

# PTR-TOF 6000 X2



## Compact high-performance PTR-TOFMS - Trace VOC Analyzer

Sensitivity > 2500 cps/ppbv LoD < 1 pptv Resolution > 6500 m/ $\Delta$ m

The PTR-TOF 6000 X2 is the **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**.

The results are an impressive mass resolution of over **6500 m/ $\Delta$ m** and a sensitivity more than **2500 cps/ppbv** with a low detection limit of **below 1 pptv**, in a robust and compact instrument platform.

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 IONICON-exclusive **genuine PTR-MS technology** includes our **patented ion chemistry quality** and **TRU-E/N**, allowing for precise E/N conditions, well-reproducible measurement results and the highest possible level of quantification accuracy.

- > Hexapole ION-GUIDE
- > ION-BOOSTER funnel technology
- > High-resolution ionTOF
- > Genuine PTR-MS with TRU-E/N®

Find out more:

[www.ionicon.com/products](http://www.ionicon.com/products)

# PTR-TOF 6000 X2

ion  
GUIDE

## IONICON PTR-TOF 6000 X2 SPECIFICATIONS\*

- Mass resolution: > 6000 m/Δm (FWHM) for m/z > 79  
> 6500 m/Δm (FWHM) for m/z > 147
- Response time: < 100 ms
- TOF pulse frequency: up to 150 kHz
  
- Sensitivity:
 

m/z 79	> 1500 cps/ppbv	Limit of Detection:	< 10 pptv (1 sec)
m/z 181	> 2500 cps/ppbv		< 1 pptv (60 sec)
  
- Mass range: 1-10000 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: 115/230 V, 1500 W
- Dimensions (w x h x d): 60x91x87 cm (23.7x35.9x34.3 in.)
- Weight: < 145 kg (319,7 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

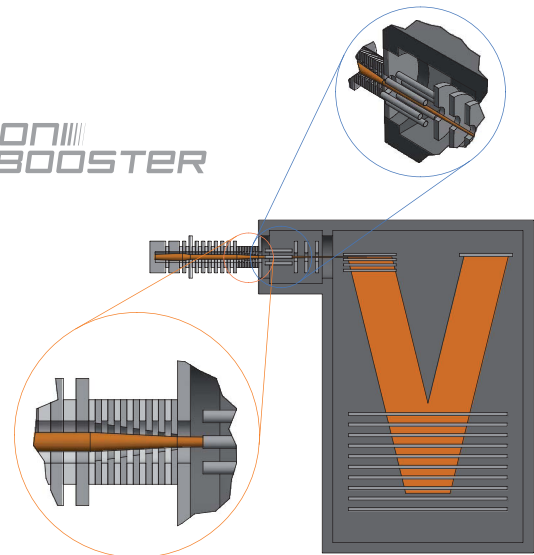
The unique system comprises a high-resolution ionTOF and IONICON's exclusive PTR-MS technology with TRU-E/N. The advanced X2 features combine the latest generation of the performance enhancing ION-BOOSTER funnel as well as the hexapole ION-GUIDE.

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 patented IONICON ion-chemistry quality ensures precise E/N conditions, well-reproducible measurement results and the highest possible level of quantification accuracy.

Utmost resolution, sensitivity and lowest real-time detection limit are now available in a robust and compact platform.

ion  
BOOSTER



## PTR-MS

We proudly rely on the IONICON-exclusive genuine 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<sup>+</sup>), featuring  $NO^+$ ,  $O_2^+$  and  $NH_4^+$  (patent pending) or  $Kr^+$  (SRI<sup>+</sup>, US Pat. 9,188,564, EP 2606505 A1) alternatively to  $H_3O^+$  as precursor ions created in the IONICON ULTRA-PURE ion source.

$O_2^+$ , 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 for subsequent real-time analysis.  $NH_4^+$  offers improved selectivity, simplified mass spectra and suppressed fragmentation.

## 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.