Technical Specifications

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TBB 913 – Floor Radiant Panel

Test Furnace with Accessories	
Measurement method	Determination of the burning behavior of floorings in accordance with EN ISO 9239-1
Test chamber	▪ Stainless steel, calcium silicate lining, T: 13.0 mm ▪ Flap with fire-resistant glazing (H x W): 11 cm x 110 cm ▪ Sample feeding from the front, extractable mounting plate for the sample holder (H x W): 12 cm x 120 cm
Sample holder	▪ Welded L-profile design, stainless steel ▪ 4x fixing clamps for sample installation ▪ Measuring section (W x D): 20 cm x 101.5 cm ▪ Sample thickness: max. 30 mm ▪ Dimensions (H x W x D): 2.2 cm x 32.5 cm x 114 cm
Gas heater	▪ Surface gas burner, steel/silicate, intalle in the test chamber ▪ 1/2" pipe connection for gas supply, check valve ▪ Dimensions (H x W x D): 45 cm x 30 cm x 8 cm
Ignition burner	▪ Row gas burner, stainless steel, with pneumatic shifting option ▪ 35 gas outlet opening, Ø = 0,7 mm, 60° shifted ▪ Dimension (L x Ø): 25 cm x 1 cm ▪ 1/2" pipe connection for gas supply, check valve
Sensors	▪ 2x NiCrNi mantle thermocouples for measurement of the test chamber temperature and the temperature in the vent ▪ Light measuring section, consisting of measuring light source, measuring light receiver, adapter and connection for compressed air flushing ▪ bidirectional probe for measurement of differential pressure ▪ Hot-wire anemometer ▪ Radiation pyrometer 300°C– 1000°C ▪ Heat flow meter according to Schmidt-Boelter, 1.1 kW/m^2 10.7 kW/m^2 ▪ Linear guided burning distance recorder and hand wheel
Calibration material	Calcium silikate panel with 9 bores, Ø = 2.6 cm dimensions (L x W x T): 105 cm x 25 cm x 2 cm
Weight	328 kg

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TBB Measuring and Control Unit	
Controller	▪ Single Board Computer with 32 GB SSD storage ▪ Colour touch screen 10.1“,1280 x 800, PCAP
Temperature measurement	▪ Beckhoff EtherCAT module (temperature measurement) ▪ 3 input thermal voltage, 24 bit ADC integrating ▪ Measuring range -100°C – 1300°C, resolution: 0.1 K ▪ Cold-junction compensation
MFC control	▪ 1 RS232 for MFC propane ▪ 1 x RS232 for MFC air
Gassteuerung	▪ Beckhoff EtherCAT module (digital output) ▪ 3 connected outputs for valves (propane, air)
Flame control	▪ Beckhoff EtherCAT module (temperature measurement) ▪ 2 Type K thermocouples
Radiation pyrometer	▪ Measuring range 300°C – 1000 °C ▪ Spectral range 3.9 um
Heat flow meter	▪ Measuring range 0 kW/m² – 20 kW/m² ▪ Type Schmidt-Boelter/Gordon, water-cooled
Path measurement	▪ Path sensor, potentiometric ▪ Measurement uncertainty <1%
Flow measurement	▪ TAURUS EtherCAT module (differential pressure) ▪ 1 bidirectional probe ▪ 1 differential pressure sensor 25 Pa
Measuring light receiver	▪ Silicium photo receiver, hardened, heat-protected optics ▪ Spectral filter with CIE distribution ▪ Dimensions (l x Ø): 190 mm x 40 mm
Measuring light emitter	▪ Halogen point light source 10 W, 2900 K color temperature ▪ Diameter of beam 25 mm, d/f = 0.0375 ▪ Dimensions (l x Ø) 190 mm x 40 mm
Gas installation*	▪ MFC for air/propane ▪ Magnetic and stop valves
Complete setup	▪ 19“-cabinet ▪ Dimensions (W x D x H): 65 cm x 65 cm x 175 cm
Weight	118 kg

TBB Software
Software for measured value acquisition, processing and presentation for floorings to fire tests TBB in accordance with EN ISO 9239-1 under Windows 7/8.1/10 Pro operating system
Graphial and numerical presentation of all measured values and intermediate results

* Compressed air and gas for the burner and radiant heater to be supplied by the user.