



**NETZSCH**

Proven Excellence.

THERMAL CONDUCTIVITY MEASURING DEVICE  
with guarded hot pipe for pipe insulations

**TLR 1000**



# GUARDED HOT PIPE

*THE ABSOLUTE METHOD FOR DETERMINING THE THERMAL CONDUCTIVITY OF PIPE INSULATIONS*

- Direct measuring method
- For pipe insulations with low thermal conductivity
- Pipe specimens with diameters up to 220 mm
- Customer-specific hot pipes
- Touchscreen for ease of operation
- Protected test chamber

Protected hot pipe with touch display – easy and intuitive operation!

The use of insulation and building materials with a low thermal conductivity value substantially contributes to protecting the environment. When transferring media (gases or liquids) through pipelines, any thermal energy generated should be prevented from release back into the surroundings. Effective pipe insulation is needed for this.

The thermal conductivity ( $\lambda$ ) is the property conveying a material's ability to conduct heat and is expressed in  $W/(m \cdot K)$ . **The lower the thermal conductivity of a material, the better its insulating properties.**

NETZSCH TAURUS Instruments GmbH primarily produces devices for measuring thermal conductivity as well as fire-testing equipment. These include guarded hot plates, HFM (heat-flow meters) and guarded hot pipe instruments for measuring the thermal conductivity of building and insulating materials. All instruments are in accordance with common standards.

- Instruments with protected hot pipe are in accordance with DIN EN ISO 8497, DIN EN 1946-5, DIN 52613, ASTM C 534, and ASTM C 335





# TLR 1000 – Pipe Tester

## Features at a Glance

- Fully insulated test chamber, designed for tube specimens with a diameter up to 220 mm
- Reference test pipe optionally available
- **Easy sample change from the top**
- Measurement precision exceeding the standard (DIN EN ISO 8497) thanks to 16 temperature sensors and two thermo chains between measuring and protection tube
- **Operator guidance via touch display with intuitive control by the software**
- Network capability
- Control, data acquisition and processing via external PC (Windows operating system) and Lambda software (option) for comprehensive evaluation and printing of measurement protocols
- Numerous interfaces such as RS232, USB and Gigabit Ethernet
- Fully automated measurement
- Variable dimensions of the hot pipe; inner pipe diameter from 18 to 89 mm
- Protected chamber tempered by the cooling system
- Reference test pipe made of rock wool with works calibration certificate
- Hot pipes with extended temperature range



### TLR 1000

Measuring range	0.001 W/(m·K) up to 0.25 W/(m·K)
Specimen diameter	■ inner: 18 mm to 89 mm ■ outer: 30 mm to 220 mm
Temperature range	■ test chamber: -15°C to 140°C ■ hot pipe: 0°C* to 200°C
Interface	1x RS 232, 1x Gigabit Ethernet, USB
Dimensions (H x W x D)	45 cm x 1850 cm x 50 cm
Power supply	110 V to 230 V, 50/60 Hz
Weight	118 kg

\* depending on the sample

# Lambda Software

UNIVERSAL SOFTWARE PROGRAM FOR CONTROL,  
DATA ACQUISITION AND EVALUATION FOR THERMAL  
CONDUCTIVITY MEASURING DEVICES

## Intuitive Software Functions

- Selection between manual and automated measurement procedure with up to 16 definable mean temperature points per measurement
- Creation of favorites for fast access to frequently used measurement tasks
- Display of all relevant data, interim and final measurement results as graphs and tables
- Recording of all relevant notifications and information
- Safety function via error messages
- Calculation of the nominal  $\lambda$ -value from ascertained  $\lambda_{90/90}$
- Customer-specific test protocol
- Intuitive icons for menu functions
- User and administrator levels



Measurement screen



Graph of the 7-point measurement

# NETZSCH

NETZSCH-Gerätebau GmbH  
Permanent Establishment Weimar  
Döbereinerstraße 21  
99427 Weimar  
Germany  
Phone: +49 3643 4174 0  
Fax: +49 3643 4174 99  
at@netzsch.com