

## Model 4430 PID



The Model 4430 Photoionization Detector (PID) features a unique patented Window Sweep™ design that prevents the sample stream from coming in contact with and contaminating the lamp window. This minimizes the downtime normally required for window cleaning in other photoionization detectors and provides extremely stable results compared to other designs. It also allows photosensitive compounds, which would otherwise polymerize on the window surface, to be analyzed. The PID is designed so that the OI Analytical XSD, ELCD, or FID will directly interface to it without the use of transfer lines. This forms a tandem detector system that uses only one detector port on the GC. The Model 4430 PID is available for installation with most GCs.

### Photoionization Detector

- Unique UV-lamp Window Sweep™ design minimizes fouling from window surface contamination.
- Lampsaver™ circuit extends lamp lifetime by turning off lamp when not in use.
- Direct interface to ELCD, XSD™, or FID to form tandem detector systems, which require only one detector port.
- Custom engineered to fit specific gas chromatograph models.
- Compatible with packed and capillary columns.
- Detector vent for venting undesirable sample solvents.
- Incorporates conical seals to prevent detector leaks.
- Easy to operate and maintain.

**Principle of Operation:** The sample stream flows through the detector's reaction chamber where it is continuously irradiated with high energy ultraviolet light. When compounds are present that have a lower ionization potential than that of the irradiation energy (10.2 electron volts with standard lamp) they are ionized. The ions formed are collected in an electrical field, producing an ion current that is proportional to compound concentration. The ion current is amplified and output by the gas chromatograph's electrometer.

#### Principal Applications:

- USEPA 502.2
- USEPA 503.1
- USEPA 602
- USEPA 8020
- Aromatics
- Olefins
- Air pollution/Industrial hygiene
- Drinking water/groundwater
- Environmental
- Product testing
- Ultrapure water
- Underground storage tank
- Waste characterization

# Product Specifications

## Principal Applications

- EPA 502.2
- EPA 503.1
- EPA 602
- EPA 8020
- Aromatics
- Olefins

## General Specifications

### Maximum Operating Temperature

- 250°C

### Detector Volume

- Approximately 250  $\mu$ L

### Materials of Construction

- Inlet — Glass-lined stainless steel
- Ion Chamber — Gold-plated stainless steel

### Solvent Vent Valve

- Remotely controlled

## Dimensions (Lamp Power Supply)

- 5 3/4" H x 2 3/4" W x 9" D

## Weight

- 5.5 lbs

## Performance Specifications

### Dynamic Range

- $>10^6$

### Sensitivity

- $<40$  pg (benzene)

### Lamp Current

- 0–1.35 mA in 9.15 mA steps

### Lampsaver Time

- 0.5–2 hrs, reset by external contact

## Requirements

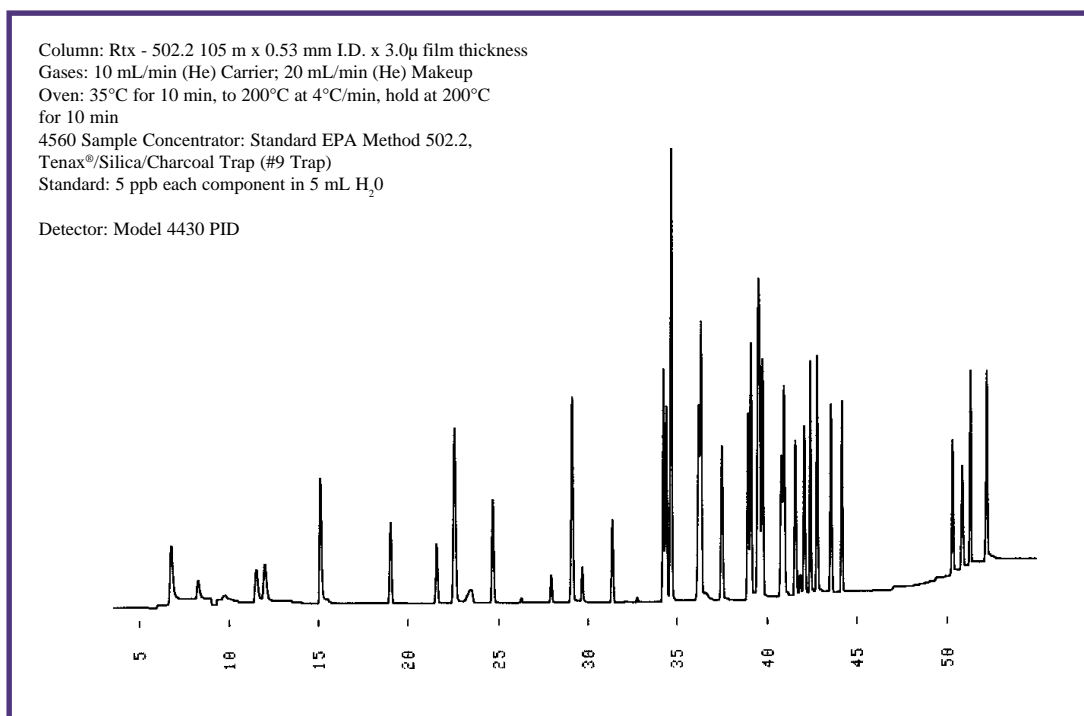
### Gas Requirements

- He (99.999%)

### Power Requirements

- 105–125 ( $\pm 10\%$ ) VAC/25 VA
- 210–240 ( $\pm 10\%$ ) VAC/25 VA

**Note:** Performance is affected by several factors, including GC, column, gas flows, and compound class.



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