

FPD - Flame Photometric Detector

FPD, Dual FPD, FPD/FID, FID/Dual FPD



- **Bandpass Filters for Sulfur or Phosphorus**
- **Use the Dual FPD for Simultaneous Sulfur and Phosphorus Detection**
- **Detects Sulfur Compounds to 200ppb, Phosphorus Compounds down to 10ppb**
- **Use the FPD/FID or Dual FPD/FID for Simultaneous Hydrocarbon Speciation**

The Flame Photometric Detector can detect sulfur compounds, such as H_2S or SO_2 , down to about 200ppb and phosphorus compounds to 10ppb. While not 100% selective, the FPD is 100,000 times more sensitive to sulfur and phosphorus compounds than hydrocarbons. The phosphorus response is linear, and the sulfur response is exponential (twice the sulfur yields four times the peak area).

The FPD is similar to the FID except that the detector body is light tight and a second flow of hydrogen purges the optical path between the photomultiplier tube (PMT) and the hydrogen rich flame. A bandpass filter (at 393nm for sulfur and 525nm for phosphorus) mounts in front of the PMT, so only the emissions from sulfur or phosphorus are detected while other wavelengths are rejected. The Dual FPD detector is equipped with two PMTs and filters for the simultaneous detection of sulfur and phosphorus.

The two chromatograms shown at right were produced by an SRI GC equipped with an FPD detector. The top chromatogram shows the FPD response to 10ppm H_2S . The bottom chromatogram shows the FPD response to 10ppm malathion, a pesticide containing both sulfur and phosphorus.

