Thermo Scientific
Dionex UltiMate 3000
Standard Systems

Standard Systems

more UHPLC for all

Precise • Robust • Versatile

Thermo
SCIENTIFIC

The new benchmark in HPLC

UHPLC solutions for any laboratory

Optimum HPLC

With support for pressures up to 620 bar (9,000 psi) at flow rates of up to 10 mL/min, detector data collection rates up to 100 Hz, and injection cycle times as low as 15 s, the Thermo Scientific™ Dionex™ UltiMate™ 3000 standard systems fully support conventional methods while offering compatibility with UHPLC applications.

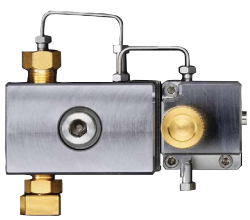
Unsurpassed Versatility

We offer the most complete choice of HPLC instruments in the industry. No matter what your applications are, the UltiMate 3000 standard systems can be perfectly configured to meet your demands.

Unmatched Performance

High-quality components, innovative mechanical, optical and electronic design, and ideally matched instruments assure highest performance. Anytime. Anywhere.

Reliable Solvent Delivery



Advanced Sample Handling

Optimized

Superior Reliability

The UltiMate 3000 standard systems with their perfect interplay of industry-leading technology, rigorous quality assurance, and predictive performance monitoring set a new standard of reliability and durability in HPLC.

Unparalleled Ease of Use

Getting from samples to results is faster and easier than ever before. Rich, intelligent functionality with Operational Simplicity™, and powerful data analysis tools will increase the efficiency of your workflow and boost overall lab productivity.

More than a System

With a full range of services from highly efficient installation processes and comprehensive training programs, to qualification and validation services, we want to provide you with more than a system.

One complete solution for LC and UHPLC

Fluidics

High-Performance Columns

Unlimited Detection

Intelligent Software

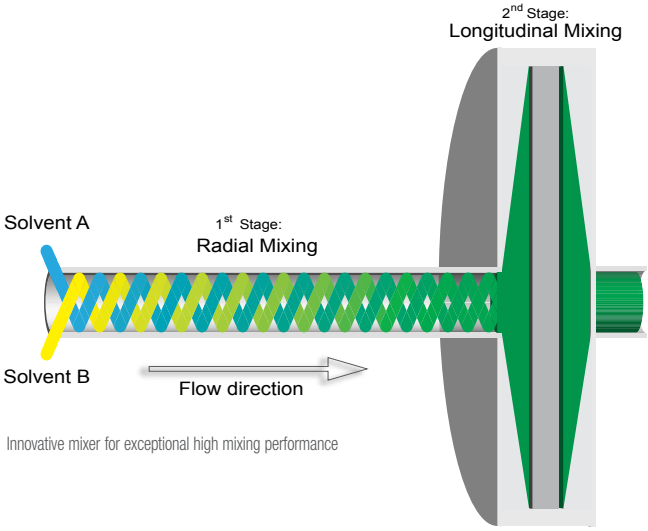
Unmatched performance

precise. robust. versatile.

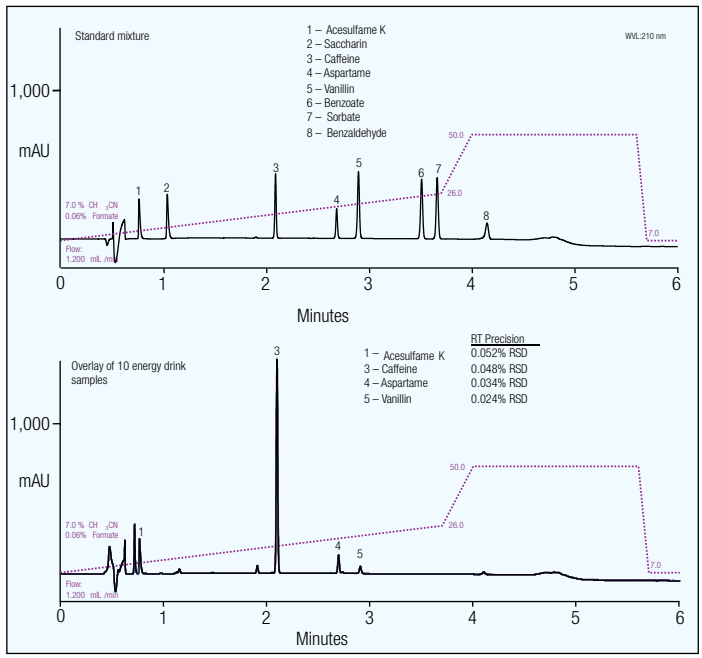
Reliable Solvent Delivery

The UltiMate 3000 SD pump family offers the most complete choice in the industry and is the right solution for a wide range of applications. All models combine unrivaled flow and gradient performance with outstanding reliability and durability.

- Wide operating flow rate range up to 10 mL/min at pressures of up to 620 bar
- SmartFlow™ ensures optimal performance independent of mobile phase composition
- SpinFlow™ mixing technology perfectly balances gradient delay volume against mobile phase mixing efficiency



Innovative mixer for exceptional high mixing performance



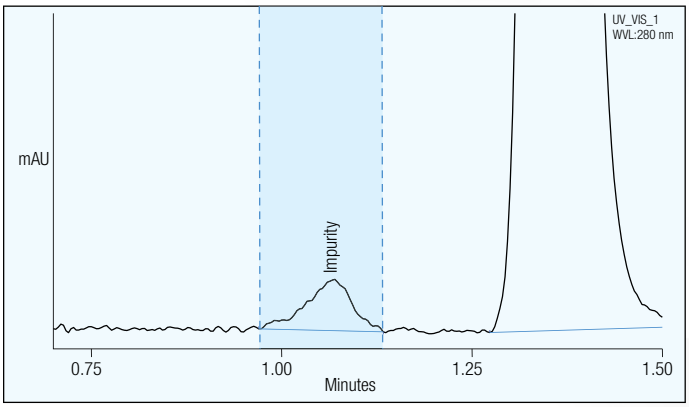
Fast analysis of soft drink additives at 515 bar with excellent retention time precision of < 0.001 min SD

Pump Type	Application Examples
Isocratic	Routine isocratic methods
Binary Gradient	Fast LC, LC-MS
Quaternary Gradient	Routine gradient methods, method development, small scale purifications
Dual-Gradient	Routine and advanced chromatographic methods, productivity solutions, multidimensional methods

Advanced Sample Handling

The innovative UltiMate 3000 autosamplers ensure reliable, precise, and accurate injections over a wide range of injection volumes. The patented temperature control protects thermally sensitive samples by eliminating temperature gradients in the sample compartment.

- Reliable, precise, and accurate injections
- Cycle times as low as 15 s
- Flexible formats, 384 well plates to 10 mL vials
- Available also with fractionation and re-injection option



Fractionation of a byproduct during a 1.5 min run

Every column and every sample **fits**

Autosampler Type	Application Examples
Analytical Sampler	Conventional LC methods
Analytical Sampler with Fractionation Option	Offline 2D-LC methods, fractionation and re-injection directly into MS, small scale purifications
Semipreparative Sampler	Semipreparative purifications

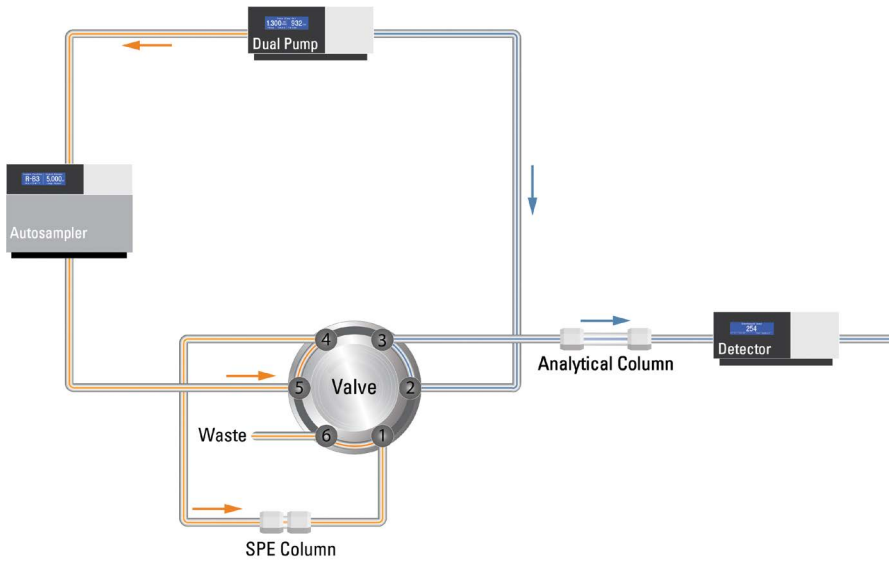
The Thermo Scientific™ Dionex™ UltiMate™ 3000 autosampler series supports an industry-leading range of sample formats

Operational simplicity
unparalleled ease of use

Precise Thermostatting for Any Column

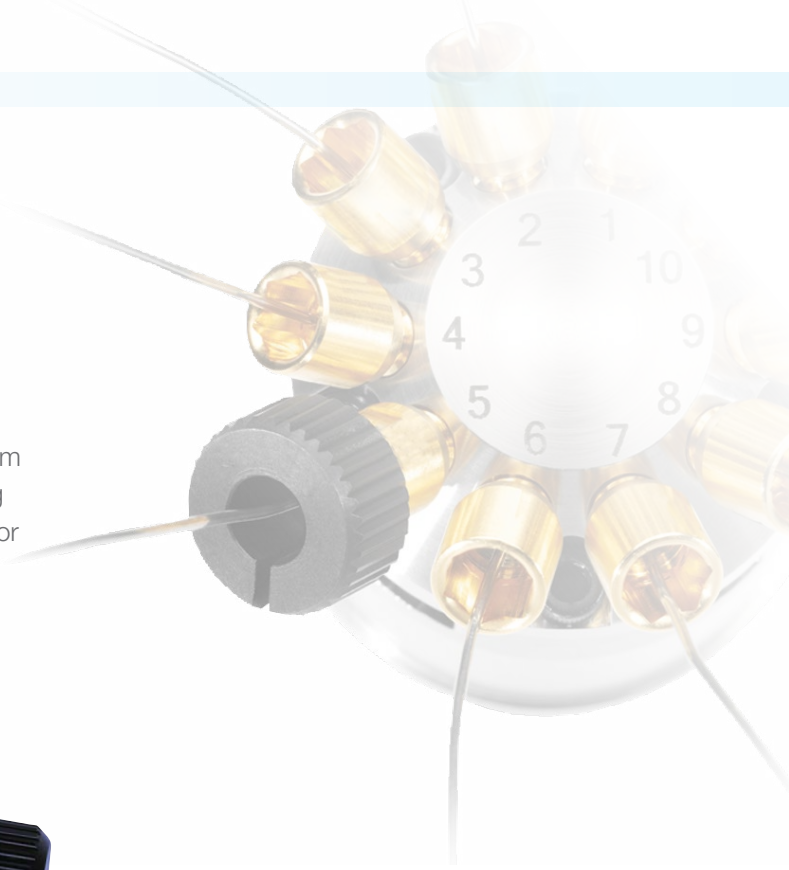
The Thermostatted Column Compartment uses large-area Peltier elements and a fan-based forced-air design to provide efficient cooling and heating. This design ensures fast equilibration upon startup, after opening the front door, and after changing the set temperature.

- Holds up to 12 columns to facilitate automated method development
- Freely configurable switching valves for advanced chromatographic techniques
- UHPLC+ solution kits facilitate advanced workflows such as on-line SPE-UHPLC



On-line SPE-LC for increased sensitivity, reproducibility, and sample throughput of methods

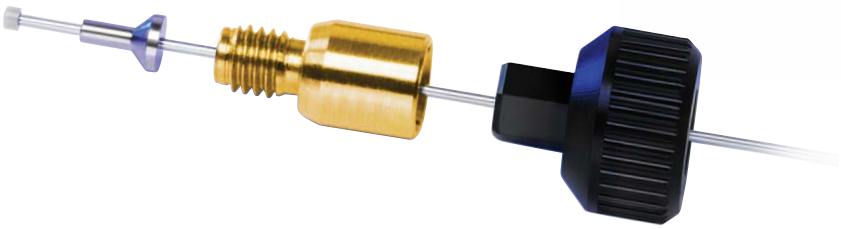
Advanced Solutions	Benefits
On-line SPE-LC	Increased sensitivity, reproducibility and sample throughput of methods with on-line sample preparation
Inverse Gradient LC	Uniform response with the Thermo Scientific Dionex Corona Charged Aerosol Detector
Parallel Setup	Increased throughput by running two distinctive methods on a system at the same time
Tandem Operation	Increased throughput by automatic alternation between two different methods
Application Switching	Increased throughput by automatic alternation between two different methods
Off-line 2D-LC	Increased resolution with two-dimensional LC



Revolutionary Fitting System

The Thermo Scientific™ Dionex™ Viper™ fingertight fitting system does away with problems experienced with conventional fitting systems. It provides a perfect fit each time and ensures superior chromatographic performance.

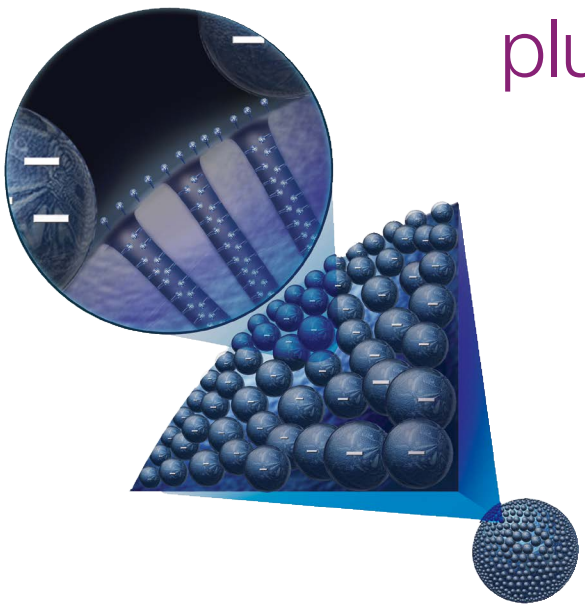
- Provides virtually zero-dead-volume fingertight connections
- Works with virtually any valve and any column from any manufacturer



High Performance Columns

Thermo Scientific columns meet the stringent requirements of modern HPLC and LC/MS methods, providing exceptionally high column efficiencies, symmetrical peaks, and exceptional ruggedness. A range of columns from general purpose to unique specialty columns are available, based on:

- Fully porous and solid core ultra-pure silica substrates
- Innovative bonding for a wide range of column selectivity
- Quality manufacturing and stringent QC to ensure consistent performance

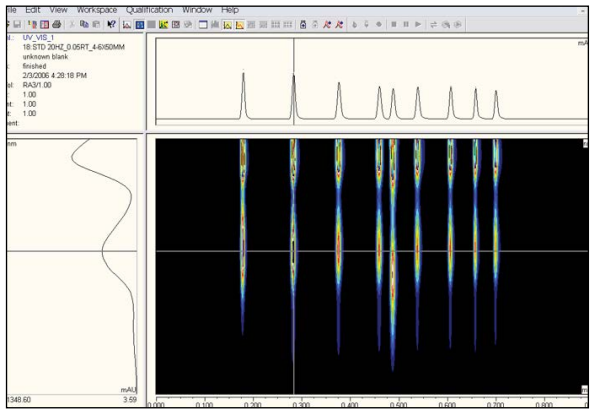


Turnkey solutions–including plumbing and software

Unique detection
more data-rich results

Wide Detection Versatility

The UltiMate 3000 detector family covers a wide detection principle range. This makes it convenient to choose the optimum detection type for your application requirements in terms of sensitivity, specificity, and precision.



Flexible UV-Vis Absorbance Detection

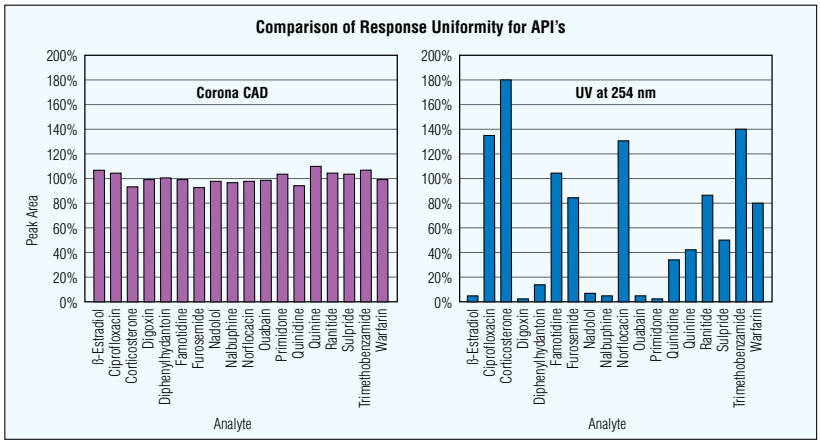
Three different detector types with a wide range of flow cells provide full flexibility in UV-vis detection at a data collection rate of up to 100 Hz. The Diode Array Detector is the best choice for maximum application flexibility combined with full wavelength spectra acquisition. The Variable Wavelength Detector offers the best noise, drift, and linearity performance.

Detection Type	Application Examples
UV-Vis Absorbance (DAD, MWD, VWD)	Standard detection for UV-vis absorbing analytes
Fluorescence (FLD)	Highly sensitive and selective detection of fluorescent analytes
Refractive Index (RI)	Detection of weak UV-vis absorbing analytes in isocratic elution
Charged Aerosol	Universal detection for all non-volatile and semi-volatile analytes
Electrochemical (ECD)	Oxidizable or reducible analytes
Single-Quad Mass (MS)	Ionizable analytes

Charged Aerosol Detection – A Universal Detection Technology

Charged aerosol detection is a unique detection technology for nonvolatile or semivolatile analytes providing consistent response independent of chemical structure. The Thermo Scientific™ Dionex™ Corona™ Veo™ Charged Aerosol Detector widens the envelope of LC conditions for mobile phase composition to take advantage of ever advancing column technologies.

- Simple, intuitive operation
- Enhanced linear dynamic range
- Sub-nanogram sensitivity
- Expanded flow rate range optimized from 0.01 to 2.0 mL/min



Response directly proportional to the amount of analyte independent from optical properties

Sensitive Fluorescence Detection

The Thermo Scientific™ Dionex™ UltiMate™ FLD-3000 Fluorescence Detector series sets a new industry standard in terms of innovative technology, detection performance, and application versatility. A unique Dual-PMT option ensures maximum sensitivity across an extended wavelength range.

Enhanced Electrochemical Detection

The high sensitivity and low noise of the Thermo Scientific™ Dionex™ UltiMate™ 3000 ECD-3000 Electrochemical detector makes it ideal for the most sensitive and demanding analyses. Choose from next-generation coulometric and amperometric sensors with SmartChip™ technology for simple, flexible, and maintenance-free operation.

Streamlined chromatography workflows
delivering results instantly

Simply Intelligent Chromatography Software

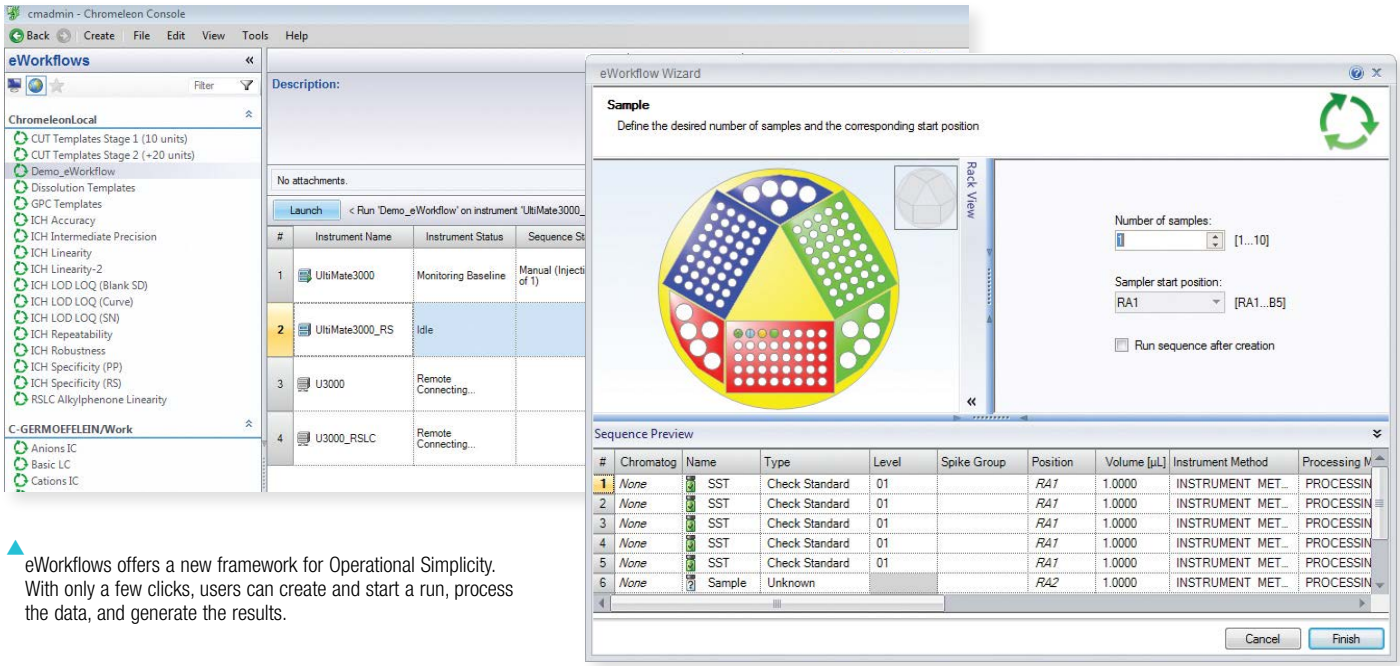
Thermo Scientific™ Dionex™ Chromeleon™ 7.2 Chromatography Data System (CDS) software is the first CDS that combines separation (LC/GC/IC) and Mass Spectrometry (MS) in an enterprise (client/server) environment. You can now streamline your chromatography and MS quantitation workflows in one application, making your lab more efficient. Using Operational Simplicity as its guiding design principle, Chromeleon CDS takes you from samples to results in the shortest time possible.

Get More `Right First Time' Analyses

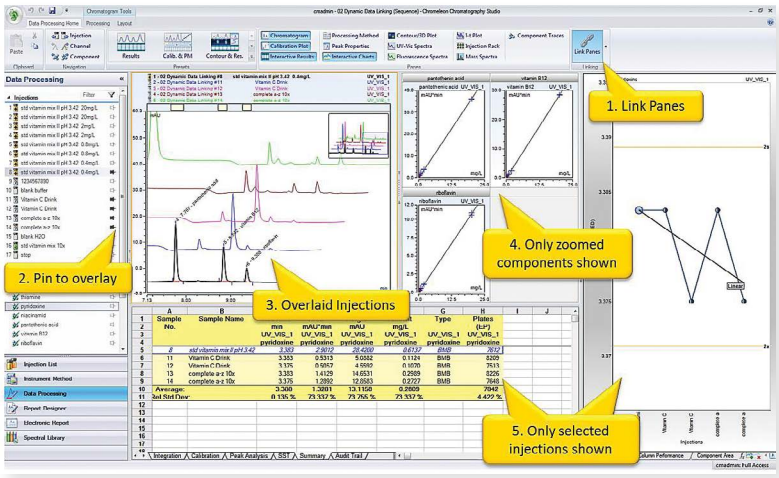
Innovative eWorkflows™, Smart Startup, and Intelligent Run Control combine to ensure that procedural rules and guidelines are followed accurately and consistently, ensuring more right first time analyses.

eWorkflows enable anyone to start chromatographic analyses and generate results with just a few selections. They provide a template to create a complete, correct sequence with predefined files and a well-defined structure.

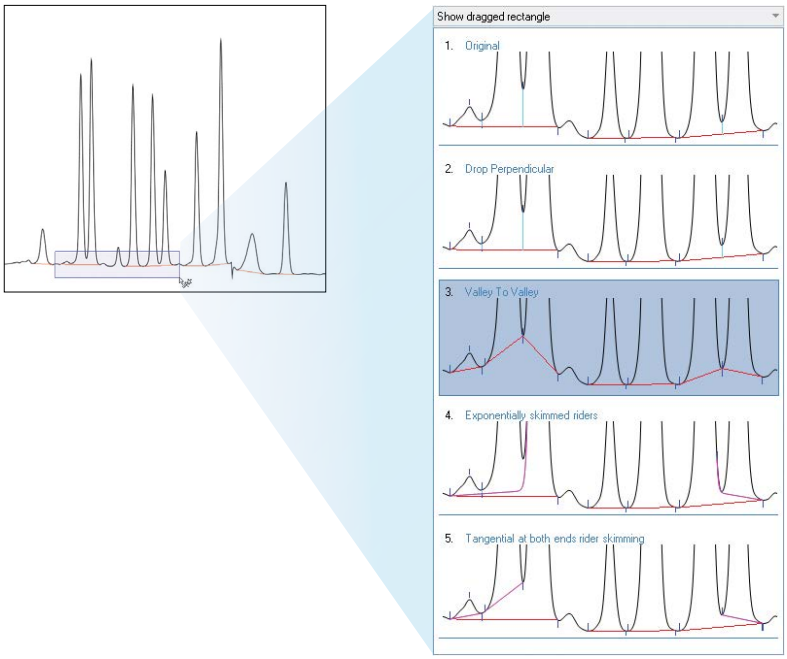
Smart Startup automatically initializes your instrument and sets correct initial instrument conditions. It then checks the instrument is properly equilibrated before automatically starting the run. During the run built-in System Suitability Tests with Intelligent Run Control take automated, in-sequence pass and/or fail actions based on the actual chromatographic results.



▲ eWorkflows offers a new framework for Operational Simplicity. With only a few clicks, users can create and start a run, process the data, and generate the results.



SmartLink displays only data relevant to the current zoom or selected components/injections for fast, easy data evaluation, saving valuable time.



SmartPeaks alternative integration approaches and automatically adds parameters to the processing method for the chosen approach.

Dynamic data processing and SmartLink reduce the analyst's effort and display the results immediately. All selections and changes made are instantly reflected in the data and results, while SmartLink ensures only data relevant to the current zoom or selected peaks is displayed, providing the analyst with all the information needed for fast, easy data evaluation.

The unique and innovative integration tools, Cobra™ peak detection wizard and SmartPeaks™ Integration Assistant, enhance the user experience and make detection and integration easy and straightforward.

Fastest way from samples to results with fewer clicks

www.thermofisher.com/dionex

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