

## Miniature Pulsed Discharge Detector

- Half the size of our D-4 model
- Uses 80% less helium than the D-4
- Ideal for portable applications
- Available on a pallet for installation on Agilent GCs

The newest member of the PDD family is also the smallest and thriftiest. The miniPDD uses about one fifth (20%) the amount of helium as the D-3 and D-4 versions, giving up only a bit of sensitivity and dynamic range in return. It is approximately one half the size of the D-4, but has nearly the same sensitivity—about 100 ppb for fixed gases. With its reduced size, weight, and helium consumption, it is particularly well suited to portable applications, or to any situation in which the high cost of helium becomes a consideration.

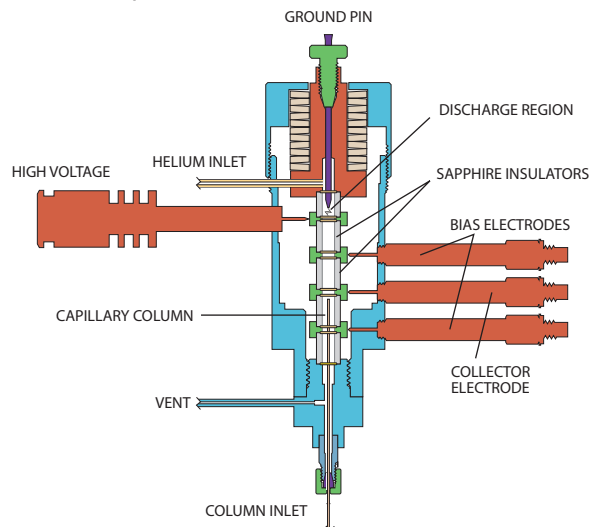
It can be paired with other Valco components (controller, pulse module, helium purifiers, etc.) or can be purchased alone for use with existing components.

PDDs are an excellent replacement for flame ionization detectors in petrochemical or refinery environments, where the flame and use of hydrogen can be problematic. In addition, when the helium discharge gas is doped with a suitable noble gas, such as argon, krypton, or xenon (depending on the desired cutoff point), the PDD can function as a specific photoionization detector for selective determination of aliphatics, aromatics, amines, as well as other species.

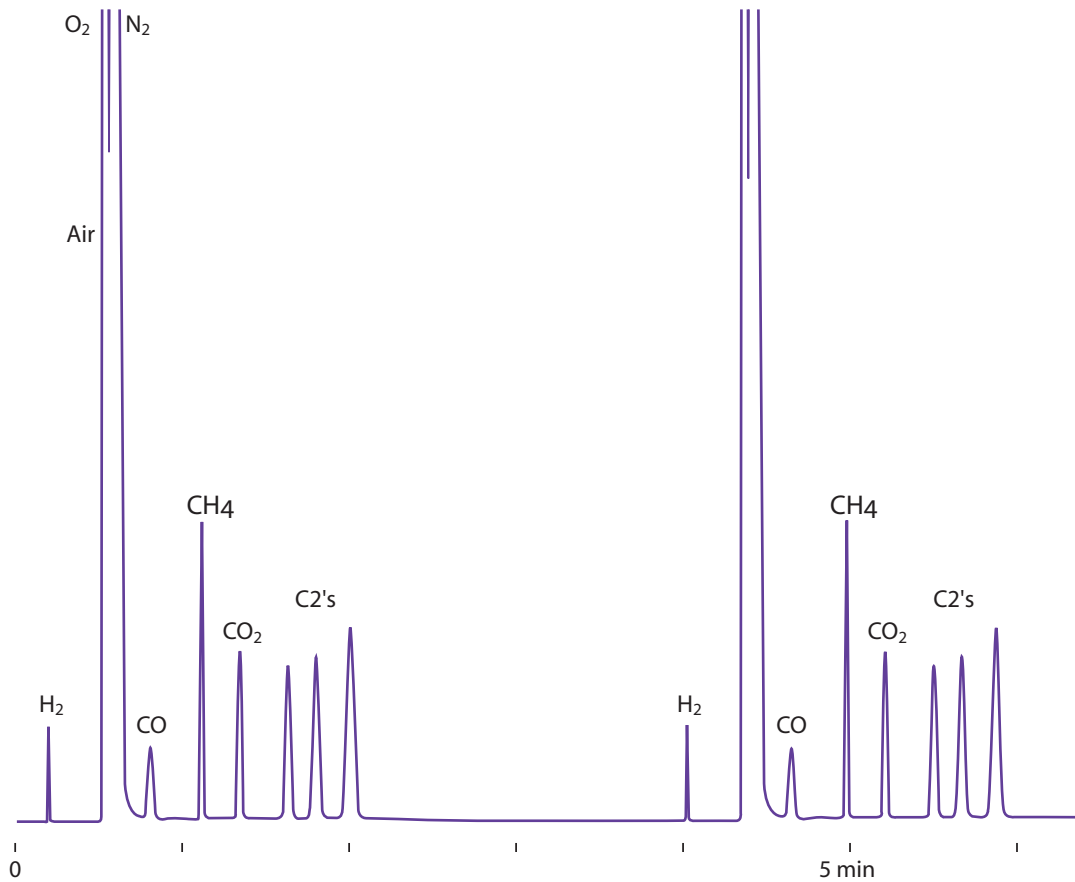


### Operating Principle

VICI PDDs (pulsed discharge detectors) utilize a stable, low powered, pulsed DC discharge in helium as an ionization source. Eluants from the column, flowing counter to the flow of helium from the discharge zone, are ionized by photons from the helium discharge. The bias electrode(s) focus the resulting electrons toward the collector electrode, where they cause changes in the standing current which are quantified as the detector output.



## Light hydrocarbons in air: two consecutive runs



Detector temp: 150°C  
 Column: 100/120 ShinCarbon 1.4 m x 0.53 mm Silcosteel  
 Resistive heat: 30°C (0.9 min) to 230°C at 100°C/min (hold 1 min)  
 Sample: 2000 ppm in air, 2 µL size  
 Carrier gas: Helium  
 Discharge gas: Helium

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