

Model 5390 Tandem PID/XSD



Tandem PID/XSD Detector

- Unique tandem design eliminates need for transfer lines and minimizes dead volume.
- Patented tandem detector design uses only one GC detector port.
- Unique UV lamp Window Sweep™ design minimizes fouling from window surface contamination.
- Exclusive Lampsaver™ circuit turns lamp off (if desired) after a specified period when not in use, to improve lamp life.
- High sensitivity with selective detection of halogenated compounds.
- Low maintenance and increased stability and reliability.
- Unique jet design minimizes peak tailing due to unswept dead volumes.

The Model 5390 Tandem PID/XSD is the new patented tandem detector configuration incorporating the popular Model 4430 Photoionization Detector (PID) and the new Model 5360 Halogen Specific Detector (XSD™) for the selective determination of halogenated compounds. With the detectors in tandem, simultaneous detection of halogen and aromatic compounds is possible, eliminating the need for two separate analyses. Its unique design eliminates transfer lines and uses only one detector port. Both detectors can be used independently, if desired. The XSD's

simplified design improves reliability and performance, reduces costs, and eliminates the use of organic solvents. The XSD is also a more selective alternative to an ECD.

Principle of Operation: A sample eluting from a capillary GC column is introduced into the PID where the olefins and aromatic compounds are first detected. Immediately upon exiting the PID, the effluent is swept into the XSD where the selective detection of the halogen-containing compounds occurs.

Primary Applications:

- USEPA 502.1, 502.2, 503.1
- USEPA 601/602
- USEPA 8010, 8020, 8021
- Halogenated compounds
- Sample screening in the laboratory
- VOCs
- Pesticides
- PCBs
- Aromatics
- Olefins
- Solvents
- Hazardous wastes
- Air monitoring

Product Specifications

General Specifications

Maximum PID Operating Temperature

- 270°C

PID Volume

- Approximately 50 µL

Dimensions

- 5300 Detector Controller: 8.25" H x 5.0" W x 12" D
- Lamp Power Supply: 5.75" H x 2.75" W x 9" D

Weight

- Detector Controller: 8.4 lbs (3.8 kg)
- XSD Detector: 0.8 lbs (0.36 kg)
- PID Detector: 5.5 lbs (2.7 kg)

Performance Specifications

XSD

Dynamic Range

- $>10^5$
- Linear range $>10^4$

Detectivity

- 1 pg Cl/second

Selectivity

- Cl:HC $>10^4$

Reactor Operating Temperature

- 90°–1100°C in 100° increments

Flow Rate

- 10–30 mL/min air (or oxygen)

PID

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

Communications

Signal Output (XSD)

- 0–1 V or 0–10 V

Requirements

Gas Requirements

- He (99.999%) for PID
- Air (or oxygen) (ultrahigh purity) 10–30 mL/min for XSD

Power Requirements

XSD

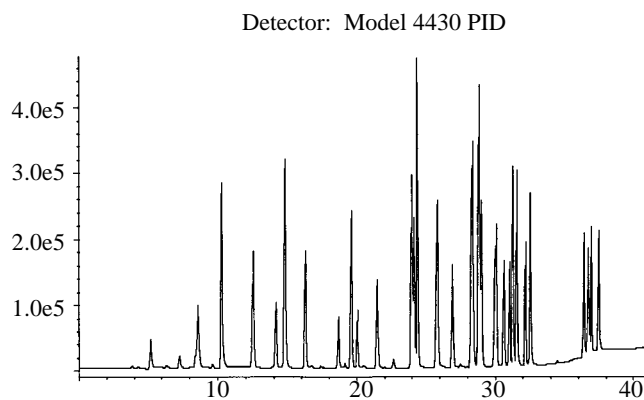
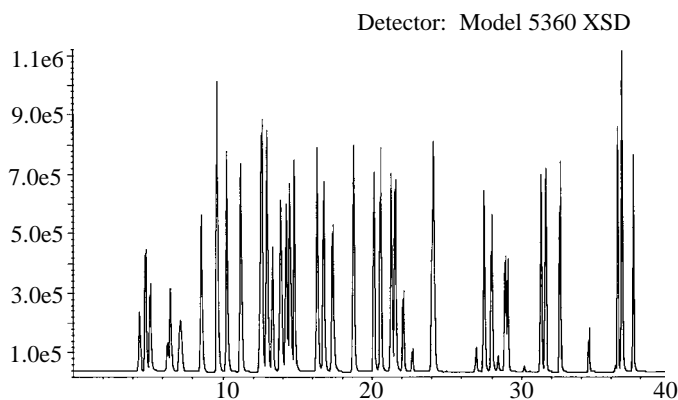
- 90–260 ($\pm 10\%$) VAC/47–63 Hz, 200 W

PID

- 105–125 VAC, 25 VA
- 210–240 VAC, 25 VA

Note: Performance is affected by several factors, including GC, column, gas flow rate, source of oxygen, compound class, and reactor temperature.

Column: Rtx 502.2, 105m x 0.53 mm I.D. x 3.0 µm film thickness
Gases: 10 mL/min (He) Carrier
Oven: 35°C for 6 min, to 35°–65°C at 10 mL/min, to 65°–145°C at 4°C/min, to 145°–220°C at 10°C/min, hold at 220°C for 5 min.
Standard: USEPA 502.2 VOC mix - 5 ppb



The OI Analytical Model 5390 PID/XSD is protected under US Patent #5,578,271.

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