



# Analytical HPLC solutions

that revolve around your needs

Area%	Symmetry
3.835	2.122
0.835	0.832
2.897	1.299
88.760	0.853
2.981	1.428
0.691	0.726

Agilent 1200 Series HPLC Systems and Modules

Our measure is your success.



# Agilent 1200 Series HPLC

Flexible, reliable and robust solutions for analytical liquid chromatography

Whatever your liquid chromatography analysis needs are you will find your individual solution within the Agilent LC portfolio. The Agilent 1200 Series is the industry-leading standard, offering everything you need for analytical HPLC methodologies. From routine analysis through new product research and development in chemical analysis and pharmaceutical industries, the Agilent 1200 Series helps you achieve reliable and robust results for all your applications.

Make a secure investment in the future of your lab with the scalable and open architecture of the Agilent 1200 Series HPLC solutions.



- Uncompromised data quality for complete confidence in your results
- Modular and scalable platform to meet your separation requirements
- Easy maintenance and intelligent system monitoring for increased uptime
- Scalable and open software architecture
- Complete qualification portfolio for highest level of operation



### A complete portfolio of LC solutions

Agilent offers the broadest portfolio of liquid chromatography solutions. Choose from systems for analytical HPLC applications or move up to high performance solutions for capillary, nanoflow or preparative LC, and for HPLC-Chip/MS or UHPLC.



To learn more, visit [www.agilent.com/chem/lc](http://www.agilent.com/chem/lc)

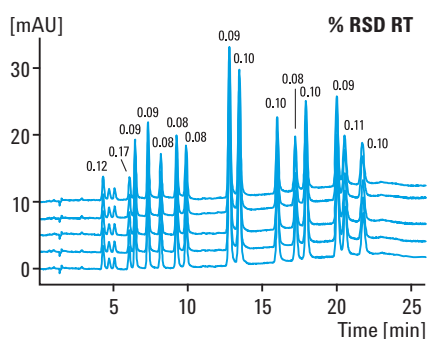
# Uncompromised data quality

for results you can rely on

With an installed base of more than 100,000 systems, Agilent LC technology is renowned worldwide for its reliability under any operating conditions. The Agilent 1200 Series represents the generation of LC designed for even greater robustness and reliability with enhanced performance. The seamless integration of each module gives you unparalleled accuracy and precision for both quantitative and qualitative analysis. Highly sensitive detectors deliver the lowest possible detection limits even for the most demanding applications.

## Excellent flow and composition precision

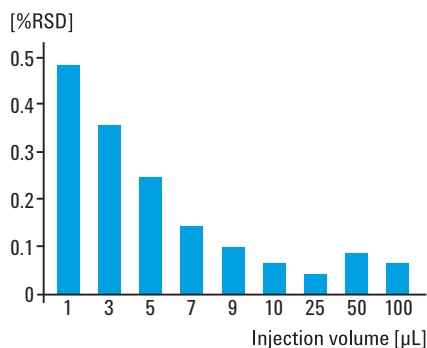
Whether you run isocratic or gradient analyses the Agilent pumping systems are always the right choice. Agilent's proven pump design provides excellent flow and composition precision over a wide flow rate range. The patented variable stroke minimizes composition ripple to ensure a smooth baseline and high sensitivity.



Excellent retention time precision as shown with data from 20 consecutive PNA analyses.

## Superior injection precision and lowest carryover

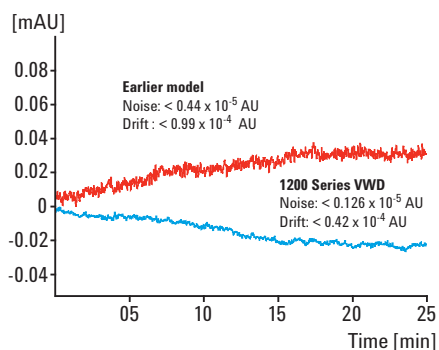
The selection of different autosamplers provides for precision levels of < 0.5 % RSD over an injection volume range from 0.01  $\mu\text{L}$  to 2000  $\mu\text{L}$ . The unique flow-through design, combined with external needle wash and optional multiple wash solvents, virtually eliminates carryover, even for highly adsorptive compounds.



Typical repeatability data for injection volumes demonstrates the high precision of the standard autosampler

## Ultimate UV-visible detection sensitivity

New low-noise flow cells and electronics provide maximum sensitivity and baseline stability. Electronic temperature control ensures baseline stability under fluctuating ambient temperature and humidity conditions.



The redesigned optics of the 1200 Series VWD exhibit 3.5 times better baseline noise and 2.4 times better drift behavior than the earlier model.

# Scalable solutions

for future expandability and adaptability

The broad portfolio of the Agilent 1200 Series offers huge flexibility for conventional analytical HPLC needs. It offers scalable solutions – from a simple isocratic system with manual injection up to fully automated gradient systems – for multiple performance levels, future expandability and adaptability. The modular design ensures that you get the configuration ideally suited to meet your application requirements. An extensive range of detection techniques – including ultraviolet, fluorescence, refractive index, evaporative light scattering and mass spectrometry – gives you the confidence that you can detect everything in your samples.

## Manual isocratic LC system

Workhorse for demanding QA/QC applications:



- Industry standard for high performance isocratic LC
- Easy and fast maintenance
- Flow rates up to 10 mL/min for a wide range of column dimensions and applications
- Upgrade options from isocratic up to automated quaternary LC system

## Automated quaternary LC system

For a wide range of method development and routine gradient applications:



- Greatest flexibility for multi-solvent gradients up to 4 solvents
- Flow rates up to 10 mL/min support both standard-bore and semi-preparative applications
- Wide selection of autosamplers for full flexibility in injection volumes and sample containers

## Automated binary LC system

For research, high-throughput and fast applications:



- High pressure mixing for superior gradient performance even at lower flow rates
- Optimized delay volumes for fast chromatography
- Flow rates from 0.05 to 5 mL/min provide ideal support for narrow-bore and standard-bore applications



# Overview of 1200 Series HPLC Modules

## Solvent Preparation

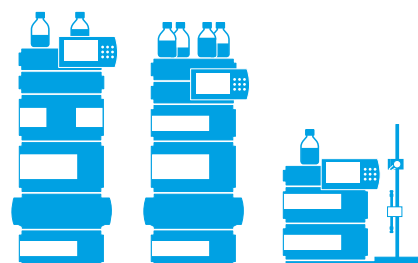


### Vacuum Degasser

Flow rate: Up to 10 mL/min  
Internal Volume: 12 mL per channel

### Micro Degasser

Flow rate: Up to 5 mL/min  
Internal Volume: 1 mL per channel



## Solvent Delivery



### Isocratic Pump

Flow range: 0.001–10 mL/min\*,  
for isocratic analysis

### Quaternary Pump

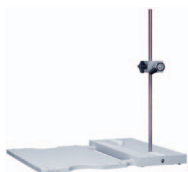
Flow range: 0.001–10 mL/min\*,  
for gradient analysis  
(requires degasser)

### Binary Pump

Flow range: 0.001–5 mL/min\*,  
for fast gradient analysis

\*(settable flow range)

## Injection Systems



### Manuel Injector

Injection range: Loops for 5  $\mu$ L–20 mL

### Standard Autosampler\*

Injection range: 0.1  $\mu$ L–100  $\mu$ L  
(extendable up to 5000  $\mu$ L)  
Sample container: Vials

### High Performance Autosampler\*

Injection range: 0.1  $\mu$ L–100  $\mu$ L  
(extendable up to 1500  $\mu$ L)  
Sample container: Vials and well-plates

\*(Also available with thermostat with temperature range 4–40°C)

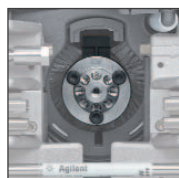
## Column compartment



### Thermostatted Column Compartment

Temperature range:  
10 degrees below ambient to 80 °C

## Valves



### Internal Valves

(built into column compartment)  
2-position/6-port valve  
2-position/10-port valve



### External Valves

2-position/6-port valve  
2-position/10-port valve

## Detectors



### Variable Wavelength Detector

for programmable single wavelength  
analysis, 1 signal,  
20 Hz data sampling rate



### Multiple Wavelength Detector

for multi-wavelength analysis,  
8 signals, 20 Hz data sampling rate



### Diode Array Detector

for multi-wavelength and spectral  
analysis, 8 signals, 20 Hz data  
sampling rate



### Fluorescence Detector

for multi-signal detection with rapid  
online scanning and spectral data  
analysis



### Refractive Index Detector

for refractive index range:  
1.00–1.75 RIU, calibrated



### Evaporative Light Scattering Detector

Flow rate: 5  $\mu$ L/min – 5 mL/min  
For peak widths of 1 second or larger



### 6000 Series LC/MS Systems

6100 Series Quadrupole LC/MS Systems (illustrated)  
6200 Series Accurate-Mass TOF LC/MS Systems  
6300 Series Ion trap LC/MS Systems  
6400 Series Triple Quadrupole LC/MS Systems  
6500 Series Accurate-Mass Q-TOF LC/MS Systems

# LC columns, supplies and services

for accurate results quickly and confidently

## Unparalleled quality and flexible choices within the ZORBAX LC column family

Maximize system performance and reliability for all your separation needs by combining the Agilent 1200 Series HPLC system with Agilent ZORBAX LC columns and LC supplies. Designed with the same attention to detail, quality and superior performance you have come to expect from Agilent instruments and backed by over 30 years of chromatography experience, you can count on Agilent's columns and supplies to deliver the high quality results you need and expect, time after time.

- Wide selection of chemistries – Eclipse Plus, Eclipse XDB, StableBond, Extend, Bonus, HILIC and more
- Superior flexibility and product scalability with a wide range of particle sizes (1.8, 3.5, 5 and 7  $\mu\text{m}$ ) and column dimensions
- Individual column performance reports to document column-to-column and lot-to-lot reproducibility
- Superior particle strength for even the most demanding high pressure applications

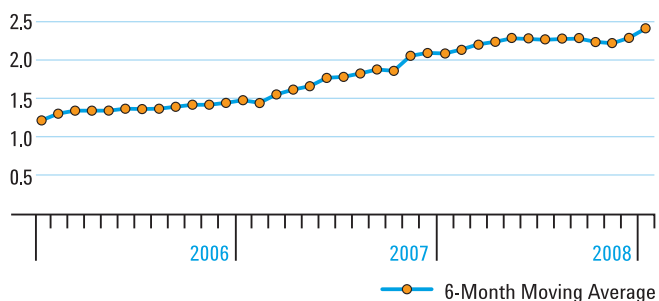


## Robust components

- Long-life pistons and seals, together with active seal wash, reduce the frequency of preventive maintenance
- Deuterium and xenon lamps with lifetimes of over 2000 hours
- Long-life rotor seals require less routine maintenance, thus increasing autosampler uptime and overall lab productivity



## Agilent Quality Index



Benchmark studies with users have shown that Agilent LC systems have always been renowned for their high quality. Over the last few years Agilent has improved this quality even further as shown by the Quality Index (QI\*) for Agilent LC systems, which has more than doubled during this period – proving the high reliability and robustness of the design and the manufacturing process.

(\*QI shown here is based on annual failure rate data for a standard LC system)



## Agilent Lab Advisor

Agilent Lab Advisor is new diagnostic and monitoring software for Agilent LC and GC instrumentation. With advanced diagnostic and maintenance capabilities, Agilent Lab Advisor helps you to keep your lab's instruments in top condition and thereby achieve high quality chromatographic results. Extended monitoring and alerting features keep you informed about the status of the entire lab and help you plan instrument resources and avoid unexpected downtime. Agilent Lab Advisor is an application-independent tool, meaning it can support Agilent LC and GC instrumentation regardless of whether you use Agilent or non-Agilent software to control your instruments.

## Agilent Remote Advisor

Agilent Remote Advisor is a remote monitoring, diagnostics and reporting feature now included in all Agilent Advantage service plans. Once connected, you'll gain direct access to Agilent experts whenever you need them, and you'll be able to download inventory reports on instrument utilization and overall equipment effectiveness on-demand – helping you to maximize instrument uptime and optimize your lab's productivity.

## Agilent Advantage Service and Support

Agilent provides customer-focused products and services for all stages in an instrument's life cycle, from installation and upgrade to operation and repair. Whether you need support for a single instrument or a multi-lab, multi-vendor operation, Agilent offers an Advantage service solution to help you solve problems quickly, increase your uptime and optimize your lab's resources.

## Agilent Compliance and Functional Verification Services

Count on Agilent to provide the proof of calibration or system qualification you need to support your ISO 17025 or GLP/GMP quality initiatives. In fact, Agilent has recently been ranked #1 in Compliance by LC/GC Magazine survey for the third time. With over 100,000 successful qualification deliveries and over a decade of practical experience in testing for regulated industries, you can trust Agilent to provide compliance and functional verification solutions to assure confidence in your analytical results.

For more information on these and other Agilent service and support solutions please visit: [www.agilent.com/chem/services](http://www.agilent.com/chem/services)



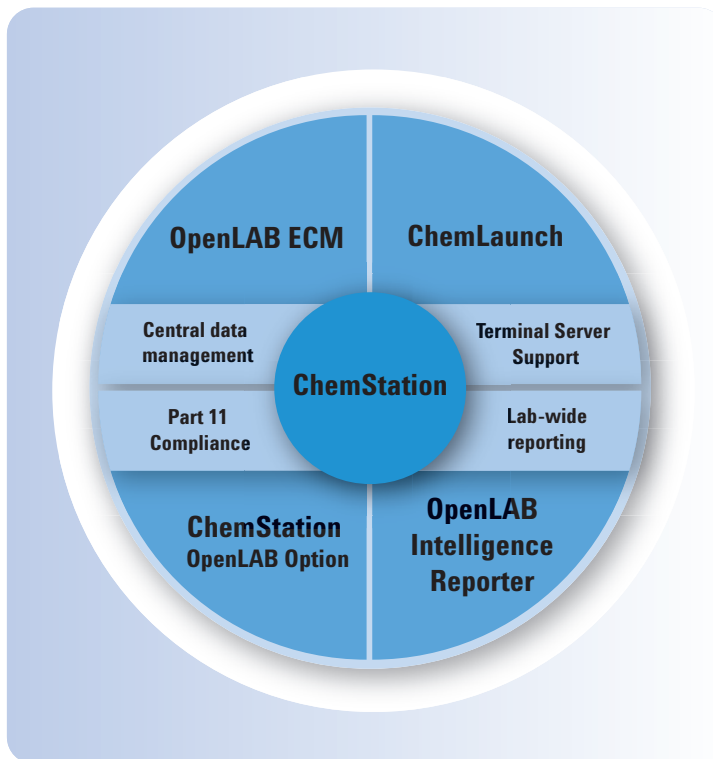
# Instrument control software

for new levels of usability

## New Agilent ChemStation for increased lab efficiency and configurable security

The new Agilent ChemStation facilitates level-5 control of Agilent 1200 Series HPLC and RRLC systems as well as Agilent 6100 Series quadrupole LC/MS systems.

- Seamless fit in non- or highly-regulated environments
- Easily extendable through built-in macro language
- Enhanced workflow support – for example, through new custom fields
- Better usability and faster results review
- Specific workflow solutions for drug discovery and development
- Integration of 3rd party detectors (ESA, CAD, CCIII)
- Control of Agilent LC, GC, CE, CE/MS and LC/MS instruments and generic A/D converters.



Agilent ChemStation modules – add functionality according to your needs.

The unique modular approach of Agilent data systems allows you to purchase only the functionality that you need. If you need more, a suite of targeted add-on modules gives you extended data system functionality.

- Lab-wide remote instrument management
- Full compliance support with configurable options
- Enhanced method and result traceability with configurable audit trails
- Cross-sequence reports with advanced calculations and trend-charting
- Thin clients for reduced validation and upgrade costs
- Centralized management of master methods



## Agilent EZChrom Elite for maximum flexibility

An easy to use software solution for labs with instruments from multiple vendors.

- Full compliance features
- Powerful and flexible reporting capabilities with automated spreadsheet calculations
- SMART sequencing for flexible automation tasks
- Easy scale-up from workstation to client-server system

## Third-party control of Agilent 1200 Series

For highest flexibility in your lab, Agilent 1200 Series systems and modules can also be controlled through all major chromatography data systems and MS workstations:

- Waters Empower
- Dionex Chromeleon
- Applied Biosystems Analyst
- Thermo Scientific Excalibur
- Thermo Scientific Atlas
- Varian Galaxie

## Agilent OpenLAB reaches beyond the lab

Agilent OpenLAB enables you to acquire and organize your data across laboratories and departments.

- Saves all documentation and data in a single repository
- Organize and retrieve data using advanced search engines
- Enables several people to rapidly and easily review a complete result set for a sample, including graphical results

## Agilent 1200 Series Instant Pilot

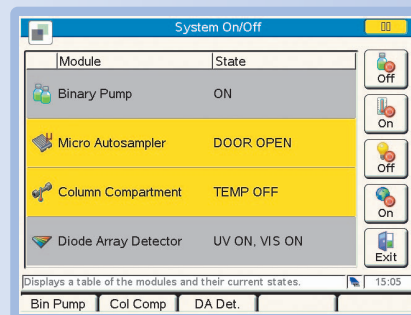
The Instant Pilot provides enhanced readability with a high resolution, high contrast color display. All chromatographic signals and instrument parameters can be plotted simultaneously on the display using different colors.

- Cost-effective, standalone solution for single instrument control
- Provides full instrument, method and sequence control and display of online signals

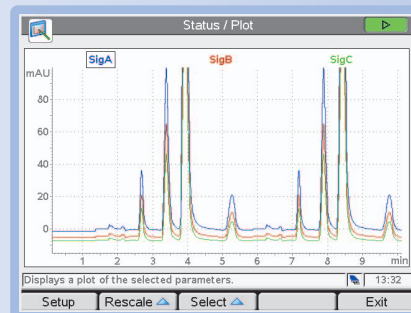


Customizable window for fast monitoring and changes of main instrument parameters.

Current system configuration with color-coded status bars.



Plot of chromatographic signals with different colors for each signal.



## Agilent Value Promise – 10 years of guaranteed value

In addition to continually evolving products, we offer something else unique to the industry – our 10-year value guarantee. The Agilent Value Promise guarantees you at least 10 years of instrument use from your date of purchase, or we will credit you with the residual value of that system toward an upgraded model. Not only does Agilent ensure a safe purchase now, we help ensure your investment is as valuable to you in the long run.

## Agilent Service Guarantee

Should your Agilent instrument require service while covered by an Agilent service agreement, we guarantee repair or we will replace your instrument for free. No other manufacturer or service provider offers this level of commitment to keeping your laboratory running at maximum productivity.



### Learn more:

[www.agilent.com/chem/1200](http://www.agilent.com/chem/1200)

### Buy online:

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

### Find an Agilent customer center in your country:

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

### U.S. and Canada

1-800-227-9770, [agilent\\_inquiries@agilent.com](mailto:agilent_inquiries@agilent.com)

### Europe

[info\\_agilent@agilent.com](mailto:info_agilent@agilent.com)

### Asia Pacific

[adinquiry\\_aplsca@agilent.com](mailto:adinquiry_aplsca@agilent.com)

© Agilent Technologies, Inc. 2009  
Published in USA, April 1, 2009  
Publication Number 5989-9876EN



**Agilent Technologies**