RE-ENGINEERED WHERE IT MATTERS



Clarus® Nova GC

PerkinElmer®
Science with Purpose

CLARUS® NOVA GC

Reliable Gas Chromatography Workflows for Every Lab

Next Generation Clarus

Clarus Nova GC builds on decades of PerkinElmer GC Innovation to deliver reliable performance, fast analysis, and the flexibility modern laboratories demand.

Designed for laboratories across petrochemical, pharmaceutical, food safety, and environmental testing, the Clarus Nova GC provides accurate, reproducible results that keep workflows moving and decisions on track.



Built for Modern Laboratories

High-Speed Performance
Faster separations and increased sample throughput.

Flexible Software Integration
Compatible with SimplicityChrom™ and leading CDS platforms.

Configurable Platform
Expanded capabilities as your laboratories evolve.

Designed for Efficiency & Sustainability

Energy Efficient Architecture
Optimized system design reduces energy consumption and other operational costs.

Smart Carrier Gas Management
Lower consumption and operating costs by leveraging hydrogen carrier gas safety and reduced carrier gas flow during standby.

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SAFETY YOU CAN TRUST

Engineered safeguards for reliable laboratory operation.

Clarus Nova GC integrates real time monitoring, automated protection mechanisms, and built in diagnostics to ensure safe operation in laboratories running demanding GC workflows.

Designed to support hydrogen carrier gas and high throughput operation, the system helps laboratories operate confidently while minimizing risk.

Integrated Hydrogen Sensor
Continuously monitors hydrogen levels and triggers alerts/shutdown above safety threshold levels.

Leak Detection and Alerts
Built in diagnostics identify gas leaks early and notify operators to prevent hazardous situations.

Emergency Shutdown Protection
Automatically shuts down the instrument when abnormal operating conditions are detected.

Secure Gas Handling
Supports approved regulators, inline filters, and optional hydrogen snubbers for safe gas management.



RE-ENGINEERED TO KEEP YOUR LAB RUNNING

Clarus Nova GC combines intelligent monitoring, predictive maintenance, and streamlined workflows to help laboratories maintain uptime and deliver consistent results.



Start Runs with Confidence

Automated leak checks and pressure sensors enable precise gas flow controls for separation giving confidence in results for every run.

Stay Ahead of Maintenance

Track consumables and service needs with predictive alerts.

Simplify Routine Service

Tool-free maintenance, in-built oven LED lamp and quick consumable changes reduce downtime and allows for hassle-free servicing.

Detect Issues Early

Real time system monitoring and audio/visual indicators help you address issues in real time.

Keep Workflows Moving

Continuous operations with Hot swap autosampler towers and CDS connectivity.

Platform Benefits

Stable Performance

Smart gas controls and precise oven temperature control performance maintain consistent results.

Connected Workflows

SimplicityChrom™ integration and remote instrument visibility streamline laboratory operations.

Efficient Operation

Support for alternative carrier gases and energy efficient system architecture help reduce operating costs.

AND THERE'S MORE...

Configured Flexibility
Adaptable configurations for evolving methods and applications.

Dual Simultaneous Injection
Double your throughput, two samples, one run.

AS 2400™ Liquid Autosampler
Hot-swap towers for uninterrupted sample processing.

SWAFER™ Technology
Effortless multi-dimensional GC for complex separations.

HS 2400™ M Headspace Autosampler
Pressure balanced technology – minimal to zero carryover & precise analysis.

External Valve Oven NEW
1. Natural Gas Analyzer
2. Transformer Oil Gas Analyzer



Detectors

FID (Flame Ionization Detector)
Gold standard for hydrocarbons, high sensitivity, wide dynamic range.
Now available with a Methanizer.

TCD (Thermal Conductivity Detector) NEW
Reliable, universal, for permanent gas analysis for petrochemical and environmental workflows.

ECD (Electron Capture Detector)
Ideal for halogenated compounds and pesticide residue analysis in food safety.

MS 2400™ SQ Mass Spectrometer
Seamless GC-MS integration for structural confirmation and trace-level sensitivity.

SimplicityChrom™ CDS
Intuitive workflows, smart alerts, and clear visualizations.

Hydrogen Carrier Gas
Enabling monitoring leaks and safety.

High-Speed GC Oven
Faster heat-up and cool-down for shorter cycle times.

Energy-Efficient Design
Lower power consumption and support for alternative carrier gases.

Injectors

Packed: Accommodates on-column to wider bore capillary columns, programmed flow/pressure support 4 gas types.

Split/Splitless: Supports high split ratios, 5 software configurable gas handling and 4 gas types.

Programmable Split/Splitless: Temperature programmable injector with oven tracking mode and supports large volume injection (50uL) with autosampler.

ADVANCED POWER. ADAPTIVE SOLUTIONS.

The Clarus Nova GC is designed to grow with your lab, integrating seamlessly with advanced technologies that expand capability, increase throughput, and simplify workflows.



MS 2400™ SQ Mass Spectrometer

Advanced GC-MS coupling

- **Trace-Level Sensitivity:** Confident detection of low-level compounds.
- **Expanded Analysis:** Seamless GC-MS coupling for demanding samples.
- **Reliable Performance:** Precision for complex workflows.



HS 2400™ M Headspace Autosampler

Maximum Efficiency and reliability

- **Pressure-balanced** design for consistent results.
- **Minimal Carryover:** Maximum reliability for high-throughput labs.
- **Flexible Sample Compatibility:** Supports 10, 20, and 22 mL vials (crimp or screw caps).



SimplicityChrom™ CDS

Smarter Software for Smarter Labs with improved stability

- **Intuitive Workflows:** Reduce training time and errors.
- **Smart Notifications:** Streamline troubleshooting and operation.
- **Clear Visualizations:** Accelerate data interpretation.

ADVANCED POWER. ADAPTIVE SOLUTIONS.

Clarus Nova GC expands its gas analysis capabilities with new solutions for Thermal Conductivity Detection (TCD), Natural Gas Analysis (NGA), and Transformer Oil Gas Analysis (TOGA). These configurations enable laboratories to perform critical gas measurements across petrochemical, energy, and industrial applications using proven GC technology.

Thermal Conductivity Detector (TCD)

Universal Multi-Gas Analysis



Key Features

- Proven 4 filament Wheatstone bridge detector design
- Automatic electronic balancing for stable baselines
- Dedicated reference and sample gas channels
- Supports up to three TCD detectors

Applications

- Petrochemical Analysis
- Biogas Monitoring
- Permanent Gas Analysis
- Green Energy And Environmental Monitoring

Natural Gas Analysis (NGA)

Comprehensive Natural GC Solution



Key Features

- **Multi-Channel GC System:** 3 detector system (TCD/TCD/FID) run simultaneously.
- **Fast, Accurate Results:** Complete analysis in 15–30 mins with high sensitivity.
- **Standards-Compliant:** Meets standard method requirement (ASTM, GPA, ISO etc). Automated Diablo EZ reporter plug in for NGA reporting needs.

Applications

- Natural Gas Analysis
- Refinery Gas Monitoring
- Industrial Gas Testing

Transformer Oil Gas Analysis (TOGA)

Prevent Transformer Failures



Key Features

- **ASTM D-3612-02 Method C Compliant:** Industry-standard method for analyzing headspace gases from transformer oil.
- **Fast and Accurate GC Analysis:** Automated analysis with HS 2400™ M Headspace Sampler.
- **Multi-Gas Detection:** TCD and FID with Methanizer for complete quantification of dissolved gases in transformer oil.

Applications

- Transformer Condition Monitoring
- Dissolved Gas Analysis
- Electrical Asset Diagnostics

INNOVATIONS THAT KEEP YOU AHEAD

Dual Simultaneous Injection (DSI)
Double Your Productivity



The Clarus Nova GC incorporates Dual Simultaneous Injection, a breakthrough for high-throughput labs.

Two Samples, One Run: Inject and analyze two samples at the same time, ideal for busy workflows that demand high turnover.

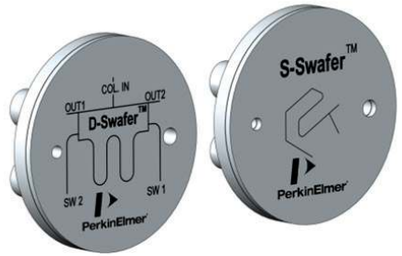
Faster Turnaround: Cut sample analysis time in half without compromising accuracy or reproducibility, enabling faster QA/QC results.

Greater Automation and Convenience: Dedicated sampling towers for each injector, supporting fully automated workflows with minimal manual intervention.

Cost Efficiency: Maximize instrument utilization and reduce per-sample operating costs.

Perfect for High-Demand Labs: Food safety, petrochemical, and environmental testing benefit from accelerated throughput.

SWAFER™ Technology
Multi-Dimensional GC Made Simple



Complex samples demand advanced separation power. SWAFER delivers multi-dimensional GC without the complexity.

Seamless Column Switching: Switch between columns automatically for enhanced resolution of challenging matrices.

No Complex Plumbing: Simplifies setup with full software control of the configuration, no manual valve configurations or re-plumbing required.

Expand Analytical Capability: Resolve co-eluting compounds and improve confidence in results for petrochemical and environmental applications.

Future-Ready: Adaptable for emerging methods and regulatory requirements.

SIMPLICITYCHROM™ SOFTWARE

Intuitive Control for Modern GC

SimplicityChrom™ simplifies GC operation with an intuitive interface, automated workflows, and secure data management that help laboratories run samples faster while reducing training time. Simplicity Vision™ enables remote instrument monitoring.





Designed for Simplicity

Intuitive Interface
Clean, streamlined interface that shortens training time and improves productivity with customizable interface to suit different needs of a workflow.

Enhanced Stability
Improved robustness and software stability ensure reliable operation across routine and advanced GC applications.

Secure Data Handling
Database driven architecture with Integrated audit trails and electronics signatured support regulatory compliance including 21 CFR Part 11.

Expanded Application Support
Supports multiple workflows using GC detectors (TCD[NEW]), Mass Spec, External Valve ovens (NGA/TOGA), and Headspace sampler. One software controls GC, HS and GCMS in one platform.

Automated NGA Integration
Automated TXO file implementation integrated with Diablo EZ reporter for NGA reporting.

Windows 11 Ready
Upgraded operating system without disrupting lab operations.

Flexible CDS Integration

Compatible drivers allow Clarus® Nova GC to integrate with 3rd party chromatography data systems.

Agilent OpenLab

Empower™

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REAL SOLUTIONS. REAL WORLD TESTING.



Industrial

- FOIL and GOIL analysis for refinery and petrochemical streams.
- Reliable permanent gas detection with TCD.
- NGA and TOGA capabilities for gas and transformer oil testing.



Pharmaceutical

- Audit-ready logs and system suitability checks.
- Consistent method transfer across global sites.
- Predictive alerts for uninterrupted workflows.



Food

- High-throughput headspace analysis with hot-swap towers.
- Fewer reruns with proactive diagnostics.
- Configurable design for evolving food safety methods.



Environmental

- Rapid VOC and pollutant detection with high-speed oven.
- Reliable permanent gas monitoring for compliance
- Energy-efficient design and alternative carrier gas support.

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KEY MARKETS

INDUSTRIAL

Petrochemical and Refinery Gas Analysis

Petrochemical and refinery laboratories rely on gas chromatography to monitor permanent gases and hydrocarbon streams across production and processing operations. Accurate analysis supports product quality, process control, and regulatory compliance.

The Clarus Nova GC platform supports NGA, TOGA, refinery gas, and permanent gas workflows. Integrated TCD detection and automated operation enable reliable results in continuous industrial environments.

Petrochemical Lab Benefits and Safety:

- **Permanent gas detection using TCD** for reliable industrial gas analysis
- **Application ready NGA and TOGA workflows** for natural gas and transformer oil testing
- **Continuous monitoring with automated diagnostics** to reduce interruptions
- **High throughput analysis** for refinery and petrochemical laboratories
- **Stable operation for demanding industrial environments**

Arnel Configurable GC Solutions: Advanced GC solutions tailored for complex gas characterization and refinery gas analysis. Designed for demanding environments, Arnel systems deliver reliable, repeatable results while simplifying operation and maintenance.

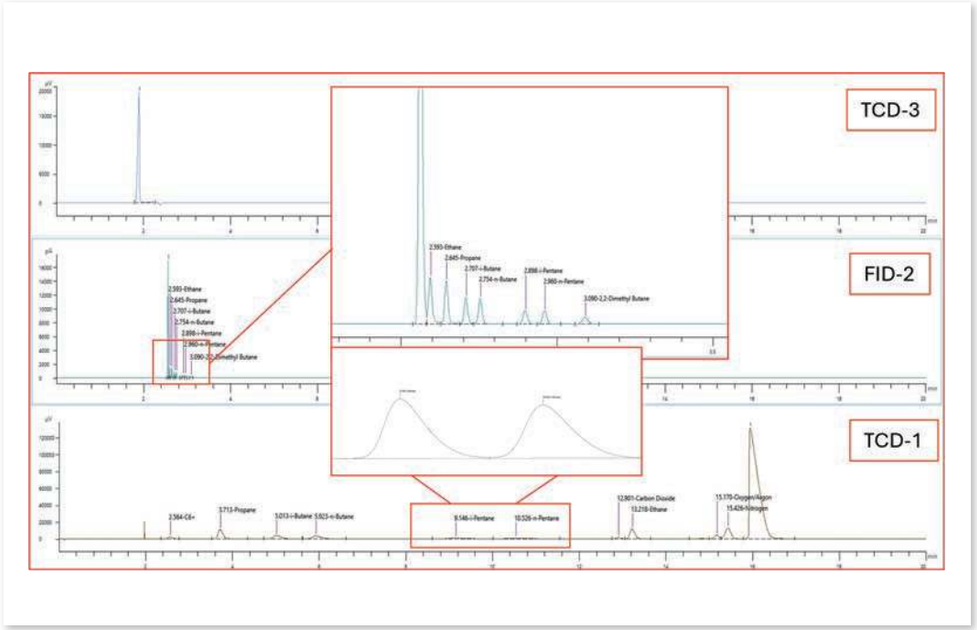
- Configurable systems for refinery gas and complex hydrocarbon analysis
- Reliable, repeatable performance in lab or field environments
- Flexible design for simplified maintenance and customization



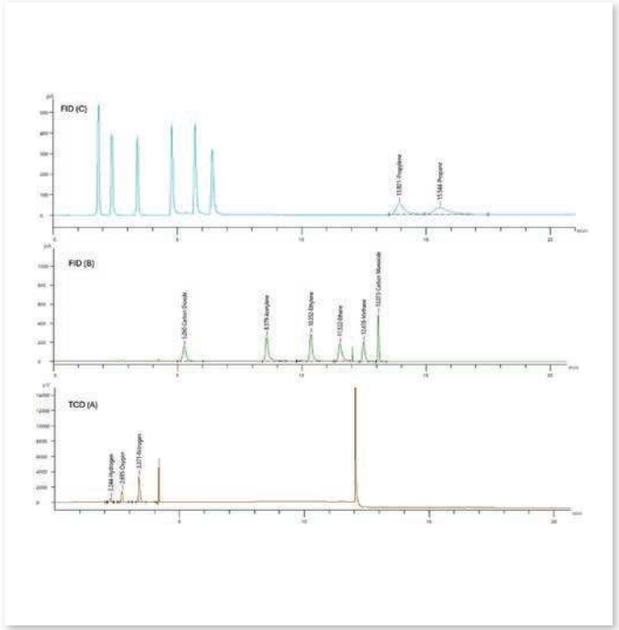
KEY MARKETS

INDUSTRIAL

Petrochemical and Refinery Gas Analysis



NGA Standard Test Mix with 3 channel detection (FID/TCD/TCD).



TOGA Oil Standard Test mix with 2 Channel detection (FID and TCD)



KEY MARKETS

INDUSTRIAL

FOIL/GOIL

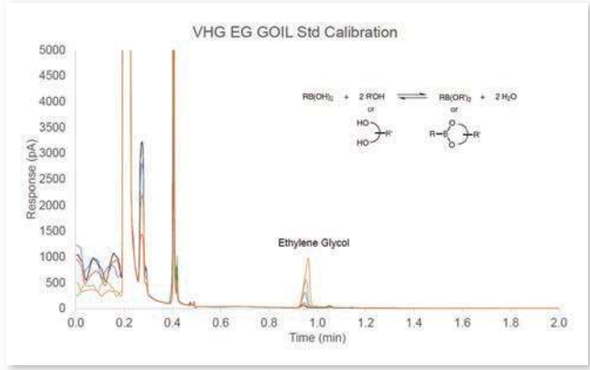
In service lubricant testing laboratories analyze millions of samples each year to monitor engine health and prevent costly equipment failures. Detecting fuel and glycol contamination in engine oils is critical for identifying leaks, degraded fluids, and potential engine damage early.

Using the Clarus Nova GC, laboratories can perform high throughput FOIL (Fuel in Oil) and GOIL (Glycol in Oil) testing with reliable and repeatable results. The automated workflow with the HS 2400 M Headspace Sampler (GOIL analysis) enables efficient screening of large sample volumes while maintaining analytical accuracy.

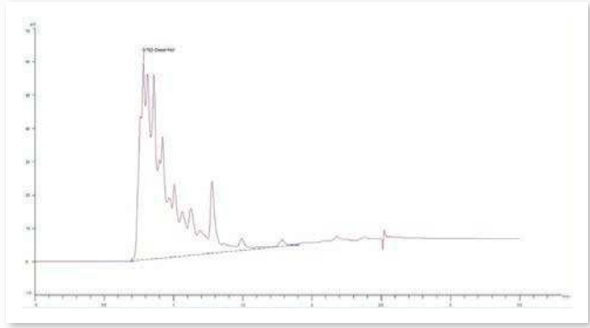
Benefits:

- Detect fuel contamination in engine oils with FOIL workflows
- Identify glycol contamination from coolant leaks or gasket failures
- High throughput headspace testing for lubricant analysis labs
- Reliable quantification of ethylene and propylene glycol in used oils
- Supports ASTM D2982, D4291, and D7922 glycol in oil testing methods

APPLICATIONS & RESOURCES



EG in Engine Oil Calibration



Diesel in Oil Calibration mix



KEY MARKETS

PHARMACEUTICAL

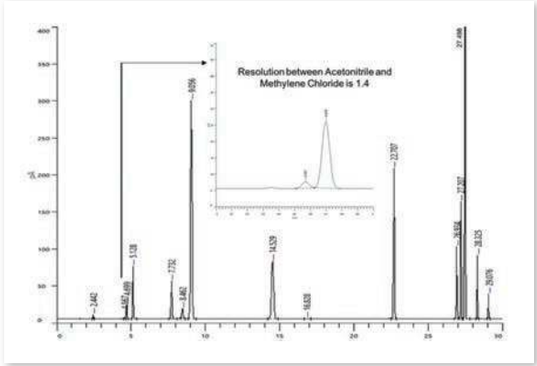
PerkinElmer Clarus Nova GC solutions are purpose-built for pharmaceutical laboratories where data integrity, method reproducibility, and regulatory readiness are essential to every result.

This integrated GC platform supports residual solvent testing, impurity profiling, and stability workflows with validated, traceable performance, helping labs maintain inspection readiness, streamline method transfer across sites, and deliver reliable results from development through routine QC.

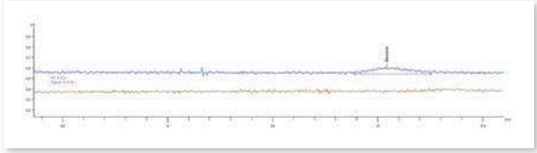
Pharmaceutical Lab Benefits & Compliance:

- **Optimized Headspace Analysis:** HS 2400™ M headspace autosampler enables reliable, automated residual solvent testing with minimal manual intervention
- **Inspection-Ready Workflows:** Automated checks and secure records support regulated environments
- **Efficient QC Throughput:** Dual injection and fast ovens speed routine testing
- **Seamless Method Alignment:** Consistent performance across instruments and global sites
- **Analytical Versatility:** Detector flexibility supports diverse pharmaceutical applications
- **Adaptable for Evolving Requirements:** Configurable platform supports changing methods and standards

APPLICATIONS & RESOURCES



*Analysis of Class 2A Residual Solvents According to USP 467**



*Analysis of Benzene in Compliance to USP Grade Carbomer 940**

*Data collected on the GC 2400 and the Clarus Nova GC can support this application



KEY MARKETS

FOOD AND BEVERAGES

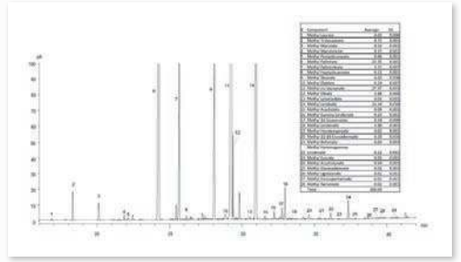
PerkinElmer Clarus Nova GC solutions are designed for food safety laboratories balancing high sample volumes with strict regulatory and quality requirements.

This flexible GC platform supports volatile analysis, contaminant screening, and packaging gas testing across diverse food matrices, helping labs deliver reliable results quickly, maintain audit readiness, and adapt to evolving food safety standards without workflow disruption.

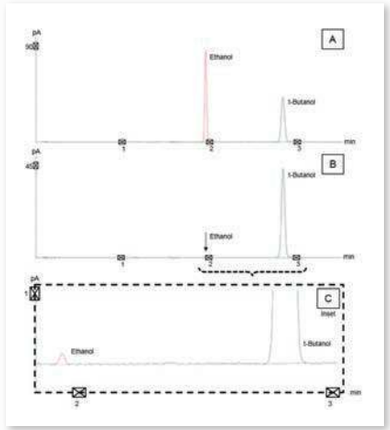
Food Lab Benefits & Assurance:

- **Audit-Ready Confidence:** Built-in controls support global food safety requirements
- **Faster Sample Turnaround:** Headspace automation and DSI accelerate routine testing
- **Reliable Results Across Matrices:** Stable baselines reduce reruns and rework
- **Flexible Detection Options:** Multiple detectors support diverse food analyses
- **Ready for Changing Standards:** Configurable design adapts to new methods

APPLICATIONS & RESOURCES



*Fatty Acid Methyl Esters testing in Chicken Powder extracts**



*Ethanol content in beverages:- (A) and (B) Calibration standards, and (C) Low-level standard (S/N) Chromatograms**

*Data collected on the GC 2400 and the Clarus Nova GC can support this application

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KEY MARKETS

ENVIRONMENTAL

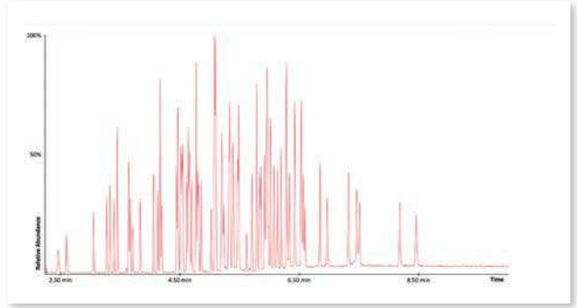
PerkinElmer Clarus Nova GC solutions are built for environmental laboratories delivering fast, defensible data under evolving regulatory and sustainability pressures.

This adaptable GC platform supports air, water, and soil testing with reliable trace-level detection and audit-ready performance, helping labs meet compliance requirements, increase sample throughput, and maintain confidence in results across diverse monitoring programs.

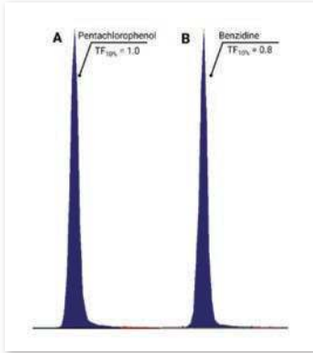
Environmental Lab Benefits & Compliance:

- **Regulatory-Ready Operation:** Designed to support global environmental standards and audits
- **High-Volume Sample Throughput:** DSI and fast ovens accelerate monitoring workflows
- **Trace-Level Detection Confidence:** Sensitive detection for VOCs and pollutant analysis
- **Versatile Analytical Coverage:** Multiple detectors support diverse environmental methods
- **Sustainable, Efficient Operation:** Energy-saving design supports green lab initiatives

APPLICATIONS & RESOURCES



*TIC chromatogram of the 86 pesticides at 10 µg/mL standard**



*Excellent peak shapes of critical compounds demonstrating industry-leading sample flow path inertness**

*Data collected on the GC 2400. But the Clarus Nova can support this application

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OneSource®

Integrated Laboratory & Manufacturing Solutions

OneSource offers a comprehensive suite of solutions for laboratories, manufacturing facilities, and capital projects to accelerate the development and commercialization of innovative therapies.



Asset Management

Optimize usage, prevent overspend, and improve equipment availability.



Compliance & Validation

Stay audit-ready and reduce risk with harmonized documentation.



Scientific Services

Delegate routine tasks and boost scientific output with onsite professionals.



Asset Utilization

Turn instrument data into actionable insights. Reduce waste, cut downtime and optimize every square foot of lab space.



Lab IT

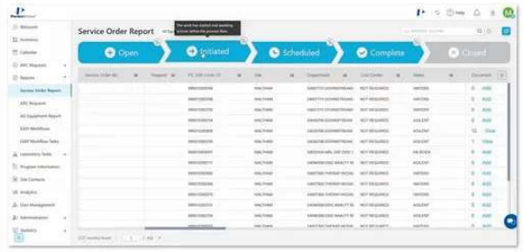
Support scientific computing infrastructure and validated systems.



Insights & Analytics

Real-time asset insights and utilization metrics. Optimize spend, streamline operations and maximize scientific output.

OneSource Digital



Connected Platform – Unifies instruments, software, and services for streamlined lab operations.

Instant Visibility – Real-time performance and compliance monitoring across your lab.

Predictive Insights – Advanced analytics to reduce downtime and optimize resources.

Regulatory Compliance – Secure data handling with audit trails and documentation.

Remote Support – Proactive troubleshooting and expert assistance anytime.

Scalable Solution – Grows with your lab and supports multi-site connectivity.

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