

# Technical Specifications

# NETZSCH

TCT 716 <i>Lambda</i>	
<b>General</b>	
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
<b>Measurement data</b>	
Thermal resistance range	0.001 to 0.030 m <sup>2</sup> ·K/W
Thermal conductivity range	0.1 to approx. 30 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 thermal 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
<b>Sample Dimensions</b>	
Sample shapes	Round
Sample dimensions	∅ 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
<b>Contact pressure and load control</b>	
Variable contact pressure	Programmable for incompressible materials; 35/70/175/350 kPa
Load control	Automatic
<b>Temperature</b>	
Temperature	<ul style="list-style-type: none"> <li>■ Max. hot plate temperature: 350°C</li> <li>■ Sample mean temperature range: -10°C to 300°C</li> </ul>
Temperature gradient	Typically 30 K, variable
Cooling system	Liquid CO <sub>2</sub>
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
<b>Instrument Dimensions</b>	
Dimensions and weight	Basic instrument: height 715 mm x width 460 mm x depth 630 mm; 54 kg (basic instrument without CO <sub>2</sub> cylinder)
CO <sub>2</sub> cylinder	mandatory for operation (not included)