



# UltiMate 3000 Standard HPLC Systems

Giving you more.



Now sold under the  
Thermo Scientific brand



Passion. Power. Productivity.

# UltiMate 3000 Standard Series – The New UHPLC Compatible Solutions for Any Laboratory

## Optimum HPLC

With support for pressures up to 62 MPa (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 UltiMate® 3000 standard series fully supports conventional methods while offering compatibility with UHPLC applications.

## Unsurpassed Versatility

Dionex offers the most complete choice of HPLC instruments in the industry. No matter what your applications are, the UltiMate 3000 HPLC system 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 Fluidics

# Benchmark in HPLC



## Superior Reliability

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

## Unparalleled Ease of Use

With the Dionex Chromeleon® 7 Chromatography Data System, 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.



High-Performance Columns



Unlimited Detection



Intelligent Software

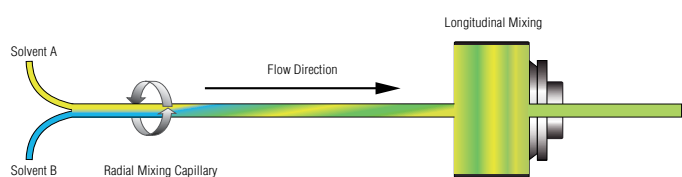
# Unmatched Performance in Solvent Delivery

Precise. Robust. Versatile.

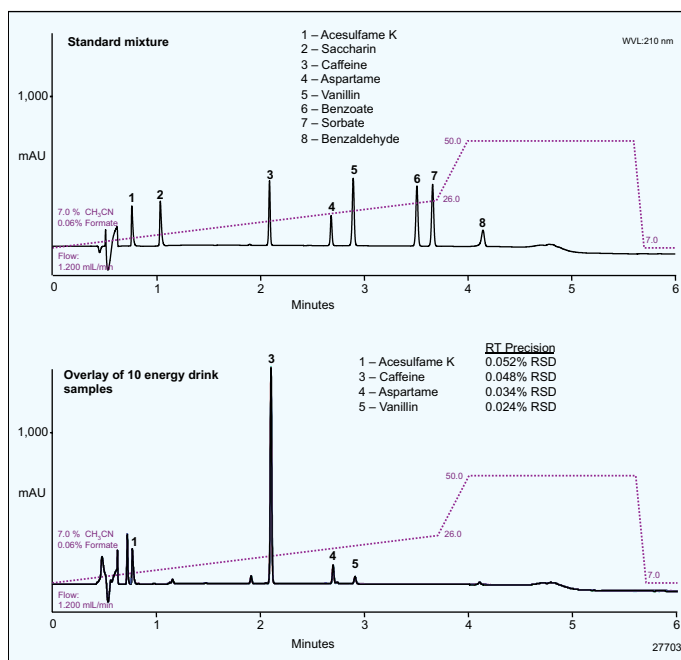
## Reliable Solvent Delivery

The UltiMate 3000 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 62 MPa
- SmartFlow ensures optimal performance independent of mobile phase composition
- Innovative 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 51.5 MPa with excellent retention time precision of < 0.001 min SD*

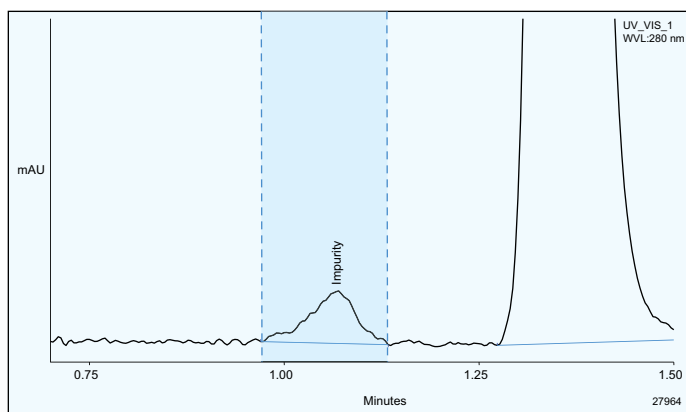
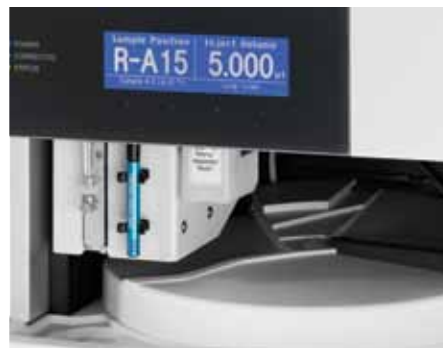
Pump Type	Application Examples
Isocratic	Routine isocratic methods
Binary Gradient	Fast LC, LC-MS
Quaternary Gradient	Routine gradient methods, method development, small scale purifications
Dual-Gradient	Routine and advanced chromatographic methods, productivity solutions, multidimensional methods

# y and Sample Handling

## Advanced Sample Handling

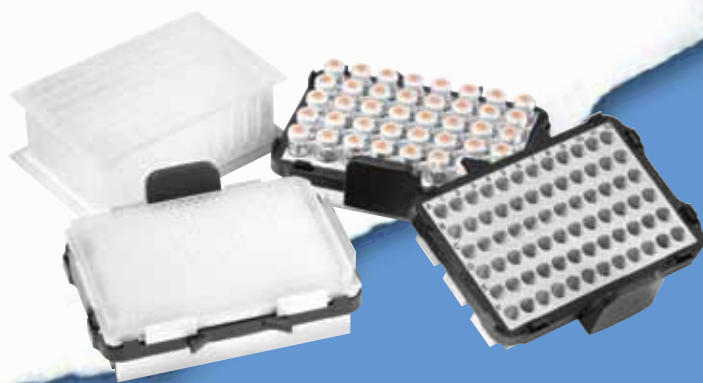
The innovative UltiMate 3000 autosampler ensure reliable, precise, and accurate injections over a wide range of injection volumes. The patented temperature control protects thermally sensitive samples by eliminating destructive temperature gradients in the sample compartment.

- Reliable, precise, and accurate injections
- Cycle times as low as 15 s
- Flexible formats, 384 well plates to 10 mL vials
- Available also with additional fraction collector valve



Fractionation of a Byproduct during a 1.5 min run

Wide range of sample format and tray variety for the UltiMate 3000 WPS Autosampler Series



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

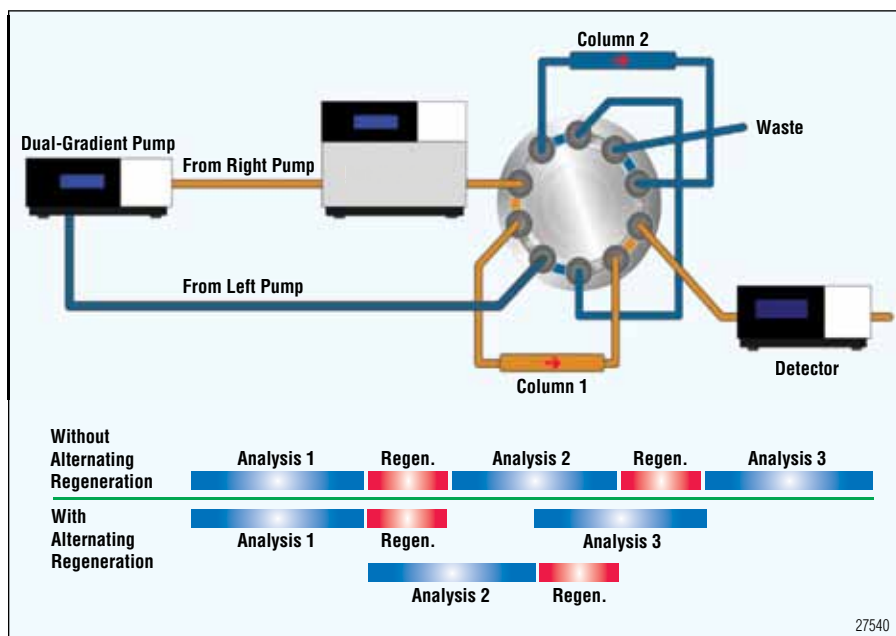
# Operational Simplicity

## Unparalleled Ease of Use for All Requirements

### Precise Thermostatting for Any Column

The Thermostatted Column Compartment use large-area Peltier elements and a fan-based forced-air design to provide efficient cooling and heating. This 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



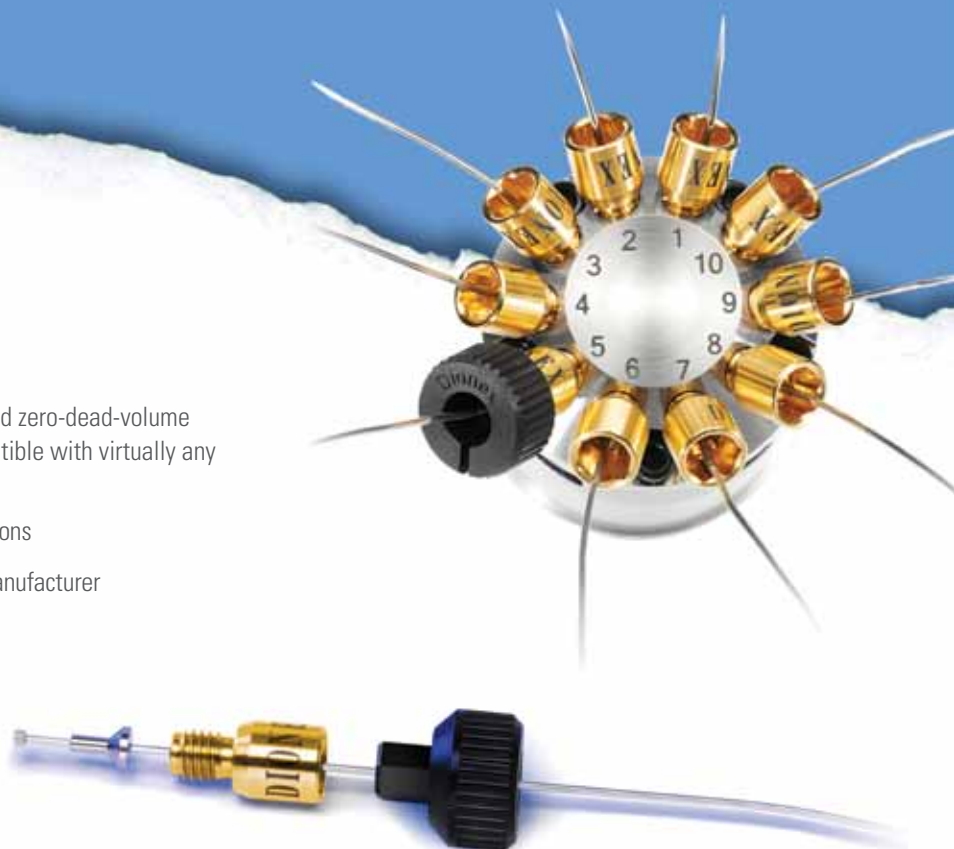
*Tandem LC for up to 100% higher throughput without changing existing method*

Advanced Solutions	Benefits
Tandem LC	Increased throughput of a single routine method on a system
Parallel LC	Increased throughput by running two distinctive methods on a system at the same time
Off-line 2D-LC	Increased resolution with two-dimensional LC
On-line SPE-LC	Increased sensitivity, reproducibility and sample throughput of methods with on-line sample preparation

## Revolutionary Fitting System

The Viper™ fingertight fitting system provides ease of use and zero-dead-volume plumbing. It improves chromatographic results and is compatible with virtually any valve and column hardware.

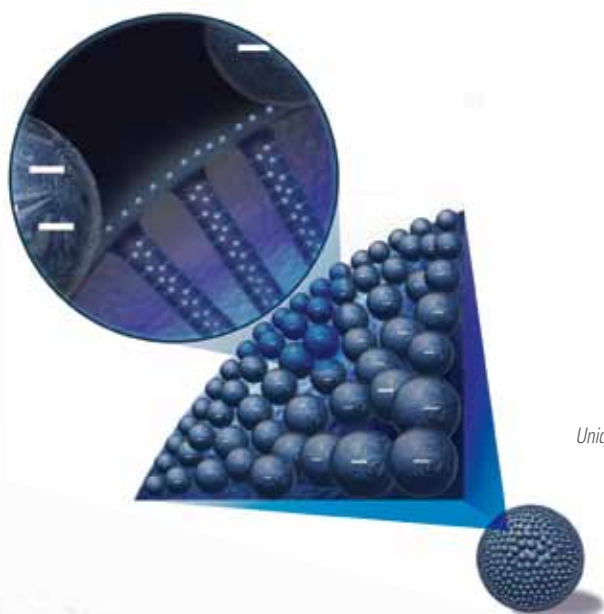
- Provides guaranteed zero-dead-volume fingertight connections
- Works with virtually any valve and any column from any manufacturer



## High Performance Columns

Acclaim® columns provide exceptionally high column efficiencies, symmetrical peaks, and low bleed required by modern HPLC and LC/MS methods. A whole range of columns from general purpose to unique specialty columns are available.

- Ultrapure silica substrate
- Proprietary high-density bonding process, and double end-capping
- Wide range of different column sizes



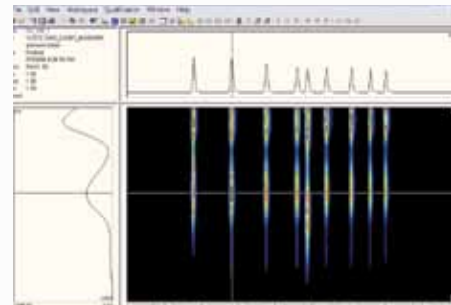
*Unique Nanopolymer Silica Hybrid (NSH) technology of the Acclaim Trinity™ Column*

# Innovative Technologies for Unlimited Detection

Confident. Sensitive. Universal.

## 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.

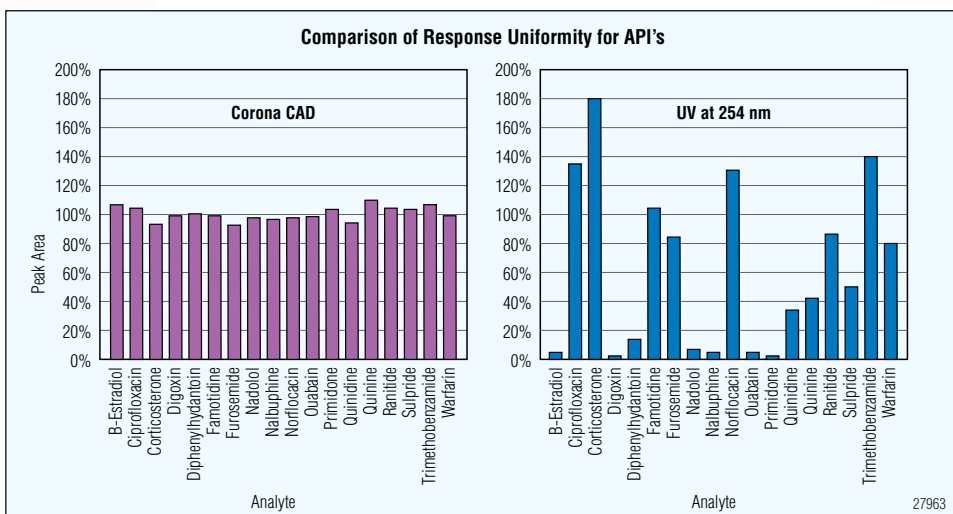
Detection Type	Application Examples
UV-Vis Absorbance (DAD, MWD, VWD)	Standard detection for UV-vis absorbing analytes
Fluorescence (FLD)	Highly sensitive and selective detection of fluorescent analytes
Refractive Index (RI)	Detection of weak UV-vis absorbing analytes in isocratic elution
Charged Aerosol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

# ction Capabilities

## Corona® *ultra*™ – A Near Universal Detection Technology

Charged aerosol detection is a unique detection technology for nonvolatile or semivolatile analytes and provides consistent response independent of analyte chemistry. The Corona *ultra* creates new opportunities for method development, QA/QC, and bioanalytical chemistry.

- Consistent response independent of analyte chemical structure
- Suitable for isocratic and gradient applications



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

## Sensitive Fluorescence Detection

The 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 the entire detection range.



## Enhanced Electrochemical Detection

The Coulochem® III is an electrochemical detector with unrivaled sensitivity in amperometric or coulometric detection. It features advanced techniques such as pulsed amperometric detection and cyclic voltammetry.



# Streamlining All Chromatography Workflows

Delivering Results Instantly



## Intelligent Chromatography Software

Chromeleon 7 is the next-generation chromatography data system from Dionex. Using Operational Simplicity as its guiding design principle, Chromeleon 7 takes you from samples to results in the shortest time possible.

Innovative **eWorkflows** enable anyone to start chromatographic analyses and generate results with just a few selections. eWorkflows automatically create sequences containing the correct instrument conditions, data processing parameters, and reporting templates. Samples are run automatically, processed immediately, and reported instantly.

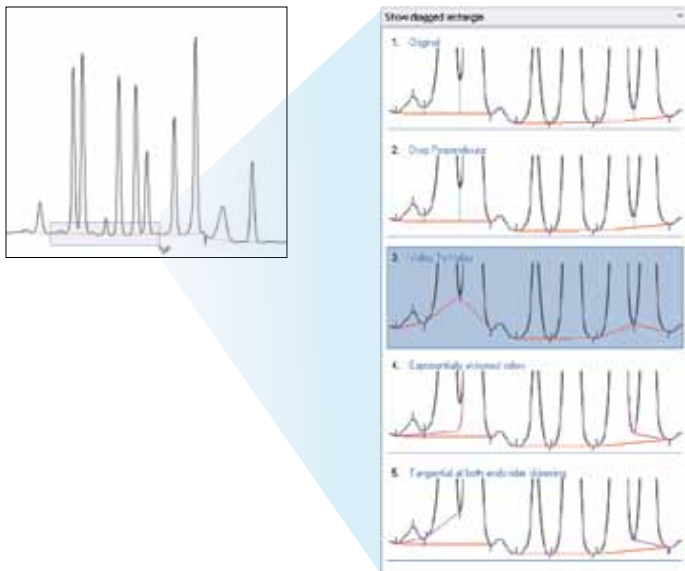
The screenshot displays the Chromeleon 7 software interface. On the left, a table titled "Aspirin - Content Uniformity" shows a list of instrument runs. The table has columns for "Instrument Name", "Instrument Status", "Sequence Status", and "Queue Status". The first four rows are visible, with the second row highlighted in yellow.

#	Instrument Name	Instrument Status	Sequence Status	Queue Status
1	01_11816w3000_DQP	Idle		
2	05_11816w3000_1	Idle		
3	01_11816w3000_2	Idle		
4	01_11816w3000_RS	Running	20090115_AD_1 (Sequence 21 of 1	

Overlaid on the table is the "eWorkflow Wizard" dialog box. It has a "Sample" section with a "Number of Samples" field set to "1" and a "Sampler Start Position" field set to "RAT".

Below the wizard is the "Uniformity of Dosage Units Report". It includes a "General" section with fields for "Product Batch Number" (88315), "Peak Name" (Aspirin), "CUT Number" (198781), "Channel" (UV\_VIS\_1), "Storage Form" (Chromatogram), and "Reference Form" (EP). It also lists "Target Content %" (100.0), "Content Factor" (1.000), "Max. Acceptance Value L1" (10.0), "Lower Amount Limit" (Not needed if  $\mu > 10$ ), and "Upper Amount Limit" (Not needed if  $\mu > 10$ ). The "Results" section shows "n = 10", "Mean" (111.5), "Standard Deviation s" (3.5), "Reference Value M" (100.0), and "Acceptance Value AV" (14.4). The "Test Result" is "Test passed".

At the bottom of the report is a scatter plot titled "Uniformity of Dosage Units Report". The y-axis is labeled "% Label Claim" and ranges from 98 to 116. The x-axis is labeled "Unit Number" and ranges from 0 to 12. There are 10 data points plotted, showing values between approximately 108 and 114.



Chromeleon's automatic integration updates and dynamic data processing reduce the analyst's effort and display the results immediately.

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.

### Software for Mass Spectrometry

DCMS<sup>Link</sup>, a free control-only software package, provides fully integrated, single point control of any Dionex LC through Xcalibur® (Thermo Fisher), Analyst® (AB/MDS Sciex), and HyStar™ (Bruker Daltonics).

Learning new software is held to a minimum with the MS software as the single user interface. The full benefits of the UltiMate 3000 single and dual pump systems are ready to support your MS applications.



## Enjoy Industry-Leading Support

Dionex Customer Support Centers are located in the United States, Europe, and Asia. These state-of-the-art laboratories are equipped with the full line of Dionex LC instrumentation and software capabilities. Support Centers provide accessible locations for advanced training and enhanced application development capabilities. Users can visit these laboratories or sign up to learn new skills in addressing challenging applications, receive training and support, and discover new, innovative HPLC and IC solutions.

## Corporate Headquarters

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Dionex products are designed, developed, and manufactured under an ISO 9001 Quality System.