

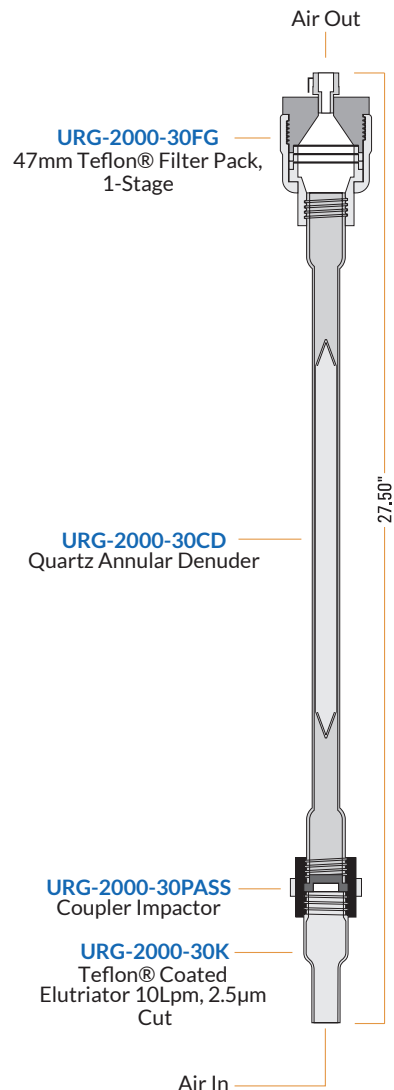


## Mercury Sampling System

### SIMULTANEOUS COLLECTION OF GASES & PARTICULATE MERCURY - URG-3000M

Recently a semi-continuous method for particulate bound mercury [Hg(p)] determination was developed by Lu et al. (1998). In this design, ambient samples are collected onto a smaller diameter (3mm) quartz filter in a quartz chamber. After 2-24 hours the quartz chamber is heated to 600 degrees C, releasing the Hg(p) as elemental Hg<sub>0</sub>. The Hg<sub>0</sub> in turn is quantified by cold vapor atomic fluorescence spectrometry (CVAFS).

URG has constructed a modification of the Lu et al. system. The key modification includes a URG Teflon<sup>®</sup> coated PM2.5 inlet, coupled to a quartz annular denuder. The aerosol is collected on a URG 25mm quartz filter supported by a quartz or nickel screen. These modifications allow (1) precise particle size collection, (2) larger surface area to minimize pressure drop changes during sampling, (3) insertion of a KCl coated quartz annular denuder between the fine particle inlet and the Hg(p) collection device to remove reactive gas phase mercury (RGM) from the quartz filter thus eliminating the possibility of reacting with the filter and other particles being collected. This sampling arrangement eliminates positive Hg(p) measurement artifacts.



# Mercury Sampling System Component Details

## URG-3000-02BA, Computerized Sampling Pump

### Specifications & Features:

- Adjustable Flow Range of 2-20Lpm
- 7 Day Programmable Timer
- Volumetric Flow or Active Volumetric Flow Options Available
- Weather Resistant for Outdoor Use
- Low Pulsation
- 40 lb



## URG-3000-02Q, Computerized Indoor Pump

### Specifications & Features:

- Adjustable Flow Range of 2-18Lpm
- 7 Day Programmable Timer
- Volumetric Flow or Active Volumetric Flow Options Available
- Available as 115 VAC or 220 VAC
- Lightweight and Portable
- Very Quiet, Low Pulsation
- 13 lb



## 47mm Teflon® Filter Packs

Design ensures sample integrity and allows for easy transportation to and from lab. Available with 1-4 stages to allow for sampling on multiple filters at once.



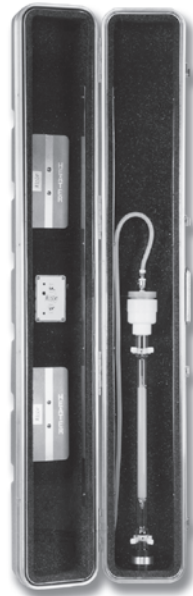
## Coupler Impactor Inlet

Teflon® coated to minimize losses. Built-in Teflon® impactor plate with removable glass frit.



## Dry Gas Meter

Mechanically counts liters that have passed through the annular denuder system.



## Measurement Capabilities

- Speciated measurements of Reactive Gas Phase Mercury (RGM) and Particulate Mercury
- Precise particle size collection
- Collects RGM and Hg(p) simultaneously
- Incorporates KCl coated quartz annular denuder
- Eliminates positive Hg(p) measurement artifacts
- Insulated sampling maintains temperature at approximately 35 degrees Celsius

## Specifications

- Insulated Sampling Box, 49.5" x 7" x 7", 15 lb
- Computerized Sampling Pump 7 Day Programmable
- 18" x 14.5" x 11", 40 lb
- 10Lpm, 2.5µm
- Available as 115VAC or 220VAC

## Additional Literature Available

- Complete URG Parts Catalog
- Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air - IO-4.2 Determination of Reactive Acidic and Basic Gases and Strong Acidity of Fine Particles, USEPA publication 625/R-96/01a
- URG Systems Overview  
[Download at www.URGcorp.com](http://www.URGcorp.com)
- Compilation of research papers documenting URG Air Sampling Instruments from 1983 to present  
[Contact URG to receive by email](#)