Technical Specifications

NETZSCH

HFM 706 *Lambda* Series	
Standards	ASTM C518, ISO 8301, JIS A1412, DIN EN 12667, DIN EN 12664*
Installation	Bench-top device (*Small*, *Medium*) Mobile metal base frame (optional for *Large*)
Thermal conductivity range	▪ *Small*: 0.007 to 2 W/(m·K)** ▪ *Medium*: 0.002 to 2 W/(m·K)** ▪ *Large*: 0.001 to 0.5 W/(m·K)** ▪ Accuracy: ± 1-2% ▪ Repeatability: ± 0.25% ▪ Reproducibility: ± 0.5% → All performance data is verified with NIST SRM 1450 D (thickness:25 mm)
Plate temperature range	-20°C to 90°C, optional for the HFM 706 *Lambda Medium*: -30° to 90°C (ΔT: variable, up to 40 K)
Air-tight system	Sample compartment with the possibility of introducing purge gas
Metering area heat flux transducer	▪ *Small/Medium*: 102 mm x 102 mm ▪ *Large*: 254 mm x 254 mm
Chiller system	External; constant temperature setpoint over plate temperature range
Plate temperature control	Peltier system
Plate motion	Motorized
Plate thermocouples	Three thermocouples on each plate, type K (two extra thermocouples with Instrumentation Kit)
Thermocouple resolution	± 0.01°C
Number of setpoints	Up to 99
Specimen sizes (max.)	▪ *Small*: 203 mm x 203 mm x 51 mm ▪ *Medium*: 305 mm x 305 mm x 105 mm ▪ *Large*: 611 mm x 611 mm x 200 mm
Variable load/ contact force	▪ *Small*: 0 to 854 N (21 kPa on 203 x 203 mm^2) ▪ *Medium*: 0 to 1930 N (21 kPa on 305 x 305 mm^2) ▪ *Large*: 0 to 1900 N (5 kPa on 611 x 611 mm^2) Force-controlled adjustment of the contact force or the desired thickness, and thus density, of compressible materials
Thickness determination	▪ Automatic measurement of mean sample thickness ▪ Four-corner thickness determination via inclinometer ▪ Specimens with a slight wedge shape can be measured
Software features	▪ *SmartMode* (incl. *AutoCalibration*, report generation, data export, wizards, user methods, predefined user definable parameters, user-defined parameters, c_p determination, etc.) ▪ Measurement History Report ▪ Enhanced Export Settings ▪ Storage and restoration of calibration and measurement files ▪ $\lambda_{90/90}$ Report ▪ Plot of plate/mean temperatures and thermal conductivity values ▪ Monitoring of heat flux transducer signal

* not HFM 706 *Lambda Large*

** Please note: In the very low thermal conductivity range, accuracy of Lambda (λ) values can be restricted. *Small* and *Medium*: 2.0 W/(m·K) achievable with optional Instrumentation Kit; recommended for hard materials and those with higher thermal conductivity