



Superior Results of ASTG's FTIR and Model 5000 PGPMS vs. Industry Standard Zahm Nagel for CO₂ Purity Analysis

Unlock Precision and Accuracy with ASTG's FTIR and The Model 5000 The Superior CO₂ Measurement Methods

When it comes to accurate and reliable CO₂ measurement, ASTG's FTIR (Fourier Transform Infrared Spectroscopy) and Model 5000 (Speed of Sound) technologies lead the way, outpacing the Zahm Nagel method. In rigorous testing, ASTG's FTIR and Model 5000 deliver superior CO₂ measurement accuracy and consistency across a wide range of samples.

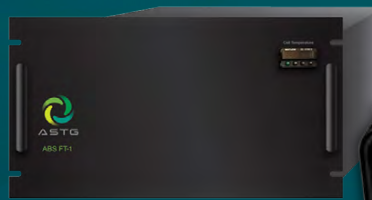


Key Comparison: CO₂ Measurement Results

  				
Sample Number	Research + Grade CO ₂ Thru Gas Divider	Model 5000 (CO ₂ %)	ASTG FTIR (CO ₂ %)	Zahm & Nagel (CO ₂ %)
1	99.24	99.23	99.23	99.06
2	99.49	99.49	99.48	99.17
3	99.75	99.75	99.74	99.55
4	99.999	99.99	100.02	100.00

As the data shows, both ASTG's FTIR and Model 5000 consistently provide CO₂ measurements that are closer to the ideal target value, with results consistently exceeding the performance of Zahm Nagel. In particular, as the target sample moves further away from 100%, both ASTG's FTIR and Model 5000 results are more accurate than the industry standard Zahm Nagel.

Why does ASTG's FTIR and Model 5000 Outperform Zahm Nagel:



Higher Accuracy

ASTG's FTIR and Model 5000 consistently deliver CO₂ readings that are closer to the desired target value, ensuring superior precision for your applications.

Consistency Across Multiple Samples

Whether you are testing a few or many samples, ASTG's FTIR and Model 5000 methods show minimal variation across multiple runs, which is crucial for industries that rely on exact measurements.

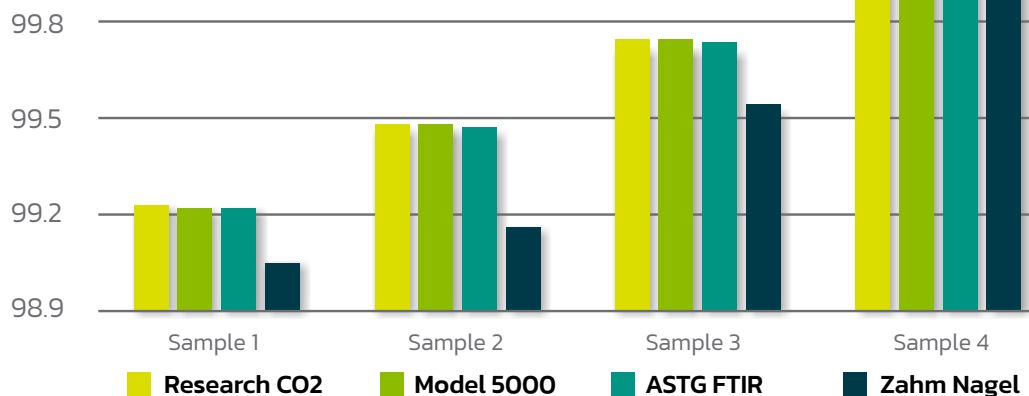
Unmatched Sensitivity

ASTG's FTIR and Model 5000 are ideal for detecting small variations in CO₂ levels, making them a perfect choice for demanding applications such as research, production quality control, and critical environmental monitoring.

Advanced Technology

The use of ASTG's FTIR and Model 5000 allows for real-time, high-throughput analysis with minimal sample handling, ensuring faster turnaround times with no compromise in quality.

Comparison of ASTG's FTIR & Model 5000 vs. Zahm Nagel for CO₂ Purity



Make the Switch Today for Superior CO₂ Measurement Accuracy

When precision, consistency, and efficiency matter, ASTG's FTIR and Model 5000 stand out as the best choice for CO₂ measurement. With advanced technology that ensures faster, more accurate results, you can trust ASTG's FTIR and Model 5000 to meet the demands of your most challenging applications.

Contact Us

For more information on ASTG's FTIR and Model 5000, or to request a demonstration, reach out today!



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**Model
5000**

Sound Measurements Ready-to-Go



Portable System to measure gas purity (99.99%) for over 500 different gases plus single digit ppms for Oxygen and Water Vapor

ASTG Model 5000 – Portable Gas Purity Monitoring System provides continuous gas purity measurements based on the physical properties of gases present. Gas purity is determined by measuring the speed of sound in a resonant acoustic cell, alongside temperature in the gas mixture and knowledge of thermodynamic properties and molar mass. This allows the Model 5000 to achieve gas purity measurements up to 99.99% with an accuracy of approximately 0.1%.

The Model 5000 includes data on nearly 500 gases such as CO₂, H₂, SF₆, N₂, Ar, He and O₂, accessible via a 7" touch screen panel or remotely through a digital interface. Users can also add gases to the data table. Additionally, ASTG has integrated electrochemical sensors capable of measuring H₂O and O₂ down to single digit parts per million (ppm).

Equipped with a long-lasting battery, data logging/control software, analog and Modbus communications connections, and sample inlet/outlet ports, the system is housed in a rugged pelican carrying case with a handle. This design ensures durability and portability, making it suitable for a variety of research applications, verification, and testing across different environments.

Overall, the Model 5000 delivers cost-effective analysis with consistent high performance and minimal maintenance requirements. Its highly stable measurement technologies reduce the need for frequent user calibration, facilitating long-term deployment. Combining the precision of laboratory-grade analyzers with portability and flexibility, the Model 5000 meets the demands of diverse research and testing scenarios.

*Maintenance-free design that operates without reference gases, consumables, filaments, optical sources or GC columns
/ 304 High Pressure-rated Resonant Acoustic Sample Cell (RASC) / No need for field recalibration after factory-characterization of the RASC
/ Large, Touch-Screen User Display that can operate in either the Gas Purity, Binary Gas or Physical Measurement Mode*

Model 5000 Portable Gas Purity Monitoring System



High Purity Configuration

The standard Model 5000 is equipped with 1/8" female NPT connections. A wide range of stainless steel (SS) gas fitting adapters are available to facilitate interfacing with NPT, VCR, VCO, tube compression, and flexible hose fittings. Specifically designed for high purity (UHP) and corrosive environments, the Model 5000 Portable Gas Purity Monitoring Systems come with welded-in-place 1/4" male VCR fittings. Units configured in this manner undergo helium-leak testing to ensure they maintain leak-free integrity. The acoustic transducer utilized features a nickel-plated copper spiral on a Kapton polyimide film. For gases that may react adversely with copper or Kapton, we advise end-users to contact ASTG to evaluate application feasibility.

ASTG's Model 5000 introduces an advanced capability to enhance gas purity research and monitoring. It offers consistent performance across various environments including laboratories, field operations, and mobile applications, supporting analysis of over 500 different gases. Designed for precision, stability, and portability, the Model 5000 operates efficiently with minimal power consumption and maintenance needs. Its rugged construction ensures reliability in challenging environments, including remote and high-altitude locations. All these features are available at a competitive price, delivering unparalleled precision and stability for your research and monitoring requirements.

Question?

Please reach out to us for additional information regarding our Model 5000-Portable Gas Purity Monitoring System and for information about other ASTG products and specialty gas services.

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Specifications:

- Measurement Principles:** Gas Purity (99.99%) – Speed of Sound via Resonant Frequency Detection
- Detector: Resonant Acoustic Cell:** Wideband Microphone
- Sample Flow Cell:** Electropolished 304 Stainless Steel
- Concentration Accuracy:** +/- 0.01 to 0.1 % typical (appl/gas species dependent)
- Response Time:** Electronic Response is T(90) in 10 seconds
- Power Requirements:** 120 VAC / 60 Hz, 230 VAC 50 Hz
- Battery Life:** 2.5 hours on full charge (standard), 5 hours option available
- Operating Temperature:** -20 to +70 Deg C (max)
- Operating Pressure:** up to 150 psia (max)
- Operating Flow Rate:** up to 5000 sccm
- Oxygen & Water Vapor Measurement Principles:**
 - O₂ - Electrochemical range: 0 – 1000 ppm
 - H₂O – Impedance range: 0.01-23,000 ppm
- Analog Outputs:** 0-5V, 0-10V and 4-20mA
- Digital Outputs:** Modbus
- Display:** 7" Touch Screen
- Dimensions:** 22" W x 18" D x 9" H / 40 lbs
- Easy Haul Case:** Built-in Extendable Handle & Wheels

In partnership with:



Member of the SGS Group

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