

# Single leaf gas exchange with *Arabidopsis thaliana*

Measuring single leaf gas exchange on *Arabidopsis thaliana* with CIRAS-3 can be accomplished using either the 25 mm x 7 mm or 18 mm diameter Head Plate with the PLC3 Universal Leaf Cuvette, with leaves filling the cuvette windows so that the exposed leaf area is known (see photographs). Examples of A vs. PPDF and A vs.  $C_i$  curves are in Figures 1 and 2, respectively. The conditions for growing the plants are important to producing plants with leaves sufficiently large to fill the windows of the cuvette. These plants were grown at 20/14 °C day/night temperatures, with 14 hours per day of light at 1000  $\mu\text{mol m}^{-2} \text{s}^{-1}$  of PPFD from sodium vapor and metal halide lamps. Contrary to common lab practice, *Arabidopsis* thrives at high light. These plants were grown in vermiculite and flushed daily with a complete nutrient solution containing 3.6 mM nitrogen.



Far Left: Measuring single leaf gas exchange on *Arabidopsis thaliana* using the PLC3 Universal Leaf Cuvette and the 25mm x 7mm Head Plate.

Left: Same measurement using the 18mm diameter Head Plate.

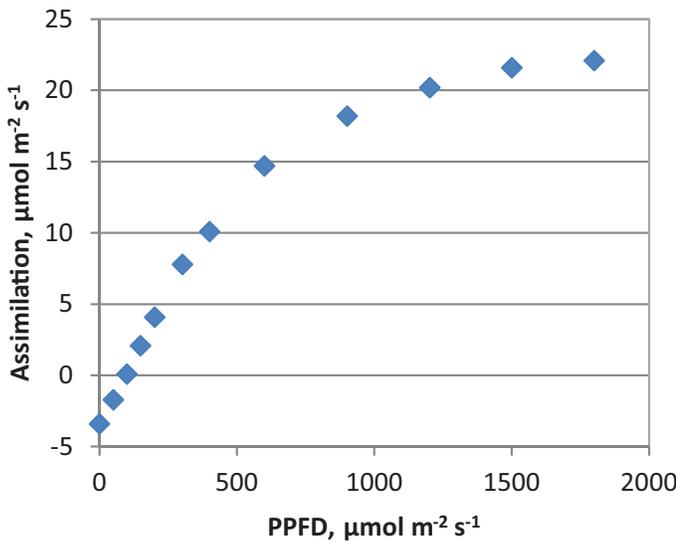


Figure 1: A vs. PPFD

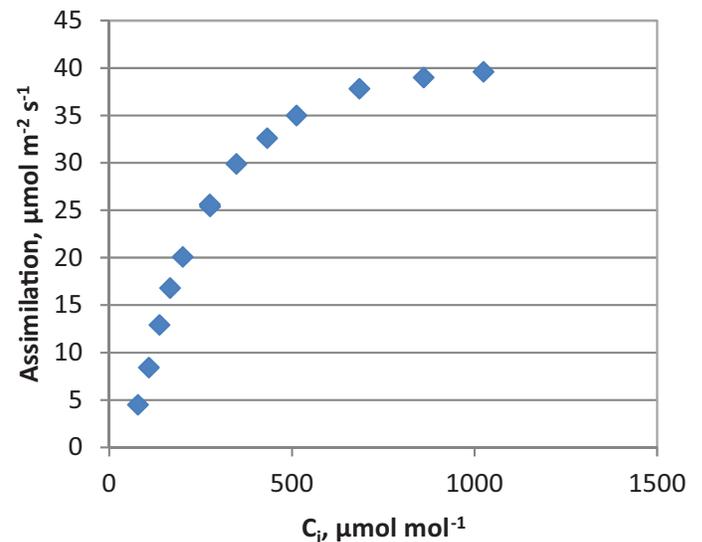


Figure 2: A vs.  $C_i$



If you would like to learn more about this application or speak with one of our experienced technical staff, please feel free to get in direct contact with us via any of the contact information listed below:

110 Haverhill Road, Suite 301  
Amesbury, MA 01913 U.S.A.

Tel: +1 978-834-0505  
Fax: +1 978-834-0545

support@ppsystems.com  
ppsystems.com

- @pp\_systems
- company/pp-systems
- ppsystems.intl
- ppsystemsinc