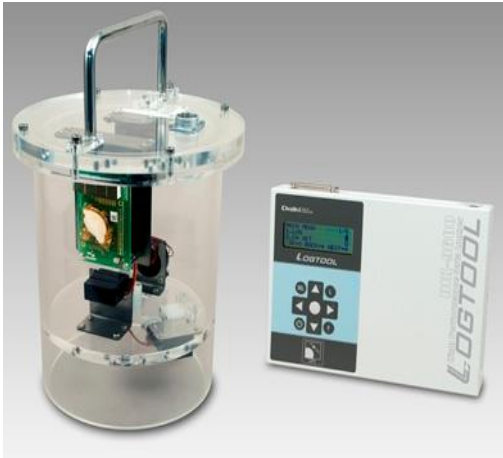


DIK-0450 : Soil Respiration System with Datalogger and GPS

(It is most suitable for on-site measurement of soil respiration)



Package Comes with:-

- Soil CO₂ Meter
- CO₂ chamber
- Chamber seating ring
- Power unit : (12V Rechargeable Battery, Battery charger, AC adapter)
- Data logger : (4 AA alkaline batteries, 2 micro SD cards (2GB), 2 card reader adapters)
- User Manual

Features:-

- This equipment possible to measure Soil CO₂, Temperature, Humidity, Barometric pressure.
- It is best for on-site measure of soil respiration.
- Measurement control datalogger records valuable data.
- Large data storage in 2 GB Micro SD cards.
- Digital Datalogger with GPS records valuable data and pinpoint location at the same time.
- Continues use 8 hours in field without battery charge.
- Easy to use & one person can handle

CO₂ chamber Components:-

Inlet port : The servo motor opens and closes the inlet port.

Exhaust port : The servo motor opens and closes the exhaust port.

Circulation port : The servo motor opens and closes the circulation port.

Circulating fan : Circulates air through the chamber while the background or soil CO₂ is being measured.

Sensors : Used to measure CO₂ concentration, atmospheric pressure, temperature and humidity.

Soil respiration is a key ecosystem process that releases carbon from the soil in the form of CO₂. CO₂ is acquired from the atmosphere and converted into organic compounds in the process of photosynthesis. Plants use these organic compounds to build structural components or respire them to release energy. When plant respiration occurs below-ground in the roots, it adds to soil respiration.

DIK-0450 Soil Respiration System anyone is easily possible to measure CO₂ in soil with just putting this device on the ground. From the short-term to long-term measurement is widely applicable. It is designed to measure four element, Soil CO₂, Temperature, Humidity and Atmospheric pressure.

Soil CO₂ datalogger enable to record measurement data, A fan and the open/close valves are automatically controlled according to the measurement. Under measurement air is shut and circulated inside chamber by a fan. After measurement, air is ventilated through inside and outside with opening a valve.

Datalogger with built-in GPS can acquire position information at the same time.

By connection an optional chamber under the measurement chamber, it is possible to observe the plant assimilation and also the breathing outbreak gas measurement of small animal.

Technical Specifications

CO2 Sensor

Measurement method : Non-Dispersive Infrared absorption (NDIR)
CO2 Measurement range : 0 to 4000 ppm
Resolution : 1 ppm
Response time : 20 seconds
Measurement interval : 2 seconds
Operating temperature range : 0 to 50°C
Operating humidity range : 0 to 95% (no condensation)
Power supply : 12 VDC

Atmospheric Pressure Sensor

Measurement range : 500 to 1100hPa
Resolution: 15Pa

Temperature Sensor

Measurement range : -40 to 60°C
Resolution : 0.1°C

Humidity Sensor

Measurement range : 0 to 100%
Resolution : 1%

CO₂ Chamber

Material : Exterior: Acrylic, transparent PVC, POM, Bracket and others: SUS
External dimensions : Placement area of ground: Outside diameter of 216 mm, Inside diameter of 200 mm
Total height: 400 mm (chamber 300 mm, handle 100 mm)
Max. outside diameter: 260 mm Chamber capacity: 6.25 L

Circulating fan : Max. air flow of 0.09 m³/min, Max. static pressure of 110 Pa, Rotation speed of 4500 rpm
Vent valve : 3 programmable control valves (DC servo motor driven)

Data logger

Analog input : Channel 1, CO2 concentration
Channel 2, Atmospheric pressure
Channel 3, Temperature
Channel 4, Humidity

Display : LCD (4 lines x 20 characters)

Language : English

Backlight : Remains lit for about 5 seconds when the "L" key is pressed

Data storage device : microSD card (2 GB)

Data Storage Capacity : over 500000 Data

GPS Measurement System : WGS-84

Power supply : AC adapter, DC input (12 VDC battery)

Backup power : 4 AA batteries for momentary power interruptions

Power consumption : Max. 500 mA (sleep mode: 5 mA or less)

Power Unit

Battery use time : When the DC battery is used, it will last approximately 8 hours assuming the following logging settings: interval time: 1 hour; gas measuring time: 10 minutes; background measuring time: 10 minutes; preheat time: 30 seconds.

Battery : 12V DC rechargeable battery

Battery charger : AC adapter

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