

# QUICK SHEET

## VERNIER Light Sensor (LS-BTA)

### LOCATION of EQUIPMENT:

Hardware: See lab attendant

Software: Requires handheld Vernier LabQuest 2 unit; see lab attendant

### INSTRUCTIONS FOR USE:

1. Plug sensor into one of the three side analog ports of the handheld unit (Vernier LabQuest 2)
2. The unit will automatically enter the appropriate screen to observe light intensity
  - a. If it does not, press the home button in the bottom right corner of the handheld unit's display, then press the LabQuest App option in the top left corner
3. Light intensity levels will begin to appear on the handheld unit, measured in lux (lx; the SI unit of illuminance: measuring luminous flux per unit area and equal to one lumen per square meter)
4. Use the switch on the box to select the desired lux range:
  - a. The 0-600 lux range is the most sensitive range and is useful for low levels of illumination
  - b. The 0-6000 lux range is a good general purpose range for indoor light levels
  - c. The 0-150,000 lux range is used mainly for measurements outside and in sunlight
5. Point the sensor at the source(s) desired to be measured/observed
  - a. If measuring the overall light intensity level of a space, hold the sensor upright at eye level for the most accurate reading
6. For data logging options, refer to the quicksheet on the Vernier LabQuest 2
7. When done recording/logging, unplug the sensor from the handheld unit

### HELPFUL TIPS:

1. If the reading reaches the maximum for the selected range(s), switch to a less sensitive range
2. If the reading is very small or 0, switch to a more sensitive range

### OVERVIEW:

The Vernier Light Sensor is a light sensor that can be used for measurements of light intensity in a variety of settings. It is capable of recording a range from 0-150,000 lux which makes it useful for all environments. The sensor works by producing a voltage which is proportional to light intensity. The resulting spectral response of the sensor approximates the response of the human eye.

### SUGGESTED APPLICATIONS:

- Studying light intensity in various parts of the interior of a building
- Comparisons between different light intensities of different artificial light technologies
- Conducting solar energy studies
- Experiments involving reflectivity of various materials/surfaces

### RELEVANT TOPICS:

Post-Occupancy Studies, Daylighting Studies, Artificial Lighting Studies, Solar Energy Studies, Reflectivity Studies