

The new Agilent 1200 Infinity Series

- Why it is INFINITELY BETTER -



1220
Infinity LC

1260
Infinity LC

1290
Infinity LC

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Systems & Solution

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Germany



Better helping you solve your problems

My boss will never approve an UHPLC system...

They want shorter turnaround times but cutting my staff...

If the system fails again I will have production on my back all day!

Can't I get a higher resolution with my HPLC?

How can I differentiate to my competitors?

We don't have time to get everybody trained to a new system...

We not even have the time to implement improvements!



The **new** Agilent 1200 Infinity Series

Raising the Standard in HPLC –
Highest Value for any
Application and
Budget

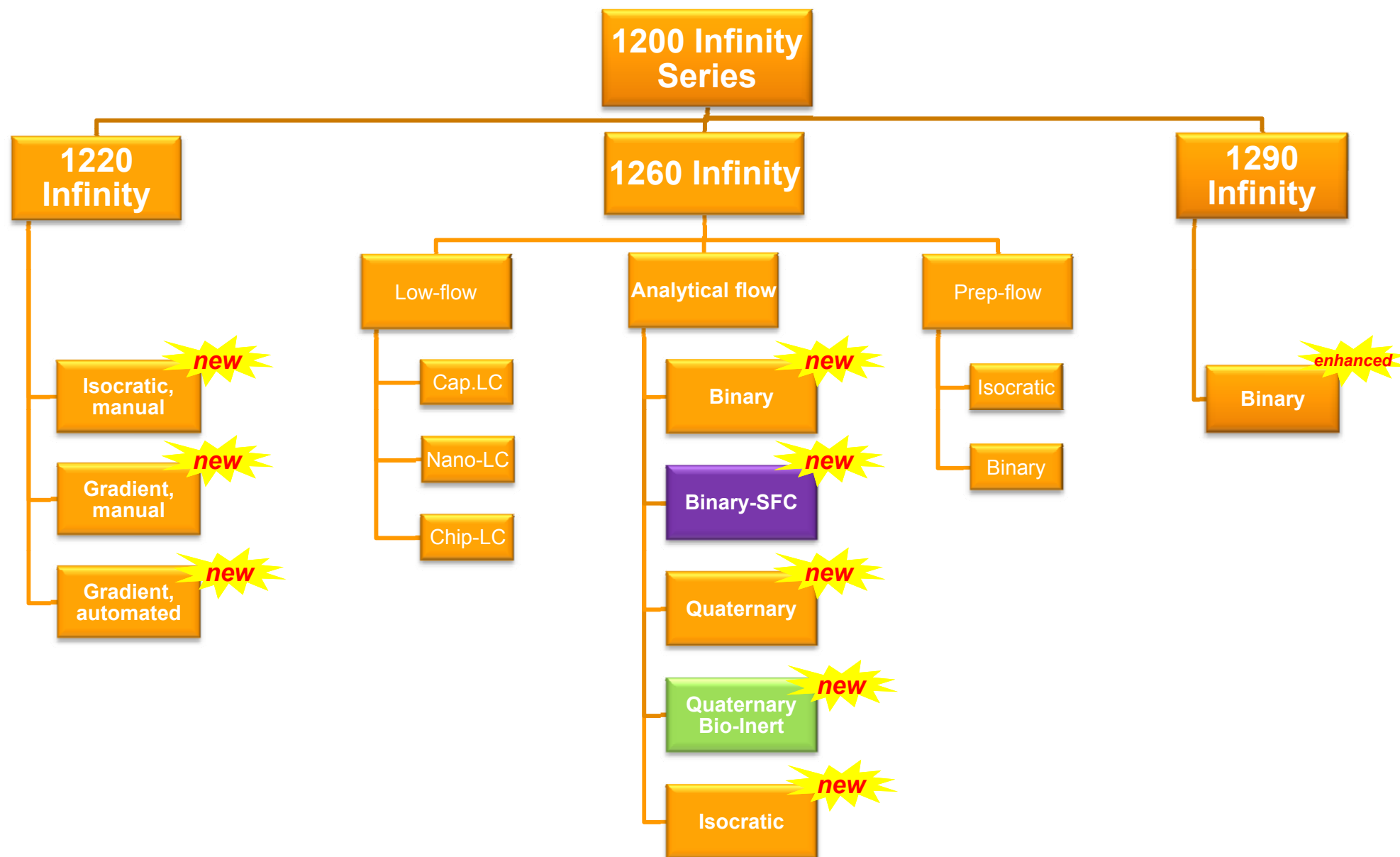
1260 Infinity
Infinitely more confident

1290 Infinity
Infinitely more powerful

1220 Infinity
Infinitely more affordable



The new Agilent 1200 Infinity Series



The new Agilent 1200 Infinity Series

1200 Infinity
Series



**1220
Infinity LC**

**Integrated
600 bar
80 Hz**

Most affordable
HPLC and RRLC
Easy to use



**1260
Infinity LC**

**Modular
600 bar
80 Hz**

Up to 10x UV Sensitivity
100% HPLC Compatible
HPLC Price – RRLC Capability



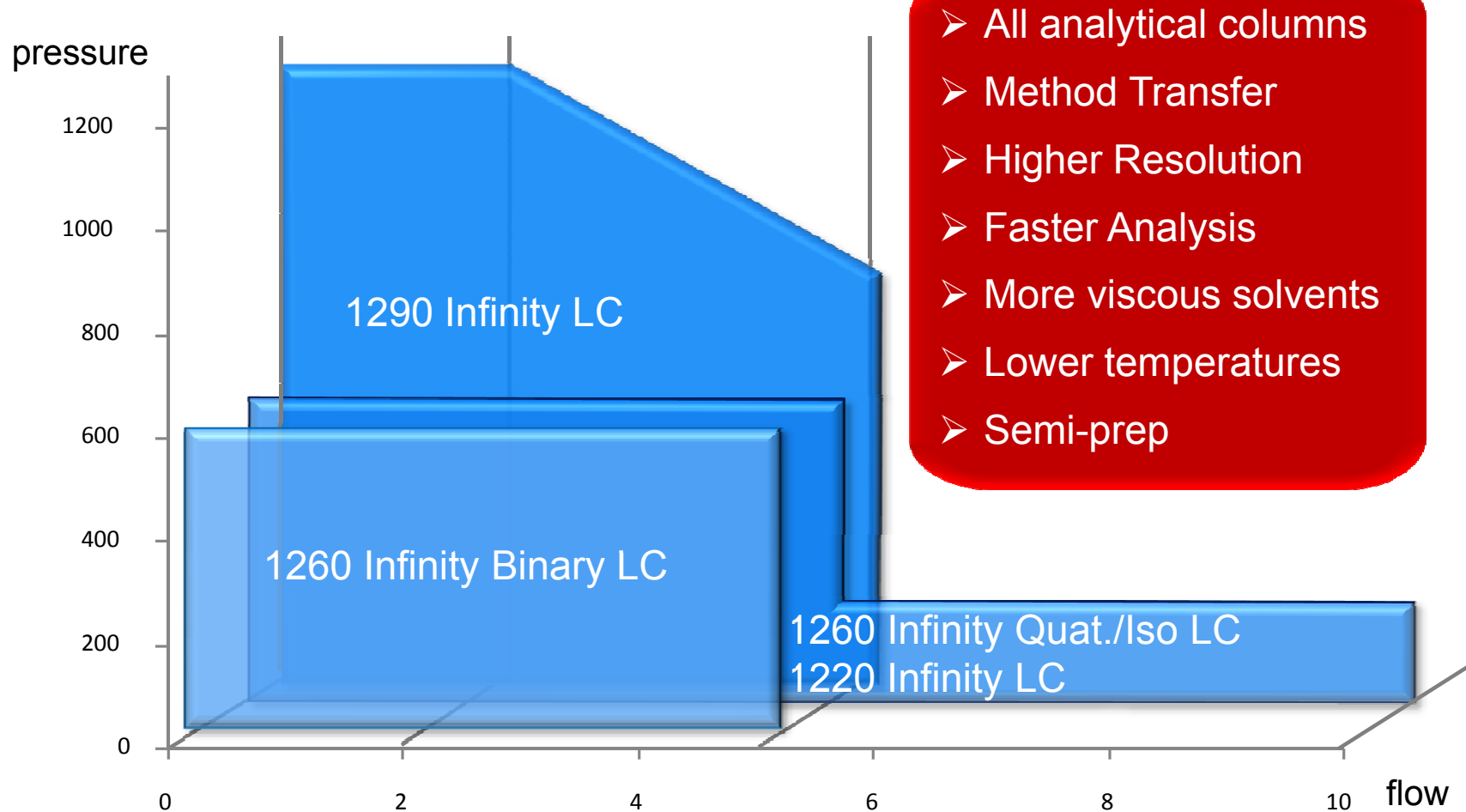
**1290
Infinity LC**

**Modular
1200 bar
160 Hz**

Highest Performance
Highest Flexibility
HPLC Service Costs



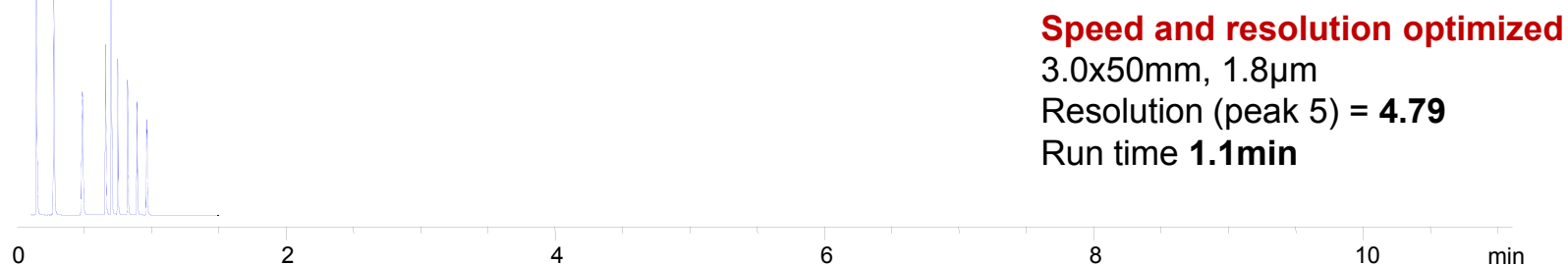
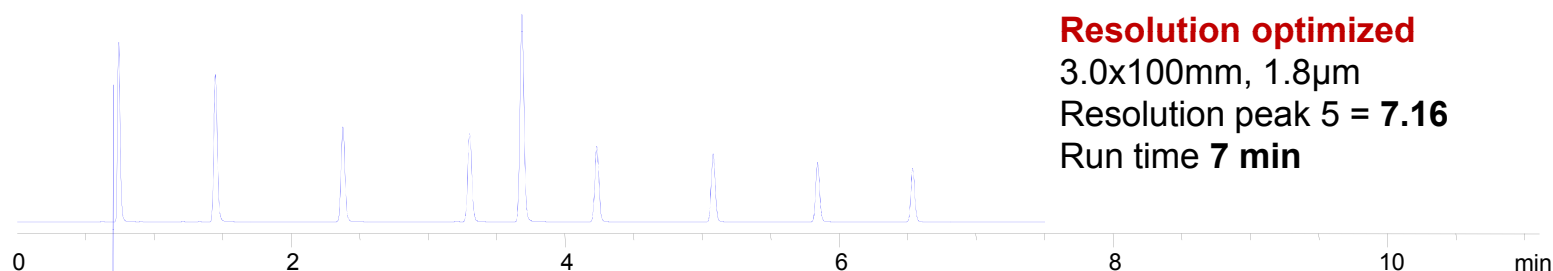
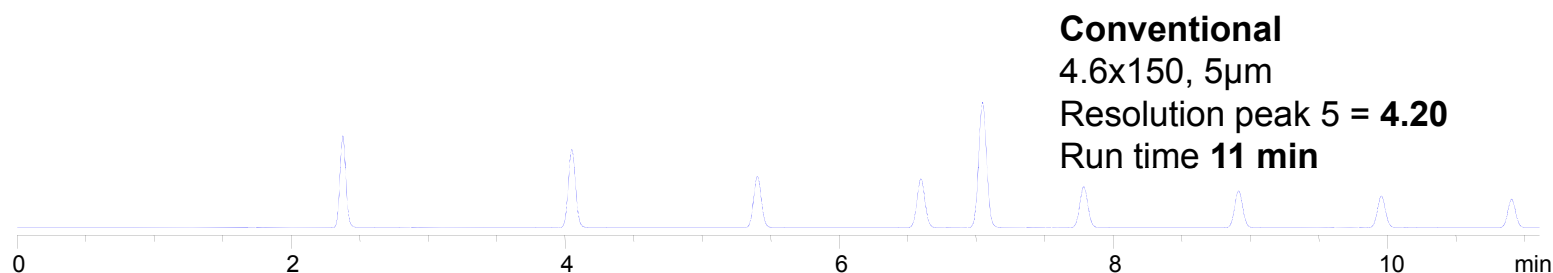
The new Agilent 1200 Infinity Series



1260 Quaternary LC and 1220 Gradient LC

RRLC Performance for EVERY LAB!

10x productivity increase and improved data quality!



NEW: 1220 Infinity LC

Isocratic and Gradient RRLC at most affordable Price



Most affordable access to 1260 Infinity Quality & Performance

- Available flavors:
 - 1220 Infinity manual isocratic system
 - 1220 Infinity manual binary gradient system
 - 1220 Infinity automated binary gradient system
- Productivity: **10x higher than conventional HPLC systems**
 - **600 bar** up to 5 mL/min (10 mL/min at 200 bar) and **80 Hz** data rate
- Technology and Quality: **1260 and 1290 Infinity inside!**
 - Degassing unit: Same Parts as 1260 Quat/1290 Bin degassing unit
 - Pump: Same Parts/Design as 1260 Quat Pump (limited to two channels)
 - Autosampler: Same Parts/Design as 1260 ALS (no Cooling)
 - VWD: Same Parts/Design as 1260/1290 VWD
- Price: significantly lower than 1260 Infinity Isocratic / Quaternary Systems!



NEW: 1260 Quaternary LC System

Enhanced Quaternary RRLC at Quaternary HPLC Price



The **evolution** of the best-selling 1200/1100 Series Quat LC*

- Productivity: **10x higher than conventional HPLC systems**
 - **600 bar** up to 5 mL/min (10 mL/min at 200 bar) and **80 Hz** Detector Speed
- Sensitivity: Up to **10x higher than conventional HPLC systems**
 - 10x by new 1260 Infinity DAD with 6 cm flow cell
 - 2x by new 1260 Infinity VWD and 1260 Infinity DAD with 1cm flow cell
- Technology: Leverage of **1290 Infinity LC** innovations
 - Pump: New, build-in degassing unit and next generation inlet valves
 - Detectors: Next generation VWD and DAD-technology
- Price: Similar as 1200 Series Quat System (400 bar, 20 Hz!)

*) 60,000
systems sold!



NEW: 1260 Binary LC System

Enhanced Binary RRLC Capability at HPLC Price



The successor of the 1200 Series RRLC

- Sensitivity: **10x higher sensitivity** than 1200 Series RRLC by new 1260 Infinity DAD
- Productivity: Same as the highly successful 1200 Series RRLC – for 2.1 mmID to 4.6 mmID columns, by scalable delay-volume
- Sampler-Performance: 0.004 % carry-over and 100 µL injection by new 1260 Infinity High Performance Autosampler. 40 µL kit for delay volume reduction.
- Technology: Leverage of **1290 Infinity LC** innovations
 - Pump: New next generation inlet valves for better performance
 - Detectors: Next generation 1290 Infinity DAD technology
 - HiP Autosampler: leveraging of many parts of the 1290 Infinity autosampler
- Significantly lower system price than 1200 Series RRLC



1290 Infinity LC

More Affordable Access to the World's Best LC



NEW: UHPLC Productivity with HPLC Service Costs

- **30 % Price Reduction by March 1st**, attractive upfront contracts
- Based on
 - proven robustness – 2x higher than 1100 Series at introduction
 - Increased parts lifetime / longer maintenance intervals
 - new design-for-supportability technology for faster maintenance, diagnostics and repair
- Technology:
 - **1200 bar system pressure** for pump, autosampler **and** valves to match any sophisticated application
 - **Highest detector sensitivity** on the market (0.6 μ AU/cm noise level)
 - **Lowest autosampler carry-over** (<0.001 %, <10 ppm for UV and MS detection in combination with 1290 Infinity Flexible Cube)



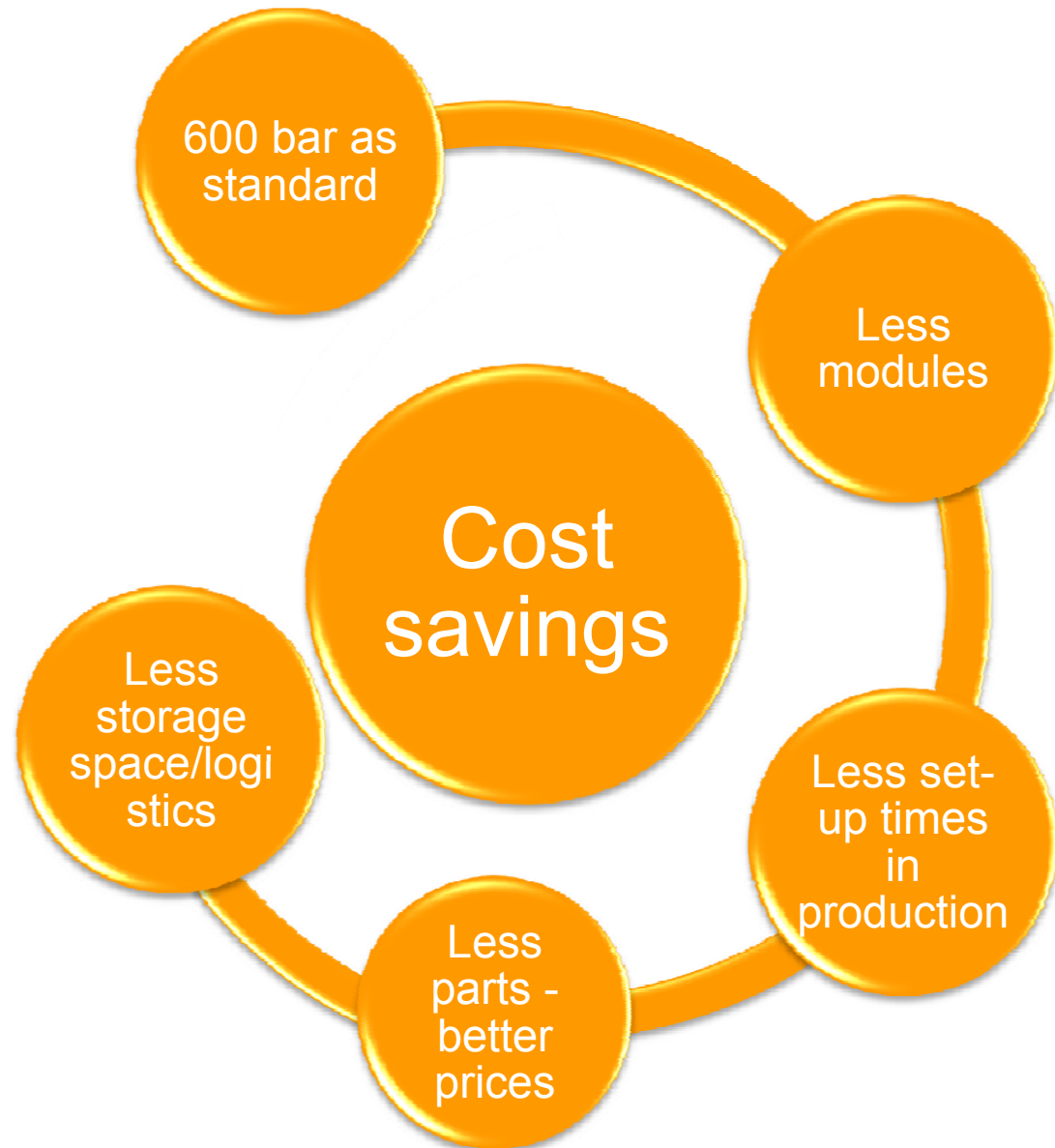
How could they reduce all the prices?

There must be a trick!

Actually there is a trick:

All cost savings were transferred directly to the product!

That is, to you!



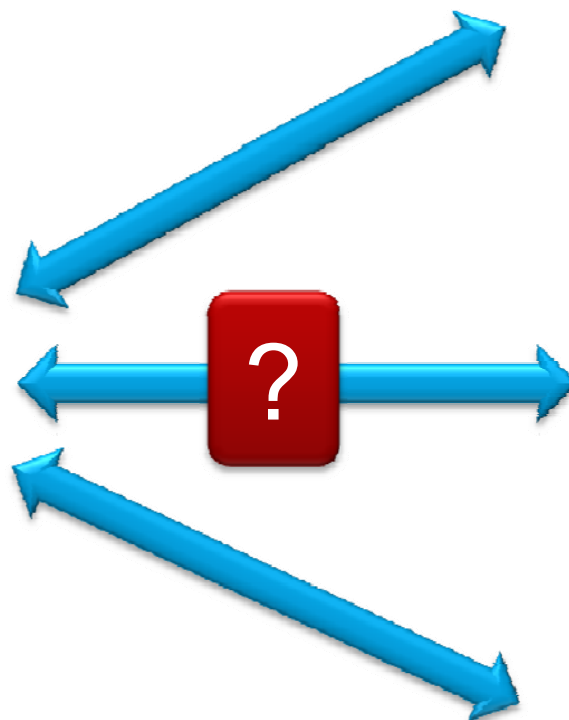
Method Transferability – how is this possible?

Run Method and Get Same Result?

1200
Series



1100
Series



1220
Infinity



1260
Infinity



1290
Infinity



What is required for seamless Method Transfer?

Either comparable systems...



| | 1100/1200 Series HPLC | 1260 Infinity Quaternary LC | 1200 Series RRLC – Std. | 1260 Infinity Binary LC |
|---------------------|-----------------------|-----------------------------|-------------------------|-------------------------|
| Max Flow Rate | 5 mL/min | 5 mL/min | 5mL/min | 5 mL/min |
| Delay Volume | 600-900 µL | 600-800 µL | 600-800 µL* | 600-800 µL* |
| Oven Design | A | A | A | A |
| Column Length | 300 mm | 300 mm | 300 mm | 300 mm |
| Injection Principle | Variable Loop | Variable Loop | Variable Loop | Variable Loop |
| Inj. Volume - Std | 100 µL | 100 µL | 100 µL | 100 µL |
| Inj. Volume - Ext. | 1500 µL | 1500 µL | 1500 µL | 1500 µL |
| Area RSD | <0.25 % | <0.25 % | <0.25 % | <0.25 % |

* Smaller delay volumes possible

Seamless Method Transfer



Method Transferability: 1260 Quat / 1220 Grad

100% HPLC Methods Compatibility – Riskless Replacement

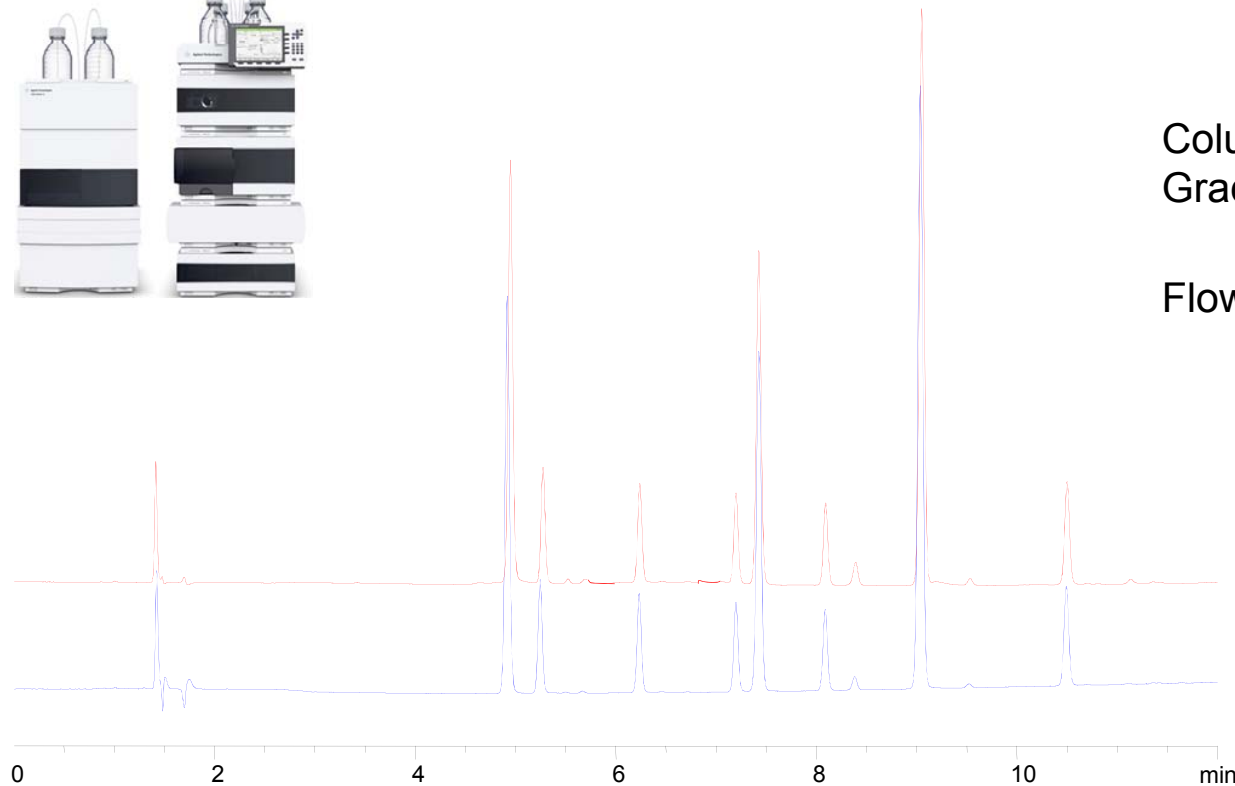
Run existing conventional HPLC methods and get same result !



Column: 4.6 x 150 mm, 5 μ m
Gradient: 0 min 20 % B
10min 95 %
Flow rate: 1 mL/min

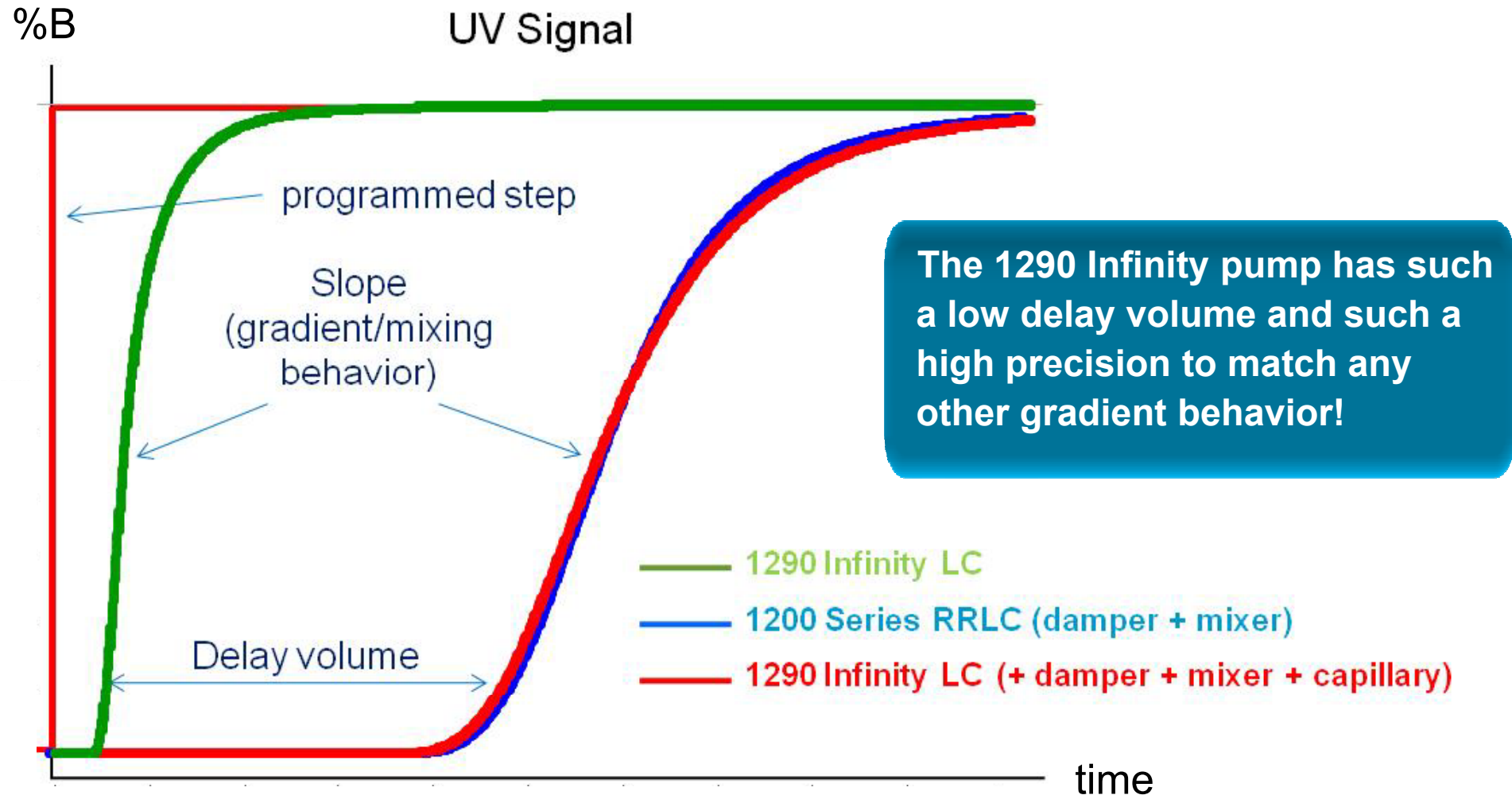
1260 / 1220 Infinity LC
Quat / Gradient system

1100 / 1200 Series
Quaternary system



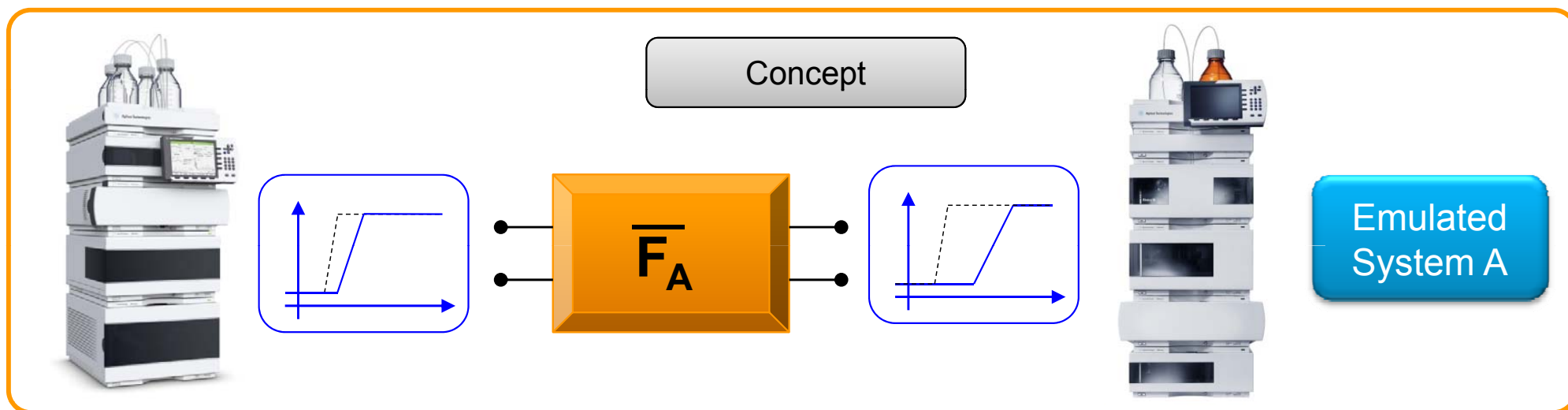
Method Transferability: 1290 Infinity LC

...or a superior LC-system like the 1290 Infinity LC



Method Transferability: 1290 Infinity LC

*System Emulation Technology (available 2011)**



Select System to be emulated by a simple mouse click:



Agilent 1100 Series



Agilent 1200
Series RRLC



Agilent 1260
Infinity LC



Agilent 1220
Infinity LC

Other!!!

* Existing 1290 Infinity will be upgradeable

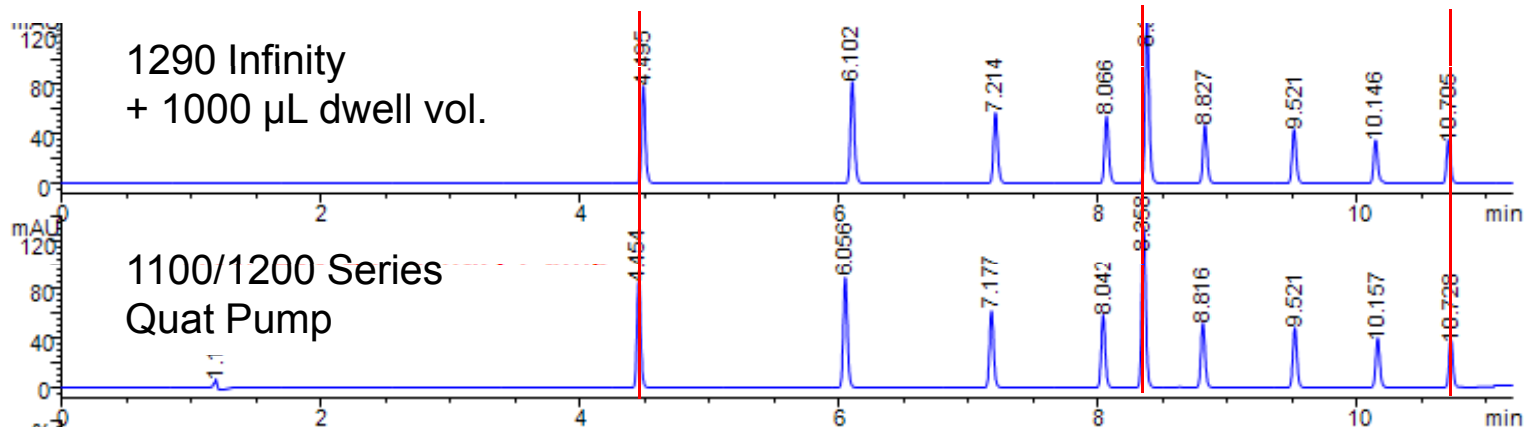


Agilent Technologies

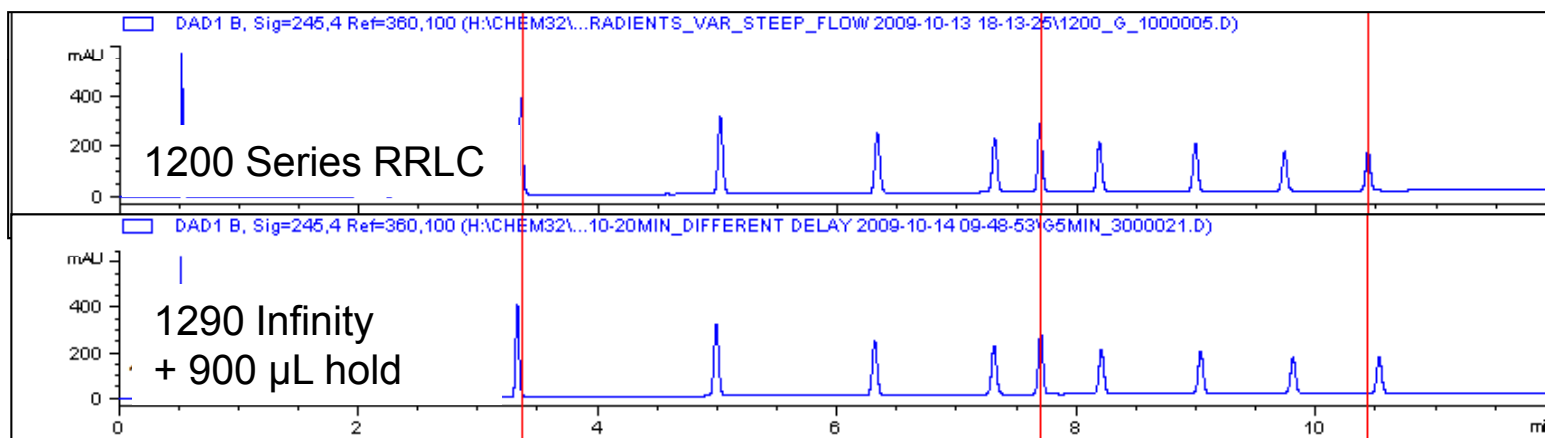
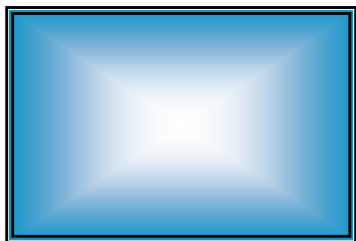
Method Transferability: 1290 Infinity LC

Bridging Solutions

1. Add physical Volume (plumbing solution)

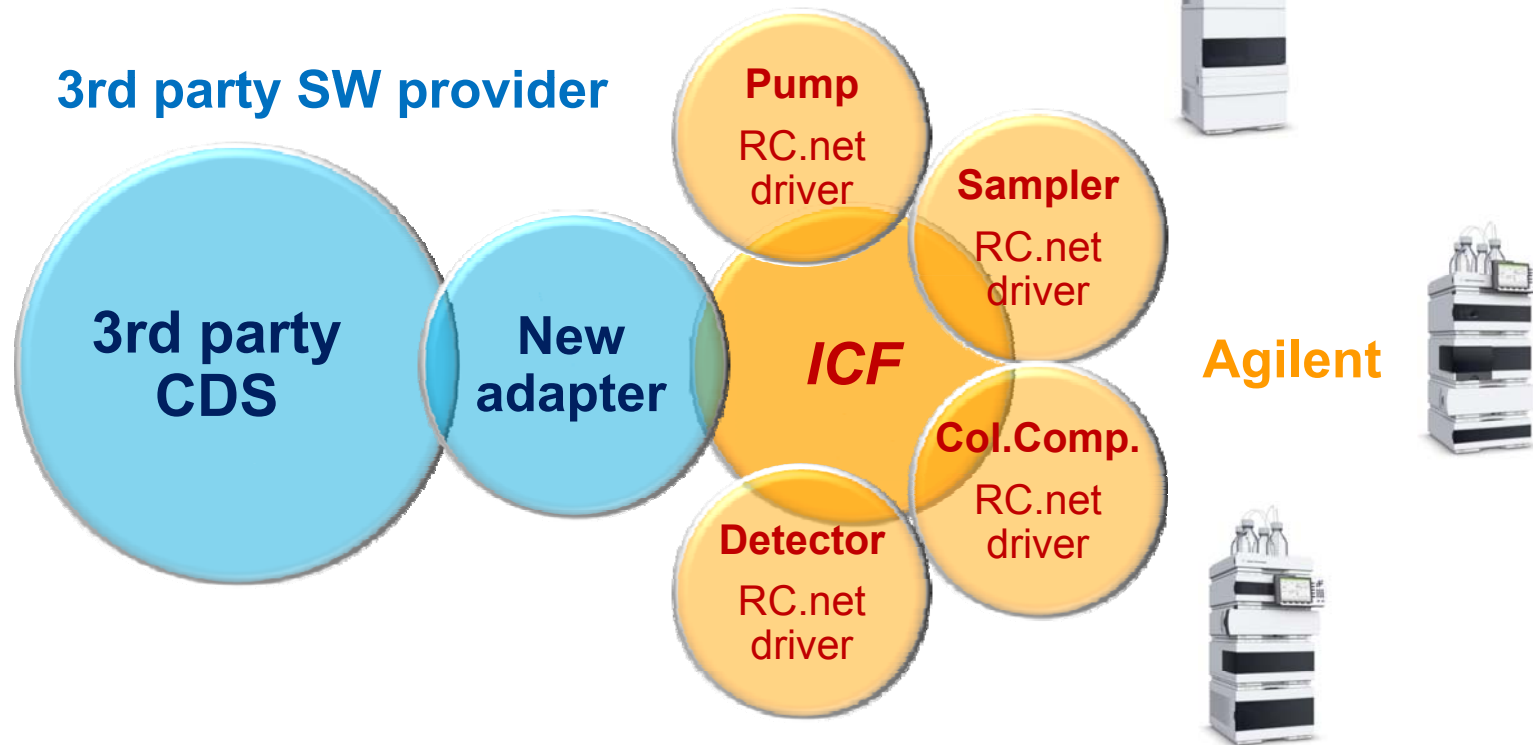


2. Programmed Isocratic Hold



NEW: Instrument Control Framework (ICF)

The Ultimate 3rd Party Connectivity Solution



- Agilent **developped** and specified the ICF
- Agilent **provides** RC.net drivers for its LC-modules
- Agilent **provided** ICF **for free** to 3rd party CDS provider
- 3rd party CDS provider **only** needs to implement the ICF into their software



NEW: Instrument Control Framework

The Ultimate 3rd Party Connectivity Solution

Advantages for Customers

- **Full and Robust Control** – all features supported by Agilent drivers
- **Immediate Control** – Plug and Play (like a printer driver)
- **Future Proof Control** – Backwards compatibility of functional extension

Advantages for Application Software Suppliers

- **Cost Savings** – Develop one Adapter instead of 50 Drivers, no more instrument purchase required
- **Customer Satisfaction** – Immediate control, no HW-features missing anymore
- **Risk Reduction** – Use drivers tested by Agilent to perfectly match the HW



NEW 1200 Infinity Series

More workflow-automation and application-based solutions

New



Analytical
SFC

New



Bio-inert
HPLC



Nano LC
& Cap LC



Preparative
LC & LC/MS



GPC
SEC



Isocratic
LC

New



Multi-method and
Method Development



High-throughput
LC & LC/MS

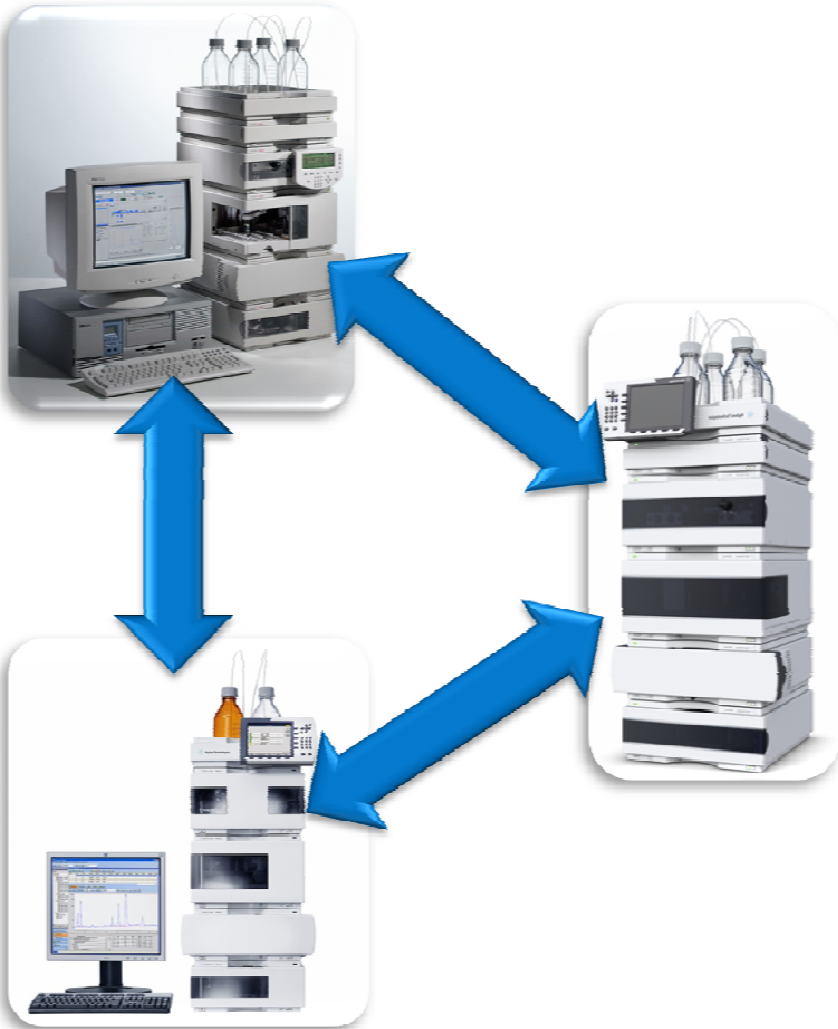


Nanoflow
HPLC-Chip MS



NEW: 1200 Infinity Series – Agilent Value Promise

Infinitely Higher Investment Protection



Full module compatibility

- Mix 1220, 1260, 1290 Infinity LC with 1100 and 1200 Series – and future systems !

Stepwise upgrade – now and in future:

- Exchange Detector only – for higher sensitivity and detection speed.
- Exchange Pump and Autosampler only – for ultra-high resolution LC on latest 1.8 μm rapid resolution column technology
- Exchange Column Compartment only – to upgrade to a fully automated multi-method or method development solution supporting up to 8 columns and 24 solvents.



Summary

The Agilent 1200 Infinity Series – INFINITELY BETTER!



Appendix



Where to find more information?

Web-sites:

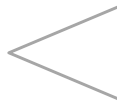
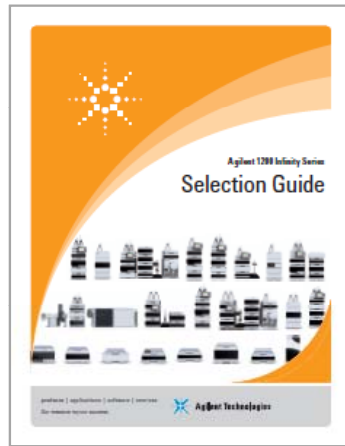
Online System Configurator:

Agilent LC Expert eSeminar Series:

www.agilent.com/chem/infinity

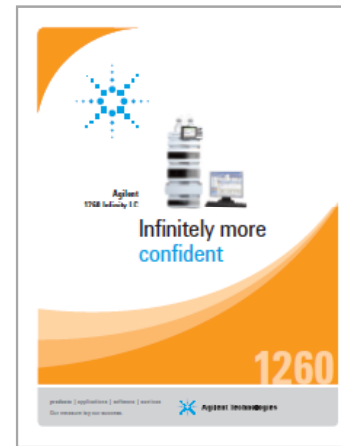
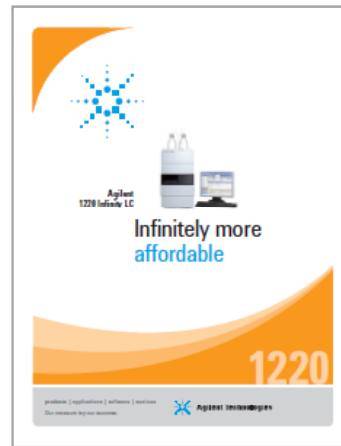
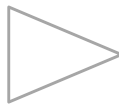
www.agilent.com/chem/1200configurator

www.agilent.com/chem/LC-eSeminars



Overview Brochure
Selection Guide

System Brochures



NEW: 1260 Infinity Diode Array Detector

10x higher Sensitivity for lower Price



NEW: Successor of 1200 DAD and DAD SL



- Sensitivity:
 - Same as 1290 Infinity DAD
 - Up to 10x higher than 1200 Series DAD and DAD SL
- Technology:
 - Same as 1290 Infinity DAD
 - 80 Hz (instead of 160 Hz on 1290 Infinity DAD)
 - 4 nm fixed slit (instead of variable slit on 1290 Infinity DAD)
- Price:
 - lower than 1290 Infinity DAD
 - lower than 1200 Series DAD SL (G1315C)
 - Comparable to 1200 Series DAD (G1315D)!!!



NEW 1260 Infinity Bio-inert HPLC

Infinitely Better for Bio-molecule Analysis



100% Bio-inert

- Metal-free sample flow path (instrument and column)
- Stainless steel-free solvent flow path
- **Widest pH range** (1-13, short-term 14)

10x sensitivity and 600bar power range

- Lowest LOD and highest resolution per time
- From **lowest pressure** up to **highest pressure** STM columns
- Unique resolution for protein applications

Bio-analysis and Bio-purification

- Analytical flow and **semi-prep fraction coll.** up to 10 mL/min

Most complete offering for NBE Characterization

- Therapeutic protein analysis using SEC, IEX, peptide mapping



NEW 1260 Infinity Bio-inert HPLC

Infinitely Better for Bio-molecule Analysis



Modified 1260 Infinity Quaternary LC

- Titanium Pump, no SST, incl. active seal wash
- Metal-free Autosampler
- Metal-free Columns
- Metal-free DAD flow cell
- Metal-free capillaries and connections

Resulting in

- Highest salt tolerance
- Lowest surface interaction
- Widest pH-range (1-13, short-term 14)



NEW 1260 Infinity Analytical SFC System

Infinitely Better for Supercritical Fluid Chromatography



*Makes routine
analytical SFC a reality!*

Highest Analytical SFC Performance

- **HPLC-like Sensitivity** (10x over existing instruments)
- Precision and Dynamic Range >10,000 for accurate quantitation of 0.01 % level impurities

Lowest Operating Cost, Green Chemistry

- **10-15x lower operating costs** by compatibility with **standard grade CO₂** instead of liquid SFC grade CO₂
- Lowest solvent consumption and waste generation

Ease of use and Reliability

- Highest investment protection by modular, reversible design
- ChemStation control, data analysis and reporting
- Agilent warranty and service quality
- Single Vendor Solution – Single Vendor Support

