FLUXTEQ

PHFS-09

PHFS-09 Heat Flux Sensor Description

The PHFS-09 is the first low-cost large area heat flux sensor on the market. It is particularly useful for monitoring the performance of thermal insulation and direct in-situ measurement of insulation thermal resistance R-values. The sensor has minimal thickness and excellent sensitivity perfect for measurements on building thermal insulation.

Potential Applications

- R&D of heat transfer components
- Energy efficiency of thermal systems
- Heat transfer education
- Wearable technology that detects calorie burn

Heat Flux Sensor Specifications

Sensor Type	Differential-Temperature Thermopile
Encapsulation Material	Kapton (polyimide)
Nominal Sensitivity	Approx. 50 to 60 mV/(W/cm^2)
Sensor Thickness (t)	Approx. 275 microns
Specific Thermal Resistivity	Approx. 0.9 K/(kW/m^2)
Heat Flux Range	+/- 150 kW/m^2
Temperature Range*	-50°C to 120°C
Response Time**	Approx. 0.6 seconds
Sensor Surface Thermocouple	Type-T
Sensing Area Dimensions	a = 8.8 cm, b = 9.5 cm
Sensing Area	83.6 cm^2

*Temperature range may be larger than specified. Further testing is being conducted.
**Response time is time for one time constant or 63% of sensor output signal to a heat flux step input