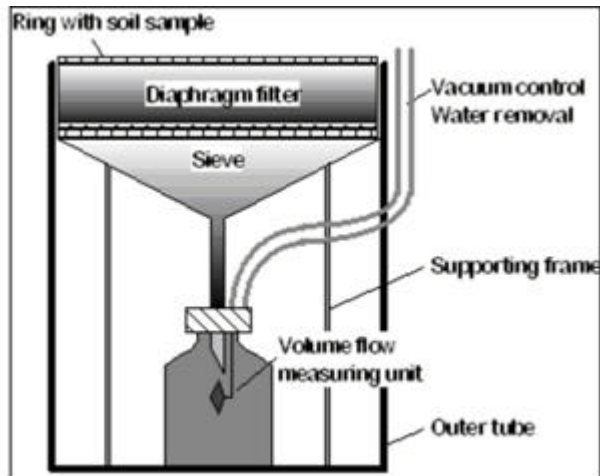


Lysimeters



Small lysimeter

181100 diam. 300 mm, complete



Small lysimeter for soil monoliths with tension-controlled hydraulic stop and infiltration measurement.

Measuring principle:

A ring holding the soil monolith is put onto a diaphragm filter and the sieve of a vacuum tank.

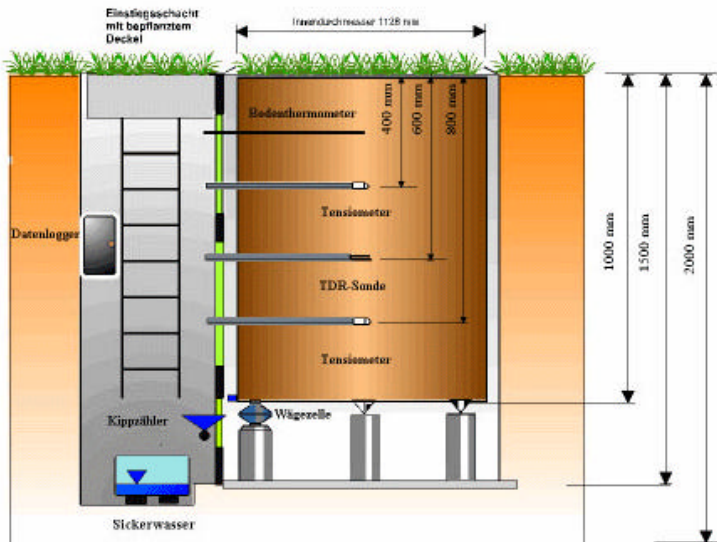
A vacuum system controls the underpressure with the tension of the surrounding soil (tension-controlled suction probe unit, see 132100).

Technical Parameters:

Sample diameter:	290 mm
Diameter of cover tube:	310 mm
Sample height:	ca. 5 cm ... 60 cm
Installation depth:	50 cm + sample height
Tension range:	0 ... ca. 0.8 bar
Conductance of diaphragm filter:	15 cm/d per 1hPa
Resolution of volume flow:	0.1 ml/s
Material:	PE, high-grade steel

Ponderable lysimeter

182100 stratified structure (1 m²/ 5t)



Lysimeter receptacle made of HD polyethylene with steel plate bottom.

Internal surface area: 1 m²
Height: 1.5 m ... 1.8 m
Weight of soil: max. 5 t

Load triangle for installation of receptacle with special pondering monitor (resolution 1:1,000,000) and adjustable knife-edge support, V2A seepage receiver (30 litres) with integrated pondering cell.

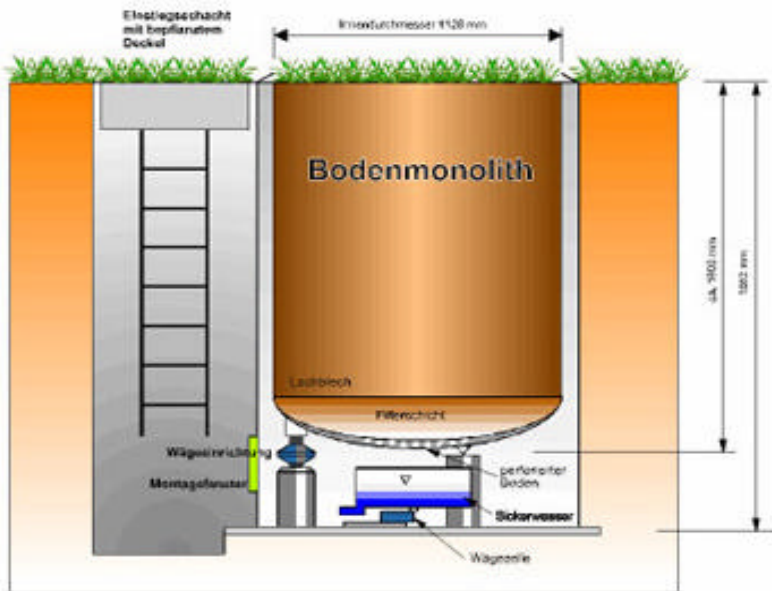
Equipment for measurement of soil moisture, soil suction tension and temperature in the profile.

Equipment for soil water sampling by layers.

Special equipment to match project target.

Ponderable lysimeter

183100 monolithic structure (1 m²/ 5t)



Lysimeter receptacle and elliptical sized bottom made of V2A for soil monoliths.

Internal surface area:	1 m ²
Height:	1.0 m ... 3 m
Monolith weight:	max. 5 t

Load triangle for installation of receptacle with special pondering monitor (resolution 1:1,000,000) and adjustable knife-edge support, V2A seepage receiver (30 litres) with integrated pondering cell.

Equipment for measurement of soil moisture, soil suction tension and temperature in profile.

Equipment for soil water sampling by layers.

Special equipment to match project target.

1-fould lysimeter station

184100 Station with 1 weighable lysimeter vessel



Lysimeter for a dump of a company



Weighable lysimeter with soil hydrological sensors

Lysimeter station in containment construction

Diameter of the station:	1224 mm
Height of the station	1,0 ... 3,5 m
Weight of the station:	450 ... 750 kg
Material the station is made of:	PE-HD
lateral entrance shaft with cover	

Lysimeter vessel

Cross section area:	1,0 m ²
Length:	1,0 ... 3,0 m
Soil weight:	3,0 ... 6,0 t
Material the vessel is made of:	PE-HD, V2A, V4A

2-fouled lysimeter station

184200 station with 2 weighable lysimeter vessels
(europe patent: 1153293)



Implanting the 2-fouled station in prepared excavation



Implanting the lysimeter vessels in the station

Lysimeter station in Containment construction

Dimensions of the station:	3,5 x 1,5 m
Height of the station:	1,0 ... 3,5 m
Weight of the station:	0,8 ... 1,2 t
Material the station is made of:	PE-HD

Lysimeter vessel

Cross section area:	1,0 m ²
Length:	1,0 ... 3,0 m
Soil weigh:	3,0 ... 6,0 t
Material the vessel is made of:	PE-HD, V2A, V4A

4-fould lysimeter station

184300 station with 4 weighable lysimeter vessels
(europe-patent: 1153293)



Implanting the 4-fould station in a prepared excavation



Lysimeter experiments in 4-fould stations

Lysimeter station in Containment construction

Dimensions of the station:	3,5 x 3,5 m
Height of the station:	2,5 ... 3,5 m
Weight of the station:	1,7 ... 2,4 t
Material the station is made of:	PE-HD

Lysimeter vessel

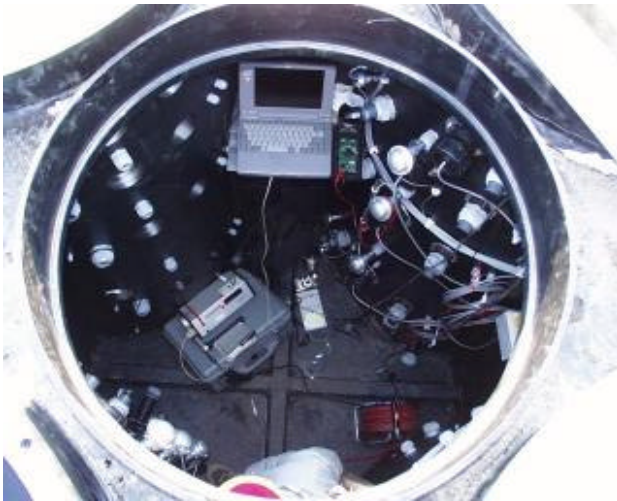
Cross section area:	1,0 m ²
Length:	1,0 ... 3,0 m
Soil weigh:	3,0 ... 6,0 t
Material the vessel is made of:	PE-HD, V2A, V4A

In Situ gas migration simulator

185100 station with 4 lysimeter vessels for gas migration experiments
(patent-No: 199 07 461)



Centric entrance shaft with approach to the lysimeter technology.



Central entrance.

Lysimeterstation in Containment-Bauweise aus PE-HD

Technical specification:

Dimensions of the station: 3,5 x 3,5 x 2,5 m

Weight of the station: 1.600 kg

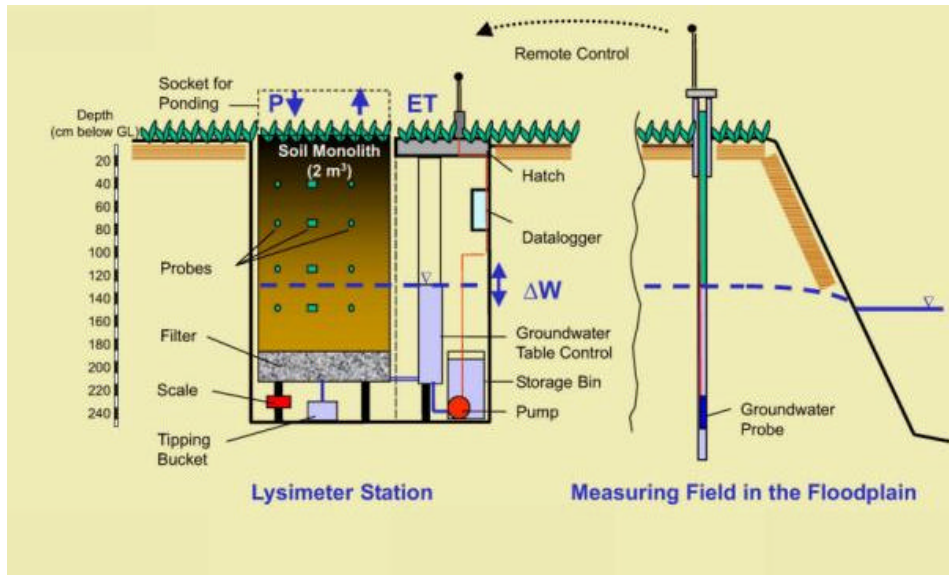
Soil mass per vessel: up to 5 t

Application possibilities:

- Examination of the migration of dump gases or withdrawing natural gas at underground leakages;
- Qualification test of sediment layers as underground gas storages;
- Examination of the Radon migration in soils;
- Detection of soil contamination;
- Special measuring equipment regarding the project aim.

Ground water lysimeter

186100 Station with weighable, ground water steered lysimeter vessels
(patent - No.: 199 07 462)



Prinzip der Grundwassersteuerung mit Funk-Pegelmessstelle.



Prinzip:

The groundwater lysimeter represents a system, which is final at the side edges and which stands in connection with its environment over the upper and the lower edge. The lower edge is characterized by the groundwater inflow and groundwater discharge R_{zu} and R_{ab} and/or possesses in periods of low ground water level a free discharge, comparably a gravitation lysimeter. At the upper edge the system stands in connection with the atmosphere over precipitation P , evaporation ET and over back-up Pond. Due to the water rivers at the upper and lower edge the water content in the lysimeter changes, expressed as memory capacity ΔS . The water supply equation for such a system reads:

$$P + \text{Pond} = ET + (R_{ab} - R_{zu}) \pm \Delta S$$

The quantities P , ΔS , R_{zu} , R_{ab} and Pond are instrumentation seized, whereby the current evaporation ET from the water supply equation can be computed.

Principal purposes:

- Temporal dynamics of the ground-water formation particularly in Aue soils;
- Influence of floodings on ground-water formation and material household;
- Misalignment and mobility of feeding and pollutants by changing redox conditions.

Lysimeter excavation technology

187100 Lysimeter excavation technology
(Patent -Nr.: 102 53 430.6)



Lysimeter excavation System



Lysimeter vessel
with soil milling

Lysimeter excavation system

- unimpaird excavation of large volume soil columns
- precise cutting of the outline of the soil monolith
- light, well transportable excavating technology
- small location impairment with low cost

Past areas of application:

- agriculture and forestry
- water management
- refuse economy, refuse dump locations
- dumps and mining industry waste dumps

We accomplish the excavation of soil monoliths as service.

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ASSISTÊNCIA TÉCNICA

PRECITECH INSTRUMENTAL LTDA.
Rua Pereira de Almeida, 31 - Praça da Bandeira
CEP 20.260-100 - Rio de Janeiro - RJ - Brasil
Tels: 55 (XX) 21 25020108 / 25022978 / 22733667 - Fax: 55 (XX) 21 25040868
info@precitech.net - www.precitech.net