IONICON

THE IONICON PTR-TOF TRACE GAS ANALYZER
PRODUCT PORTFOLIO



PTR-TOF MASS SPECTROMETERS FROM IONICON

Our PTR-TOF instruments comprise genuine IONICON PTR technology coupled to ioniTOF mass analyzers. The most important features all systems offer are:

- pptv-range detection limits for monitoring VOCs
- Direct real-time analysis without sample preparation
- The entire mass range quantified in split seconds

Major differences among the instruments lie in their mass resolving power, sensitivity, and detection limits. Higher-end instruments feature higher-resolution TOF analyzers; the higher the resolving power, the better the separation and identification of substances in the mass spectra.

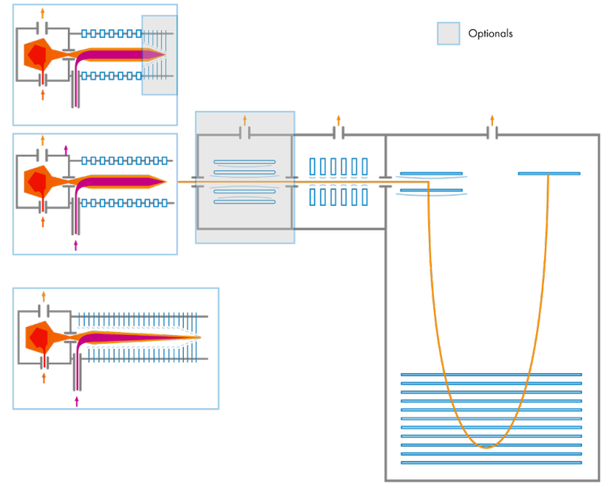
HOW IT WORKS

The PTR-TOF series uses IONICON's PTR-MS soft ionization technology based on proton transfer from H_3O^+, which is generated in the proprietary ultra-pure Invion source. In the downstream PTR drift tube, these H_3O^+ reagent ions ionize traces of Volatile Organic Compounds (VOCs) in the sample air under well-defined reaction conditions. This quantitative ionization process is soft and leaves the molecules intact. Following this highly efficient ionization process, the resulting ions are separated according to their m/z and detected in a high-resolution TOF mass analyzer.

PTR-TOF & FUSION PTR-TOF

Ion Funnel and **hexapole** are add-ons for certain instruments to improve performance.

FUSION reaction chamber
A combination of an innovative RF-electrode design with a sophisticated pumping scheme allows for unprecedented sensitivity and simultaneously keeps the reaction region extremely clean, resulting in market-leading limits of detection.



	PTR-TOF 1000	PTR-TOF 3000	PTR-TOF 4000	PTR-TOF 5000	PTR-TOF 6000	PTR-TOF 10k	FUSION PTR-TOF 10	FUSION PTR-TOF 20	VOCentinel AMCentinel
Mass resolution m/dm (FWHM)	> 1 500	> 3 000	> 4 000	> 5 000	> 6 000	> 10 000	>10 000	>20 000	> 3 000
Sensitivity cps/ppbv @ selected m/z	> 200 / > 2 000 (ultra add-on)	> 100	> 600 / > 6 000 (ultra add-on)	> 50	> 2 000	> 1 000	>40 000	> 5 000	
Limit of detection @ selected m/z, 60 s	< 10 pptv / < 5 pptv (ultra add-on)	< 5 pptv	< 5 pptv / <1 pptv (ultra add-on)	< 10 pptv	< 1 pptv	< 1 pptv	< 0.2 pptv	< 1 pptv	< 5 pptv
Optional bipolar ionization add-on							✓	✓	
Dimensions (w x h x d) cm	60x91x80	60x91x80	60x91x80	60x91x87	60x91x87	60x135x80	60x135x80	60x175x80	48x80x66
Weight kg	~ 125	~ 135	~ 135	~ 145	~ 145	~ 180	~ 185	~ 200	~ 90

Available as automated industrial monitoring set-up compatible with optional AME software, as lab-rack or optional (separable) lightweight 19" mobile-frame version.

19" mobile-frame, ready for automated monitoring and unattended operation.



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Contact us to solve your analytical challenge!

As the pioneers and global leaders in PTR-MS, we provide ultra-sensitive technology for detecting Volatile Organic Compounds (VOCs). Developed by our founders, our analyzers have enabled hundreds of high-impact publications and continue to advance research across diverse scientific fields. We translate this excellence into industrial performance through real-time solutions for process monitoring, quality control, and emissions tracking. By eliminating traditional lab wait times, IONICON empowers partners to make immediate, data-driven decisions that enhance efficiency, ensure compliance, and guarantee product consistency.

THE WORLD'S LEADING PTR-MS COMPANY