LAB LYSIMETER

Technical specifications

UGT UMWELT GERÄTE TECHNIK

Laboratory lysimeter (customized production)

LYSIMETER VESSEL

Dimensions lysimeter vessel	H= up to 600 mm, Ø 150 up to 300 mm
Power supply	230 V/50 Hz with backup battery 12 V/6,5 Ah
Material	PP, V2A, PET, PE-HD

BASE PLATE WITH FREE SEEPAGE DRAIN

Material	Polypropylen or V2A, conical, with drain outlet, Ø 300 mm
Filter	grid plate with appropriate mesh size to prevent from loss of soil

WEIGHING SYSTEM

Load cell	platform-cell, V2A
Accuracy	0.025 %
Max. load	150 kg
Operating temperature	- 10 ... +40 °C

PRECIPITATION GAUGE WITH TIPPING COUNTER (optional)

Tipping volume	5 ml
Resolution	1 mm
Calibration	grams per tipping
Accuracy	+/-5 %
Housing	(Ø/H): 116/137 mm

SMT 100

Number	max. 3 pc
Measuring range soil moisture	0 - 60 %vol (0 ... 100 % with limited accuracy)
Resolution soil moisture	± 1 % vol
Measuring accuracy soil moisture	± 3 % vol
Measuring range temperature	-40 ... +60 °C extended temperature measuring range on request
Resolution temperature	± 0.2 °C
Measuring accuracy temperature	± 0.8 %
Signal output	2x analog (0-1 V), digital SDI 12/ RS485

FRT 15D - Full Range Tensiometer

Number	max. 3 pc
Measuring range	-100 up to +1500 kPa (pF 4.2)
Power supply	20 mA/5...20 V
Interface	RS485 Modbus
Connection	M12 sensor plug 4-pole
Dimensions	Ø 25 mm; L=150 mm

SUCTION PROBE / *SUCTION PROBE MINI*

Suction probes with ceramic	3 pc., L=10cm, delivery and vacuum pipe
Ceramic cell	P80; 20 x 50 mm / *Ø 10 mm 25*
Duran collection bottle (optional)	3 pieces, 500 ml, GL 45
Lid (optional)	3 pieces, PE, with silicone seal special water stop valve, hose connections
Bottle magazine (optional)	stainless steel

LYSIMETER-CONTROL STATION

Data logger	depending on requirements/sensor equipment DT80 or DT82; universal data logger, Software, optional customer-specific programming
Signal output digital	8 I/O´s, SDI-12, RS232, RS485
Signal output analog	up to 15 (± 50V)
Connections	Web & FTP Client/ Server, LAN, USB
Housing	PG screw connections, protective roof, fittings for mast mounting

MODUL PORE WATER EXTRACTION SYSTEM - tensions- and time controlled suction probe system (optional)

MODUL LOWER BOUNDARY CONDITION - tensions- and time controlled suction probe system (optional)

MODUL IRRIGATION SYSTEM (optional)

UGT – 3 LAYER-FILTER GRAVEL (optional)

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UGT UMWELT GERÄTE TECHNIK
The Solutionists

MORE THAN STANDARD

LAB LYSIMETER

Soil processes on laboratory scale

Small lysimeters for laboratory use

Controlled experiments, more accurate results

Even more info at:
www.ugt-online.de

LABORLYSIMETER

Bodenprozesse im Labormaßstab

To complement our lysimeter product line, we have developed a laboratory scale solution. The laboratory lysimeter is a small weighable lysimeter station, suitable for monoliths with a diameter of 150 to 300 mm and a height of 600 to 1.500 mm and indoor investigations. It is suitable for both disturbed (filled by hand) and undisturbed soil monoliths (special sampling devices).

We offer laboratory lysimeters in a variety of configurations. Each laboratory lysimeter system is customized to fit the planned project.

Laboratory lysimeter with PET lysimeter vessel

Possible measurement parameters are:

- ✔ Weighing
- ✔ Lower boundary control
- ✔ Irrigation
- ✔ Water content of the soil
- ✔ Soil temperature
- ✔ Electrical conductivity
- ✔ Soil pore sampling
- ✔ Redox potential
- ✔ pH value

Lysimeters are an important tool for investigating the water balance in agriculture, forestry and other ecological issues. In combination with precipitation measurements (sprinkler system) they allow the quantitative determination of the current evapotranspiration of vegetation-covered or vegetation-free soils.

Our laboratory lysimeter is a small lysimeter, which we have designed especially for laboratory use (indoor). Design, construction and functionality are always fully adapted to the study objective.

Studying soil processes on a laboratory scale has several advantages:

- ✔ the controlled environment allows more accurate experiments
- ✔ the scale can be adapted to a wide range of processes
- ✔ it allows shorter experiment times compared to field studies
- ✔ different substrates can be quickly changed

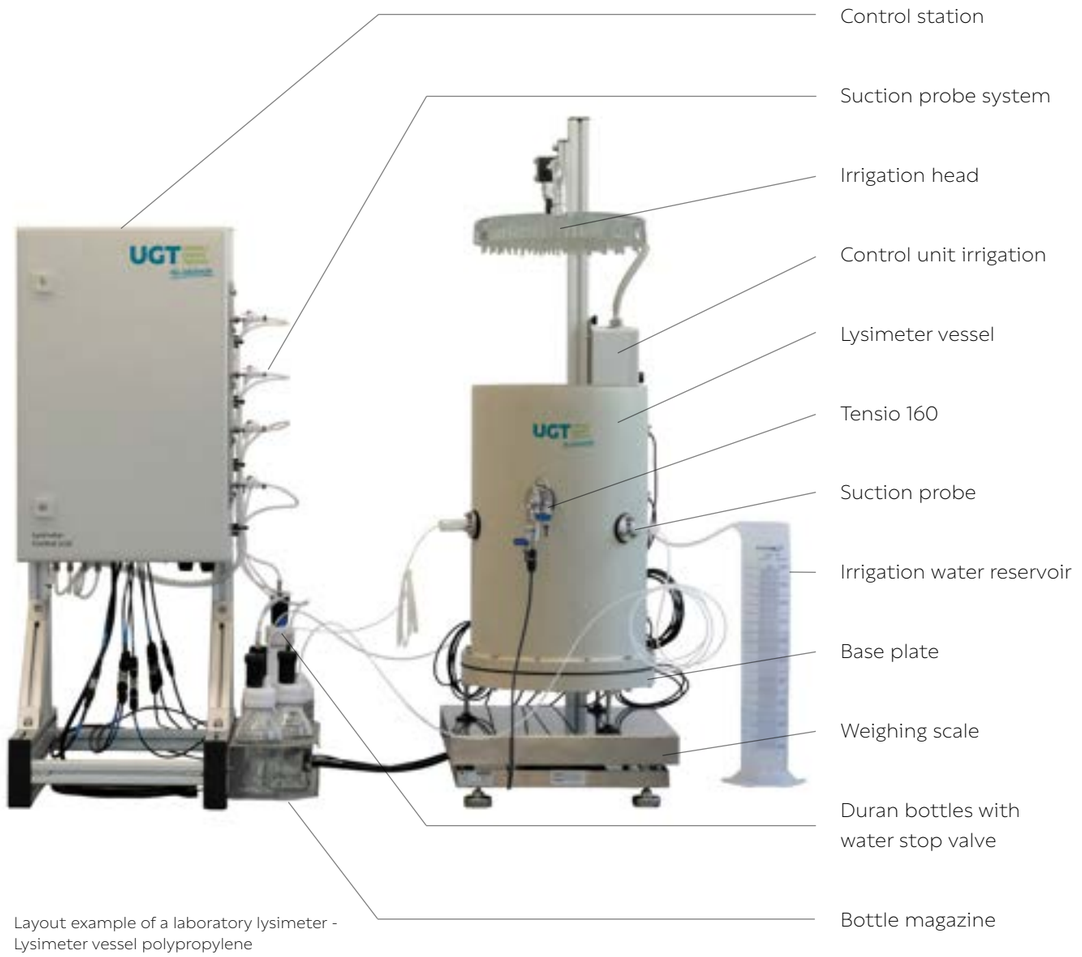
STRUCTURE

of our laboratory lysimeter – optionally expandable

The compact laboratory lysimeter consists of a lysimeter vessel, a weighing system and a set of high precision and accurately fitting soil hydrological sensors and a control station each.

The UGT laboratory lysimeter can be extended by a tension- and time-controlled suction probe system for automated control of the pore water extraction module and the lower lysimeter rim module, and by a sprinkler system.

The basic module is always the lysimeter vessel, which can be filled manually with a disturbed soil, but can also contain an undisturbed monolith. For laboratory purposes, a plastic jacket is usually used.



Layout example of a laboratory lysimeter - Lysimeter vessel polypropylene