



# novaCHROM 3000

## Gas Chromatograph

% , ppm and ppb analysis using a Flame Ionisation Detector



The new NovaCHROM 3000 GC contains the latest GC technology based around the industry proven Flame Ionisation Detector (FID). The state of the art technology is a result of 50 years of experience that makes AGC Instruments a leading manufacturer in the industry. This rugged detector design, of which AGC Instruments has extensive experience, is ideal for both cost effective and reliable gas analysis. Utilising the latest advanced technologies, this GC provides customers with the precise results they require with the ease of use and support features expected.

The NovaCHROM 3000 GC uses the industry proven Flame Ionisation Detector (FID) for the measurement of Hydrocarbons in a various gas streams. This detector will allow measurements from % down to ultra low ppb levels with ease and with minimal training required. Using the new interactive touch screen, the NovaCHROM series is easy to use and set-up. The arrival of the new Electronic Pressure & Flow Management System has ensured all functionality is easy and accessible also. The constant monitoring of critical status information such as flows, pressures and temperatures is readily available to the operator and is backed up with the Alarm activation which allows feedback locally to other locations such as the Control Room or DCS. This information allows all personnel to know that the GC is performing to specification with the peace of mind that goes with it. Therefore the NovaCHROM 3000 provides a top class performance to you at all times.

The AGC Engineering Team will custom design an analytical solution to meet your application. All systems are designed with pipework not exceeding 1/8" in diameter and using only Swagelok® stainless steel fittings, the flow paths are contamination free and allows a fresh sample to reach the detector with speed. Coupled with the world famous Vici Valco® Rotary Valves, the robust systems ensure an excellent stability, sensitivity and a long working life. Furthermore, AGC are renowned for After Sales Service which is available locally in each market. The expertise is available to you at all times so that your ownership of the system is always supported.



### Features

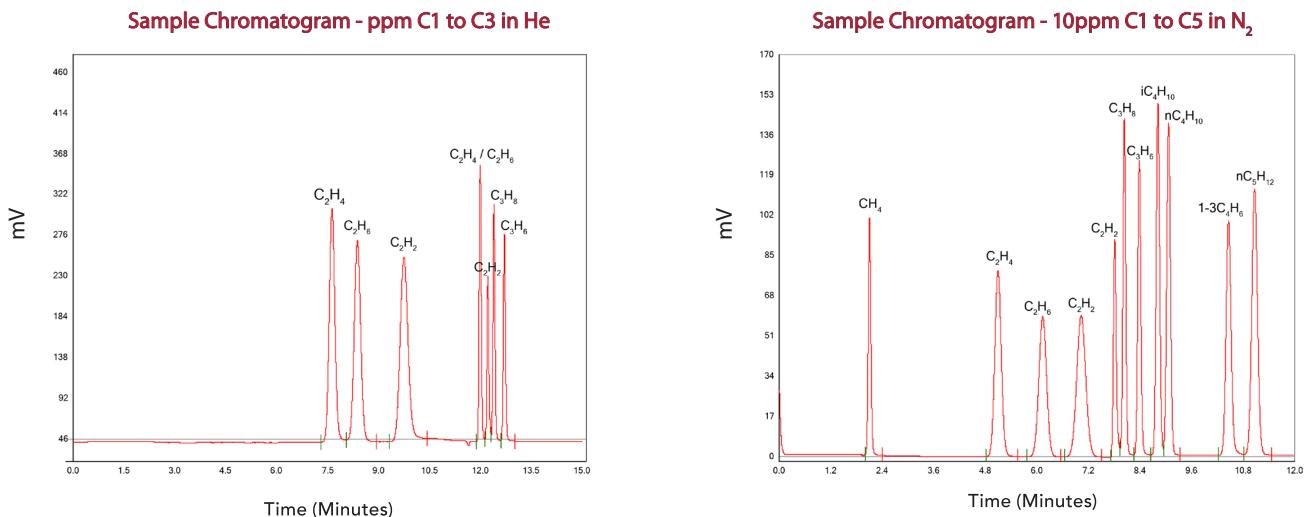
- Flame Ionisation Detector (FID)
- Electronic Pressure & Flow Management System
- Sensitivity to ppb levels
- Accuracy to  $\pm 0.5\%$  Full Scale
- Fast Detector Response: < 0.5 seconds (90%)
- Ideal for analysis of Hydrocarbons
- Versatile & Robust Detector design
- Cost Effective and Reliable
- Large Colour 6.5" LCD Touch Screen
- Long Term Stability & Sensitivity
- Fully Automated Use
- Electropolished Stainless Steel Tubing
- Integrated Configurable Alarms System
- Packed, Micro-Packed & Capillary Columns for Maximum Sensitivity
- Independent Column Ovens with individual Temperature Control
- Integrated Diagnostics System
- Full Control by TrendVision PLUS Software
- Increased Connectivity with both USB, RS-232 and RS-485
- Drop Down Front Panel for easy access during maintenance and servicing



# Principle Of Operation

The AGC NovaCHROM 3000, using the Flame Ionisation Detector (FID), is used to measure concentrations of hydrocarbons within a sampled gas. The presence of hydrocarbons is detected by burning the sampled gas in an air-hydrogen flame. Burning just pure hydrogen with air produces only trace amounts of ionisation. The presence of hydrocarbons in the sampled gas, when burnt with an air-hydrogen mix causes high levels of ionisation. The ionisation occurs as a result of the carbon atoms present in the sampled gas. The level of ionisation is proportional to the number of carbon atoms within the sample which can be measured on a data capture system, such as the AGC TrendVision PLUS Chromatography Software.

With a quick start up time and fast detector response, operation of the NovaCHROM 3000 is swift, precise and straightforward. Moreover, the packed columns with their independent column ovens and individual temperature controllers also maintain exceptional stability, accuracy and repeatability. Servicing and maintenance is trouble-free with a drop-down front panel for easy access to the electronic components and our unique column infrastructure, which can regenerate in-situ, providing you with seamless operations. The minimal gas consumption provides an economical platform with a low cost of ownership and long life span.



## Markets & Typical Applications:

- Air Separation Units
  - C<sub>1</sub> to C<sub>6</sub>+ ppm in O<sub>2</sub>
  - C<sub>1</sub> to C<sub>6</sub>+ ppm in Air
  - CH<sub>4</sub>/ NMHC in O<sub>2</sub>
- N5, N6 & N7 Grade Gas Production & Specialty Gas Analysis
  - Certification of Calibration Gases for trace analysis
  - C<sub>1</sub> to C<sub>6</sub>+ in specialty gases
  - CO / CO<sub>2</sub> ppb in specialty gases
- Corrosive Gases / Electronic Gases
  - ppb CO / CO<sub>2</sub> analysis
- Solvent Recovery Units
- Refineries
- Food & Beverage
  - VOC in CO<sub>2</sub> (ISBT & CGA)  
(e.g. Acetaldehyde, Methanol..etc.)
- Steam reformer/ He production or purification/  
H<sub>2</sub> or He
  - CH<sub>4</sub> / NMHC in H<sub>2</sub>
  - C<sub>1</sub> to C<sub>4</sub> ppm/ ppb in H<sub>2</sub> or in He
- Solvent Recovery Units
- Analysis of CO & CO<sub>2</sub> using Methaniser
- Methane and Non Methane Application
- Impurities in Ethylene & in Propylene
- Natural Gas Analysis

## TrendVision PLUS Software

TrendVision PLUS is the latest release of the well recognised Chromatography Data Capture Software from AGC Instruments. Rugged industrial level modular and scalable hardware is used with an Embedded Windows Operating System. TrendVision PLUS provides a unified chromatography method whereby all settings are contained in a single method, including event tables, calibration tables and integration settings. In addition, this software enables AGC GC systems to run in a fully unattended mode. It can also take control of GC systems and automatically perform the required analysis using the pre-programmed methods. This is coupled with the ability to send results back to a DCS or control room using fieldbus protocols or traditional 4-20 mA signalling. If On-Line operation is not required then the software runs equally well in its Stand-Alone mode with the same functionality and ease of use. Please consult with our specific brochure for this Software.

# Specification

Detector	Flame Ionisation Detector (FID)
Sensitivity	< 10ppb of CH <sub>4</sub>
Linearity	10 <sup>6</sup>
Accuracy	±0.5% full scale
Temperature Range	Operating: 30-45°C Ambient: +10°C to +30°C
Range	< 10 ppb to 100% [Application Dependent]
Detector Response Time	< 0.5 seconds (90%)
Noise	10 µV maximum, depending on operating parameters
Warm up Time	1 Hour (Typical)
Power	230 V AC / 50 Hz or 115V AC / 60Hz, 300W
Configurations	19" Rack, Bench Top or Wall Mount
Dimensions	Rack/Bench: 19" (483mm) (W) x 5U (219mm) (H) x 22" (564mm) (D)
Weight	25 kg
Interface	6.5" LCD Colour Display with LED backlight and resistive touch screen
Carrier Gas	Nitrogen (N <sub>2</sub> ), Helium (He), Argon (Ar) : <5ppm H <sub>2</sub> O free from CnHm 20-40mL/min
Support Gases	Air: 300 mL/min <5ppm H <sub>2</sub> O      H <sub>2</sub> : 30mL/min <5ppm H <sub>2</sub> O , CnHm <1ppm
Sample Gas	10 - 500 mL/min flow (200ml/min flow recommended)
Actuator Gas	Clean Dry Air @ 3 Bar (300 KPa) pressure
Electronic Gas Management*	5-10 Bar input: Controls Carrier Gas Output from 0-5 bar
Valves	Vici Valco® high purity rotary valves
Standard Fittings	1/8" Stainless Steel with Swagelok® fittings
Output Signal**	0 - 1 V
Columns	Packed, Micro-Packed and Capillary columns available
Ovens	Independent Column Ovens with individual temperature control (Regeneration in-situ)
Alarms	Detector, System, Flow, Maintenance, Temperature, Pressure
Outputs	TrendVision PLUS provides mA or Profibus/Modbus and RS - 485 connectivity

\* Subject to system design/configuration

\*\* Can be adjusted to the input specification of the customer's recorder/integrator/data handling system.  
For Automatic operation, AGC Instruments recommends the TrendVision PLUS Chromatography Software System.

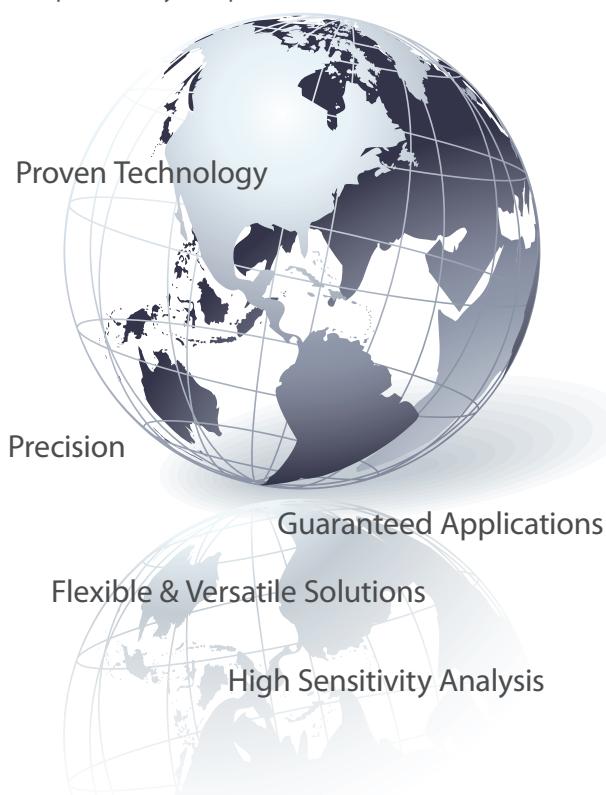


# Company Profile

## AGC Instruments

AGC Instruments is a leading manufacturer of Gas Analysis Solutions to all users requiring a Quality Control or identification of their gas stream. We have over 50 years' experience in providing our customers with their "Total Gas Analysis Solutions". We work closely with all customers to ensure they obtain the analytical solution that meets their needs and a system that is easy to use and understand. All AGC distributors are extremely experienced and factory trained to the highest standards, offering you a complete after sales support service.

The wide range of Detectors available can be customised to measure unique gas streams and we place an emphasis on the continuous development of our analytical solutions. Our worldwide reach with strategic partners ensures that you have peace of mind and after sales care that are important to your operations.



## Aftersales Care

AGC Instruments are committed to providing and maintaining quality systems from customer liaison to technical knowledge through to System Design and Delivery. We believe that our After Sales Support to the customer is one of the most important services we can offer. Each Distributor has been carefully selected and trained to ensure our customers receive the best possible service. Furthermore, online customer support and direct support are available to deliver a comprehensive support package.

## Range of Detectors

Discharge Ionisation Detector	DID	1000
Argon Discharge Detector	ADD	2000
Flame Ionisation Detector	FID	3000
Thermal Conductivity Detector	TCD	4000
Flame Photometric Detector	FPD	5000
Photometric Ionisation Detector	PID	6000
Electron Capture Detector	ECD	7000

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