

Are you in search of the ultimate solution for precise gas dilution? Look no further! Our Precision Gas Dilutor is the cutting-edge instrument you've been waiting for. Designed with precision, reliability, and ease of use in mind, this gas dilution system is your key to achieving accurate gas mixtures for a wide range of applications.

KEY FEATURES

Unparalleled Precision: The Precision Gas Dilutor offers unmatched accuracy in gas dilution. It ensures precise and repeatable gas mixture concentrations, guaranteeing reliable results every time.

Wide Range of Dilution Ratios: With its dilution range of 1500 our dilutor can handle a vast range of dilution ratios, making it versatile for various industries, including environmental monitoring, chemical analysis, and more.

User-Friendly Interface: The intuitive desktop control software allows for easy setup and operation. You can control and monitor the dilution process with just a few taps in the manual control panel or you can use the flow sequence mode enabling completely automated dilution series.

Customization: Tailor your gas dilution process to your specific needs with our customizable flow controllers.

Exceptional Quality: Crafted with high-quality materials and precision engineering, our dilutor is built to last, ensuring longevity and reliability.

Compact Design: The Precision Gas Dilutor's compact footprint makes it suitable for laboratory benches as well as working at site in the field with limited space. Its ergonomic design also facilitates easy maintenance.

APPLICATIONS

Environmental Monitoring: Ideal for creating precise gas standards for air quality analysis and emissions testing.

Chemical Analysis: Essential for analytical laboratories requiring accurate gas mixtures for calibration and quality control.

Research and Development: A valuable tool for researchers studying gas reactions and processes.

Manufacturing: Ensure consistent gas mixtures in manufacturing processes, such as semiconductor production.

Low ppb-Level Gas Mixtures: Ensured accuracy even at dilution processes down to the ppb or sub-ppb level.

Sulfur Compounds? We've Got You Covered. Sulfur compounds, known for their distinct odors and potential reactivity, are often used in various industrial applications. Our Precision Gas Dilutor can accurately and safely handle these compounds, due to its inert setup of all gas-bearing parts.

Hydrogen/ Natural Gas/ Biogas: Monitoring of sulfur compounds or rather filter breakthrough. Generation of highly accurate gas mixtures in order to calibrate the measuring system.

Rest assured, whether you're working with aggressive corrosive gases or sulfur compounds, our Precision Gas Dilutor is up to the challenge, ensuring your processes remain accurate, reliable, and safe.

EXEMPLARY RESULTS: H₂S/ COS-CALIBRATION

For calibration of our GC-IMS device we used a 1 ppm test gas of H₂S/ COS. The test gas was diluted by several dilution factors yielding in the following series of concentrations: 0, 100, 250, 500, 750 ppb. The whole dilution series was repeated two times in order to check for hysteresis effects (which easily can occur due to adsorption effects, e.g.) Each concentration was measured >10 times whereas the cycle time of the measurements was about 10 min. Afterwards the arithmetic mean and corresponding standard deviation was calculated (s. Figure 1).

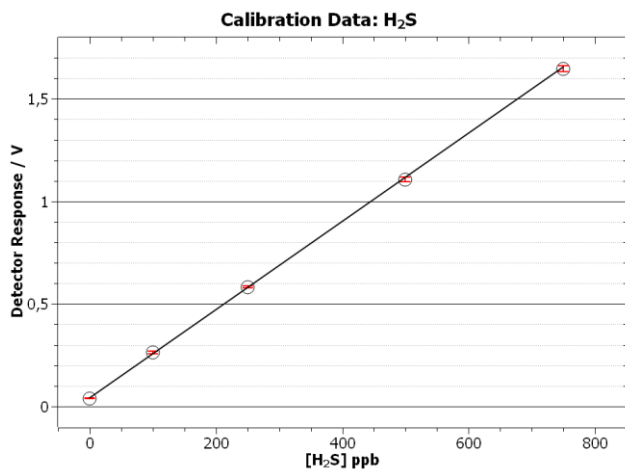


Figure 1: Calibration data of H₂S (n=>10) in the range of 0 to 750 ppb. Standard deviation is depicted by red bars and linear regression by black line.

STANDARD DEVIATIONS

[Analyte] / ppb	σ (H ₂ S) / %	σ (COS) / %
100	2.3	3.2
250	0.8	2.5
500	1.0	2.7
700	0.9	2.2

Table 1: Standard deviations of the calibration data of H₂S and COS.

Adsorption/ Desorption Effects / Hysteresis / Repeatability

Several compounds are known to significantly adsorb on surfaces, which can drastically affect the reproducibility and accuracy of analytical measurements. Therefore the Precision Gas Dilutor uses completely intertized surfaces for the gas-bearing parts, only. Due to these special surfaces the adsorption/ desorption processes are drastically reduced, which will save time (no need for long flushing times of the pipes in order to saturate the surfaces). Figure 2 depicts the raw calibration data of H₂S at different concentrations. It can easily be seen that by the used measuring setup neither time-dependent increase of signal response at a certain concentration nor time-dependent decrease of signal after reducing the concentration is observed. These results strongly depict that the device is nearly free of measurable adsorption/ desorption effects in case of H₂S.

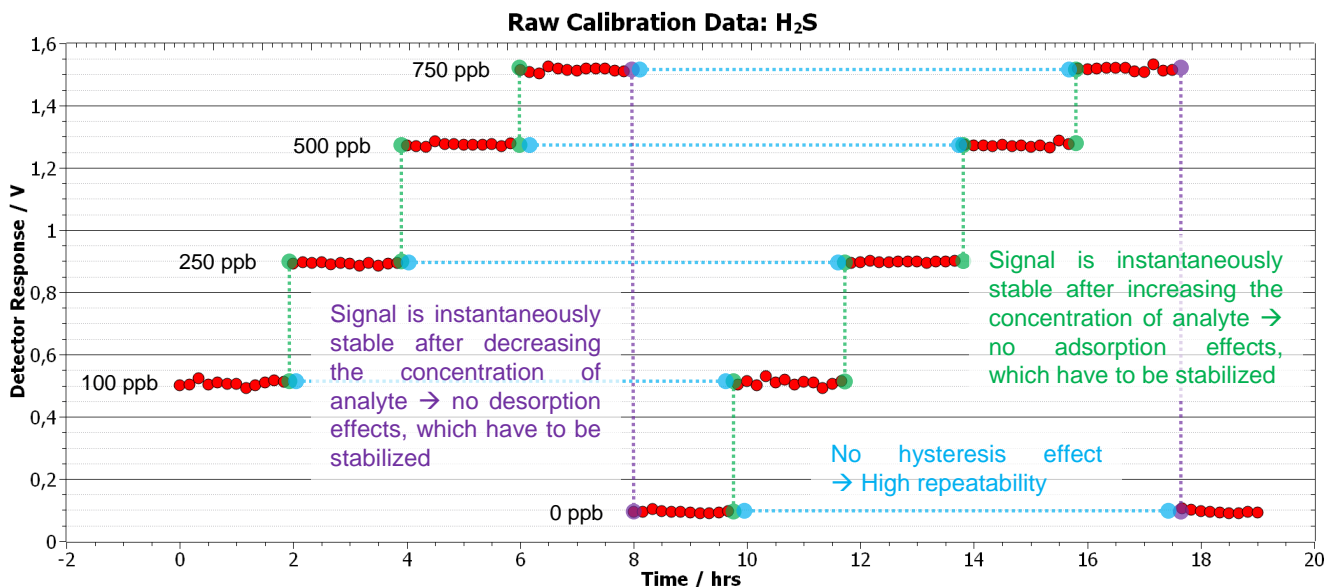


Figure 2: Raw calibration data of H₂S an in the range of 0 to 750 ppb.

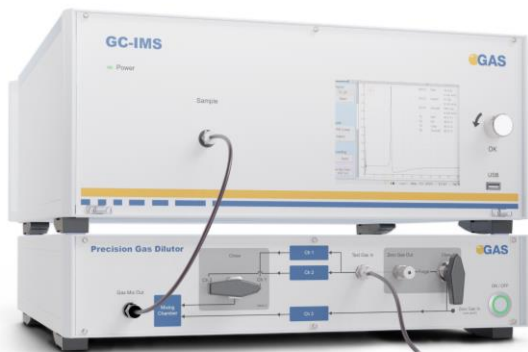


Figure 3: Precision Gas Dilutor connected to the GAS GC-IMS. The compact design enables calibration or calibration checks in the lab or at-site.

SPECIFICATIONS

Dimensions (l x w x h) / mm	435 x 449 x 84
Weight	~6 kg
Gas inlet connectors	3 mm Swagelok®
Material gas-bearing parts	Sulfinert®
Dilution factor range	0 – 1500
Flow control	3 MFCs
Pressure input	3 bar
Flow controller accuracy	± 0.5 % RD ± 0.1 % FS
Flow controller repeatability	< 0.2 % RD
Warm-up time	30 min. for optimum accuracy 2 min. for accuracy ± 2% FS
Operating temperatures	-10...+70°C
Output flow rate	Matched to GAS systems (Standard: 300 mL/min) or adjustable to customers needs
Communication	USB connectivity
Power supply	85 – 264 V AC (external) 24 V DC / 8.3 A (internal)

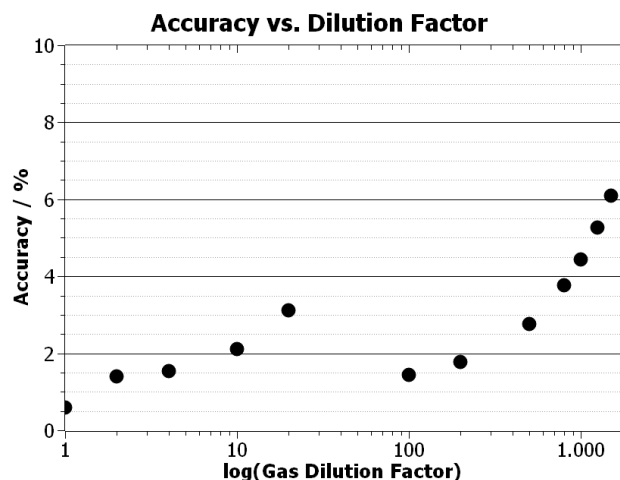


Figure 4: Dilution Factor vs. Flow accuracy of the Precision Gas Dilutor.

Channel Accuracies

The Precision Gas Dilutor offers a dilution factor range from 0 up to 1500. As can be seen in Figure 4 the accuracy of the Precision Gas Dilutor is below 5 % in the range of dilution factors from 0 to 1000 and reaches a maximum value of 6.1 % at a dilution factor of 1500.

Why Choose Our Precision Gas Dilutor?

Unmatched Precision: Ensure your processes meet the highest standards of accuracy.

Reliability: Built to last with top-tier components.

Ease of Use: Intuitive interface for hassle-free operation.

Versatility: Compatible with a wide range of gases and applications.

Don't compromise on precision and reliability. Upgrade your gas mixing capabilities with the Precision Gas Dilutor!

For inquiries, pricing, and more information, please visit the website and/ or contact:

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