

VARIAN, INC.

# 940-LC

ANALYTICAL TO PREPARATIVE LIQUID CHROMATOGRAPHY SOLUTIONS



**VARIAN**

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# Scale Up to Superior Performance and Reliability

## The Ultimate in Analytical to Preparative HPLC

The Varian 940-LC high performance liquid chromatograph is a fully integrated, pre-configured and pre-tested system. A complete solution in a compact footprint, the automated Varian 940-LC meets all your analytical and preparative chromatography needs today, and into the future.

Expect versatility, reliability, scalability – and more.

The Varian 940-LC delivers:

- High performance analytical HPLC
- Fast, easy scale-up to preparative HPLC
- Flexible configurations
- Unmatched concentration range
- Versatile detection
- Superb, practical fraction collection
- Simple, productivity-boosting software

## With Our Experience, Your HPLC Needs Are Covered

The Varian 940-LC stems from a history of liquid chromatography excellence. For four decades, Varian's range of reliable and easy-to-use HPLC instruments has served pharmaceutical, environmental, chemical, and other industrial R&D and QA/QC laboratories worldwide. So when you buy a HPLC from Varian, you can rest assured you are investing in a relationship with proven experts in HPLC.

Our customized HPLC systems, combined with the widest range of Varian-produced column chemistries, packing materials and dedicated software, provide versatile solutions for all your analytical to process-scale separations. Varian is your one-stop-shop for everything HPLC!



The Varian 940-LC liquid chromatograph is a compact, stylish, fully-integrated HPLC, delivering versatility, reliability and scalability.

# From Analysis to Purification

## Flexibility For All Your Applications

Whether you require analytical or preparative chromatography for pharmaceutical, food, nutraceutical or industrial environments, the Varian 940-LC delivers. You can customize the system to enhance your application capabilities:

- Add the Varian 445-LC Scale-Up Module for automatic column switching to move from analytical to preparative operation.
- Add the sample pump system for gram-scale isolation of large molecule biopharmaceuticals.
- Confirm the purity of pharmaceuticals by spectral comparisons and purity calculations using the photodiode array (PDA) detector.
- Detect unknown compounds or break-down products in shelf life studies using the refractive index (RI) detector.
- Characterize unknown compounds or metabolites after collection with the Varian 440-LC Fraction Collector.

### Flexible Systems

	Analytical	Semi-prep	Bench-top Process
Binary gradient solvent delivery	•	•	•
Autosampler	•	○	-
Sample pump system	-	-	○
Scale-Up Module	○	○	-
UV detector	•	•	•
PDA detector	○	○	○
RI detector	○	○	○
Fraction collector	○	○	○
Solvent organizer	•	•	•
Storage compartment	•	•	•

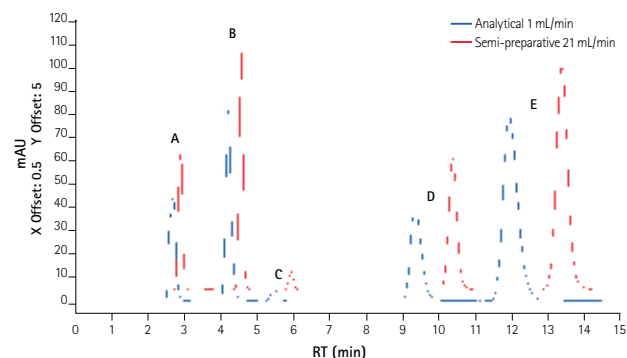
- Standard feature
- Optional feature
- Not available

# The Benchmark in Analytical to Prep HPLC

## Seamless Scale-Up – Two Instruments in One

The Varian 940-LC provides you with seamless analytical to preparative scale-up, while maintaining performance and reliability.

- Software-controlled Scale-Up Module automatically switches between analytical and preparative columns, for easy and reliable transition.
- Optimized flow paths for analytical and preparative operation ensures chromatograms are overlaid with correlated retention times, allowing consistent fraction collection.
- Prime up to four solvents into the Scale-Up Module, for greater choice.
- Full software control of the Scale-Up Module protects against errors when moving between different columns and flow rates, allowing unattended washing, switching, purging and equilibration of columns.

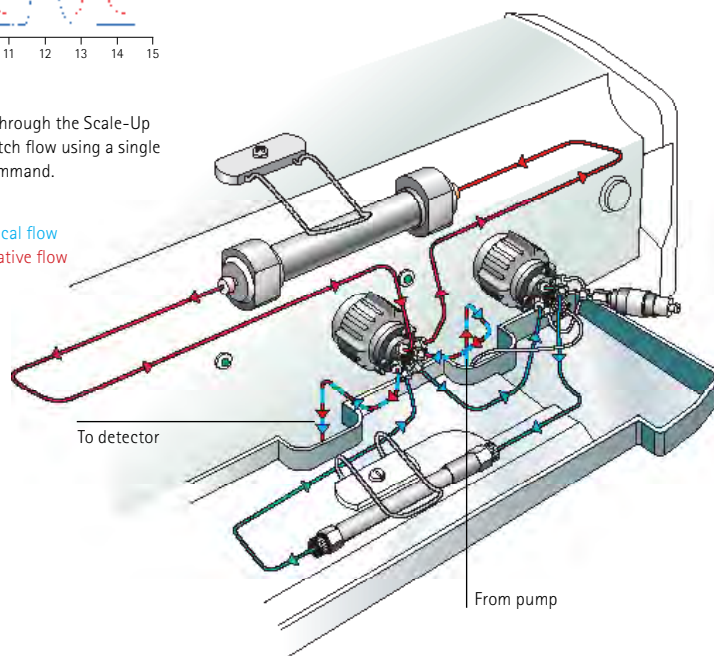


When switching between analytical and semi-preparative columns, optimized flow paths ensure chromatograms are neatly overlaid, as demonstrated above. (A–E: uracil, acetophenone, methyl benzoate, toluene, naphthalene)

Columns: Varian Pursuit™ XRs C18; Mobile phase: 75% methanol, 25% water; Detection: UV at 245 nm

Flow paths through the Scale-Up Module. Switch flow using a single software command.

— Analytical flow  
— Preparative flow



## Trouble-free Injections and Collections

The built-in autosampler and reliable and versatile fraction collector, combined with complete software and valve automation makes preparative work easy.

- Use the integrated autosampler to perform unattended sample injections from two hundred 2 mL standard HPLC vials or three 96 format wellplates.
- Autosampler features external needle wash and needle-in-flow path design, which flushes the needle and injection path with solvent, virtually eliminating sample-to-sample contamination.
- For larger volumes in automated method development and unattended preparative runs, inject and purify up to 120 5 mL samples, to maximize your laboratory's productivity.
- Fraction collector accommodates 7 to 50 mL capacity containers and a variety of racks, including Varian 940-LC autosampler racks, to suit your requirements. Autosampler rack compatibility provides practical collect and re-inject capabilities.
- With Galaxie™ Chromatography Software, collect fractions according to threshold, time slice, slope – any criteria you like. All software parameters are stored for future inspection and ultimate repeatability.

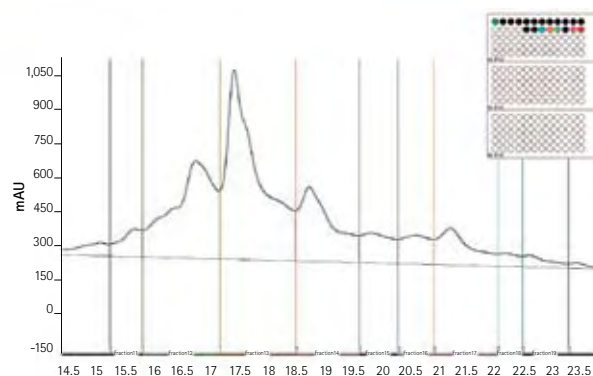
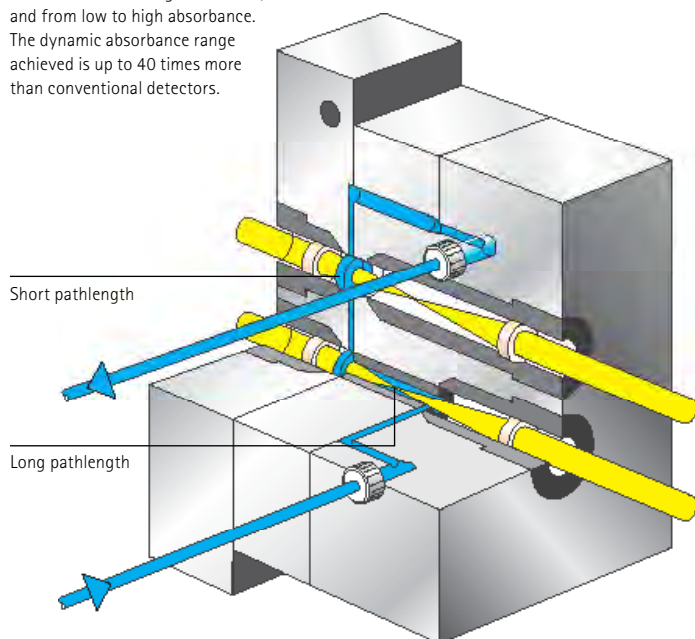
# Unrivalled Versatility and Productivity

## Adaptable by Design

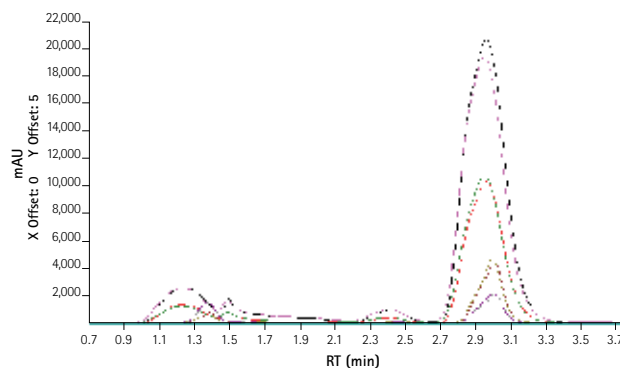
The Varian 940-LC liquid chromatograph has a range of built-in features and options for adapting to your laboratory's future needs:

- Pumping systems deliver isocratic or gradient operation from 10  $\mu\text{L}/\text{min}$  to 200 mL/min with pressure capability to 6000 psi, enabling you to use small particle packing materials, for productivity-boosting Fast LC.
- Pump heads in titanium and PEEK™ are available for ultra inert work at flow rates up to 200 mL/min for gram scale preparation, increasing the versatility of your laboratory. Uptime is maximized, as only the pump heads need to be replaced.
- Dual pathlength flow cells extend the absorbance range of the UV or PDA detector from the detection limits up to 80 AU for greater sensitivity. Plus, you don't have to change the flow cell when moving from analytical to preparative operation.
- The ability to ratio two wavelengths for monitoring peak purity during a run gives you greater confidence in your results.
- Dedicated configurations for upgrading to production-scale work at 100–200 mL/min.

With dual pathlength flow cells in the UV or PDA detector, use one flow cell for low to high flow rates, and from low to high absorbance. The dynamic absorbance range achieved is up to 40 times more than conventional detectors.



The fraction collector accurately collects fractions according to user-defined criteria. Shown above is an insulin collection with colored lines corresponding to containers (inset).  
Column: Varian Pursuit™ C18; Mobile phase: 85% of 0.1% trifluoroacetic acid in water, 15% of 0.1% trifluoroacetic acid in acetonitrile; Detection: UV at 214 nm; Flow: 1 mL/min



Achieve up to 80 AU when moving from analytical to preparative operation, without changing the dual pathlength flow cell. Above shows dynamic range from 2 to 21 AU of 5-hydroxytryptophan sample.  
Column: Varian Pursuit XRs C18; Mobile phase: 85% water, 15% methanol; Detection: UV at 230 and 280 nm; Flow: 21 mL/min

# Galaxie™ Chromatography Software

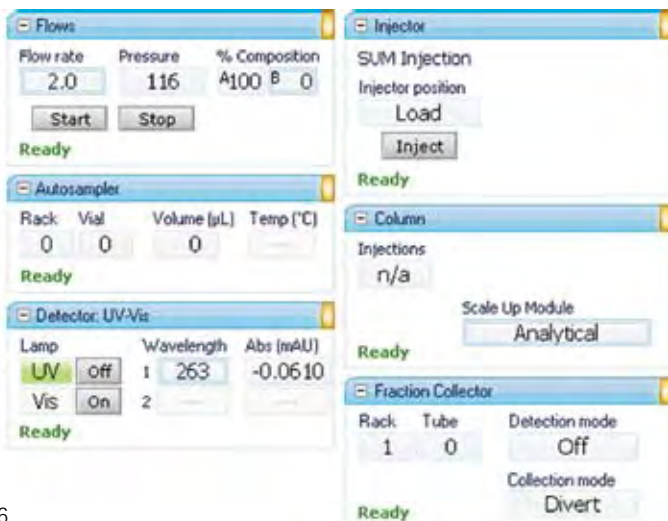
## Simple. Flexible. Secure.

### Software That Drives Productivity

Varian Galaxie Chromatography Software delivers advanced tools for effective results, in an easy-to-use format. Galaxie capabilities include documentation, method development assistance, and control of several chromatographs from one PC. It features:

- Optional Fusion AE™ (Automated Experiment) to automate the processes of developing, optimizing and validating methods, for quick, rugged separation.
- Built-in spectral analysis tools for PDA or dual wavelength detectors for on-the-fly peak purity assessment, improving preparative yields.
- User-friendly interface controls preparative injections, preparative flow rates and fraction collection for set it and forget it functionality.
- An upgrade path to a Client/Server configuration to centralize system control and data handling.
- User access control, audit trails and electronic signature capabilities for enhanced data security, assisting with operation in regulated environments, such as US FDA 21 CFR Part 11.
- Customized reports and powerful data handling capabilities, providing all the information you need in the format you want.

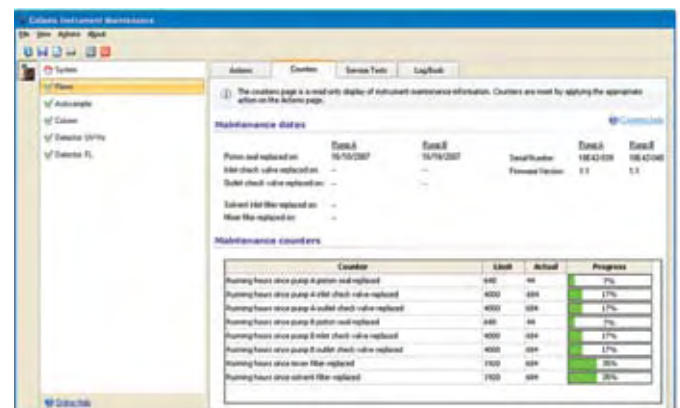
For an overview of the status of your Varian 940-LC, check the Instrument Status window. Quick diagnosis maximizes instrument uptime. For the ultimate in flexibility, you can override method settings while acquiring data and manually control the instrument, all from one view.



### Instrument Maintenance Scheduling

The Galaxie Instrument Maintenance window displays parameters such as pump strokes, number of injections and lamp intensity. As these parameters change, you can make informed decisions about when to perform maintenance on your instrument, for maximum uptime and peace of mind. You can also:

- Perform pre-defined instrument tests such as system noise, linearity, injection reproducibility, gradient accuracy, detector wavelength reproducibility and pressure integrity to ensure the highest confidence in instrument performance.
- Perform automated IQ/OQ tests to assist with operating in validated environments.



The Instrument Maintenance window lets you know when seals, valves and filters will require changing. So you are always prepared.



# Depend on Varian for All Your Chromatography Needs...

## From Microlitre to Litre Flows

Varian's unique capabilities in separation technologies extend from sample clean-up using Bond Plexa™, OMIX™, Bond Elut™ and Chem Elut™ extraction products, through analysis/identification and scale-up of the separation, all the way to pilot plant.

Our range of liquid chromatography systems provide microflow pumping on the Varian 320-MS LC/MS/MS systems, mL/min flow rates on the Varian 920-LC analytical HPLC, Varian 940-LC and SD-1 PrepStar™, to the ultimate of seamless scale-up with Varian expertise in pilot plant separations at L/min flow rates on our SepTech™ skid HPLC systems.

## Varian Columns and Separation Media

Whether you need capillaries, 50 mm preparative columns or multi-kilo batches of prep and process chromatography packings for columns up to 150 mm ID, Varian can help. Our unique and exciting chemistries include Pursuit™ Diphenyl, PFP, Polaris™ and high performance Pursuit XRs C18 and C8 columns.

We manufacture every component of our proprietary phases, such as the world-famous Polymer Laboratories™ polymeric resins, and the pure silica gels in our Microsorb™ range. Our aim is to provide the highest quality columns, giving you better peak shapes, higher reproducibility and longer column lifetimes, all at an affordable price.

We are committed to meeting your needs with a full range of consumable products and supplies. Call today to request your free copy of our comprehensive analytical supplies catalog. Or, shop online at [www.varianinc.com](http://www.varianinc.com)

## Analytical to Process Scale Separation Solutions from One Provider



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# 940-LC

## ANALYTICAL TO PREPARATIVE LIQUID CHROMATOGRAPHY SOLUTIONS

### Varian, Inc. – Supporting Customers Worldwide

All products are eligible for on-demand support from a worldwide network of specialists who can assist with any need. Varian, Inc. offers:

- Comprehensive programs that include a full range of services – from minor repairs, to complex applications development and training.
- Factory-qualified Field Support Representatives and Specialists, specifically chosen for each installation.
- Global support teams strategically located around the world.

To learn more about Varian's industry-leading customer support, visit our Web site at [www.varianinc.com/support/](http://www.varianinc.com/support/)

### Varian, Inc. – Serving Industries Worldwide

Biosciences

Pharmaceuticals

Clinical Research and Forensics

Food and Agriculture

Chemical Analysis

Environmental

Fuels and Energy

Material Sciences

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