

# AirSentry® II

## AMC Monitoring System



The AirSentry II AMC Monitoring System is the most advanced Airborne Molecular Contamination monitor available, utilizing state-of-the-art gas detection technology (Ion Mobility Spectrometry, Pulsed Fluorescence) to detect and characterize airborne molecular contamination from multiple locations within a cleanroom. This system contains a 16- or 30-point manifold sampling system and a laptop computer with secure software and communications, and can be configured to detect one or more compounds.

In modern cleanrooms, processes and equipment are often spread over a large manufacturing area and multiple floors. Air handlers recirculate the majority of air within a cleanroom and easily spread molecular contamination to unwanted areas, negatively impacting areas far away from the actual contamination source. The AirSentry II AMC Monitoring System provides a central monitoring station that allows for rapid contamination detection and analysis, as well as customizable AMC monitoring strategies to cover a wide number of sample points spread across a facility.

### BENEFITS

- Monitors up to 30 sample locations
  - Low cost per sample point
- Multiple AMC compounds detected (NH<sub>3</sub>, Amines, Acids, Chlorides, SO<sub>2</sub>)
- Real-time graphical software
- Alarm monitoring to AMC events or trends
- Calibrations traceable to the National Institute of Standards and Technology (NIST)
- Compact size
- Simplifies track/trace and control aspects of molecular contamination monitoring

### APPLICATIONS

- Multi-point cleanroom and process bay monitoring
- Determining and monitoring the chemical filter efficiency and effectiveness for multiple lithography tools (upstream/downstream of filters for each tool)
- AMC contribution from makeup and recirculation air handlers
- Long-term contamination trending
- Baseline and qualification of AMC levels in new cleanrooms



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### specifications

Sample point options	16 or 30 Channels
Analyzer options	NH <sub>3</sub> , Amines, Acids, Chlorides, SO <sub>2</sub>
Analyzer ranges	0 – 50 ppb <sub>v</sub>
Sample tube length (max.)	75 m
Power	120 VAC or 230 VAC
CDA requirements	10 LPM, 40 psig input, < - 76 °F (< - 60 °C) dew point, no particles > 50 µm, hydrocarbon-free
Vacuum	< 33 kPa (absolute)
Weight	Depends on analyzer configuration
Dimensions (l, w, h)	30 x 23 x 46 in (76 x 58 x 119 cm)
Communication	Ethernet (OPC)

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Patents pending.

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#### Strategies for AMC contamination monitoring fall into three general categories:

##### 1. Real-Time:

Real-time monitors are used continuously in the most critical locations, such as photolithography, where even sub-ppb levels of contamination degrade process performance and negatively impact yield.

##### 2. Near Real-Time:

Near real-time monitors consist of a multi-port sampling scheme to sample a large number of locations on a periodic basis (2 – 3 times per day).

##### 3. Off-Line:

Off-line monitoring generally is the process of manually collecting an air sample over a 6 – 24 hour period; laboratory analysis is performed at some later date, with results returned in 7 – 10 business days.

A robust AMC monitoring process uses a combination of all three strategies with a near real-time technique providing the majority of information. The data from the near real-time analyzer often triggers the subsequent use of either real-time or off-line techniques in order to provide more detailed time-based or composition-based information. This allows for minimum monitoring costs as real-time and off-line techniques are more expensive on a per sample point basis over the lifetime of the monitoring period. In summary, near real-time monitoring through the use of the AirSentry II AMC Monitoring System is the foundation upon which robust and capable AMC monitoring programs and strategies are built.



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