IONICON

PTR-TOFMS SERIES

PTR-TOF 1000

LoD < 10 pptv Resolution > 1500 m/Δm (FWHM)

The IONICON PTR-TOF 1000 is a fast and sensitive instrument for trace volatile organic compounds (VOCs) quantification at a very high time resolution.

This PTR-TOFMS system has been extensively tested by leading scientists in field measurement and flight campaigns. It is the smallest, lightest and most affordable time of flight based PTR-MS we ever constructed.

Quantitative analysis of the entire mass range within split-seconds and higher resolution for better separation and identification are now available in an instrument with the size, weight and price usually resctricted to quadrupole PTR-MS.

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

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

> Ultra-fast, sensitive and affordable
> Proven in field and flight campaigns
> Smallest and lightest PTR-TOFMS
> Entire mass range in split-seconds

Find out more:
www.ionicon.com/products

THE SOLUTION FOR REAL-TIME TRACE GAS ANALYSIS

IONICON

PTR-TOF 1000

IONICON PTR-TOF 1000 SPECIFICATIONS*

- Mass resolution: > 1500 m/Δm (FWHM) for m/z > 60
- Response time: < 100 ms
- Pulse frequency: up to 150 kHz

- Sensitivity:

m/z 79	> 40 cps/ppbv;	LoD < 20 pptv (1min)
m/z 181	> 100 cps/ppbv;	LoD < 10 pptv (1min)

- Mass range: 1-10,000 amu
- Linearity range: 10 pptv - 1 ppmv
- Adjustable flow: 50 - 800 sccm
- Inlet system (Different/Multiplexing inlet systems available on request):
  1.2 m long inlet hose - with inert (PEEK) capillary
  Inlet system heating: 40-180°C (104-356°F)

- Reaction chamber heating range: 40 - 120°C (104 - 248°F)
- Power supply and max. consumption: 100-230 V, 1500 W
- Dimensions (w x h x d): 60x91x80 cm (23,7x35,9x31,5 in.)
- Weight (incl. SRI): < 150 kg (330,7 lbs)
- Interfaces: 1x Touch screen display
  8x DI/O, 2x AI, 2x AO
  (digital/analog I/O package on request)

*Specifications are subject to change without prior notice.
Product pictures and illustrations may differ from actual configuration.
Detection limit, linearity range and resolution are dependent on the substances measured, integration time and system set-up.

PTR-TOF 1000 FEATURES AND BENEFITS

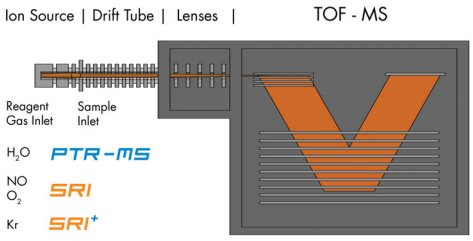
The PTR-TOF 1000 is an IONICON PTR-TOFMS instrument with dimensions, weight and price usually restricted to quadrupole PTR-MS, but having all the advantages of the more powerful time of flight based solutions: acquisition of the entire mass range in split-seconds and higher resolution for better separation and identification.

The instrument demonstrated its reliability and robustness but also its remarkable technical abilities and speed during various international campaigns and is ideally suited for analysis of VOCs at a very high time resolution. It comes with a fully integrated IONICON data acquisition and data treatment software suite.

Enter into the world of PTR-TOFMS with IONICON's new PTR-TOF 1000: it is the smallest, lightest and most affordable time of flight based PTR-MS we have ever constructed.

TECHNOLOGY

The innovative technology IONICON trace gas analyzers are based on is Proton Transfer Reaction - Mass Spectrometry (PTR-MS).
This unique, soft ionization is realized by 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 PAs than H_2O and are therefore not ionized. This is one of the main reasons for our market-leading low real-time detection limit for trace compounds and due to precisely controlled ion source and drift tube parameters, absolute quantification of VOC concentrations is possible.



SRI-MS

The IONICON PTR-TOF 1000 is also available with Selective Reagent Ionization - Mass Spectrometry (SRI/SRI+) featuring NO^+ and O_2^+ (SRI) or Kr^+ (SRI+) alternatively to H_3O^+ as precursor ions created in the new ULTRA-PURE ion source (patent pending).
The benefits are extraordinary as O_2^+, but especially Kr^+, have a higher ionization potential than H_3O^+ and therefore many important (inorganic) substances such as CH_4, CO, CO_2, NO_2, SO_2, etc. can be detected and quantified using a single IONICON instrument. NO^+ as reagent ions help separating several isomeric VOCs that can subsequently be quantified in real-time.

ROBUST, RELIABLE & EASY TO USE

The PTR-TOF 1000 is completely software controlled featuring a touch screen interface. Installed in a space-saving rack and mounted on wheels, it allows for easy transportability and variable location measurements. We deliver the PTR-TOF 1000 in a re-usable eco-friendly flightcase container.

IONICON Analytik GmbH • Eduard-Bodem-Gasse 3 • 6020 Innsbruck • Austria • Tel.: +43 512 214 800 • www.ionicon.com • info@ionicon.com