



Picarro G1302 Carbon Monoxide, Carbon Dioxide and Water Vapor Analyzer

The Picarro G1302 CO/CO₂/H₂O Analyzer is a real time, trace gas monitor capable of measuring these gases with parts-per-billion (ppbv) sensitivity. The analyzer is based on Picarro's unique Wavelength-Scanned Cavity Ring Down Spectroscopy (WS-CRDS) which offers significant ease of use and cost of ownership benefits compared to other technologies. WS-CRDS is a time-based measurement using a near-infrared laser to quantify spectral features of molecules in a gas circulating in an optical measurement cavity. An effective path length of up to 20 kilometers provides exceptional precision and sensitivity. A patented, high-precision wavelength monitor makes certain that only the spectral features of interest are being monitored, making the analyzer insensitive to typical atmospheric concentrations of other species. Precise temperature and pressure control systems designed into the Picarro G1302 ensure accurate measurements over long periods of time with minimal use of calibration gases. The analyzer is exceptionally rugged and essentially drift-free and can operate both in laboratories and in harsh environments. Easily transportable from site to site, the analyzer can be set up and running within minutes.

The gas concentration is displayed in real-time with no post-processing required, and is continuously archived to the analyzer's internal hard drive. 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 (via RS-232 interface) and via optional analog outputs. Users can connect remotely with the analyzer's internal Windows-based PC and control it through a standard Remote Desktop connection or with similar remote login software. The analyzer can also use the internet connection to automatically synchronize with an atomic clock time service. The software includes a valve sequencer, automatically controlling up to six external solenoid valves and a rotary valve.

Picarro G1302 Features

- Superb sensitivity, precision & accuracy with virtually no drift
- Fast, continuous, real time measurements without interference
- Large dynamic range with high linearity
- Field and laboratory deployable
- Installed and operational in minutes
- Rugged and insensitive to changes in ambient temperature

Performance Specifications

Target Gas (in air)	Precision (5 sec / 5 min, 1-σ) <i>*Guaranteed over operating conditions below</i>	Max Drift (over 24 hrs / 1 month) <i>*Guaranteed over operating conditions below (peak-to-peak, 50-minute average)</i>
CO	<40 ppbv / <2 ppbv	15 ppbv / 50 ppbv
CO ₂	<200 ppbv / <50 ppbv	150 ppbv / 500 ppbv
H ₂ O	100 ppmv / 50 ppmv	

System Specifications

Measurement Technique	WS-CRDS
Range	Typical ambient CO, CO ₂ : 0-1000ppmv, H ₂ O: 0-100% RH
Measurement Interval	~5 seconds
Sample Temperature	-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	For best results at lower CO concentrations, drying to < 0.05% by volume H ₂ O may be required
Temperature	10 to 35 °C (operating) -10 to 50 °C (storage)
Humidity (ambient)	<99% R.H. non-condensing
Accessories	Pump (internal), keyboard, mouse, LCD monitor (optional)
Outputs	RS-232, Ethernet, USB, analog (optional) 4-20mA / -10 – 10V
Fittings	¼" Swagelok ®
Dimensions	17" x 9.75" x 23" (43 x 25 x 59 cm) including feet
Installation	Benchtop or 19" rack mount chassis
Weight	58 lbs (26.3kg)
Power Requirements	90-120VAC, 50/60 Hz, 220 VAC, 50Hz, < 300W