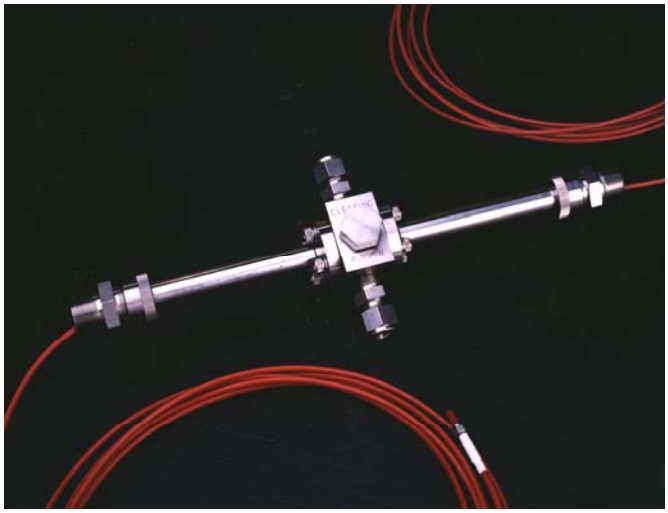
Guided Wave INCORPORATED

Process Analytical Systems

Multi-Purpose 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, an important parameter for repeatable measurements.

Process-Resistant Construction

The Multipurpose Flow Cell comes standard in 316 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 the DuPont-Dow web site for chemical compatibility and temperature specifications of various o-ring materials: www.dupont-dow.com

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)

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

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 and lower limits of detection.

Heated Version Available

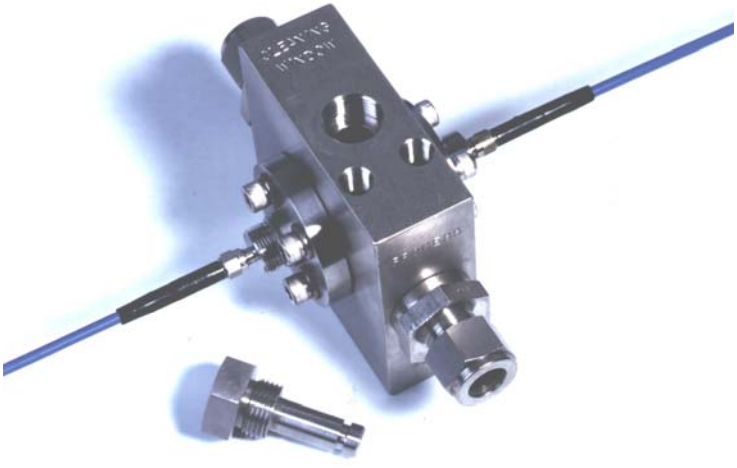
A version of the MPFC, drilled to accept a heating or cooling fluid, is also available. While the heat exchanged is not sufficient to significantly impact a rapidly flowing sample, it can be used to maintain the temperature of a preconditioned sample.

Specifications

Body Material:	▪ 316 SS (standard) ▪ Hastelloy B ▪ Hastelloy C-276 ▪ Titanium 6A1-4V ▪ Nickel 200 ▪ Monel (Nickel 400) ▪ Carpenter 20 ▪ 316L SS ▪ Tantalum ▪ 304 SS
O-Ring Material:	▪ Viton ▪ EPDM ▪ Kalrez® ▪ Silicon ▪ Others materials available
Window Material:	Sapphire
Pathlength / Flow Tube Size:	1 mm / 3/8” OD Tubulation 2 mm / 3/8” OD Tubulation 3 mm / 3/8” OD Tubulation (non-standard) 5 mm / 3/8” OD Tubulation 10 mm / ½” OD Tubulation 13 mm / ¾” OD Tubulation (non-standard) 20 mm / 1” OD Tubulation
Maximum Pressure:	500 psi [3450 kPa]
Maximum Temperature:	300 °C (o-ring material dependent)
Spectral Range:	400 – 2100 nm (200 – 1000 nm optional)
Optical Efficiency:	> 45% (800 – 1650 nm)
Fiber Termination:	SMA 905
Conduit Connection:	3/4” MNPT

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 mailed or emailed for your review. Information on Guided Wave’s process analyzers, process probes, and fiber products can be found at http://www.guided-wave.com.

Multi-Purpose Heated Flow Cell



Specifications are subject to change without notice.

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