



D I A L

Diagnostic Instrumentation & Analysis Laboratory
Mississippi State, MS 39762-5932

Standard Gas Analysis Capabilities

DIAL is equipped to conduct particle size distribution studies, as well as measure several types of analytes in the gas phase. Upon request, testing can be performed according to EPA guidelines. The equipment and techniques include:

Portable Flue Gas Monitor for detection of up to nine gas types, including

- CO: up to 40,000 ppm with 1 ppm resolution for concentrations < 2,000;
- O₂: 0 - 25% with 1% accuracy;
- CO₂: 0 - 25% with 0.1% resolution;
- SO₂: 0 - 2000 ppm with 1 ppm resolution;
- Hydrocarbons: 0 - 50,000 ppm (resolution is application dependent);
- H₂S: 0 - 200 ppm with 1 ppm resolution;
- NO: 0 - 1000 ppm with 1 ppm resolution;
- NO₂: 0 - 100 both with 1 ppm resolution.

Dual NO_x/ NO₂ Analyzer for conducting EPA Method 7E. (L.O.D. of 1.0 ppm). Equipped with NO₂ generator.

Dual CO/CO₂ Analyzers for conducting EPA Method 10. (L.O.D. of 0.1 ppm).

SO₂ Analyzer for quantitative detection of sulfur dioxide in off-gases. (L.O.D. of 1.0 ppm).

Oxygen Analyzers for quantitative detection of oxygen in off-gases. (L.O.D. of 0.1%)

Hydrocarbon Analyzers for quantitative detection of combustibles for area or flow monitoring. (L.O.D. of 0.025%).

Total Hydrocarbon Analyzer for quantitative detection of combustibles and hydrocarbons. (L.O.D. of 1 ppb; reported as propane).

Dynamic Gas Calibrator for mixing calibration gases.

Cascade Impactor for quantifying particle size distribution and concentration with very high resolution.

Stack Samplers for conducting EPA Method 5 for determination of particle concentrations and EPA Method 29 for multiple metals concentrations in off-gases.

Other applicable equipment and techniques include:

Laser Doppler Velocimeter for measuring gas and liquid velocities using flow tracer particles.

Fiber-based Infrared Pyrometer for measuring surface temperatures.

High-volume Ambient Air Impactor for measuring particle distributions present in ambient air.

Nafion gas dryers, HEPA particle filters, heated traced gas sample lines, diaphragm sample pumps, etc.

Additional information about DIAL's gas analysis capabilities can be obtained by contacting:

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