



# SMART FIELD LYSIMETER

## DESCRIPTION

The Smart Field Lysimeter is more intelligent than other lysimeters. It's the only system in the world with a bi-directional pump that automatically maintains true field conditions within the lysimeter. How? Field moisture (water potential) is measured and transmitted to the control center. If the soil in the lysimeter is drier than field conditions, water is pumped back into the lysimeter from the drainage reservoir. If the soil in the lysimeter becomes too wet, the pump pulls water out, ensuring true field conditions at all times. Plus, the Smart Field Lysimeter weighs both the lysimeter and the drainage barrel with a high-precision balance. Increases and losses of stored water are directly measured to the gram, making it one of the most accurate measures of precipitation, evapotranspiration, and deep drainage on the market.



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### FEATURES

- A complete small, weighable, tension-controlled lysimeter combined with tensiometers, soil moisture sensors, data logger and optional GPRS modem
- Field identical water conditions and temperature dynamics
- Accurate ET
- Direct measurement of the water balance
- Depth flexibility
- Lightning protection
- Powered by solar panels
- More economical and easier to install than large lysimeters

The precision balance inside the Smart Field Lysimeter is the pinnacle of METER engineering, designed using a quarter century of lysimeter experience. This means, unlike conventional tipping spoon and drip counter rain gauges, every single drop of water that precipitates or condenses on the soil surface is detected and measured—even dew or hoar frost.

The precision scale also accurately determines how much leachate leaves the root zone. Substances dissolved in it, such as nitrates or pesticides, can be analyzed independently by simply drawing a water sample from the drainage reservoir.

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The Smart Field Lysimeter is the only instrument that can make accurate plot-level estimates of the true field evapotranspiration. Why? Unlike eddy covariance, which relies on rain gauges with known inaccuracies, the Smart Field Lysimeter uses a highly sensitive load cell to weigh how much water accumulates or evaporates from leaves or the soil surface with an exceptionally high resolution. Nothing else can give you this type of ET data—nothing.

| SPECIFICATIONS                    |   |
|-----------------------------------|---|
| <b>Modular setup</b>              | Modular Smart-Field-Lysimeter with bi-directional boundary control, basic setup, extendable to up to four lysimeters.   |
| <b>Pump system</b>                | Pumping system for bidirectional regulation of the lower hydraulic boundary, controlled by field matric potential or manually.                                |
| <b>Leachate weighing platform</b> | PL-10 weighing platform for leachate tank   |
| <b>Leachate tank</b>              | 10 liters, comes with a buriable box  |
| <b>Included sensors</b>           | 1 x T8 field reference tensiometer<br>3 x 5TE ECH <sub>2</sub> O probes for soil moisture<br>3 x TEROS 21 probes for matric potential<br>Auger set for probes |
| <b>Data collection</b>            | Data logger DT80-M w. integrated GPRS/3G-modem for data transfer and remote access, SIM-ready   |
| <b>Power</b>                      | Rechargeable battery 12 V/26 Ah, charger and power-management module  |
| <b>Lightning</b>                  | Integrated lightning protection   |
| <b>SFL-300 cylinder</b>           | Stainless steel cylinder, height 30 cm, inner diameter 30 cm, six sensor ports, two each at 5, 15 and 25 cm   |
| <b>SFL-600 cylinder</b>           | Stainless steel cylinder, height 60 cm, inner diameter 30 cm, six sensor ports, two each in 5, 30 and 55 cm   |
| <b>SFL-900 cylinder</b>           | Stainless steel cylinder, height 90 cm, inner diameter 30 cm, six sensor ports, two each at 5, 45 and 85 cm   |
| <b>SFL-300 enclosure</b>          | Field enclosure with removable sealing and collar, diameter 45 cm, height 45 cm   |
| <b>SFL-600 enclosure</b>          | Field enclosure with removable sealing and collar, diameter 45 cm, height 78 cm   |
| <b>SFL-900 enclosure</b>          | Field enclosure with removable sealing and collar, diameter 45 cm, height 108 cm  |
| <b>SFL-300 weight platform</b>    | PL-50 weighing platform for lysimeter   |
| <b>SFL-600 weight platform</b>    | PL-100 weighing platform for lysimeter  |
| <b>SFL-900 weight platform</b>    | PL-200 weighing platform for lysimeter  |

## Contact info



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The Smart Field Lysimeter is small enough to transport in a pickup truck and install by hand. It's available for three different depths, 30, 60, or 90 cm, allowing for customized layouts and giving it the flexibility to fit your application or unique site condition. Excavation is made easier with the SFL toolset and the lysimeter's smooth stainless steel exterior. In addition, METER offers a complete installation service and advises you personally before, during, and after your purchase.

This Instrument is manufactured by our principle company

**METER Environment - USA**