

## SERIES 750 Transmission Flow Cell

The Series 750 Flow-Through Transmission Cell is a precision optical instrument that provides a very rugged and reliable way to remote sense a variety of process development and on-line applications via fiber optic assemblies at high temperature and pressure operating conditions. These cells offer a high optical transmission capability with an unrestricted flow path and a choice of path lengths.

The Series 750 Transmission Cell is fiber-coupled for unattended side-stream or in-line process monitoring or laboratory testing. Fibers are easily attached via SMA connectors. The optical design is pre-aligned and optimized for maximum optical throughput in the Near-IR spectral region. The design creates a 2mm diameter collimated beam across the interior space of the cell for transmission measurements. One lens assembly collimates the light from the incoming fiber assembly into and across the transmission cell and the second lens assembly focuses the received energy back into the return fiber assembly. The optical design of this cell, like all PSD's remote sensing optical probes, is optimized to maximize the signal-to-noise ration in the spectral region of interest (e.g. UV, Visible and Near-IR)

A major advantage and unique design feature of this cell is a proprietary sapphire-to-metal seal capability. This technique eliminates the use of any O-rings or a brazed joint that can limit the long-term operational reliability of the sapphire window seal. As a result, the primary wetted surface material are 316/316L Stainless Steel, or the material specifically requested and the sapphire windows. This combination provides a very robust and inert environment for long-term reliability.

The cell can handle operating temperatures up to 250°C and 500 PSI. The path length is pre-set before shipment. Path lengths are available from 0.5mm–20mm. Spacer sets are available to change the path lengths on-site. Tooling is also provided to remove the optical probes on-site for O-ring replacement or change of spacer sets. Process connections and flow through paths can be specified to satisfy the exact requirements of the customer. Additional features also include, channels fro either cartridge heaters or fluid temperature control, a clean-out port perpendicular to the optical flow path and a port for the RTD temperature sensor provided.

### **PRODUCT HIGHLIGHTS & SPECIFICATIONS**

Optional UV and visible light sampling

Robust and inert construction  
for industrial process applications

Alternate material per customer  
request to construct probe

Capable of operating up to 250°C and 500 PSI

Process connections for specific  
installation requirements available

Path length preset as requested

Spacer sets available to adjust path length on-site

Channels provided for temperature control

Clean-out & RTD ports provided