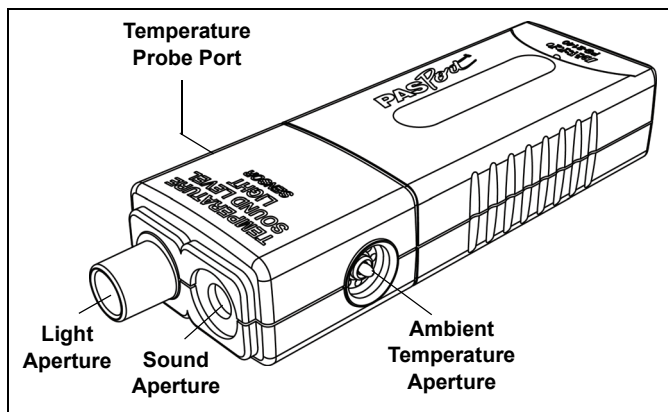


## Temperature/Sound Level/Light Sensor

PS-2140



### Required Items\*

PASCO Interface

PASCO Data Acquisition Software

\*See the PASCO catalog or the PASCO web site at [www.pasco.com](http://www.pasco.com) for more information.

### Recommended Items\*

Stainless Steel Temperature Probe (PS-2153)

Fast Response Temperature Probes (PS-2135)

PASPORT Sensor Extension Cable (PS-2500)

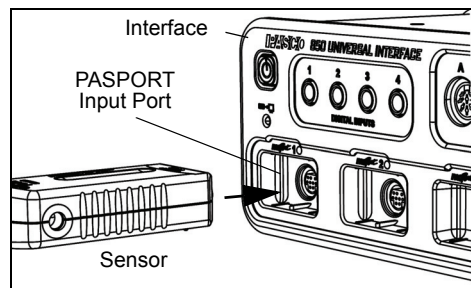
## Introduction

The PS-2140 Temperature/Sound Level/Light Sensor measures ambient temperature, probe temperature, sound level in decibels (dB), and light level (light intensity) in lux (lumens per square meter). Ambient temperature is automatically recorded through the Ambient Temperature Aperture and does not need a temperature probe. Probe temperature refers to the measurement from a probe connected to the Temperature Probe Port on the side of the sensor. Any PASCO temperature probe with a 2.5 millimeter (mm) phone plug can be connected to the temperature probe port.

The sensor is designed to work with a PASPORT-compatible interface (such as the UI-5100 850 Universal Interface) and PASCO data acquisition software (such as PASCO Capstone) to measure charge and voltage.

## Setup the Sensor

- Plug the sensor into one of the PASPORT input ports of a PASCO PASPORT-compatible interface.



NOTE: If more distance is needed between the sensor and the interface, plug the sensor into the included Sensor Extension Cable, and then plug the cable into the interface.

- Start the PASCO data acquisition software.

## Using PASCO Capstone Software

- Click the “Hardware Setup” icon in the Tools palette to open the “Hardware Setup” panel. Confirm that the sensor icon appears with the interface’s icon.
- Click one of the display templates in the Capstone workbook page, or double-click an icon in the “Displays” palette to open a data display.
- Setup the data display to show what is to be measured and the units for displaying the data.

## Using SPARKvue Software

- Connect the sensor to a SPARKvue-compatible interface and start the software. The sensor parameter screen opens and shows the list of measurements for the sensor.
- In the sensor parameter screen, touch the measurement name, and then touch ‘Show’ to open a graph display.
- To change the measurement or the units, touch the “Graph Tools” icon (📊) and then touch the “Display Properties” icon (⚙️).

## Record Data

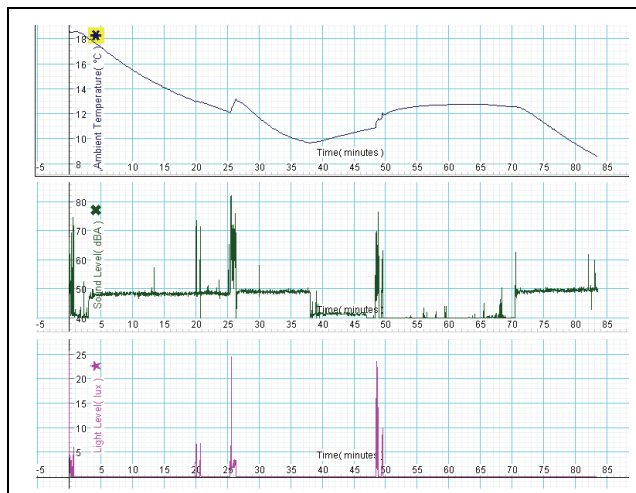
- If needed, press the ZERO button on the sensor.
- Click “Record” or touch ‘Start’ to begin recording data.

**More Information**

For more information about collecting, recording, displaying and analyzing data, refer to the User’s Guide or Online Help System for the data acquisition software.

**Sample Data**

The following graph display shows data for Temperature, Sound Level, and Light Intensity changes inside a refrigerator.



**Specifications**

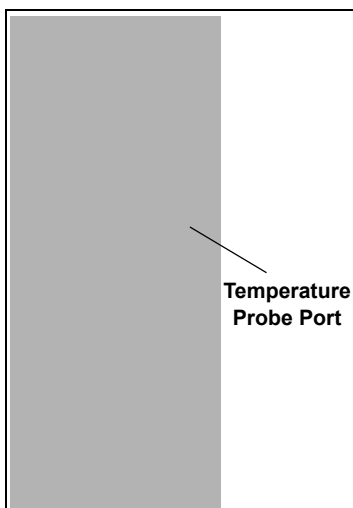
Item	Item
<b>Ambient Temperature:</b> Range: -10° to 50°C Accuracy: ±2°C Resolution: 0.01°C	<b>Light:</b> Range: 0 to 5249 lux Accuracy: ±2 dB Resolution: 0.1 lux
<b>Probe Temperature*:</b> Range: -35°C to 135°C Accuracy: ±0.5°C Resolution: 0.01°C	<b>Sound Level:</b> Range: 40 to 90 dBA Accuracy: ±3 dB Resolution: 0.1 dB

(\*The range, accuracy and resolution of the Probe Temperature measurement will vary with the type of probe connected to the sensor.)

**Sensor Usage**

**Tip:** Do not point the Light Aperture at the Sun for more than a few minutes.

**Tip:** If connecting two or more Temperature/Sound Level/Light Sensors to a multi-port PASCO interface, don’t plug the sensors side-by-side. Placing the sensors too close to each other may block a sensor’s Temperature Probe Port.



**Tip:** When using the Temperature/Sound Level/Light Sensor with a PASCO datalogger for prolonged measurements (more than 55 minutes), ensure that the PASCO datalogger contains new or charged batteries.

**Suggested Applications**

- Studying light absorption, sound acoustics, thermal energy transfer (conduction, convection, and radiation).
- Environmental, greenhouse, and ecological studies.
- Comparing temperature, light, and sound from different electrical devices.

**More Information**

For the latest information about the sensor, visit [www.pasco.com](http://www.pasco.com) and enter “PS-2140” in the Search window.

**Technical Support**

For assistance with any PASCO product, contact PASCO at:

Address: PASCO scientific  
 10101 Foothills Blvd.  
 Roseville, CA 95747-7100

Phone: +1 916-786-3800 (worldwide)  
 800-772-8700 (U.S.)

E-mail: [support@pasco.com](mailto:support@pasco.com)

Web [www.pasco.com](http://www.pasco.com)

**Limited Warranty** For a description of the product warranty, see the PASCO catalog. **Copyright** The PASCO scientific *Instruction Sheet* is copyrighted with all rights reserved. Permission is granted to non-profit educational institutions for reproduction of any part of this manual, providing the reproductions are used only in their laboratories and classrooms, and are not sold for profit. Reproduction under any other circumstances, without the written consent of PASCO scientific, is prohibited. **Trademarks** PASCO, PASCO Capstone, PASPORT, SPARK Science Learning System, SPARK SLS, and SPARKvue are trademarks or registered trademarks of PASCO scientific, in the United States and/or in other countries. For more information visit [www.pasco.com/legal](http://www.pasco.com/legal).

**Product End of Life Disposal Instructions:**

This electronic product is subject to disposal and recycling regulations that vary by country and region. It is your responsibility to recycle your electronic equipment per your local environmental laws and regulations to ensure that it will be recycled in a manner that protects human health and the environment. To find out where you can drop off your waste equipment for recycling, please contact your local waste recycle/disposal service, or the place where you purchased the product.

The European Union WEEE (Waste Electronic and Electrical Equipment) symbol (to the right) and on the product or its packaging indicates that this product must not be disposed of in a standard waste container.

