

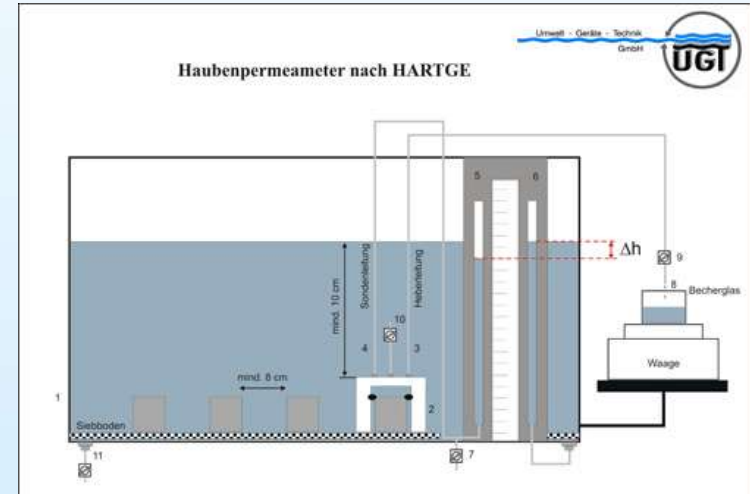


# UGT Range of Measurement Tools

March 17th – Bucarest/Romania

# Hydraulic conductivity measuring device

## Hood-Permeameter by Hartge



Laboratory permeameter for determination of the saturated hydraulic conductivity of soil samples ( $k_f$  – value).

# Unsaturated Hydraulic Conductivity

## The $k_u$ -pF apparatus

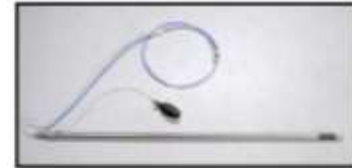
Laboratory instrument with 20 micro-tensiometers to determine the soil tension of 10 soil samples



# PL measuring chambers



*Air permeameter in the field measurement*



*Pipe probe*



*TDR-Probe and FL-tensiometer*

## PL 300

Field measuring device to record the air permeability of soils



*sampling ring adapter*



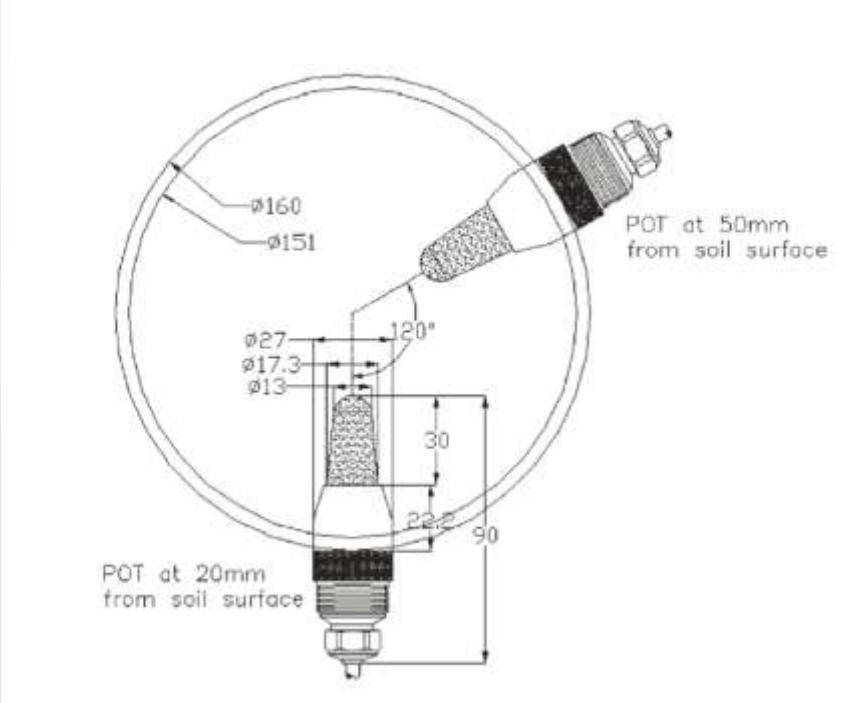
*surface chamber*



*Darcy chamber*



# Full Range Tensiometer



# Multilyzer



Technical Data of the Quicklyzer

Measuring range	1 - 1000 mg/l
Detection limit	1mg/l
Detectable Substances	NO3- ; NO2-
Power supply	12V supply voltage or battery
Interfaces	RS232; USB 2.0
Flow rate	25µl/min
Dimensions [L x W x H]	40cm x 30cm x 20cm

# Soilinsight







# Soil-LT + ku-pF extension

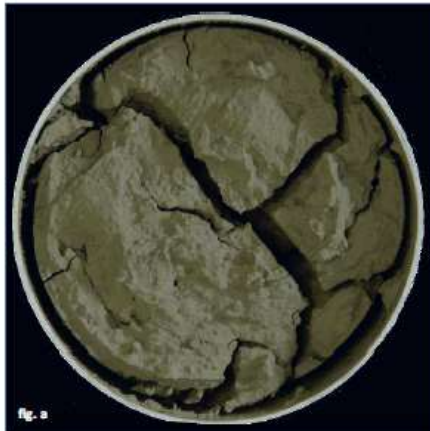


fig. a

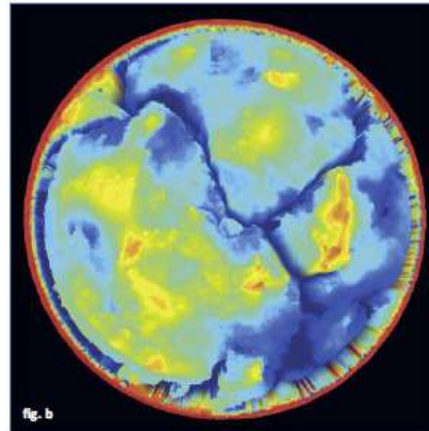


fig. b

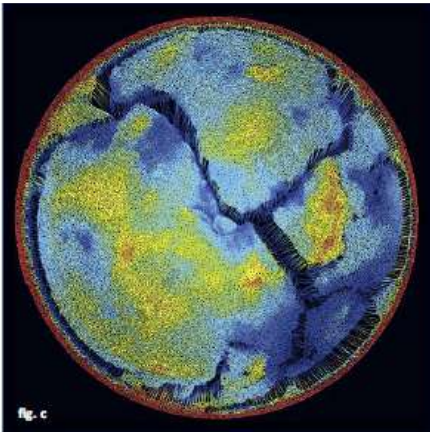
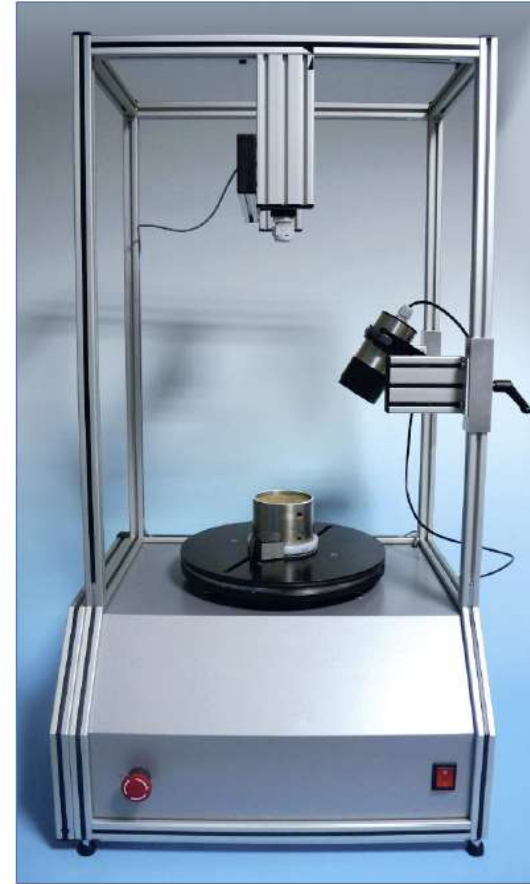


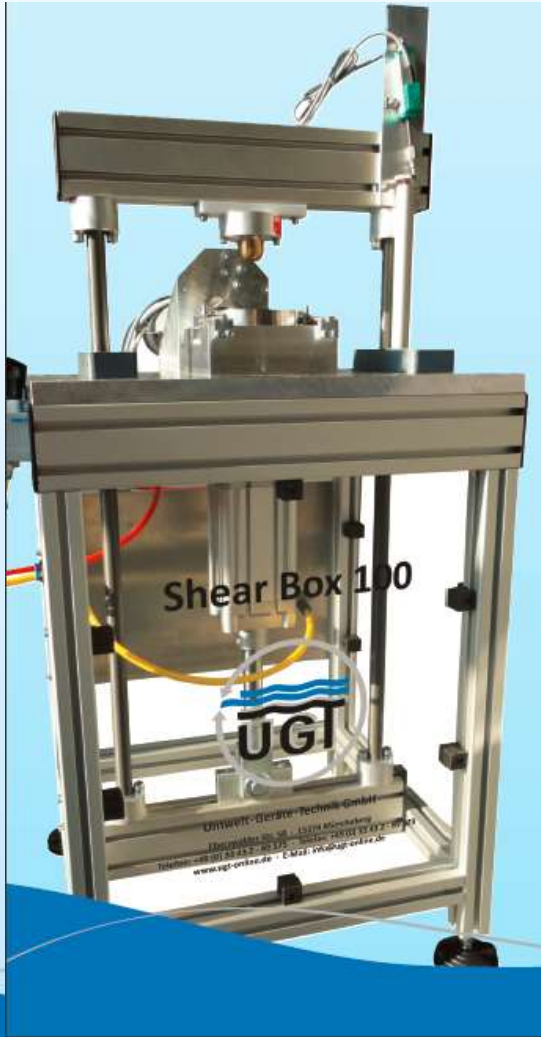
fig. c



fig. d



# Shear Box 100



# SEDIMAT 4 – 12



Laboratory apparatus for determination of particle size distribution in mineral soil material with 4 fractions by DIN ISO 11277 or 2 fractions according to ASTM

# UMP-1 combined soil moisture, conductivity and temperature sensor



- Measuring range water content: 0 ... 100 %
- Measuring range permittivity  $\epsilon$ : 0 ... 80
- Measuring range conductivity: 0,001 ... 5 mS/cm  
Optional upgrade to 40 mS/cm
- Measuring range temperature: -20 ... +60
- Accuracy water content:  $\pm 2\%$
- Accuracy conductivity :  $\pm 1\%$
- Accuracy temperature:  $\pm 0,2^{\circ}\text{C}$
- Measurement Volume: 1000 ml

# Range of different Tensiometers



**Tens 100**



**Tens 130**



**Tens 150**



**Tens 151**



**Tens 160**



**Full Range Tensiometers**

# Ready-To-Go-Lysimeter/ Lab Lysimeter





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