THE WORLD'S LEADING PTR-MS COMPANY

IONICON

THE IONICON PTR-TOF TRACE ANALYZERS PRODUCT PORTFOLIO

PTR-TOFMS SERIES

WE OFFER ULTRA-SENSITIVE REAL-TIME ANALYZERS FOR VOC AND AEROSOL MONITORING.

THE PTR-TOF SERIES

Our PTR-TOF instruments comprise the genuine IONICON PTR technology coupled to ioniTOF mass analyzers.

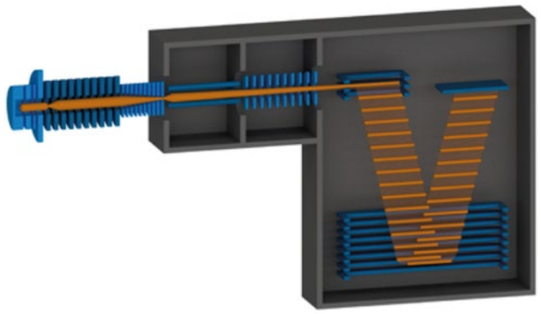
The most important features all systems offer are:

- pptv-range detection limit for monitoring of VOCs
- direct real-time analysis without sample preparation
- the entire mass range quantified in split-seconds
- robust engineering quality & field-tested performance

Major differences between the instruments relate to mass resolving power, sensitivity and detection limits. Higher-end instruments have higher resolution TOF analyzers, the higher the number the better the separation and identification of substances in the mass spectra.

More advanced systems also offer an ION-BOOSTER funnel or a hexapole ION-GUIDE for higher sensitivity. These performance features can even be combined as part of the X2 technology.

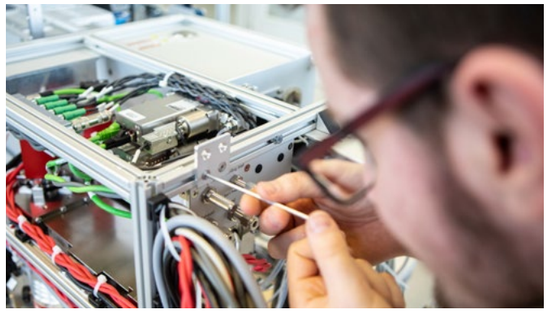
PTR-MS



IONICON TRU-E/N® PTR-TOFMS schematic incl. ION-BOOSTER funnel and Hexapole ION-GUIDE

The PTR-TOF series uses IONICON-exclusive genuine PTR-MS soft ionization technology of proton transfer from H_3O^+. H_3O^+ is generated in the IONICON ULTRA-PURE ion source. In the downstream PTR drift tube, these H_3O^+ reagent ions efficiently ionize the traces of Volatile Organic Compounds (VOC) in the sample air at well-defined reaction conditions. This quantitative ionization process is soft and conserves the chemical composition of the molecules. After the extremely efficient PTR ionization process, ions are separated according to their m/z and detected in a high-resolution TOF mass analyzer in real-time.

SRI-MS



The optional SRI add-on allows to also produce NO^+, O_2^+ or NH_4^+ (EP 3503161 B1) or Kr^+ (EP 2606505 B1, US 9188564 B2) reagent ions 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. IONICON utilizes a patented process for creating NH_4^+ without the need for adding toxic, hazardous or corrosive NH_3, NH_3-salt or -derivate (EP 3503161 B1).

IONICON PTR-TOF SERIES SPECIFICATIONS CHART:

	PTR-TOF 1000	PTR-TOF 1000 ULTRA	PTR-TOF 4000	PTR-TOF 6000	PTR-TOF 10k
Performance features included	–	ion BOOSTER	ion GUIDE	ion GUIDE X2 BOOSTER	ion GUIDE X2 BOOSTER
X2 performance option (ION BOOSTER & GUIDE)	–	available with X2 performance	available with X2 performance	X2 performance included	X2 performance included
Main characteristics	most affordable	ultimate sensitivity	high sensitivity elevated mass resolution	high sensitivity high mass resolution	ultimate mass resolution
Mass resolution	> 1500 m/Δm	> 1500 m/Δm	> 4000 m/Δm	> 6000 m/Δm	> 10000 m/Δm
Sensitivity (@ m/z) 181	> 200 cps/ppb	> 2000 cps/ppbv	> 600 cps/ppbv	–	–
Sensitivity with X2 performance (@ m/z) 181	–	> 30000 cps/ppb	> 6000 cps/ppb	> 2000 cps/ppb	> 1000 cps/ppb
Limit of detection (@ m/z 181)	< 10 pptv (60 sec)	< 5 pptv (60 sec)	< 10 pptv (1 sec)	–	–
Limit of detection with X2 performance (@ m/z 181)	–	< 5 ppt (10 sec)	< 1 ppt (60 sec)	< 1 ppt (60 sec)	< 1 ppt (60 sec)
Dimensions (w x h x d)	60x91x80 cm	60x91x80 cm	60x91x80 cm	60x91x87 cm	60x135x80 cm
Weight	< 125 kg	< 130 kg	< 135 kg	< 145 kg	< 180 kg
Power consumption (standby/typical operation):	< 400/500-800 W	< 400/550-850 W	< 400/550-850 W	< 400/600-900 W	< 400/600-900 W

CONTACT US

Tell us your analytical challenge and we'll propose the ideal trace VOC monitoring solution!

We offer analyzing your samples as a free showcase in our applied science lab. We have got you covered with a full suite of analytical services and instruments, adapted your needs.

IONICON

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