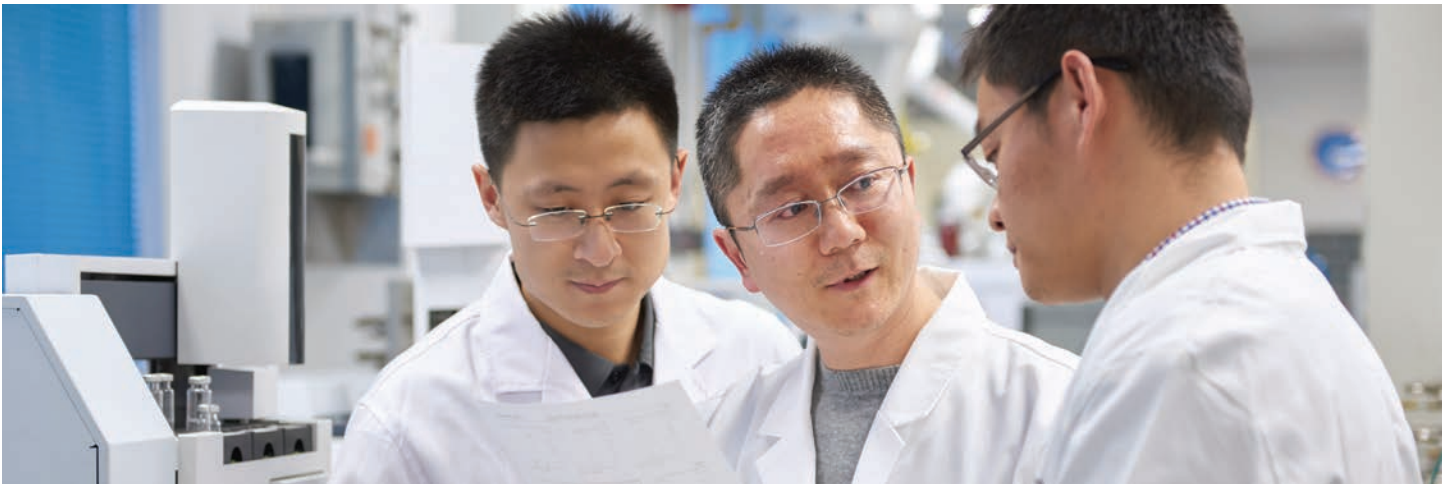


# Intelligent and Reliable: A New Outlook on Routine GC

Agilent 8860 gas chromatography system





## How Much Does an Hour of Unplanned Downtime Cost You?

Unexpected instrument downtime causes delays in generating critical sample reports. You might compensate by spending extra time in the lab—or even calling in at night or over the weekend. Even worse, unplanned repair expenses can stress your already tight budget even further.

### **The new Agilent 8860 system lets you take back control**

Why the Agilent 8860 GC? Because it enables you to work smarter—not longer and harder. Its built-in intelligence features help you avoid unplanned downtime and minimize costly operational surprises.

### **Intelligent GC: Instruments that work as hard as you do**

The 8860 GC is just one of a new breed of instruments that monitor system health, track injections, and alert you to leaks. That means you can plan your work—including maintenance—rather than react to unexpected downtime.

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

### **Give yourself one less thing to worry about**

The 8860 GC embodies the future of routine GC. It combines Agilent quality, reliability, and performance with innovations that maximize lab uptime and minimize unplanned repair expenses.

Perfect for a broad range of routine GC applications, the 8860 GC delivers consistent, repeatable results—day after day.

# Routine Analysis That's Anything But Routine

## Intuitive touch screen interface

Gives you real-time access to instrument status and information.

### Home screen

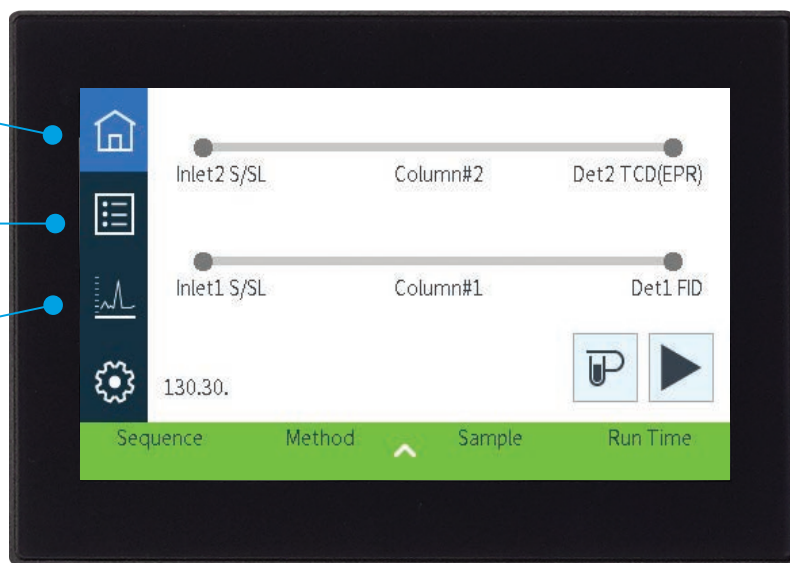
Provides at-a-glance system configuration and flow path status.

### Instrument actuals screen

Allows you to customize and identify frequently used setpoints for quick accessibility.

### Plot screen

Confirms that analyses are progressing as intended.



## Browser interface

Proactively minimizes unexpected downtime without having to stand at the instrument.

- Gain access from any browser (tablet, laptop, or PC).
- Edit GC methods and sequences without the need for a data system.
- Call up Diagnostics, Maintenance, Logs, and Help menu items.
- Review logs, or consult the user manual, right at your desk.
- Check instrument status and run diagnostics from any place within reach of your secure lab network.



# A New Milestone for Routine GC Analysis

Based on core platform designs of the Agilent 7890 GC—the world's most widely used GC system—the 8860 GC elevates routine GC analysis to new levels of performance, reliability, and cost effectiveness.



## Performance you can count on... every day

- Built-in Agilent reliability tested to 8890 GC standards.
- Temperature and pressure compensation for more stable chromatographic performance.
- Optional electronic pneumatic regulation (EPR) for easy, precise manual operation with digital display.



## Low cost of ownership

- Hydrogen or nitrogen alternate carrier gas capability minimizes operating costs.
- Helium conservation module and hydrogen sensor help reduce gas costs.
- Sleep/wake modes reduce gas and energy consumption.



## Intelligent capabilities with remote status monitoring

- Built-in diagnostics and maintenance functions help avoid unplanned downtime.
- Browser interface allows method and sequence editing and access to logs.
- Help menus offer easy access to user documentation.
- Connectivity lets you check status, or run diagnostics, from anywhere within your network.



## More consistent results, less rework

- Electronic pneumatic control (EPC) ensures repeatability of retention times and peak areas.
- Digital electronics keep your setpoints constant from run to run, and operator to operator.



### Mass spectrometry compatibility

- Improved confidence in detection and identification.
- The 8860 GC is compatible with the Agilent single quadrupole mass detector.



### Simplicity of manual operation, precision of digital display

- Electronic pneumatic regulation (EPR) is an easy-to-use alternative to traditional manual pneumatic operation.
- More precise than pressure gauges and eliminates need for bubble meters.

## GC performance monitoring

The system examines data obtained from samples and evaluates the chromatography retention time, area, and shape of specified peaks. If the peaks are not what they should be, the system will notify you.

### Blank run evaluation

Blank runs are used to trace the source of artificially introduced contamination. They are critical to accurate quantitative analysis, and are often required by regulatory agencies as part of the quality control process.

The 8860 GC evaluates blank run data and identifies problems such as baseline excursions, unexpected peaks, and elevated baseline from the column stationary phase. It then raises a “not ready” notification if the blank isn’t truly blank.

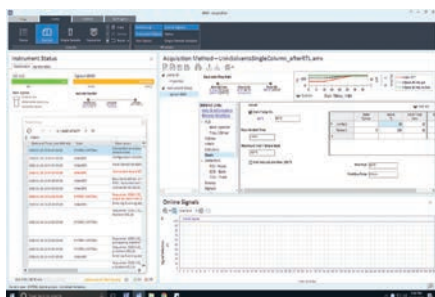
A screen, accessible from the browser interface, lets you accept defaults based on Agilent recommendations or tailor blank analysis to your needs. You can also select what should happen if blank analysis fails (warn and continue, pause, or abort).

### Detector evaluation

The system will automatically evaluate detector checkout samples, providing a written summary report in the diagnostic section.

# Software Optimized for Your Lab

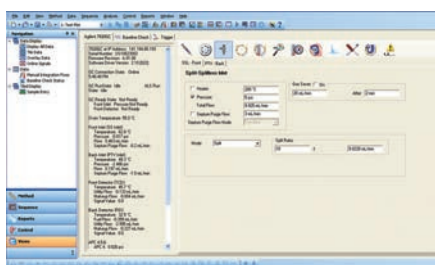
Keep your lab connected—and get the most from your Agilent GC system investment—with Agilent software. From data collection, analysis, and reporting... to interpretation and management... our software helps you transform analytical data into meaningful results.



## Agilent OpenLab CDS

### Capture, analyze, and share data

- Optimize LC, GC, and single quadrupole MS workflows on Agilent and non-Agilent instruments.
- Quickly onboard staff with easy-to-use software and intuitive Help and Learning.
- Maintain quality and reliability with role-based access controls and comprehensive audit trails.
- Speed data review by visualizing large data sets with Peak Explorer.
- Identify out-of-spec results with visual highlights in customized reports.
- Automate time-consuming tasks by integrating Sample Scheduler for OpenLab with your LIMS.



## OpenLab CDS ChemStation and EZChrom editions

### Simplify the analytical process and manage your daily workload

#### OpenLab ChemStation edition

- Comprehensive support of analytical workflows and method development.
- Also available as a cost-effective “VL” version for controlling one instrument.

#### OpenLab CDS EZChrom

- Maintain comprehensive control of Agilent LC and GC instruments, plus the most complete control of other vendors’ instruments.
- Also available as a cost effective “VL” version for controlling one instrument.

#### OpenLab CDS EZChrom Compact

- Choose this economical software for data acquisition and analysis with control of up to two instruments from one PC.



## DA Express data analysis

A great choice when you don't need extensive data processing or compliance support

- Simplify data analysis.
- Easily integrate signal data, build calibration curves, and create result reports.
- Built into the 8860 GC: Access through the browser interface.
- Does not require a chromatography data system.
- Run basic reports on any device with a browser and an instrument connection through your network.
- If your lab already has an Agilent CDS, you can continue using the same software platform for the 8860 GC system.

## No matter which Agilent software you choose, you can take advantage of these productivity-enhancing capabilities

- Integrated method development tools and calculators guide you through changing carrier gas, selecting the right liner, or changing to a column of different dimensions.
- Consumables database simplifies method development by minimizing tracking errors and automatically populating analytical methods with key configuration information.
- Graphical consumables and Parts Finder tools help you locate key part numbers and descriptions for easy ordering.



The 8860 GC is compatible with the latest versions of legacy CDS systems, such as Multi-Technique ChemStation and EZChrom Elite. So you can count on a seamless transition.

# Full GC Flexibility from Sample Introduction Through Detection

More than just instruments, Agilent GC and GC/MS analyzers are complete workflow solutions—incorporating innovations that optimize your system for your unique application.

## A wide inlet selection lets you configure your GC for your needs

- Split/splitless (SSL) for large bore and all capillary columns
- Purged packed injection port (PPIP) for wide bore capillary and packed columns
- Programmable cool on-column (PCOC) for columns  $\geq 0.250$  mm id
- Gas sample valves for gas sample and switching applications
- Liquid sample valves for liquefied sample applications involving gases at high pressure

## High-sensitivity detectors accommodate every sample type

- Flame ionization detector (FID)
- Thermal conductivity detector (TCD)
- Electron capture detector (ECD\*)
- Nitrogen-phosphorus detector (NPD)
- Single-wavelength flame photometric detector (FPD Plus)
- SCD/NCD
- Single quadrupole mass spectrometer

*\* Not available in Japan. Check for availability in your region.*

## Industry spotlight: Configurations that suit a broad range of routine GC applications



### Energy and chemicals

The 8860 GC provides flexible detector positioning for analyses that require configurations for a combination of up to three gas or two liquid sampling valves. An optional auxiliary EPC gas module or pneumatic control module provides added supply gases and capabilities needed for more complex GC analyses.

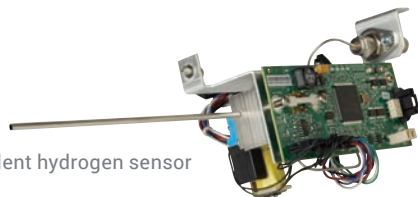


### Environmental and food safety

You can configure the 8860 up to two inlets and three detectors for maximum flexibility. A common configuration would be FID and ECD, with a third detector (such as FPD Plus) used simultaneously—or later in another type of analysis.



# Carrier Gas Options Let You Use Resources More Efficiently

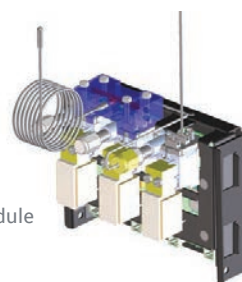


Agilent hydrogen sensor

## Alternate carrier gases decrease costs and protect our environment

Many labs are switching to alternate carrier gases, such as nitrogen and hydrogen. Nitrogen is an inexpensive option when the separation chemistry achieves sufficient resolution. Hydrogen, too, has excellent chromatographic qualities and can increase throughput.

The Agilent hydrogen sensor detects potential leaks early, and puts your system into safe standby mode, if necessary.



Agilent helium conservation module

## Helium conservation for validated methods

Tools such as our helium conservation module and helium switch allow you to use helium for your GC runs. You can switch to an alternate gas (such as nitrogen) when your GC is idle.

# Enhanced Chromatographic Capabilities: Produce Quality Data the First Time... and Every Time

## Retention time locking for rock-solid consistency

Available with most Agilent OpenLab CDS software platforms, retention time locking (RTL) precisely matches the retention times of any GC system to those of another Agilent GC system with the same column and method. So, you can ensure long-term repeatability and correct retention times after column maintenance. You can also standardize your QA/QC measurements by comparing results between systems in the same lab—or at different locations.

RTL works by studying the relationship between inlet parameters and retention time during three to five reference runs. It then calibrates the system using the results. Later, you can match the original retention times on the locked method by performing a single relocking analysis.

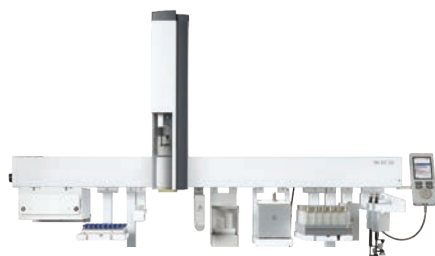
# Inject Your Samples, Quickly, Precisely, and Reproducibly for High-Quality Data



## Agilent 7693 Series automatic liquid sampler (ALS)

### Inject new performance into your GC

With the fastest injection time of any GC autosampler, the Agilent 7693 Series ALS virtually eliminates thermal discrimination. It minimizes variability and manual errors with enhanced capabilities—such as 3-layer sandwich injections. What's more, its modular design lets you upgrade from 16 vials to 150 vials as your lab expands.



## Agilent PAL3 autosampler

### Boost output with advanced sample preparation capabilities

The versatile Agilent PAL3 platform is easily configured for liquid injection, and offers large-volume injection (LVI), multiple vial sizes, and extended sample vial capacity. It is ideal for liquid injection, headspace, and solid-phase microextraction (SPME) applications.



## Agilent 7697A headspace sampler

### Automatically introduce volatile compounds from almost any sample matrix

Ensure an inert sample pathway for superior GC system performance without analyte degradation or loss. Electronic pneumatic control (EPC), a 111-vial capacity, and three exchangeable 36-vial racks make the 7697A an ideal choice for high-throughput labs. In addition, the Agilent 7697A headspace sampler supports the use of hydrogen as a carrier gas.

Protect your instrument—and the integrity of your samples—with Agilent industry-leading vials, caps, and syringes. View the Agilent sample introduction brochure at [www.agilent.com/chem/vialsresources](http://www.agilent.com/chem/vialsresources) and search for 5991-1287EN.

# A Complete GC Workflow That Helps You Get from Where You Are to Where You Want to Be

For over 50 years, Agilent has led the way with industry-changing GC and GC/MS instruments, consumables, software, and more. And every step of the way, your goals become *our* goals: Improving user experience, laboratory operation, and business success.

## Intelligent GC systems

### Stop building your day around your GC

The 8860 GC is one of several new instruments that give you the freedom to work the way you want—while delivering quality data, every time.

## Agilent sample preparation solutions

### Reliably extract and concentrate samples from complex matrices

- Streamline protein precipitation and lipid removal with Agilent Captiva EMR-Lipid.
- Simplify sample preparation with prepackaged Agilent Bond Elut QuEChERS kits.
- Produce cleaner extracts using Agilent Bond Elut SPE.

## Agilent Ultra inert consumables

### Reliable, consistent inertness

- Decrease adsorption along the flow path for accurate, reproducible detection of trace-level analytes.
- Achieve the parts-per-billion, parts-per-trillion, or lower detection levels that today's analyses demand.

## Agilent J&W GC capillary columns

### Consistent performance and reliability

- Ultra Inert columns, with inert liners, ensure optimal signal-to-noise performance.
- Deliver the lowest bleed levels, highest inertness, and tightest column-to-column reproducibility.

## Flexible repair options

### Get your lab back to work

- **On-demand repairs:** When an instrument needs diagnosis or repairs, our experts will get it operational again.
- **Service plans:** Get your current problem fixed—and all other issues covered for one year.
- **Service Center repair:** Ship to us, and we'll send a replacement. Or, we'll fix and return it.

## Genuine replacement parts for Agilent detectors

### Replacement part authenticity counts

- 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.

## Gas Clean filters with Smart sensors

### Reduce the risk of column damage, sensitivity loss, and instrument downtime

- Automatically monitor and get notified when the moisture or oxygen indicator in the filter is reaching capacity and the filter is saturated.
- Follow step-by-step instructions provided by the 8860 touch screen and software to replace the filter.

## Agilent CrossLab: Real insight, real outcomes

CrossLab goes beyond instrumentation to bring you services, consumables, and lab-wide resource management. So your lab can improve efficiency, optimize operations, increase instrument uptime, develop user skill, and more.



Learn more:

**[www.agilent.com/chem/gc](http://www.agilent.com/chem/gc)**

GC column selection tool:

**<http://selectgc.chem.agilent.com>**

GC/MS instruments:

**[www.agilent.com/chem/ms](http://www.agilent.com/chem/ms)**

Inert flow path:

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