Product Description

For Monitoring:

NH3, H2S, HCl, H2S, CO, H2O, HCN, O2, CO2, CH4, HDO, HF, NO, D2O

The TDL Laser Monitor 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 “DFB” laser mounted in a thermoelectric cooler for unsurpassed accuracy and performance.

Features & Benefits

- High sensitivity ppb to percent level measurements
- One analyzer can be used for up to 8 measurement points
- Compact and simple to install
- Ambotent conditions from -400 to 600°C
- Laser located in controller allowing for simple signal control and diagnostic access
- Moisture can be added as a second channel
- Off Stack/Process extractive option
- Hazardous Area Div I & II Options
- Performance designed Process Monitor
  - Gas sampling/conditioning not required
  - Corrosive/toxic applications
  - Calibration not required
- Exceeds EPA CEMS Regulation requirements
  - MACT & MATS - Draft PS-18 Compliant
  - Boiler MACT O2 and CO Compliance
  - Approved Zero & Span Calibration checks
- Extremely Fast (<1 second) response time
- Operates in high dust/moisture applications
- Unaffected by stack/duct alignment changes
### Analyzer Specifications

| Laser | Near Infrared Tunable Diode Laser  
|---|---
| Telecommunication grade lasers for longevity, reliability and availability |
| Response Time | <1 second |
| Detection Limits | NH3 < 0.3 ppm/m / HCl < 0.16 ppm/m  
| Consult Factory for other gases |
| Environmental Conditions | -10 to +40°C | 5 – 95% RH | 800 – 1200 mbar |
| Calibration | Factory Test sent with every unit.  
| Internal reference cell, external portable audit module, or in-line flow through cell |

### Inputs Temperature & Pressure Compensation Analog Inputs

<table>
<thead>
<tr>
<th>Outputs and Networking</th>
<th>Qty 8, 4-20mA Analog Outputs, Dry Contacts, Ethernet, Status relays</th>
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<tbody>
<tr>
<td>Dynamic Range</td>
<td>5 orders of magnitude</td>
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<tr>
<td>Data Logging and Displaying Software</td>
<td>DataView, DataReview, (optional LasIRView diagnostic software)</td>
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<tr>
<td>Data Storage</td>
<td>Internal storage &amp; External storage via Ethernet or RS232 to external computer</td>
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</table>
| Power Supply | Input: 100 – 240 VAC @50-60Hz, +12 VDC  
| Output: 12V, 60w, Operating Voltage: 12 VDC |
| Analyzer Dimensions:* | 6” (H) x 14” (W) x 10” (D)  
| (15 x 35 x 25 cm) 11 lb. (5kg)  
| *Available in desktop and 19” rackmount enclosures. |
| Power Supply | Input: 100 – 240 VAC @50-60Hz, +12 VDC  
| Output: 12V, 60w, Operating Voltage: 12 VDC |

### Stack/Duct Optics:

| Base | 6” (H) x 9” (W) x 14.5” (D)  
|---|---
| 11.5 lb (5.2 kg) NEMA 4x Fiberglass Enclosure |
| Mounting | 4"OD ANSI flanges, additional sizes optional. |
| Air Purge Requirements | Depending on conditions 50 psi @ 25 L/min  
| (Blower purge systems available) |
| Environmental Conditions | Gas: -100 to +1800 °C, 5-95% RH, 25-2000 mbar  
| Optics: -40 to 55°C, 5-95% RH, 25-2000 mbar  
| Detector up to 90°C |

### Typical Applications

**Power:**
- HCl: EPA MATS Compliance Monitoring per PS18
- NH3 & H2O: Gas Fired Slip Monitoring for Process Control & EPA compliance
- NH3: Coal Fired slip monitoring for prevention of air preheater pluggage & corrosion
- O2 & CO: Combustion Control

**Cement:**
- HCl: EPA PC MACT Compliance Monitoring per PS18
- CO, CO2, O2: Process Monitoring

**Refining:**
- CO, CO2, O2, H2S, NH3: FCC, SRU, Furnaces & Heaters

**Petrochemical:**
- HF, H2S, CO, O2, NH3, Trace H2O: SRU, Reform & Cracker

**Chemical:**
- CO, CO2, O2, HF, H2O, NH3, HCN: Process gases

**Nitric Acid Production:**
- NH3

**Aluminum Smelters:**
- HF in Stack

**Gold Smelters:**
- CO, CO2, O2, H2O

**Nickel Smelters:**
- H2S, CO, O2

**Copper Smelters:**
- NO

**Gold Smelters:**
- HCN

**Pulp & Paper:**
- H2S

**Nuclear Processing:**
- HF, D2O, HDO

**Incinerators:**
- HF, HCl, NH3, O2, CO, CO2

**Nylon, Carbon fibers, Plastics:**
- HCN, O2

**Waste Water Treatment:**
- H2S

**Ceramic/Brick:**
- HF, HCl

**Landfill:**
- H2S, CH4, NH3

**Tobacco Processing:**
- CO, CO2 as early fire detection

**Automobile Exhaust:**
- CO, CO2

**Fertilizer:**
- HF

**Thermal Oxidizer:**
- O2