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CHROMELEON®

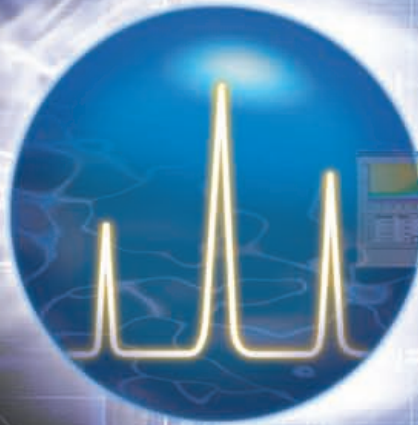
CHROMATOGRAPHY MANAGEMENT SYSTEM

Now sold under the
Thermo Scientific brand

Thermo
SCIENTIFIC

adaptable

compliant



CONTROL



dynamic

 **DIONEX**



THE WORLD'S MOST COMPLETE CHROMATOGRAPHY

You face many challenges: maximize productivity, improve quality, control cost, comply with regulations, cope with change. Amid these challenges, you need to deliver & develop methods, manage a laboratory, or deploy information systems.

Facing your challenges is a lot easier when you have the right chromatography software. Whether you need a solution for HPLC, IC, or GC—whether your domain covers an instrument, a laboratory, a department, or an enterprise—Chromeleon offers you unbeatable capability, flexibility, and usability. Discover what Chromeleon can do for you.



■ Exceptional Usability

Chromeleon looks and works like software you already know, so learning is fast and easy. Browse data like you do in the Windows® Explorer. View and analyze results using a fully integrated spreadsheet that operates like Microsoft® Excel. Take advantage of friendly wizards that guide you through common tasks and procedures. Press <F1> at any time to get detailed, context-sensitive Help on your current task, or to quickly access reference information in Chromeleon's extensive on-line documentation.

■ True Multi-Vendor Automation

Why settle for the limitations of relay control when you can have complete, intelligent automation with detailed event tracking? Chromeleon fully controls over 300 different instruments from more than 30 manufacturers, so you can standardize and simplify your operations—using your existing equipment—without compromising on capabilities.

■ Fast, Powerful Data Retrieval and Analysis

To get real productivity out of your data system, you need more than just instrument automation. You need powerful tools to retrieve, analyze, and manage all the data your automated instruments generate. With Chromeleon's friendly data browser, powerful search features, and integrated spreadsheet, you can rapidly locate, calculate, review, update and report the information you need—and automate all these tasks!

■ Full Regulatory Compliance with Increased Productivity

Complying with regulations such as GLP, CGMP, and 21 CFR Part 11 does not need to slow you down. Chromeleon's built-in compliance features give you all the security, validation, audit trail, and electronic record management tools you need to meet regulatory requirements, without sacrificing productivity.

overview

1

Easy

Learning Chromeleon is fast and easy, because it looks and works like software you already know.

2

Universal

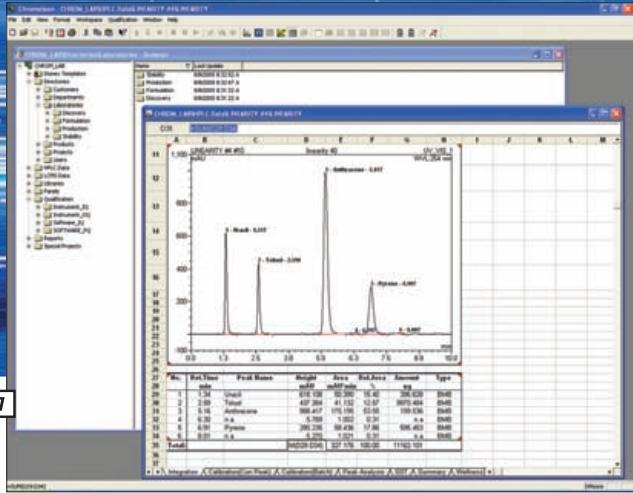
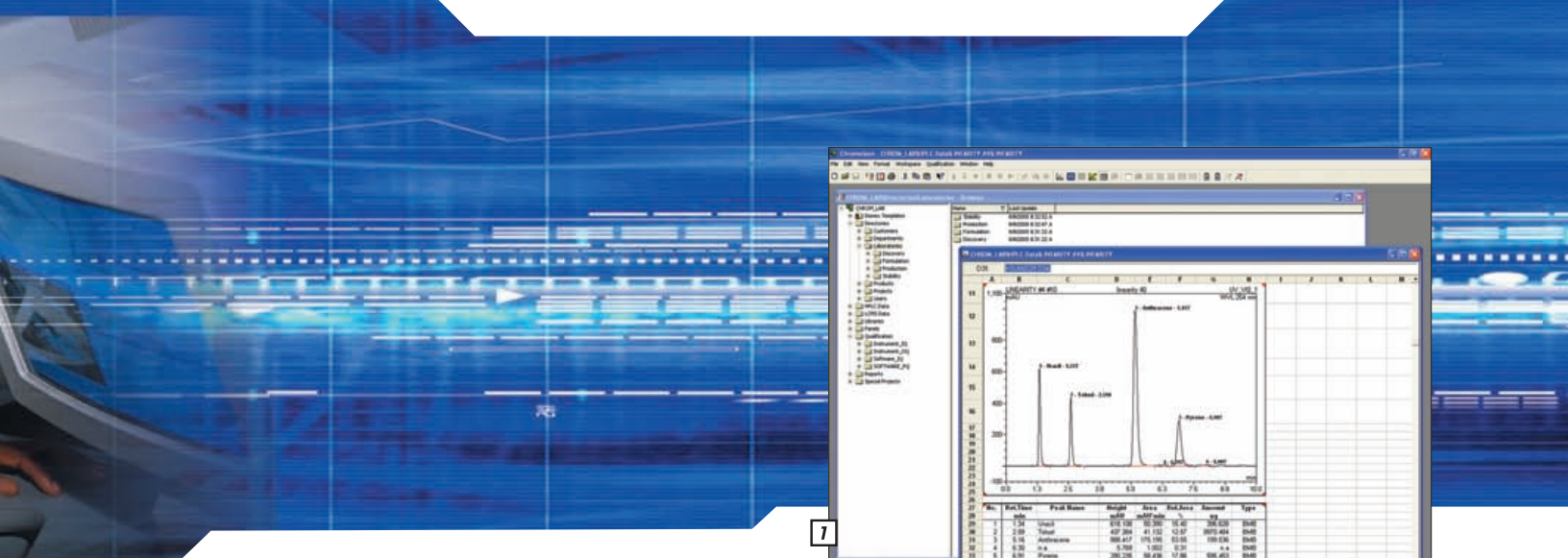
Chromeleon provides far better and broader instrument control than any other chromatography data system.

3

Powerful

Chromeleon's powerful data analysis tools deliver the information you need, quickly and easily.





1

MANAGEMENT SOLUTION

Add device to timebase

Timebase Name: HPLCR3

Manufacturers:

- ABI
- Agilent
- Beckhoff
- BIO-RAD
- CTC
- Dionex
- Eas
- Fisons
- Gilson

Devices:

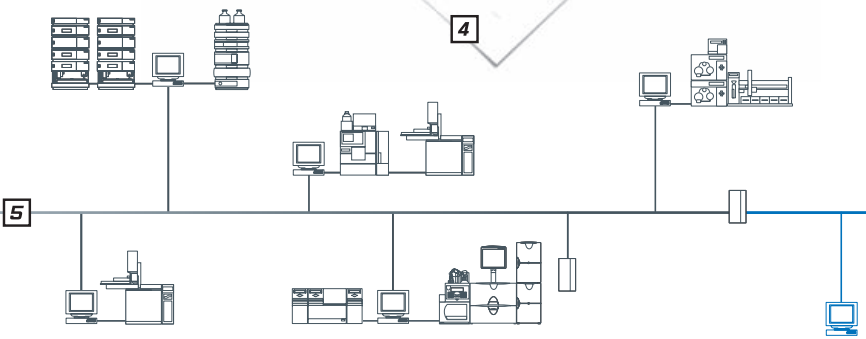
- 1050 Autosampler
- 1050 Gradient Pump
- 1050 UV/VIS Detector
- 1100 HPLC System
- 5000 Gas Chromatograph
- 6000 Gas Chromatograph
- 6000 Gas Chromatograph
- 7673A GC Autosampler

2

3



4



5

A Safe Investment
 With Chromleon, you get more than the best chromatography software. You get a scalable, forward-looking solution that grows and adapts to satisfy your changing needs, plus a complete suite of world-class support services from Dionex, a global leader in separation science.

4 Compliant
 All the software features you need to maintain regulatory compliance are cleanly integrated into Chromleon.

5 Adaptable
 With its outstanding adaptability, scalability, and support, Chromleon will continue to satisfy your needs far into the future.



GAIN CONTROL OF ALL YOUR CHROMATOGRAPHY WITH

Chromeleon's intelligent automation delivers a solution without compromises. From a single software platform, you get full control of a wide range of chromatography instruments. Universal control scripts and customizable control panels let you simplify and standardize operations across different instruments, and optimize the operator interface for different users and applications. And Chromeleon's complete, detailed audit trails record not only the instructions sent to the instruments, but also the responses they send back. Standardization, flexibility, reliability, compliance—you get it all with Chromeleon.

■ Unified Control of Diverse Instruments

It's time to expect better instrument control from your chromatography software. Chromeleon controls over 300 different HPLC, IC, and GC instruments and accessories from more than 30 manufacturers, with full bidirectional communication, extensive command options, and detailed event tracking. You can share methods between different instruments, optimize control panels for different users, or even set conditional triggers in the software to respond intelligently to changing conditions. No other software makes it so easy to harmonize operations throughout your laboratory.

■ Universal Control Scripts

Creating and maintaining methods for different instruments used to be a hassle. You had to deal with different control protocols and terminology, and work around the idiosyncrasies of each device. Training operators and keeping them from making mistakes was not easy, and the only way to transfer a method from one system to another was to recreate the method on the target system.

Chromeleon changes all that. Its universal control scripts let you use exactly the same commands

and programs to operate equipment from different suppliers, simplifying your job and making methods portable between similar instruments. Any differences between the instruments are automatically handled by Chromeleon's device drivers, so you can focus your attention on your broader objectives without being distracted by peripheral details.

■ Operator Interfaces that Fit Your Needs

Most chromatography data systems force you to adapt to someone else's user interface design, even if it doesn't really match your particular needs. But Chromeleon is different: it adapts to you. You can choose an instrument control panel with as much or as little information as you want, or design your own using Chromeleon's unique control panel editor. Cut training time by having all operators use the same panel—even with instruments from different manufacturers. Satisfy diverse needs by using different panels for different instruments, applications, or operators. Pick from dozens of pre-configured panels, modify them as you like, or create your own panels. The choice is yours.

■ Detailed Instrument Audit Trails

Whether or not your laboratory is regulated, you need to know what your instruments did

control



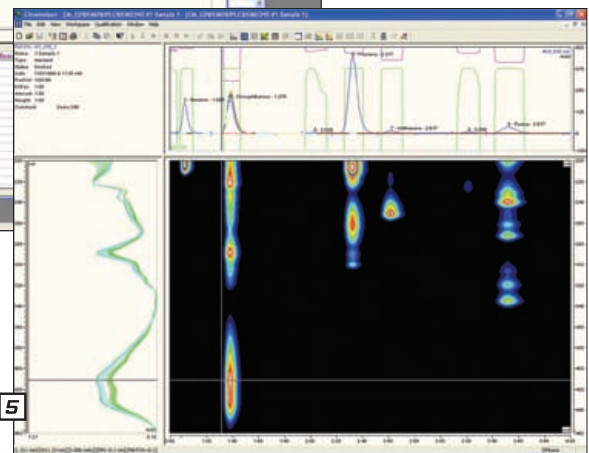
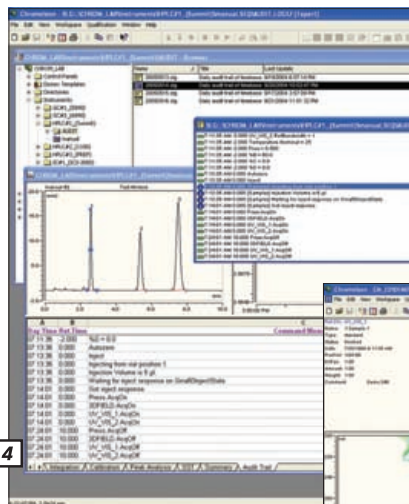
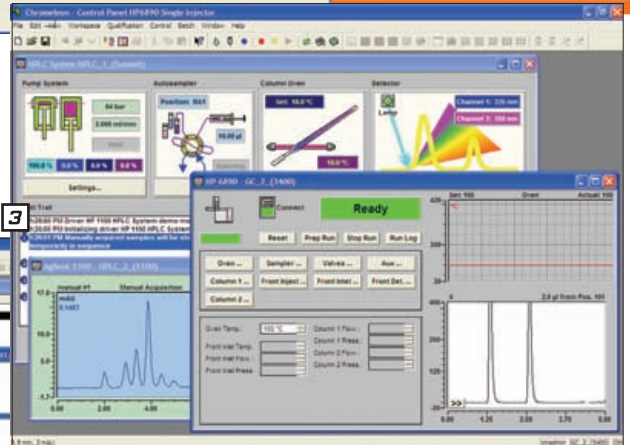
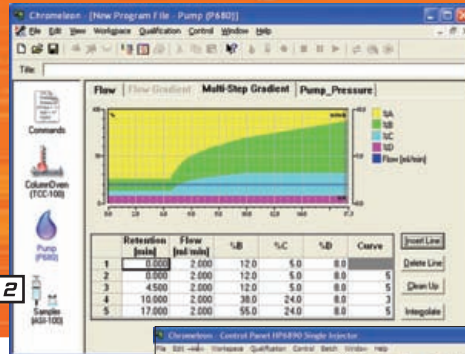
1 Multi-Vendor
Get full control of diverse LCs, ICs, and GCs with a single software solution.

MULTI-VENDOR AUTOMATION

and when they did it. Chromeleon automatically generates detailed event logs that document every control command, every instrument response, every operator action, and every alert related to the generation of your raw data, regardless of whose instruments you use. You can view the event logs post-run, include them in your reports, or even watch them in real time as your instruments run, so you always know exactly what your systems have been doing.

High-Performance Data Acquisition

To get good analytical results, you need to start with high-quality data. Chromeleon collects high-resolution digital data directly from popular instruments made by Dionex, Waters, Agilent, Thermo, and Shimadzu—including full 3-D diode-array data. Data from other detectors can be collected via the UCI-100 Universal Interface, which digitizes up to eight analog detector signals with 24-bit dynamic resolution at data collection rates up to 100 Hz.



2

Universal

Operate instruments from multiple manufacturers with the same Chromeleon instrument control program.

3

Adaptable

Use whatever instrument control panels best suit the instruments, users, and applications in your laboratory.

4

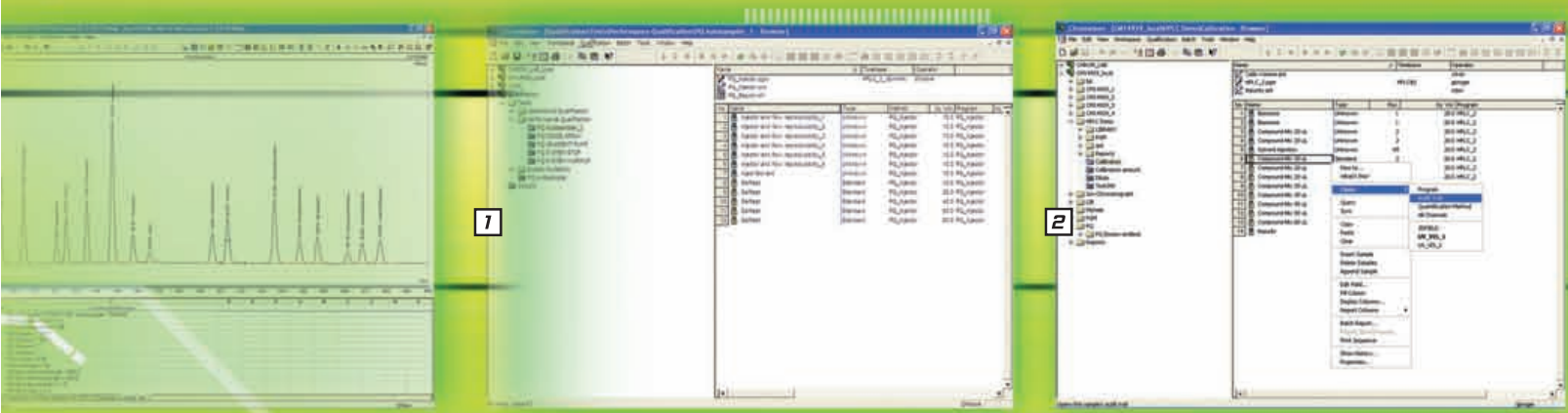
Documented

View a complete log of all instrument events at any time—even in real time as your instrument runs!

5

Accurate

Capture high-resolution data from multiple detectors, accurately and reliably.



GET THE MOST OUT OF YOUR DATA WITH POWERFUL

data

When delivering knowledge is your job, you need to manage data, extract relevant information, and communicate your findings—quickly, effectively, and reliably. Those tasks are a lot easier with Chromeleon. It lets you organize your data any way you like—by project, laboratory, user, product, client, or whatever else suits your workflow. You can quickly find and browse through any set of samples, and instantly compare data from different samples or different detector channels. Analytical results are displayed right on the screen with the chromatograms, and all the information updates dynamically if a change is made, so you never have to worry about consistency. And Chromeleon's integrated spreadsheet lets you easily create customized reports to satisfy specific needs of individual customers.

Fast, Easy Data Access

Chromeleon gives you instant access to your data. You can get directly to sequences, samples, data, meta-data, and results right from the Chromeleon Browser—no need to hunt through directories or mentally correlate scattered files. Simply click on a sequence to see its samples, and click on a sample to see its chromatogram, acquisition program, quantification method, or audit trail. Want to see the same item for the next sample or the next detector channel? Just click on the toolbar buttons to scroll through samples and channels without changing the context. It's so fast and easy that reviewing data actually becomes fun.

Dynamic Data Displays

Get new insights into your data with Chromeleon's versatile, dynamic data displays. You can view any combination of chromatograms, spectra, calibration plots, method settings, and analytical results. As you navigate in one display, all the others update instantaneously, and visual cues help you understand each item in its context. For example, the marked point in the calibration plot always

corresponds to the marked line in the peak table and in the report, as well as the marked peak in the current chromatogram. If you adjust a baseline of a calibration standard peak, the calibration curve and all dependent results are instantly recalculated and displayed. There's no guesswork, no batch reprocessing, no frustrating trial-and-error method optimization.

Powerful Data Mining

With its relational database and data mining tools, Chromeleon delivers answers in seconds instead of hours or days. Just select or enter some characteristics of the samples you want to find, and Chromeleon quickly lists all samples that match your criteria. All the tools you use to study a sequence work the same way with query results, so you can browse and compare samples, view instant summary reports, optimize methods, and more, all without learning a new user interface. Unlike conventional database queries, which limit your choices to basic criteria like sample name and analysis date, Chromeleon lets you search *ad hoc*

1 Easy

Chromeleon's user-friendly design is centered around chromatography concepts like samples, sequences, and methods.

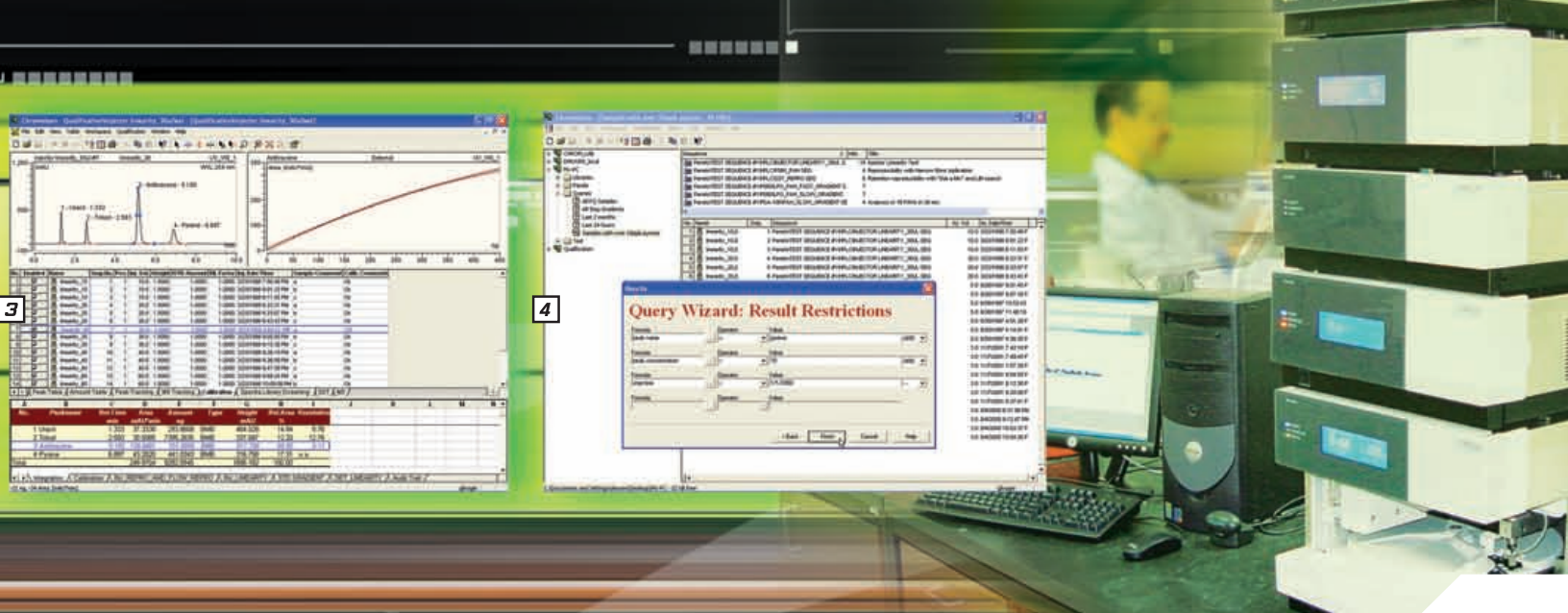
2 Fast

Instantly access raw data, meta-data, and results from any sample or group of samples.

3 Dynamic

Understand relationships between different aspects of your data through dynamic interlinked views.





ANALYTICAL TOOLS

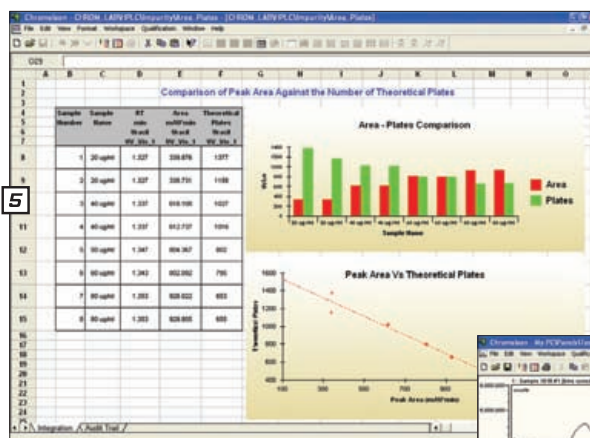
using any combination of criteria, including calculated analytical results!

Find all samples that contained more than a specified amount of a key analyte...all the QC lab analyses awaiting electronic signature...even all the samples run last month on a certain HPLC in which the resolution of peaks 11 and 12 was less than 2.8.

Versatile Reporting

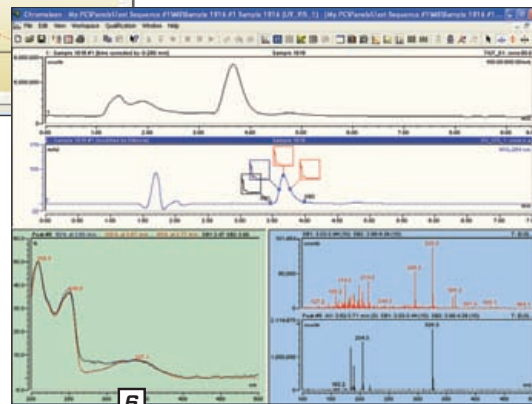
Chromeleon's integrated, Excel-compatible spreadsheet makes it easy to analyze your data, and to present results in the ways your customers want to see them. Report workbooks can have as many worksheets as you like, and can include result tables, chromatograms, calibration plots, spectra, audit trails—even custom equations and charts. Every cell, table, and chart updates instantly if any of the source data change, so you never have to worry about consistency.

You get the custom reports you need without the hassles and validation issues of exporting to external software, so you save time, effort, and frustration.



3-D Data Analysis

Want more information about the composition of your samples? Take advantage of Chromeleon's powerful diode-array and mass spectrometry options to confirm peak purity, positively identify compounds, and develop optimum analytical methods. View, compare, and manipulate multiple chromatograms and spectra quickly, easily, and interactively. Store any number of spectra in your own custom libraries, then use intelligent spectral library matching algorithms to determine the composition of unknown samples. Never before has the power of 3-D data analysis been so accessible to chromatographers!



4 Powerful

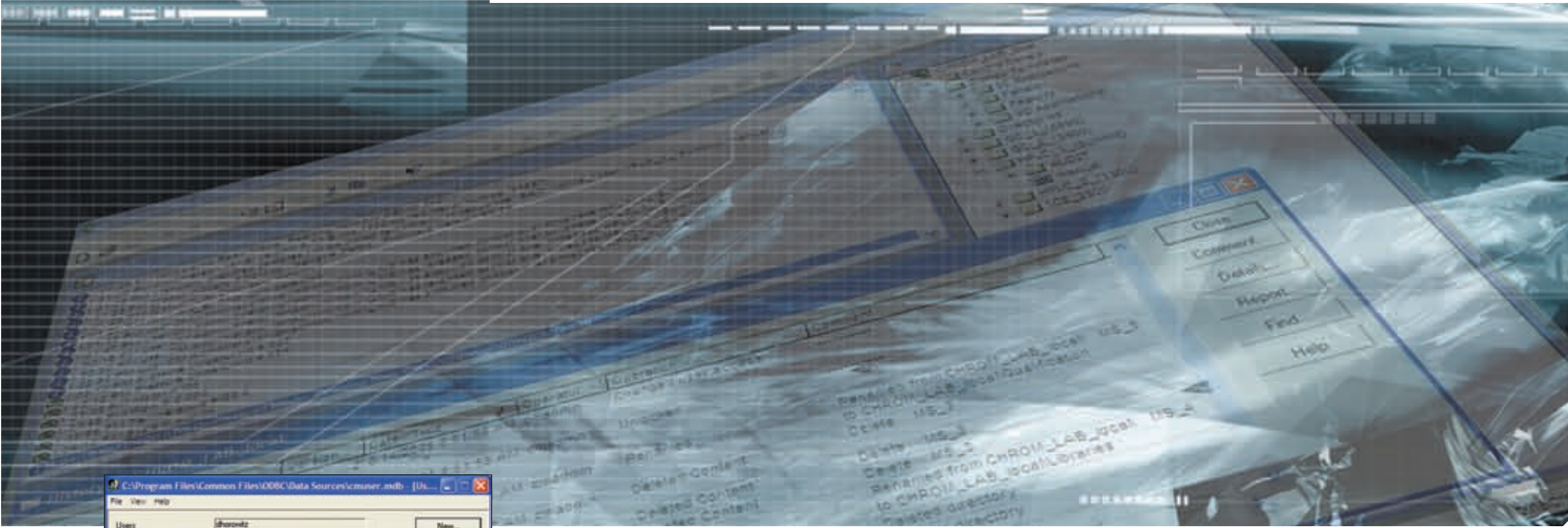
Find and collate results quickly and easily with Chromeleon's powerful data mining tools.

5 Versatile

Produce the custom reports you need quickly, easily, and automatically with Chromeleon's built-in spreadsheet.

6 Multi-Dimensional

Get more information from your samples with Chromeleon's diode-array and mass-spectrometry features.



ACHIEVE FULL REGULATORY

1 **Users**: A screenshot of the 'Users' management window showing a list of users and their assigned roles and access groups. Roles include 'Lab Manager', 'QC - Productivity', 'QC - Stability', and 'QC - Quality Control'.

2 **Performance Qualification**: A screenshot of a 'Performance Qualification' report for 'Injector and Flow Reproducibility'. It includes a table with columns for 'Sample Name', 'Ret. Time', and 'Area'. The table shows data for 'AD1 100 and flow reproducibility_1' through 'AD1 100 and flow reproducibility_8'.

3 **History of CHROM_LAB_local**: A screenshot of a 'History' window showing a log of system changes. The log includes columns for 'Name', 'Version', 'Date/Time', 'Operator', 'Operation', and 'Comment'. Comments include 'Changed user access', 'Renamed from CHROM_LAB_local_US_3 to CHROM_LAB_localQualification', and 'Deleted Content'.

4 **Approve Signature**: A screenshot of the 'Approve Signature' dialog box, which includes fields for 'Sequence', 'Current Time', 'Signature', 'User ID', and 'Signature Password'.

Good analytical work alone is no longer sufficient. You have to be ready to defend your results, not only with sound science, but also with compelling evidence that the results are authentic and fully traceable. Access control, validation records, audit trails, chain of custody—they're all required. You know you need to comply with the rules, but how can you make your existing chromatography systems and operations compliant? How can you cope with an increasing workload of analyses while still ensuring that you're always ready to pass an audit? You need a solution that meets compliance requirements AND increases your productivity. You need Chromeleon.

compliance

1 Security

Chromeleon provides the controls you need for a secure and productive laboratory, whatever your environment.





COMPLIANCE WHILE INCREASING PRODUCTIVITY

■ Security that Fits Your Workflow

Chromeleon's comprehensive security system provides fine-grained control over specific chromatography objects and operations. Over 100 different chromatography privileges can be allocated as appropriate to any number of Privilege Groups, so you can control who can run samples, who can modify methods, who can change peak baselines, and so on. You can also control access to specific instruments and data folders by defining any number of Access Groups. Administration tools let you set rules for login and signature passwords, and automatically lock inactive stations and accounts that have too many login failures. All security-related events are automatically tracked in a detailed security log.

■ Fully Automated Validation

Qualifying your analytical systems no longer has to be a tedious chore. Chromeleon's AutoQ™ qualification suite fully automates the Installation Qualification, Operational Qualification, and Performance Qualification procedures for your instruments and software. Simply select the tests you want to perform, load your autosampler, and select <Start>—Chromeleon does all the rest while you go work on other tasks. When you return, detailed reports are waiting for you. Method validation is easy, too, thanks to Chromeleon's

versatile System Suitability Testing and statistical analysis features. In addition to standard USP and EP tests like efficiency, resolution, tailing, and reproducibility, you can define any number of tests to automatically check any reportable variable across any set of samples in your sequences.

■ Detailed Audit Trails

With Chromeleon's comprehensive audit trails, you always have the documentation you need to defend your results. Every event related to instrument control and data acquisition is automatically captured in event logs. Every change to a baseline, a quantitation method, or a calibration is tracked in the modification history. And all security-related events—logins, password changes, privilege changes, and electronic signature events—are recorded in a detailed security system log.

But Chromeleon does more than just capture the audit trails. It also helps you extract the information you need out of them, quickly and easily. View the events pertaining to a single sample, a sequence, or an entire data warehouse. Filter the display down to records matching a specific user, time period, or event type, and sort the filtered list simply by clicking on column titles. Print the filtered and sorted list directly, or embed the audit trails directly in your analytical reports.

■ Seamless Electronic Signatures

The vision of the paperless laboratory is now a reality within your reach. Chromeleon has all the tools you need to implement an efficient electronic record-keeping system that complies with 21 CFR Part 11 requirements. All of the processes for document creation, review and approval fit right into the natural laboratory workflow, so you can eliminate the paper chase without having to completely restructure your operations. Result? You achieve both compliance and improvements in productivity.

2

Validation

With AutoQ™ automated qualification, validating your chromatography systems becomes almost effortless.

3

Audit Trails

All instrument events and user actions are automatically documented in detailed audit trails.

4

E-Signatures

All the functions you need to implement paperless record-keeping are seamlessly integrated into Chromeleon.



SATISFY NEEDS THROUGHOUT YOUR LABORATORIES WITH

Chromeleon is more than your best choice in a chromatography workstation—it's also a complete multi-user chromatography management solution that adapts to diverse needs throughout your enterprise. You can start with a small installation and scale it up at your own pace, using the operating system and database platforms that best suit your needs. Get the benefits of centralized data storage and system administration without giving up the flexibility of distributed workstations. Standardize or customize user interfaces, methods, and reports as appropriate to address different users and different applications. Integrate Chromeleon with other software products to further improve overall laboratory productivity and efficiency.

Flexible, Scalable Client/Server Architecture

Because the user interface and instrument control functions of Chromeleon are handled by separate server and client software modules, you can implement the software in any configuration that suits your needs. Operate client and server modules on the same computer for a complete, stand-alone instrument workstation. Connect workstations and client stations with a network to centralize data storage and system administration, and to gain remote access to instruments and data. Start your implementation with a single workstation and expand it to a laboratory, department, or your whole enterprise—without changing the software, without any downtime, and without retraining the users!

Cross-Platform Compatibility

Unlike other data systems, Chromeleon gives you a choice of operating systems and database platforms. It works transparently with any combination of Windows 2000, Windows XP, and Windows Vista computers, so you can migrate from one platform to another at your own pace. Use the default database format (compatible with Microsoft Access) for an economical workstation solution with no database license fees or administration requirements, or deploy Chromeleon on Oracle® or Microsoft

SQL Server for a robust, multi-user enterprise implementation. Mix platforms as you wish, and migrate with ease.

Convenient System Administration

Satisfying diverse needs is much easier when you have the right tools. From a single console, a Chromeleon administrator can allocate software licenses, configure workstations, manage user privileges, and perform system maintenance. Set up and monitor remote stations from the convenience of your office. Enforce limits on what users can see and do, while granting them flexibility to adapt the software to their own needs. Define global and user-specific operating policies, and delegate routine administrative tasks to laboratory managers. Automate data backup and archiving processes without affecting system users.

Industry-Leading Reliability

Nobody can afford downtime, especially with a multi-user installation. Chromeleon's distributed client/server architecture and intelligent instrument control provide more inherent reliability than other data systems do, but Chromeleon takes reliability a step further. Its exclusive Network Failure Protection feature keeps your automated instruments running in

adaptability

1

Scalable

Expand your Chromeleon network easily and economically.

2

Compatible

Choose the platforms that fit your needs, and migrate with ease.

3

Manageable

Administer your Chromeleon systems from anywhere in the network





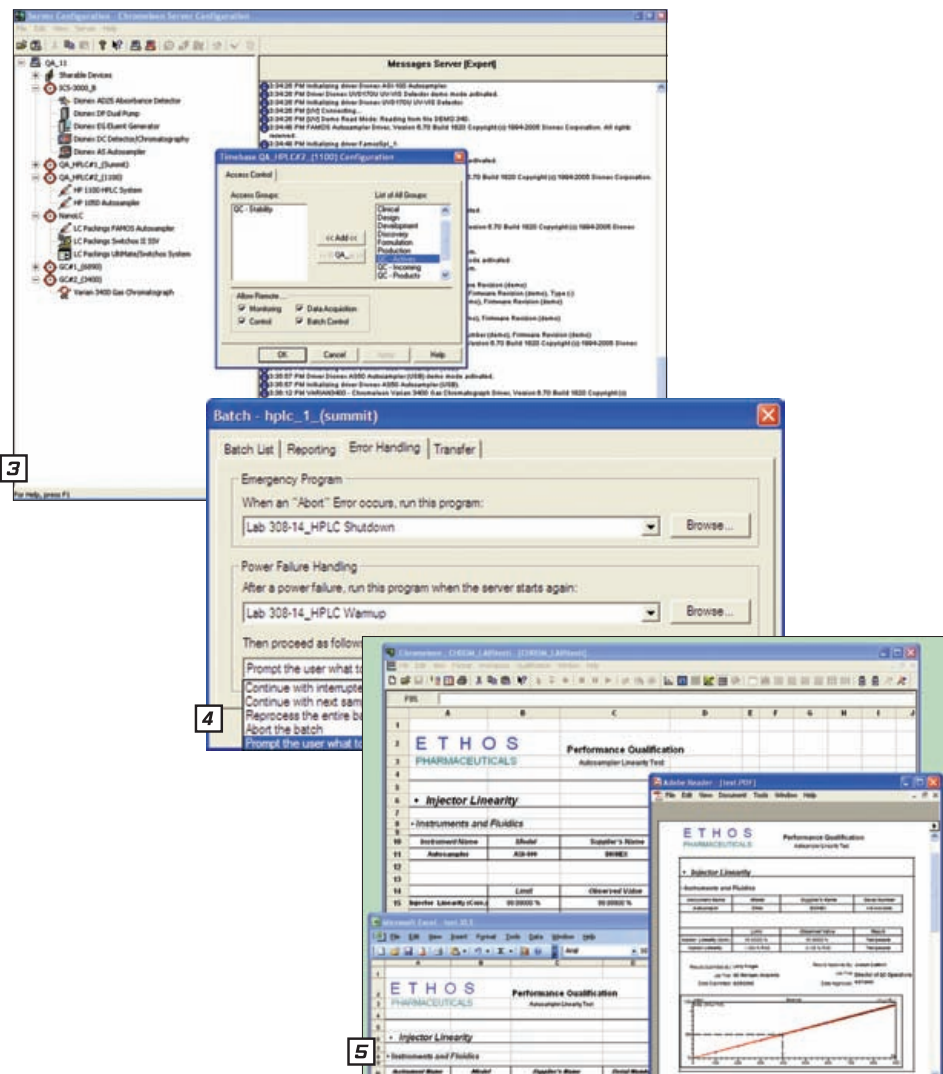
CHROMELEON—THE MASTER OF ADAPTABILITY

the event of sudden or scheduled network server unavailability, without any loss of data or productivity. Even transient power failures don't stop Chromeleon. It simply brings your instruments back up to operating conditions, then resumes analyses in accordance with your pre-defined instructions. All contingency actions are documented in detailed audit trails. With Chromeleon, you get the high availability and fault tolerance you need for optimum productivity.

■ Easy Integration with Other Applications

Chromeleon works seamlessly with other software products in your laboratory. Copy chromatograms, spectra, and other graphics to office applications to create journal publications and custom presentations. Import sample worklists from your LIMS, and post results back to it upon completion of analyses.

Export Chromeleon reports in popular formats, such as Microsoft Excel, Adobe PDF, and HTML, for convenient distribution to people outside your laboratory environment. Develop highly customized applications in popular programming languages like C++ and Visual Basic, and make direct function calls to the chromatography software with the optional Chromeleon Software Developer's Kit.



4 Reliable
Chromeleon keeps working productively even in the event of problems that paralyze ordinary data systems.

5 Extendible
Integrate Chromeleon seamlessly with your favorite office applications and your LIMS.

When you invest in Chromeleon, you get more than just a product—you get a complete solution with an open future, and a partner committed to your success.



Whether your scope is just one laboratory station or a site-wide initiative, Dionex is ready to provide the solutions and services you need to reap a rapid return on your investment. And our ongoing software development program protects that investment by ensuring that Chromeleon continues to be the best solution to your needs, far into the future.

Quality Products from a Global Leader in Separation Science

Dionex offers an extensive array of innovative, high-quality instruments, software, consumables, and associated products that solve problems for laboratories. All Dionex products are designed, developed, tested, and manufactured in accordance with life cycle processes modeled after ISO 9001.

Software with an Open Future

For over 20 years, Dionex has continually brought new and exciting chromatography software to market, while always providing our customers with a smooth upgrade path. Our ongoing investments in software development and testing continue to broaden Chromeleon's instrument support, add data analysis capabilities, strengthen security and robustness, and simplify usage. With Chromeleon, your software investment does not depreciate – it actually grows in value!

Services that Streamline Your Deployment

At Dionex, we know that our success depends on your success. To ensure both, we provide a complete suite of support services, including consultation, installation, validation, training, technical support, and on-site repair. And to protect your investment, we offer extended warranties and software subscriptions that keep your Chromeleon systems up to date with the newest software technologies and capabilities.

Find Out More

For more information, demonstrations, and no-obligation quotations, contact your local Dionex representative.

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Passion. Power. Productivity.

