

Multi-Purpose Process Flow Cell

GUIDED WAVE'S Multi-Purpose Flow Cell (MPFC) is used whenever direct insertion probes are not appropriate and the process material does not require the added assurance of the High Safety Flow Cell. One of the primary advantages of near infrared process spectroscopy is the utilization of intrinsically safe fiber optic cables to remotely locate the probe. While direct insertion probes eliminate sample loops and sample systems and their associated problems, sometimes it is necessary to install sample loops for safety, service, and/or sample conditioning reasons. The MPFC is a convenient, compact, rugged sample interface that is easy to install and even easier to service. The cell's sapphire windows can be cleaned by simply removing a clean-out plug for direct access to the windows without disconnecting process lines or fiber optic cables. This clean-out port is a Guided Wave innovation.

A Simple, Serviceable Design

Key elements of the MPFC design are simple, serviceable o-ring seals, the GW clean-out port, high optical efficiency, slip jointed conduit-ready connections, sapphire windows, a clean flow pattern, and o-ring sealed optics to prevent ambient moisture infiltration. The probe can be field disassembled for o-ring service and reassembled without changing the optical pathlength, a crucial parameter for repeatable measurements.

Process-Resistant Construction

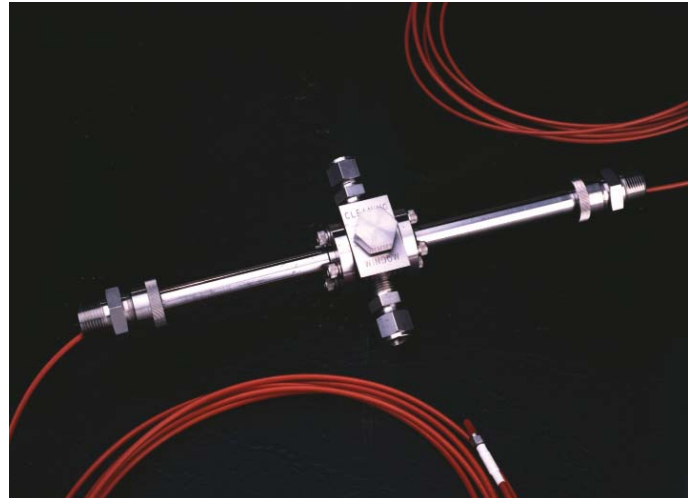
The Multipurpose Flow Cell comes standard in 316L stainless steel but is available in many other alloys. Suitable o-ring materials must be specified to meet your process chemistry and safety requirements. Common materials, such as Viton, Kalrez®, EPDM, etc., are readily available. Please consult appropriate resources for temperature specifications of various o-ring materials and chemical compatibility with your process.

Exceptional Light Transmission

Like other Guided Wave optical probes, the MP Flow Cell provides exceptional optical performance. Typically, peak transmission exceeds 50%. That means more signal, lower measurement noise translating to lower limits of detection.

Dual Seal For Added Safety

Our multi-purpose flow cells now boast a dual seal at the sapphire "window-to-process" interface. This doubles protection for the expensive internal optical lenses.



Operating Range

The Multi-Purpose Flow Cell operates over the following pressures and temperature ranges:

- Temperatures to 300 °C (o-ring material dependent)
- Pressures to 500 psi (o-ring durometer dependent)
- A certified version is available that is rated to 1000 psi

This cell is available in five standard pathlengths 1, 2, 5, 10, and 20 mm.

Contact Us

Please contact a Guided Wave salesperson at gwinfo@guided-wave.com or a sales representative for exact flow cell details and part numbers. Detailed installation drawings are available and can be emailed for your review. Information on Guided Wave's process analyzers, process probes, and fiber products can be found at www.guided-wave.com.

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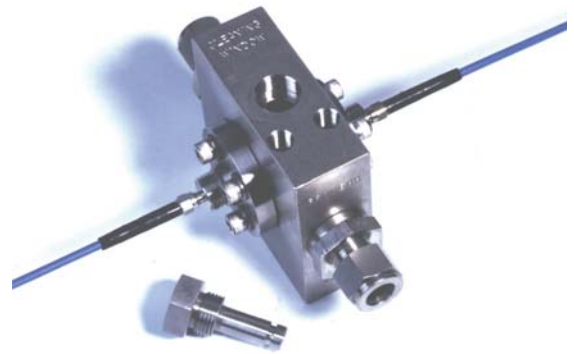
Specifications

Body Material:	316L SS (standard) Hastelloy B Hastelloy C-276 Titanium 6A1-4V Nickel 200 Monel (Nickel 400) Carpenter 20 316 SS Tantalum 304 SS
O-Ring Material:	Viton EPDM Kalrez Silicon Other materials available
Window Material:	Sapphire (Vis-NIR) or Fused Silica (UV)
Pathlength Flow Tube Size:	1 mm / 3/8" OD Tubulation 2 mm / 3/8" OD Tubulation 5 mm / 3/8" OD Tubulation 10 mm / 1/2" OD Tubulation 20 mm / 1" OD Tubulation

Maximum Pressure:	500 psi [3450 kPa]
Maximum Temperature:	300 °C (o-ring material dependent)
Spectral Range:	VIS-NIR (400 – 2100 nm) UV-VIS (200 – 850 nm)
Optical Efficiency:	> 45% (800 – 1650 nm)
Fiber Termination:	SMA 905
Conduit Connection:	3/4" MNPT

Heated Version Available (shown below)

A version of the MPFC, drilled to accept a heating or cooling fluid, is also available. While the heat exchanged is not sufficient to significantly impact a rapidly flowing sample, it can be used to maintain the temperature of a preconditioned sample.



Axial Flow Cell (shown below)

For pathlength requirements >20 mm, see our versatile Axial Flow Cell design (Literature # 1043).

