Thermo Scientific Dionex Chromeleon 7 Chromatography Data System

Chromeleon 7 CDS
Streamline Your Laboratory

Thermo
SCIENTIFIC

Streamline your Laboratory

One CDS for all chromatography laboratories – routine, development or research – regulated or not.

A Chromatography Data System or CDS is vital for efficient and reliable operation of any modern chromatography laboratory – it must manage all the analytical processes from instrument control, to raw data storage and processing, right through to generating the final results.

Every laboratory is different and faces unique challenges. We want those challenges to be your science, not your data handling system. Our mission is to provide a CDS that delivers a superior user experience for the entire laboratory analysis system, fitting with existing chromatography workflows, giving better results, faster.

Whether the workflow needs are basic or complex, from fully compliant routine analyses to totally flexible research workflows or anything in between — Thermo Scientific™ Dionex™ Chromeleon™ Chromatography Data System can be configured to cover them all.
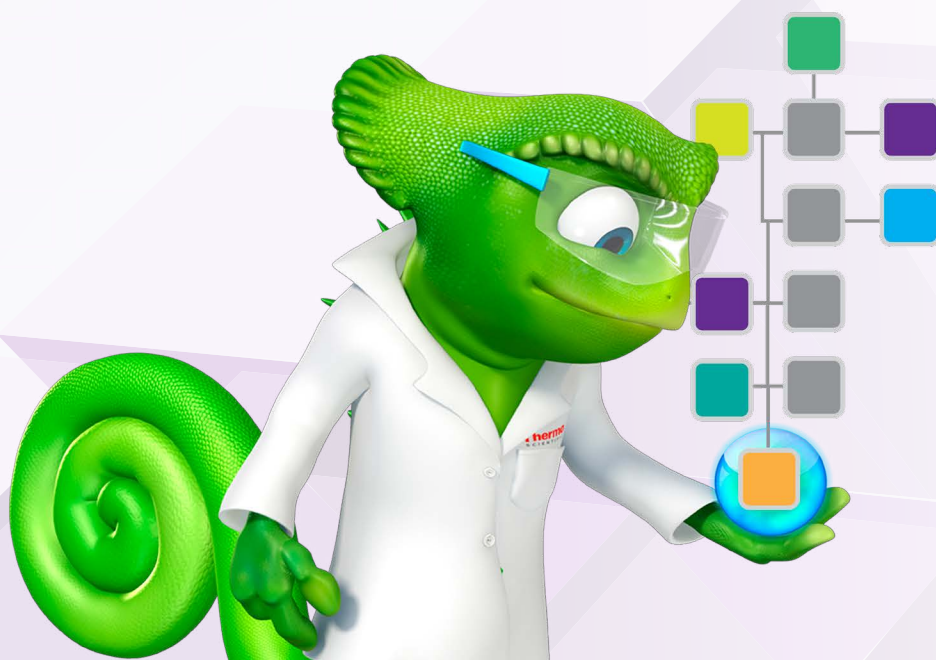
Enjoy Operational Simplicity

Everything in Chromeleon CDS is designed using our rules of Operational Simplicity to minimize the number of steps, the training required, and the time taken for any task. This ensures the best possible workflow experience, shortening the time needed to become familiar with the software while providing smart, intuitive tools — reducing errors and increasing efficiency.

… increase productivity

- Error-free sequence setup using eWorkflows™
- More "right the first time" analyses using Smart Startup and Intelligent Run Control
- Faster data processing, reviewing and reporting with dynamic updating and smart tools built in

… control all your instrumentation

- Native control for Thermo Scientific IC, GC, LC and MS instruments
- Comprehensive control for over 300 third-party instruments
- Customizable ePanels provide a consistent look and feel for all instruments

… achieve regulatory compliance

- Automated software and instrument qualification routines and qualification monitoring
- Highest data integrity and traceability with comprehensive security tools.
- eReports and eSignatures ensure regulatory (incl. 21 CFR Part 11) compliance

… simplify administration

- Centralize administration of licenses, users and network resources
- Organize and archive data
- Distribute resources across the network, between laboratories and sites

… connect your laboratory

- Easily interface with other laboratory software (e.g. LIMS, SRM)
- Access Thermo Scientific™ AppsLab for our library of analytical applications
- Control instruments and view data from mobile devices

Meet Chromeleon…

Chromeleon Console
Instruments, Data and eWorkflows

Easy data organization

Folder structure can be arranged to fit with any workflow.

Instant data access

Patented Chromatogram MiniPlots and Custom Report Columns give immediate feedback on injection quality and results.

Convenient Categories

For easy navigation between instruments, data and eWorkflows.

Associated items

All files required to run, process and report the data are included. Also attach external files, e.g. a standard operating procedure (SOP) for direct access.

eWorkflows – fastest way from samples to reliable results

Customizable ePanels for instrument control

Chromatography Studio
Data Processing and Reporting

Easy sample navigation

Quickly switch between injections and pin to overlay.

Interactive ribbon

Easily find all relevant tools and functions for the current activity.
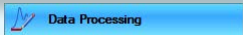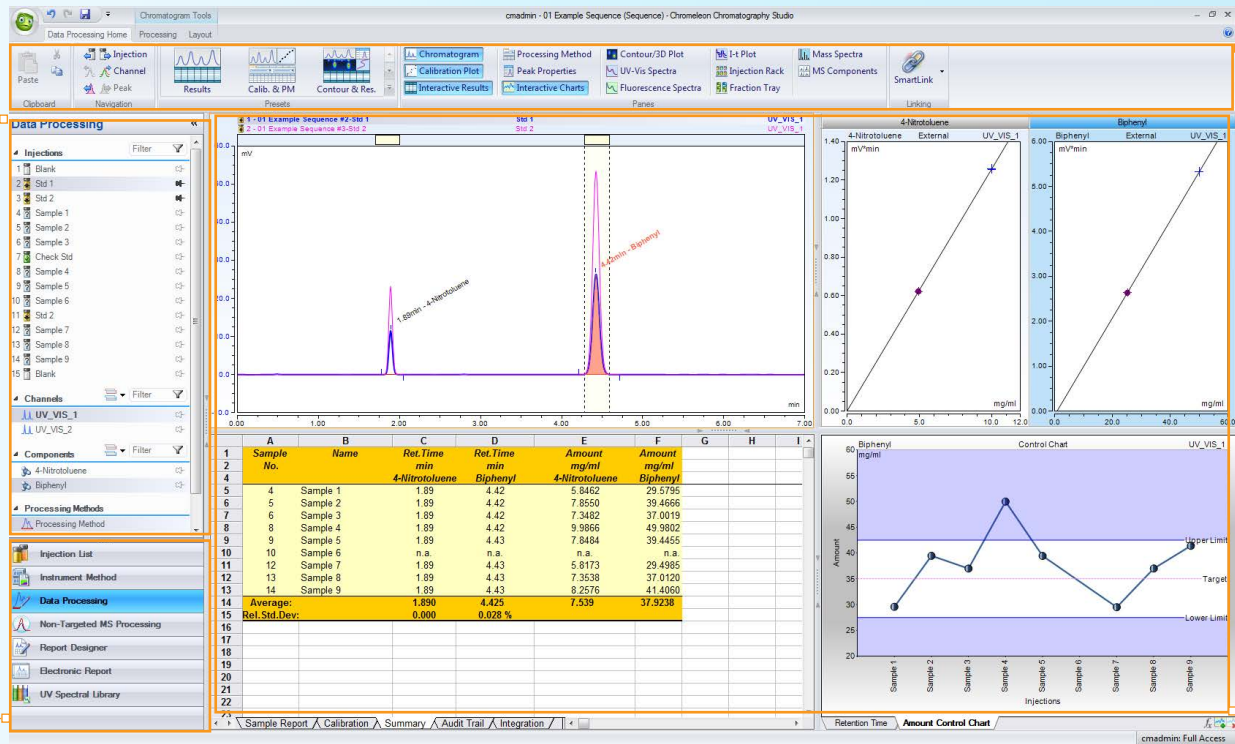
Data Processing — Processing Method, Calibration/Spectra Plots, Interactive Results/Charts, and more

Convenient Categories

Access everything needed to process, review and report the entire sequence.

Broad Working area

View all required information in one location for fast, easy data review.

Injection List — Synced to Console

Instrument Method
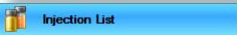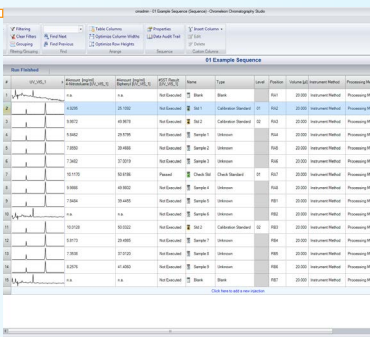
Report Designer — Spreadsheet-based
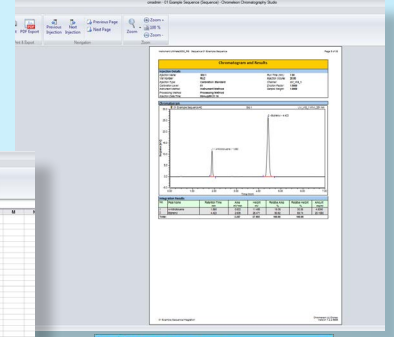
Electronic Report — With electronic signatures

Increase Productivity

"…the gain in efficiency from the use of the Report Designer feature…has taken what was a 2–3 hour job to <1 hour in most cases. The largest saving is in the use of Chromeleon software's SST feature in the processing method. [Running] a two-shift operation, there was always an 8-hour period/day when analyses would run but could not be monitored. … Now SST data allows me to build the criteria into the run and … I can make use of a whole extra shift."

– Douglas Manufacturing

Boost laboratory efficiency with Operational Simplicity and Intelligent Functionality

Chromeleon CDS provides a suite of smart tools that assist the user, making routine tasks faster and generating better quality results. Key tools are:

– **eWorkflows** ensuring error-free execution of each analysis to meet SOP requirements

– **Smart Startup** and **Sequence Ready Checks** ensuring runs only start when everything is equilibrated and ready

– **System Suitability Tests (SST)** with **Intelligent Run Control (IRC)** providing automated checks for in-run pass/fail of limits and result dependent automation of the acquisition

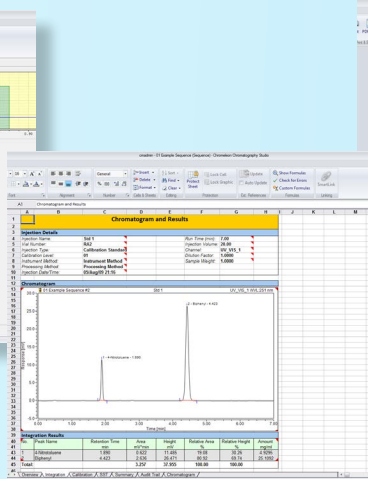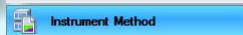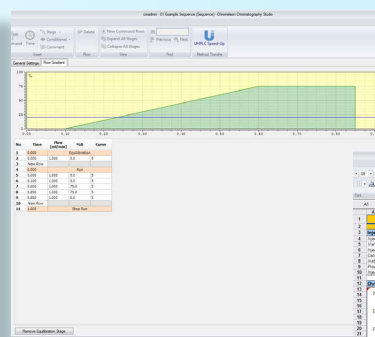– Powerful spreadsheet-based **Report Designer** simplifying creation of user-defined templates to meet all reporting and charting requirements

These tools simplify many tasks, reducing errors and enabling more 'right the first time' analyses.

Eliminating workflow errors

Sequence Creation
eWorkflows create complete, correct sequences

+

Instrument Preparation
Smart Startup ensures proper instrument equilibration

+

Sample Analysis
Ready Check finds sequence issues. SST & IRC monitor in-run injection quality

+

eWorkflows deliver productivity

Manually creating sequences is an inefficient, error-prone process. eWorkflows provide a solution to easily create complete,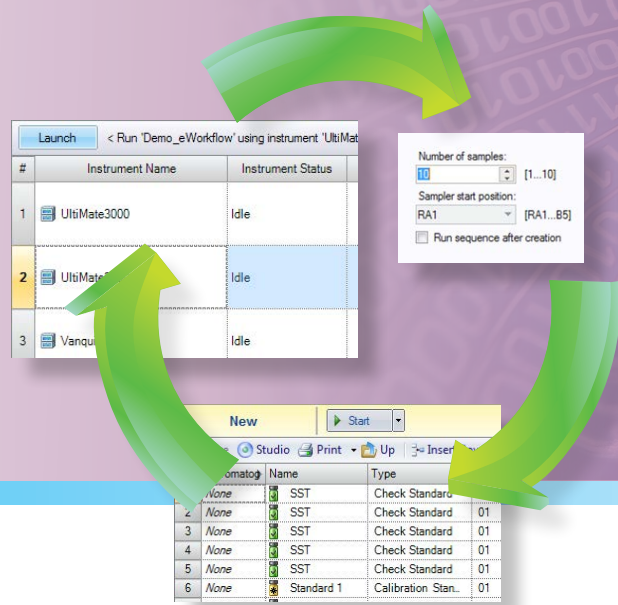 correct sequences with predefined associated files and a well-defined structure. They minimize the amount of training, effort and time required to get from sampling to reliable results, increasing laboratory productivity.

Faster data processing

Once the analysis is complete, batch review and reprocessing of chromatography data can be a very time consuming and error-prone process. Chromeleon CDS simplifies and streamlines this process using:

- In-sequence **Miniplots** and **Result Columns** giving an immediate overview of the data and results

- **Dynamic Data Processing** ensuring all selections and changes are instantly reflected in the data and results, for all injections in the sequence, saving huge amounts of data processing time

- **SmartLink** providing all the information needed for fast, easy data evaluation

- **Cobra wizard** which quickly sets optimal detection settings for each analysis in just a few steps

- **SmartPeaks™ Integration Assistant** which, with just a few clicks, consistently integrates the peaks

Spending less time processing, checking and reporting results increases laboratory productivity.

Data Processing
Dynamic Data Processing, SmartPeaks & Cobra wizard for fast data processing

+

Data Reviewing
SmartLink for easy data evaluation and Electronic Reports for controlled result sharing

+

Data Reporting
Fully traceable Report Designer with built-in Report Check

=

means increased productivity

Control all your instrumentation

"Chromeleon offers the best support for third-party instruments. Competitors' software provided only limited support for far fewer third-party instruments."

– Douglas Manufacturing

Chromeleon CDS not only provides complete control of Thermo Scientific GC, IC, LC and MS instruments, but also comprehensive control of many more chromatography instruments from most other LC and GC vendors, enabling a true single-vendor CDS solution.

Intuitive Instrument Interface

Get instant access to all instruments via automatically-generated user-customizable ePanels. They provide a consistent look and feel for all chromatography instruments with comprehensive controls, instrument status, sequence control and easy monitoring of detector baselines.

Full Control of LC, IC and GC Instruments

A deep integration of Chromeleon CDS with Thermo Scientific instruments enables complete control of all functions including easy calibration, controlled shutdown when an analysis finishes, and automatic reminders of service and calibration intervals for LC instruments.

Control of other vendor instruments is implemented using native drivers either provided directly by, or created in cooperation with, the instrument manufacturer ensuring there is no loss in control when compared to any other CDS.

LC

IC
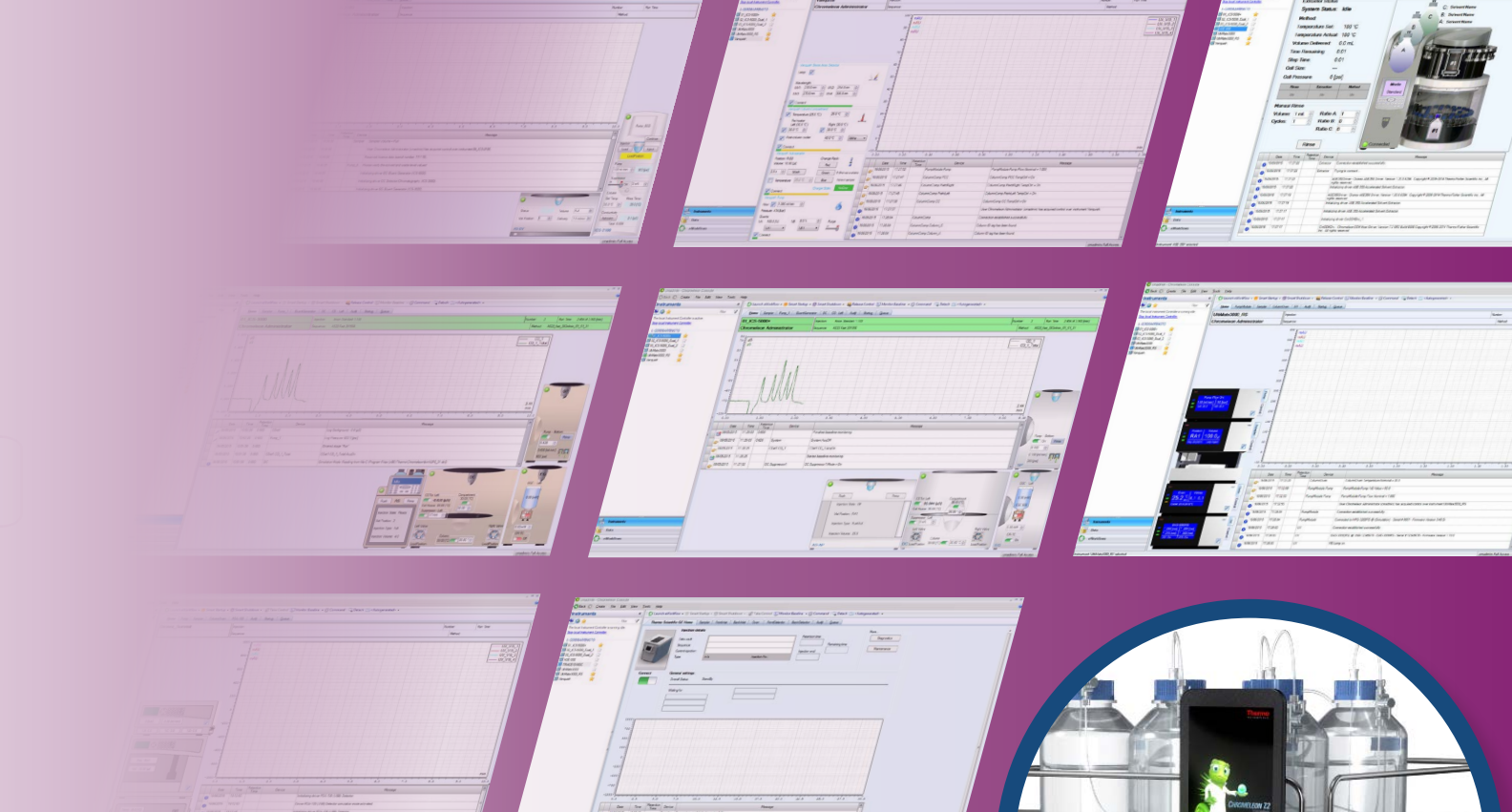
Integrated Control of Mass Spectrometry Instruments

More and more customers want to take advantage of the increased sensitivity and selectivity provided by MS instruments. Chromeleon CDS fully integrates MS control lowering the barrier for this change by providing all the usability, scalability and compliance benefits in the same software used for chromatography separations.

The support for Thermo Scientific GC-, IC- and LC-MS instruments uses native MS control drivers combining powerful Chromeleon CDS features with additional MS-specific data views, processing, library searching and reporting capabilities. By extending Chromeleon CDS beyond chromatography into MS, it is now possible to streamline chromatography and MS quantitation workflows within a single software package and use the MS like any other routine detector.

Chromeleon CDS Goes Mobile

Today's world is connected, so why not extend this to your Thermo Scientific UHPLC system? The Chromeleon CDS App provides access to view instrument and run status, control instrument parameters, and even start runs using eWorkflows, all directly from the tablet.

LC-MS
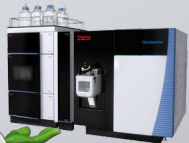
GC-MS

GC

COMPLIANCE

Achieve regulatory compliance

"Our customers actively requested a 21 CFR Part 11 compliant system for purity analysis. Now that the system is in place they feel more secure knowing their data is safe and that we have full audit trails with user actions recorded for each chromatogram. It's also very helpful for them when compiling data packets for regulatory filing." – Sigma-Aldrich

Control system access

An advanced security system supports an unlimited number of security levels and is designed to fit any chromatography workflow. Over 130 different privileges can be allocated to an unlimited number of different user roles. Access groups further determine control of different instruments and data objects ensuring users are only allowed to see permitted items.

Access control

Comp

Traceability
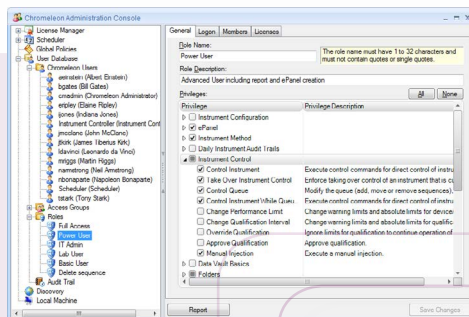
Track system activities

To ensure data integrity, an automatically-created comprehensive set of secure, computer-generated, time-stamped audit trails tracks all changes for the instruments, users, user databases, results and all data objects. A relational database at the heart of the Chromeleon Data Vault stores all previous versions of a data object to facilitate easy result comparisons. Chromeleon CDS also has a version comparison tool for easy viewing, side-by-side comparison, and even restoring of previous versions.
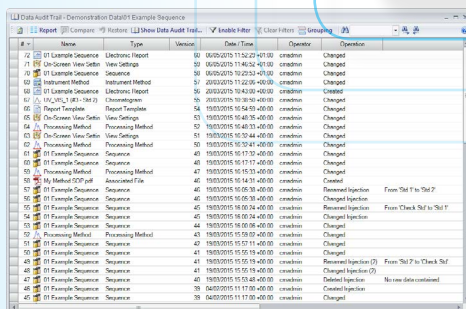
GLP, GMP and 21 CFR Part 11 Compliance

The Electronic Records and Signatures Rule, known as 21 CFR Part 11, was established by the U.S. Food and Drug Administration (FDA). GLP and GMP apply more globally. Chromeleon CDS has been designed to fully meet these requirements, providing features that allow users to implement controls in accordance with their interpretation. It has successfully passed many regulatory audits.

"We have now moved to electronic signatures and this allows us to save time and paper. Only the final approved report is printed and goes into the individual batch record."
– Regis Technologies

Data security

Verification
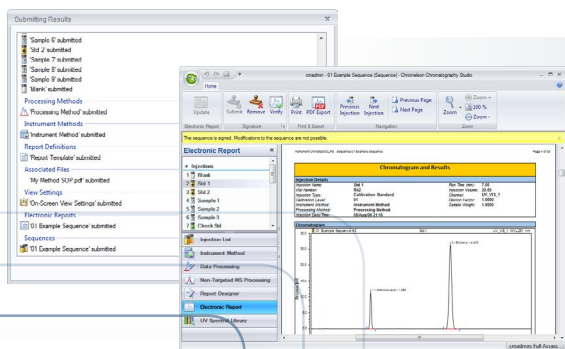
Manage data security

Beyond the protections afforded by the operating system, data security is assured through protected data storage in centralized relational databases, either Microsoft™ SQL Server™ or Oracle™ Database Server.

A comprehensive, chromatography-oriented security system controls access to data and records which can also be electronically signed with two levels of protection:

- Electronic Reports – providing controlled pre-submission previews of final results for structured review
- Electronic Signatures – the Electronic Report and entire sequence are locked and protected from further changes

Verify correct performance

Validation of chromatography systems usually includes installation, operational, and on-going performance qualifications (IQ, OQ, PQ respectively) of both instruments and software.

Chromeleon CDS has built-in IQ, OQ and PQ routines for both itself and LC instruments, both Thermo Scientific and third party. These widely accepted procedures are up to 100% automated, saving time and eliminating user errors.
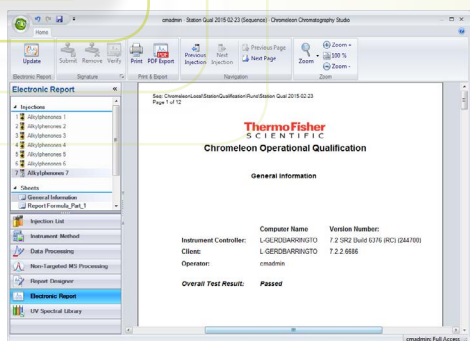
Manage your laboratory

"…straightforward Queries for each HPLC column pull data out from the Chromeleon CDS database and provide trend charts for pressure, resolution, plate count, asymmetry, and retention time. We also use a utilization report to monitor the workload for each of our instruments."

- Douglas Manufacturing

It is a huge challenge to find software that can efficiently and effectively handle all the chromatographic laboratory data, is easy to administer, and will expand with the laboratory while having a low cost of operation.
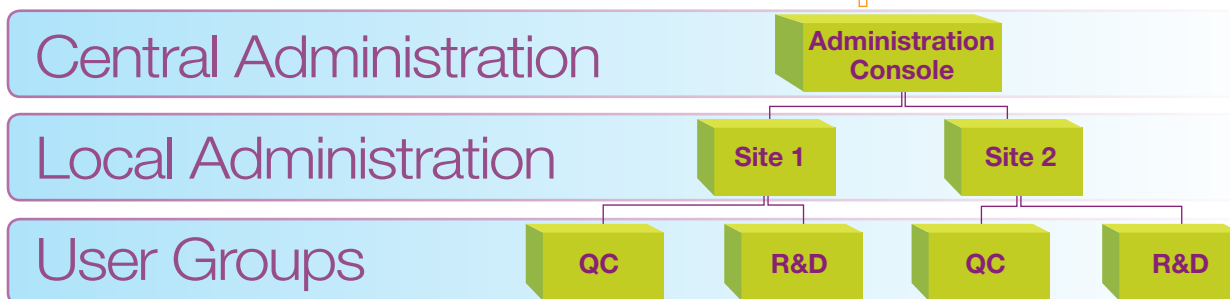
Chromeleon CDS is designed to address these challenges and provides an easily deployable single software platform controlling all chromatography instruments in the laboratory, drastically reducing training and maintenance effort. It scales from a single workstation up to global multi-site deployment connecting different laboratories to one central data center. Thus it will seamlessly grow with the laboratory, while maintaining an identical user experience.
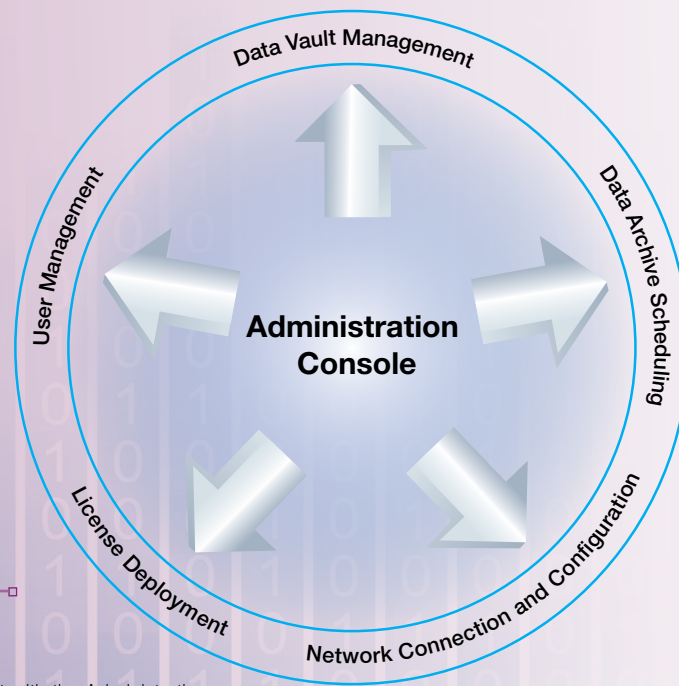
Built for Networks

Chromeleon CDS offers compatibility with most network infrastructures, including Microsoft™ Terminal Server and Citrix™ Virtual Application Platforms. It also provides built-in functionality for load balancing, failover, and hierarchical user management. This ensures highest data security and allows distribution of resources between laboratories while retaining central control, making administration easy and economical.

Fast Network Configuration

The Discovery Service ensures all computers in the network are automatically connected to and configured for the Chromeleon Domain with just a few clicks, simplifying and accelerating deployment.

Central Administration — Administration Console

Local Administration — Site 1 — Site 2

User Groups — QC — R&D — QC — R&D

Data Vault Management
User Management
Data Archive Scheduling
License Deployment
Network Connection and Configuration

Administration Console

Centralized Administration

Chromeleon CDS administration is easy and cost-efficient with the Administration Console allowing centralized performance of many management tasks.

Laboratory Monitoring

Having up-to-date information about laboratory performance allows for informed decision making. Chromeleon CDS can evaluate all data from all instruments and easily visualize this information, for example, to show column performance, instrument utilization or laboratory performance statistics.

24/7 laboratory uptime

A major requirement in many laboratories is to ensure highest instrument uptime. Keeping the laboratory fully up and running during a network outage, planned or not, is a big challenge. Unlike traditional data systems, Chromeleon CDS's intelligent Network Failure Protection (NFP) allows operation independent of the network. When the network is down, the unique XVault technology keeps instruments running, data accessible for processing, and even allows creation and running of new sequences - ensuring 24/7 laboratory uptime.
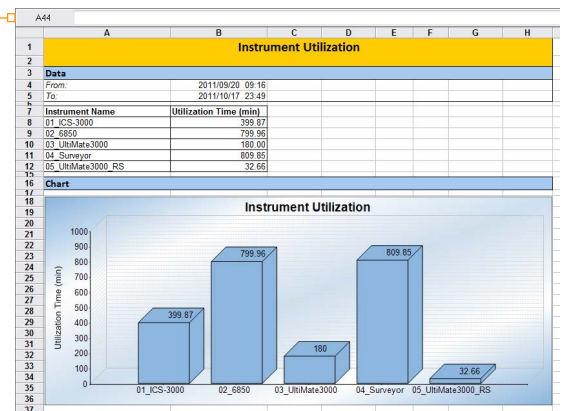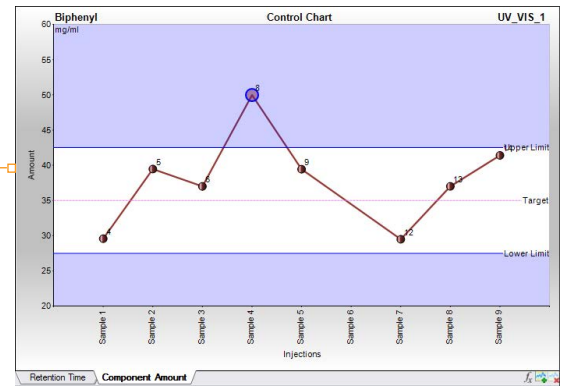
Software license is always available ➕ **Users can always logon** ➕ **Users can continue working** ➕ **No data is lost — ever** ＝ **True 24/7 laboratory uptime**

Connect Your laboratory

Many companies are now facing the challenge of managing the ever-growing volume of data generated and turning it into useful information that enables timely and effective decision making. It is almost a requirement that a CDS can connect to Laboratory Information Management Systems (LIMS) and other tools (e.g. enterprise resource planning (ERP), electronic laboratory notebooks (ELN), manufacturing execution systems (MES), etc.)

Chromeleon CDS is designed to be flexible and open, simplifying connection to any third-party software application. A Software Developers Kit is available for programming of custom interfaces or applications alongside other Thermo Scientific software products.

Seamless LIMS integration

Chromeleon CDS is fully integrated with Thermo Scientific™ SampleManager LIMS™, providing a seamless CDS link within the LIMS to streamline the laboratory process and eliminate manual steps related to sample testing, results capture and analysis. The integration of SampleManager LIMS with Chromeleon CDS gives access to all LC, GC, IC and MS data within the same platform and user environment, simplifying training of personnel and reducing operating costs.

Connect for better decision making

With Thermo Scientific™ Integration Manager™, data generated by any instrument, service, or third party-application can be collected electronically and stored in a central database. The system accepts data regardless of the output format and translates it to the correct format for each intended recipient.

With all data in one location, report preparation effort is greatly reduced thereby freeing laboratory personnel to focus on the science of the laboratory while allowing management to make decisions based on current and pertinent information from the entire operation.
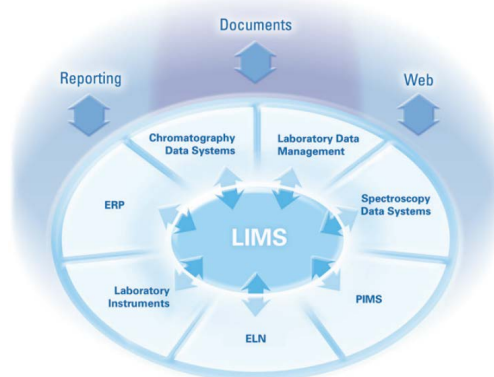
Faster method development

Connect to the AppsLab Library of Analytical Applications (thermoscientific.com/appslab) to discover the latest applications from Thermo Fisher Scientific for LC, IC, GC, GC-MS and LC-MS instruments. Jump start your method development by finding and downloading ready-to-use eWorkflows – created and tested by Thermo Fisher Scientific application scientists – from AppsLab Library right into Chromeleon CDS where they can be directly executed.

Securely share, compare, search and reuse data

The Thermo Scientific™ Data Manager™ Scientific Data Management System (SDMS) is designed to provide indefinite secure storage and rapid retrieval of scientific data from any platform without using the original instrument software. It easily integrates with Chromeleon CDS as well as existing software such as LIMS or ELN, and enterprise systems such as ERP.

Via automatic conversion to XML, Data Manager allows users to securely share, compare, search, query and reuse raw instrument and document data across the organization. Data is secure, manual data manipulation is eliminated, costs are reduced, and information becomes knowledge for management decision making.
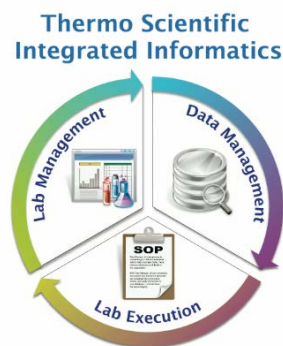
Enhanced vial identification

Chromeleon CDS works with the Thermo Scientific™ Virtuoso™ Vial Identification System to give an error-free alternative to manual vial labeling; it turns a necessary chore into a value-added component within a laboratory workflow. With advanced labeling capabilities, the Virtuoso system ensures accurate vial identification and reliable data, increasing laboratory productivity.

Visit AppsLab Library for online access to applications for
GC, IC, LC, GC-MS and LC-MS.

www.thermoscientific.com/AppsLab

Like Charlie Chromeleon on Facebook to follow his travels and get important
updates on chromatography software!

facebook.com/CharlieLovesChromatography

To find a local representative, visit:

http://www.thermoscientific.com/dionex-info

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