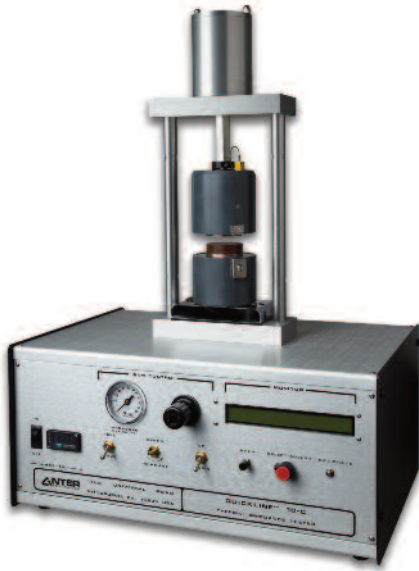




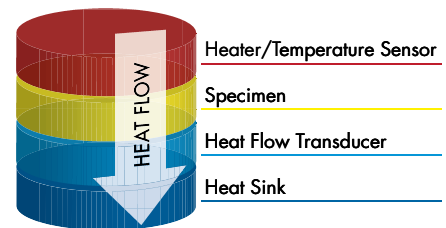
# DTC-25 THERMAL CONDUCTIVITY METER



The DTC-25 is an entry-level, single temperature test instrument used for quick determination of thermal conductivity of solid materials using the guarded heat flow method. Because of its simple operation, small specimen size, and short cycle time, the DTC-25 is ideally suited for research, quality control and screening of materials. Non-solids, such as pastes or liquids, can be tested using special containers. Thin films can also be tested accurately using a multi-layer technique, with the help of an optional software package.

## DTC-25 Test Method

- A test specimen is held under a compressive load between two polished metal surfaces. The upper surface is temperature controlled. The lower surface is part of a calibrated heat flux transducer, which is attached to a liquid cooled heat sink.
- The contact resistance is kept small by applying a reproducible, pneumatic load to the test stack, and with the use of thermal interface pastes.
- An axial temperature gradient is established through the stack as heat flows from the upper surface through the test specimen to the heat sink.
- The temperature drop through the specimen is determined from temperature sensors in the metal surfaces on either side of the specimen.
- After reaching thermal equilibrium, the temperature difference across the specimen is measured along with the output from the heat flux transducer. These values and the specimen thickness are then used to calculate thermal conductivity.
- The DTC-25 is factory calibrated using specimens of known thermal resistance spanning the range of the instrument. Calibration reference sets are also available.



Guarded Heat Flow Test Method



- Guarded Heat Flow Meter
- Ambient Temperature Operation
- Economical and Easy to Use
- 2" diameter Specimen
- Conforms to ASTM E1530

## Simple, Efficient, Economical

The DTC-25 is completely self-contained and requires no additional instrumentation for the measurement. An optional chiller providing coolant at a fixed temperature is recommended for optimal performance. The DTC-25 is a simple, fast, accurate, and reasonably-priced laboratory instrument.

## System Software

The DTC-25 test method is in accordance with specification ASTM E1530 for measuring thermal conductivity. The unit is supplied with a utility software program for convenient data analysis. The user simply enters data from the DTC-25 digital display via the computer keyboard and the thermal conductivity is automatically computed. If the measured thermal resistance value falls outside the range of the instrument, the program suggests testing a different specimen thickness for obtaining more accurate test results.

---

## DTC-25 Technical Specifications

Method	Guarded Heat Flow Meter
Standard Test Method	ASTM E1530
Specimen Compatibility	solids, pastes, liquids, thin films, auxiliary capsules for pastes and liquids
Specimen Size	
Thickness	Maximum 1.25" (32mm) depending on thermal resistance Thin films down to 0.004" (0.1 mm), with optional software
Diameter	50 mm
Temperature Range	Near ambient
Thermal Conductivity Range	0.1 to 20 W/mK
Thermal Resistance Range	0.0004 to 0.012 m <sup>2</sup> K/W
Accuracy	±3% to 8% depending on conductivity
Reproducibility	±2%
Dimensions	20" (50.8 cm) W x 14" (35.56 cm) D x 27" (68.58 cm) H

---

TA Instruments, 159 Lukens Drive, New Castle, DE 19720  
Telephone: (302) 427-4000 • Fax: (302) 427-4001 • E-mail: [info@tainstruments.com](mailto:info@tainstruments.com)

[www.tainstruments.com](http://www.tainstruments.com)