TCA 300

Thermal conductivity measuring device with heat flow meter according to ISO 8301, ASTM C 518, DIN EN 1946-3, EN 12664, EN 12667 and EN 12939

Measuring devices of the TCA 300 series are compact, robust desktop devices equipped with an integrated Single Board Computer (SBC) with Windows 10 operating system, the software Lambda 2016 and a high resolution color touch display that can be operated in standalone mode.

Numerous interfaces such as RS232, USB and Gigabit Ethernet enable the connectivity to peripheral devices and the fast and convenient transfer of all relevant data. The direct connection to a printer allows for printing test reports without using an additional PC.

Features:

- Fully insulated test chamber to avoid external influences
- 2 symmetrically arranged precision heat flow meters
- External cooling with tap water or recirculation cooler for three different temperature ranges
- Electrically operated plate lifting mechanism
- Digital measurement of pressure and sample thickness
- SBC with 32 GB SSD, Windows 10 and software Lambda 2016
- 10.1“ color touch-screen
- Interfaces: 1x RS232, 4x USB, 1x Gigabit Ethernet

Measuring procedure	Heat flow meter method according to ISO 8301,
	ASTM C 518, DIN EN 1946-3, EN 12664, EN 12667, EN 12939
Measuring range	in dependence of sample thickness 0.002 - 1.0 W/m2K
Sample dimensions	Thickness in dependence of thermal conductivity 5 - 100 mm
	w x d: 100 x 100 mm
	(up to 300 x 300 mm in case of measurement of insulating materials)
Temperature range	cooling plate (min. / max.): -20 / 60 °C (-10 / 50 °C) ***₁**
	Heating plate (min. / max.): -10 / 70 °C (0 / 60 °C) ***₁**
Measuring inaccuracy	± 1.0 % (max. ± 5.0 %, according to ISO 8301)
Reproducibility	± 0.5 % (max. ± 1.0 %, according to ISO 8301)
Hot plate	Aluminium, black anodized, 300 x 300 mm
Cooling plate	Aluminium, black anodized, 300 x 300 mm
Temperature control	Peltier units with heat exchanger
Heat flow meters	2 pcs, measuring area: 100 x 100 mm
Plate lifting unit	linear lifting function, electromotoric
Measurement of thickness	digital, 0 - 120 mm, resolution 0.1 mm
Measurement of pressure	digital, 0 – 500 N (5.5 kPa), resolution 1 N (11.0 Pa)
Display	10.1" 1280 x 800 wide touch screen
Controller	Intel Atom E3845, 2 GB RAM, 32 GB SSD
Software	SBC, Windows© 10 embedded, Lambda 2018 SBC
Operation / display	lifting speed, pressure of the measuring plate, plate distance,
	start / stop measurement, measuring results.
Interfaces	1x RS232, 3x USB 2.0, 1x Gigabit Ethernet
Sample entry	from front (insulated chamber door)
Construction	desktop device with insulated protection chamber
Operating conditions	Temperature +18 °C to +24 °C, relative humidity 5% to 65%
Dimensions	(W x D x H) 48.5 x 49.0 x 63.5 cm
Weight	45.0 kg
Power supply	90 - 264 V, 50/60 Hz, max. 320 W
Delivery range	Measuring device TCA 300 basic, Power cable, USB connection cable
	Software Lambda 2018 SBC, English manual
Options	Recirculating cooler, Test frame for samples < 300 x 300 mm
	Test frame for loose material Calibration panel with factory certificate
	Calibration panel with certificate IRMM

Notebook, PC, printer