

## Heated Multi-Purpose Flow Cell

**GUIDED WAVE'S** Multi-Purpose Flow Cell is also available as a heated version. The flow cell is drilled to accept a heating or cooling fluid. 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.

- Suitable for many installations in side streams or sample conditioning systems
- Suitable for use where temperature control of sample is desired
- Threaded chamber is provided for the circulation of heating or cooling fluids
- Collimated beam for excellent light transmission
- Clean out port for easy window cleaning
- Compatible with all Guided Wave analyzers

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.



### System 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 Multi-Purpose 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 MPFC 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 lens.

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

## Contact Us

Please contact Guided Wave 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](http://www.guided-wave.com).

Specifications	Heated Multi-Purpose Flow Cell
Uses / Applications	Most process streams including many with acids, bases, or cyanides.
Pressure Range (psi)	0 to 500
Maximum Temperature (°C)	300 (o-ring dependent)
Spectral Range (nm)	UV-Vis (200-1000); Vis-NIR (400-2100)
Optical Pathlength (mm)	1;2;5;10;20
Connections	3/8in tubulation (for pathlengths 1-5mm) 1/2in tubulation (for 10mm pathlength) 1in tubulation (for 20mm pathlength) 1/8in NPT ports for heating or cooling fluid
Standard Material	316L SS
Window Material	Sapphire (Vis-NIR) or Fused Silica (Deep UV)
Window Seal	Polymer o-ring materials: Viton, Kal-Rez® 6375, others on request
Fiber Connector	SMA 905
Mounting	3/4in MNPT Conduit connection standard (gland connection also available)
Part Number	45301-xxxx