

# MOBILE MEASURING CHAMBERS



## Automated for peatland

For HSWT, we have installed specially manufactured gas measuring chambers for mineral soils. The automatically movable gas detection chambers can be moved along predefined transects. This enables systematic data acquisition and facilitates the identification of gas concentration patterns.

- ✓ For long-term tests with high temporal repeatability
- ✓ Minimization of working time and supervision



## Automatic Y-gas measuring chamber

For the automated measurement of trace gases from soil emissions with connection to a gas analyzer

- ✓ Transparent chamber for the detection of  $NEE + R_{eco}$  (ecosystem respiration)  
 $R_{eco} = CO_2 R_{soil} + R_{plant}$  (soil respiration) +  $R_{plant}$  (plant)
- ✓ Opaque chamber for quantifying soil respiration



We are a partner of:

**PICARRO**

the professional for gas analysis

**eosense**

the professional for soil flow measurement

Your project.  
Our solution.

Just get in touch with us if you have an idea, a research project. Together we will find a suitable solution for you!

We look forward to your call or e-mail.

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# GAS FLOW MEASUREMENT

Chamber technology from UGT

Measurement under field conditions

Open and closed systems

Optimally adapted to your project



Even more info at:  
[www.ugt-online.de](http://www.ugt-online.de)

# Challenges in the GAS FLOW MEASUREMENT

A prerequisite for the analysis of soil-borne gases and the gas exchange between soil, plants and the atmosphere is the detection of these gases so that they can be fed into an analyzer.

Gas measuring chambers have proven themselves as a reference method, which either generate a controlled gradient (open systems) or which interrupt the exchange for a certain period of time (dynamic closed systems).

UGT offers a wide range of customized solutions, tailored to the plant population and the problem at hand. Especially in combination with the Picarro gas analyzers, precise and customized solutions are available.

## INTERESTING FACTS ABOUT GAS MEASURING CHAMBERS

- ✓ **Open systems** allow exchange via the upper edge and provide a measuring section underneath in which flow rates can be determined based on the gradient. The upper opening ensures that the plants are affected as little as possible and that the temperature and gas temperature and gas composition differ little from the environment. The disadvantage of this system is that wind disturbs the gradient. The chambers are therefore only recommended in windless areas.
- ✓ **Closed systems** can either be used as a fixed installation over a certain period of time to determine the intake or depletion of the gas fractions over a certain period of time, or by means of a mobile installation. Closure to accurately determine the time-varying flows.
- ✓ Gas measurement chambers can be transparent or opaque.  
With **transparent chambers**, the sum of the gas fluxes resulting from soil respiration and plant metabolism.  
With **opaque chambers**, only gases from dark respiration are measured.



## OUR SOLUTIONS AND PRODUCTS



### MOBILE GAS MEASURING CHAMBER TRANSPARENT

Determination of the exchange capacities of gases between plants or soil and the atmosphere

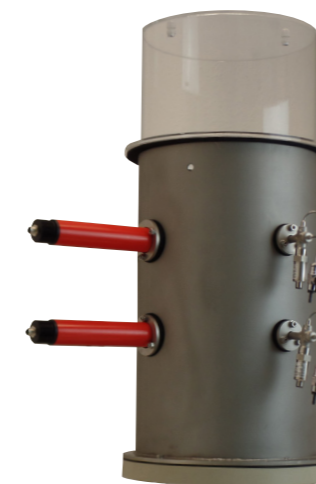
- ✓ Mobile gas measurement under field conditions
- ✓ Clearly defined measurement & high accuracy
- ✓ Available as open path or closed path application



### MOBILE GAS MEASUREMENT CHAMBER OPAQUE

Closed gas measurement from dark respiration

- ✓ Mobile gas measurement under field conditions
- ✓ Clearly defined measurement & high accuracy
- ✓ Available as open path or closed path application



### PRECISELY FITTING MEASURING CHAMBERS FOR LABORATORY AND FIELD LYSIMETERS

Detailed picture of gas dynamics in the soil

- ✓ Study soil processes that influence the release or absorption of gases
- ✓ Insights into the microorganisms and chemical reactions in the soil
- ✓ Detection of changes in the soil atmosphere over time



### MANUAL GAS MEASURING CHAMBER

Available in opaque and transparent versions

- ✓ Spatiotemporal detection: gas measurements along a transect
- ✓ Detecting hotspots of gas emissions
- ✓ For the validation of measurements