

PTR-QMS SERIES



THE WORLD'S
LEADING
PTR-MS
COMPANY PRESENTS



HIGH SENSITIVITY PTR-MS

Detection Limit < 1 pptv

The IONICON High-Sensitivity PTR-MS instrument is an **ultra-sensitive detector** for volatile organic compounds (VOCs) that allows for **continuous VOC quantification**.

Our **premium PTR-QMS series** product, based on quadrupole mass spectrometry, combines market-leading **low online detection limits** reaching even **ppqv-levels**, with high selectivity and a very fast response time.

Direct injection of sample gases **without preparation** contributes to the **speed and simplicity** that is common to all our instruments.

Selective qualitative and quantitative analysis of trace compounds in remarkably short measurement times combined with a system **linearity range** covering over **six orders of magnitude** satisfy the highest claims of the world's best scientists.

Our unique **soft ionization (PTR) technology** together with our extensive experience in gas-phase ion chemistry and engineering of scientific instruments accounts for the **reliability, ultra low detection limit, very low mass fragmentation, fast response time and robustness** of our PTR-MS systems.

Mass Range 1-512 amu

- > Market-leading low detection limit < 1 pptv
- > Real-time VOC quantification
- > Soft & efficient ionization technology
- > Fast and easy direct sample injection

Find out more:

www.PTRMS.com/products/ptrqms



HIGH SENSITIVITY PTR-MS

ONLINE VOC DETECTOR - 1 PPTV SPECIFICATIONS*

- Mass range 1-512 amu (up to 2048 amu on request)
- Resolution < 1 amu
- Response time: 100 ms
- Measuring time: 2 ms/amu to 60 s/amu
- Detection limit**: 1 pptv
- Linearity range**: 1 pptv - 10 ppmv
- Sensitivity (Benzene)** > 300 cps/ppbv
- Adjustable flow: 50 - 800 sccm
 - Inlet system (Dual inlet system available on request):
 - 1.2 m long inlet hose - with internal inert (PEEK) capillary
 - Inlet system heating: up to 180°C (356°F)
- Reaction chamber heating range: 40 - 130°C (104 - 266°F)
- Power supply and max. consumption: 100-230 V, 750 W
- Dimensions (w x h x d): 55x86x78 cm (21.7 x 33.9 x 30.7 in.)
- Weight: 140 kg (309 lbs)
 - Interfaces:
 - 1x Ethernet 10/100 Mbit RJ45 (TCP/IP)
 - 1x RS 232
 - 5x Digital outputs

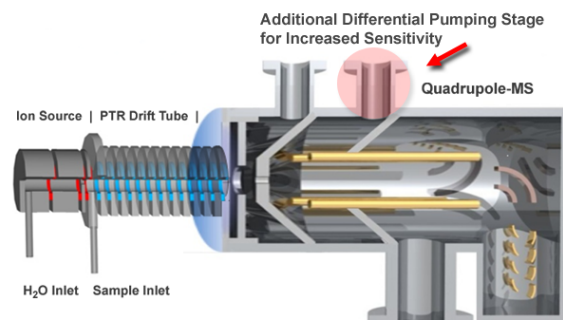
*Specifications are subject to change without prior notice.

**Actual detection limit and linearity range are dependent on the substances measured, integration time and system set-up.

TECHNOLOGY

The innovative technology all IONICON Analytik products are based on is Proton Transfer Reaction - Mass Spectrometry (PTR-MS).

This unique soft ionization method is based on proton transfer from H_3O^+ ions to all compounds with a higher proton affinity (PA) than water. Common constituents of air such as N_2 , O_2 , Ar, CO_2 etc. have lower proton affinities than H_2O and are therefore not ionized. This is one of the main reasons for our market-leading low online detection limit for trace compounds in the range of less than one pptv.

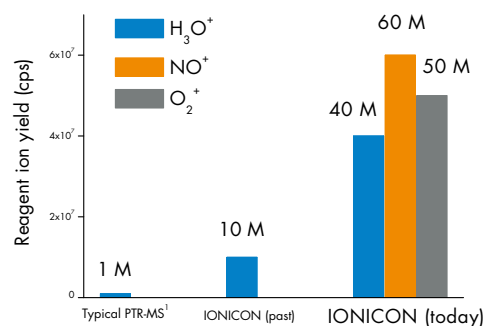


ULTRA SENSITIVE

The High-Sensitivity PTR-MS, our PTR-QMS series' flagship product is incarnating our technological evolution of more than a decades's experience in PTR-MS.

An additional differential pumping stage along with many other small refinements of our unique PTR-MS technology accounts for the extraordinary sensitivity and detection limit this instrument achieves.

Up to 60.000.000 precursor ions are responsible for a break-through in real-time mass spectrometry: for the first time an IONICON PTR-MS instrument is capable of quantifying concentrations in the ppqv-range.



¹ R.S.Blake, P.S.Monks and A.M.Ellis, Chem.Rev., 109 (2009) 861.

PTR+SRI-MS

The IONICON High-Sensitivity PTR-MS is now also available as High-Sensitivity PTR-MS^{+SRI} (Switchable Reagent Ions) featuring NO^+ and O_2^+ as additional precursor ions.

The benefits are extraordinary as not only isomeric VOC compounds can be separated and instantaneously quantified but also substances with a smaller proton affinity than the PA of H_2O can now be detected with the High-Sensitivity PTR-MS^{+SRI}.

Find out more about PTR+SRI-MS:
www.PTRMS.com/technology