

# THERMAL CONSTANTS ANALYSER

TPS 2500 S



*Transforming the complex into the simple*

## TPS 2500 S

The Hot Disk TPS 2500 S constitutes a new and improved industry benchmark Thermal Constants Analyzer test system. This general-purpose R&D instrument is designed for analyzing thermal transport properties covering an extensive range of materials of various types of geometry and dimensions. The TPS 2500 S meets ISO Standard (ISO/DIS 22007-2.2).

The patented TPS technique – today used in more than 200 laboratories – is highly appreciated for its ability to simultaneously determine thermal conductivity, thermal diffusivity and specific heat capacity from a single measurement, with limited emphasis on sample preparation. The operative simplicity of the TPS 2500 S and the performance achieved when using optimally designed Hot Disk sensors, makes this system a robust and ideal tool for tests of solids, liquids, powders, pastes and foams. The trademark high accuracy and precision makes the instrument suitable for QC testing.

Optional software modules allows the instrument to be used in special applications, such as measurements of thin films, coatings or adhesive layers (Thin Films module), high-conducting sheets or slabs (Slabs module), and anisotropic samples or layered structures (Anisotropic module) – important applications in the electronics, automotive, aerospace, nuclear and chemical industries.

The test & analysis software for the TPS 2500 S system incorporates tools for automated measurements as well as automatic temperature control of external devices. The software also incorporates tools for exporting results to 3rd-party software (MS Excel), for additional processing or statistical analysis..

## KEY FEATURES

**Sensors.** The TPS 2500 S operates a wide variety of TPS sensors suitable for different materials and applications.

**Temperature Control.** Automatic Temperature series measurements (Isothermal Steps) are easy to perform using either an optional external Furnace or Liquid-Temperature Bath. The test & measurement software and TPS 2500 S instrument controls the external device through an RS-232 port on the rear of the TPS 2500 S instrument.

**Everything to get you started.** The basic TPS 2500 S system includes everything to get you started making measurements, including installation and on-site training. The instrumentation includes: Standard Measurement Module software, one Sensor and Stainless Steel Reference material for data verification & Room-Temperature Sample Holder. *Optional: PC with Windows XP, MS Office 2007 SBE, Monitor, Keyboard and Mouse.*

**Optional Software Modules.** In addition to the Standard Technique, optional software for SLAB, THIN FILM, ANISOTROPIC and SPECIFIC HEAT CAPACITY modules is available.

## SPECIFICATIONS TPS 2500 S

Thermal Conductivity		0.005 to 500 W/mK
Thermal Diffusivity		0.1 to 100 mm <sup>2</sup> /s
Specific Heat Capacity		Up to 5 MJ/m <sup>3</sup> K
Measurement Time		1 to 1280 seconds
Reproducibility		Typically better than 1%
Accuracy		Better than 5%
Temperature Range	<i>Standard</i>	Ambient (Room Temp. only)
	<i>With Furnace<sup>1</sup></i>	Ambient to 750°C
	<i>With Circulator<sup>2</sup></i>	-20°C to 180°C
Power Requirements		Adjusted to the line voltage in the country of use
Smallest Sample Dimensions		0.5mm High, 2mm Diameter (Cylindrical sample)
Sensor Types Available		Kapton insulated with or without cable (from cryogenic temperatures up to 180°C)
		Mica insulated without cable (Room Temp. up to 750°C). <sup>3</sup>
Meets ISO Standard (ISO/DIS 22007-2.2)		

*As Hot Disk continually improves its instrumentation, specifications are subject to change without prior notice.*

<sup>1</sup> Furnace is also available with Argon Gas/Vacuum Option.

<sup>2</sup> Use of Circulator requires Liquid or Solid Sample Holder for Bath.

<sup>3</sup> Due to the nature of the testing procedure, the use of a Mica Sensor in the furnace at high temperatures requires special handling/care. The Specific Heat Capacity module requires the use of a specially manufactured sensor with Gold Cup & Lid assembly.



TPS 2500 S unit



Kapton insulated sensor



Room-Temperature sample holder with reference sample

## CONTACTS

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