

# Versatile Chamber



Optimised to allow maximum irradiance through to the sample



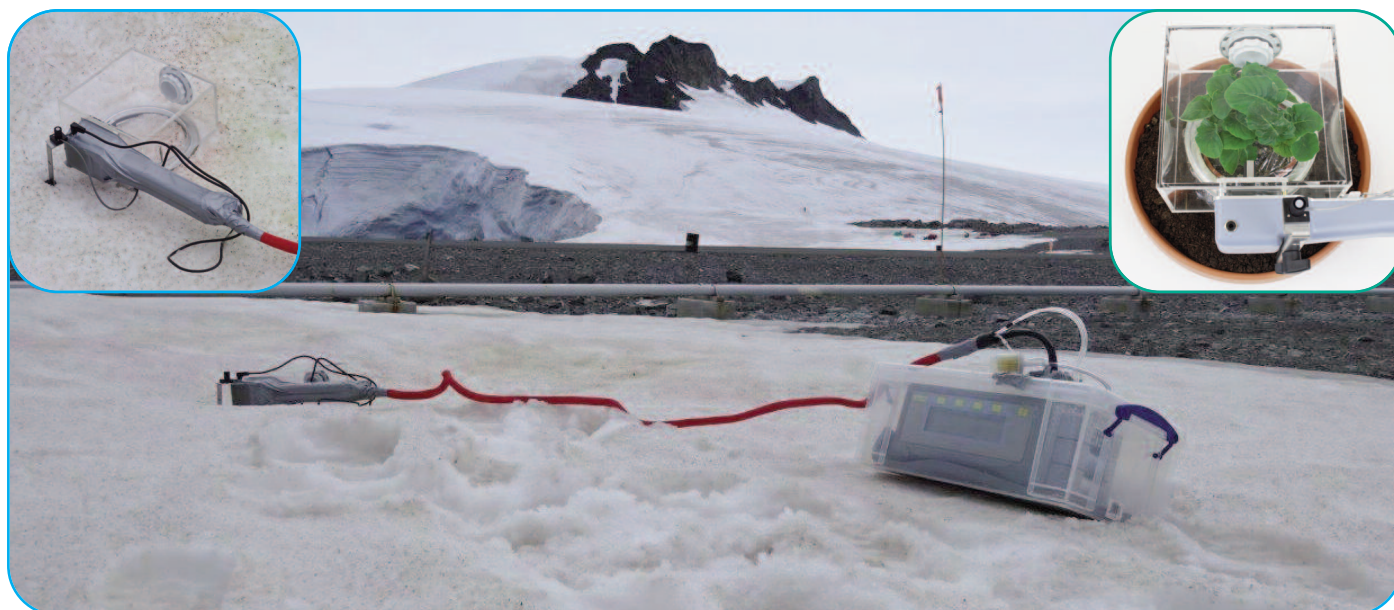
Field rugged chamber, used in the harshest environments

Determine Net Carbon Exchange Rate over soil...or snow

Or photosynthesis of whole, small plants such as *Arabidopsis thaliana*

Even determine microalgal gas exchange in light/dark conditions

Fitting all ADC photosynthesis/soil respiration systems



## New chamber, new applications

We introduce a two-part chamber for use in combination with our **LCi T** or **LCpro T** (also compatible for retro-fitting to earlier systems) for measuring gas exchange over whole, small plants (such as *Arabidopsis thaliana*) or for soil respiration measurements.

Plants can be grown in the sealed pot, or the lower collar can be embedded into soil. Adaptors are available for direct connection to 4" or 6" PVC pipe. For whole plant measurement, a suitable medium must be used to exclude soil respiration interference.

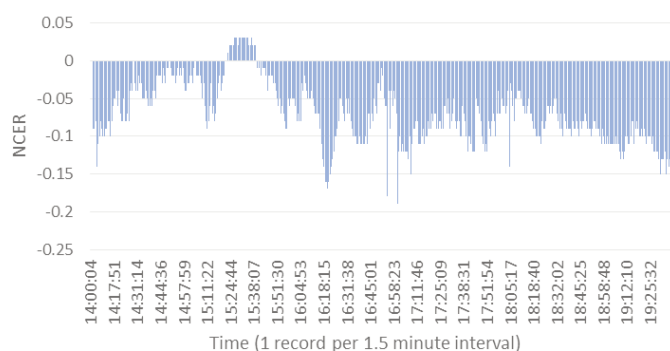
## Tested in Antarctica

Our grateful thanks to Dr. Davey from the University of Cambridge, who used this chamber in Antarctica, fitted to an **LCpro-SD** system, to measure the gas exchange over algae colonies growing in ice and snow.

"After some delay in getting the kit here (Antarctica) due to bad sea ice, I made the first test measurements of the snow algae chamber. It seems to work really well".

"The PAR is good, as is the temperature, it matches our other measurements. The NCER is the right way round ie. negative and then positive when we put the black-out sheet over the chamber. The battery lasts well, after 6 hours it was only 1/4 used".

Figure 1: NCER of snow microalgae



Courtesy of Dr M.Davey, Department of Plant Sciences, University of Cambridge, UK.

## Temporal or spatial CO<sub>2</sub>/H<sub>2</sub>O flux

Data can be collected as Net Carbon Exchange Rate, (NCER) for soils or respiring organisms in a dark-adapted state, or as photosynthesis/transpiration rates for whole, small plants in light conditions (ambient or controlled).

Figure 1 (below) demonstrates the use of both modes of measurement in Antarctica. Both positive and negative NCER values demonstrate periods of light/dark influencing algal gas exchange.

The chamber can either be installed in one sample area for temporal investigations, or several 'collars' can be inserted into the ground at various sites for spatial studies.

Data can be viewed graphically on either **LCi T** or **LCpro T** console, and downloaded through SD card or USB port to be exported easily into spreadsheet software.

### Versatile Chamber Specification

PAR:	0-3000 $\mu\text{mol m}^{-2} \text{sec}^{-1}$ Silicon photocell
Chamber Temperature:	-5°C to 50°C Precision thermistor +/- 0.2°C accuracy
Soil Temperature:	-5°C to 50°C Precision thermistor
Flow rate to soil chamber:	100 to 500 $\text{ml min}^{-1}$
Operating temperature range:	5°C to 45°C

#### Soil Chamber:

Collar:	Stainless steel
Upper chamber:	Cast acrylic
Volume:	1 L
Diameter:	130mm
Height:	Collar: 75mm Upper chamber: 70mm
Weight:	Collar: 325g Upper chamber: 320g

ADC BioScientific Ltd. retain the right to change any specification as part of their continual product development

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