

iWorx[®] Physiology Teaching Kits

iWorx Physiology Teaching Kits have everything you need to make physiology labs exciting, informative and easy. They combine a rugged, economical data recording unit with click-and-play LabScribe software to provide versatile, cost-effective data recording solutions. They also include web-ready iWorx human, animal and psychological physiology courseware and a selection of transducers and accessories needed for typical college-level lab experiments. Both the hardware and the software have been designed especially for teaching. Hardware components are easy to set up and virtually indestructible. LabScribe, a full featured recording and analysis application, actually configures itself for the experiment at hand, and allows a wide range of easy-to-perform analyses.



Web-ready iWorx Courseware.

The iWorx solution starts with dynamic, interactive human, animal and psychological physiology courseware, developed over several years by university teaching professionals. The course materials include more than 50 lab experiments and 180 learning exercises. They're 100% web-ready. You can easily put them on your own course home page, and customize the content to suit your own teaching requirements. Course materials are provided in an easily reproducible printed format, as well as .pdf and HTML files.

The courseware works seamlessly with the LabScribe software. Selecting the group of experiments that come with the standard iWorx physiology lab manual adds over 40 experiments to the Settings menu; choosing any of the experiments automatically loads the display time,

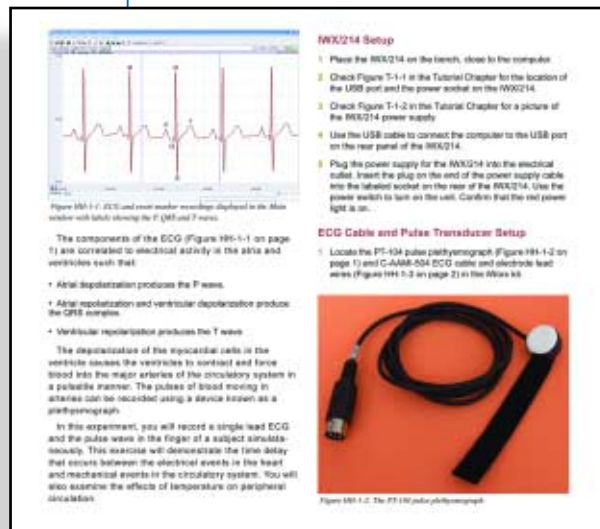
sampling rate, calibrations, analysis functions, and more that are needed to complete the lab. Complete documentation for that lab is automatically called up and displayed in a separate window.

A unique "settings manager" lets instructors attach external resources, such as Web links, .pdf files, movies or illustrations to the experimental settings file and makes them readily available to assist students in the completion of the experiment. Instructors can use the "settings manager" to customize their curricula as well.

Web versions of the laboratory documentation feature professionally rendered, full-color graphics illustrating physiological principals. All of the web materials can be used locally, or placed on the course/department server for general viewing.



iWorx Physiology Teaching Kits are built around professionally-developed, web-ready courseware that includes human, animal and psychological physiology labs.



Human Physiology Labs

- Heart
- Circulation
- Exercise
- Fluid Balance
- Muscles
- Nerves
- Respiration

Animal Physiology Labs

- Cellular Respiration
- Metabolism
- Membrane Properties
- Nerves
- Muscles
- Fluid Balance
- Heart
- Circulation

Psychophysiology Labs

- Brain Waves and Cortical Arousal
- Emotion and Skin Conductance
- Cognition and Skin Conductance
- Biofeedback
- Vagal Tone
- Cynicism and Hostility

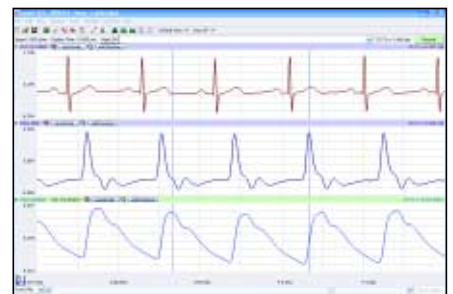
LabScribe makes even sophisticated experiments "click and play" easy.

LabScribe has been developed from the ground up for classroom teaching, and strikes an ideal balance between flexibility and simplicity. Setup of gains, sampling rates, display times and other criteria is automatic via the "settings" file. No complicated adjustments are needed. Users can easily control the various aspects of recording through dialogue windows and save their preferences for future use. In Manual mode, the user has control of all aspects of the recording.

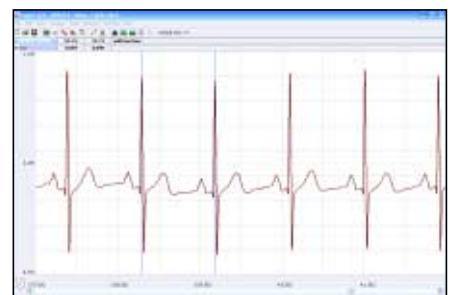
LabScribe includes its own function generator/stimulator for maximum experiment versatility. Easy-to-use tools let the student make measurements from the data with a minimum of manipulation. For example, LabScribe can display the Mean, Min, Max, Duration and Amplitude of a selection, or it can display the Rate or Integral of incoming signals in real time. Incoming voltages can be easily converted to real units such as pH or mmHg. And, of course, built-in online help is instantly available.

Recorded data is presented as distance-per-unit of time, e.g., cm/sec, exactly as it would be on a traditional paper chart recorder. Using the built-in annotation feature, students can even "write" on the virtual chart recording to quickly locate regions of interest.

For convenience, professional-looking LabScribe reports can be prepared and edited, all within the program's own Journal. If desired, the pictures and text in the Journal can be easily exported to other programs.



LabScribe is a comprehensive, data recording and analysis solution developed especially for classroom use. It's easy to use, yet offers a full range of features for human, animal and psychological physiology teaching.



LabScribe's Analysis window lets you zoom in on specific areas of the recording and perform calculations on selected pieces of the data.

iWorx 214 Data Recorder

This rugged, reliable 4-channel data recording unit is engineered to take years of classroom use and abuse. It is constructed of extruded aluminum, with a minimum of student-accessible controls and adjustments. For most applications, setup is automatic and transparent to the user. From within the software the unit can be configured for EEG, EMG (EOG) or ECG. The iWorx 214 includes a dual-channel biopotential amplifier approved for use on human subjects. Two additional channels accept practically any sensor you're likely to encounter, as well as voltage output of pH meters, spectrophotometers and



other laboratory devices. The iWorx 214 also provides a fully functional built-in stimulator useful for a variety of human and animal labs.

The recorder interfaces to a PC or MAC via a USB connection which provides aggregate sampling at 100 kHz continuous, more than fast enough for just about any teaching experiment.

Specifications

Analog Inputs:	2 isolated differential biopotential / 2 single-ended 2 differential transducer Inputs
Input Range:	$\pm 5V$
Excitation Voltage:	$\pm 5V$
Input Impedance:	10 Gohm
Amplifier Response:	0–2kHz
Analog Output:	1 (differential)
Output Range:	$\pm 5V$
Output Current:	5mA
Output Resolution:	12 Bit
ADC Resolution:	16 Bit
System Noise:	± 1 LSB ($< 1mV$)
Sampling Rate:	100,000 samples/sec aggregate continuous
Trigger	1 (TTL)
Biopotential Amplifier:	Safe for use on human subjects; includes optically isolated input and AAMI input cable
Stimulator Output:	$\pm 5V$ (accessories available to increase Stimulator output to 100V)

System Requirements

The iWorx Physiology Teaching Kits require either a Pentium level computer running Windows 98, ME, 2000, or XP, or a Macintosh computer running OSX. In either case the computer must have at least 512 megabytes of RAM, and at least 10 megabytes of free space on the hard drive.



All necessary transducers, cables and connectors are included in a rugged storage and carry case that keeps everything in its place and ready for use.

Complete Package— Everything Included

iWorx Physiology Teaching Kits are shipped with all transducers, cables, accessories, and manuals needed for the labs in the selected group—everything designed to work together. The transducers are extremely robust and carry the same three-year warranty as the iWorx 214 Data Recorder.

Warranty and Upgrades

iWorx Physiology Teaching Kit comes with a 3-year warranty. Software upgrades are free, and are automatically delivered to registered users via e-mail and can be easily downloaded from the iWorx users area.

LabScribe software and courseware may be freely distributed to students.

Ordering Information

Part No.	Description
HK/214	<p>Advanced Human Physiology Kit includes:</p> <ul style="list-style-type: none">■ iWorx 214 Four Channel Computer Interface with Built-In Two Channel Isolated Bioamplifier and LabScribe Recording Software■ Spirometer with 300 Liter Flow Head■ Hand Dynamometer■ Pulse Plethysmograph■ Event Marker■ Temperature Sensor■ Non-Invasive Blood Pressure Transducer and Stethoscope■ 150 Pre-Gelled Ag/AgCl Electrodes■ 12VDC GND. Power Supply■ Cables■ Printed, HTML and PDF Lab Manual
AHK/214	<p>Advanced Animal and Human Physiology Kit includes:</p> <ul style="list-style-type: none">■ iWorx 214 Four Channel Computer Interface with Built-In Two Channel Isolated Bioamplifier and LabScribe Recording Software■ Spirometer with 300 Liter Flow Head■ Hand Dynamometer■ Pulse Plethysmograph■ Event Marker■ Temperature Sensor■ Force Transducer■ Displacement Transducer■ Nerve Bath Chamber with stimulating/recording Electrodes■ Intracellular Probe■ Oxygen Electrode with Current-to-Voltage Adapter■ Non-Invasive Blood Pressure Transducer and Stethoscope■ 150 Pre-Gelled Ag/AgCl Electrodes■ 12VDC GND. Power Supply■ Cables■ Dissection Kit■ Printed, HTML and PDF Lab Manual
PK/214	<p>Psychological Physiology Kit includes:</p> <ul style="list-style-type: none">■ iWorx 214 Four Channel Computer Interface with Two Built-In Isolated Biopotential Amplifiers■ Pulse Plethysmograph■ Event Marker■ Temperature Sensor■ Non-invasive Blood Pressure Transducer■ Reusable Button Electrodes■ Galvanic Skin Response Amplifier■ Cables■ 12VDC GND. Power Supply■ 150 Pre-Gelled Ag/AgCl Electrodes■ Printed, HTML and PDF Lab Manual



Want to learn more?

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