

URG

Better Air. Better Lives.

Ambient Nitrate & Sulfate Monitor

Time Resolved Direct Measurements of: Nitrate, Sulfate



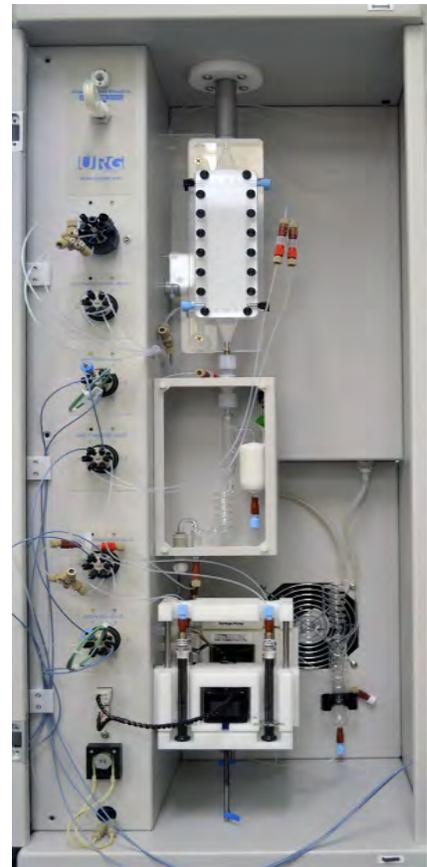
Ambient Nitrate & Sulfate Monitor- 9000NS

The Ambient Nitrate & Sulfate Monitor (URG-9000NS) provides time-resolved, direct measurements of anion particulate nitrate and sulfate contained in suspended fine particulate matter (PM-2.5). In its standard operational setting, the instrument generates a new particulate nitrate and sulfate measurement in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) every hour. It can function as either a free-standing or rack-mounted unit and is automated for continuous, unattended operation in air quality monitoring stations.

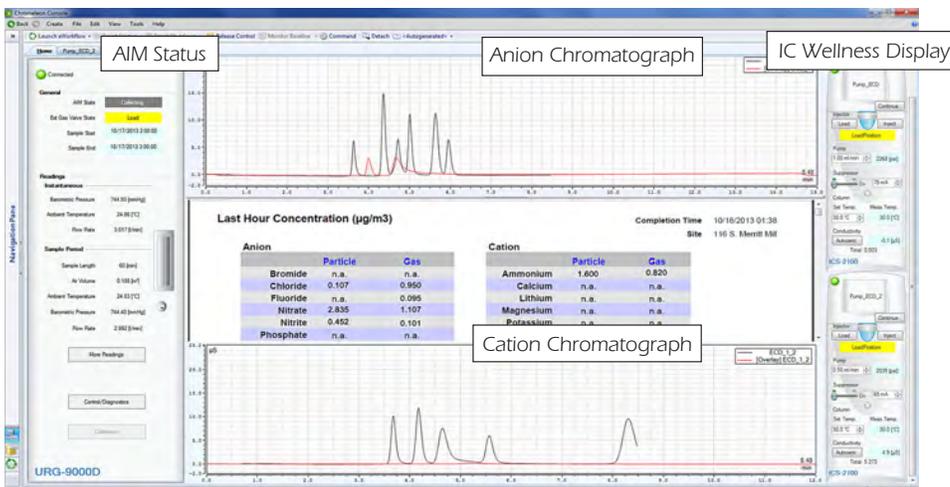
Ambient particulate nitrate and sulfate can represent major fractions of the PM-2.5 concentration in certain areas—namely those where fuel combustion results in sulfur dioxide (SO_2) emissions; it is often produced as a result of the interaction of ammonia (NH_3), NO_x , SO_2 and other gaseous constituents. Its measurement can also be important with respect to understanding visibility degradation, atmospheric chemistry, and inputs into various ecosystems.

Software

The new URG-9000NS driver for Chromeleon 7.2 allows for seamless control of the URG-9000NS with one powerful software program. The Ambient Nitrate & Sulfate Monitor as well as the 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 URG-9000NS operation from one user-friendly home panel. From this home panel, users can quickly identify that the URG-9000NS 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-9000NS



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 Ambient Nitrate & Sulfate Monitor was comprehensively evaluated using EPA certified SO₂ concentrations from 20-500 ppb. The denuder collection efficiency was found to remain at 99.8% for all concentrations. The membrane material is pre-cut for fast replacement and can be used for up to 6 weeks. The unique and highly efficient fastener design on the denuder makes assembly very quick and easy.

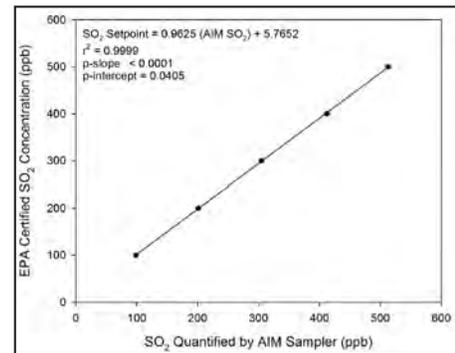
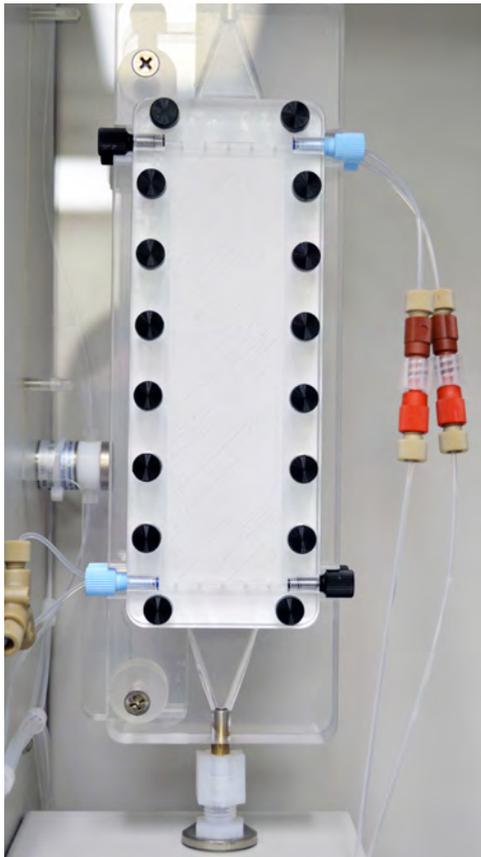


Exhibit 1-3. Comparison of Known SO₂ Concentrations to AIM Reported SO₂ Concentrations.

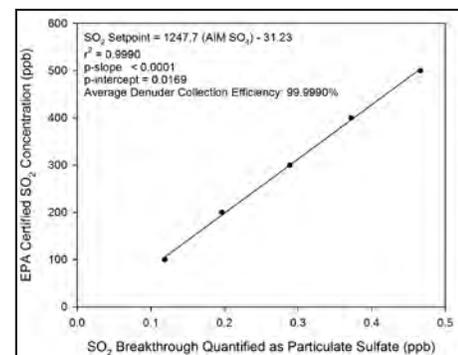


Exhibit 1-4. Comparison of Known Concentrations to AIM Reported Sulfate Concentrations (SO₂ Breakthrough).

Ceramic Coated Super Saturation Chamber

The heat delivery and insulation design for the super saturation chamber has been improved. The safe, tamper-proof ceramic coating prevents the exterior from becoming too hot while delivering continuous ultrapure steam.



* Patent Pending

Ambient Nitrate & Sulfate Monitor Specifications

Power	Wide Range 100-240VAC
Dimensions	38.1 x 40.6 x 91.4 cm (15 x 16 x 36 in)
Weight	29.5 kg (65 lb)
Measures	Nitrate, Sulfate
Detection Limit	0.05 µg/m ³ Every Hour (Optional 15-30 Minutes)
Installation	Requires Installation in an Enviromentally-Controlled Shelter where the Temperature is Maintained Between 20-30 Degrees Celsius
Operating Temperature	20 - 30° Celsius
Ambient Air Temperature	-20 - 50° Celsius
Configurations	Stand-Alone or Rack Mountable Unit Available



Why Choose the Ambient Nitrate & Sulfate Monitor?

Reliable

The Ambient Nitrate & Sulfate Monitor (URG-9000NS) 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 URG-9000NS 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 URG-9000NS 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™ IC can be disconnected from the URG-9000NS and used separately from the system.

