacological studies using isolated tissues.



**PTK18 Biochemistry Kit** For recording pH, oxygen, temperature and volumes.



**PTK26 Stimulus Presentation Kit** Allows stimulus presentation and evoked response experiments.



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PowerLab systems and signal conditioners meet the European EMC directive. ADInstruments signal conditioners for human use are approved to the IEC60601-1 patient safety standard and meet the CSA C22.2 No. 601.1-M90 and UL Std No. 2601-1 safety of medical electrical equipment standards.



**GLP**  
21 CFR Part 11  
Compliance

**ADINSTRUMENTS.com**

ISO 9001:2008 Certified Quality Management System



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