

# TELEDYNE ANALYTICAL INSTRUMENTS

## Fiber Optic Sanitary Flow Cell for Lab or Process Applications

Teledyne offers an in-line fiber optic flow cell designed to meet the sanitary requirements of the pharmaceutical industry. The new sanitary flow cell can be used when sample concentrations are too high for traditional cuvettes and dilution is not an attractive option. When used with a fiber optic based light source (Du, Xe, Tungsten, or LED) and fiber optic cables, the sanitary flow cell will transmit energy through dense liquids, highly concentrated solutions, or semisolids. Pathlengths range over 0 to 1.0 mm and the flow cell is very efficient in the .02 to 0.1 mm. In demanding process conditions the flow cell can be supplied with quartz or sapphire windows.

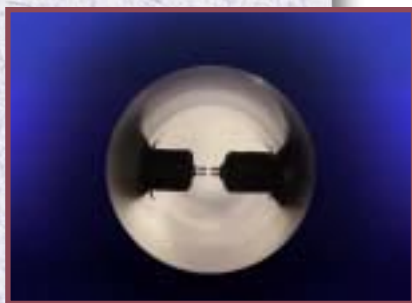
### Flow Through Transmission



1/2" sanitary design fiber optic flow cell  
with Tri-clamp connections

### Flow Cell Applications

Many applications exist for the sanitary flow cell in the Pharmaceutical industry. For example, drug compounds typically have very high extinction coefficients and are measured by a spectrophotometer after several dilution steps. Diluting the sample introduces error to the measurement and can affect the quality of a product in addition to the time and manpower it takes for sample preparation.



1 mm pathlength with small DP  
loss

### Custom Designs

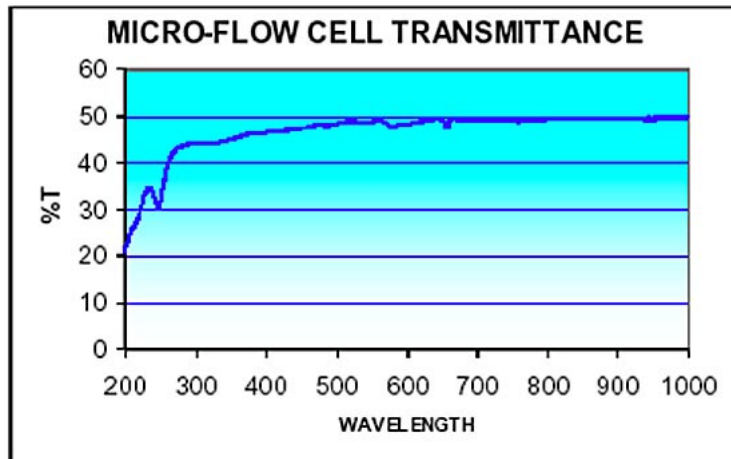
Sanitary flow cells are designed to operate in the chemical environment they will be installed in and are available in a range of materials other than 316SS. Sanitary flow cells may also be configured for fluorescence applications by placing an additional fiber input at 90° to the transmission path. The high density fluorescent cloud is easily picked up by the collecting fiber. Sanitary flow cells can be supplied from 1/2" up to 2" diameters.



1/2" configuration with elbow  
connection

### Throughput Efficiency

The throughput (at several wavelengths) of the sanitary flow cell is very high. The curve below was taken by measuring the transmittance of the cell compared to two fibers joined in a union.



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