



Low to Moderate Vacuum



High Pressure

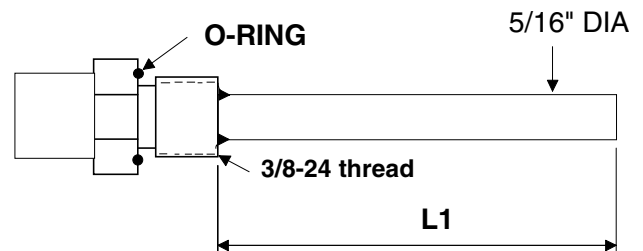
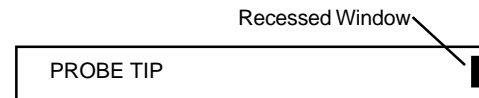
## OPTION W - WINDOW PROBES

**Window probes are used for sensing in high pressure or vacuum applications. (Standard probes are generally satisfactory for pressures up to 500 psi and for low vacuum).**

Window probes utilize a sapphire window set over the fiber bundle. The window is recessed into the sensor tip and epoxied to the face of the fiberoptic bundle to seal against the high pressure or vacuum.

### HIGH PRESSURE

Sensor tips are usually threaded. For very high pressure, the sensor tip can be supplied brazed to a straight thread o-ring fitting as shown here. Successful applications to 30,000 psi have been achieved.



### WINDOW PROBE TIP FOR HIGH PRESSURE

### VACUUM

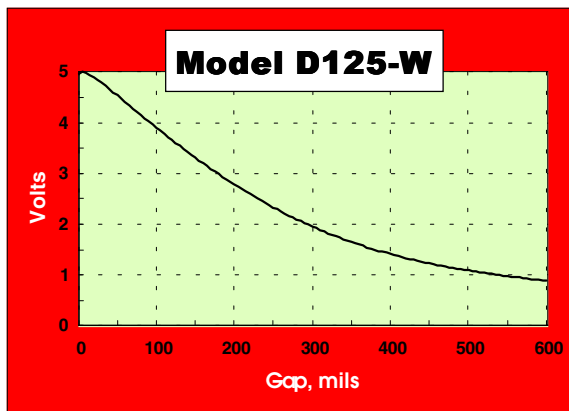
A variety of flanges have been designed to gain access to vacuum environments from low to moderate ( $10^{-6}$  Torr). The design shown above allows for adjustment of the sensor tip position, includes a window at the tip for sealing the fiber optics, a compression fitting to seal at the sensor O.D., and an o-ring flange for transverse adjustment and for sealing at the chamber bulkhead.

## RANGES OF OPERATION

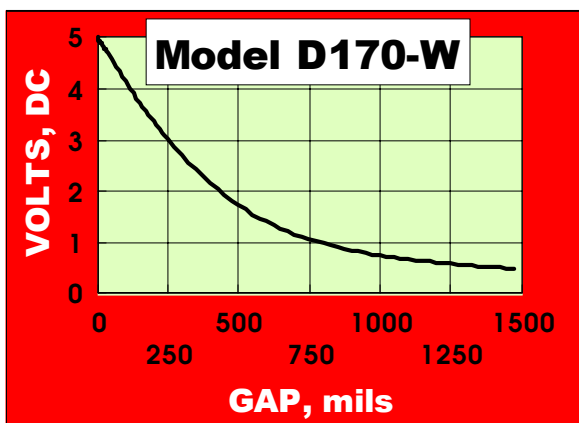
With *standard probes*, the sensor tip can be placed flush against the target surface. That permits operation on the near side, optical peak and far side regions of D models.

With *window probes*, a sapphire window is placed between the fiberoptics and the target, thereby preventing complete closure of the optical circuits. With D models, the near side region and the optical peak are truncated off the sensor's operating range, leaving **only the far side region** of operation. Two examples are shown below.

Whereas end-viewing probes yield zero output volts when touching a target surface, window probes reach their full scale output when in contact. Window probes are set up and calibrated by placing them into contact with the target surface and setting the output to full scale.



**D125-W Typical Linear Range 10 - 140 mils**  
**(Std D125 Linear Range 60 - 185 mils)**



**D170-W Linear Range 0 - 180 mils**  
**(Std D170 Linear Range 65 - 265 mils)**