

## SERIES 625 Single Fiber Transflectance Probe

PSD's Series 625 Single Fiber Transflectance Probe is a precision optical instrument that allows remote fiber optic NIR transmission measurement of heated and pressurized clear or slightly scattering liquid process streams. Applications include permanent side-stream and in-line installations and this probe can also be dipped into liquid samples at the laboratory bench or at receiving inspection.

A major advantage and unique design feature of this probe is a proprietary sapphire-to-metal seal capability. This technique eliminates the use of O-ring seals and lead to potentially dangerous failure. The only sample contact materials are the 316/316L Stainless Steel, or the metal specifically requested and the sapphire window. This capability enables this probe to operate at temperatures up to 300°C and pressures up to 5,000 PSI. However, the maximum operating temperature and pressure will be dependent upon the diameter of the probe and the resulting wall thickness. The sapphire windows are chemically inert and have a very hard surface that resists etching from caustic solutions and scratching from hard or rough surfaces.

The probe contains two internal 600 micron ultra low OH silica fibers that terminates at SMA connectors at the back of the probe and an optically efficient sapphire window and reflecting mirror assembly. This probe is a double-pass transflectance design where the radiant energy passes through the sample medium twice. This makes the effective pathlength twice the physical gap. The physical gap is variable from 1mm–20mm. As an alternative, interchangeable fixed pathlength mirror tips can also be provided. The result is high transmission capability, excellent optical stability and photometric accuracy. In addition, it provides the flexibility for this probe to be made with diameters from 0.25" (6.25mm) to 1" (25.4mm) with lengths to satisfy specific customer requirements. This probe can be easily connected to 600 micron single fiber assemblies over long lengths via the SMA connectors. The probe can be provided with a wide assortment of attachment capabilities such as welded-on flanges, pipe fittings, or port connectors to accommodate specific installation requirements.

### PRODUCT HIGHLIGHTS & SPECIFICATIONS

No O-ring or brazed joints

Optional UV and visible light sampling

Proprietary sapphire-to-metal seal providing robust, inert design

Variable Pathlength Mirror Tip (1–20mm)

Interchangeable Fixed Pathlength Mirror Tips (pathlength per request)

Capable of operating up to 300°C and 5,000 PSI

Probe Diameter: 0.25" (6.25mm) to 1" (24.5mm) or larger upon request

Different probe lengths available

Optics: Sapphire

Probe Material: 316/316L Stainless Steel (other materials available upon request)