Thermopile 8441301

Instruction sheet

07/06 SP

1 Inlet (funnel)
2 Shaft
3 Metal housing
4 Measurement output (4-mm safety connectors)

1. Description

The thermopile is a highly sensitive apparatus used for measuring radiation (e.g. heat radiation from black bodies, reflection of long-wave heat radiation).

Integrated in a metal housing with a polished funnel, the thermopile consists of a black surface of 15 mm diameter to which 17 thermocouples are connected. The thermocouples generate a thermoelectric potential *U* which is proportional to the intensity of the incident heat radiation.

2. Technical data

Sensitivity:	0.14 µV/µW approx.
Setting time:	40 s for 95% of the measured value
Black surface:	15 mm ∅
Internal resistance:	1 Ω
Connections:	Two 4-mm safety connectors
Dimensions:	94 mm x 40 mm ∅
Shaft:	10 mm ∅
Weight:	200 g approx.

3. Operation

To conduct the experiment, the following apparatus is additionally recommended:

1 Instrumentation amplifier for students' experiments	8532161
1 x 4-mm high-frequency BNC cable	U11257
1 Multimeter ESCOLA 10	8531160
1 Stand base	8611210

In order to prevent any drifting of the output voltage, the metal housing of the thermopile should be at room temperature.

- After setting up the experiment, wait for a few minutes before taking readings.

Readings may be made incorrect due to the influence of body heat or other external influences.

- Do not touch the apparatus while taking readings.
- Avoid direct sunlight and do not set up the apparatus in the vicinity of a heater/radiator.
- Set up the thermopile approx. 3 cm away from the object of the experiment (e.g. Leslie's cube 8442830).
- Connect up the instrumentation amplifier and the multimeter.

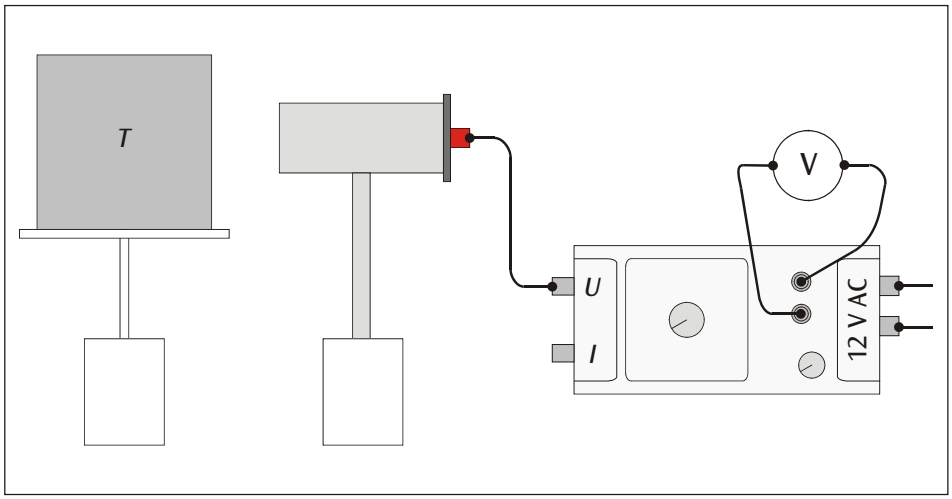

Fig. 1 Experimental set-up Leslie's cube