

## QMS 505 Aëolos Coupling

### QMS Specifications

Mass range*	1 u to 300 u (optionally to 512 u); including auto-tuning using PFTBA to calibrate the mass scale axis
Mass filter	Quadrupole with hyperbolic rods and pre-filter (patented)
Ion source	Cross-beam EI ion source
Cathodes/filaments	Two iridium cathodes with Y <sub>2</sub> O <sub>3</sub> coating
Electron energy	25 eV to 150 eV
Emission current	0.1 mA to 2 mA
Detector	SEM with discrete dynodes and integrated Faraday cup
Dynamic range (electronic)	9 decades
Detection limit	< 100 ppb (gas-dependent)
Resolution	0.5 u to 1.5 u
Vacuum system	Turbo molecular pump with 4-stage diaphragm pump (oil-free)
RF generator	High-stability fully digital RF generator
Measuring modes	Scan analog, scan bargraph, MID
Scan rate (electronic)	> 100 u/s (scan bargraph) → possible with reduced dynamics (10 u to 100 u, fixed measurement range of 1E-7, short settling and integration time; however, sufficient sensitivity for library search)
Power	115 - 230 VAC / 50 - 60 Hz
Power consumption	≈ 800 W

### Transfer System from the Thermal Analyzer to MS

Adapter systems (STA/TGA/DSC/DIL to capillary and capillary to MS gas inlet system)	<ul style="list-style-type: none"> <li>■ Heated adapter and transfer line</li> <li>■ Temperature adjustable to T<sub>max</sub> 400°C</li> <li>■ Single-step pressure reduction, no orifice</li> </ul>
Entirely insulated capillary	<ul style="list-style-type: none"> <li>■ Made of quartz glass, max. 300°C, length ≈ 3 m, Ø 60 µm (Optionally made entirely of insulated stainless steel, max. 350°C, length » 2.5 m)</li> <li>■ Spare loop inside a furnace above the MS casing</li> <li>■ Can be changed out by the customer</li> </ul>
Vacuum-tight connection between thermal analyzer and MS	Yes
Pressure reduction from thermal analyzer to MS	Single-step pressure reduction from 10 <sup>3</sup> mbar to approx. 5x10 <sup>-6</sup> mbar