IONICON

FUSION PTR-TOF 20

Ultimate Performance Trace VOC Analyzer

Resolution m/Δm > 20 000 • LoD < 1 pptv • Sensitivity > 20 000 cps/ppbv

The new FUSION PTR-TOF 20 offers the highest mass resolving power and exceptional sensitivity for outstanding analytical performance.
It is powered by a new ioniTOF generation, the Invion ion source for rapid reagent ion switching with stable ionization conditions and the ultra-clean FUSION PTR reaction chamber, enabling market-leading detection limit below 1 pptv.
The exceptional mass resolution, ranging from m/Δm 20 000 to 25 000 (FWHM) is a critical advantage for complex samples.
Without any sample pretreatment, all IONICON PTR-MS instruments provide instant quantitative analysis of the vast majority of VOCs, offering a solution for even the most challenging analytical problems.
The FUSION PTR-TOF 20 incorporates IONICON's genuine PTR-MS technology, patented TRU-E/N ion chemistry, and is available as bipolar set-up for both, positive and negative reagent ions, for unmatched substance detection coverage.

- Mass Resolution > 20 000
- Fast Reagent Ion Switching
- FUSION PTR Technology

THE SOLUTION FOR REAL-TIME TRACE GAS ANALYSIS

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FUSION PTR-TOF 20

FUSION PTR-TOF 20 Specifications

Mass resolution
m/Δm > 20 000 (FWHM)
up to m/Δm 25 000 with limited sensitivity

Sensitivity
m/z 121: 5 000 cps/ppbv @ m/Δm 20 000 (FWHM)
m/z 121: 20 000 cps/ppbv @ m/Δm 10 000 (FWHM)

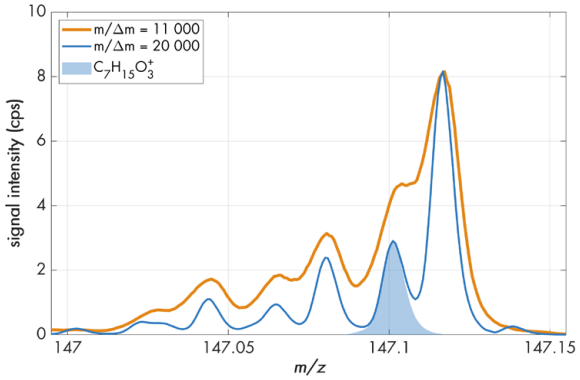
Limit of Detection
m/z 121 < 1 pptv (1 min) @ m/Δm 20 000 (FWHM)
m/z 121 < 5 pptv (1 s) @ m/Δm 20 000 (FWHM)

All values obtained at a mass range of approximately up to *m/z* 250.

Dimensions
60x175x80 cm (WxHxD)

Weight
< 200 kg

Typical operation
< 1500 W



A mass spectrum of ambient air in Innsbruck, Austria, reveals the unambiguous benefits of a mass resolution of > 20 000. For example, $C_2H_{15}O_3^+$ can be separated with ease from its isobaric interferences.

Ultimate performance for advancing scientific insights

Food, Flavor & Fragrance

PTR-MS with high mass resolution enables precise separation of isobaric compounds, making it ideal for analyzing complex aroma compositions in food, beverages, and other products. It allows non-invasive detection of trace compounds without extensive sample preparation, which is crucial for understanding subtle differences in quality, authenticity, and sensory impact.

Environmental

PTR-TOF-MS excels in environmental research by providing real-time and ultra-sensitive detection and identification of VOCs. It is the benchmark method for fast, quantitative, and ultra-sensitive analysis of almost the entire range of atmospheric organics. Its broad range and advanced features make it ideal for emission studies and understanding complex atmospheric processes.

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