



Drain Gauge G3 Lysimeter

DESCRIPTION

The Drain Gauge G3 allows you to deploy multiple units to cover a large area at an affordable cost. It's an incredibly easy-to-use lysimeter that provides dependable monitoring of groundwater leaching, drainage, and recharge without the complexity of larger systems. This means you can instrument entire agricultural fields to better quantify variability.

The G3 was deliberately engineered to be installed below the plow layer, so growers can perform normal operations directly over the instrument, which eliminates problems like edge effects. Plus, the Drain Gauge G3 can be combined with METER soil moisture sensors and precipitation gauges to estimate the total water balance more accurately than methods which only guess at deep drainage as a residual.



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FEATURES

- Completely sealed system protects from high water tables
- 6.1 cm drainage capacity allows for large sampling volumes
- Monitor solute fluxes with optional EC sensor
- Can be used with the optional AutoPump to automatically draw samples on remote or high drainage deployments

One challenge with lysimeter measurements is that water can flow around receptacles buried in the ground. Unlike traditional pan lysimeters, the G3 corrects for this problem by using an innovative duct and wick design to keep soil tension in the soil column similar to that of the natural soil at the installation site. After installation, the G3 is practically effortless. It requires almost no power and no maintenance other than periodically pulling samples.

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The Drain Gauge G3 is a passive-capillary lysimeter that determines the volume of water and chemicals draining from the root zone into groundwater. Once installed below the root zone, water samples are easily collected through the surface port for analysis of chemicals, fertilizers, and other contaminants. Not only is the Drain Gauge constructed from inert materials so it won't react with compounds collected in the sample reservoir, it also features a sealed design.

SPECIFICATIONS	
Dimensions	Total length: 147 cm. DCT length: 63.5 cm. DCT (inside) diameter: 25.4 cm. Reservoir length: 81.3 cm Reservoir (outside) diameter: 11.5 cm Access tube length: 180 cm standard, customizable Access tube, outside diameter: 6.0 cm (2" schedule 40 PVC) Sample evacuation tube: 1.27 cm OD X 0.79 cm ID X 3 m length; custom lengths available upon request Mass: 20 kg with stainless steel DCT, 14 kg with PVC DCT
Range	Drainage: 0-61 mm bottom of wick and 61-100 mm top of reservoir chamber. Water depth: 0 to 3.5 m. Electrical conductivity: 0 to 120 dS/m. Temperature: -11 to 49 °C
Resolution	Drainage: 0.2 mm. Water depth: 1 mm. Electrical conductivity: 0.001 dS/m. Temperature: 0.1 °C
Accuracy	Drainage: ±1.4 mm. Water depth: ±0.1 % of full scale @ 20 °C. Electrical conductivity: +0.01 dS/m or + 10 % (whichever is greater). Temperature: ±1 °C
Suction at intake	110 cm (11 kPa)
Solution collection capacity	3.1 L (6.1 cm of drainage) to bottom of wick Additional 5.1 L (10 cm of drainage) of reserve capacity in wick chamber
Solution collection surface area	507 cm ² (25.4 cm inside diameter)
Wetted material	DCT (standard): 304 Stainless Steel 11 gauge DCT (optional inert material): PVC Wick: dry-fired fiberglass Root inhibitor: Treflan (BioBarrier™), removable upon request Sample evacuation tube: Polyethylene Hydraulic bridge material: Diatomaceous Earth (DE) All other parts: PVC
Operating temperature	0 to 50 °C (Pressure transducer cannot be allowed to freeze while submersed.)
Power requirements	3.6 - 15 VDC, 0.03 mA quiescent, 0.5 mA during 300 ms measurement
Measurement time	300 ms (milliseconds)
Output	Serial TTL, 3.6 volts levels or SDI-12
Connector types	3.5 mm (stereo) plug, or stripped & tinned lead wires (3)
Cable length	10 m standard; custom lengths available upon request
Data logger compatibility (not exclusive)	METER ZL6, Em50/60 Series, ProCheck, Campbell Scientific
Software compatibility	ZENTRA Cloud, ZENTRA Utility, ECH ₂ O Utility (rev 1.64+), DataTrac 3 (rev 3.4+)

Contact info



Monitoring MENA

Insight into instrumentations

(962) 5353-2091

PO Box 1100 Salt

Post Code 19110 **JORDAN**

sales@monitoring-mena.com

www.monitoring-mena.com

For most applications, we recommend using the add-on Drain Gauge Sensor to measure conductivity, temperature, and depth of the collected sample and to help determine when to empty the sample reservoir. The sensor also provides time-series drainage data, enabling you to correlate drainage with irrigation, fertilization, or other events. For installation sites that are remote or have high drainage rates, use the G3 AutoPump to take samples or empty the reservoir automatically. The sensor and AutoPump can be easily integrated with pre-installed units and are ideal for use with our new ZL6 data logger.

This Instrument is manufactured by our principle company

METER Environment - USA