

## Teflon® Process Flow Cell

**GUIDED WAVE'S** Teflon flow Cell was developed for sample streams that are either extremely corrosive or intolerant to metal contamination. None of the cell's wetted parts are constructed of metal. Only smooth Teflon and sapphire surfaces contact the process stream. Otherwise, the Teflon Flow Cell utilizes the same optical components as our popular Multi-Purpose Flow Cell. Corrosion resistant stainless steel is used in the outer cell construction to maintain a rigid, stable optical pathlength. Hence, it has the same high optical efficiency. Plus, it is guaranteed not to leak!

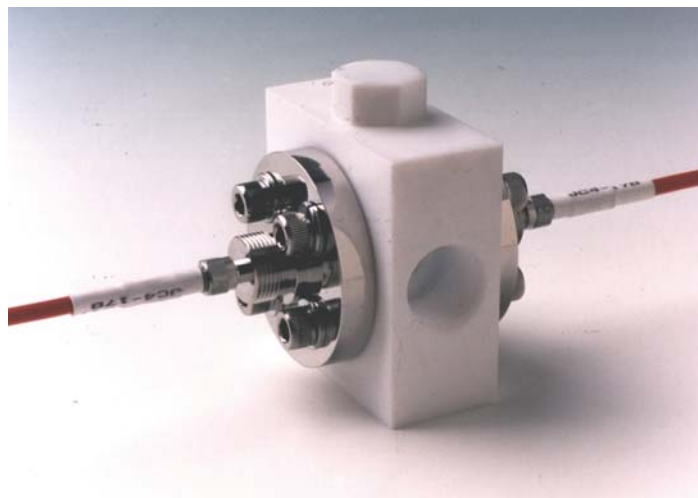
### Quality is in the Design

Teflon not only "cold flows", but has a very large temperature coefficient of expansion. To maintain the all important pathlength, stainless steel rods are embedded in the Teflon body. The windows and other precision optics are held rigidly in place by these rods. Thus, preventing even the slightest change to the critical pathlength during the normal expansion and contraction that naturally occurs with Teflon products.

The measurement accuracy of the stream is therefore never compromised due to this or any other phenomena. If necessary, the cell can be completely disassembled for inspection or deep cleaning. The reassemble step is easily accomplished without changing the critical pathlength. For your convenience, the Teflon Flow Cell is equipped with a clean-out port that provides access to the windows for cleaning without disconnecting fibers or plumbing.

### Process-Resistant Construction

Since no metal parts come in contact with the liquid stream, the design is ideal for processes where even parts per billion levels of metals contamination can create serious problems as in semiconductor fab etching and cleaning steps. The cell also performs well in the presence of extremely corrosive streams containing strong acids, bases, peroxides or halogenated compounds.



### Common Integration with Most Spectrometers

The Teflon Flow Cell is manufactured to facilitate full integration with any fiber optic system configured with SMA 905 connectors. Keep in mind that operation with fibers having a core diameter of 400 to 600 micron will provide the best optical performance.

### Operating Range

The Teflon Flow Cell operates at moderate temperatures and pressures. Specifically, safe upper limits for deployment are:

- Temperatures to 150 °C
- Pressures to 100 psi

Available in four standard pathlengths 2, 5, 10 and 20 mm, but other custom paths are available by special order.

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## Exceptional Light Transmission

Like other Guided Wave optical probes, the Teflon Flow Cell provides exceptional optical performance. Typical peak transmission exceeds 50%. That means more signal, lower measurement noise and lower detection limits. The flow cell can be completely dismantled, then reassembled without changing the sampling pathlength, an important feature when working with established NIR calibration models.

## Compatible with All Guided Wave Analyzers

The sample interface is a crucial component of a complete fiber optic based analyzer system. For optimal performance, the probe must be "optically matched" with both the spectrophotometer and the fiber optic cable. The Teflon Flow Cell, just as is the case for all Guided Wave's probes, provides consistently high performance when used in combination with our analyzers and fiber. See the Guided Wave web site [www.guided-wave.com](http://www.guided-wave.com) for information on our process analyzers, fiber and other products.

## Specifications

Wetted Materials	Teflon, Sapphire
Windows	Sapphire
Non-wetted Metallic Parts	316L SS
Pathlengths	2, 5, 10, 20 mm
Spectral Range	400 – 2100 nm (200 - 1000 nm optional)
Efficiency	> 45% (800 – 1650 nm)
Maximum continuous operating temperature	150 °C
Maximum Pressure	100 psi
Termination	SMA 905 female
Pipe Connection	½" FMPT or ½" Tubulation



Teflon Flow Cell (above) with Other Guided Wave Flow Cell Designs