## Technical Specifications

<table>
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<th>Feature</th>
<th>Description</th>
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<td><strong>TCC 918 – Cone Calorimeter</strong></td>
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<tr>
<td><strong>Measurement method</strong></td>
<td>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</td>
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</table>
| **Heating unit**             | - Double-walled, stainless steel with mineral wool insulation  
- Electric heating element: 5.0 kW  
- Total dimensions: Ø = 107 mm, H = 65 mm                                                                                                                                 |
| **Load cell**                | - 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 mm³                                                                                                                                                                                                 |
| **Burner**                   | - Robust methane gas burner for calibration  
- Mass flow controller for methane*  
- Software-controlled magnetic valve  
- Centering adapter for safety adjustment and easy use                                                                                                                                                     |
| **Igniter**                  | - 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**           | - 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**            | - 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**   | Effective Peltier cooler for gas cooling without mechanical parts  
- Cooling to -10°C for effective drying without toxic drying agent                                                                                                                                                                                                         |
| **Light measuring system**   | - 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**         | - 2 Particle filters, main filter for 2 µm and secondary filter for 0.1 µm particle size  
- Automatic software-controlled condensate pump                                                                                                                                                              |
| **Gas analyzer**             | - 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**                 | - Integrated computer with touch panel for parameter definition and visualization (19")  
- Second touch panel for ditigal switches and prameter 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**    | 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