

**INTUITIVE  
ACCURATE AND  
READY WHEN YOU ARE**



LC 300 HPLC and UHPLC Systems





# LC THAT DESERVES A CLOSER LOOK

Laboratories in nearly every industry are continuously faced with growing demands for increased throughput, improved margins, and more efficient processes. And when it comes to liquid chromatography, a one-size-fits-all approach just isn't enough. You need an LC system tailored to your needs, with user-friendly software, consumables, service, and support – the total package.

Meet the **PerkinElmer LC 300**, the latest LC to step off our production lines. With features and benefits such as five available detectors, ultraprecise gradient flows, low dispersion, and new Simplicity™Chrom CDS software, our LC 300 systems provide improved workflows, throughput, and usability. Whether you need the ruggedness of conventional HPLC, or the proven benefits of UHPLC, the LC 300 has you covered.

## APPLICATIONS



# CHROMATOGRAPHY SIMPLIFIED

Technology

Whether you're looking for a high-end HPLC or powerful UHPLC platform, our LC 300 systems help your lab achieve fast, accurate results.

The LC 300 system was designed for very low dispersion, increasing separation efficiency, and lowering detection limits. It's available with your choice of five high-sensitivity detectors (photodiode array, UV/Vis, multi-wavelength UV/Vis, fluorescence, and refractive index) to meet your diverse application needs. Other features and benefits include:

- **Choice of HPLC (10K psi/690 bar) or UHPLC (18K psi/1240 bar) system** to suit unique laboratory needs
- **Multiple sample-handling options with patented valve technology** to meet existing and future requirements
- **Integrated color display** providing system status at a glance
- **SimplicityChrom software** for easy and intuitive instrument control
- **Available third-party drivers** for several commercially available systems

APPLICATIONS

# WHEN ACCURACY IS EVERYTHING

Each of the components of the LC 300 system come together seamlessly to deliver the dependability, power, and efficiency you need to achieve your goals. Whether analyzing food samples for label-claim accuracy, cannabis for potency, or pharmaceuticals and consumer goods for potential impurities, the LC 300 system, paired with SimplicityChrom CDS software, not only meets your needs, but grows with you.

Learn more about the LC 300 components, including the pump, autosampler, column oven, and five different detectors.



## APPLICATIONS

Click to reveal more features and benefits.

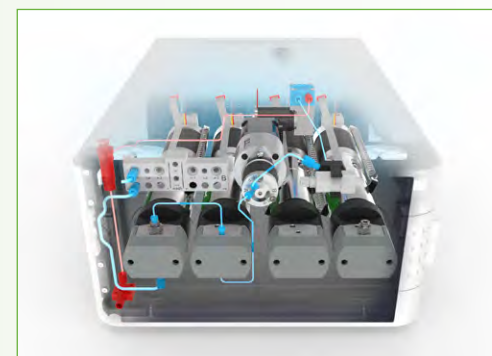
► LC 300 Pump

### LC 300 Pump

The pump that meets your needs, with multiple configurations for binary solvent delivery of up to four solvents.

#### Features include:

- A choice of 10K psi (690 bar) pump for routine, high-throughput HPLC testing, or 18K psi (1240 bar) UHPLC pump for ultrafast separations
- Four individually motor-driven and controlled pump heads, generating maximum freedom for precise flow control and pulsation reduction
- Self-cleaning, active-seal wash system ensuring you achieve maximum life of the piston seals
- Efficient software-controlled prime and purge completed in just minutes



Rapid, automated priming and purging



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System Components

APPLICATIONS

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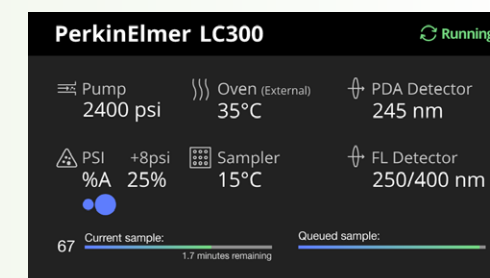
► LC 300 Autosampler

## LC 300 Autosampler

A robust, precise autosampler is necessary to achieve optimal efficiency and accuracy.

### Features include:

- Advanced fluidics technology featuring a patented injection valve\* which facilitates accurate and highly reproducible injections ([read our Tech note on the ILD™ injection valve for more information](#))
- Integrated column oven offered standard on all LC 300 autosamplers
- Onboard, automated dilution and derivatization, without the use of additional hardware or software
- High-visibility color LCD screen enables quick and efficient review of pump pressure, oven and sample tray temperature, and sample queue status without having to log into your CDS software



High-visibility LCD display on LC 300 autosampler

\*U.S. Patent No. 8,322,197 B2, European Patent No. 2196801

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▶ System Components

## APPLICATIONS

Click to reveal more  
features and benefits.

▶ LC 300 Peltier Column Oven

### LC 300 Peltier Column Oven

When performing workflows that require column switching, wider temperature ranges, or longer columns, the LC 300 Peltier Column Oven is a must.

#### Features include:

- Ultimate flexibility to achieve your analytical goals with a large column compartment that can accommodate columns measuring up to 30 cm in length
- Precise and consistent temperature control from 5 °C to 90 °C ensuring accurate and repeatable analyses
- Pairing SimplicityChrom with an optional internal column selection valve allows automated column switching of up to six columns, saving time and increasing efficiency



Column  
Selection Valve

# DETECTION JUST GOT EASIER

High-sensitivity detection is essential for most LC applications. The LC 300 system can be configured with one or more detectors to meet the needs of your laboratory. And with upgrade options available, your investment is future-proofed as your analytical needs grow or change.

Each of the LC 300 detectors features an integrated solvent and waste tubing management system while the PDA and two UV/Vis detectors also feature a built-in solvent organizer to reduce the number of modules in the LC stack, while also reducing asset management complexity.

LC 300 Detectors

APPLICATIONS

Click to reveal more  
features and benefits.

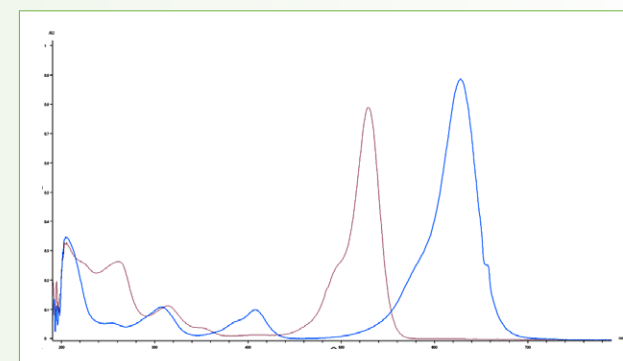
► LC 300 Photodiode Array Detector (PDA)

## LC 300 Photodiode Array Detector (PDA)

Ideal for laboratories balancing high-sample throughput requirements with methods that require high levels of sensitivity – all with the added certainty of component confirmation via spectral data processing tools.

### Features include:

- Low baseline noise and high linear dynamic range provide ultimate analyte concentration tolerance
- To further increase sensitivity, an interchangeable, self-aligning 50 mm flow cell is available
- The combination of sampling rates up to 200 Hz, low optical dispersion, and spectral identification ensure accurate results for any application
- Outstanding spectral capabilities and functions, such as wavelength maximum, peak purity, and spectral libraries for confident method development and peak confirmation



Overlay of UV/VIS spectra from FD&C  
Red #3 and Blue #2

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▶ LC 300 Detectors

APPLICATIONS

Click to reveal more  
features and benefits.

▶ LC 300 Multi-wavelength Detector (MWD)

## LC 300 Multi-wavelength Detector (MWD)

Designed for laboratories that require more than one single wavelength to be monitored, processed, and stored per analysis.

### Features include:

- Simultaneous collection of up to eight channels at any wavelength or sampling rate
- A wide linear dynamic range, low baseline noise, and sampling rates up to 200Hz for ultralow and high concentrations, without sample dilution
- Upgrade options to accommodate a full-featured photodiode array detector with spectral capabilities allowing the system to grow with your needs
- Additional options include a fiber optic, self-aligning 50 mm flow cell for greater sensitivity and flexibility



50 mm flow cell



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▶ LC 300 Detectors

APPLICATIONS

Click to reveal more  
features and benefits.

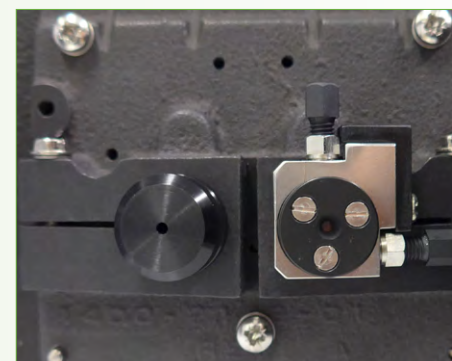
▶ LC 300 UV/Vis Detector

## LC 300 UV/Vis Detector

A simple, yet highly sensitive UV/Vis detector.

### Features include:

- An industry-leading dual-beam optical design for ultimate stability and sensitivity of your analyses
- Choice of either a deuterium or tungsten light source provides flexibility and allows for optimal sensitivity at any wavelength
- Sampling rates up to 100 Hz for UHPLC application needs



Dual-beam optical design with reference cell (left) and flow cell (right)

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LC 300 Detectors

APPLICATIONS

Click to reveal more  
features and benefits.

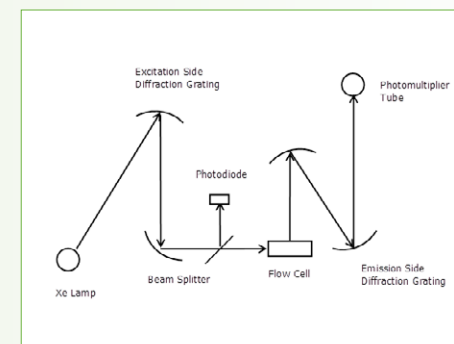
► LC 300 Fluorescence Detector

## LC 300 Fluorescence Detector

Achieve selective detection of fluorescing compounds with sensitivity that can be up to 1,000 times greater than standard UV detection.

### Features include:

- An axially irradiated flowcell, low-noise electronics, and dynamically temperature-controlled cell body
- Exceptional sensitivity and stability for an ideal balance of accuracy and reproducibility
- Scanning capability for efficient method development



Schematic of fluorescence  
operating principle

# DETECTION JUST GOT EASIER

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LC 300 Detectors

APPLICATIONS

Click to reveal more  
features and benefits.

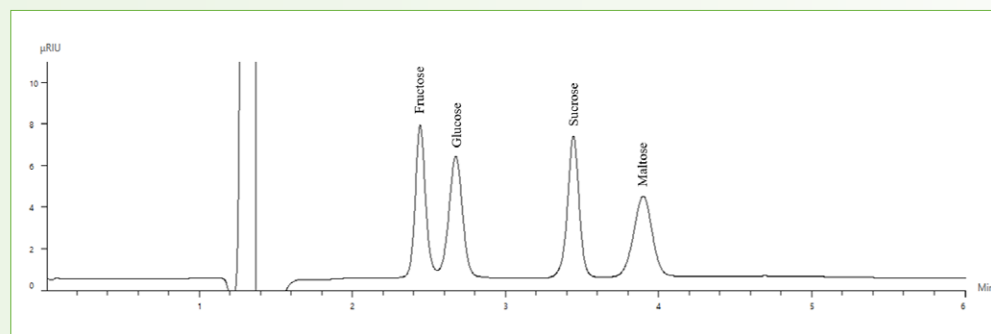
► LC 300 Refractive Index Detector

## LC 300 Refractive Index Detector

Detector of choice for the analysis of carbohydrate, polymer, and other non-UV chromophoric compounds.

### Features include:

- Designed to achieve outstanding stability through an optical system mounted within a precise temperature-controlled housing, minimizing the impact of subtle changes in ambient temperature
- Long-life LED light source for the ultimate in uptime and productivity



Chromatogram showing the separation of four sugars detected with RI detection.



# THE SOFTWARE THAT'S SIMPLE

**SimplicityChrom** was designed with you in mind. It's intuitive and flexible, enabling you to achieve your analytical goals and get results quickly, thanks to a user-friendly, intuitive graphical interface. Most importantly, for labs that test highly regulated samples, such as food and pharmaceuticals, SimplicityChrom ensures compliance with 21 CFR Part 11.



SimplicityChrom software offers you peace of mind so you can concentrate on what matters most – your analytical goals.

SimplicityChrom features and benefits include:

- Modern design, balancing the power you need with user-friendly iconography and easy-to-learn workflows
- Efficient creation and printing of reports directly from the Data Review and Acquisition modules
- Smart user interface offering notifications to keep you informed and working efficiently
- Management of user accounts and profiles directly in SimplicityChrom, simplifying the administration process and mitigating many common IT challenges associated with domain management
- Powerful search and filter features in Audit Trail for a superior user experience
- Tools to meet 21 CFR Part 11 compliance requirements, such as audit trail, lab management, and review/approve are integrated into the main application for greater access and productivity

[Click for More About SimplicityChrom](#)

Software

APPLICATIONS

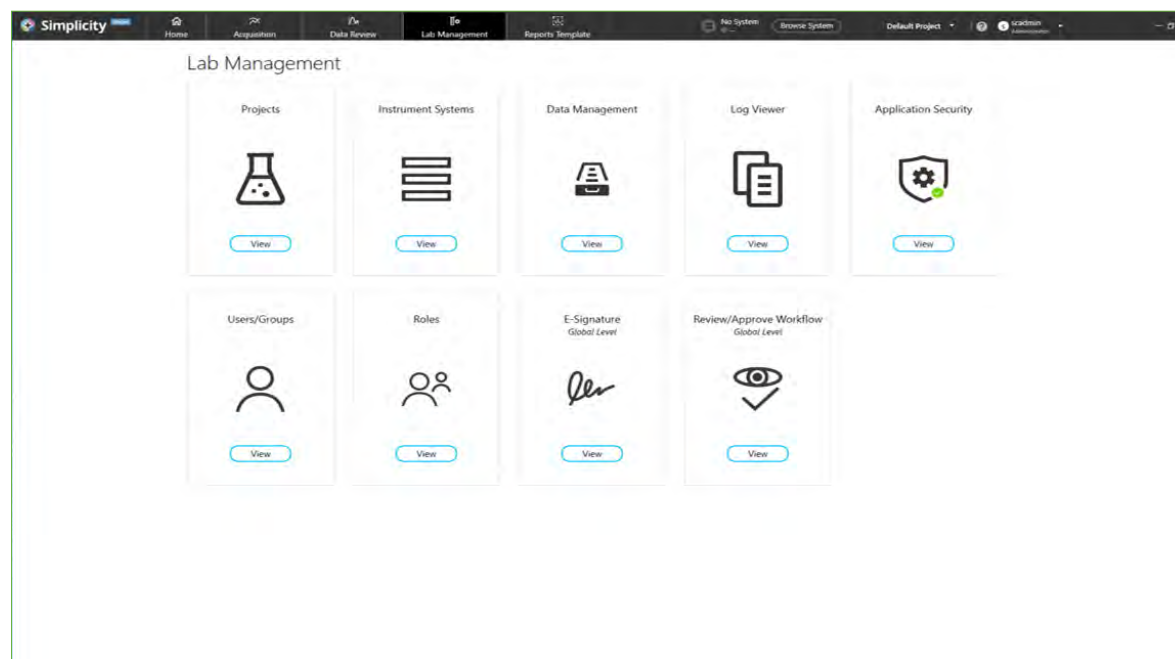
# THE SOFTWARE THAT'S SIMPLE

[Click for More About SimplicityChrom](#)

► End-to-End Control – *Everything you need is in one place.*

Software

APPLICATIONS



## End-to-End Control

**Everything you need is in one place.**

SimplicityChrom enables you to complete all your data-processing and instrument-control needs in one, easy-to-use application. Bold and intuitive iconography make learning and designing workflows easy for both novice and expert users.

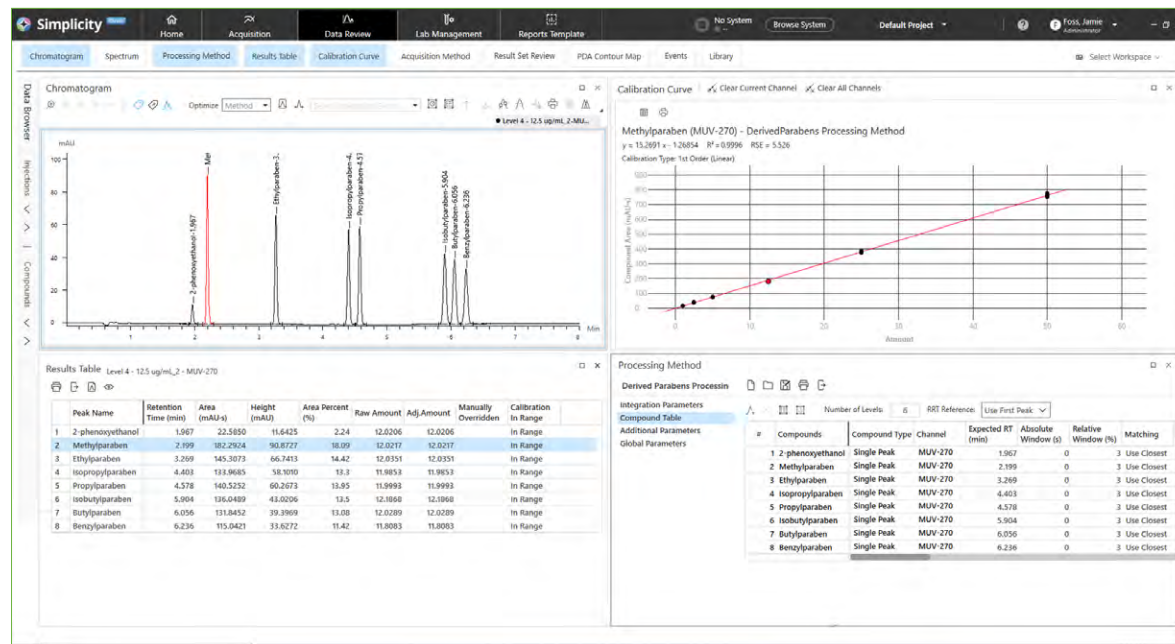
# THE SOFTWARE THAT'S SIMPLE

[Click for More About SimplicityChrom](#)

► Intuitive Design – *All the power you need, without the overcomplication you don't.*

Software

APPLICATIONS



## Intuitive Design

**All the power you need without the overcomplication you don't.**

On a single screen, SimplicityChrom allows you to view data tables and chromatograms for a given analyte across multiple samples to identify trends, save time, and perform better data analysis. Automatic recalculation of results saves time and reduces the potential for error, as users see changes in real time.



# THE SOFTWARE THAT'S SIMPLE

[Click for More About SimplicityChrom](#)

► Customized Experiences – *Designed for the most important user – you.*

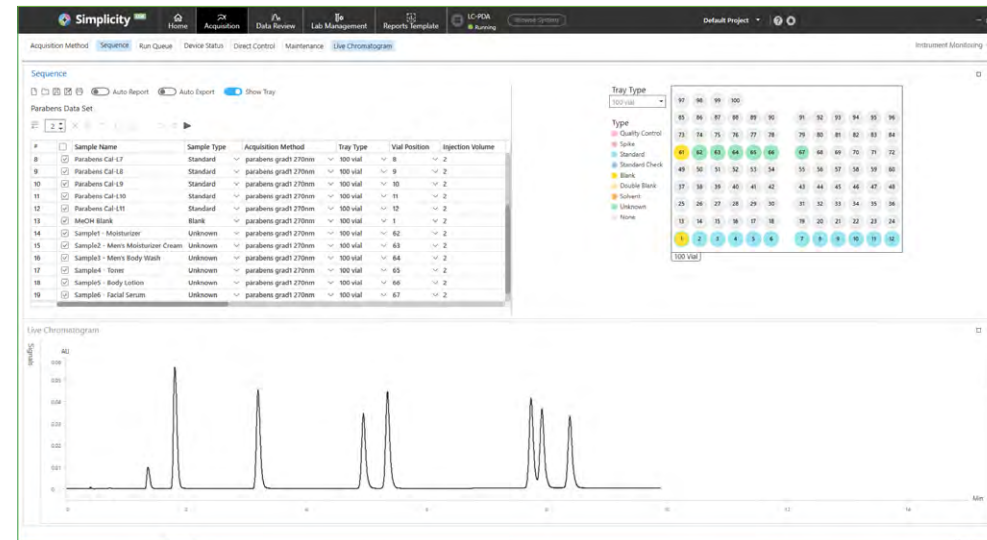
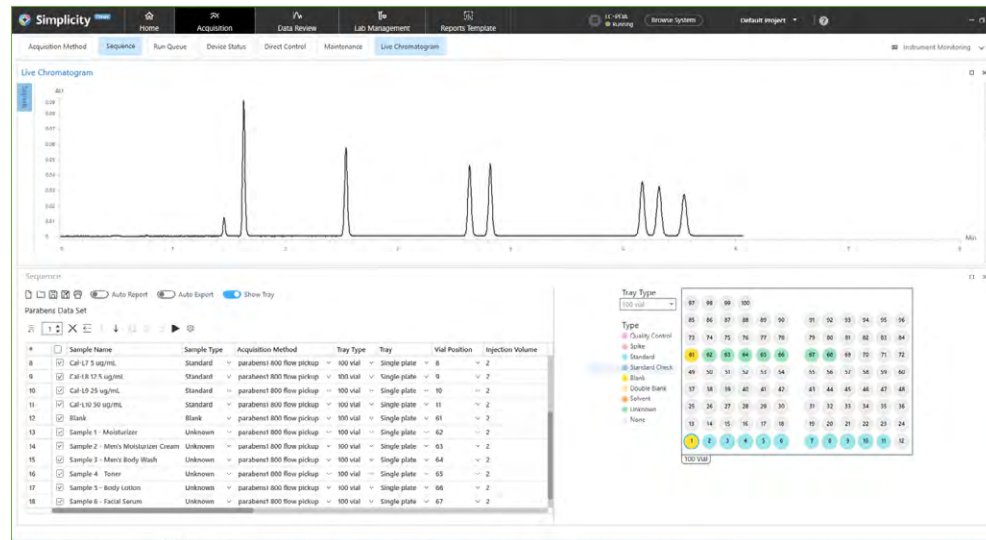
Software

APPLICATIONS

## Customized Experiences

**Designed for the most important user – you.**

Not all users process or visualize data the same way. SimplicityChrom allows you to create customized layouts and workflows to meet your process, allowing users to quickly and easily rearrange and save their workspaces in the Acquisition and Data Review environments.



# THE SOFTWARE THAT'S SIMPLE

[Click for More About SimplicityChrom](#)

► Efficient Compliance – *Compliance doesn't have to be complicated.*

Software

APPLICATIONS

Title	Document Type	Status	Date of Last Action	Last Modified By	Action
Acetaminophen	Acquisition Method	Approved	20 Aug 2020	James Donne	<a href="#">View</a>
Diphenhydramine	Report Template	In Review	20 Aug 2020	Li Qiang	<a href="#">Review</a>
Codeine	Acquisition Method	Approved	20 Aug 2020	Diya Chandra	<a href="#">View</a>
Aspirin	Processing Method	Pending Review	20 Aug 2020	Abby Smith	<a href="#">Review</a>

## Efficient Compliance

**Compliance doesn't have to be complicated.**

SimplicityChrom streamlines your compliance activities, incorporating all 21 CFR Part 11 functionality in one, easy-to-use platform. Additionally, administrators can manage user access directly in the CDS application, mitigating many unnecessary IT challenges.

# TESTING FOR POTENCY QUALITY AND SAFETY

From growers to manufacturers to third-party testing labs, the cannabis market is committed to ensuring the top quality, accurate potency, and consistent safety of its product. Arming growers and sellers with accurate data concerning the potency of their product facilitates higher prices, while also ensuring products are safe for consumption.

Ensuring label-claim accuracy is equally important for growers, dispensaries and consumers alike. Leveraging the fast and robust chromatographic separation capabilities of the LC 300, along with the wide linear dynamic range of the LC 300 PDA detector, a variety of cannabinoids can be quickly and accurately quantified with exceptional reproducibility.

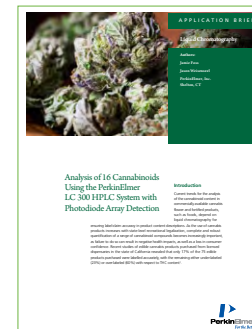
## APPLICATIONS

Cannabis



Read our application brief to learn more about cannabis analysis.

[Analysis of 16 Cannabinoids  
Using the PerkinElmer LC  
300 HPLC System with  
Photodiode Array Detection](#)



In addition to the LC 300, we offer a full portfolio of solutions for the cannabis market. Whether you perform heavy metals testing utilizing ICP-MS, pesticide analysis on an LC/MS/MS, or terpene analysis using GC/MS, PerkinElmer is your single source solution. For more information, please visit our [Cannabis Analysis website.](#)



# FROM FOOD LABELS TO ADULTERANTS



When it comes to food analysis, the LC 300 system helps ensure food labeling is accurate, additives are quantified for safety and compliance, and adulterants are identified.

As regulations on food safety and labeling requirements become more stringent, it's essential that your instrument has the optimal balance of performance and versatility. And knowing that your system has the ability to grow with your needs ensures that your investment is future proofed.

Protecting consumer safety and verifying label-claim accuracy are essential for any food manufacturing operation, and these activities rely heavily on the accuracy and breadth of LC analyses.

[Read our application note](#) detailing a fast and accurate method for the quantification of isoflavones in nutraceutical samples in support of label-claim activities.

Further, ensuring consistent product composition requires analyses that are not only accurate, but also reproducible, to allow you to confidently produce and sell your product.

[Read our application note](#) highlighting a method with exceptional repeatability for the analysis of four sugars in a complex maple syrup matrix, utilizing the LC 300 HPLC and RI detector.

## APPLICATIONS

Food



# QUALITY CONTROL OF PERSONAL CARE PRODUCTS



Testing of personal care products is an essential part of any consumer product company's quality and safety program. With consistently evolving regulations and consumer pressure, manufacturers of consumer goods need to have confidence that their raw materials and finished products are free from adulterants and impurities and are safe for consumer use.

The robust nature of the LC 300 system ensures that as your analytical needs change, your instrument and software can adapt to meet those needs. Whether you're testing haircare products to determine the presence of parabens or glycols, characterizing lipstick to confirm adherence to composition guidelines, or analyzing sunscreens to ensure broad-spectrum coverage label claims, the LC 300 system offers the analytical performance you need, without the unnecessary complexity that can slow you down.

## APPLICATIONS

Consumer Goods

**Read our application note to learn how we can aid you in achieving regulatory compliance and accurate product composition in support of quality control programs.**

[Analysis of Sunscreen Active Ingredients and Parabens in Lotions and Lip Balms by UHPLC with PDA Detection](#)



# ANALYSIS FOR A HEALTHIER WORLD



Good Manufacturing Practice (GMP) not only drives the QA/QC process inside your company, but it also guides the development of the technologies, tools, and processes we build. Together, we can assure you are meeting your regulatory obligations while continuously manufacturing compliant products used during Chemistry Manufacturing Controls (CMC) testing in the drug development and QC lot release processes of commercial drug manufacturing.

**Drug substance and excipients testing** ensures the purity, quality, and safety of drug substances so that they are fit for purpose. Our LC 300 system can be used to QC drug substances and aid in your GMP compliance activities.

**Control of impurities** is mandatory for both drug substance and drug product testing to guarantee impurity levels are below regulatory levels. The sensitivity and stability of the LC 300 detectors is ideal for the identification of organic impurities in drug substances, products, and excipients.

**Final drug product analysis**, including dissolution testing and stability testing, ensures correct active pharmaceutical ingredient (API) strength. The multiple detector options available with the LC 300 system ensures you can analyze products for a wide range of constituents.

## Take Comfort in Peace of Mind

With stringent regulations in the pharmaceutical industry, you can have confidence that our LC 300 system, operated with SimplicityChrom CDS software, helps you remain 21 CFR Part 11 compliant. Third-party drivers also allow for seamless integration with existing data systems.

## APPLICATIONS

▶ Pharmaceuticals



# GET THE MOST OUT OF YOUR INSTRUMENTS AND YOUR ANALYSIS

You take your analysis seriously – and so do we. Our carefully crafted consumables promise reliable performance, control of operating costs, and maximized uptime of your instruments. Choose the right consumables for your analysis.

## CHROMATOGRAPHY ESSENTIALS

Ensuring all of the components of your LC instrument are running smoothly is paramount to ensuring accurate and precise analyses. Whether you need spare lamps or flowcells for your detectors, valves, or pistons for your pumps, or autosampler trays – we have you covered. [Read More](#) ►



## QUASAR™ LC COLUMNS

Achieve rugged and reproducible results – batch to batch and column to column – with an all-encompassing, flexible solution that meets the diverse, changing needs of your analyses. From a variety of sizes to a scalable design, our LC columns are flexible for all your separation needs. [Read More](#) ►



## VIALS

Not all vials are created equal. Contamination from sub-standard glass or poor-quality septa can lead to interferences, inaccuracies, and failures that can affect lab productivity. Our high-quality vials and caps facilitate consistent results day after day. [Read More](#) ►



## APPLICATIONS



# COMPLETE SERVICES FOR INCREASED PRODUCTIVITY AND EFFICIENCY



- Asset optimization
- Lab environment and instrument monitoring
- Asset location
- Education and training
- Technology and descriptive analysis
- IoT/Lab of the future
- Remote support
- Multivendor services
- Compliance
- Lab support
- IT solutions
- Instrument qualifications



## APPLICATIONS

Today's lab leaders are facing several challenges, from tighter deadlines to increased budget scrutiny to teams with various degrees of comfort with lab equipment. Time that could be spent getting ahead is spent on noncore activities.

To help you overcome barriers to success, OneSource® Laboratory Services has built a team of trained scientists and engineers who bring their real-life knowledge to you, helping increase your productivity with recommendations on how to best utilize your assets. With this knowledge, you can get back to your core mission.

Labs of all sizes need to know their equipment will work as expected, every time they turn it on. From contracts and performance maintenance available for our instruments as well as other manufacturers' equipment to full lab asset management delivered globally, we can help you make the most of your important lab assets.

And for labs looking to introduce new equipment and techniques, we offer training at our facilities and at yours.

Service

# COMPLETE SERVICES FOR INCREASED PRODUCTIVITY AND EFFICIENCY



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- Education and training
- Technology and descriptive analysis
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- Remote support
- Multivendor services
- Compliance
- Lab support
- IT solutions
- Instrument qualifications

## INSTRUMENT SUPPORT SERVICES

Maintaining labs is never easy, especially when an instrument is down. We know you're responsible for the performance of your laboratory, and we make sure nothing holds you back. With the quickest response times and highest first-time fix rates, our field service engineers, manufacturing site technical services, and research and development teams are here at your disposal to ensure maximum uptime.

You need your instruments to be reliable and running with minimal downtime, and you want flexible service agreements that are easy to comprehend. We understand, and we're here to help.

## COMPLIANCE SERVICES

Navigating the complexities of regulations can be difficult for even the most efficient laboratories. OneSource compliance services can help relieve the burden of compliance and free up more time for your core activities. With our consultative approach we can help identify gaps in data integrity and compliance of your lab instruments and systems.

OneSource offers the most robust range of compliance products and services for each stage of the instrument lifecycle. From commissioning, qualification, and computer system validation, to periodic OQ, and even system retirement activities – OneSource has your lab's compliance covered.

## EDUCATION SERVICES

Whether you are looking for a basic instrument refresher course, simple troubleshooting techniques, general application support, or method optimization, our field application scientists or service engineers will come directly to your lab. Through education, you will gain knowledge and insights into the latest techniques, not only increasing your confidence, but also unlocking the full potential of your instrument.

## APPLICATIONS



# SMARTER QUESTIONS FASTER ANSWERS



Looking for industry-leading informatics software? We've got that, too: Overcome challenges like volatile pricing, increased environmental regulation, and data complexity. Browse our suite of informatics software and improve collaboration, spark R&D innovation, and deliver predictive analytics in real time.

## ChemDraw®

Accelerate the drawing and publishing of chemical and biological compounds.

## Signals™ Notebook

A cloud-native electronic lab notebook that captures, reuses, and shares experimental data.

## E-Notebook™

Document analyses and leverage the knowledge gained from previous experiments.

## Lead Discovery

Discover actionable insights by seamlessly integrating chemical and biological molecules with activity results.

## TIBCO Spotfire®

Quickly analyze disparate data from multiple sources and create a complete picture of what's happening in real time.

### APPLICATIONS

▶ Informatics

**PerkinElmer, Inc.**  
940 Winter Street  
Waltham, MA 02451 USA  
P: (800) 762-4000 or  
(+1) 203-925-4602  
[www.perkinelmer.com](http://www.perkinelmer.com)



For a complete listing of our global offices, visit [www.perkinelmer.com/ContactUs](http://www.perkinelmer.com/ContactUs)

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