Picarro G5101-i. N_2O concentration and isotopes

The World's first truly field deployable, continuously measuring N_2O analyzer

Capable of field station or lab use, the G5101-i measures ambient level N_2O concentration, $\delta^{15}N$ and $\delta^{18}O$ with unprecedented performance and incredible ease-of-use.

Operating in the Mid-IR using Picarro's unique time-based Cavity Ring-Down Spectroscopy (CRDS) and with an effective pathlength of up to 20 km, the sensitivity and precision of this instrument is unmatched by traditional absorption and ICOS based systems. Further, our patented wavelength monitor makes certain that only Picarro can operate unimpeded by interfering species.

Picarro G5101-i Features

- High precision at atmospheric concentrations
- $\delta^{15}N$ and $\delta^{18}O$ measurements
- Cryogen-free operation
- Field and laboratory deployable
- Installed and operational in minutes

In addition, Picarro analyzers use a small 35 cc volume cavity, ensuring better temperature stability, faster gas exchange, lower noise and higher sensitivity.

And, precise cavity temperature (better than 0.002 ºC) and pressure control (better than 0.003% of an atmosphere) designed into the system ensure accurate measurements over very long periods of time. As a result, Picarro systems maintain high linearity, precision, and accuracy with minimal calibration, which means significant ease-of-use and cost of ownership benefits.

Further, Picarro's diagnostic software suite continuously measures and records 38 parameters and, if you are on the internet, our service organization can access all of them remotely, practically anytime. If you have a problem we'll get you up and running, fast.

The analyzer can be configured to automatically send out measurement data at regular intervals via the Ethernet or optional modem and can output real-time data in digital format and via optional analog outputs. Users can connect remotely and control the analyzer through a standard Remote Desktop connection or with similar remote login software.

Targeted Performance		
Gas species	**Precision** (30 sec, 1-σ)	**Max Drift (24 hrs/1 month)** (peak to peak, 50 minute average)
N_2O (Concentration)	< 0.2 ppbv	< 0.2 ppbv/ <0.5 ppbv
$\delta^{15}N$	< 1 ‰	
$\delta^{18}O$	< 1 ‰	

System Requirements	
Measurement Technique	Completely time-based, CRDS
Measurement Range	N_2O: 0.2 – 2 ppmv
Measurement Interval	~ 5 seconds
Sample Temp.	-10 to 45 °C.
Sample Flow Rate	< 0.4 slm at 760 Torr, no filtration required
Sample Pressure.	300 to 1000 Torr (40 to 133 kPa)
Sample Humidity	<99% R.H. non-condensing @40°C, no drying required
Operating Temperature	10 to 35 °C, (-10 to 50 °C storage)
Outputs	RS-232, Ethernet, USB, optional analog, 4-20mA/-10 – 10V
Fittings	¼" Swagelok ®
Dimensions and weight	17w x 17d x 10h in^3, ~ 75 lbs

 480 Oakmead Parkway, Sunnyvale, CA 94085 · T 408.962.3900 · E info@picarro.com · W www.picarro.com