AERODYNE RESEARCH, Inc.

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45 Manning Road, Billerica, MA
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ARISense

Air quality sensor system

Model 100

Designed for gas and particle pollutant measurements to better understand atmospheric chemistry and environmental public health.

Applications

- Distributed sensing solutions capable of 10 to 100 times the spatial and temporal resolution of typical air quality monitoring (AQM) networks
- Urban AQ monitoring
- Point source characterization
- Near-field combustion
- Exposure assessment
- Community engagement and education
- Indoor air quality
- Security / Emergency response

Advantages

- Transparent data handling protocols
- Honest assessment of sensor measurement uncertainties
- Thorough laboratory and in-field calibrations
- Modular, lightweight, flexible design
- Real-time multi-pollutant characterization including both gas phase and particulate matter concentrations
- Adaptable power and networking configurations based on desired deployment scheme
- Rugged weather-proof enclosure with versatile mounting options

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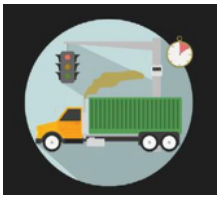
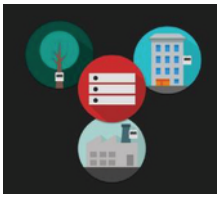
Particle Size Range: $0.38 \leq d_p \leq 17$ µm (across 6 size bins)

Gas Measurements: Electrochemical measurements of [NO, NO_2 O_x (O_3 + NO_2), CO]
Non-dispersive infrared (NDIR) measurement of CO2

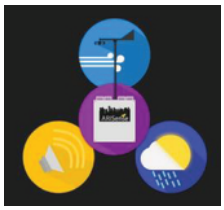
Size/Weight: 8.59" L x 5.11" D x 8.59" H, 5 lbs
21.8 cm x 13 cm x 21.8 cm, 2.3 kg



Fast | Realtime | Raw Data
Data recorded by each ARISense node is stored on an internal flash drive at user-defined data acquisition rates (5-60s). The high time-resolution of ARISense measurements provides a near-instantaneous look at changing pollutant concentrations, leading to a clearer picture of local point source impacts that may disproportionately impact air quality.



Internet-Enabled
ARISense systems are configured to allow users to push real-time data to the cloud where sensor outputs can be visualized by the general public and downloaded by users and researchers. Opening up the ARISense database to the communities in which the systems are deployed allows individuals to connect their personal observations with changes in pollutant concentrations in their immediate vicinity. See https://arisense.io/.



Fully-integrated Low-cost AQ Sensor System
Integration of peripheral sensors for measurement of environmental and meteorological parameters (relative humidity, temperature, solar intensity, barometric pressure, ambient noise, wind speed & direction) provides additional context for interpreting/understanding sensor response and improving source attribution.