Dual Laser
HNO₃/HONO TILDAS

Sensitive, rapid, highly specific and continuous measurements of HNO₃ and HONO in ambient air.

**APPLICATIONS**

- Extremely sensitive detection of nitric acid (HNO₃) and nitrous acid (HONO) to studies of ambient air quality, environmental nitrogen deposition/production, and others.
- Fast flow allows for <1 s time response
- Can be used with Aerodyne Inertial inlet and Active Passivation to reduce sample-wall interactions
- Eddy Covariance measurements.
- Fast response plume studies.
- Air quality monitoring.
- Mobile measurements from ship, truck, and aircraft platforms.

**ADVANTAGES**

- Absolute trace gas concentrations without calibration gases.
- Fast time response.
- Free from interferences by other atmospheric gases or water vapor.
- Turnkey and unattended operation.
- Ready to be deployed in field measurements and on moving platforms.
- Two lasers allow simultaneous measurement of more species.
- Optical pathlength of either 76 meters or 210 meters.
### Performance Specifications

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<tr>
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<th>HNO3</th>
<th>HONO</th>
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<tbody>
<tr>
<td>Precision at 1 sec</td>
<td>150 ppt or 0.15 ppb</td>
<td>210 ppt or 0.21 ppb</td>
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<tr>
<td>Precision at 100 sec</td>
<td>60 ppt or 0.06 ppb</td>
<td>75 ppt or 0.075 ppb</td>
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The precision is the standard deviation of a data stream measured at the typical ambient mixing ratio. Accuracy before calibration is typically 2%.

### Enhanced Measurement Options

- Inertial inlet for particle separation with fast time response (see right)
- Multiple valve control for calibration/zeroing at inertial inlet
- Active passivation to improve time response to <1 s

### Instrument components

**Core instrument**
- Thermoelectric chiller
- Keyboard, mouse, and monitor
- Vacuum pump (customer specified)

**Data Outputs**
- RS-232, USB drive, ethernet

### Instrument Operating Conditions

- Operating temperature: 10 to 35 °C
- Sample flow rate: 0 to 20 slpm

### Mechanical Specifications for Dual Laser Trace Gas Monitor:

- Dimensions: 560 mm x 770 mm x 640 mm (WxDxH)
- Weight: 75 kg
- Electrical Power: 250-500 W, 120/240 V, 55/60 Hz (without pump)

### MultiPass Cell:

- Choice of 76 meter standard cell (V=0.5 liters) or 210 meter “Super Cell” (V=2 liters)

### References: