

TCC 918 – Cone Calorimeter

Measurement method	Reaction-to-fire tests - Heat release rate (cone calorimeter method) and smoke production rate (dynamic measurement) according to ISO 5660-1 and ASTM E 1354
Heating unit	<ul style="list-style-type: none"> Double-walled, stainless steel with mineral wool insulation Electric heating element: 5.0 kW Total dimensions: Ø = 107 mm, H = 65 mm
Load cell	<ul style="list-style-type: none"> Load cell with bracket, stainless steel Weighing range: 0 – 8.2 kg Weighing resolution and accuracy: 0.01 g/±0.01 g
Exhaust fan	With collector, stainless steel; dimensions: 400 x 400 x 330 mm ³
Burner	<ul style="list-style-type: none"> Robust methane gas burner for calibration Mass flow controller for methane* Software-controlled magnetic valve Centering adapter for safety adjustment and easy use
Igniter	<ul style="list-style-type: none"> Robust pneumatic mechanism for fast moving (software-controlled) Electric spark for precise ignition of burning gases Variable pulse width and duration adjustable by the software to investigate the ignition behavior of the sample
Measuring tube	<ul style="list-style-type: none"> Stainless steel, Ø 114 mm, with gas sampling probe 2 thermocouples and orifice assembly for differential pressure Adapter for optical measuring section and FT-IR coupling Special design for easy assembly in case of maintenance
Sample holder	<ul style="list-style-type: none"> Stainless steel, frame for sample adjustment for defined distance to the cone heater Inner Dimensions (W x D x H): 100 x 100 x 50 mm³
Cold trap for test gas	<ul style="list-style-type: none"> Effective Peltier cooler for gas cooling without mechanical parts Cooling to -10°C for effective drying without toxic drying agent
Light measuring system	<ul style="list-style-type: none"> Protection windows with reduced condensation effects by airflow (compressed air) He-Ne laser light source (0.5 mW) and radiation hardened housing (laser glass 2) Silicone photo detector with aluminum housing and mounting flange, black anodized Data acquisition system with two separate and synchronized ADC channels for fast operational readiness and high stability
Gas conditioning	<ul style="list-style-type: none"> 2 Particle filters, main filter for 2 µm and secondary filter for 0.1 µm particle size Automatic software-controlled condensate pump
Gas analyzer	<ul style="list-style-type: none"> SIEMENS ULTRAMAT/OXYMAT 6E Measuring components: CO₂, O₂, CO Measuring range: 0 - 100% for O₂ Automatic calibration of the gas analyzer by software-controlled gas valves Full integration into the TCC computer system and operation via TCC touch panel
Software	<ul style="list-style-type: none"> Integrated computer with touch panel for parameter definition and visualization (19") Second touch panel for digital switches and parameter display (10") TCC software for easy operation and full gas analyzer control by digital interfaces Movable keyboard section, optional operation via network (WiFi or LAN) by additional Windows PC
Instrument dimensions	<ul style="list-style-type: none"> Industrial cabinet W x D x H: 1550 x 620 x 2700 mm³ Weight: approx. 450 kg
Power supply	380/400 V, 50/60 Hz, 32 A

* Burner gas to be provided by the user