Guelph Constant Head Permeameter

The Guelph constant head permeameter is used to determines the permeability in the root zone for measurements to a depth of 15-75 centimetre. This is a complete set.

Applications

- Soil Permeability
- Environmental Monitoring
- Mining
- Soil Physics

Key Features

- Steady stat principle for optimum accuracy
- Easily transported, assembled, and operated by one person
- Measurements can be taken in 1/2 to 2 hours, depending on soil type
- Many additional accessories to add

Set contains

- Guelph constant head permeameter
- Field tripod
- Augers
- Well brush
- Water container
- Vacuum test handpump, etc.
- In carrying case

Specification	
Depth Range, Standard Unit	15 to 75 cm (note: with Extension Tubes, measuring depths can be increased)
Auger Cutting Diameter	6 cm (2-3/8 inches)
Well Height Range	2,5 cm to 25 cm
Collapsible Water container Capacity	11,36 liters
Maximum Permeameter Capacity	3,18 litres Combined Reservoir cross-sectional
Combined Reservoir cross-sectional area (X value)	35,22 cm2 (±0,18 cm2 standard deviation)
Inner Reservoir cross-sectional area (Y value)	0,16 cm2 (±0,04 cm2 standard deviation)
Package size	137 x 15 x 18 cm
Weight	21 kg

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Method

The Guelph permeameter is a constant head permeameter that operates in accordance with the principle of the “Mariotte bottle”. After making a borehole to the desired depth, the instrument is installed; the water slowly flows from the meter into the bore hole and will penetrate the soil. At a certain moment a saturated bulb is formed and the outflow of water from the permeameter reaches a constant value; this value is measured. Measurements can be taken in 1/2 to 2 hours, depending on soil type, and require only about 2.5 litres of water

The bulb is very stable, and its shape depends on the type of soil, the radius of the well and the head of water in the well. The shape of the bulb is included in the value of the C-factor (Reynolds et al., Groundwater Monitoring Review 6:1:84-95, 1986) used in the calculations. The set is equipped with 80-centimetre attachments that can increase the working depth. The maximum practical working depth is 3.15 metre.

Accessories are available to expand the measuring possibilities of the permeameter. Measurements with the Guelph permeameter are meant for above the groundwater table.