POLLUTION
A N A L Y T I C A L   E Q U I P M E N T

Pyxis GC BTEX
CARRIER FREE ANALYSER

Outdoor
Air Quality
Monitoring

Innovative, Reliable, Smart.

THE GAS CHROMATOGRAPHIC REVOLUTION FOR ENVIRONMENTAL MONITORING

PyxisGC BTEX is the first and unique gaschromatograph "carrier gas free" for remote BTEX monitoring in ambient air. PyxisGC BTEX is manufactured by Pollution Analytical Equipment in compliance with EN14662-3:2015.
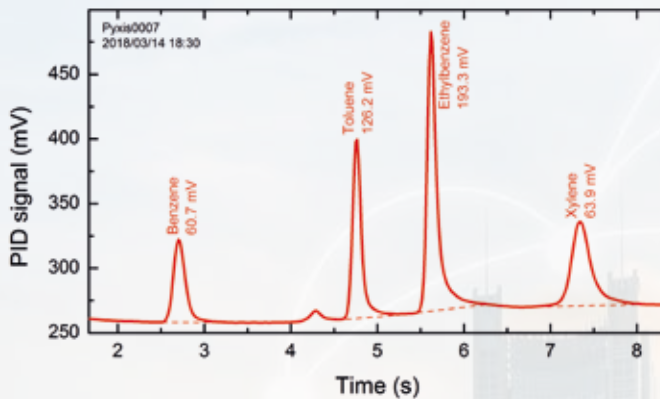
MINIATURISED ANALYTICAL SYSTEM

The analytical module of PyxisGC BTEX is characterised by miniaturised dimensions and high sensitivity, thanks to the combination of two technologies:
- Micro Electro-Mechanical Systems (MEMS), applied to the selective preconcentrator and to the column of chromatographic separation (proprietary technology)

MEMS for pre concentration and gas chromatographic separation

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- Miniaturised Photoionization detector (PID) for the peaks quantification

APPLICATIONS

- "Smart city" air quality monitoring
- Fence line monitoring

KEY FEATURES

- PID Detector
  High sensitivity
- MEMS Technology
  Miniaturized
- Carrier Gas Cylinders FREE
  Low cost ownership
- Cloud software for management /control
  Remote real time monitoring

CARRIER GAS FREE

PyxisGC BTEX uses ambient air as carrier gas, differently to the traditional GC: carrier gas cylinders are not necessary anymore. This unique feature allows simple installations and avoid periodically visits to the installation site in order to replace the empty cylinders.

REAL-TIME BTEX MONITOR
FOR A SAFER ENVIRONMENT

BTEX (Benzene, Ethylbenzene, Toluene, Xylenes) are a group of volatile, harmful, and carcinogenic compounds, usually released in the atmosphere during industrial processes or vehicle fuel combustion. Outdoor and continuous monitor of such compounds is very important, gives a clear picture of the air quality and can be used to identify health and safety concerns, demonstrate compliance with local regulations and even assess if there is a leak in storage or processing infrastructure. Benzene concentration is regulated by European Air Quality Directive 2008/50EC, which sets the limit valute (LV) at 1,5 ppb (5 µg/m3) for the annual mean.

SMART CITY

THE AIR QUALITY MONITOR AROUND YOU

WHAT
A smart city is a designation given to a city that incorporates information and communication technologies (ICT) to enhance the quality and performance of urban services such as energy, utilities, and transportation, so to reduce resource consumption, wastage, and overall costs. In order to achieve this goal it is necessary to monitor real-time the environmental conditions, with a network of sensor nodes across relevant spots in a city, for identifying the sources of pollution and mitigate them.

HOW
PyxisGC BTEX can be implemented in the monitoring network and supply real-time information about the quality of the air related to BTEX concentration. These data can be used to get a clearer picture of the air quality, with precise geolocalization, thus helping in the development of an environmental plan able to reduce the pollution impact on the population.

WHERE
- Schools, hospitals, museums, parks
- Street canyons, garages, tunnels, high-traffic areas
- Airports, stations, harbours

FENCE LINE
CONTINUOUS CONTROL
AND FAST RESPONSE FOR EVERYDAY SAFETY

WHAT
Monitoring the potential escape of pollutant gases from industrial sites can be difficult to achieve due to changing weather conditions and the large size of many of this sites. Fence line monitor is the only way to ensure that proposed standards are being met and that neighboring communities are not being exposed to unintended emissions. This is a relatively new approach to control emissions from an industrial plant, in order to identify the souce of potential problem.

HOW
PyxisGC BTEX can be installed in a network around industrial facilities and with our Cloud software it's possible to view the data in real time, from every smart device everywhere in the world.
Reliable, real-time data can be used to create charts, tables, and other statistical analysis. The correct functioning of the plant can be continuously monitored and in case of emergency situations the threat will be quickly assessed and handled.

WHERE
- Oil & gas plants
- Iron and steel industries, foundries
- Harbours and airports
- Solvents, chemicals, or fuel depot
- Waste management areas, landfills

ADVANTAGES
- Rugged construction, IP55 cabinet
- Carrier gas free
- Automatic analysis with autocheck and autocalibration
- Remote control and Cloud software (Pollution Guardian)
  with real-time data
- Low maintenance cost and low energy consumption
- Easy relocation due to small size and weight

DIFFERENT CONFIGURATIONS TO MEET SPECIFIC DEMANDS

AUTOCALIBRATION
Autocalibration system with a span gas cylinder. This system maintains the analytical stability for one year, avoiding the replacement of the cylinder.

UPS BATTERY
UPS system with lithium batteries. This system maintains the monitoring instrument online up to 6 hours in case of an electric blackout.

ANALYTICAL MODULE
This system includes MEMS pre-concentrator and MEMS column, PID detector and gas chromatography processing.

COMMUNICATION INTERFACES
- LAN, Wi-Fi, 4G for local access and Cloud integration "Pollution Guardian"
- MODBUS for automated control and integration with data management system.

PYXISGC BTEX OUTDOOR VERSION (4 configurations available)			
	WEE	WCE	WBE	W0E
ANALYTICAL MODULE	·	·	·	·
AUTOCALIBRATION	·	·		
UPS BATTERY	·		·	
CLOUD	·	·	·	·

POLLUTION GUARDIAN, THE CLOUD SOLUTION FOR THE REMOTE DATA MANAGEMENT IN REAL TIME

PyxisGC BTEX is entirely matchable with the cloud service, "Pollution Guardian" for the data monitoring and management. The Pollution Guardian software stores up and archives analysis data automatically, it allows the real time data and the historical data viewing (with creation of charts, tables, graphs and other statistical analyses).

Pollution Guardian allows to set user-defined alarms on the data collected and to send notifications via SMS or email. In addition, push notifications on your smartphone is also available, thanks to the dedicated APP. Thanks to Pollution Guardian it is possible to manage the instrument: the remotely diagnostic has never been so simple.

SPECIFICATIONS

Dimensions	420mm x 620mm x 210mm
Weight	Models: W0E 11,5 Kg / WCE (auto-calib) 13 Kg / WBE (UPS) 17,5 Kg / WEE (auto-calib+UPS) 19 Kg
Operating Temperature	0°C - 60°C
Instrument control	Integrated PC board
Data storage	16 GB Internal Flash Memory (up to 7 years of continuous measurements)
Power Imput	12V CC max. 2,5A
Power consumption	Max. 25W
Carrier gas	Ambient Air, <10 sccm
Sampling	Sample Flow Rate 250 - 450 sccm
Detector	High-sensitivity PID - Photo Ionization Detector (10.6 eV)
Analysed Gases	Benzene, Toluene, Ethylbenzene, Xylenes (other gases on request)
Analytical range "Smart City" version	[0.5 – 80] µg/m^3 benzene with 15 min analysis cycles
Analytical range "Fence Line" version	[1.0 – 160] µg/m^3 benzene with 15 min analysis cycles
Lower Detection Limit	<0,2 µg/m3 (0.05ppb) of Benzene
Communication interfaces	Ethernet, Wi-Fi, 4G
Instrument control and data access	· Local WebServer, accessible with a common browser (IE, Firefox, Chrome) · MODBUS su TCP server · IoT service "Pollution Guardian"

Due to continuous improvement, our products can be subject to modification at any time and without any notice among the technical specs and images here listed, to be considered only as indicative.

Environment

THE ANSWER TO YOUR ON-SITE DETECTION CHALLENGES

www.pollution.it

Management
System
ISO 9001:2015

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BI-EN0312-0