

Produce Accurate, Reliable Data and Ensure Your Best Product Quality

Agilent Refinery Gas Analyzers



Apply the Latest GC Technologies Without Disrupting Your Application Workflow

Precisely analyzing refinery gases is challenging because the source and composition of each gas varies considerably. To succeed, analyzers must quickly separate complex mixtures—including a broad range of samples found in refinery and petrochemical streams.

Confidently monitor and optimize catalytic and other processes with Agilent Refinery Gas Analyzers

Agilent Refinery Gas Analyzers (RGAs) are based on the Agilent 8890 GC system. Each is configured in the factory and chemically tested to deliver the results you need, fast, while saving you precious startup time.

Choose from standard configurations for extended refinery gas, fast refinery gas, fixed gases, and flue gas. Or customize a refinery gas analyzer, based on either the 8890 GC or the Agilent 990 Micro GC system, to meet your specific requirements.



Agilent 8890 GC system



Agilent 990 Micro GC system

Agilent RGAs reflect industry standards and our stringent quality-control process

Each includes:

Factory

- System configuration and leak testing
- Instrument checkout
- Installation of appropriate columns
- Factory-run chemical checkout using application checkout mix

Delivery

- Instrument manual and factory-developed chromatography method
- DVD with method parameters and checkout data files for easy operation from the start
- Consumables included—no separate ordering required
- Consumables information for easy reordering

Installation

- Duplicate factory checkout with checkout sample onsite by factory-trained support engineer
- Optional application startup assistance



Intelligent GC instruments that work as hard as you do

Agilent RGAs are part of a new breed of instrument that monitors system health, alerts you to potential issues, and helps you solve problems. That means you can plan your work—including maintenance—rather than react to unexpected downtime.

In addition, analyzers feature core microchannel-based electronic pneumatic control (EPC). Unique to Agilent, this design protects against gas contaminants—such as particulates, water, and oils—improving reliability and longevity.

Best of all, you can check on your lab anytime, from anywhere. Mobile access features let you view setup information, troubleshoot problems, check for leaks, backflush columns, pause and start sample runs, and manage method development.

Generate Reliable Data Quickly

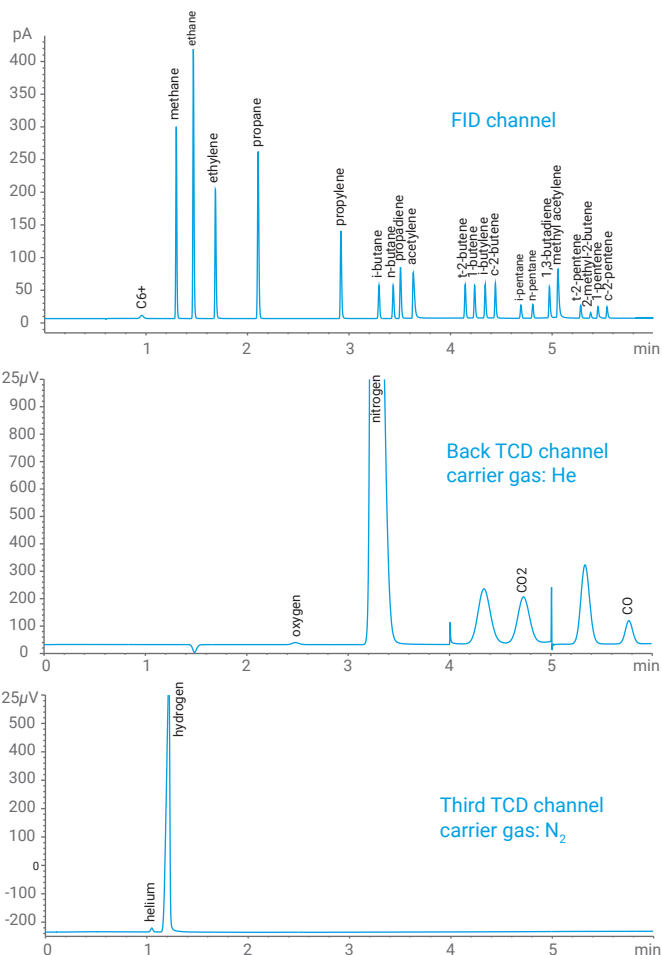


Agilent 8890 Fast RGA

Precisely analyze refinery gas in just six minutes

Separating complex mixtures of hydrocarbons and permanent gases can be difficult on a single-channel GC. The Agilent 8890 Fast Refinery Gas Analyzer is configured for simultaneous operation of three parallel channels, and conforms to ASTM D1946 and UOP 539 methods.

- An optional auxiliary oven adds flexibility without the need for a second GC.
- Easy-to-use Ultimate Union improves chromatographic performance and peak shape using capillary flow technology.
- Third thermal conductivity detector (TCD) channel improves hydrogen detection and linearity.
- Customized reporting simplifies data review and processing. OpenLab reporting provides calculations in mole %, weight %, or volume %, and calculated heat content.



Checkout sample run on an Agilent 8890 Fast RGA. The third TCD channel allows you to use nitrogen (or argon) carrier gas for linear response for hydrogen.

Micro GC RGA

When every second matters

Do you require maximum flexibility and speed? A portable multidimensional system based on the Agilent 990 Micro GC can perform a total analysis in less than 180 seconds. Each of its four channels includes a micromachined injector, capillary column, and TCD optimized for specific RGA analytes.

- Ready-to-go configuration includes proven hardware and software.
- Small system volume is ideal for sample streams with low component concentrations.
- Optional integrated microgasifier gives you the flexibility to analyze liquefied gases.

In the lab or in the field, Agilent Micro GC analyzers quickly deliver the information you need, whenever and wherever you need it.

Here are the capabilities of Agilent Refinery Gas Analyzers

Analyzer	Agilent 8890-Based Analyzers						Micro GC Analyzer
	Fast RGA	Fast RGA w/H ₂ S	Fast RGA w/H ₂ S & O ₂	High Capacity RGA with Large Valve Oven	Fast RGA with Large Valve Oven and Micropacked Columns	RGA with Large Valve Oven and Hydrogen Carrier	990 Micro GC RGA
Option number	G3545A #600	G3545A #601	G3545A #602	G3545A #603	G3545A #604	G3545A #605	G3588
Channels	3	3	3	3	3	3	4
Valves	5	5	5	4	4	3	NA
Detectors	TCD/TCD/FID	TCD/TCD/FID	TCD/TCD/FID	TCD/TCD/FID	TCD/TCD/FID	TCD/TCD/FID	μTCDs (4)
Columns	7 (PLOT and packed)	7 (PLOT and packed)	7 (PLOT, packed, and micropacked)	7 (PLOT and packed)	7 (PLOT and packed)	6 (capillary and packed)	4 (PLOT and WCOT)
Analysis time	6 min	13 min	7.5 min	17 min	9 min	7 min	150 sec
Hydrocarbon range	C ₁ –C ₅ (C ₆ and C ₇ with extended time) (C ₆₊ , backflushed)	C ₁ –C ₅ (C ₆ and C ₇ with extended time) (C ₆₊ , backflushed)	C ₁ –C ₅ (C ₆₊ , as backflush)	C ₁ –C ₅ (C ₆₊ , as backflush)	C ₁ –C ₅ (C ₆₊ , as backflush)	C ₁ –C ₅ (C ₆₊ , as backflush)	C ₁ –C ₆ (C ₇ with extended time)
Permanent gases	He, H ₂ , O ₂ , N ₂ , CO ₂ , CO	H ₂ , He, O ₂ *, N ₂ , CO ₂ , CO, H ₂ S, COS**	H ₂ , He, O ₂ , N ₂ , CO ₂ , CO, H ₂ S	CO ₂ , CO, O ₂ , N ₂ , H ₂ S	CO ₂ , CO, O ₂ , N ₂ , H ₂ S, COS	H ₂ , He, O ₂ , N ₂ , CO ₂ , CO, H ₂ S, COS	H ₂ , O ₂ , N ₂ , CO ₂ , CO, H ₂ S, He
Minimum detection level (hydrocarbons)	100 ppm	100 ppm	100 ppm	100 ppm	100 ppm	100 ppm	0.5 ppm
Minimum detection level (permanent gases)	100 ppm	100 ppm	100 ppm	100 ppm	100 ppm	100 ppm	2 ppm
Minimum detection level (H ₂ S)	NA	500 ppm (if no H ₂ O present)	500 ppm	500 ppm	500 ppm	500 ppm	5 ppm
Configured per	ASTM D1946, UOP 539	ASTM D1946, UOP 539	ASTM D1945, ASTM D1946, UOP 539	ASTM D1945, ASTM D1946, UOP 539	UOP 539	UOP 539	NA

*Detected but not quantitated.

**Not shown on chromatogram. Elutes after H₂S.

Need a custom analyzer?

We can help you meet your most challenging demands with specialized technologies that significantly reduce your time-to-first-sample. With preconfigured hardware and predeveloped methods, our analyzers help your analysts focus only on your SOPs.

A Complete GC Workflow That Supports Your Business Goals



For more than 50 years, Agilent has led the way with cutting-edge GC and GC/MS instruments, consumables, software, and service.

We have also taken an active role in developing methods and applications, many of which have evolved into global standards for energy/fuels analysis. Today, Agilent experts are actively involved in standards development with some of the world's most trusted standards organizations, such as ASTM.

Simplify sample preparation with prepackaged Agilent Bond Elut QuEChERS kits

- Extraction kits with preweighed salts in anhydrous packets let you add salts after the organic solvent—avoiding exothermic reactions.
- Dispersive kits accommodate the aliquot volumes specified by current AOAC and EN methodologies.

Produce cleaner extracts using Agilent Bond Elut SPE

- A selection of polymer, silica, and other sorbents in formats ranging from multiple cartridge sizes to 96-well plates.
- Consistent particle size ensures superior flowthrough and performance.
- Vacuum manifolds and accessories help you meet all your SPE challenges.

Make sample preparation consistent, accurate, and safe with the Agilent 7696A sample preparation workbench

- Combines precise automation with an intuitive software interface to eliminate variability in dilution, extraction, standards addition, and other key steps.
- Significantly reduces exposure to hazardous solvents for long-term peace of mind.
- No need to transfer to other sample containers. All prepared samples are finished in 2-mL vials that are compatible with most GC and LC autosamplers.

Don't miss a thing in your GC analysis: Agilent Inert Flow Path

- Ensure consistent inertness from injector to detector.
- Decrease analyte adsorption for lower limits of detection and better signal-to-noise response.

Onsite assistance gives you peace of mind

No matter where you are on the energy/fuels supply chain, Agilent can help you increase production efficiency, reduce scrap and rework, and enhance product quality.

Flexible service and support options keep your lab up and running

- Agilent University: education and training to fit your needs with classroom and online options.
- Maintenance and repair: on-demand, service plan, and service center repair options available.
- CrossLab Connect Smart Alerts: email notification for consumables replacement and preventive maintenance, as well as instrument monitoring for your entire lab.

When authenticity counts, choose genuine replacement parts for Agilent detectors

- Minimize background interference, low signal counts, and response changes.
- Maintain reliable performance, consistent signal output, and maximum uptime.
- Backed by the Agilent service agreement—plus a 90-day warranty from the date of shipment.



Agilent OpenLab

Capture, analyze, and share data

OpenLab CDS supports instrument control and digital data acquisition from chromatography systems and hardware manufacturers around the world.

- Single platform for most GC and LC instruments: supports many common third-party instruments.
- Scalable and easy to use: all versions share a common user interface and formats for data and method files.
- Grows with your lab: no costly retraining or method revalidation.

Learn more:

www.agilent.com/chem/gc

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