Key Technical Data

NETZSCH

	LFA 467 *HyperFlash*®	LFA 467 *HT HyperFlash*®
Temperature range	-100°C ... 500°C room temperature version available	RT ... 1250°C (furnace temperature 1500°C)
Heating rate (max.)	50 K/min	50 K/min
Furnace cooling device	External chiller (RT… 500°C), Optional: ▪ Liquid nitrogen cooling (-100 … 500°C) ▪ Pressurized air (0°C … 500°C)	External chiller
Thermal diffusivity	0.01 mm^2/s ... 2000 mm^2/s	0.01 mm^2/s ... 2000 mm^2/s
Thermal conductivity	0.1 W/(m·K) ... 4000 W/(m·K)	0.1 W/(m·K) ... 4000 W/(m·K)
Accuracy	▪ Thermal diffusivity[1]: ± 3% ▪ Specific heat[2]: ± 5%	▪ Thermal diffusivity[1]: ± 3% ▪ Specific heat[2]: ± 5%
Repeatability	▪ Thermal diffusivity[1]: ± 2% ▪ Specific heat capacity[2]: ± 3%	▪ Thermal diffusivity[1]: ± 2% ▪ Specific heat capacity[2]: ± 3%
Xenon flash lamp	▪ Pulse energy[3]: up to 10 Joules/pulse (variable), software-controlled ▪ Pulse width[4]: 20 to 1200 µs	▪ Pulse energy[3]: up to 10 Joules/pulse (variable), software-controlled ▪ Pulse width[4]: 20 to 1200 µs
ZoomOptics	Optimized field of view (optional, requires no mask)	Optimized field of view (optional, requires no mask)
Pulse mapping	Patented pulse mapping (US7038209, US20040079886, DE 10242741), for finite pulse correction and improved c_p determination	Patented pulse mapping (US7038209, US20040079886, DE 10242741), for finite pulse correction and improved c_p determination
IR detectors	▪ InSb: RT ... 500°C ▪ MCT: -100°C ... 500°C ▪ Detector refill device (option)	▪ InSb: RT ... 1250°C ▪ Detector refill device (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	▪ For round and square samples ▪ For liquids, pastes, resins, powders, fibers, laminates, anisotropic samples ▪ For tests under mechanical pressure	For round and square samples
Integrated automatic sample changer	4 insets for up to 4 samples each: ▪ 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 12.7 mm ▪ □ 10 mm ▪ Ø 10 mm

1 Accuracy of thermal diffusivity amounts to ±1.5% and repeatability to ±1%, based on 900 tests on Cu (high diffusive) and Pyrex (low diffusive) specimens (dia. 12.7mm, thickness 2.0mm) 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.
3 Pulse energy limited to 10 J to prevent non-linearity effects due to sample overheating and a detector signal not proportional to the temperature changes. Combining lower pulse energy with high detector sensitivity ensures accurate results.
4 Adjustable in steps of 1 µs