

HFP01 HEAT FLUX PLATE/ HEAT FLUX SENSOR

HFP01 is the world's most popular sensor for heat flux measurement in the soil as well as through walls and building envelopes. By using a ceramics-plastic composite body the total thermal resistance is kept small.

INTRODUCTION

HFP01 serves to measure the heat that flows through the object in which it is incorporated or on which it is mounted. The actual sensor in HFP01 is a thermopile. This thermopile measures the differential temperature across the ceramics-plastic composite body of HFP01. Working completely passive, HFP01 generates a small output voltage proportional to the local heat flux. Using HFP01 is easy. For readout one only needs an accurate voltmeter that works in the millivolt range. To calculate the heat flux, the voltage must be divided by the sensitivity; a constant that is supplied with each individual instrument. HFP01 can be used for in-situ measurement of building envelope thermal resistance (R-value) and thermal transmittance (H-value) according to ISO 9869, ASTM C1046 and ASTM 1155 standards.

Traceability of calibration is to the "guarded hot plate" of National Physical Laboratory (NPL) of the UK, according to ISO 8302 and ASTM C177. A typical measurement location is equipped with 2 sensors for good spatial averaging. If necessary two sensors can be put in series, creating a single output signal.

If measuring in soil, in case a more accurate measurement is needed, the model HFP01SC should be considered. If measuring on glass, the PU-series should be considered.

See also models HFP03 and the PU series.

MORE INFORMATION / OPTIONS

Additional cable length x metres (add to 5m),
AC100 amplifier, LI 19 hand held readout

HFP01 SPECIFICATIONS

Sensitivity (nominal):	50 $\mu\text{V}/\text{Wm}^2$
Temperature range:	-30 to +70 °C
Sensor thermal resistance:	< 6.25 $10^{-3} \text{ Km}^2/\text{W}$
Range :	+2000 to -2000 Wm^2
Calibration traceability:	NPL, ISO 8302 / ASTM C177
Expected typical accuracy: (12hr totals)	within +5/- 15% in most common soils, within +5/ -5 % on walls

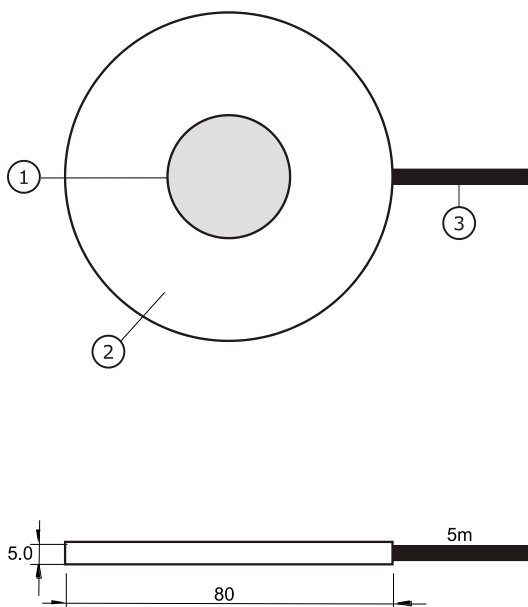


Figure 1

*HFP01 heat flux plate dimensions:
(1) sensor area, (2) guard of ceramics-plastic
composite, (3) cable, standard length is 5 m.
All dimensions are in mm.*