DPS Instruments Europe GmbH

Custom GC Systems are what we're - About !

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100"S of Custom GC Systems

This fun little video tells our story. We believe we should leave our planet a better place for our children and generations to come!

We are proud to offer 4 GC models, 8 different detectors, built-in sample concentrators, incredible plumbing schemes, autosamplers, and many other accessories. Consequently, we can build 100"S of configurations of Custom GC Systems. Where each one is specifically builtto metthe requirements of your GC Analysis application. In other words, we don"t just build GC"S, we build application specific Custom GC Systems!

Companion 1 - Portable GC System

Custom GC - Products

· Only1 GC Detector(Choosefrom: FlO, NPD, PID, orTID) " 1, or 2 Injectors (on-Column, or Custom SIS)
· Ambientto 325°C
" Temperature Program - to 80°C/min

https://www.dps-instruments.com

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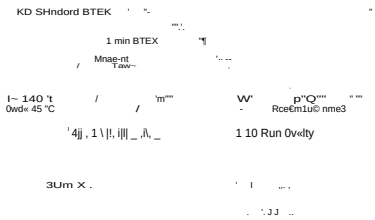
heated and the compounds are directed to the analytical column for GC analysis. In conclusion, the entire sequence of the MicroExtractor Concentrator is automated through the Timeline of the DPS Control Software.

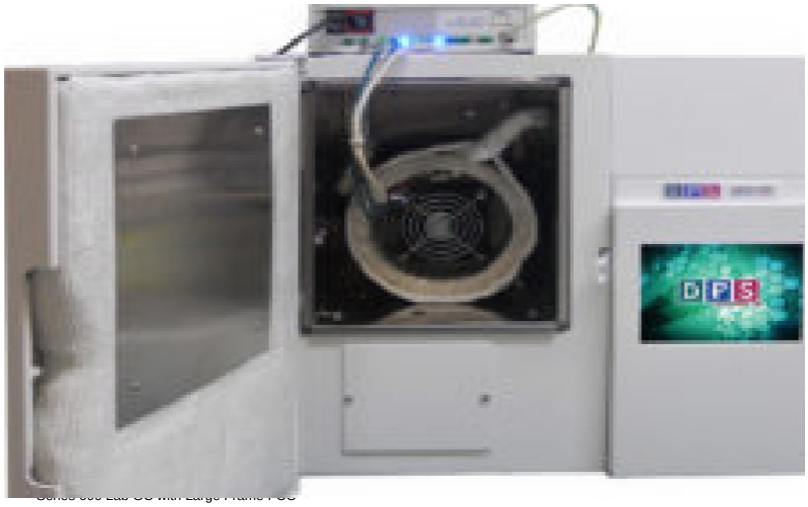
FCO Upgrade for Fast GC



The Fluidless Column Oven (FCO) is a revolutionary low mass accessory. The column is sealed inside an insulated oven, but comes in direct contact with the heater elements. Therefore, this contact allows the gradient to be transferred directlyto the column. The low mass of the oven and direct heating make veryfast temperature ramping possible in both the Extended Run and Classic models. In addition an integrated chiller cools the column between runs and is powerful enough to permit sub-ambient GC analysis starting as low as 20°C.

Check outthe Installation Video

Visit GC Ovens for more about Fast GC



Innovative Plumbing Schemes

Headspace Vial Cleaner Accessory

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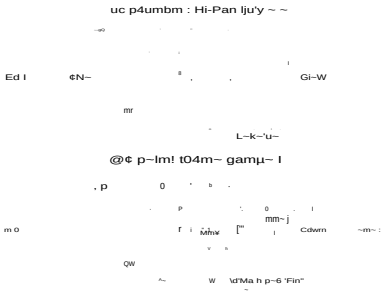


Click for Large

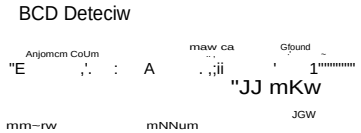
Example: Dual Sample Loop

There are so manyto choose from it is not possible to list them all. But just contact us and we will be happy to help you configure your Companion Portable GC, or Series 600 Custom GC System foryour specific GC sample analysis.

Custom GC - Detectors

BCD

Bromide Chloride Detector



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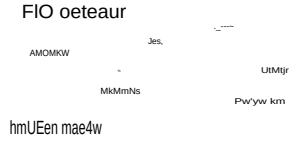
BCD Overview - Above all, the BCD detector is highly selective to Bromine and Chlorine compounds. Moreover, the BCD is only available in DPS Custom GC Systems. While the BCD sensitivity to these compounds approaches the sensitivity of the radioactive ECD detector, the detector is completely non-radioactive. To start, atvery high temperatures, the aluminum in the ceramic collector acts as a catalyst to cleave Bromide and Chloride ions from the molecules. The catalytic activity starts around 700°C and increases exponentially, with the temperature of the Reaction Cell. However, we limitthe Reactor Cell to 1000°C for safety purposes. Finally, the negatively charged Collector Electrode

FID

Flame Ionization Detector



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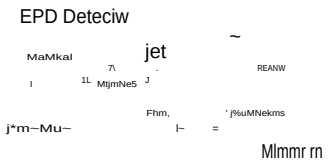
FID Overview - The FlO detector is selective to all compounds that burn, therefore it is commonly used forthe analysis of hydrocarbons. At first, a precisely controlled Hydrogen and Air mixture is ignited and burns as a small flame atthe end of a jet within the Detector Body. Consequently, all compounds exiting the column pass through the flame. As a result, those that are combustible ionize. Afterthat, the negatively charged Collector Electrode attracts the positively



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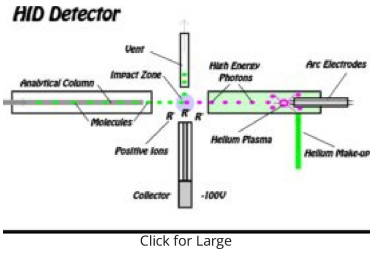
FPD Overview - The FPO detector can be configured for 2 modes of operation. Firstly, a highly selective configuration for Sulfur compounds. Or secondly, a mode that is highly selective for Phosphorus compounds. To start, a precisely controlled Hydrogen and Air mixture is ignited and burns as a small flame atthe end of a jet within the Detector Body. Therefore, all compounds exiting the column pass through the flame and those that are combustible ionize. Afterthat, all excited Sulfur, or Phosphorus ions return to their ground state and emit photons. The specific wavelength filters within the detector body only let certain photons pass through to a Photo MultiplierTube (PMT), where they are detected and amplified. The FPO produces a lot of water, which is a problem for most Portable GC"S, howeverthe unique design of the DPS FPO detector takes care of this problem.

HID

Helium Ionization Detector



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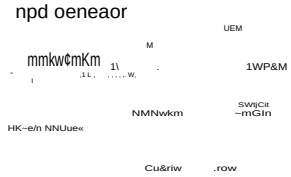
HID Overview - The HID detector is a universal broad range detector, so it is highly sensitive to almost all compounds. At first, in a pure helium environment, a currentflows between two electrodes creating a plasma of high energy short wavelength photons. Consequently, as the compounds exitthe column they are bombarded bythese photons and Ionized. Take note, that the energy of these photons are 24 eV, which is sufficientto Ionize almost all compounds. Afterthat, the negatively charged Collector Electrode attracts the resultant positively charged Ions. The HID can be run in series with other detectors, such as a FlO, PID, or BCD. The unique design of the DPS HID detector is ideal for both Series 600 Lab and Portable Custom GC Systems.

NPD

Nitrogen Phosphorus Detector



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NPD Overview - The NPD detector is highly selective, but onlyfor Nitrogen and Phosphorus containing compounds. At first, a precisely controlled Hydrogen and Air mixture surrounds the NPD bead within the detector body. Secondly, a voltage is applied to the bead to activate the surface. Finally, Nitrogen or Phosphorus compounds react with the activated surface as they exit the column creating Ions. Consequently, the negatively charged Collector Electrode attracts the resultant

PID

Photo Ionization Detector

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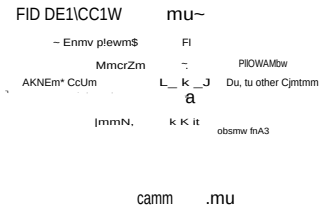

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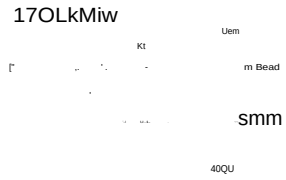
PID Overview - The PID detector is highly sensitive to hydrocarbons, but onlythose that are aromatic, or have double ortriple bonds. To begin, the PID lamp emits 2 majorwavelengths of high energy Ultraviolet lightthattravel through the window of the lamp. Afterthat, the compounds exiting the column are bombarded bythese UV photons and Ionized. Finally, the positively charged Ions are attracted to the negatively charged Collector Electrode and amplified. The energy of these photons averages 10.6 eV, and this is sufficient to ionize aromatic compounds, but not aliphatic compounds. Since the PID is non-destructive, the PID detector is commonly used in series with other detectors. For instance, in DPS Custom GC Systems the PID is used in series with both the BCD and FIO detectors.

TID

Thermo Ionic Detector



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TID Overview - In short, the TID detector is highly selective to Amines and Nitroaromatic compounds commonlyfound in explosives. At first, a precisely controlled Nitrogen, orAir mixture surrounds the TID bead within the detector body. Secondly, a Voltage is applied to the bead to activate the surface. Afterthat, Amines and Nitroaromatic compounds react with the activated surface as they exitthe column creating Ions. Therefore, the negatively charged Collector Electrode attracts the resultant positively charged Ions.

Custom GC - Customers

Six Continents and Counting!

Due to the current data protection regulations we are reluctant to present a list of customers, or even display their logos. We think thatthis is sad, but you probably already have a good idea of who they are by the products and services they provide. Although, we have smiling customers on 6 continents,

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Custom GC"S for Method Specific -Applications

Consumer Products

Food, Packaging & Personal Care

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Environmental

Air, Water & Soil

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Forensics

Arson, Blood & Drugs

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Custom GC Forensics

PetroChemical

Permanent Gas, Fuel & Safety

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Custom GC Petrochemical

Pharmaceuticals

Medicine & Cannabis

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Click an Image for the Application

Custom GC Pharmaceutical

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Custom GC Quality

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