

# URG

*Better Air. Better Lives.*

## Ambient Ion Monitor

Time Resolved Direct Measurements of:  
Nitrate, Sulfate, Ammonium, HCl, HNO<sub>3</sub>, HNO<sub>2</sub>, SO<sub>2</sub>, NH<sub>3</sub>



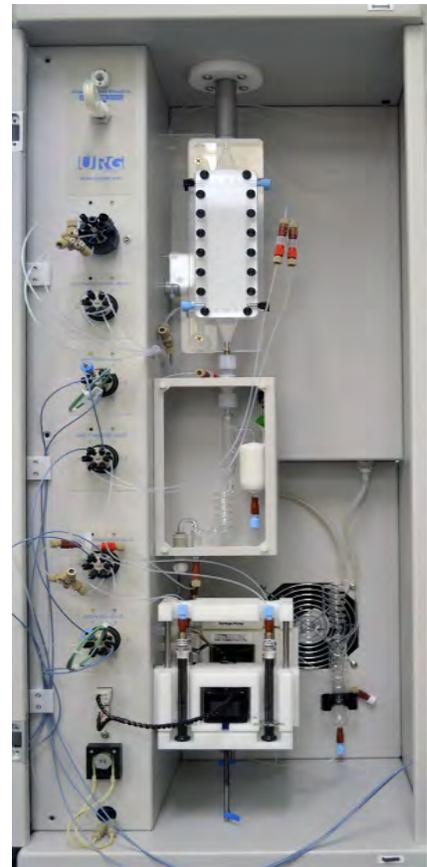
## Ambient Ion Monitor

The 9000 Series Ambient Ion Monitors consist of several different configurations for your specific sampling needs. The Ambient Ion Monitor System can be configured with one Ion Chromatograph (IC) to provide time-resolved direct measurements of anion particulate Nitrate, Sulfate, Nitrite, Phosphate and Chloride found in PM-2.5, as well as gas phase Hydrogen Chloride, Nitric Acid, Nitrous Acid and Sulfur Dioxide. With the addition of a second IC, the Ambient Ion Monitor will also provide time-resolved direct measurements of cation particulate Ammonium, Sodium, Calcium, Potassium and Magnesium, as well as gas phase Ammonia.

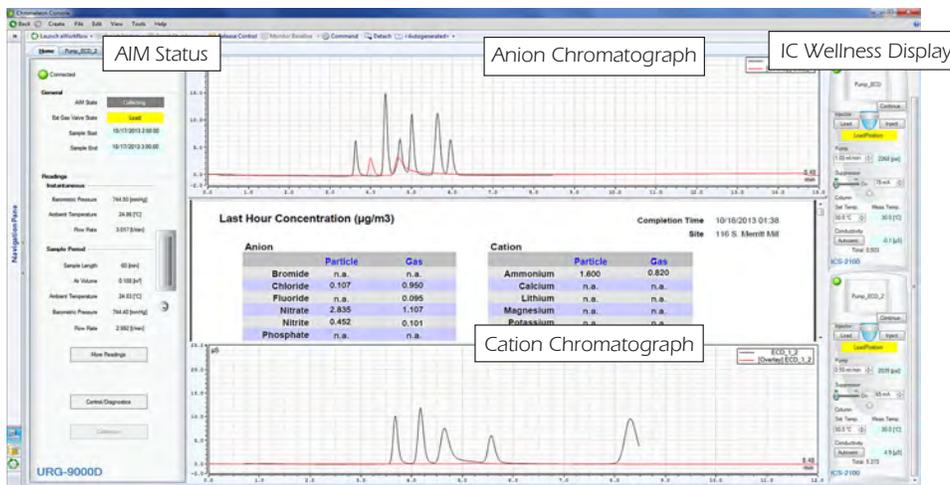
The analysis method for the AIM System is a Thermo Scientific™ Dionex™ ion chromatography system. Dionex Reagent-Free™ IC (RFIC™) systems produce eluents and regenerants electrolytically, so all you need to do is add water. The unique Dionex RFIC systems work seamlessly with the AIM System for accurate determinations of air contaminants. The accuracy of the IC analysis is verified by an internal “check” standard of Lithium Bromide that is injected with each sample.

## Software

The new AIM driver for Chromeleon 7.2 allows for seamless control of the AIM with one powerful software program. AIM and IC data are stored in a single database and can be exported using customizable report templates. Firmware updates are easily downloadable through Chromeleon. You can completely control the AIM operation from one user-friendly home panel. From this home panel, users can quickly identify that the AIM is operating correctly. The pre-flight conditions automatically check the instrument methods to ensure that they are configured properly prior to operation. Once data has been QA'ed, the software automatically recalculates data to  $\mu\text{g}/\text{m}^3$ .



Inside the URG-9000D  
AIM System



Chromeleon Home Panel

## Unique Parallel Plate Denuder

A recent study done by the US EPA has confirmed that the patented URG parallel plate denuder is 99.8% efficient. The AIM was comprehensively evaluated using EPA certified SO<sub>2</sub> concentrations from 20-500 ppb. The denuder collection efficiency was found to remain at 99.8% for all concentrations. The membrane material is now pre-cut for fast replacement. It can be used twice as long as the previous material (6 weeks vs. 3 weeks). The unique and highly efficient fastener design on the denuder makes assembly very quick and easy.

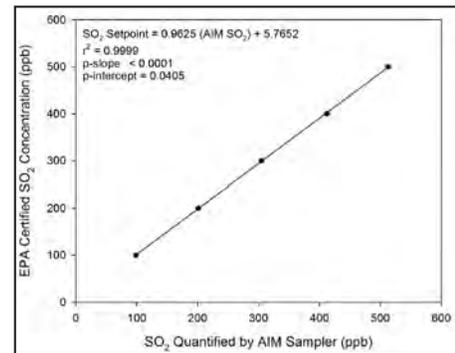
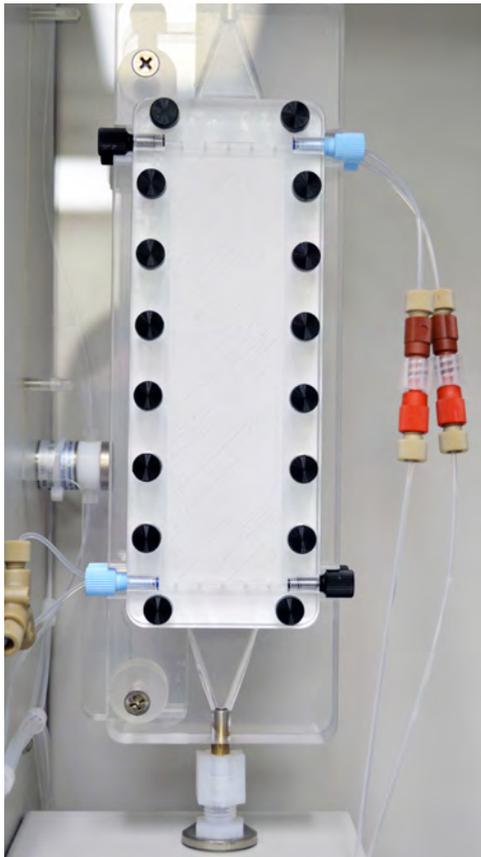


Exhibit 1-3. Comparison of Known SO<sub>2</sub> Concentrations to AIM Reported SO<sub>2</sub> Concentrations.

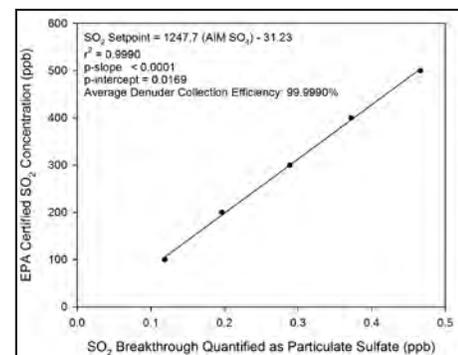


Exhibit 1-4. Comparison of Known Concentrations to AIM Reported Sulfate Concentrations (SO<sub>2</sub> Breakthrough).

## Ceramic Coated Super Saturation Chamber

The heat delivery and insulation design for the super saturation chamber has been improved. You will be quick to notice the new look and how heat is delivered with minimal loss. The safe, tamper-proof ceramic coating prevents the exterior from becoming too hot.



\* Patent Pending

## Ambient Ion Monitor Specifications

<b>Power</b>	Wide Range 100-240VAC
<b>Dimensions</b>	15" x 16" x 36"
<b>Weight</b>	Approximately 50 lb
<b>Measures</b>	Nitrate, Sulfate, Nitrite, Phosphate, Chloride, Ammonium, Sodium, Calcium, Potassium, Magnesium, Ammonia, Hydrogen Chloride, Nitric Acid, Nitrous Acid and Sulfur Dioxide
<b>Detection Limit</b>	0.05 µg/m <sup>3</sup> Every Hour (Optional 15-30 Minutes)
<b>Installation</b>	Requires Installation in an Environmentally-Controlled Shelter where the Temperature is Maintained Between 20-30 Degrees Celsius
<b>Configurations</b>	Stand-Alone or Rack Mountable Unit Available



## Why Choose the AIM?

### Reliable

The AIM System can be left unattended for up to 14 days, compared to its competitors that can only be left for up to 1 week.

### Accurate

At the inlet, the AIM System contains a customizable Teflon® coated sharp cut cyclone that eliminates the build up of static charge and avoids the risk of sample loss.

### State of the Art

The AIM System uses a parallel plate denuder equipped with a pre-cut membrane. The stability provided by the denuder eliminates the potential for microbial growth within the denuder that exists in other systems that have rotating denuders with moving mechanical parts. In addition, unlike the other ICs, the Thermo Scientific™ Dionex™ ICs can be disconnected from the AIM and used separately from the system.

