

Carbon Dioxide (CO₂)

The CO₂ Gas Sensor measures carbon dioxide concentration in the atmosphere or in an enclosed volume, such as a terrarium. It uses infrared detection to measure the energy absorbed by carbon dioxide molecules and digital signal processing to reduce noise.

Materials List

- 1: Xplorer Datalogger (PS-2000)
- 1: Carbon Dioxide Gas Sensor (PS-2110)
- 1: 250-ml sample bottle







Site Selection

- Sensor range is 0 to 300,000 ppm, with an accuracy of 10% of the value for readings up to 10,000 ppm and an accuracy of 20% of the value for readings up to 50,000 ppm. *Above 50,000 ppm the readings should be used as a qualitative assessment only.*
- ➔ DO NOT use the sensor in liquids, in dusty or windy environments, or in direct sunlight.
- Find a level surface (to place bottle) that is out of the wind and not in direct sunlight.

Sample Preparation

1. Take readings when the non-condensing relative humidity is between 5% and 95% and when temperatures are between 20°C and 30°C. The sensor may operate beyond these ranges, but the accuracy will be reduced.
2. Collect gases in the open sample bottle by keeping the bottle upright with the neck open.

Measurement & Recording

1. Press  to turn on the datalogger and attach the carbon dioxide gas sensor.
2. Insert the sensor with the stopper assembly into the upright sampling bottle. Make sure that the stopper fits snugly.
3. Allow 90 seconds for the sensor to warm up; readings should stabilize. If not, remove sensor, allow fresh air to fill the bottle, and repeat Step 2.
4. Press  to start logging data; wait 15 seconds; press  to stop logging data.
5. Record the time of day, site notes, and CO₂ reading in parts per million (ppm).
- ⊕ *Normal CO₂ levels in fresh air are between 400 and 450 ppm.*
6. Press  to turn off the datalogger.

Clean-up & Completion

1. Unplug the sensor from the datalogger and replace items in the original storage bag(s).