



TEMPOS: Soil Thermal Conductivity and Diffusivity

DESCRIPTION

The new TEMPOS is different. We've ripped up everything in our thermal properties analyzer and reinvented it from the ground up to give you higher accuracy in much less time, at a price you can afford. How? Accurate thermal properties measurements have always been about complex mathematics. Recent scientific breakthroughs in how these complex equations are solved have enabled not only higher accuracy, but also allowed us to calibrate using significantly improved data sets—making this instrument more accurate than any other in its class. Not only that, improved proprietary algorithms enable the TEMPOS to make these measurements with an incredible one-minute read time (versus the usual 10 to 15 min.).



TEMPOS

FEATURES

- Improved algorithms increase accuracy
- New one-minute read times
- Measure thermal diffusivity and specific heat at a fraction of the cost
- ASTM 5334- and IEEE 442-compliant
- Controlled heating ensures heat is constant
- An updated interface makes test setup easier than ever
- Navigation through menus and options is more straightforward
- Test set-up and results are displayed more clearly
- Mini USB cable makes downloading data easier
- Interactive color screen
- Automatically identifies the sensor you have plugged in and illustrates heating
- Extended battery life lengthens use time
- New rugged, ergonomic case
- Portable: use in the field or in the lab
- Measure moist and frozen materials accurately
- Short heating times ensure no moisture movement
- Measures thermal conductivity of many fluids
- Robust sensor needles limit breakage
- Each sensor engineered for a specific material
- Automatically corrects for linear temperature drift
- Resolves temperature to ± 0.001 °C

TEMPOS: Soil Thermal Conductivity and Diffusivity

The ASTM 5334- and IEEE 442-compliant TEMPOS is engineered using ISO 2008 standards. It takes accurate readings of thermal conductivity, thermal resistivity, thermal diffusivity, and specific heat in many material types across multiple disciplines, from soil and concrete to food, plastics, lubricating oil, and even human tissue. Each needle produces only a discrete amount of heat, virtually eliminating the moisture movement (or free convection in liquids) that could alter a reading.

Contact info



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SPECIFICATIONS	
Range	0–50 °C
Power	5 AA batteries
Battery life	More than 250 high-power measurements
Data storage	2,048 measurements in flash memory (both raw and processed data are stored for download)
Read modes	Manual and unattended measurement modes
OPERATING ENVIRONMENT (Sensors)	
Range	–50 to 150 °C
PHYSICAL CHARACTERISTICS	
Controller	Length: 18.5 cm (7.28 in) Width: 10 cm (3.94 in) Height: 3.5 cm (1.38 in)
Carrying case	Length: 37 cm (14.57 in) Width: 30 cm (11.81 in) Height: 10.5 cm (4.13 in)
Display size	Width 5.5 cm (2.17 in) Height 4.0 cm (1.57 in)
Sensor interface	DB-15 connector
SENSORS	
TR-3 (10 cm [large] single needle)	Range: Conductivity: 0.1–4.0 W/(m • K) Resistivity: 25–1,000 °C • cm/W Accuracy: Conductivity: ±10% from 0.1–4.0 W/(m • K) Size: 2.4 mm diameter × 100 mm length
SH-3 (3 cm dual-needle)	Range: Conductivity: 0.02–2.00 W/(m • K) Resistivity: 50–5,000 °C • cm/W Diffusivity: 0.1–1.0 mm ² /s Volumetric specific heat capacity: 0.5–4.0 MJ/m ³ Accuracy: Conductivity: ±10% from 0.2–2.0 W/(m • K) Diffusivity: ±10% at conductivity above 0.2 W/(m • K) ±0.02 W/(m • K) from 0.10–0.20 W/(m • K) Volumetric specific heat capacity: ±10% at conductivities above 0.1 W/(m • K) Size: 1.3 mm diameter × 30 mm length, 6 mm spacing
RK-3 (6 cm [thick] single needle)	Range: Conductivity: 0.1–6.0 W/(m • K) Resistivity: 17–1,000 °C • cm/W Accuracy: Conductivity: ±10% from 0.1–6.0 W/(m • K) Size: 3.9 mm diameter × 60 mm length
COMPLIANCE	Manufactured under ISO 9001:2015 EN 61326-1:2013 EN 55022/CISPR 22

This Instrument is manufactured by our principle company

METER Environment - USA