

Accurate. Reliable. Cost Effective.

Emissions Monitoring for Compliance & Process Improvement



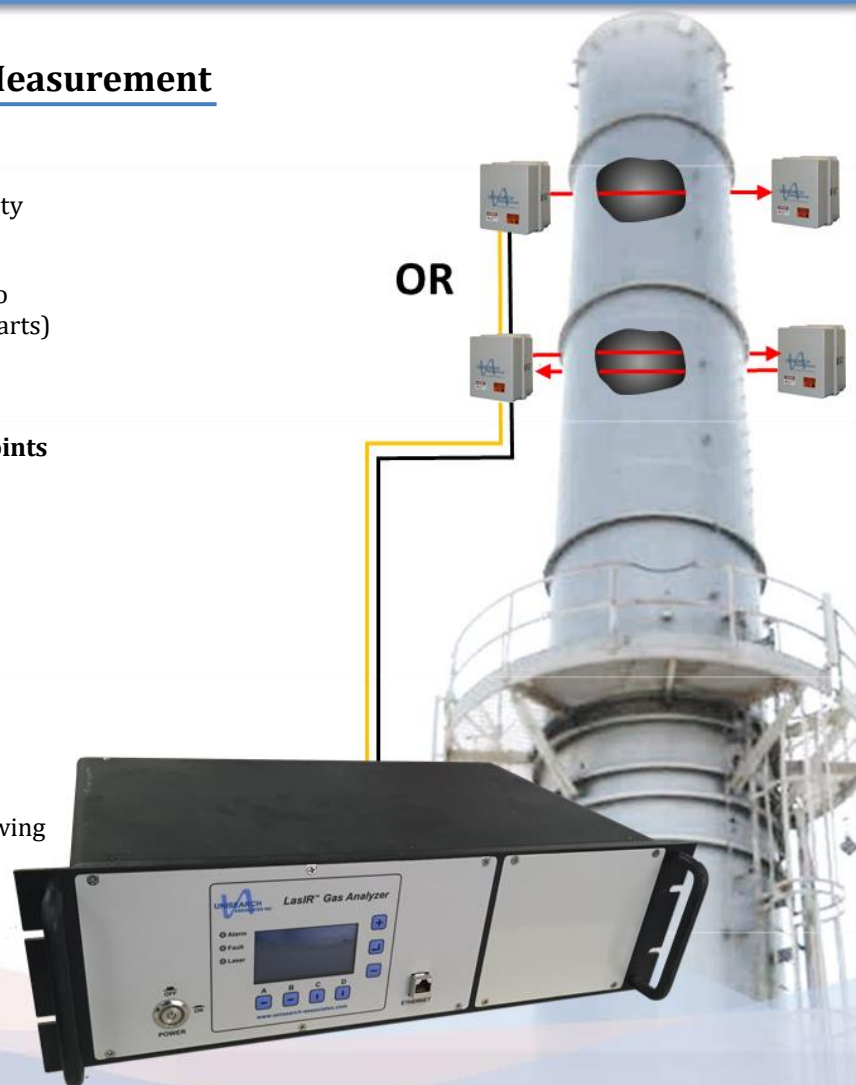
LasIR™ Laser-based In-situ Cross-stack, Open-path, Extractive and Pseudo In-situ Gas Analyzers

NH₃, HCl, O₂, CO, H₂O, HCN, H₂S, CO₂, CH₄, HF, HDO, D₂O,...

LasIR™ In-situ Cross-stack/Duct Gas Measurement

- **TDL (Tunable Diode Laser)** technology for unmatched accuracy & reliability
- **Single-pass or Dual-pass optics** for enhanced sensitivity
- **Stack/Duct diameter** up to 15 m
- **NEMA 4X/IP66 fiberglass composite enclosures** (also available in 316 Stainless Steel and Teflon-coated wet parts)
- **Optics Flanges** 4" ANSI (9" DIA) #150
- **High sensitivity** ppb to percent level measurements
- One analyzer can be used for up to **16 measurement points**
- **Calibration** not required
- **Inline/Offline Audit option** available
- **Extremely Fast** (<0.5 second) response time
- **Compact and simple** to install
- **Gas Temperature** -40° to 1,100°C
- **Gas Pressure** 1 to 1,500 mBar
- **Ambient conditions** from -50° to 70° C (for optics)
- **Gas conditioning** not required
- **Unaffected** by stack/duct alignment changes
- **Laser inside controller located in Control Room** allowing for simple signal control and diagnostic access
- **Separation between measurement location and controller** up to 1 km
- **Built-in** data storage for >1 year of data

OR



Product Description

Unisearch LasIR™ **Gas Analyzer** is a continuous monitor designed to measure flue gases for both compliance and process monitoring. The Controller uses a near infrared (NIR) Tunable Diode Laser Absorption Spectrometer System utilizing a single mode laser mounted in a thermoelectric cooler for unsurpassed accuracy and performance. Since the spectral purity of the laser is high and the selected absorption feature is unique,

measurements can be made free of interferences from other gases. The measurements are made either in-situ across the stack or duct in either a single or dual pass design (depending upon the application and sensitivity), pseudo in-situ, open path or extractive. A Windows based software package displays the data on either a Host laptop PC or the client's existing data acquisition system. Standard 4-20 mA analog input/outputs, Ethernet, MODBUS, RS232 & Status Relays.

LasIR™ Open-path Gas Measurement

- **TDL (Tunable Diode Laser)** technology for unmatched accuracy & reliability
- **Path length** up to 1,000 m
- **High sensitivity** ppb to percent level measurements
- **Linearity** up to 5 orders of magnitude
- **High Precision** reflector elements
- **Heavy-duty** alignment stage
- **Built-in** Riflescope and Visible laser
- **Multi-point** measurement capability (up to 16 channels)
- **Calibration** not required
- **No interference** from other gases
- **Inline/Offline Audit option** available
- **Extremely Fast** (<0.5 second) response time
- **Compact and simple** to install
- **Gas Temperature** -40° to 400°C
- **Ambient conditions** from -40° to 60° C (for optics)
- **Gas conditioning** not required
- **Laser inside controller located in Control Room** allowing for simple signal control and diagnostic access



LasIR™ Portable Open-path Gas Measurement

- **TDL (Tunable Diode Laser)** technology for unmatched accuracy & reliability
- **Stand-alone system** with built-in optics, analysis, display and data storage
- **Path length** up to 250 m
- **High sensitivity** ppb to percent level measurement
- **Linearity** up to 5 orders of magnitude
- **High Precision** reflector elements
- **Built-in** Riflescope and Visible laser
- **Calibration** not required
- **No interference** from other gases
- **Offline Audit option** available
- **Extremely Fast** (<0.5 second) response time
- **Compact and simple** to set up
- **Gas Temperature** -40° to 400°C
- **Ambient conditions** from -20° to 50°C
- **Gas conditioning** not required



LasIR™ Extractive Gas Measurement

- **TDL (Tunable Diode Laser)** technology for unmatched accuracy & reliability
- **Multi-point** measurement capability (up to 16 channels)
- **316SS Gas cell** (Nickel or Teflon-coated surface available)
- **Path length** up to 50 m (up to 75 m optional)
- **High sensitivity** ppb to percent level measurement
- **Linearity** up to 5 orders of magnitude
- **Calibration** not required
- **No interference** from other gases
- **Inline/Offline Audit option** available
- **Extremely Fast** (<5 seconds) response time
- **Stable Optical Assembly**, pre-aligned
- **Temperature & Pressure Control** of gas available
- **Gas Temperature** -10⁰ to 200⁰C
- **Gas Pressure** 5 to 1,200 mBar
- **Ambient conditions** from 0⁰ to 50⁰C
- **Gas moisture removal** not required



LasIR™ Pseudo In-situ Measurement System (PIMS)

- **TDL (Tunable Diode Laser)** technology for unmatched accuracy & reliability
- Gas Measurement in **very high dust loading** (up to 200 g/Nm³)
- **Multi-point** measurement capability (1, 2, 4, 8, 12 & 16 channels)
- **Gas Transfer Line** not required
- **High sensitivity measurement** (ppb to percent level) measurement
- **Linearity** up to 4 orders of magnitude
- **Calibration** not required
- **No interference** from other gases
- **Inline/Offline Audit option** available
- **Fast** (<5 seconds) response time
- **Stable Optical Assembly**, pre-aligned
- **Gas Temperature** 0⁰ to 500⁰C
- **Gas Pressure** 950 to 1,200 mBar
- **Ambient conditions** from 0⁰ to 60⁰C
- **Gas moisture removal** not required