Technical Specifications

NETZSCH

TCT 716 *Lambda*	
General	
Standards	Based on ASTM E1530
Operation	External PC, minimum i5 or equivalent, 500 GB, 2x USB 3.0 (not included)
Automated instrument calibration	Yes; reference materials: fused silica; pyroceram and stainless steel
Testing chamber	Motorized door opening/closing mechanism, interlocked
Measurement data	
Thermal resistance range	0.001 ... 0.030 $m^2 \cdot K/W$
Thermal conductivity range	0.1 … approx. 45 W/(m·K) (using proper sample thicknesses)
Thermal conductivity accuracy	±3% deviation from literature value (depending on the accuracy of calibration material)
Thermal conductivity repeatability	±2% (precision; measurement of the same sample in the same device after sample out/in between measurements)
Measurement times for different material types	In general, t < 2 hours/point, depending on range, number of temperature steps and conductivity
Number of set points	Free-selectable number of programmable test temperatures; typically full range test includes 5 to 6 test temperatures max.
Number and type of temperature sensors	Premium RTD class A, in protective capsule, 14 total/instrument, resolution: 0.01°C
Metering area of the plates	51 mm, round, full cross section
Sample Dimensions	
Sample shapes	Round
Sample dimensions	ø 51 mm nominal (2 in; +0.005 in, -0.050 in); height up to 31.8 mm (1¼ in)
Sample condition	Solid
Number of samples	Up to 2; independent of type, identical thermal cycles
Contact force and load control	
Variable contact force	Programmable for incompressible materials
Contact pressure/accuracy	5 … 50 psi ± 5 psi
Load control	Automatic
Temperature	
Temperature	▪ Max. hot plate temperature: 350°C ▪ Sample mean temperature range: -10°C to 300°C
Temperature gradient	Typically 30 K, variable
Cooling system	Liquid CO_2
RTD resolution	±0.05%, class A RTD, approx. ±0.01°C resolution
Locations of temperature measurement	Specific locations along stack, consisting of upper plate/sample/lower plate, heat sink
Instrument Dimensions	
Dimensions and weight	460 mm (18") wide, 630 mm (25") deep, 510 mm (20") high, 80 lbs (without CO_2 cylinder)
CO_2 cylinder	mandatory for operation (not included)