

# PFAS and CHEMICAL FAST GAS CHROMATOGRAPH

Model ~ PFAS-TA-L

## FEATURES:

- DETECTS PFAS AND OTHER HYDROCARBONS – C4 TO C25
- AIR OR WATER
- **PFAS-TA-L identifies vapors as low as 1 PPT (parts-per-trillion) in just 5-60 seconds.**
- BENCHTOP OR PORTABLE
- QUANTITATIVE
- QUALITATIVE ANALYSIS
- EXCEPTIONAL SENSITIVITY
- ANALYZE VAPORS IN 5 - 60 SECONDS
- INTERNAL SAMPLE PUMP
- DATA OUTPUT - BLUETOOTH OR RS-232 USER SETTABLE
- DISPLAY ON USER'S LAPTOP; **OPTIONAL:** LAPTOP
- DC POWER WITH CHARGER



## APPLICATION:

The PFAS-TA-L Vapor detector and analyzer is a field ready fully integrated system for air or water. With an internal sampler pump and integrated computer, the **PFAS-TA-L identifies vapors as low as 1 PPT (parts-per-trillion) in just 5-60 seconds.** . EPA's proposed regulation limit for PFOA and PFOS is 4 ppt. The PFAS-TA-L provides immediate measurement of PFOA and PFOS. Typical laboratory analysis is expensive and may take a week or more for results.

Rapid, on-the-spot PFAS contamination testing below the EPA's limit and can be configured for either water or air samples.

A proprietary Surface Acoustic Wave (SAW) detector results in a system with previously unattainable sensitivity in a portable low-cost package.

## DESCRIPTION:

- Carrier Gas: Helium, Typical 300 tests per day per charge
- Analysis Time: 5 – 60 Seconds
- Display: Windows any version

Utilizing a trap and helium carrier gas, the PFAS-TA-L injects samples into a heated column and separation takes place. Materials sequentially exit the column and are deposited on the SAW detector. The deposit results in a change in the oscillating frequency of the resonator directly proportional to the mass.



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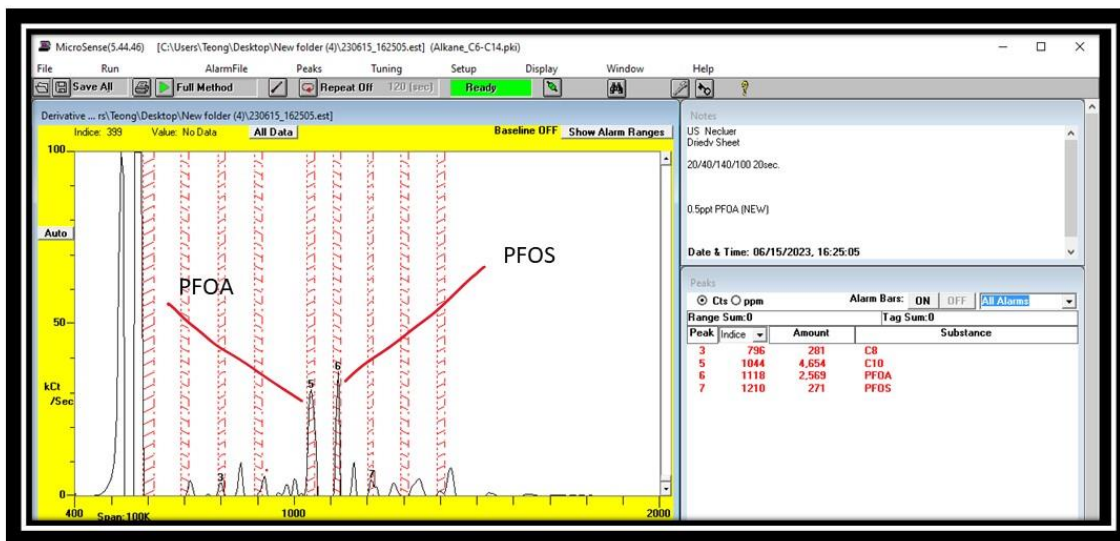
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## THE PFAS AND CHEMICAL DETECTION SYSTEM EXPLAINED

Sheet of AEM membrane  
(20.40.140.100 Pump 10sec) Weight 364mg slice



### UNIQUE DETECTION

- Recognizes full chemical signature
- Provides a complete chemical profile
- Has an expandable library of 700+ chemical signatures
- Ultra-high-speed chromatography
- Same time pattern recognition and trace detection
- Adapts and learns to recognize threat signatures



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## HOW IT WORKS

- A Q surface acoustic wave (SAW) interferometer is the key component
- Individual analyte peak half-width is measured in seconds
- Every picogram of material is collected on the surface of the temperature-controlled quartz crystal.
- An image of the chemical pattern is obtained from the frequency of the SAW resonator.
- The SAW interferometer produces a resonance frequency proportional to the amount of column effluent deposited on the quartz surface.
- A complex ambient environment is viewed and recognized via a its image

This unique method and function is a rapid and accurate process for PFAS and other chemical detection. The benchtop model **PFAS-L** and the field model **PFAS-F** provide researchers with a process that stands out from other market methods.

## SPECIFICATIONS:

<b>DETECTOR:</b>	Surface Acoustic Wave (SAW) Quartz microbalance
<b>Dynamic Range:</b>	$2 \times 10^5$
<b>Temperature:</b>	0° C to 150° C, programmable
<b>Detects:</b>	PFAS and C4 to C25
<b>Sensitivity:</b>	PFAS-L - 1 part per trillion in 5-60 seconds. For many compounds in 10 seconds Sensitivity will vary by compound sampling time, matrix, interferences & detector temperature ranges.
<b>Accuracy:</b>	<2% standard deviation
<b>Dynamic Range:</b>	$10^6 \pm 10\%$
<b>Recycle Time:</b>	30 sec minimum
<b>SAMPLING:</b>	
<b>Sample Pump:</b>	Internal
<b>Sample Introduction:</b>	~.5 ml/sec
<b>Sample Time:</b>	1-300 seconds, User Settable
<b>Carrier Gas:</b>	Helium, (Min 99.999% purity, #6) Replaceable Cylinder 95cc at 17.6MPz (2560 psi) Typical use is 200 - 300 tests per day on one helium charge
<b>Compound Identification:</b>	Automatic with user calibration



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## COLUMN:

Limits: 35°C to 225°C -depending on column

Ramping: 1 – 18° C/sec

## ENVIRONMENT:

Operating Temperature: 32°F to 105° (0°C to 40°C)

Relative Humidity: 0 – 95% non-condensing

Power: Battery Pack: 28V DC, 16 AHr Lithium Ion (5hr typical)

Charger Power: 100 – 127 VAC at 3 amps – 50/60 Hz;  
200 - 240 VAC at 1.5 amps – 50/50 Hz

## INLET CONNECTION / TEMPERATURE:

Inlet Port: Stainless steel LUER

Temperature: 50°C to 200°C

## SYSTEM CONTROLLER SOFTWARE:

Intel Pentium 100 MHz or better processor, MIN: 16MB RAM, 1GB Hard Driver with Windows (any version)

**OPTIONAL:** Laptop computer

## WEIGHT & DIMENSIONS:

### HEAD:

**Weight:** 5.7 lbs (2.6 kg)  
**Length:** 12.5 in (31.8 cm)  
**Width:** 4.3 in (10.9 cm)  
**Height:** 6.8 in (17.3 cm)

### SUPPORT:

**Weight:** 18.7 lbs (8.5 kg)  
**Length:** 12.5 in (31.8 cm)  
**Width:** 9.7 in (26.4 cm)  
**Height:** 5.8 in (14.5 cm)

### CHARGER:

**Weight:** 7.7 lbs (3.5 kg)  
**Length:** 13.5 in (34.25 cm)  
**Width:** 9.7 in (14 cm)  
**Height:** 3.7 in (9.5 cm)



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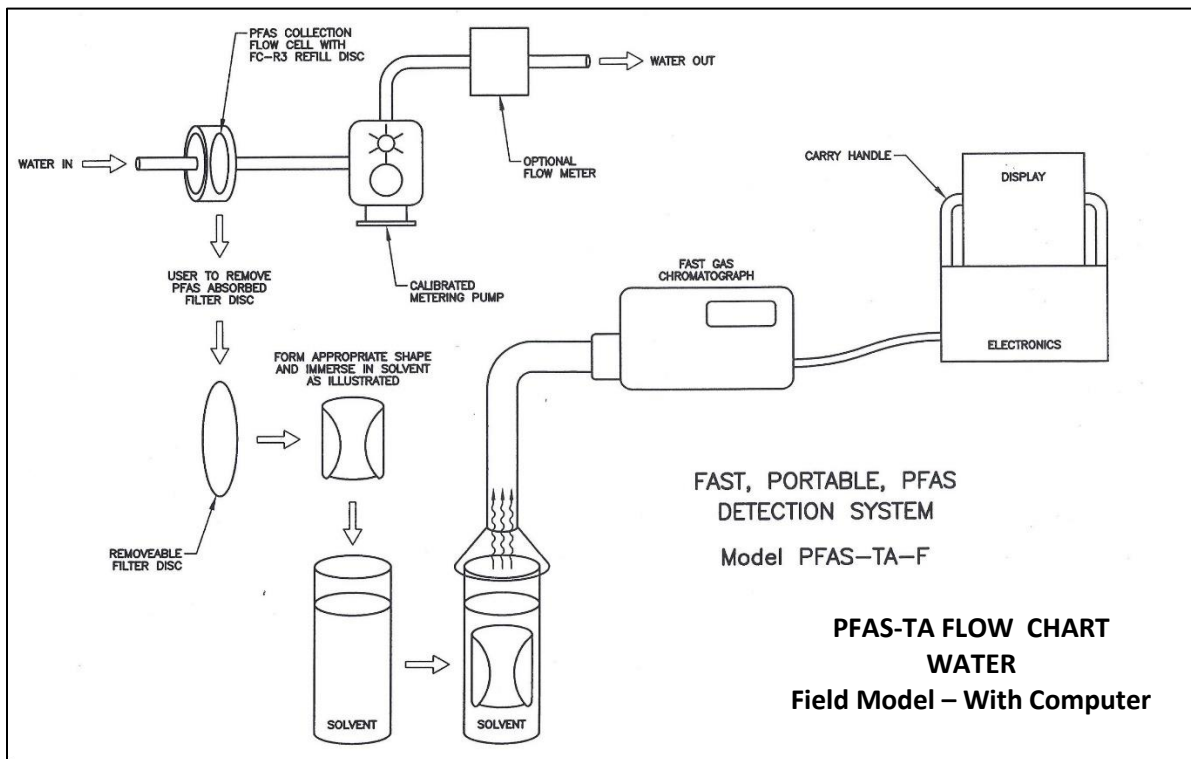
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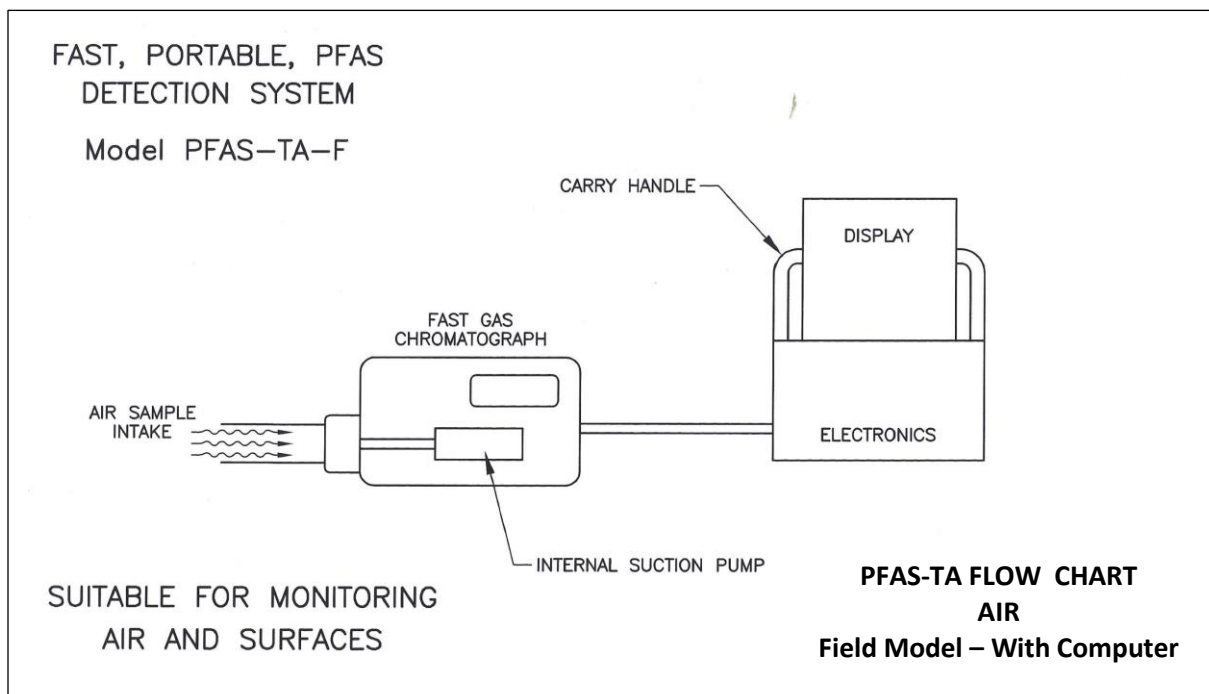
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PFAS-TA-L Model has Optional Computer.

PFAS-TA-F Model includes Computer.



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