

HFM 446 *Lambda* Series

Standards	ASTM C518, ISO 8301, JIS A1412, DIN EN 12667, DIN EN 12664*
Type	Stand-alone, with integrated printer
Thermal conductivity range	<ul style="list-style-type: none"> ■ <i>Small</i>: 0.007 to 2 W/(m·K)** ■ <i>Medium</i>: 0.002 to 2 W/(m·K)** ■ <i>Large</i>: 0.001 to 0.5 W/(m·K)** <p><i>Small</i> and <i>Medium</i>: 2.0 W/(m·K) achievable with optional instrumentation kit, recommended for hard materials and those with higher thermal conductivity</p> <p>Performance data:</p> <ul style="list-style-type: none"> ■ Accuracy: ± 1% to 2% ■ Repeatability: ± 0.25 % ■ Reproducibility: ± 0.5% <p>→ All performance data is verified with NIST SRM 1450 D (thickness 25 mm)</p>
Plate temperature range	-20°C to 90°C, optional for the HFM 446 <i>Lambda Medium</i> : -30° to 90°C
Air-tight system	Sample compartment with possibility to introduce purge gas
Metering area heat flux transducer	<ul style="list-style-type: none"> ■ <i>Small/Medium</i>: 102 mm x 102 mm ■ <i>Large</i>: 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.)	<ul style="list-style-type: none"> ■ <i>Small</i>: 203 mm x 203 mm x 51 mm ■ <i>Medium</i>: 305 mm x 305 mm x 105 mm ■ <i>Large</i>: 611 mm x 611 mm x 200 mm
Variable load/contact force	<ul style="list-style-type: none"> ■ <i>Small</i>: 0 to 854 N (21 kPa on 203 x 203 mm²) ■ <i>Medium</i>: 0 to 1930 N (21 kPa on 305 x 305 mm²) ■ <i>Large</i>: 0 to 1900 N (5 kPa on 611 x 611 mm²) <p>Force-controlled adjustment of the contact force or the desired thickness, and thus density, of compressible materials</p>
Thickness determination	<ul style="list-style-type: none"> ■ Automatic measurement of mean sample thickness ■ Four-corner thickness determination via inclinometer ■ Compliance to non-parallel specimen surfaces
Software features	<ul style="list-style-type: none"> ■ <i>SmartMode</i> (incl. <i>AutoCalibration</i>, report generation, data export, wizards, user methods, predefined user definable parameters, user-defined parameters, c_p determination, etc.) ■ 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 ■ Creation/selection of configurations for stand-alone-operation (without PC)

* not HFM 446 *Lambda Large*

** Please note: In the very low thermal conductivity range, accuracy of Lambda (λ) values can be restricted.