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**Product Name :**  
Geothermal Probe With Heat Pipe Principle

**Product Code :**  
LBNY-0005-1250008



#### **Description :**

The set-up also allows to take a closer look at the basic methods applied for determining the thermal conductivity of the surrounding soil of the geothermal probe. In near-surface geothermal energy generation the thermal energy stored under the Earth's surface is used for heating purposes. The transparent experimental set-up provides an insight into the closed circuit of the heat transfer: it allows a clear view on the evaporation in the heat pipe, the condensation in the probe head and the reflux of the heat transfer medium on the inside wall of the heat pipe. It demonstrates the operation of a geothermal probe with heat pipe principle.

#### **Learning objectives/experiments:**

Determination of the amount of heat that can be dissipated in the heat pipe with variation of the thermal load  
Determination of the sand's thermal conductivity by means of a thermal response test  
Variation of the filling level of the heat transfer medium contained  
Examination of the radial temperature profile in a sand sample and determination of the thermal conductivity  
Fundamentals of geothermal energy  
Operating behaviour of a geothermal probe with heat pipe principle  
Fundamentals and energy balance of a heat pump.

#### **Technical Specification :**

Heat pipe made of glass with transparent temperature control jacket  
Demonstration of the operation of a geothermal probe with heat pipe principle  
Supply of the working medium via the lab network or via water chiller  
Water as a working medium for heat dissipation in the heat exchanger  
Simulation of the energy balance of a heat pump.



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