

About Us:

Peak Labs is a world leader in design and manufacturing of process gas chromatographs (GC). We provide simple, innovative, complete solutions for trace to percent level analysis. Our analyzers are equipped with a unique design, which allows our customers to accurately measure trace gas to part per trillion levels, while maintaining a wide linear range. Peak Labs practical experience and ability for customization to suit your application needs makes us your analytical partner, not just your supplier.

Contact:

Ph: (650) 691-1267
 Fax: (650) 691-1047
 2330 Old Middlefield Way,
 Ste. 10, Mountain View, CA
 94043

www.peaklaboratories.com



Flame Ionization Detector (FID):

(For the Detection of Hydrocarbon Impurities)

The GC FID uses a highly sensitive flame ionization detector, which is integrated with Peak's unique design specifically for the process application in UHP gases. C-H bonds are ionized and "collected" via a voltage grid within the detector. This produces an electronic signal proportional to the number of ions, otherwise known as concentrations, within the sample onto easy to read multi-interface LCD screen. The FID is used to measure trace amounts of **hydrocarbon and carbon dioxide** impurities in N₂, Ar, He, O₂, H₂, N₂O, Air & other specialty gases. These measurements are made down to part per trillion levels, while offering a wide linear range for simple, accurate data.

Features:

- Backlit, User Friendly Touchscreen (LCD)
- Multiple Communication Protocols
- Visual Chromatogram and Numerical Results
- Excel Compatible Data
- Accurate, Effective and Reliable Design
- On-board Integration with Rerun Capability



Benefits:

- Continuous Monitoring
- Custom Solutions for your Processing Needs
- Quick, Reliable Global Support and Training
- Lower Total Cost of Ownership
- Offers Simple and Accurate Measurements, down to the Part Per Trillion Level

Fields of Application:

- Air Separation Plants
- Regulatory Air Monitoring
- Government & University Research Institutes
- Quality Assurance / Control
- Semiconductor Plants
- Purifier Manufacturers
- Process Control
- Medical Research Labs



Contact us.

The Peak Performer 1 FID gas chromatograph (GC) can be optimized for your analytical needs in a variety of matrix gases. Typical applications are provided below:

- CH₄, CO₂, NMHC (non-methane hydrocarbons) in UHP bulk process gases
- CH₄ production in bio-reactors
- Atmospheric CH₄ and NMHC / THC analysis

Performance

Typical lower detection limits (in parts per trillion)

Impurity	Matrix Gas	N ₂ , Ar, He	O ₂	Air	H ₂
CH ₄ : Methane		500	500	500	500
CO: Carbon Monoxide		*	*	*	5 ppb
CO ₂ : Carbon Dioxide		800	800	N/A	800
NMHC		800	800	800	800

* Contact local representative for specific details

All performance specifications are based on fully optimized PP1 FID with 5 cc sample loop on continuous analysis.

Unless specified, carrier gas is purified nitrogen

FID fuel gases are UHP grade < 1000 ppb impurities

Accuracy

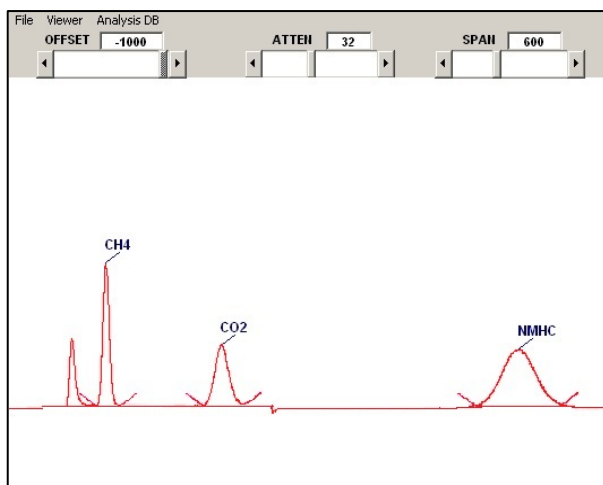
- + / - detection limit or 10 % of reading, whichever is higher

Range

- 10000 : 1
- Examples:
- < 1 ppb- 10 ppm w/ 5 mL sample loop
 - < 5 ppb- 50 ppm w/ 1 mL sample loop

Dimensions / Electrical

- 27" L x 17" W x 7" H
- 25 lbs.
- 115 VAC, 50 – 60 Hz / 220 VAC, 50-60 Hz
- 1.5 amp maximum



Operation

- Run time ~ 400 seconds (depending on application)
- Operating Temperature: 55 - 85 °F (13 - 30 °C)
- Gas Supply Requirements: Carrier: Getter Purified Nitrogen Supply pressure 70 – 110 psig with 5% stability
- FID H₂: 99.999% pure or purified < 1000 ppb impurities Supply pressure 25 – 45 psig with 5% stability
- FID Air: 99.999% pure or purified < 1000 ppb impurities Supply pressure 5 – 45 psig with 5% stability
- Data Collection / Communication: 0-1 VDC Analog Outputs RS232, RS485 Serial Communication Data Archive / Viewer / Trend Log/ Raw Detector Signal

Options:

- On Column Syringe Injector Adapter
- Dual Sample Stream
- 4-20 mA Output

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Pulse Discharge Detector (PDHID)

(For the Detection of Nitrogen & Argon)

The GC PDHID analyzer is equipped with a uniquely designed pulse discharge detector utilizing a stable low power pulse electrical discharge via helium as a source of ionization. This analyzer is the ideal solution for the detection of trace amounts of **nitrogen & argon** impurities in He, Ar, O₂, H₂, N₂, N₂O & other specialty gases. Chromatographs are generated by the ionization of helium using high energy photons. Resultant electrons are accelerated to the collector electrode, where they are quantified as the detector output. This process integrated with Peak's proven platform delivers prompt and accurate results, while still maintaining a wide linear range.

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Fields of Application:

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- Government & University Research Institutes
- Quality Assurance / Control
- Semiconductor Plants
- Purifier Manufacturers
- Process Control



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The Peak Performer 1 PDHID gas chromatograph (GC) can be optimized for your analytical needs in a variety of matrix gases. *Typical* applications are in process gas plants such as manufacturing of:

- Ar & N₂ in UHP gases
- H₂, Ne, Kr, Xe & CH₄ in bulk gases

Performance

Typical lower detection limits (in parts per billion)

Impurity	Matrix Gas	He	Ar	O ₂	H ₂	N ₂	N ₂ O
N ₂ : Nitrogen		10	10	10	10	N/A	10
Ar: Argon		5	N/A	10	10	5	*

* Contact local representative for specific details

All performance specifications are based on fully optimized carrier matrix gas

Accuracy

- + / - detection limit or 10 % of reading, whichever is higher

Range

- 5000 : 1
- Examples:
 2 ppb- 10 ppm w/ 1 mL sample loop
 5 ppb- 25 ppm w/ 200 uL sample loop

Dimensions / Electrical

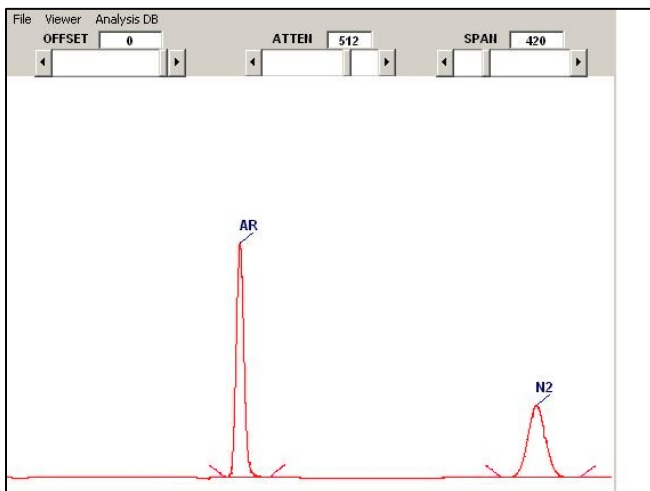
- 27" L x 17" W x 7" H
- 25 lbs.
- 115 VAC, 50 – 60 Hz / 220 VAC, 50-60 Hz
- 1.5 amp maximum

Operation

- Run time ~ 500 seconds (depending on application)
- Operating Temperature: 55 - 85 °F (13-30 °C)
- Gas Requirements:
 Carrier Gas Supply: Cryogenic & Getter Purified Helium
 Supply pressure 70- 110 psig with 5% stability
 Total Flow: ~200scm (plus ~50 cc per actuation)
- Data Collection / Communication:
 0-1 VDC Analog Outputs
 RS232, RS485 Serial Communication
 Data Archive / Viewer / Trend Log/ Raw
 Detector Signal

Options:

- On Column Syringe Injector Adapter
- Dual Sample Stream
- 4-20 mA Output



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Reducing Compound Photometer (RCP):

(For the Detection of Hydrogen, Carbon Monoxide & Select Hydrocarbons)

The GC RCP analyzer is equipped with a uniquely designed hybrid ultraviolet / HgO photometer. This analyzer is the ideal solution for the measurements of trace amounts of **hydrogen, carbon monoxide & select hydrocarbons** in N₂, Ar, He, O₂, Air, H₂, C₃H₆ & other specialty gases. Chromatographs are generated by sample loop injections administered through columns in an isothermal oven to our GC detector. The resulting mercuric oxide reaction liberates a mercury vapor that is measured via a UV light absorption method. This process integrated with Peak's proven platform delivers prompt and accurate results, while still maintaining a wide linear range.

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Benefits:

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- Lower Total Cost of Ownership
- Offers Simple and Accurate Measurements, Down to the Part Per Trillion Level

Fields of Application:

- Air Separation Plants
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- Semiconductor Plants
- Purifier Manufacturers
- Process Control
- Medical Research Labs



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The Peak Performer 1 RCP gas chromatograph (GC) can be optimized for your analytical needs in a variety of matrix gases. *Typical* applications are provided below:

- H₂ and CO in UHP bulk process gases
- CO in atmospheric research and continuous monitoring stations
- H₂ in groundwater and sediment studies
- C₂H₂ & C₂H₄ in environmental samples and research

Performance

Typical lower detection limits (in parts per trillion)

Impurity	Matrix Gas	N ₂ , Ar, He	O ₂	Air	H ₂	C ₃ H ₆
H ₂ : Hydrogen		800	800	800	*	10 ppb
CO: Carbon Monoxide		300	300	300	500	5 ppb
C ₂ H ₄ : Ethylene		500	500	500	*	N/A

* Contact local representative for specific details

All performance specifications are based on fully optimized PP1 with 1 cc sample loop on continuous analysis.

- Unless specified, carrier gas is purified nitrogen
- Helium matrix spec is based on purified Helium as carrier
- Based on medical grade air as carrier

Accuracy

- + / - detection limit or 10 % of reading, whichever is higher

Range

- 1000 : 1 Minimum
- Examples:*
- < 1 ppb- 1 ppm w/ 1 mL sample loop
 - < 10 ppb- 10 ppm w/ 100 uL sample loop

Dimensions / Electrical

- 27" L x 17" W x 7" H
- 25 lbs.
- 115 VAC, 50 – 60 Hz / 220 VAC, 50-60 Hz
- 1.5 amp maximum

Operation

- Run time ~ 3 minutes (depending on application)
- Operating Temperature:
55 - 85 °F (13-30 °C)
- Gas Requirements:
Carrier Gas Supply: Nitrogen / Air / Argon / Helium
99.99% or purified better to < 10 ppm total impurities
Supply pressure 70- 110 psig with 5% stability
- Data Collection / Communication:
0-1 VDC Analog Outputs
RS232, RS485 Serial Communication
Data Archive / Viewer / Trend Log/ Raw
Detector Signal

Options:

- On Column Syringe Injector Adapter
- Dual Sample Stream
- 4-20 mA Output

