Clarus 400

Gas Chromatograph

Built to **perform.**

Affordable to own.

With the **flexibility** you need.

PerkinElmer®
precisely.

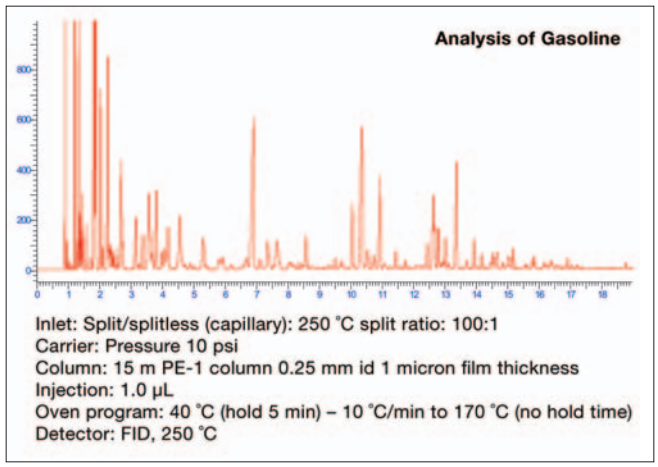
flexibility maximizes

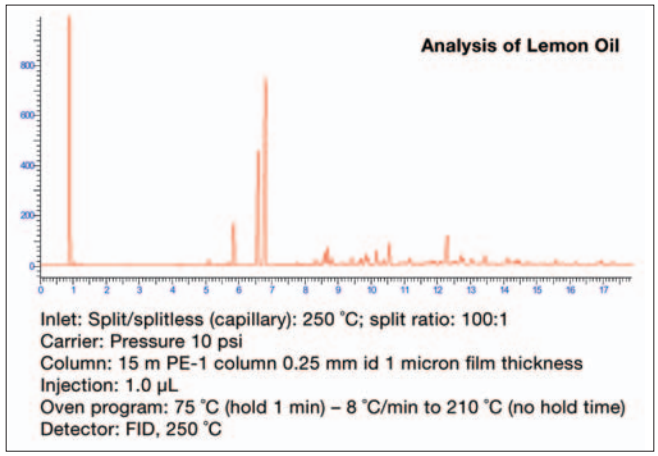
The Clarus® 400 Gas Chromatograph (GC) delivers the proven performance and analytical capabilities of the world-class Clarus GC family at an affordable price for the budget-conscious laboratory. It provides the flexibility to meet a diversity of analytical requirements – examples include laboratories running analyses in petrochemicals, environmental monitoring, forensics, food and beverage, materials testing and educational-institution laboratories. The Clarus 400 GC delivers the accuracy and precision for both non-routine as well as quality control (QC) analyses.

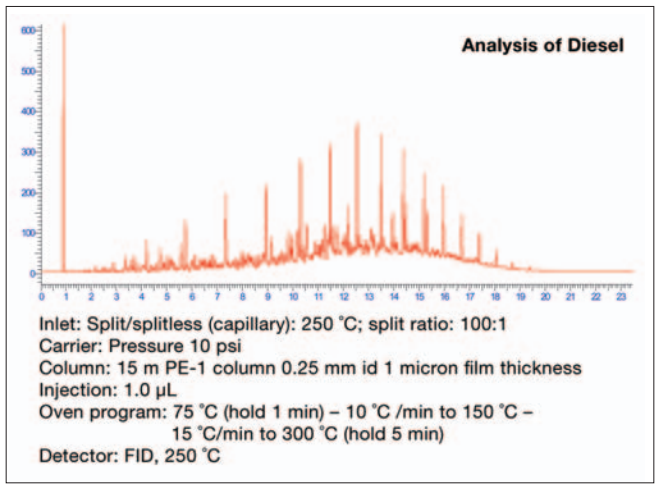
The Clarus 400 GC has been designed for ease-of-setup and operation. As such, tools including an installation kit and localized user guides are available to get your lab up and running quickly and efficiently. A keypad user interface in your choice of five languages (English, Spanish, Brazilian Portuguese, Chinese and Russian) simplifies user interaction.

The Clarus 400 GC can also be integrated with the PerkinElmer® TurboMatrix™ Headspace and Thermal Desorption sample-handling systems, extending application capabilities – these include blood-alcohol analysis, food-packaging analysis, beverage quality and a variety of materials-testing and environmental-monitoring requirements including ambient air as well as waste-water and groundwater monitoring.

Instrument control and data management are provided by PerkinElmer's TotalChrom® Chromatography Data Systems (CDS), making managing data easier than ever and streamlining laboratory workflow.







The Clarus 400 GC offers a feature-set that allows a wide range of applications flexibility with no compromises in performance.

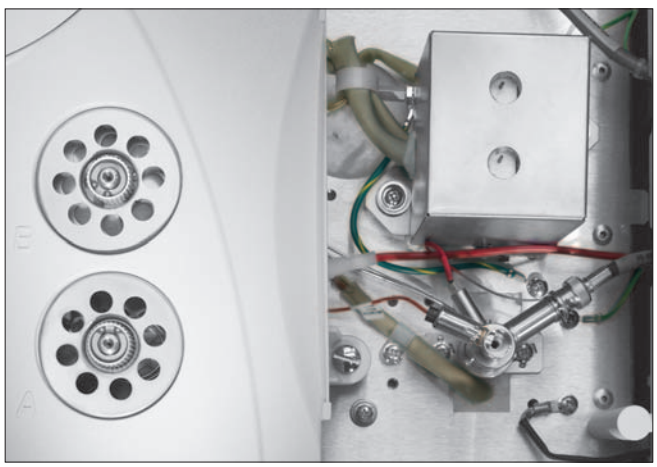
application capabilities

Single-channel or dual-channel configurations for optimal analytical capability

The Clarus 400 GC is available in single-channel or dual-channel configurations with a choice of a capillary (split/splitless) injector for all capillary columns and a packed column injector as well as a selection of four detectors. Manual pneumatics are used to control flows and pressure. The option to add PerkinElmer's liquid autosampler provides enhanced productivity and sample throughput.

You can choose from any one or two of the following detectors to accommodate a wide variety of analytical applications:

- Flame Ionization Detector (FID) – offers a wide response range to a broad variety of compounds, allowing analysis in a wide dynamic range.
- Thermal Conductivity Detector (TCD) – ideal for light hydrocarbon and permanent gas analysis.
- Electron Capture Detector (ECD) – the premier detector in environmental applications for PCBs, organochlorine pesticides and halogenated hydrocarbons.
- Nitrogen Phosphorus Detector (NPD) – specific for the analysis of nitrogen and phosphorus pesticides in food safety and environmental monitoring.



Single/dual-channel configurations optimize analytical capability.

Best-in-class integrated autosampler enhances sample throughput

PerkinElmer's optional best-in-class robust and reliable autosampler enhances flexibility and automation capability for the Clarus 400 GC. This integrated liquid autosampler accommodates three autosampler syringe sizes (0.5, 5.0 and 50 µL) and three injection speeds (slow, normal and fast) for diverse sample analysis. Our rotating autosampler allows injection through either injection port automatically without further user intervention, saving you time and money.

The autosampler is fully controllable from the Clarus 400 GC keypad user interface and provides a mechanically robust, dependable system. Performance is assured by optical sensors that consistently monitor the system to make certain all is proceeding as planned.

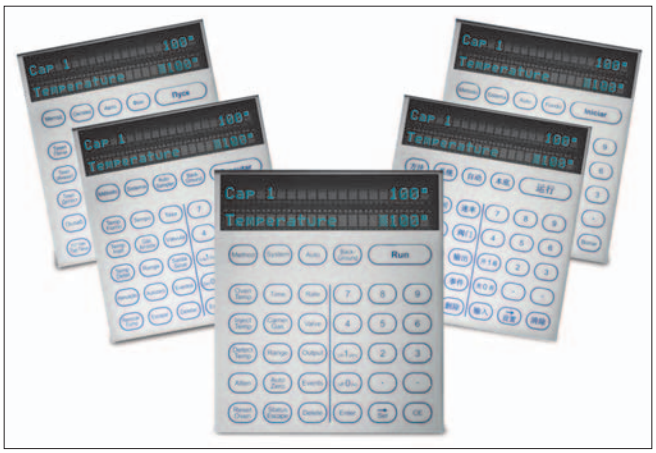
The autosampler, fully controllable from the Clarus 400 GC, provides flexibility and automation.

interactive features optimize productivity

Local-language keypad user interface

The Clarus 400 GC comes with a keypad user interface. You can choose from five different languages (English, Spanish, Brazilian Portuguese, Chinese and Russian) to ensure your entire staff is at ease when working with the system.

The display of the Clarus 400 GC user interface is a two-line, 20-alpha numeric character vacuum fluorescent display in English.



Choice of local-language keypad interfaces simplifies operation.

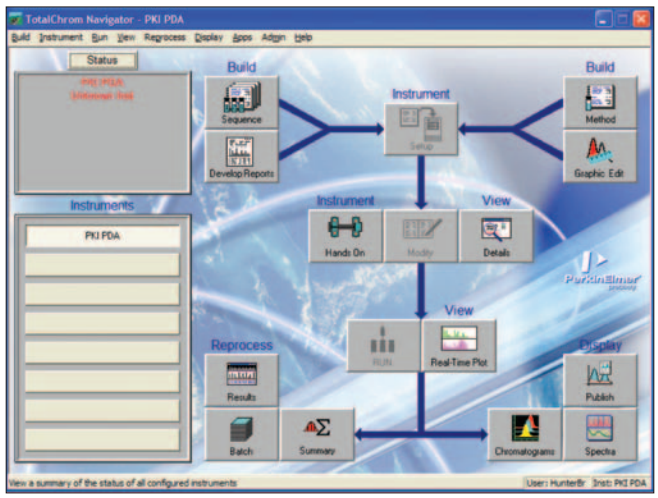
Easy setup and operation

In order to minimize the learning curve, a localized user guide is available. A user installation kit is also available that contains all necessary tools and accessories to allow you to readily install your Clarus 400 GC.

Enhanced productivity with TotalChrom CDS

Acquiring, processing and reporting data is a streamlined series of operations in PerkinElmer's TotalChrom CDS software, designed to fit your laboratory workflow and maximize your Clarus 400 GC system's performance and productivity. TotalChrom data systems can be deployed in workstation, thin client, or enterprise client/server computing environments. When configured with a PerkinElmer GC, the data system serves as both an instrument controller and data manager for the overall system.

Instrument-control parameters, such as oven temperature and pressure ramps for GC are displayed as both graphic profiles and numeric grids for rapid visualization of your experiment. The sequence editor uses a template to quickly and conveniently build a complex list of injections in the editor's spreadsheet. The standard TotalChrom reporting tool provides various basic report formats for quantitative analysis and allows users to tailor results with customized headers and labels, expressions (mathematical formulas) and footers. Numerous report options provide formatting choices and automated ASCII output-file creation. Special summary report and suitability report options enable users to obtain additional information on the operation of the analytical system and support the analyst in the method-validation process. Editing tools facilitate the entry of parameters common to selected rows or fields in the spreadsheet, saving time and eliminating errors from repetitive entry of common values.



TotalChrom CDS streamlines laboratory workflow.

sample handling extends applicability

Combine the Clarus 400 GC with our market-leading TurboMatrix sample handling systems and world-class service and support for an integrated, complete analytical solution from a single source.

TurboMatrix Headspace Samplers

Our TurboMatrix Headspace samplers provide unparalleled precision and ease-of-use for any GC application. The TurboMatrix Headspace samplers incorporate an intuitive, multilingual touch-screen graphical user interface that provides easy control. Volatile compounds in almost any sample matrix can be determined simply and quickly by headspace gas chromatography. TurboMatrix Headspace systems can expand the analytical capabilities of your GC to a variety of applications, including environmental monitoring for volatile-organic-compound determination in water, soils and solid sample matrices; food packaging for determination of printed-ink solvents in packaging films that can impart off-flavors or off-odors; pharmaceuticals, foods, forensics for analysis of organic volatile impurities at lowest possible detection levels; materials testing including monomers, polymers and additives analysis of compound outgassing from coatings. You choose the system you need based on your performance and throughput requirements – our proven TurboMatrix Headspace technology delivers on your expectations.

TurboMatrix Thermal Desorbers

Thermal desorption is a technique that simplifies and speeds a wide range of GC applications, including indoor and outdoor air monitoring, analysis of outgassing from semiconductor materials, polymers, upholstery and furnishings, packaging, pharmaceuticals and analysis of flavors and fragrances. As the undisputed market leader in GC sample handling, we took the next step to offer you even more benefits for your lab. PerkinElmer offers a choice of five different TurboMatrix Thermal Desorber (TD) models in manual pneumatics or programmable pneumatic control with single-tube and automated 50-sample configurations. As with our headspace samplers, all thermal desorber models incorporate an intuitive, multilingual touch-screen graphical user interface that provides easy control.

Clarus 400 GC (left) with TurboMatrix HS-40 (right).

Clarus 400 GC (left) with TurboMatrix 100 TD (right).

PerkinElmer, Inc.

PerkinElmer – the clear choice in GC

PerkinElmer is the only chromatography supplier who develops, manufactures, supports and services every product it offers to provide a truly integrated system. This means one expert supplier – with best-in-class instruments and a world-class service and support organization – can address all of your applications and troubleshooting needs, from sample handling to data handling.

PerkinElmer's gas chromatography offering also includes:

Clarus 500 GC

The Clarus 500 GC is available with either manual or programmable pneumatic control as well as a wide assortment of injectors and detectors to accommodate a broad range of application requirements. It comes with a full-color, easy-to-use touch-screen user interface in 8 languages, reducing the learning curve further while speeding routine interaction.

Clarus 600 GC

For fast-paced, high-volume laboratories, the high-performance Clarus 600 GC provides the fastest analytical cycle times in conventional GC, featuring a unique, high-performance oven. The resulting shorter injection-to-injection time will significantly increase your throughput and productivity by speeding your analytical cycle time.

Clarus 560 D GC/MS

The Clarus 560 D GC/MS combines the dependable diffusion-pump capabilities of the high-performance Clarus 600 D MS with the robust Clarus 500 GC, enabling laboratories to conduct reliable, cost-effective routine analyses. State-of-the-art electronics for the fastest scanning rates and widest mass range, coupled with the most robust, flexible GC autosampler and two extra GC channels, offer extended applicability.

Clarus 600 GC/MS

Combine the Clarus 600 GC with our Clarus 600 Mass Spectrometer (MS) for a high-performance GC/MS. The Clarus 600 GC/MS is a best-in-class quadrupole GC/MS with a fast scanning speed and wide mass range. Multiple pumping options and robust hardware features, coupled with easy-to-use TurboMass™ software, create a powerful package to drive your laboratory analyses.

TurboMatrix sample handling

All Clarus GC or GC/MS instruments can be coupled with our market-leading TurboMatrix Headspace and Thermal Desorption samplers for extended application capabilities.

Expert, end-to-end service and support

PerkinElmer manufactures and supports the broadest range of instruments, reagents and consumables in the industry. Our 1200 factory-trained and certified engineers have an average 15 years of experience maintaining leading-edge scientific equipment, including preventative maintenance, validation support and instrument repair. Plus, you can rely on end-to-end training and technical support, from sample handling through data handling.

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