

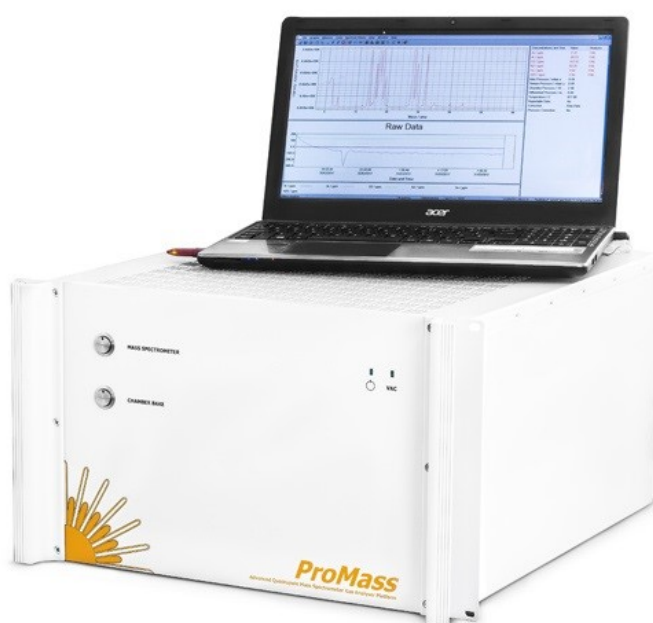
Protea ProMass EI-MS

Without the time-resolved separation of gases by e.g. gas chromatography, fragmentation patterns for complex gas mixtures are difficult to interpret. For simple gas mixtures, the process mass spectrometer benefits from very low response times and low sampling volume requirements in addition to wide calibration ranges.

The Protea ProMass QMS (quadrupole mass spectrometer) comes in a 6U 19" rack module. Gas samples are provided through a 2-meter heated capillary. A 250 L/sec turbo molecular drag pump (TMP) in combination with a drag pump creates minimum 10^{-5} mbar vacuum in the system. Faraday and C-SEM detectors are provided for a wide detection range. Response times as low as 10 ms can be achieved.

An inherent problem with electron impact mass spectrometry (EI-MS) is the interference at m/z 28, with contributions from CO, CO₂ and N₂. With multivariate quantitation, the complete fragmentation spectrum can be utilized and the individual gas concentrations estimated.

The QMS is typically applied to low sample volume applications or characterization of gas where the dynamics of the composition is of importance.



Protea ProMass QMS

- Millisecond response time
- Good sensitivity
- 0-200 m/z range
- Diaphragm and rotary backing pumps
- Software with chemometrics for multi-gas quantitation
- LOD typically 100 ppb mol

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