

Technical Specifications

NETZSCH

	LFA 717 HyperFlash®	LFA 717 HyperFlash® HT
Temperature range	-100°C to 500°C (RT version available)	RT to 1250°C
Heating rate (max.)	50 K/min	50 K/min
Cooling device	External chiller (RT to 500°C), optional: ▪ Liquid nitrogen cooling (-100°C to 500°C) ▪ Pressurized air (0°C ... 500°C)	External chiller (RT to 1250°C)
Thermal diffusivity	0.01 mm²/s ... 2000 mm²/s	0.01 mm²/s ... 2000 mm²/s
Thermal conductivity	0.1 W/(m·K) ... 4000 W/(m·K)	0.1 W/(m·K) ... 4000 W/(m·K)
Accuracy	▪ Thermal diffusivity¹: ± 3% ▪ Specific heat capacity²: ± 5%	▪ Thermal diffusivity¹: ± 3% ▪ Specific heat capacity²: ± 5%
Repeatability	▪ Thermal diffusivity¹: ± 2% ▪ Specific heat capacity²: ± 3%	▪ Thermal diffusivity¹: ± 2% ▪ Specific heat capacity²: ± 3%
Xenon flash lamp	▪ Pulse energy: up to 10 Joules/pulse (variable), software-controlled ▪ Pulse width: 10 ... 1500 µs	▪ Pulse energy: up to 10 Joules/pulse (variable), software-controlled ▪ Pulse width: 10 ... 1500 µs
ZoomOptics	Patented; optimized field of view (optional, requires no mask)	Patented; optimized field of view (optional, requires no mask)
Pulse mapping	For finite pulse correction and improved c_p determination	For finite pulse correction and improved c_p determination
IR detectors	▪ InSb: RT ... 500°C ▪ MCT: -100°C ... 500°C ▪ Detector refill (option)	▪ InSb: RT ... 1250°C ▪ Detector refill (option)
Atmosphere	Inert, oxidizing, static and dynamic	Inert, oxidizing, static and dynamic
Vacuum	< 150 mbar	10 ⁻⁴ mbar (with turbo pump)
Data acquisition	2 MHz ▪ Min. measurement time (10 half times) down to 1 ms → for highly conducting and/or thin samples (e.g., Al, Cu plates, thin films, etc.) ▪ Max. measurement time up to 120 s → for low-conducting and/or thick samples (e.g., polymers, refractories, etc.)	2 MHz ▪ Min. measurement time (10 half times) down to 1 ms → for highly conducting and/or thin samples (e.g., Al, Cu plates, thin films, etc.) ▪ Max. measurement time up to 120 s → for low-conducting and/or thick samples (e.g., polymers, refractories, etc.)
Gas control	Frits or optional MFC; measurements under reduced pressure possible	MFC + internal pump
Sample holders	▪ Round and square samples ▪ Liquids, pastes, resins, powders, fibers, laminates, anisotropic samples ▪ Tests under mechanical pressure	▪ Round and square samples ▪ Liquids, pastes, resins, powders, lamellar samples ▪ Tests under mechanical pressure
Integrated automatic sample changer	4 insets for up to 4 samples each: ▪ Ø 6 mm, 8 mm, 10 mm, 12.7 mm ▪ 4x Ø_{max.} 25.4 mm ▪ 16x up to Ø_{max.} 12.7 mm ▪ 16x up to □_{max.} 10 mm	4 insets for 1 sample each: ▪ Ø 10 mm, 12.7 mm ▪ Ø 6 mm and 8 mm on request ▪ □ 10 mm

1 Accuracy of thermal diffusivity amounts to ±1.5% and repeatability to ±1%, based on 900 tests on Cu (high diffusivity) and Pyrex (low diffusivity) specimens (Ø 12.7mm, thickness 2.0 mm) with at least 3 different devices at room temperature.

2 Accuracy of the specific heat capacity amounts to ±4% and repeatability to ±2% when using 4 different reference materials, 550 shots, averaging for 5 shots, RT, recommended dimension, recommended shot parameters.