PICARRO G5101-i
N₂O Concentration and Isotopes Analyzer

Continuous, Precise, Stable

- High precision at atmospheric concentrations
- δ¹⁵N including site-specific isotopomers
- Field Station* and laboratory deployable
- Cryogen-free, continuous operation

**Technology Advantage:** Operating in the Mid-IR spectrum, Picarro's unique cavity ring-down spectroscopy (CRDS) technology provides unsurpassed performance by leveraging the sensitivity of time-based measurement with the precision produced by an optical path length over 8 km.

**Practical Design:** Picarro’s small, 48 cc measurement cell ensures better stability, lower noise, and improved capability to handle small samples. It also enables the most compact design of any N₂O isotope analyzer.

**Precise Control:** In order to produce highly linear and low drift measurements over months of operation, pressure and temperature are controlled to better than ±0.005 °C and ±0.0002 atm. In conjunction, our patented wavelength monitor ensures absolute spectral position is accurately maintained.

**Easy Configuration:** Choose to automatically send data at regular intervals via Ethernet or optional modem, or stream data in real-time. Users can easily connect and control the analyzer using the provided or other remote login software. It can also interface with the Small Sample Isotope Module (SSIM) and the Picarro 16-port distribution Valve.

**Performance Specifications**

<table>
<thead>
<tr>
<th>Target Species</th>
<th>Precision 1-σ 10min avg</th>
<th>Precision 1-σ 100sec avg</th>
<th>Concentration Range (ppb N₂O in Air)</th>
<th>Max Drift over 24hrs, peak to peak, 1hr average</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₂O (concentration)</td>
<td>Typical: &lt; 0.04 ppb Guaranteed: &lt; 0.05ppb</td>
<td>Typical: &lt; 0.07ppb Guaranteed: &lt; 0.1ppb</td>
<td>300 - 1500</td>
<td>&lt; 0.1 ppb Typical</td>
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<tr>
<td>δ¹⁵N, δ¹⁵Nα, δ¹⁵Nβ</td>
<td>Typical: 0.3 % Guaranteed: &lt; 0.5 %</td>
<td>Typical: 0.7 % Guaranteed: &lt;1%</td>
<td>300 - 1500</td>
<td>&lt; 2 % Typical</td>
</tr>
</tbody>
</table>

**Typical performance based on the certificate of compliance and performance of a cohort of 5 analyzers**
Field Station Deployability:
The G5101-i system is the most conducive laser-based isotopic analyzer on the market today for field station use by virtue of its light weight, small footprint and low power consumption.

Please check with Picarro for DC power source set up and for chamber measurement recommendations.