

PICARRO G2108 HCl CRDS Analyzer

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

Advantage Note: The Picarro G2108 Hydrogen Chloride Analyzer is a real time, trace gas monitor capable of measuring HCl with parts-per trillion (ppt) sensitivity. The analyzer is based on Picarro's unique Cavity Ring Down Spectroscopy (CRDS), a time-based measurement utilizing a near-infrared laser to measure a spectral signature of the molecule. Gas is circulated in an optical measurement cavity with an effective path length of up to 20 kilometers. A patented, high-precision wavelength monitor makes certain that only the spectral feature of interest is being monitored, greatly reducing the analyzer's sensitivity to interfering gas species, and enabling ultra-trace gas concentration measurements even if there are other gases present. As a result, the analyzer maintains high linearity, precision, and accuracy over changing environmental conditions with minimal calibration required. Precise temperature and pressure control systems designed into the Picarro G2108 ensure accurate measurements over long periods of time with minimal use of calibration gases. The analyzer is exceptionally rugged, essentially drift and maintenance free, and requires no consumables, thereby offering significant ease of use and cost of ownership benefits.

Easily transportable from site to site, the analyzer can be set up and running within minutes, with essentially zero sample preparation. The gas concentration is displayed in real-time with no post-processing requirements, and data is continuously archived to the analyzer's internal hard drive. Designed to operate both in laboratories and other, harsher, environments, it can operate for many months without user interaction. The analyzer can be configured to automatically export measurement data at regular intervals via an Ethernet connection or it can output real-time data in digital (via RS-232 interface) or optional analog formats. Users can connect remotely with the analyzer's internal Windows 7 OS PC and control it through a standard Remote Desktop connection or with similar remote login software. The analyzer can also use its modem or Ethernet connection to automatically synchronize with an atomic clock time service. The software includes a valve sequencer, capable of controlling up to six external solenoid valves and a rotary valve.

Target specifications:

The table below indicates the expected performance of the analyzer.

Actual performance specifications will be released with Certificate of Compliance

Target Gas (in air-like matrix)	Lower Detectable Limit [300 second interval standard deviation of the 30 second measurement data over 4 hrs, (3-sigma)]	Zero drift* (24 hrs / 1 month) (peak-to-peak, 5-minute average)
HCl	<120 ppt	± 400 ppt / ± 1000 ppt

System Specifications	
Measurement Technique	Cavity Ring-Down Spectroscopy
Measurement Cell Temperature Control	+/- 0.005 °C
Measurement Cell Pressure Control	+/- 0.0002 atm
Measurement Range	0-2000 ppb
Measurement Interval	~5 seconds
Sample Temperature	-10 to 45 °C
Sample Pressure	300 to 1000 Torr (40 to 133 kPa)
Sample Flow Rate	< 600 sccm
Sample Humidity	< 99% R.H. non-condensing @ 40 °C, no drying required
Ambient Temperature Range	15 to 35 °C (operating); -10 to 50 °C (storage)
Ambient Humidity	< 99% R.H. non-condensing
Outputs	RS-232, Ethernet, USB
Fittings	¼" Swagelok®
Dimensions	Analyzer: 17" w x 7" h x 17.5" d (43.2 x 17.9 x 44.6 cm), not including 0.5" feet External Pump: 12.8" L x 8.9" h x 6.2" w (32.4 x 22.6 x 15.8 cm)
Weight	70 lbs (31.75 kg) including pump
Power Consumption	100 – 240 VAC, 47 – 63 Hz (auto-sensing), < 260 W start-up (total): 110 W (analyzer), 75 W(pump) at steady state
Calibration	Calibration measurements for this instrument are limited by the ability to generate a constant concentration sample. The availability of commercially available standards suitable for your application should be investigated. Please contact Picarro for further information.