



**Introducing HPLC solutions from
Thermo Fisher Scientific**

An Exciting Combination!



Chromatography Powerhouse

#3 in Chromatography ~\$650M.
On our way to #1 by 2020

IC, HPLC, UHPLC, Nano HPLC,
GC, sample prep, software and
consumables

Integrated LC/MS Solutions

Leader in MS becomes a leader in
LCMS

LCMS & GCMS including single
quad, tandem (QQQ & ion trap)
and hybrid techniques

Commercial Reach & Deep Expertise

350,000 Customers
150 Countries
37,000 Employees

Increased presence in Asia-Pacific
Deep Applications Expertise

All UltiMate 3000 Systems Now Fully UHPLC Compatible

UHPLC⁺ focused

Basic Automated



- Highly economic & reliable
- 620 bar UHPLC compatible
- Flow rates up to 10 mL/min
- 100 Hz detector range
- Modular flexibility

Standard



- 3rd Generation Modules
- 620 bar UHPLC compatible
- Flow rates up to 10 mL/min
- Oven temp. 5 – 80 °C
- 100 Hz DAD, MWD, VWD, FLD, CAD
- Highest flexibility

x2 Dual LC



- Two systems in one
- 620 bar UHPLC compatible
- Flow rates up to 10 mL/min
- Oven temp. 5 – 80 °C
- Automated Application Switching
- Parallel and Tandem LC
- Online SPE-LC
- Automated method scouting
- Turn key Viper kits for ease of use

RSLC



- Binary and Quaternary UHPLC systems
- 1000 bar up to 5 mL/min
- 800 bar up to 8 mL/min
- Oven temp. 5 – 110 °C
- 200 Hz DAD, MWD, VWD, FLD
- Improved sub 2- μ m particle column compatibility
- Ultrafast/ultra resolution system

x2 Dual RSLC



- x2 Dual UHPLC System
- Two systems in one
- 1000 bar up to 5 mL/min
- 800 bar up to 8 mL/min
- Oven temp. 5 – 110 °C
- 200 Hz DAD, MWD, VWD, FLD
- Parallel and Tandem LC
- Online SPE-LC
- Automated method scouting
- Offline 2D-UHPLC
- Turn key Viper kits for ease of use

RSLCnano



- UHPLC system for Nano/Cap/Micro range
- 20 nL/min – 50 μ L/min up to 800 bar
- Continuous direct flow
- New standard in retention time precision
- Snap-in valves
- nanoViper fitting system for easy operation

Basic



Standard



x2 Dual LC



RSLC



x2 Dual RSLC



RSLCnano

Dionex' Industry Leading UHPLC Portfolio

Pumps

Isocratic



Binary



Quaternary



Dual-Gradient



Nano/Cap Flow



Autosampler

Basic



Standard



Thermostatted



+ Fractionation



Nano/Cap Flow



Column Compartments

Standard



High Temp.



With Valves



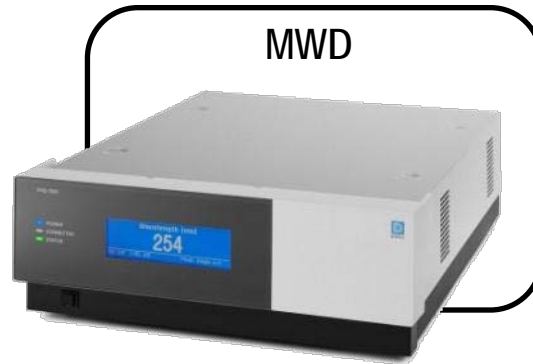
Viper/nanoViper



Dionex' UHPLC-Compatible Detectors



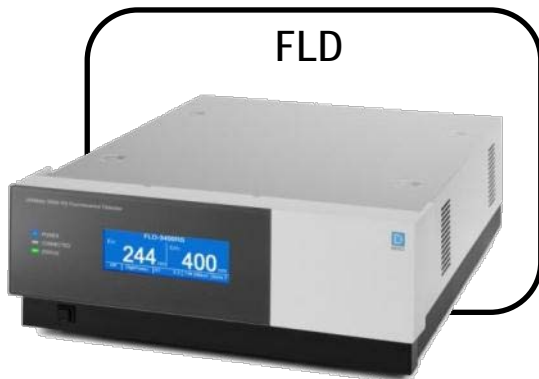
100Hz VWD-3100
200Hz VWD-3400RS



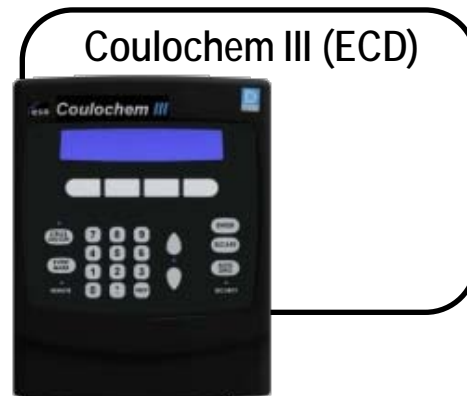
100Hz MWD-3000SD
200Hz MWD-3000RS



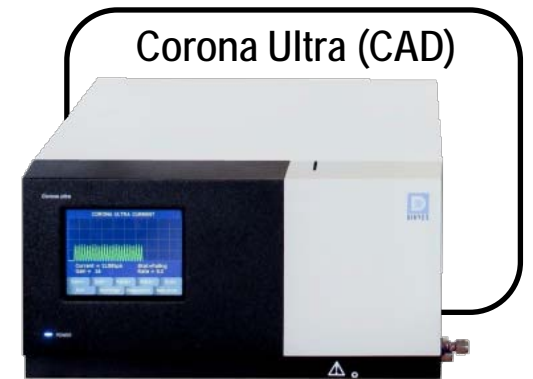
100Hz DAD-3000SD
200Hz DAD-3000RS



100Hz FLD-3100
200Hz FLD-3400RS



100Hz Coulochem III (ECD)



100Hz Corona Ultra (CAD)

The most complete UHPLC detector range

Accela Instruments

Accela increases laboratory productivity, through its versatility with conventional and high speed chromatographic capabilities in an efficient, easy to use system that handles pressures up to 1250bar.



Accela 1250 and Accela 600

- Maximum operating pressure of **1,250bar** across the entire flow rate range up to **2ml/min** (Accela 1250)
- Maximum operating pressure of **600bar** across the entire flow rate range up to **5ml/min** (Accela 600)
- **Extremely low pump delay volume**
- **Quaternary** capability
- Equipped with **Force Feedback Control (FFC)** technology to provide extremely stable baselines without the use of pulse dampeners and greatest flow rate and gradient accuracy without the need of sensors that are in contact with the mobile phase



EASY-nLC Product Line

- EASY-nLC II

- 300 bar



- EASY-nLC 1000

- 1000 bar
- **ASMS launch!**

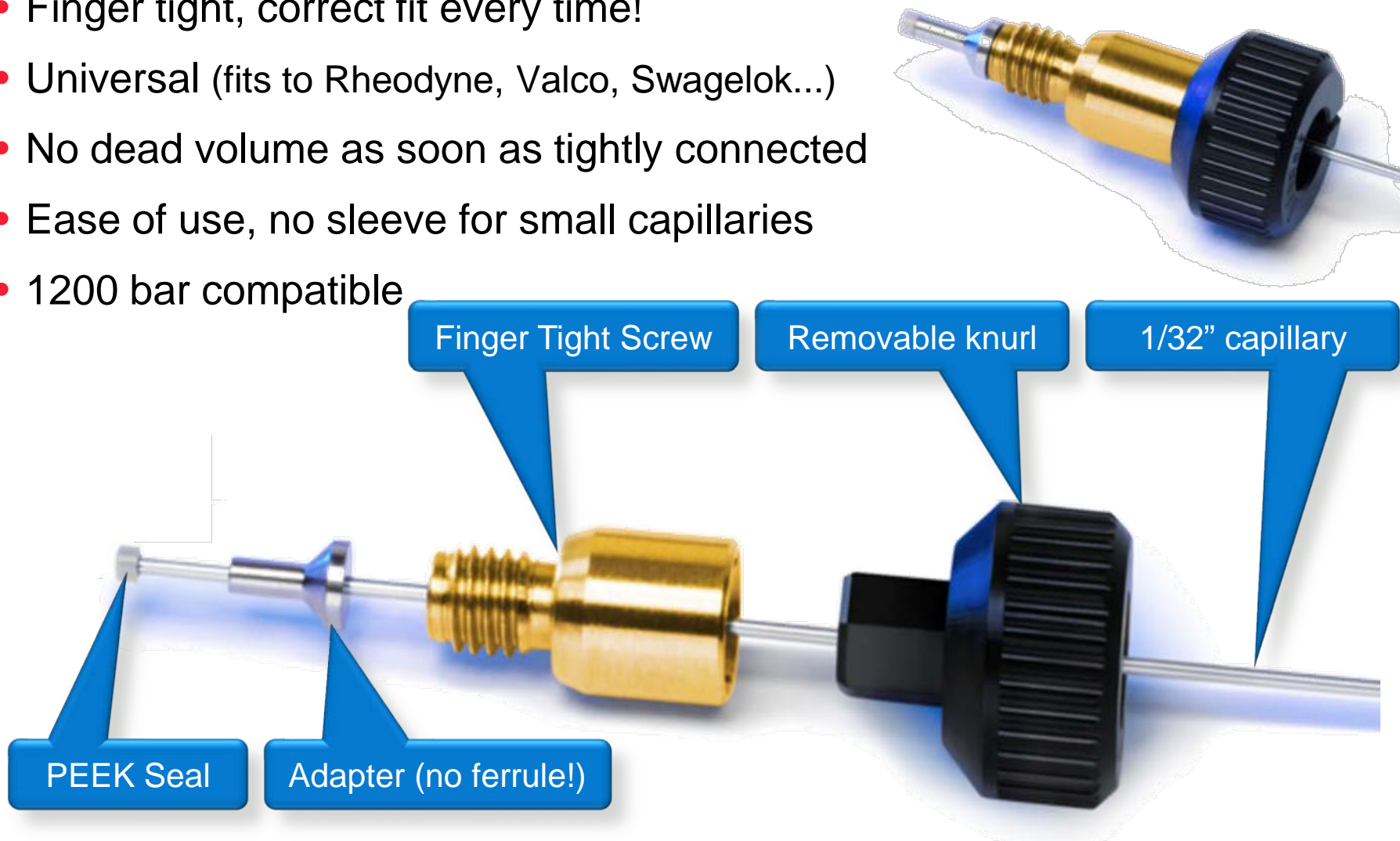


- Common Benefits

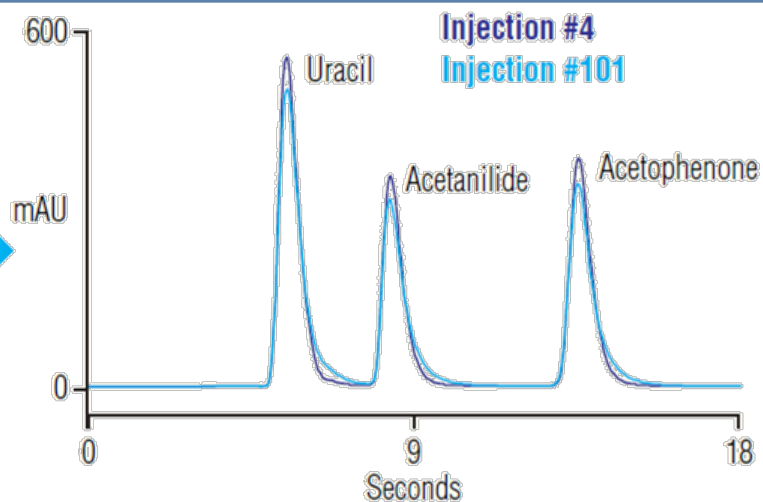
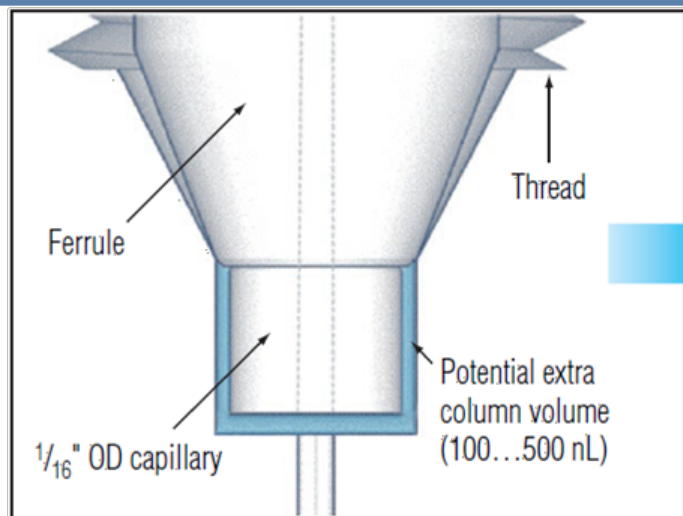
- Unrivalled ease of use
- Effortless operation
- Proven performance with state-of-the-art MS systems
- Excellent productivity
 - high resolution and reproducibility
- Excellent resolution and reproducibility in complex samples
- 1D and 2D nano-LC in one system
- Intelligent maintenance
- Remote support
- Easy maintenance, access and service

Viper™ Finger Tight Fitting System

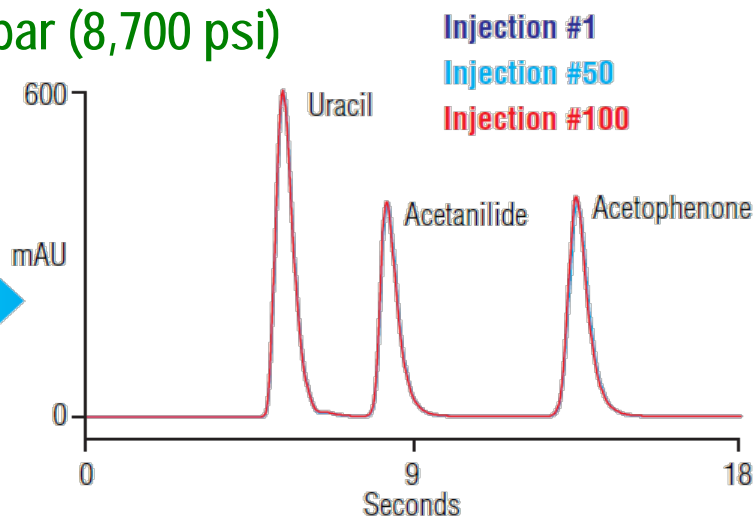
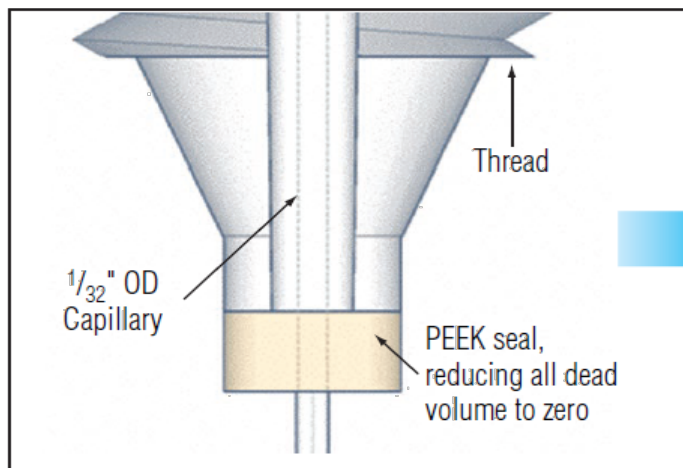
- Finger tight, correct fit every time!
- Universal (fits to Rheodyne, Valco, Swagelok...)
- No dead volume as soon as tightly connected
- Ease of use, no sleeve for small capillaries
- 1200 bar compatible



Viper™ Performance



Standard finger tight fitting at 600 bar (8,700 psi)



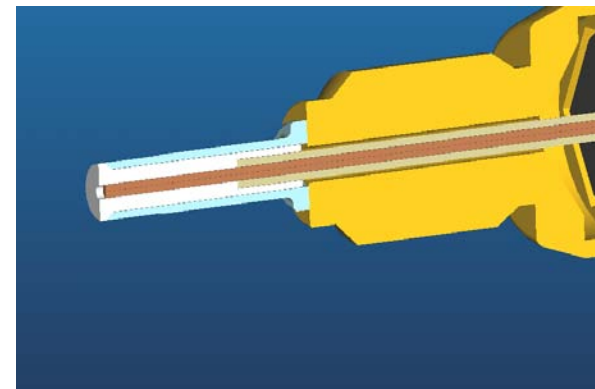
VIPER at 600 bar (8,700 psi)

ZERO Dead Volume

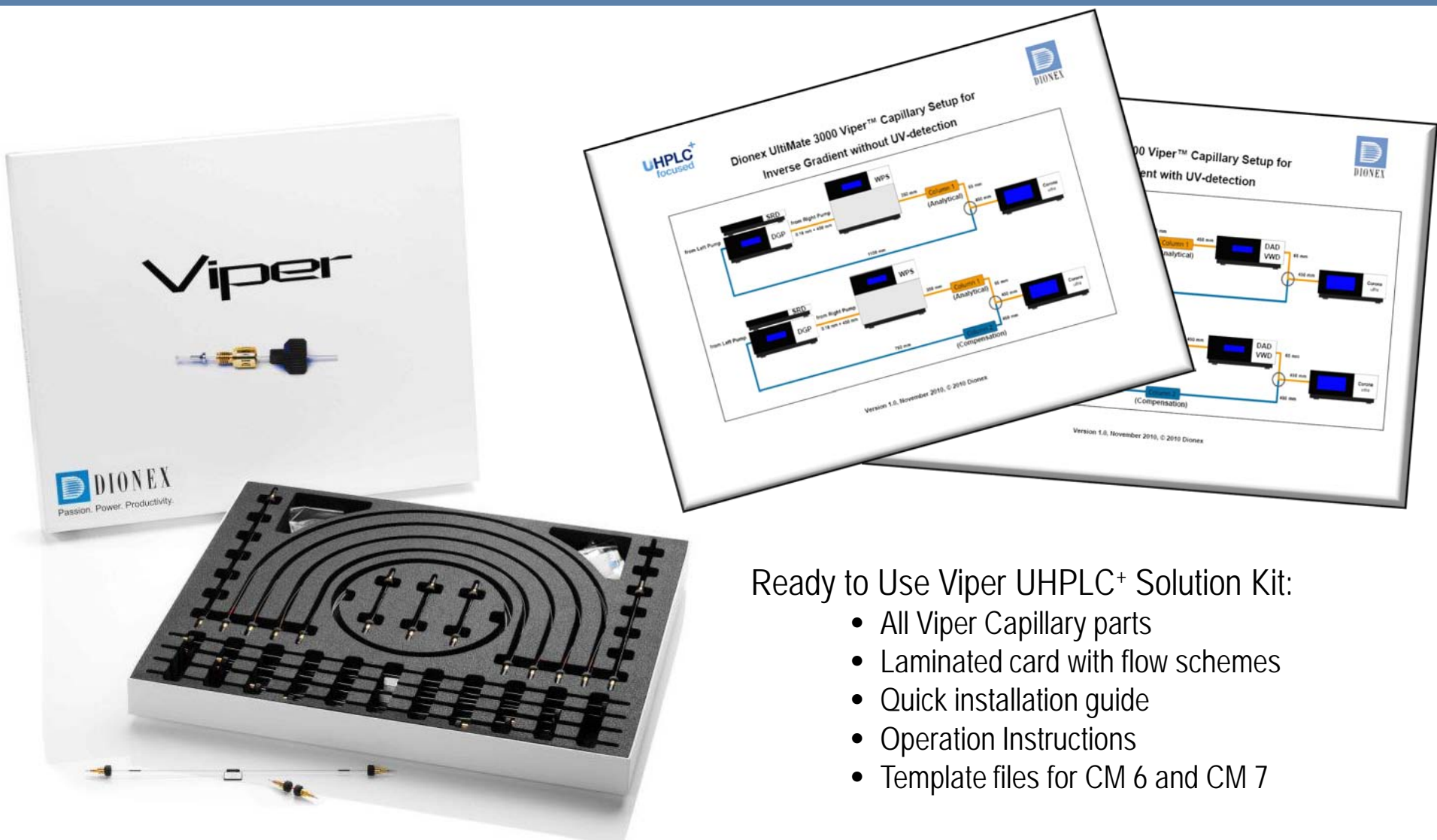
Ease of Use – nanoViper

- *nanoViper* is nano LC made easy !
- Features
 - Fingertight connection
 - Up to 1000 bar
 - Dead volume free by design
- Values
 - Tool-free assembly, easy fluidics
 - No column damage by over-tightening
 - UHPLC compatible
 - No experimental failure due to bad connections

nanoViper



Viper Application Tubing Kits

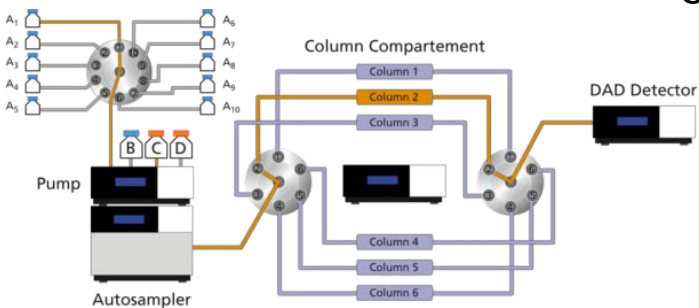


Ready to Use Viper UHPLC+ Solution Kit:

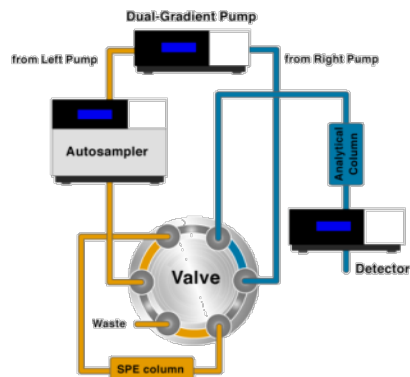
- All Viper Capillary parts
- Laminated card with flow schemes
- Quick installation guide
- Operation Instructions
- Template files for CM 6 and CM 7

UHPLC⁺ x2 Dual Applications Summary

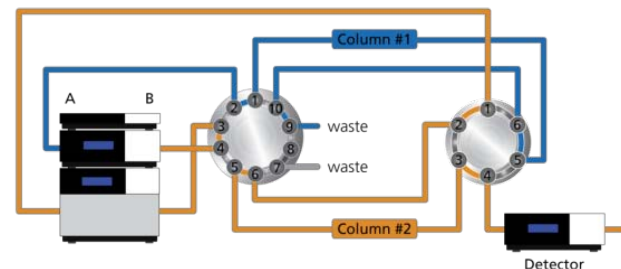
Automated Method Scouting



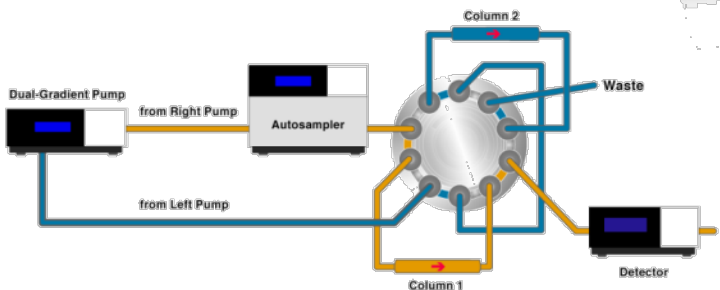
Online SPE



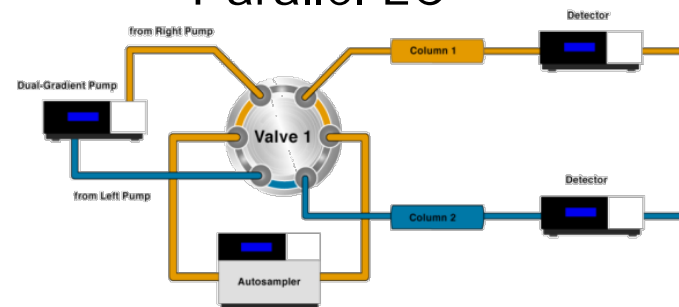
Application Switching



Tandem LC



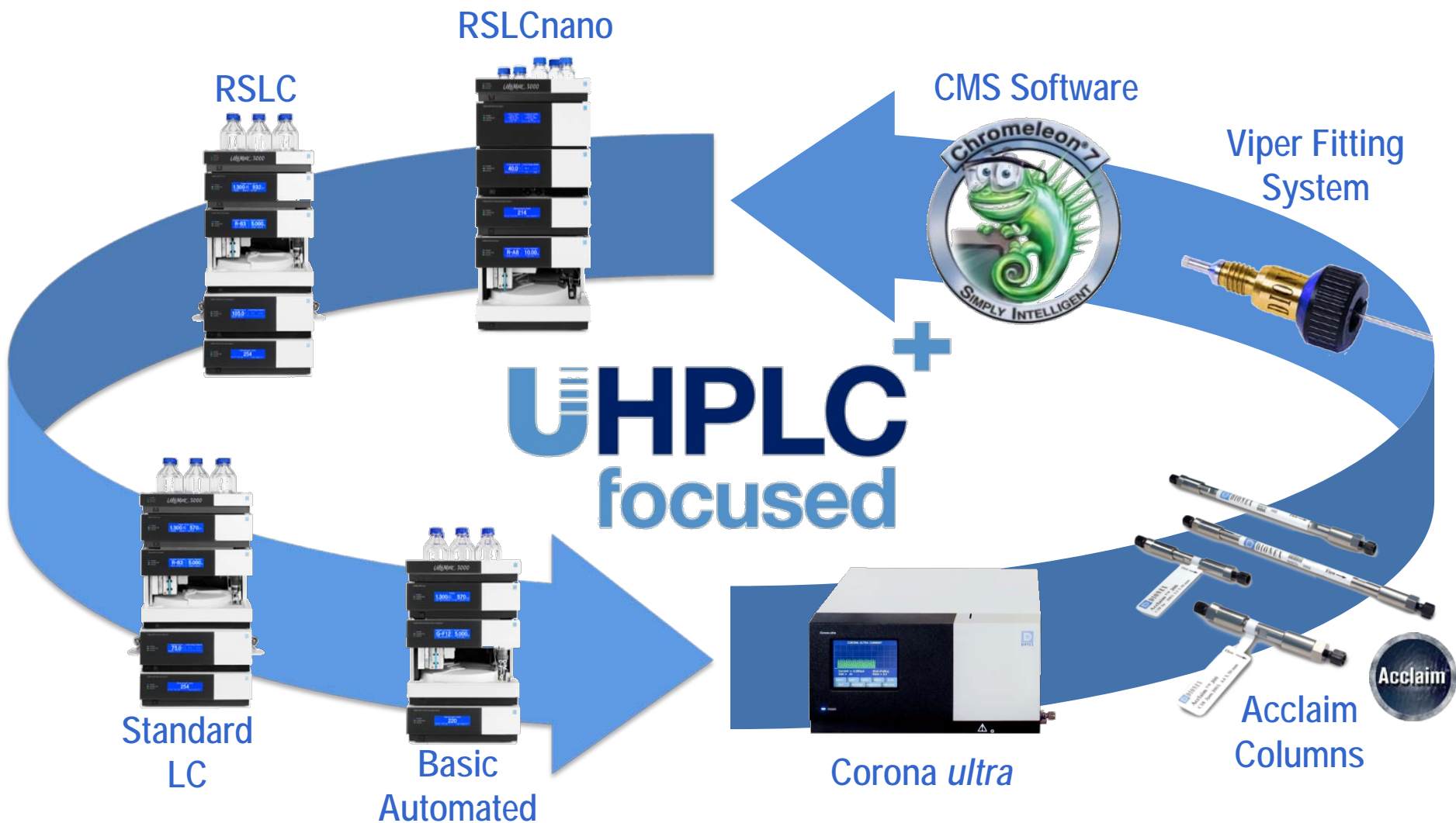
Parallel LC



Chromeleon 7 – Simply Intelligent



UHPLC⁺ Focused LC Product Portfolio



thank you for your
attention