



# 9050 SERIES

## IN-SITU DUV PROBE

### MEASURES WITH UV & VIS

one to ten, or more:  $\text{NH}_3$ ,  $\text{NO}$ ,  $\text{NO}_2$ ,  $\text{SO}_2$ ,  $\text{Cl}_2$ ,  $\text{ClO}_2$ ,  $\text{BTX}$ , and others

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### FEATURES

- New Patented Technology, Not Subject to Drift Like Current Technology
- Single Penetration of Gas Stream
- Calibrate In Place
- Uses DOAS with Proprietary PLS Fit
- Record Complete Spectra and Post-Process to Search for Unknowns
- Meets US and International EPA, State and Local Agency Requirements
- Accurate Measurements
- Fast Response
- Automatic Calibration
- Automatic Temperature Correction
- Digital Circuitry and Signal Transmission
- Stable Alignment
- EPA-Approved In-Place CGA Calibration Verification
- Proven Design
- Expandable
- Low Maintenance



The **AIM** Series 9050 is the UV probe design of the very popular E-6200 IR and 5600 UV In-Situ Stack Gas Monitors: with a double-pass optical design. The dispersed light is measured on a 2048 element array detector, employing dispersive UV (DUV) DOAS spectral analysis.

**AIM** manufactures some of the most advanced air pollution monitoring equipment available today. These instruments incorporate mechanical and optical features which have been refined through over 30 years of practical field experience, state-of-the-art design, and over 4,000 installations world-wide.

**AIM** is experienced in the development, installation, operation and compliance testing of emissions monitoring instrumentation. This includes single and multi-component UV, VIS, and IR absorption gas analyzers, gas filter correlation analyzers, transmissometers, single and multiple-pass optical systems, FTIR analyzers, fiber-optic coupled systems, and long-path (open-path) ambient analyzers.

Information on complete systems and analyzers for specific applications is available from the factory.

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## SPECIFICATIONS

**Ranges:** Adjustable from ppm to percent (%) levels, depending upon pathlength; multiple outputs/ranges available.

**Typical System Configuration:**

SO <sub>2</sub>	0 - 25 to 0 - 250 ppm v/v
NO <sub>x</sub>	0 - 25 to 0 - 250 ppm v/v
NH <sub>3</sub>	0 - 10 to 0 - 50 ppm v/v
Cl <sub>2</sub>	0 - 100 to 0 - 1000 ppm v/v
BTX	0 - 10 to 0 - 100 ppm v/v

**Accuracy:** Better than  $\pm 2\%$  of full scale

**Repeatability:** Better than  $\pm 1\%$  of full scale

**Linearity:** Better than  $\pm 1\%$  of full scale

**Zero Drift:** Less than  $\pm 1\%$  of full scale in 30 days

**Span Drift:** Less than  $\pm 1\%$  of full scale in 30 days

**Response Time:** Analyzer - 10 msec; System - 1sec to 15 minutes, Typ., operator selectable

**Outputs:** Linearized (better than 1%) analog 4-20 mA, (isolated optional); RS232C/RS485 digital outputs; relay contact closures, programable; modem interface available.

**Signal Processing:** Digital

**Communications:** Ethernet (to 100m), or Modbus RS485 (to 1000m)

**Ambient Temp:** 10°F to 130°F (-10°C to 55°C) standard; Extended range with additional temp control available

**Power:** 1 10V  $\pm 15\%$ , 30 amp, 50/60 Hz  $\pm 2\text{Hz}$  240V  $\pm 15\%$ , 15 amp, 50/60 Hz  $\pm 2\text{Hz}$

**Enclosure Protection:** NEMA 4X

**UV Source** - The source is optimized for the spectral range required, and may be a D2 arc, Xe arc, or halogen bulb.

**Monochromator** - Low, medium, and high resolution gratings available to fit the application.

**Array Detector** - The UV light is dispersed onto the 2048 element array.

**Temperature Control** - The temperatures of the probe and analyzer are measured and controlled for long-term, stable operation.

**Construction Materials** - Materials are corrosion resistant, a fundamental requirement for long-term, reliable operation.

**Enclosure** - The system enclosure is NEMA 4x, and is temperature controlled with on-board heating and cooling.

**Digital Signal Processing** - The detector output is amplified, digitized, and transmitted to the system controller via RS485 link. Outputs include ppm, %, mg/m<sup>3</sup>, wet or dry basis, corrected to x% O<sub>2</sub> or CO<sub>2</sub>, lb./hr., lb./MBtu, etc.

**Elimination of Interferences** - Although H<sub>2</sub>O and CO<sub>2</sub> are not interferences for most UV measurements, other gases such as SO<sub>2</sub> have absorption bands that could potentially interfere. The DOAS technique matches the absorption pattern, and subtracts the overlapping absorption spectra, producing an interference-free measurement.

Represented by: