



Borehole SATURO SATURATED HYDRAULIC CONDUCTIVITY OF SOIL IN FIELD

METER



Get more out of every field visit

Saturated hydraulic conductivity is a pain to measure in the field. And that's only the beginning. When you get back to the office, you still have to convert the raw data into hydraulic conductivity and infiltration rates. We think you should spend less time on complexity and more time being productive. That's why we automated almost everything in the new SATURO.

Set it up, and leave

The SATURO dual-head infiltrometer does almost everything for you. It's fully automated and doesn't require post-processing of data. Use the borehole accessory kit to auger a borehole to depths of up to 2 m (6 ft), install the ring, connect the hoses, and push start. It's that simple. The infiltrometer automatically measures infiltration rates, and the control unit calculates field saturated hydraulic conductivity (K_{fs}) on the fly. That means if you need a value right away, it's there. If you want to dig deeper, you can always download the raw data.

Widely adopted

The SATURO has been **adopted by the USDA National Resources Conservation Services (NRCS) Soil Survey Team and the Soil Health Institute** as the standard method of measuring saturated hydraulic conductivity. The Soil Health Institute considers it a **tier 1 indicator** for soil health assessments. Additionally, the SATURO is a standard test method described by **ASTM standard D8550-25**, making it available for a wide range of civil, geotechnical, and environmental engineering projects. Unlike double ring systems

One person can do everything

Unlike double ring systems, the SATURO infiltrometer is designed for one person to carry and set up. Plus, it requires less water, saving you a lot of time and effort. The SATURO ponds water on top of the soil and uses air pressure to create two different pressure heads. It uses a pump to automatically maintain the correct water levels.

No more constant measuring and adjusting

It operates unattended, which means you can get other field work done instead of having to babysit the instrument. And, you can run multiple instruments simultaneously, allowing you to further maximize the efficiency of your time in the field.



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Eliminate guessing

Single and double ring infiltrometers require you to know - or guess - the “alpha factor” (soil macroscopic capillary length) to manually correct for three-dimensional flow. The SATURO infiltrometer changes everything. It automates the well-established dual head method which measures infiltration at two different pressure heads to estimate sorptivity. This simplifies the three-dimensional flow analysis, allowing you to determine field saturated hydraulic conductivity without making any dubious assumptions. And the best part is, it does all the calculations for you, saving you hours of tedium.

A simple, precise solution

The SATURO infiltrometer combines automation and simplified data analysis together in one system. It even computes infiltration rates and field saturated hydraulic conductivity on the fly. The SATURO is **recommended by the Soil Health Institute** as a standard method for measuring K_{fs} : a Tier 1 soil health indicator. The SATURO makes life a little easier for those who need a faster, more accurate way to measure K_{fs} in the field.

Features

- Fully automated infiltrometer
- Capable of unattended measurements below the soil surface
- The **Soil Health Institute recommends SATURO** as a standard method for measuring K_{fs} : a Tier 1 soil health indicator
- Compliant with ASTM standard test method D8550-25
- K_{fs} values calculated and graphed in real time, no data post-processing is necessary
- Portable
- Includes self-contained water reservoir

Specifications

Infiltration rate	Range: 0.0038 cm/hr to 115 cm/hr Resolution: 0.0038 cm/hr Accuracy: $\pm 5\%$ of reading
K_{fs}	The range of K_{fs} values that can be effectively measured by the SATURO infiltrometer are limited by the minimum and maximum infiltration rates listed above. These depend on the pressure heads applied to the water during infiltration and to the three-dimensional flow characteristics of the soil, so the measurement range of K_{fs} cannot be specified explicitly. SATURO will generally be able to make measurements on poorly to moderately structured soils as coarse as medium sand, but the maximum infiltration rate can be exceeded by soils with excessive structure and especially by soils with significant macropores.
Water level	Maintained at 5 cm
Pressure head ranges	0 to 40 cm
Operating temperature	0 to 50°C
Charging adapter	18 V 2.2 Amps; Range 18 to 24 V DC Output: USB
Infiltrometer head	Total height: 18.3 cm ⌀ Inner diameter: 17.2 cm
Insertion ring	Inner diameter: 14.4 cm ⌀ Insertion depth: 5 cm , 10 cm
Borehole infiltrometer head	Total height: 28.78 cm ⌀ Inner diameter: 8.26 cm



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