



TPS 500 S

Hot Disk Thermal Constants Analyser



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Compact and Versatile Thermal Constants Analyser

The TPS 500 S rapidly measures the thermal conductivity, thermal diffusivity and specific heat capacity of solids, powders, pastes, gels and high-viscosity liquids. The instrument has high accuracy and sample geometry is flexible. Sample preparation is kept to a minimum and most materials are tested in less than 60 seconds. This versatile instrument along with the elegant Hot Disk Thermal Analysis software is the ideal measurement apparatus for the small-scale laboratory or a compact and efficient QC testing system.

The user-friendly test and analysis software incorporates tools for scheduled measurements as well as automated temperature control of external devices. Furthermore it includes tools for exporting results to third-party software (MS Excel or raw text), for additional processing or statistical analysis. For precise and automatic temperature readings an optional PT-100 temperature sensor is available.

The TPS 500 S system constitutes a complete package, including everything necessary for making measurements: Core instrument; Isotropic, Slab, One-Dimensional and limited Specific Heat Capacity software modules; three Sensors; Stainless Steel Verification Samples for data validation and a Room-Temperature Sample Holder.



The Hot Disk Sensor

THERMAL CONSTANTS ANALYSER

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Thermal Conductivity	0.03 to 100 W/m/K using standard isotropic method. 5 to 200 W/m/K using slab or one-dimensional methods.
Thermal Diffusivity	0.02 to 40 mm ² /s using standard isotropic method. 2 to 100 mm ² /s using slab or one-dimensional methods.
Specific Heat Capacity	0.10 to 4.5 MJ/m ³ K.
Measurement Time	2.5 to 2560 seconds.
Reproducibility	2 % (thermal conductivity). 10 % (thermal diffusivity, sensor radius 6.4 mm). 12 % (volumetric specific heat, sensor radius 6.4 mm)
Accuracy	Better than 5 % (thermal conductivity).
Temperature Range Core Instrument With Furnace With Circulator	-100 °C to 300 °C. Ambient. Ambient to 300 °C. -35 °C to 200 °C.
Power Requirements	Adjusted to the line voltage in the region of use.
Smallest Sample Dimensions	3 mm x 8 mm diameter or square for bulk testing. 0.1 mm x 12 mm diameter or square for slab testing. 10 mm x 5 mm diameter or square for one-dimensional testing.
Largest Sample Size	Unlimited.
Sensor Types Available	Kapton-insulated sensors 7577 (radius 2.0 mm), 5465 (radius 3.2 mm) and 5501 (radius 6.4 mm) with or without cable.



Hot Disk®

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