

5390 PID/XSD

TANDEM PHOTOIONIZATION/HALOGEN SPECIFIC GC DETECTOR

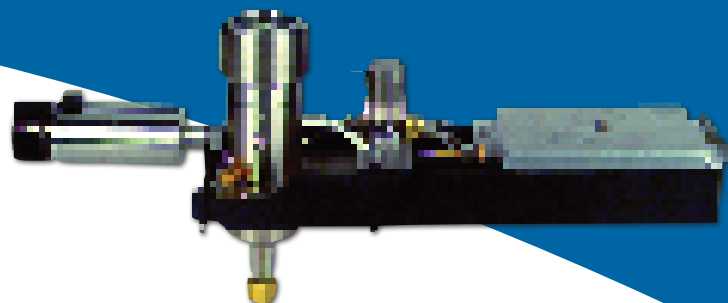
The 5390 Tandem PID/XSD is a patented combination detector incorporating the 4430 Photoionization Detector (PID) and the 5360 Halogen Specific Detector (XSD™). The two detectors in tandem produce simultaneous chromatograms of halogen and aromatic compounds eliminating the need for two separate analyses. Its unique design eliminates transfer lines and uses only one detector port. Both detectors can also be used independently.

Operating Principle

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 selective detection of the halogen-containing compounds occurs.

Tandem PID/XSD Capabilities

- Unique tandem design eliminates need for transfer lines and minimizes dead volume.
- Tandem detector design uses only one GC detector port.
- Unique UV lamp Window Sweep™ design minimizes fouling of window surface.
- Exclusive Lampsaver™ circuit turns PID lamp off (if desired) after a specified period when not in use, to extend 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 or transfer lines.



Principal Applications

- USEPA Methods 502.1, 502.2, 503.1, 601/602, 8010, 8020, 8021
- Volatile Organic Compounds (VOCs)
- Trihalomethanes (THMs)
- Pesticides
- PCBs
- Aromatics
- Olefins
- Solvents and hazardous wastes
- Air monitoring
- Sample screening in the laboratory

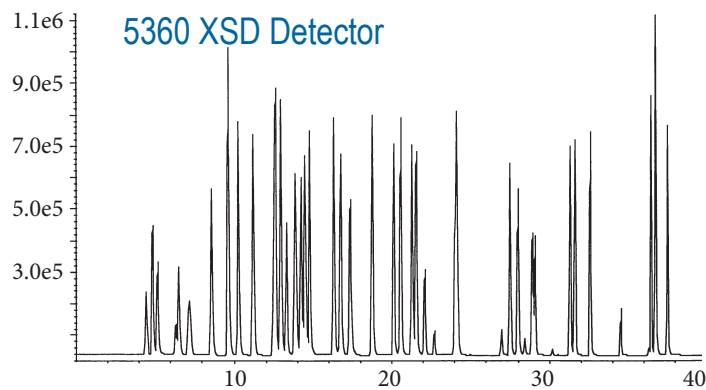
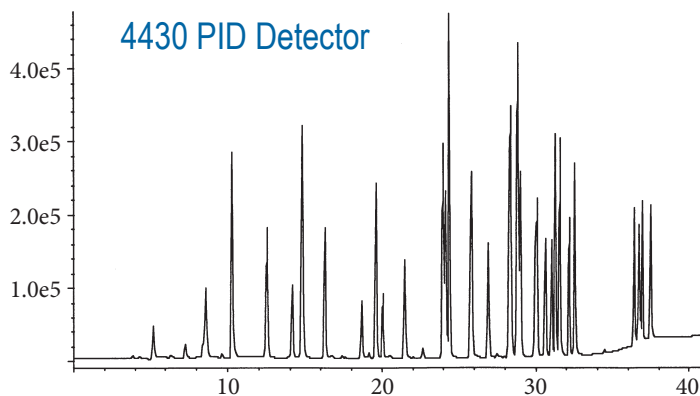
XSD (Halogen Specific Detector)

Dynamic Range	>10 ⁵ ; Linear Range > 10 ⁴
Detectivity	<1 pg Cl/second
Selectivity	Cl:HC > 10 ⁴
Reactor Operating Temperature	1,000 - 1,100 °C
Gas Requirements/ Flow Rate	Ultra high purity air (or oxygen) 10-30 mL/min
Power Requirements	90-260 V _{AC} (±10% V _{AC}) 47-63 Hz, 200W
Detector Weight	0.8 lb (0.36 kg)
Signal Output	0-1V or 0-10 V
5300 Detector Controller Dimensions	8.25" H x 5.0" W x 12" D
5300 Detector Controller Weight	8.4 lbs. (3.8 kg)

PID (Photoionization Detector)

Dynamic Range	> 10 ⁴
Sensitivity	<40 pg benzene
Lamp Current	0 - 1.35 mA in 9.15 mA steps
Lampsaver Time	0.5 - 2 hr, reset by external contact
Gas Requirements	He 99.999%
Power Requirements	105 - 125 V _{AC} , 25 VA 210-240 V _{AC} , 25 VA
Maximum PID Operating Temperature	250 °C
PID Volume	Approximately 50 µL
PID Lamp Power Supply Dimensions	5.75" H x 2.75" W x 9" D
Detector Weight	5.5 lb (2.7 kg)

PID and XSD Chromatograms of USEPA Method 502.2 Standard, 5 ppb of each component



Standard

USEPA 502.2 VOC mix - 5 ppb

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

Column

Rtx® 502.2, 105m x 0.53 mm I.D. x 3.0 µm film thickness



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The OI Analytical 5390 PID/XSD Tandem Detector is protected under U.S. Patent # 5,578,271

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