

5350 PID/ELCD

TANDEM PHOTOIONIZATION / ELECTROLYTIC CONDUCTIVITY GC DETECTOR

The 5350 Tandem PID/ELCD is a combination detector coupling a 4430 Photoionization Detector with a 5320 Electrolytic Conductivity Detector. With the detectors in tandem, simultaneous detection of aromatic and halogen compounds is possible, eliminating the need for two separate analyses. This unique design eliminates transfer lines and uses only one detector port. Both detectors can be used independently, if desired. The 5350 PID/ELCD is available for installation on most GC manufacturer's instruments.



Operating Principle

A sample eluting from a capillary GC column is introduced into the PID where the olefins and aromatic compounds are detected. Immediately upon exiting the PID, the effluent is swept into the ELCD where halogenated compounds are detected. These two detectors in tandem are used for the determination of volatile organic compounds (VOCs) as specified in USEPA methods.

PID/ELCD 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 improve lamp life
- ELCD employs a quick-change, disposable deionizing resin cartridge
- Reactor design uses brass and graphite/VespeI® ferrules instead of solid graphite ferrules
- Programmable ELCD solvent venting using GC timed-event relay

Principal Applications

- USEPA Methods (502.1, 502.2, 503.1, 601, 602, 8010, 8020, 8021)
- Aromatics
- Olefins
- Halocarbons
- Solvents
- Hazardous wastes

5350 PID/ELCD SPECIFICATIONS

4430 PID Specifications

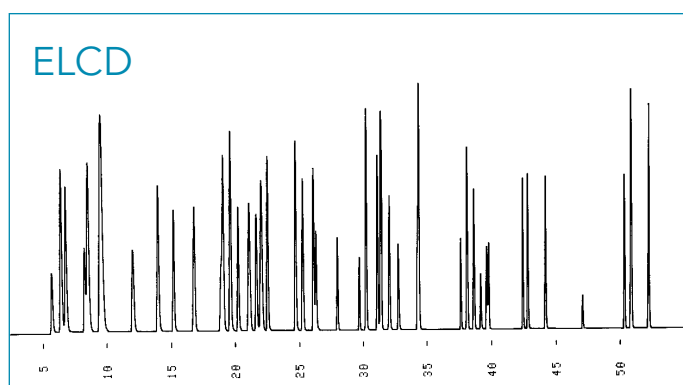
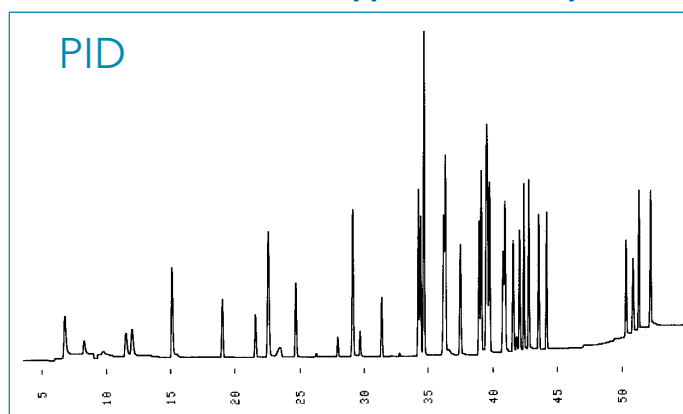
Dynamic Range	> 10 ⁶
Linear Range	> 10 ⁶
Sensitivity	> 40 pg Benzene
Maximum Operating Temperature	250 °C
Lamp Current	0-1.60 mA (in 9 steps)
Lampsaver Time	0.5-2 hr, reset by external contact
Patent	The 4430 PID is protected under U.S. Patent number 4,804,846.
Gas Requirements	Helium (99.999%)
Lamp Power Supply Power Requirements	105-240 V _{AC} (±10%) 47-63 Hz
Lamp Power Supply Weight	2.5 kg (5.5 lb)
Lamp Power Supply Dimensions	5.75" H x 2.75" W x 9.0" D

5320 ELCD Specifications - Halogen Mode

Detectable Mass	
Maximum*	1 pg lindane
Maximum	5 µg lindane
Dynamic Range	5 x 10 ⁶
Selectivity	Cl/HC > 10 ⁶ Cl/N > 10 ⁵ Cl/S > 10 ⁵
Reactor Temperature	
Range	800 - 1,100 °C in 100 °C increments
Stability	± 1 °C
Solvent Flow	Adjustable on the cell amplification board
Solvent Flow Range	0-200 µL/min
Solvent Vent Valve	Controlled by GC-timed event relay
Gas Requirements	H ₂ (99.999%) Halogen Mode
Detector Controller Power Requirements	90-260 V _{AC} (±10%) 47-63 Hz, 200W
Detector Controller Weight	3.8 kg (8.4 lb)
Detector Controller Dimensions	8.25" H x 5.0" W x 12" D

* Minimum Detectable masses were obtained under optimal operating conditions.

PID and ELCD chromatograms of USEPA Method 502.2 standard, 5 ppb of each component



Standard

5 ppb each in 5 mL H₂O

Gases

10 mL/min (He) Carrier
20 mL/min (He) Makeup

Oven

35 °C for 10 min, to 200 °C at 4 °C/min, hold at 200 °C for 10 min

Eclipse Sample Concentrator

Standard EPA Method 502.2, Tenax®/Silica/Charcoal Trap (#9 Trap)

Column

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

Note

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

O·Analytical

a xylem brand



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