

LAB LYSIMETER

Technical specifications



Laboratory lysimeter (customized production)

LYSIMETER VESSEL		FRT 15D - Full Range Tensiometer	
Dimensions lysimeter vessel	H= up to 600 mm, Ø 150 up to 300 mm	Number	max. 3 pc
Power supply	230 V/50 Hz with backup battery 12 V/6,5 Ah	Measuring range	-100 up to +1500 kPa (pF 4.2)
Material	PP, V2A, PET, PE-HD	Power supply	20 mA/5...20 V
BASE PLATE WITH FREE SEEPAGE DRAIN		Interface	RS485 Modbus
Material	Polypropylen or V2A, conical, with drain outlet, Ø 300 mm	Connection	M12 sensor plug 4-pole
Filter	grid plate with appropriate mesh size to prevent from loss of soil	Dimensions	Ø 25 mm; L=150 mm
WEIGHING SYSTEM		SUCTION PROBE / SUCTION PROBE MINI	
Load cell	platform-cell, V2A	Suction probes with ceramic	3 pc., L=10cm, delivery and vacuum pipe
Accuracy	0.025 %	Ceramic cell	P80; 20 x 50 mm / Ø 10 mm 25
Max. load	150 kg	Duran collection bottle (optional)	3 pieces, 500 ml, GL 45
Operating temperature	- 10 ... +40 °C	Lid (optional)	3 pieces, PE, with silicone seal special water stop valve, hose connections
PRECIPITATION GAUGE WITH TIPPING COUNTER (optional)		Bottle magazine (optional)	stainless steel
Tipping volume	5 ml	LYSIMETER-CONTROL STATION	
Resolution	1 mm	Data logger	depending on requirements/sensor equipment DT80 or DT82; universal data logger, Software, optional customer-specific programming
Calibration	grams per tipping	Signal output digital	8 I/O's, SDI-12, RS232, RS485
Accuracy	+/-5 %	Signal output analog	up to 15 (± 50V)
Housing	(Ø/H): 116/137 mm	Connections	Web & FTP Client/ Server, LAN, USB
SMT 100		Housing	PG screw connections, protective roof, fittings for mast mounting
Number	max. 3 pc	MODUL PORE WATER EXTRACTION SYSTEM - tensions- and time controlled suction probe system (optional)	
Measuring range soil moisture	0 - 60 %vol (0 ... 100 % with limited accuracy)	MODUL LOWER BOUNDARY CONDITION - tensions- and time controlled suction probe system (optional)	
Resolution soil moisture	± 1 % vol	MODUL IRRIGATION SYSTEM (optional)	
Measuring accuracy soil moisture	± 3 % vol	UGT - 3 LAYER-FILTER GRAVEL (optional)	
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		



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.

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



Laboratory lysimeter with PET lysimeter vessel

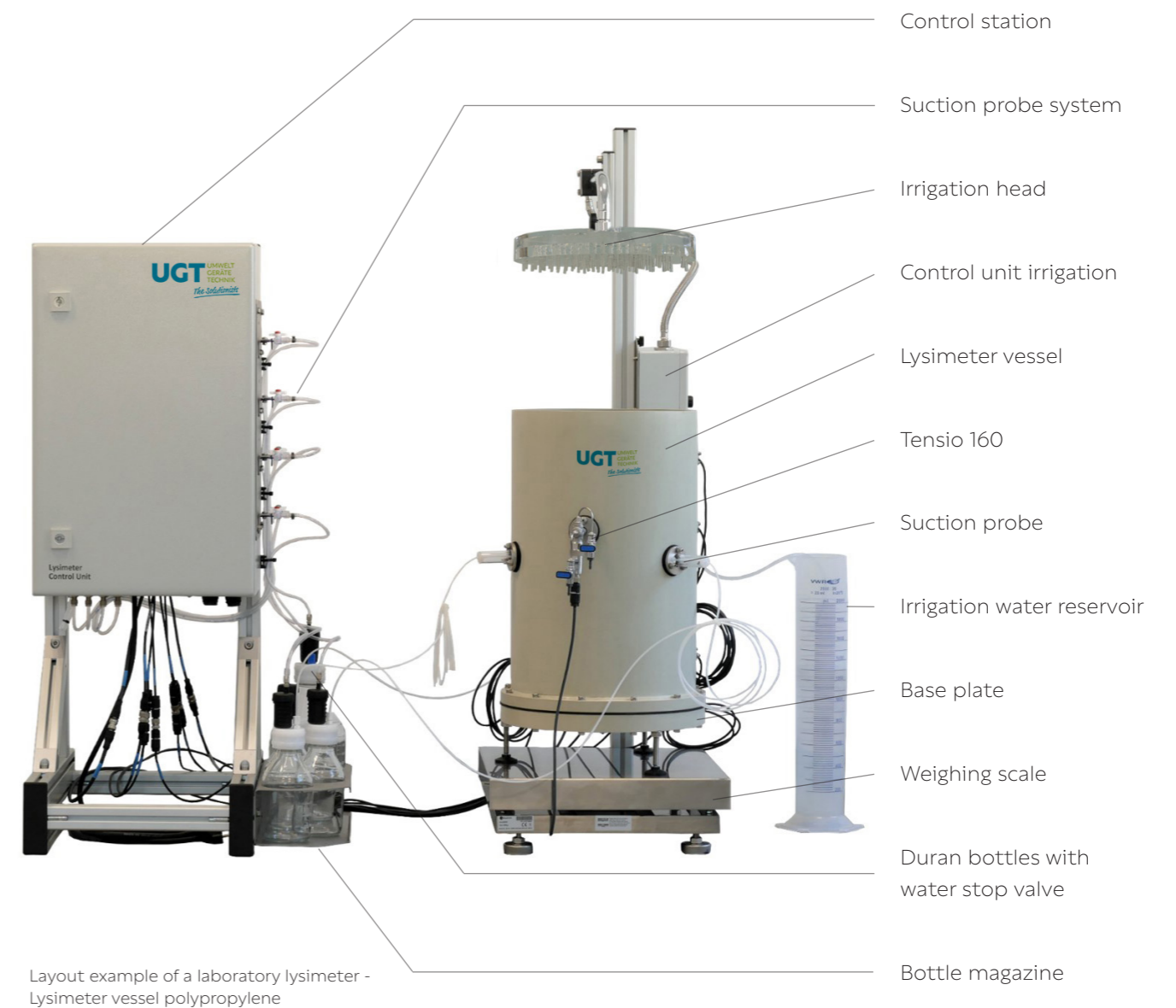
STRUCTURE

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