Agilent 1200 Series LC Multi-method Solution

Our measure is your success.

products | applications | software | services

Agilent Technologies

An unmatched combination of instruments, columns and software

Infinite flexibility and versatility!

Is your lab looking for a better, more effective way to cope with many different applications requiring different separation conditions? Are you constantly exchanging columns or replacing solvents to match the need of your customers? Do many different users with different separation requirements use systems under your responsibility? Are you developing analytical LC methods?

1290 Infinity LC

1200 Series RRLC

1200 Series LC

"The Agilent automated column and mobile phase screening system and the Method Scouting Wizard software facilitated a very rapid method development"
Dr. Kelly Zhang, Genentech, USA

"That system gave us a method we work on for a month, almost overnight"
The Dow Chemical Company

Multi-method selection based on an Agilent 1290 Infinity LC system – for maximum flexibility, performance and sensitivity.

Here`s the ultimate solution for your needs!

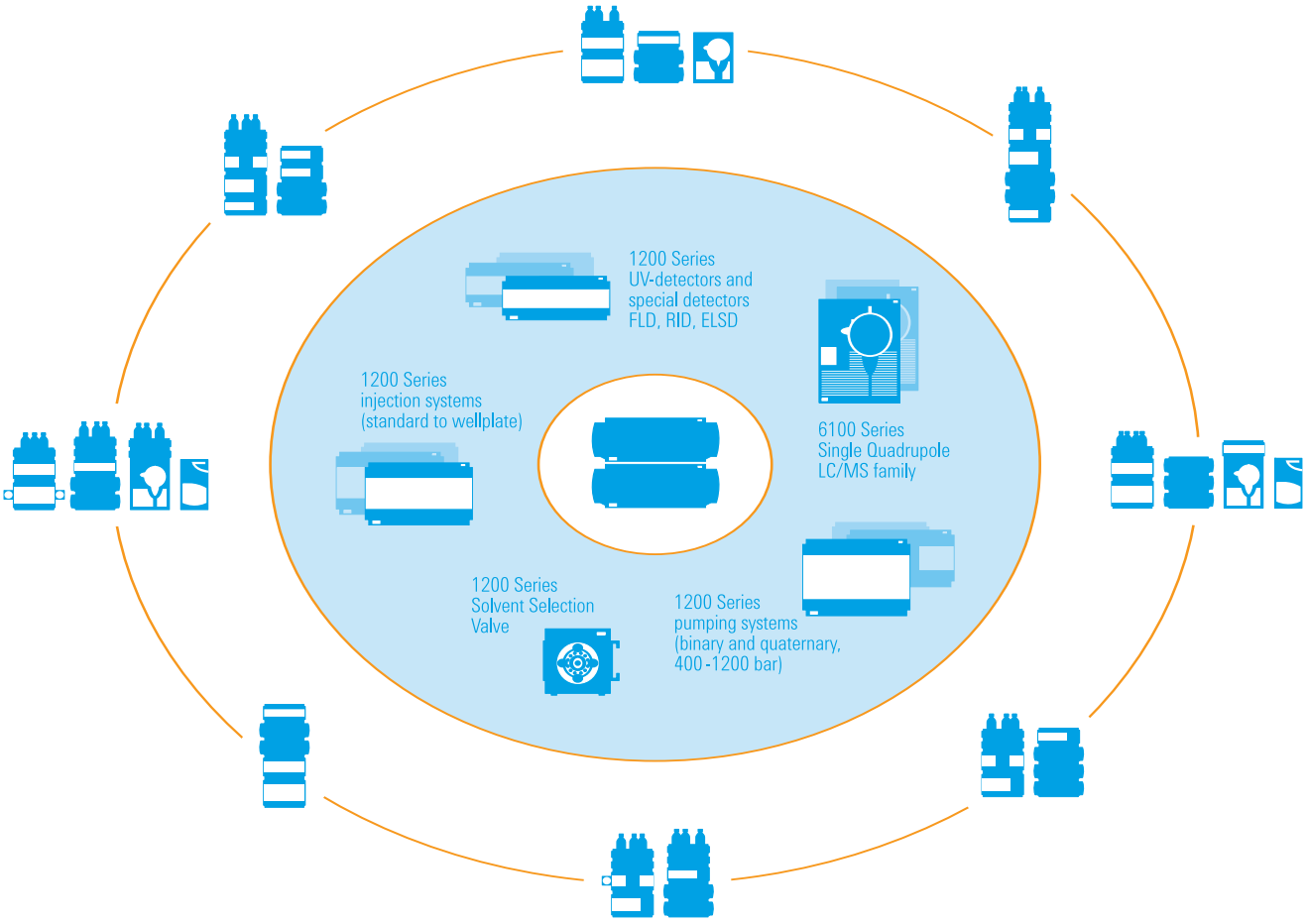
- Select of up to 8 columns and 26 different solvents through one-click operation in the control software.
- Choose from more than 50 LC modules for different pressure ranges, detection requirements and budget restrictions.
- Benefit from more than 1000 different test conditions for binary, ternary or quaternary gradients without the need to disconnect a column or exchange a solvent bottle!

Highest pressure is not required for every application!

The best system for any pressure range

Select from more than 50 LC modules for different detection modes and different budgets to configure your ideal system.

There are so many different applications, so why limit your buying decision for new instrumentation to a vendor that forces you to select a system that is over-equipped or under-performing. With the Agilent LC portfolio you can tailor your system for column and solvent switching to standard, medium or ultra-high pressure operation.



The high power of the Agilent 1200 Series Rapid Resolution LC or even the ultra-high performance of the Agilent 1290 Infinity LC offer additional flexibility in terms of selectivity, speed and resolution to solve your most complex application challenges. It's not only LC hardware – it is a complete concept of instrumentation, software, separation columns, as well as applications and services.

Many different modules are available for optimized setup:

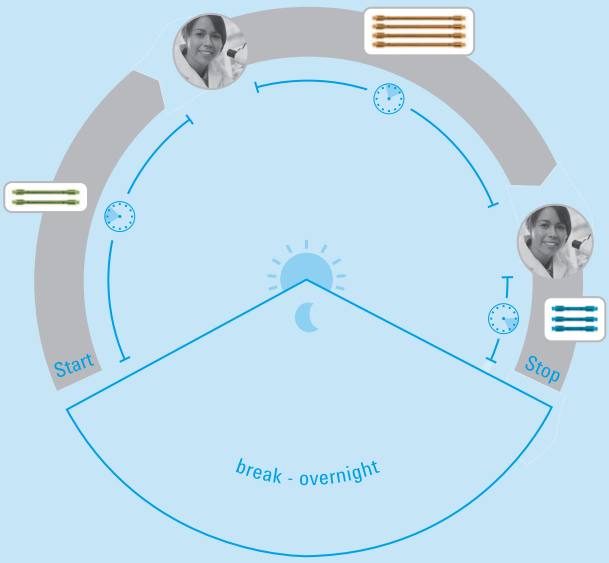
- Quaternary and binary pumps for operation up to 400, 600 or 1200 bar
- Standard, well-plate or high-capacity autosamplers – all available for different pressure ranges
- UV, diode array, fluorescence, refractive index, evaporative light scattering and mass selective detectors
- A/D converter for combination with virtually any detector

For labs that require continuous change of columns or solvents

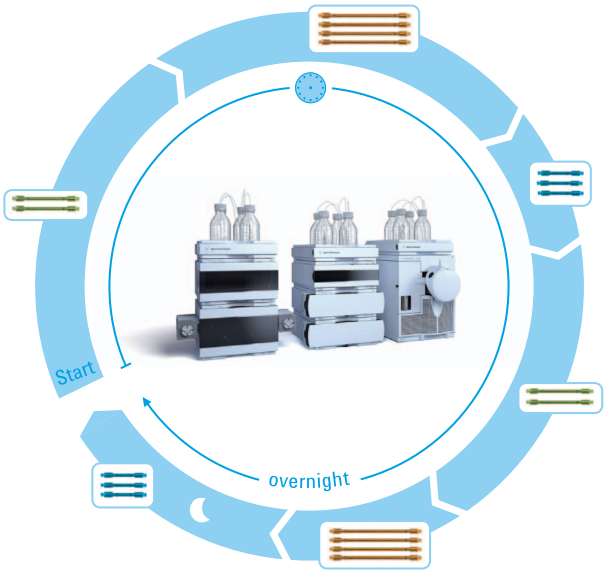
Easy living for multi-method applications

Does this sound familiar: 10 runs on column A, 16 runs on column B, interrupt – priority sample on column C, return to column B and then 12 runs on column A? At each change of application someone needs to walk up to the LC system, stop the flow, exchange the column, check for leaks and reestablish the flow to continue with the next analysis. This is an unnecessary waste of resources. Time is lost when nobody is available to change the column and continual replumbing wears out the fittings over time. And, how do you plan to utilize the system overnight or at weekends?

Today, a user has to interact with the LC system to set up a new application.



With the Agilent 1200 Series Multi-method Solution you can set up many different applications – the column becomes a simple method parameter.



With the new Agilent 1200 Series Multi-method Solution the column and solvent become simple method parameters. First, you set up your system by defining up to 8 columns and 26 solvents. Then you select the required column and solvent for your application through the control software, making them part of your method. There is no need for you to interact with the system between different applications anymore. You can also combine many different applications and run them as a sequence overnight or even at weekends.

A simple yet powerful color-coding scheme in the software shows the colored tags attached to the columns and capillaries, making setup and maintenance much easier.

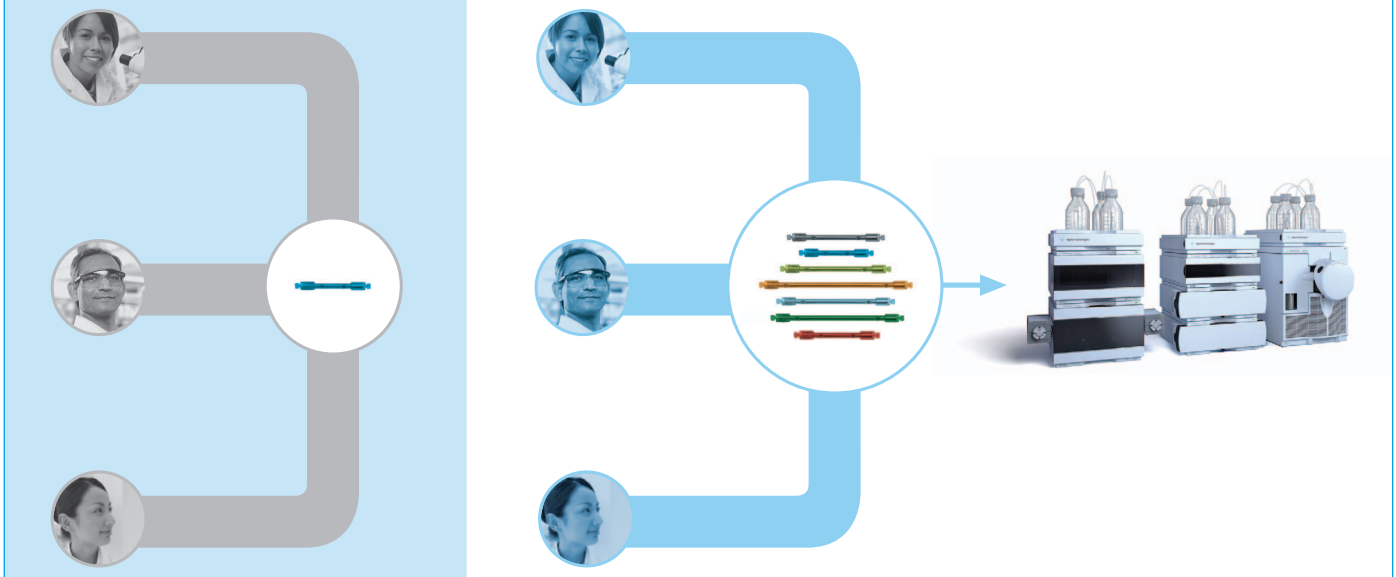
Superior chromatography for superior chemists

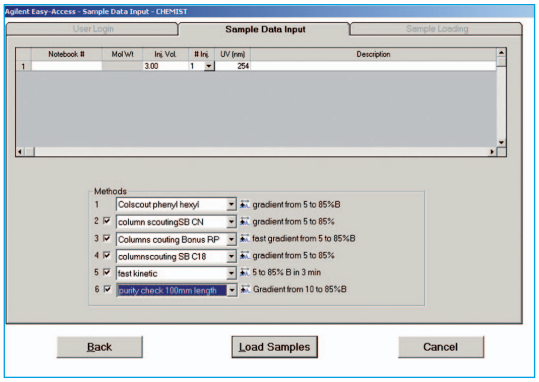
Open-access to optimized separations

A similar situation is a multi-user environment in which several users are working on different projects. Often, users require specific columns, mobile phases and sets of separation conditions. On a typical system, either the separation needs to be compromised or the user must interact with the system. The Agilent 1200 Series Multi-method Solution solves this dilemma by providing easy access to many columns and solvents.

Today, usually only one column is available for different needs.

With the Agilent 1200 Series Multi-method Solution every user can have the ideal column for their separation challenge on a walk-up system.





The Agilent Easy Access software allows users with different separation needs to have the optimal conditions for their analytical challenge. Regardless of whether they are performing reaction monitoring on a short C18 column, purity control on a long C8 column or control of a starting material on a highly polar CN phase – they always have walk-up access to the system.

The system administrator defines user groups, methods, priorities and instrument control. This setup gives users a convenient and easy-to-use interface, making LC/MS analysis as simple as TLC – but much faster and with a much higher level of information!

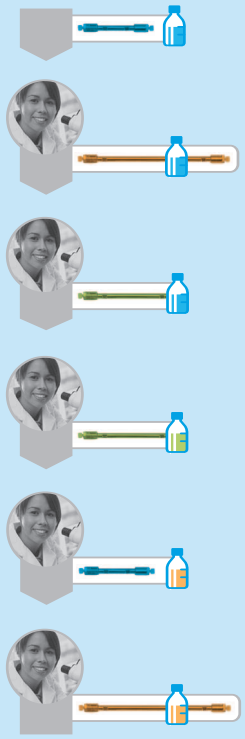
More conditions – less interaction

Method development made easy

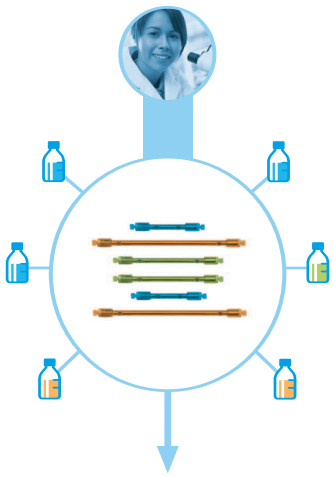
LC method development used to be a tedious job – continuously exchanging columns, solvents, editing methods and so on. With a normal LC this requires continuous interaction with the system.

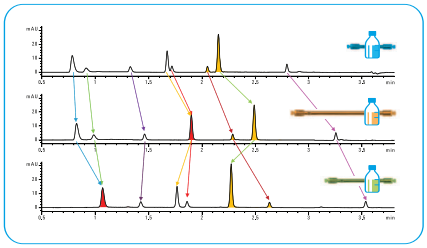
Not so with the Agilent Multi-Method Solution. It is the ideal tool for method development! Besides the superior hardware dedicated software solutions make life even more easier.

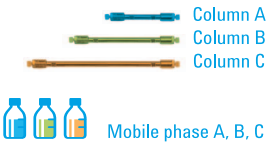
In method development today, changing the selectivity requires user interaction.



With the Agilent Multi-method Solution you interact just once with your system, defining up to 1000 unique selectivities by combining the available columns and solvents. The system then does the rest – unattended.







The outstanding flow and pressure ranges of the Agilent 1290 Infinity LC combined with a minute gradient delay volume facilitate the development of methods for virtually any other HPLC or UHPLC system on the market!

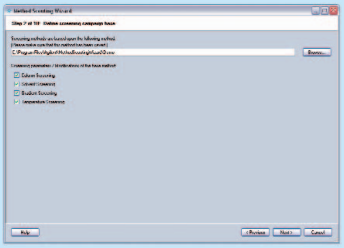
Depending on the complexity of the separation problem, different requirements are placed on the software to be able to support the experimental setup. With the Agilent ChemStation Method Scouting Wizard a simple-to-use but highly effective tool is available to define a sequence and all methods to screen a multidimensional matrix of columns, solvents, gradients and temperatures.

As well as saving the time required for manual setup, the Method Scouting Wizard reduces many sources of error such as wrong settings, improper flushing and equilibration.

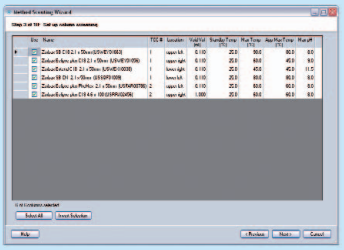
- Wizard guides you through setup
- Automatic generation of scouting methods
- Automatic flushing and column equilibration
- Automatic generation of a ChemStation sequence
- Experiment setups for multiple samples and injections
- Settings can be stored as a template for reuse

From simple to sophisticated

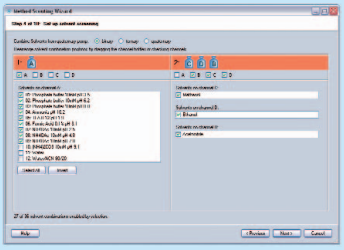
Software choices to meet your needs



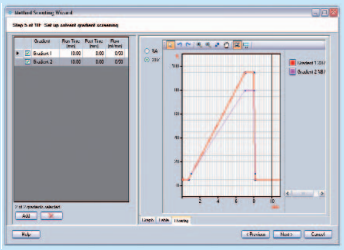
1. Define project
Choose scouting combinations and base method.



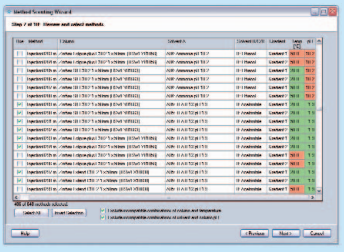
2. Select columns
All installed columns are shown automatically.



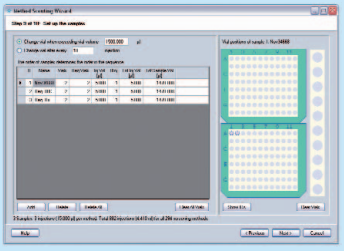
3. Select solvents
Pump types and valves are automatically detected.



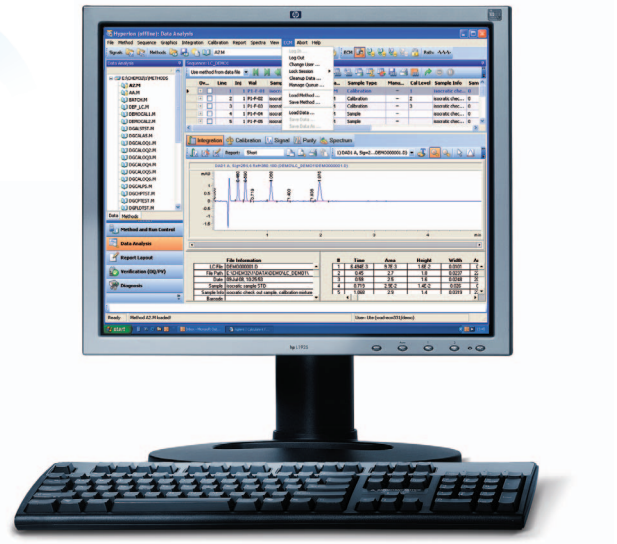
4. Define gradients
Select between different gradients and temperatures.



5. Review and select screening methods
Check for incompatible combinations.



6. Set up samples
Define injection volumes and number of repetitions.



Advanced functionality with Agilent partner solutions

Fulfilling highest demands in analytical method development

If you need your analytical methods to be developed in a fully automated fashion, including automated optimization of separation parameters in unattended operation combined with highly sophisticated peak tracking and reporting functionality, Agilent has partnered with Advanced Chemistry Development and with ChromSword.

ChromSword – Automated Method Development

Advanced Chemistry Development

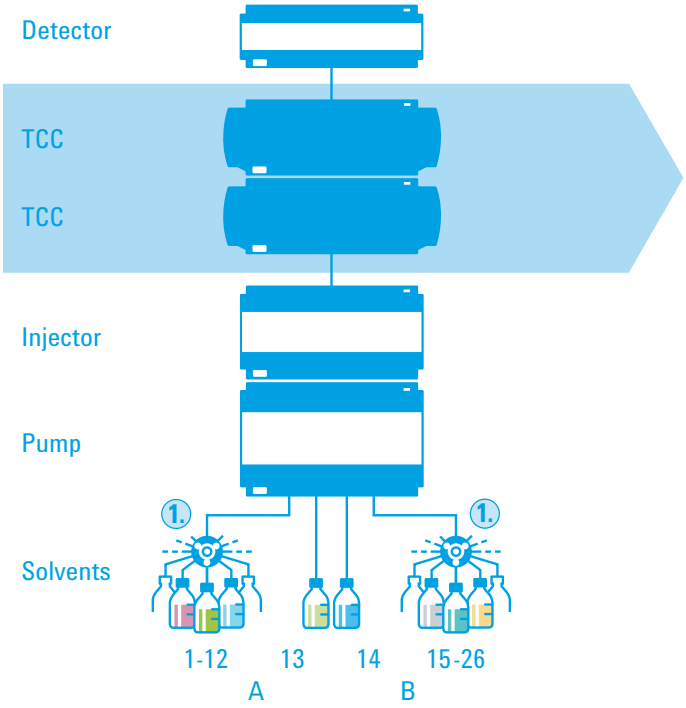
ACD/Labs

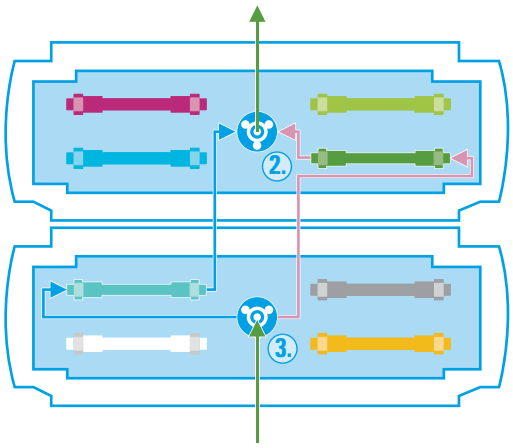
Superior hardware and unsurpassed ease-of-use

Flexibility and performance

The new Agilent 1290 Infinity Thermostated Column Compartment (TCC) is the heart of any Agilent method development or multi-method system. Up to three TCCs can be clustered together – regardless of whether the system is based on 1200 Series, 1200 Series SL or 1290 Infinity modules. New Agilent Quick-Change valves introduced with the 1290 Infinity LC give you easy access to capillary fittings for straightforward installation and maintenance.

System overview:

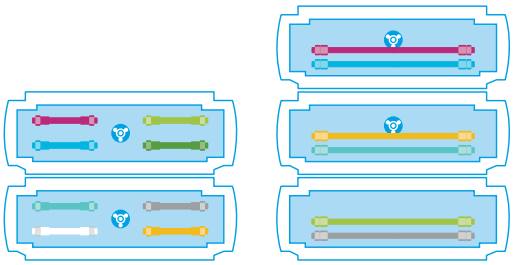




1. External solvent selection valve for up to 12 additional solvents
2. 8-position/9-port outlet valve for column selection
3. 8-position/9-port inlet valve for column selection

All valves available for different pressure ranges

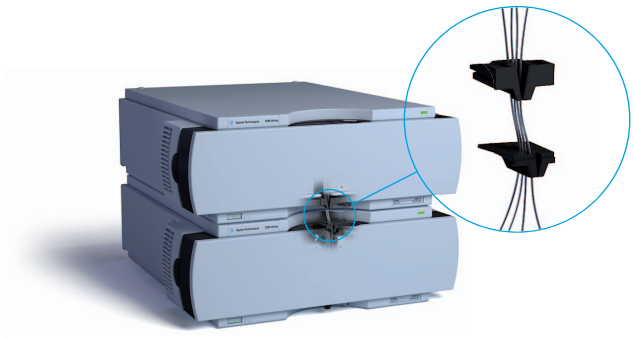
You can extend the number of solvents available using one or two external 12-channel selection valves. Choose a configuration that meets your needs – either 24 aqueous buffers or 12 aqueous buffers and 12 organic modifiers. Once set up in the software, simply select your solvent from a list. Valve mounting aids and tubing kits are available for tidy and optimized setup. With a binary pump in the system, up to 169 binary solvent combinations are possible. A quaternary pump lets you create up to 193 combinations. When eight columns are installed this means over 1000 unique separation conditions are available – without the need to interact with the system. In contrast to certain commercially available instrumentation, the Agilent system facilitates the use of all typical analytical column dimensions.



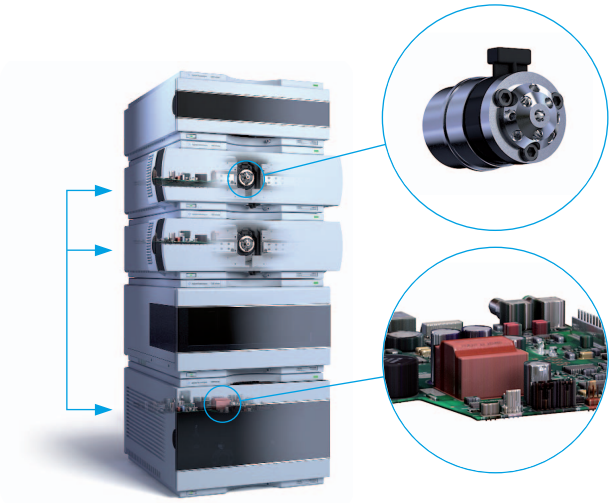
Fewer worries, less interaction – more results

Technical innovations with user focus

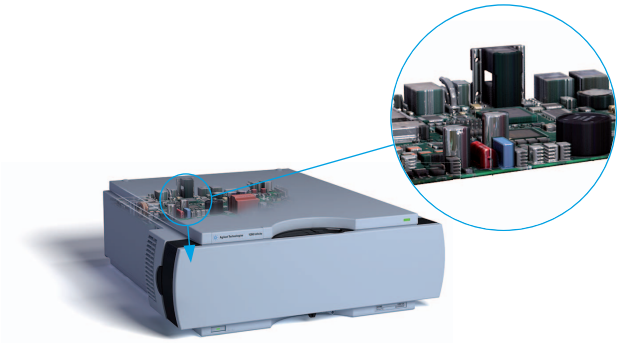
The new Agilent TCC includes a range of simple enhancements that makes it exceptionally easy to use.



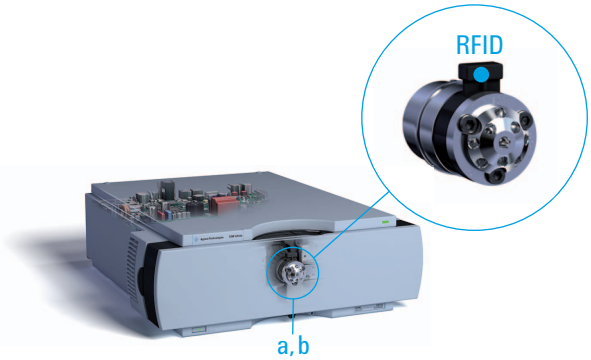
The control software's innovative clustering concept facilitates handling of up to three TCCs, treating them as if they were a single instrument. New capillary guides organize the fluid connections between TCCs and prevent damage to the tubing.



Unique firmware-based flow control protects the columns from sudden pressure shocks by reducing the flow automatically, monitoring the pressure and switching the valves. The flow is then reestablished.

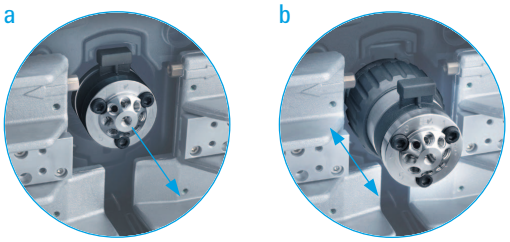


A new sensor in the TCC front panel warns the operator when the panel is not closed properly, preventing poor thermostatting of the column that could lead to irreproducible results.



Radio-frequency identification (RFID) tags on the valve heads provide the system with details of the valve type, serial number of switches and pressure setting.

The new Agilent Quick-Change valves are mounted on pull-out rails, making installation, plumbing and maintenance easier than ever before.

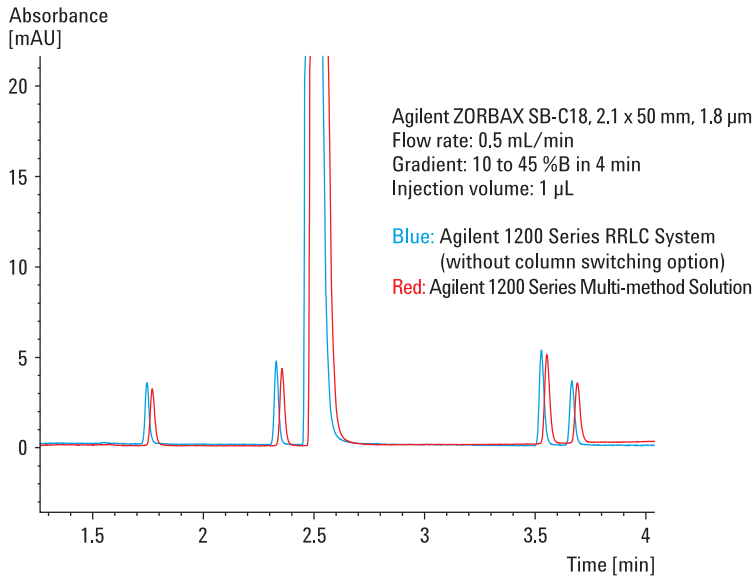


Optimized for demanding conditions

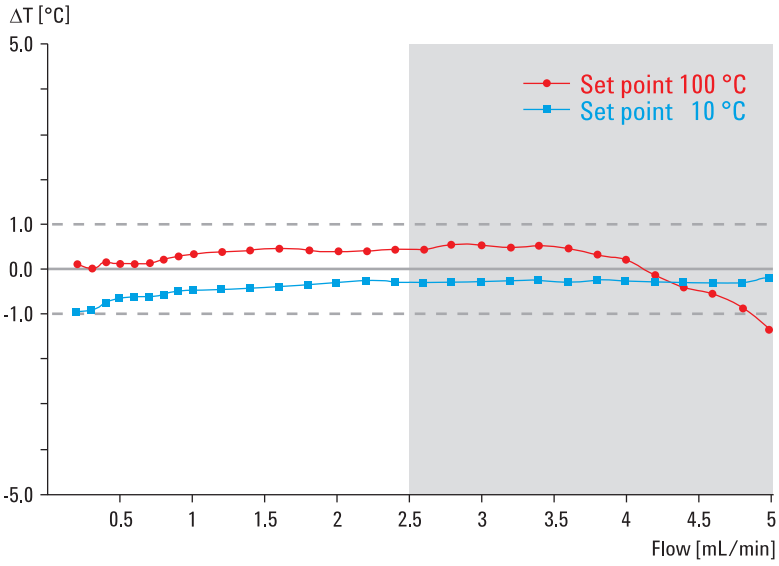
Predictable performance

The unmatched flexibility of the Agilent 1200 Series Multi-method Solution is complemented by outstanding performance. Two parameters – delay volume and thermal behavior – are of particular importance in this context. Adding valves and additional capillaries to a system can increase delay volume and must be managed carefully. If not, peak dispersion occurs, leading to poor results.

With the Agilent 1200 Series Multi-method Solution, delay volumes are carefully controlled – resulting in minimal peak broadening even under demanding conditions with narrow-bore, sub-2-µm columns.



Precise temperature control is vital when methods developed on one system need to be transferred to another. Not only has the 1290 Infinity TCC industry-leading specifications but also the temperature control of different Agilent TCC models is excellent. The variation between a 1290 Infinity TCC and a 1200 Series TCC SL is typically less than ±0.5°C at maximum temperature settings across the entire flow range.



Columns and services

Complete solutions

Agilent ZORBAX columns and consumables

From normal phase to reverse phase, there is a ZORBAX HPLC column that offers a solution for your specific application. Agilent's ZORBAX columns are optimized for high throughput analysis with the widest range of Rapid Resolution (3.5 µm) and Rapid Resolution High Throughput (1.8 µm) columns. New Rapid Resolution High Definition (1.8 µm) columns provide high pressure compatibility – up to 1200 bar. There are over 600 choices for analytical columns covering the broadest range of applications and conditions.

Column kits are available for Rapid Resolution (3.5 µm) and Rapid Resolution High Throughput (1.8 µm) columns with 2.1 mm and 4.6 mm ID. The kits have three different stationary phases selected to optimize rapid method development.

Capillary kits for different column dimensions allow you to optimize system setup.

New Agilent Rapid Resolution High Definition (1.8 µm) columns provide high pressure compatibility with the Agilent 1290 Infinity LC for for optimized development of UHPLC methodologies.

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.

Stay focused on your development process and leave the rest to Agilent Service and Support

Agilent's experienced service and support team is ready to help with a wide array of programs designed to maximize the performance of your instruments, minimize downtime, and optimize productivity.

Agilent offers a wide array of technical support and contract services that cover all your instrument service needs:

- On-site preventive maintenance to ensure dependable operation and minimize unplanned downtime.
- Troubleshooting, maintenance and repair for Agilent as well as non-Agilent instruments.
- Compliance services and industry-accreditation support services.
- Remote monitoring and diagnostics for real-time support and on-demand reporting.
- Expert consulting and training.

The Agilent Service Guarantee

Get a level of confidence only available from Agilent. 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.

System characteristics

Final system specifications depend on the configuration

Column dimensions:	Typically 2.1 – 4.6 mm ID, up to 300 mm length	
Number of columns:	Up to 8 optionally a waste and/or bypass-line (reducing number of columns)	
Number of temperature zones:	Up to 6	
Number of solvents:	Up to 26	
Flow rate:	1290 Infinity binary pump:	2 mL/min up to 1200 bar 5 mL/min up to 800 bar
	1200 Series binary pumps:	Up to 5 mL/min
	1200 Series quaternary pump:	5 mL/min up to 400 bar 10 mL/min up to 200 bar
Pressure range:	1200 bar (1290 Infinity) 600 bar (1200 Series RRLC) 400 bar (1200 Series LC)	
Detection:	Agilent 1200 Series and 1290 Infinity detectors like variable wavelength, multiple wavelength, diode array, fluorescence, refractive index, evaporative light scattering or third party detectors through Agilent A/D converter.	
MS detection:	Agilent 6100 Series Quadrupole MS	
Software support:	Direct control by Agilent data systems with easy-select functionality of columns and solvents: • open-access support • method scouting/method screening support • automated method optimization (by Agilent partners)	

(for more detailed specification refer to the specifications of the individual modules you want to have in your final method development system)

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U.S. and Canada
1-800-227-9770, agilent_inquiries@agilent.com

Europe
info_agilent@agilent.com

Asia Pacific
inquiry_lsca@agilent.com

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