

Monitor and Optimize Processes and Establish Market Value

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 Agilent 8890 GC or 990 Micro GC systems. 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 to meet your specific requirements.



Agilent 8890 GC system



Agilent 990 Micro GC system



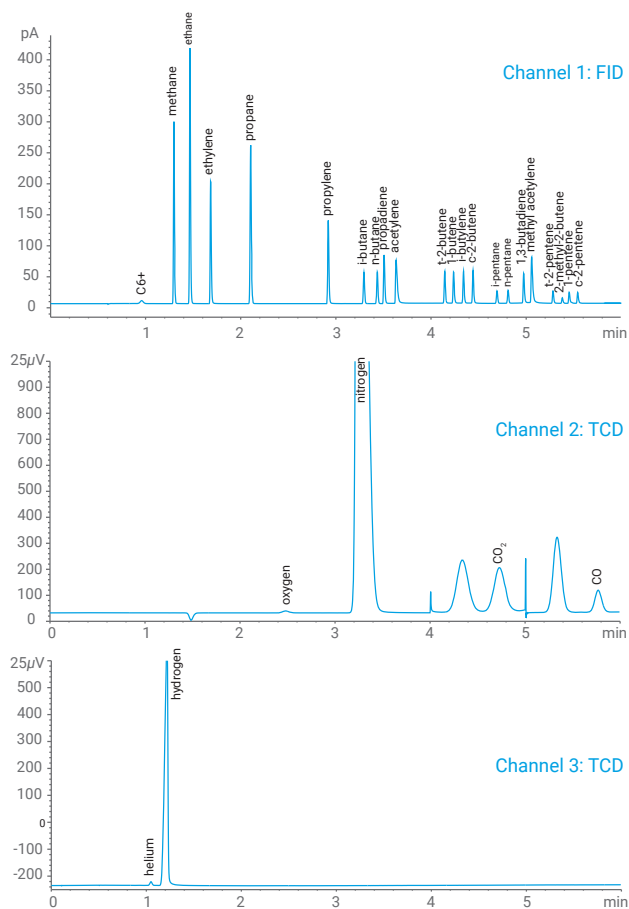
Agilent 8890 fast RGA

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.
- A 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 percentages, and calculated heat content.

[Learn more](#)



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 to hydrogen.



Micro GC RGA

When every second matters

The Agilent 990 Micro GC refinery gas analyzer is a small, transportable system that can operate in remote environments with complete operational simplicity.

Do you require maximum flexibility and speed? A portable system based on the Agilent 990 Micro GC can perform a total analysis in less than 180 seconds. Four independent channels—each with its own micro-machined injector, column, and TCD—optimize refinery gas analysis.

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

Agilent Micro GC analyzers quickly deliver the information you need anytime, anywhere. [Learn more](#)



Agilent GC gasifier

Reliably introduce liquefied gas into your GC

The Agilent GC gasifier accessory safely controls the transition of liquefied gas to a gaseous state without discrimination or adsorption due to its inert flow path. So you can feel confident that the sample in the line is the sample being analyzed.

- Samples are delivered to the GC system under constant flow and pressure.
- Control and monitor the gasifier with ease through the GC user interface.
- Seamlessly switch between two samples—or one sample plus a calibration standard.
- Purge N₂ gas without the need to disconnect samples.

[Learn more](#)



Agilent GC gasifier for 990 Micro GC, 8860 GC, and 8890 GC.

Intelligent GC instruments that work as hard as you do

Refinery gas analyzers based on the Agilent 8890 GC—part of a new breed of instrument—monitor system health, alert you to potential issues, and help 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.





Agilent refinery gas analyzers capabilities

	Agilent 8890 GC Analyzers						Agilent 990 Micro GC Analyzers	
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	RGA Configuration 1	RGA Configuration 2
Option Number	G3545A #600	G3545A #601	G3545A #602	G3545A #603*	G3545A #604*	G3545A #605	G3588A	G3588A
Channels	3	3	3	3	3	3	4	3
Valves	5	5	5	4	4	3	NA	NA
Detectors	TCD/TCD/FID	TCD/TCD/FID	TCD/TCD/FID	TCD/TCD/FID	TCD/TCD/FID	TCD/TCD/FID	μTCDs (4)	μTCDs (3)
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)	3 (PLOT and WCOT)
Analysis Time	6 min	13 min	7.5 min	17 min	9 min	7 min	3 min	2 min
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 ₉	C ₁ –C ₆ (C ₆₊ as backflush to detector)
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, Ne	H ₂ , O ₂ , N ₂ , CO ₂ , CO, H ₂ S, He, Ne
Minimum Detection Level (Hydrocarbons)	100 ppm	100 ppm	100 ppm	100 ppm	100 ppm	100 ppm	20 ppm C ₁ , 2 ppm C ₂ –C ₅ , 1 ppm C ₆ –C ₉	20 ppm C ₁ , 2 ppm C ₂ –C ₅ , C ₆₊
Minimum Detection Level (Permanent Gases)	100 ppm	100 ppm	100 ppm	100 ppm	100 ppm	100 ppm	20 ppm (2 ppm for H ₂)	20 ppm (2 ppm for H ₂)
Minimum Detection Level (H ₂ S)	NA	500 ppm (if no H ₂ O present)	500 ppm	500 ppm	500 ppm	500 ppm	2 ppm	2 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	NA

*These analyzers can include an optional column conditioning oven for convenient high-temperature conditioning of packed columns without the need to remove and reinstall other columns with lower temperature tolerances.

Explore additional analyzers for energy and chemical applications.

Need a custom analyzer?

We can help you meet your most challenging demands with specialized technologies that significantly reduce your time from system arrival to final validation. With preconfigured hardware and method-specific separation tools, your analysts can focus on calibration and validation per your lab SOPs.



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

At the factory:

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

At delivery:

- Instrument manual for running the method
- Method parameters and checkout data files are included on GC memory for fast future reference
- Consumables included—no separate ordering required
- Consumables information for easy reordering

At installation:

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

Capture, analyze, and share data: OpenLab CDS works the way you do

OpenLab CDS is a chromatography data system that combines productivity, usability, and the highest level of data integrity. With a single user interface, you can control your Agilent LC, GC, single quadrupole LC/MS, and GC/MS, as well as other vendors' instruments in the lab, to streamline training and support. Built-in tools provide time-saving steps in analysis, interpretation, and reporting workflows while technical controls ensure work quality, effective records management, and enhanced data security.

Reporting for refinery gas analyzers (as with natural gas analyzers) can be done through OpenLab CDS with the NGA/RGA reporting tool or through OpenLab CDS with Diablo's EZReporter software.

The OpenLab reporting feature for RGA lets you generate a custom calculation file, a constants file, and a report template for conditions defined in GPA, ASTM, or ISO standards. FPS (foot-pound-second)-based calculations (Btu) are used by GPA, ASTM, and other organizations in the United States. Metric-based calculations (meter-kilogram-second) are used for reporting natural gas composition and physical property calculations according to ISO 6976 for EU and GB/T 11062 for China.

Note: Optional PROstation software lets you calculate physical properties through onboard data handling (no need for OpenLab CDS) for when simple, direct results are needed at instrument. License required.

[Learn more](#)



Example of OpenLab CDS reporting of light gases and hydrocarbons from an Agilent 8890 GC with FID and TCD.



Complete your GC workflow and achieve your business goals

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

When authenticity counts, choose genuine replacement parts for Agilent detectors

There are many benefits to using genuine Agilent replacement parts, including the minimization of background interference, low signal counts, and response changes. This means you can maintain reliable performance and maximum uptime. And every genuine replacement part is covered by a 90-day warranty from the date of shipment and your Agilent service agreement for added peace of mind.



Optimally designed FID jets for easy installation and secure results

Our improved flame ionization detector (FID) jet design increases ease of use by eliminating the possibility of installation damage and providing universal compatibility with both packed and capillary columns. The widened tail diameter simplifies installation without causing damage to the column head, and the etched rings around the jet head provide quick identification. Even more, the shortened jet tail is universally compatible—reducing your part number count from 12 to 4.



Gas Clean filter for enhanced gas quality

Deliver high-quality gas with the Agilent Gas Clean purification system, preventing column damage, sensitivity loss, and instrument downtime. Replacing the filters when they have reached absorption capacity ensures maximum protection of your GC columns and analytical hardware—a must for high-temperature analysis and longer column lifetime.



Gold seals for accurate sample transfer

Enhance your system's inertness with Agilent certified gold seals. They form a leak-free seal with the bottom of the inlet body and column ferrule to minimize sample contamination and loss. Additional benefits include improved signal-to-noise ratio, decreased column bleed, and the extension of column life.

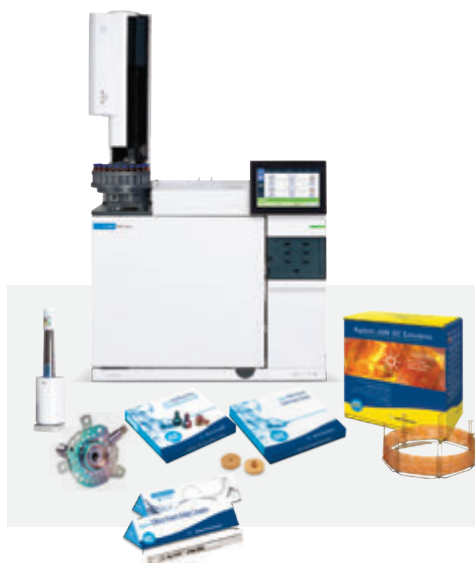


J&W advanced capillary and packed GC columns

We offer the most extensive and innovative range of GC columns for your refinery gas analysis needs. Options include a variety of general-purpose and application-optimized columns that meet ASTM testing standards.

Ordering information

Description	Part Number
FID jet, universal fit, 0.011-inch id, 0 rings: Optimal sensitivity for standard GC/FID analysis	5200-0176
FID jet, universal fit, 0.018-inch id, 1 ring: For high-temperature applications; allows buildup of column bleed while providing an opening	5200-0177
FID jet, universal fit, 0.030-inch id, 2 rings: For specific high-temperature methods only (such as simulated distillation)	5200-0178
Gas Clean kit for 8890 and 8860 GC	CP179880
Replacement Gas Clean filter carrier gas purifier	CP17973
GC inlet seal, gold plated with washer, 10/pk	5190-2209
GC inlet seal, gold plated with washer, Ultra Inert, 10/pk	5190-6145



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

Ensure the inertness of flow path surfaces, and allow analytes to safely pass from injector to detector. The Agilent Inert Flow Path can decrease analyte adsorption for lower limits of detection and better signal-to-noise response, resulting in better trace level analysis. [Learn more](#)

Flexible service and support options keep your lab up and running

From asset management to applications support and laboratory analytics, Agilent can help you improve operational efficiency.



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Flexible, cost-effective training options help you boost efficiency and minimize downtime. Choose the format that suits you best—including in-person, virtual instructor-led, and self-paced online courses. [Learn more](#)



Agilent CrossLab

Extend uptime, produce reliable data, stay compliant, and have predictable service costs. We'll also equip your team with the knowledge and skills they need to drive your lab's success. [Learn more](#)



Agilent CrossLab Smart Alerts

Get immediate notification when an instrument goes down, and why it did. Smart Alerts also gives you timely maintenance recommendations and helps you order your favorite consumables. [Learn more](#)



Agilent Trade-in and Buyback Program

Lower your environmental impact—and earn credit toward your new GC instrument. The Agilent Trade-in and Buyback Program lets you trade in your older GC or GC/MS for cash or credit. Agilent will remove the old equipment from your lab and ensure proper recycling. We also offer payment plans and flexible spending options to help you equip your lab with essential technology. [Learn more](#)

Need to add new technologies to your lab?

Partner with Agilent to elevate your GC and GC/MS capabilities with step-by-step upgrade options—both full system and modular. Together, we can forge an upgrade path that fits your analytical needs, budget, bench space, and workflow. Count on us for:

- Expert training
- Method consultation
- Sustainability support
- Agilent value promise

Contact your Agilent representative for more information.

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© Agilent Technologies, Inc. 2025
Published in the USA, January 31, 2025
5994-1316EN