

# LI-COR Biosciences – NCERA-101 Station Report 2021

## **About:**

LI-COR scientists and engineers are closely involved in the scientific community through extensive internal R&D; global collaborations with leading scientists; presentations at scientific conferences, workshops, and seminars; and publishing in leading scientific journals. By maintaining close relationships with academic, governmental, and industrial research institutions, LI-COR develops products that are at the forefront of modern technology for research in the biological and environmental sciences.

## **New Facilities and Equipment:**



**LI-600**



**LI-6800**

The new LI-600 Porometer/Fluorometer is a lightweight, handheld porometer and optional fluorometer that simultaneously measures stomatal conductance and chlorophyll fluorescence of leaves while they are connected to the plant.

The LI-6800 Portable Photosynthesis System characterizes gas exchange and fluorescence and numerous other parameters under controlled chamber conditions of light, temperature, humidity and CO<sub>2</sub>.

## **Accomplishment Summaries:**

### **LI-600 Porometer/Fluorometer**

The LI-600 makes its measurements in 5-15 seconds, allowing you to sweep through your entire greenhouse to make measurements in a very short time. A barcode reader is also built into the device to allow you to scan plants and/or tables that might be coded for quick documentation and metadata of your measurements. The LI-600 also includes computer software for flexible configuration set-up and data streaming. The newest version coming in 2022 facilitates leaf angle and GPS measurements to supplement the dataset.

## LI-6800 Portable Photosynthesis System

The LI-6800 is the only photosynthesis system capable of measuring combined gas exchange and fluorescence from leaves and aquatic samples in a controlled environment. With gas analyzers, temperature response, and the flow path split all located near the chamber, measurements are faster and more precise than ever before.

### **Impact Statements:**

When used together, the two instruments provide highly complementary data. For example, the LI-600 can be used to screen a large population and the LI-6800 can be used to measure selected individuals from that population in greater detail.

## LI-600 Porometer/Fluorometer

- Rapidly Screen up to 200 samples per hour to identify candidates for detailed measurements.
- Measures in ambient conditions.
- Easy to use, basic configuration options.
- Chlorophyll *a* fluorescence in ambient light.

## LI-6800 Portable Photosynthesis System

- Measure detailed physiological and photosynthetic parameters, including light response curves and A/Ci curves.
- Measurements in controlled conditions; capable of multiple independent controls, including light, CO<sub>2</sub>, H<sub>2</sub>O, and temperature
- Sophisticated configuration options in an intuitive graphical interface.
- Chlorophyll *a* fluorescence with controlled light, capable of induction kinetics measurements.

Controlling the inputs/drivers in a system can have significant affects, positive or negative, on plant growth. Measuring the plant's response to these influences is key. Besides plant disease, other indicators of stress arise from lack of water or overheating.

### **Published Written Works:**

Recent Publications utilizing the LI-600 Porometer/Fluorometer and LI-6800 Portable Photosynthesis System together:

Outside of a handful of poster presentations, there has not been a sufficient period of time to produce published peer-reviewed works for both products combined. An internal Application Note details the advantages:

<https://www.licor.com/documents/wcqljhmyd1rwotm0j0ayh5vwd0r41b7q>