

## Soil Respiration Meter



### Introduction:

Soil respiration measurement is the main way for carbon to return to the atmosphere from terrestrial ecosystem, and it is also the characterization of life activities in soil. Accurate measurement of its release is the key to evaluate the biological process in ecosystem; By monitoring soil respiration and its related parameters, the response of root box soil microorganisms to climate change can be estimated. Soil CO<sub>2</sub> flux is affected by many complex physical and biological processes in time and space. Long-term, continuous and accurate measurement of soil carbon flux is of great significance to the study of terrestrial ecosystem carbon flux. The soil respiration meter can simultaneously display the CO<sub>2</sub> concentration, soil temperature, photosynthetic effective radiation intensity, flow, air temperature and humidity of the respiration chamber.

### Features:

- \* Intuitive display: Chinese LCD 160\*256 dot matrix, simple operation and clear interface.
- \* Data storage: Large Capacity SD card is used to store data, which has large data storage capacity and convenient export.
- \* Data acquisition: CO<sub>2</sub> concentration, soil temperature, air temperature, air humidity, photosynthetic effective radiation intensity, gas flow and other indicators can be collected at the same time. The stability, accuracy, attention and time response of the measurement are very good.
- \* Easy to use: small size, light weight, portable, single person operation, arbitrary movement, clear gas circuit and circuit connection.
- \* Wide application: users can choose breathing chambers with different volumes or other purpose breathing chambers, which can be widely used for the determination of respiration of soil, fruits and vegetables, seeds, plants and so on.
- \* Convenient power supply: it is equipped with standardized maintenance free lithium battery, which can be used for more than 10 hours at a time. It can also be powered by AC and DC.
- \* Instrument protection: microelectronic flowmeter is adopted, with the function of prompt protection for gas path blockage.

### Technical Parameters:

Model	SRM-3051T
Carbon Dioxide Detection	Infrared carbon dioxide detection module Measurement range: 0~5000ppm Linearity: $\leq \pm 1\%$ F.S Repeatability: $\leq \pm 1\%$ Response time: $\leq 15s$ Zero drift: $\leq \pm 2\%$ f.s/24h End drift: $\leq \pm 2\%$ f.s/24h
Soil Temperature Detection	Micro fast response PT100 platinum resistance Measurement range: 0~60 °C Resolution: 0.1 °C, Accuracy: $\pm 0.3$ °C
Air Temperature Detection	Inlet temperature detection module Measurement range: -20~95 °C Resolution: 0.1 °C Accuracy: $\pm 0.2$ °C
Air Humidity Detection	Inlet humidity detection module Measurement range: 0~100% Resolution: 0.1% Accuracy: $\pm 1.8\%$
Light Detection	Silicon photocell with correction filter, response spectrum 400nm-700nm Measurement range: 0-3000 $\mu\text{mol} / \text{m}^2 / \text{s}^{-1}$ Resolution: 1 $\mu\text{mol} / \text{m}^2 / \text{s}^{-1}$ Accuracy: $\pm 5\%$ $\mu\text{mol} / \text{m}^2 / \text{s}^{-1}$
Flow Detection	Microelectronic flowmeter Measurement range: 0~1.5l/m Resolution: 0.01l/min Accuracy: $\pm 2\%$
Soil Respirator	Volume 1.0L.
Storage	Storage mode: 2GB memory card storage Storage format: TXT document
Working Power Supply	Battery: 8.4V lithium battery; Power Adapter: 100~240V 50/60Hz
Package Size(L*W*H) mm	550*350*250
Gross Weight (kg)	8