

MP-2 Thermal Conductivity

Portable Thermal Conductivity Meter for
Liquids, Solids, Pastes and Powders

Conforms to ASTM and ISO Standards



Transient Hot Wire - Liquids (THW-L3)



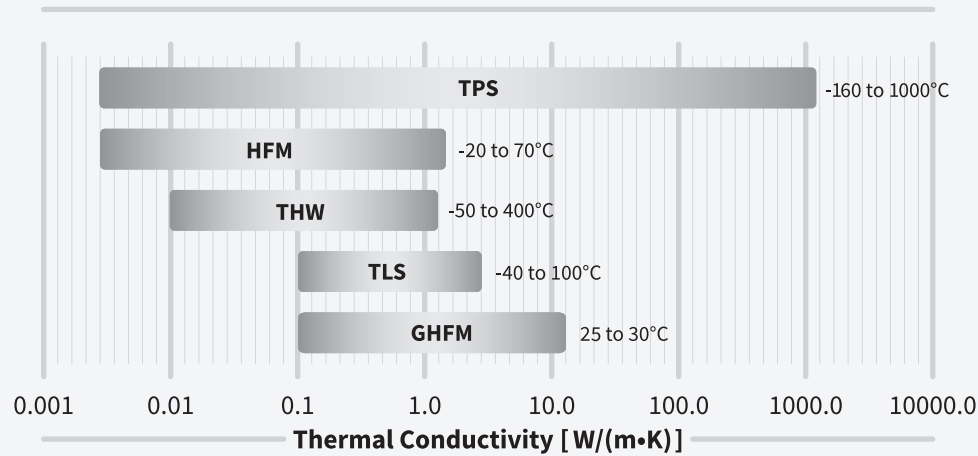
Transient Line Source (TLS)



Transient Hot Wire - Solids (THW-S)



Thermal Effusivity (TPS-EFF)



THERMAL CONDUCTIVITY:

- HFM-100** (Heat Flow Meter)
- THW-L1** (Transient Hot Wire)
- GHFM-01** (Guarded Heat Flow Meter)

THERMAL ANALYSIS:

- DSC-L600** (Differential Scanning Calorimeter)
- TGA-1000** (Thermogravimetric Analyzer)
- TGA-1500** (Thermogravimetric Analyzer)



- TLS-100** (Transient Line Source)
- THW-L2** (Transient Hot Wire)
- TPS-EFF** (Transient Plane Source)
- GHFM-02** (Guarded Heat Flow Meter)
- MP-2** (Measurement Platform)

Thermtest has been advancing the measurement of thermal conductivity, thermal diffusivity, and specific heat for more than a decade. With more than 2000 satisfied customers worldwide, our unique combination of advanced thermal conductivity instrumentation for the laboratory, portable meters for the field, and accessories enables us to provide ideal solutions to fit any material testing application and budget.



Thermal Conductivity **MP-2**

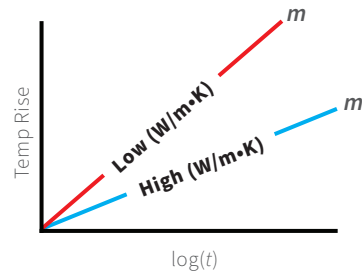
Thermal conductivity Measurement Platform – 2 (MP-2) users benefit from the convenience and accuracy gained when using primary testing methods. The MP-2 controller auto-detects the connected sensor and loads corresponding testing parameters. Measurements are easily performed with the smart on-board software and transferred to computer with an included Windows utility program.

Measurement Platform-2 Features



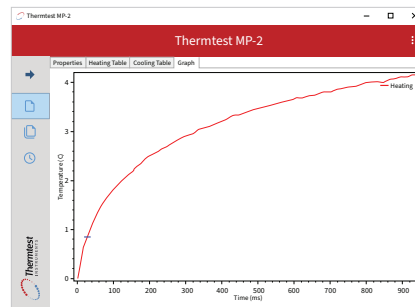
Featured Measurement Platform-2 Capabilities

The MP-2 is an advanced meter with unique selection of transient thermal conductivity sensors for a variety of applications, with a focus on primary measurements. The transient thermal conductivity sensors share similar principles of operation. The sensor wire is heated using a constant current source (q) and the temperature rise is recorded by monitoring the change in electrical resistance of the wire (THW and EFF) or by a resistance temperature detector device (TLS). For samples of high thermal conductivity, the lower the slope; for samples of low thermal conductivity, the higher the slope.



For convenience, the auto-testing function can be programmed on-board or with the MP-2 Windows utility software. Additional on-board and utility features include the ability to review, save or delete, and export results to Excel. To maximize portability, power can be supplied by battery or USB cable. Informative screen icons keep users informed about power status and testing progress.

Thermtest MP-2	
#	1
SAMPLE ID	WATER
Date & Time	10/26/2020 8:12PM
Test Time (s)	1.000000
Ambient Temperature (C)	20.348850
K(W/mk)	0.605414
Current (mA)	284
AVG DTR (C)	0.000092
Delta T (C)	4.157341
Sensor Type	N/A
Cal Data	10/26/2020

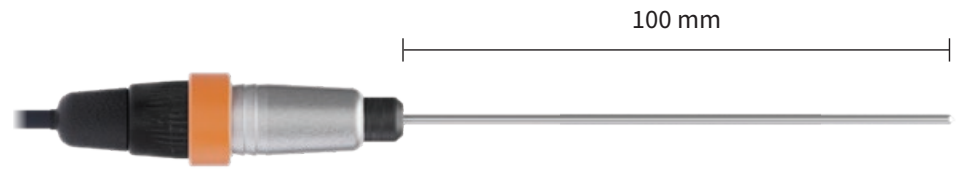


- **Primary Measurement Sensors**
- **Economical, Smart, and Accurate**
- **Portable and Lab Instruments**
- **Multi-Sensor**
- **Auto-Test and Export**
- **ASTM and ISO Compliant**

MP-2 SENSORS

SENSORS	MATERIALS
THW-L3	Liquids and Pastes
TLS 50 mm	Rock and Concrete
TLS 100 mm	Soils and Polymers
TLS 150 mm	Soils and Polymers
THW-S	Insulation and Soft Materials
TPS-EFF	Textiles and Fabrics

Transient Line Source (TLS 50 mm and TLS 100 mm)



Materials	Concrete, Rock and Polymers
Measurement Capabilities	Bulk Properties
Thermal Conductivity	0.3 to 5 W/m·K
Thermal Resistivity	0.2 to 3.3 mK/W
Measurement Time	3 min.
Reproducibility	Typically better than 2%
Accuracy	Typically better than 5%
Temperature Range	-40 to 100°C
Minimum Sample Size	50 mm in length, 50 mm diameter
Largest Sample Size	Unlimited
Standards	ASTM D5334-14

Materials	Soils, Pastes, Powders and Solids
Measurement Capabilities	Bulk Properties
Thermal Conductivity	0.1 to 5 W/m·K
Thermal Resistivity	0.2 to 10 mK/W
Measurement Time	3 min.
Reproducibility	Typically better than 2%
Accuracy	Typically better than 5%
Temperature Range	-40 to 100°C
Minimum Sample Size	100 mm in length, 50 mm diameter
Largest Sample Size	Unlimited
Standards	ASTM D5334-14, IEEE 442-1981

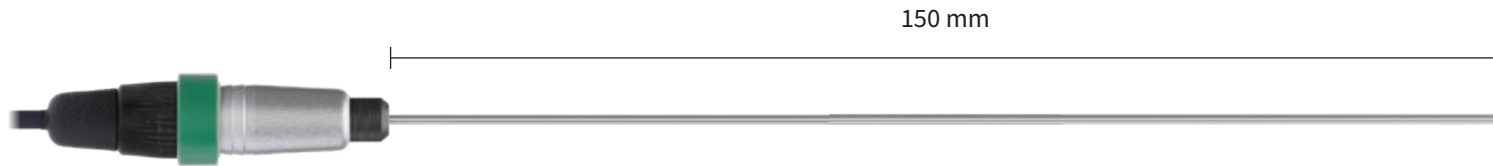


thermtest.com/applications/tls50mm



thermtest.com/applications/tls100mm

Transient Line Source (TLS 150 mm)



Materials	Soils, Pastes, Powders and Solids
Measurement Capabilities	Bulk Properties
Thermal Conductivity	0.1 to 3 W/m·K
Thermal Resistivity	0.3 to 10 mK/W
Measurement Time	3 min.
Reproducibility	Typically better than 2%
Accuracy	Typically better than 5%
Temperature Range	-40 to 100°C
Minimum Sample Size	150 mm in length, 50 mm diameter
Largest Sample Size	Unlimited
Standards	ASTM D5334-14, IEEE 442-2017



thermtest.com/applications/tls150mm

Transient Hot Wire (THW-L3 and THW-S)



Materials	Liquids, Pastes and Powders
Measurement Capabilities	Bulk Properties
Thermal Conductivity	0.01 to 1 W/m•K
Measurement Time	1 second
Reproducibility	Typically better than 2%
Accuracy	Typically better than 5%
Temperature Range	10 to 40°C
Minimum Sample Size	15 mL
Largest Sample Size	Unlimited
Standards	ASTM D7896-19

Materials	Insulation and Soft Materials
Measurement Capabilities	Bulk Properties
Thermal Conductivity	0.01 to 2 W/m•K
Measurement Time	< 5 seconds
Reproducibility	Typically better than 2%
Accuracy	Typically better than 5%
Temperature Range	10 to 40°C
Minimum Sample Size	50 mm x 10 mm
Largest Sample Size	Unlimited
Standards	N/A

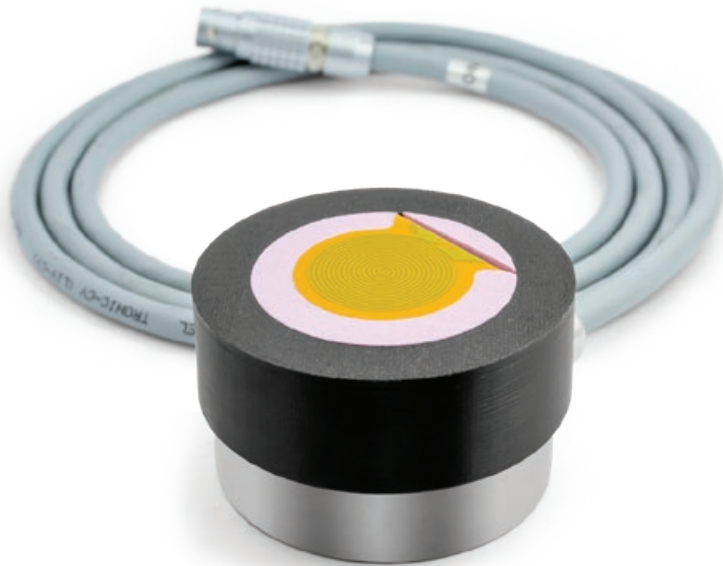


thermtest.com/applications/thw-l3



thermtest.com/applications/thw-s

Transient Plane Source (TPS-EFF)



Materials	Textiles, Fabrics and Solids
Measurement Capabilities	1-Dimensional
Thermal Effusivity Range	35 to 1700 W√s/m ² K
Measurement Time	2 and 10 seconds
Reproducibility	2%
Accuracy	5%
Temperature Range	-10 to 50°C
Minimum Sample Size	35 mm diameter x thickness dependent on Effusivity
Maximum Sample Size	Unlimited
Moisture Range	0 to 90% (non-condensing)
Sensor Diameter	30 mm
Standards	ASTM D7984-16
Test Method	Transient Plane Source



thermtest.com/applications/tps-eff

Sensor Comparison



THW-L3
Transient Hot Wire - Liquids

0.01 to 1 W/m•K
Thermal Conductivity

10 to 40°C
Temperature Range

5%
Accuracy

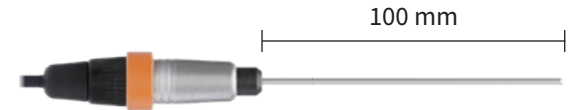


TLS 50 mm
Transient Line Source

0.3 to 5 W/m•K
Thermal Conductivity

-40 to 100°C
Temperature Range

5%
Accuracy

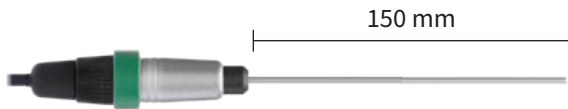


TLS 100 mm
Transient Line Source

0.1 to 5 W/m•K
Thermal Conductivity

-40 to 100°C
Temperature Range

5%
Accuracy



TLS 150 mm
Transient Line Source

0.1 to 3 W/m•K
Thermal Conductivity

-40 to 100°C
Temperature Range

5%
Accuracy



THW-S
Transient Hot Wire - Solids

0.01 to 2 W/m•K
Thermal Conductivity

10 to 40°C
Temperature Range

5%
Accuracy



TPS-EFF
Transient Plane Source

35 to 1700 W√s/m²K
Thermal Effusivity

-10 to 50°C
Temperature Range

5%
Accuracy



HEADQUARTERS

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