

# BreathSpec<sup>®</sup>



**Sensitive Analyser for Metabolic  
Marker Substances in human Breath**

## BreathSpec® – Gas Chromatograph coupled to an Ion Mobility Spectrometer

The BreathSpec®

Thus traces of Volatile Organic Compounds (VOCs) even in highly humid matrices

Results are available within a few minutes and markers are typically detectable even at ppbv-/pptv-technical configuration, its menu as well as its extremely easy and reliable sampling through an attached CO<sub>2</sub>-/O<sub>2</sub> device allows to simply generate data bases and run clinical studies with respect to different diseases.

### Features

- Stand-alone unit with integrated computer
- Sampling unit including precise spirometry for side stream measurement of CO<sub>2</sub> / O<sub>2</sub>
- Heated IMS, column, lines (< 80°C)
- Purification mode
- development: temperature control of IMS, column, drift and carrier gas flow rate
- Software controlled switching between positive and negative ionization mode
- Manual or fully-automatic operation incl. data acquisition, -analysis, visualization and data transfer to external devices
- Storage of data on internal memory or external network shares
- PC-Software package

### Applications

- Monitoring of work related exposures to hazardous substances
- Detection and/or monitoring of diseases
- Control of drug decomposition (pharmaceuticals)

### Technical Specification

**Working principle:** Ion Mobility Spectrometry

**Ionisation:** β-radiation source (Tritium (<sup>3</sup>H))

**Activity:** 300 MBq, below the exemption limit of 1 GBq, EURATOM guideline

**Drift voltage polarity:** Positive and negative, switchable

**Sampling:** Direct through mouthpiece, controlled by precise Spirometer

**Range:** Semi-quantitative, typically low ppb,

**Dynamic range:** 1-3 orders of magnitude

**Display:** 6.4" TFT, VGA-Display

**Input unit:** Rotary pulse encoder

**Processor:** 400 MHz X-scale

**Data acquisition:** Ultra-fast ADIO-board

**Data processing:** X-board / Baseboard

**Data storage:** 2 GB Compact-Flash

**Communication:** RS232, USB, Ethernet

**Electrical connectors:** 2 x D-Sub 9-pole (for modem, console), D-Sub 15-pole (for external devices), RJ45 (for digital modem or SSH), 2 x USB-A

**Power supply:** 100-240 V AC, 50-60 Hz (external supply), 24 V DC / 5A, XLR-connector (internal)

**Power consumption:** < 180 Watt

**Dimensions:** 449 x 375 x 177 mm (WxDxH)

**Weight:** 15.5 kg

**Housing:** 19" compatible, IP 20 enclosure, EMC certificated

**Cooling:** Axial ventilator, temperature controlled, max. 5.5 m<sup>3</sup>/h

**Gas connectors:** 3 mm stainless steel Swagelok connectors for gas in- and outlet