

PTR-TOF 6000 X2



Compact high-performance PTR-TOFMS - Trace VOC Analyzer

Sensitivity > 1000 cps/ppbv LoD < 1 pptv Resolution > 6000 m/Δm

The PTR-TOF 6000 X2 is the **new premium IONICON PTR-TOF** trace VOC analyzer. X2 combines the latest generation of **performance enhancing** tools incl. the **ION-BOOSTER funnel** as well as the **hexapole ION-GUIDE**.

Utmost resolution, sensitivity and lowest real-time detection limit are now available in a robust, transportable platform that is **smaller and lighter** than previous products.

The results are an impressive mass resolution of over **6000 m/Δm** and a sensitivity more than **1000 cps/ppbv** with a low detection limit of **below 1 pptv**.

Quantitative analysis of the **entire mass range in a split-second** and high mass resolution are features of all IONICON time-of-flight mass spectrometers. **Direct injection** of sample gas **without preparation** contributes to the speed and simplicity our instruments are known for.

The 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.

- > Hexapole ION-GUIDE
- > ION-BOOSTER funnel technology
- > Novel high-resolution TOF
- > Compact & lightweight PTR-TOFMS

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PTR-TOF 6000 X2

ion
GUIDE

IONICON PTR-TOF 6000 X2 SPECIFICATIONS*

- Mass resolution: > 6000 m/Δm (FWHM) for m/z > 147
> 5500 m/Δm (FWHM) for m/z > 79
- Response time: < 100 ms
- TOF pulse frequency: up to 150 kHz
- Sensitivity & Limit of Detection:

| | | |
|---------|-----------------|------------------------|
| m/z 79 | > 1000 cps/ppbv | LoD < 10 pptv (60 sec) |
| m/z 181 | | LoD < 1 pptv (60 sec) |
- Mass range: 1-10,000 amu
- Adjustable inlet 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): 60x91x87 cm (23.7x35.9x34.3 in.)
- Weight: < 135 kg (297.7 lbs)
- Interfaces: 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.

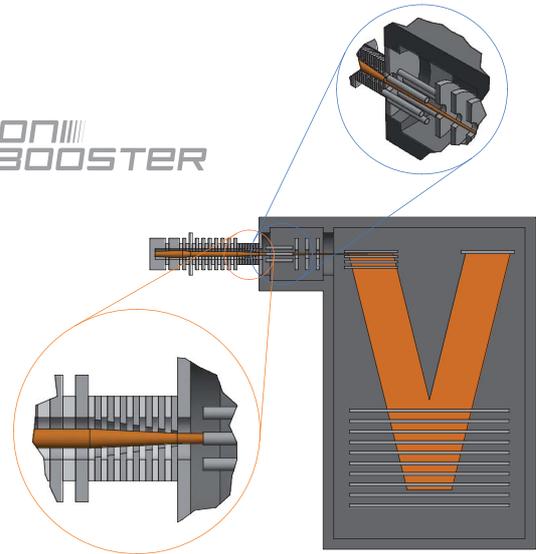
PTR-TOF 6000 X2 BENEFITS

The unique system comprising a novel high-resolution TOF and IONICON's PTR technology with the new "X2" features allows for the ultimate PTR-TOFMS experience. X2 combines the latest generation of performance enhancing tools incl. the ION-BOOSTER funnel as well as the hexapole ION-GUIDE.

The ion funnel focuses the ions into the hexapole ion guide which results in nearly lossless transmission of an extremely focused ion beam into the TOF mass spectrometer. This increases the sensitivity dramatically and also improves the instrument's mass resolving power.

The PTR-TOF 6000 X2 is the new premium IONICON PTR-TOF trace VOC analyzer, outperforming all preceding instruments. Utmost resolution, sensitivity and lowest real-time detection limit are now available in a robust, transportable platform that is smaller, lighter and even more affordable than the former flagship product.

ion
BOOSTER



PTR-MS

We proudly rely on the unique IONICON PTR-MS soft ionization technology where by proton transfer from H_3O^+ , all compounds with a higher proton affinity (PA) than water are ionized. Common constituents of air, such as N_2 , O_2 , Ar, CO_2 etc. have lower PAs than H_2O and are therefore not detected. This is one of the main reasons for our market-leading low, real-time detection limit for trace compounds. Due to precisely controlled ion source and drift tube parameters, absolute quantification of VOC concentrations is possible.

SRI-MS

The PTR-TOF 6000 X2 is also available with Selective Reagent Ionization - Mass Spectrometry (SRI/SRI+) technology, featuring NO^+ and O_2^+ (SRI) or Kr^+ (SRI+; US Pat. 9,188,564) alternatively to H_3O^+ as precursor ions created in the IONICON ULTRA-PURE ion source.

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 6000 X2 is completely software controlled. Installed in a space-saving rack and mounted on wheels, it allows for easy transportability and variable location measurements. We deliver the PTR-TOF 6000 X2 in a re-usable eco-friendly flightcase container.