

The 200 Series GC



WELCOME TO ELLUTIA CHROMATOGRAPHY SOLUTIONS

We are an independent manufacturer of innovative chromatography instruments. Established in 1994 and formerly known as Cambridge Scientific Instruments Ltd, the company renamed at Ellutia Chromatography Solutions in 2010 and now have divisions in the UK, USA and Germany. Since then we have gone from strength to strength and supply our light, compact, yet highly sensitive GCs to a broad range of markets including education, brewing, materials testing and forensics.

We pride ourselves on our personalised, responsive service and ability to provide customised solutions to our customers' challenges. Offering an ideal combination of agility and speed of service with a global outlook, and industry-shaping technological innovations, we have become the partner of choice for hundreds of customers.

Our instruments are designed and manufactured in the UK at the company headquarters in Ely, Cambridgeshire. The instruments are designed to be compact with great energy efficiency, whilst also delivering industry standard analytical performance.

Ellutia GC History

March 2017 Ellutia release 500 Series GC at Pittcon, its first GC to offer conventional air blown and ultra-fast direct heated chromatography functionality in one instrument



February 2017 Ellutia moves to new premises on Ely Business Park, Cambridge



2010 Cambridge Scientific Instruments rebrands to Ellutia



2007 300 Series GC, standalone ultra-fast GC System based around the concept of directly heating metal columns released



2000 200 Series GC with patented Heat Recovery heating system released



1994 Cambridge Scientific Instruments works on the development of the EZ-Flash and EZ-Flash II Ultra-Fast GC Accessories



THE 200 SERIES GC

The 200 Series GC is compact and lightweight, offering all the functionality of a much larger instrument in a small footprint. This makes it ideal for applications where space is at a premium, including the education sector, as well as quality control and remote field applications. This single-channel instrument includes a temperature programmable oven that accommodates most standard capillary columns, electronic gas control, split/split-less injector and a choice of detector options.

Evolution

As part of our development as an instrumentation company, we identified education as a key target market for GC. All the feedback we received from universities and other educational establishments was that their chromatography teaching equipment was old or second-hand and too large to keep in the laboratory – and that investing in new was not an option within budgets.

We developed a system to fit this sector's needs. The 200 Series is small, compact for easy storage, simple to use, robust and competitively priced – without compromising analytical performance. The instrument has continually evolved since its launch, maintaining the high level of performance that has become associated with the Ellutia brand.

Heat exchanger technology

For efficient, cost-effective performance, the heating feature was critical. In most standard GCs, a fan circulates hot air generated by a heater to heat up the oven. The 200 Series uses a compact, award-winning flow through heat exchange system to circulate air through the oven, requiring less energy. The Heat Exchanger system helps retain the heat inside the GC by passing the energy from the outgoing air to the incoming. This maximises efficiencies and cuts operational costs by reducing the need for more powerful heaters.

Once development was complete and the instrument was in use, we realised the full potential of the 200 Series across many sectors of industry.

Technical specifications

Compact

Footprint
16cm (H) x 41cm (W) x 34cm (D)

Light

Weight 7.5kg

Easy to use

Originally designed for use in education so an ideal introductory model

Control

Built in keypad incorporating 2 x 16 character LCD display

Power

800VA, 230V/50/60Hz, 115V/50/60Hz

Colour

Available in grey or Ellutia green

PC control via Ellution Chromatography Data station

Run line control allows the use of most recorders, integrators and PC integration packages

Detectors

Flame Ionisation Detector (FID)



Characteristics

Temperature Range:	100-320°C
Linear Range:	10 ⁵
Minimum Detectable Quantity:	5 x 10 ⁻¹² grams of carbon (at 3 x signal to noise)
Responsive to:	Organic Compounds

Flame Photometric Detector (FPD)



Characteristics

Temperature Range:	100-320°C
Phosphorus mode range with accuracy of 5x10 ⁻¹³ g of Phosphorus per second	
Sulphur mode near square law response for sulphur with accuracy of 5x10 ⁻¹¹ g of sulphur per second	
Responsive to:	Sulphur and Phosphorus compounds

Thermal Conductivity Detector (TCD)



Characteristics

Temperature Range:	100-300°C
Number of Filaments:	4
Filament Temperatures:	180°C, 240°C, 320°C
Linear Range:	10 ⁴
Minimum Detectable Quantity:	Typically 2 x 10 ⁻¹⁴ gml ⁻¹ for nonane
Responsive to:	All compounds

Electron Capture Detector (ECD)

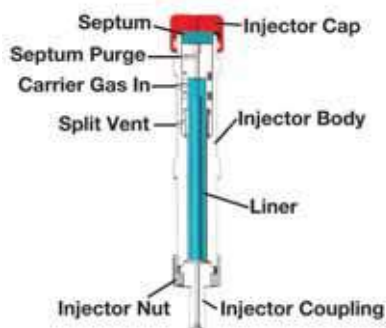


Characteristics

Temperature Range:	100-320°C
Linear Range:	10 ³
Minimum Detectable Quantity:	5 x 10 ⁻¹³ grams of lindane (at 3 x signal to noise)
Responsive to:	Halogenated, Phosphorus and Nitro Compounds

Injectors

- Split/splitless injector supplied as standard with all instruments
- Split linearity better than 3% up to 200:1
- Injector temperature range 60 - 280°C
- Optional capillary on-column adaptor
- Optional gas sampling valve



Autosamplers

Ellutia's Autosampler range featuring Liquid, Headspace and SPME sample introduction, is one of the most compact on the market with a near-to-zero requirement for bench space. The range has a great record for reliability and is simple to use.

The Liquid Autosampler range includes the EL3000A, EL3100A and EL3200A. The Headspace Autosampler range features the EL2000H and EL2100H and the EL2800T is the all in one Autosampler.

EL2800T
all in one



EL2000H
Headspace sampler



EL2100H
Headspace sampler



Ellutia Liquid Autosampler Range's Technical Specifications

	EL3000A	EL3100A	EL3200A
Sample Capacity	15 Samples	121 Samples (1 removable rack)	209 Samples (2 removal racks)
User Interface	Keypad Touch	Touch Screen	Touch Screen
Syringe Housing Illumination		3	3
SyringeID ²		3	3
BCR (Bar Code Reader) ¹			Optional
Software: HTA Autosampler Manager) (Standard Version)	Included	Free trial (60 days)	Free trial (60 days)
Easy fixing/Repositioning System	3	3	3
Controlable in Ellution	3	3	3

EL3000A
liquid autosampler



EL3100A
liquid autosampler



EL3200A
liquid autosampler





Gas Controls

- Electronic pressure control of carrier gas of 0.3 to 50psi, fully programmable with up to five ramps. Maximum total flow 250ml/min
- Detector gas control fixed sinter (apply the specified pressure to the instrument for correct gas flow rates)
- Optional two channel gas box to allow variability of detector gases

Columns Oven

- Accommodates all capillary columns up to 7 inch cage, maximum length 120m (5 inch cages required above 60 metres)
- Optional packed column capability
- Temperature range from 15°C above ambient to 300°C
- 5 ramp temperature programming
- Ramp rates up to 40°C/min below 200°C, up to 20°C above 200°C
- Maximum isothermal temperature 240°C

Software – Ellution

Developed in conjunction with DataApex, Ellution Chromatography Data Station is an advanced chromatography software package with optional modules for data acquisition, processing and instrument control. Its wide range of data acquisitions interfaces allows connections to any GC or LC chromatograph.

The key benefits of Ellution:

- Makes collecting and processing data from Ellutia's instruments quick and simple
- Easy to generate accurate reports due to the clear structure and intuitive graphical user interface
- Full control of Ellutia Gas Chromatographs is included as standard
- Optional extensions enable implementation of specific methodologies

Ellutia also offers Ellution hardware for a variety of requirements, including A/D converters for data acquisition, control boards for LC control and precise analogue signal generator devices. This hardware can be synchronised with Ellutia's autosampler or Chromatograph, or can be supplied as standalone hardware.

MARKET SEGMENTS

The 200 Series can be used across a range of applications, including agrochemicals, brewing and cannabis. GC techniques can be used for the detection of Organo-Phosphorus Pesticides, Organo-Sulfur Pesticides and Organo-Chlorine Pesticides. In the brewing and malting market, it can be used in applications for wine and whiskey analysis. Cannabis analysis is possibly the fastest growth area for GC testing.

The medicinal cannabis industry is big business and there is a real need for internationally-recognised regulations and quality control. The chemical composition of the cannabis determines the positive and negative effects of each dose. There are many different strains of cannabis plant, all having different levels of each active compound. Strains are cultivated through cloning and cross breeding of different plants to achieve a new strain with a desired flavour or percentage of cannabinoid. If cannabis were brought in-line with other pharmaceutical testing, each batch of medicinal cannabis would need to be tested for potency, flavour profiling and residual solvents.

Markets include:

Cannabis

Potency testing evaluates the levels of each compound attributed to any health impact, flavour profiling would be applicable for determining strain identity through levels of compounds responsible for distinctive tastes and smells and residual solvent analysis to determine if any solvents used within the processing and extraction of different cannabis components remained within the finished product.



Environmental /Pesticide

Screening analysis of samples where results can be rapidly examined and a same day turnaround can be guaranteed. The analysis can be repeated to provide confirmation of the results faster than traditional GC methods.



Brewing

In the brewing industry, GC is used to determine flavours (including detecting 'off' flavours) and for quality control to ensure a beer is ready to leave fermentation.



TRAINING SERVICES

The Ellutia GC Excellence Academy



Housed at our head quarters in Ely, Cambridgeshire, Ellutia's Excellence Academy hosts training courses by RSC-approved independent trainer, Anthias Consulting, as well as Ellutia-led sessions by Ellutia's technical experts.

Ellutia offers a range of training sessions across all levels, from bespoke courses to sessions that cover key application areas including: brewing, food safety, petrochemical and environmental analysis.

The training benefits scientists, students and researchers in mastering the use of modern gas chromatography instruments and maximising their potential. Ellutia's deep heritage and expertise in GC techniques and close relationships with customers means there is maximum emphasis on equipping GC users with the insight they need. emphasis on equipping GC users with the insight they need.

Upcoming training sessions will cover the following areas:

Cannabis Analysis

Register your interest for the next cannabis analysis course here:
www.ellutia.com/resources/training/gc-excellence-academy/cannabis-analysis/

Brewing Analysis

Register your interest for the next brewing analysis course here:
www.ellutia.com/resources/training/gc-excellence-academy/brewing-analysis/

Ellution Training

Register your interest for the next Ellution training course here:
www.ellutia.com/resources/training/gc-excellence-academy/ellution-training/