



MarqMetrix Removable FlowCell Sampling Optic

Features & benefits

- Ideal for flow-through, continuous flow applications
- Cell can be cleaned to eliminate contamination
- Minimizes dead volume and sample handling requirements
- Simple design for easy integration
- Designed to withstand harsh chemical conditions
- Removable probe design for application flexibility

Applications

- Downstream and midstream oil & gas
- Polymer and plastic processing
- Food and beverage production
- Chemical and hazardous material handling

Flexible, high-performance Raman sampling for continuous flow applications

The Thermo Scientific™ MarqMetrix™ Removable FlowCell™ Sampling Optic is designed for demanding continuous flow-through applications that require both precision and flexibility.

Building on the proven performance of the standard MarqMetrix FlowCell sampling optic, the Removable FlowCell sampling optic introduces a unique decoupling feature that allows users to uncouple the immersion probe from the flow path. This enables direct access to the optical sampling interface—ideal for cleaning, developing offline chemometric models, or repurposing the optic as an immersion probe—while maintaining the same optical efficiencies used in the flow configuration.

Continuous measurement with flexible access

The FlowCell probe's design positions the patented Thermo Scientific™ MarqMetrix™ BallProbe™ spherical optic directly in the flow path, minimizing dead volume and sample handling requirements while ensuring maximum optical efficiency. Standard fittings (e.g., Swagelok, Parker A-lok, Hoke) enable easy integration into continuous flow systems. Each unit is individually pressure tested to ensure reliability in harsh environments.

The FlowCell sampling optic can be easily decoupled, providing direct access to the optical path for cleaning or validation purposes.



Removable (left) and standard FlowCell (right).



From left to right: 1/8" and 1/4" versions shown with the optical path removed (flow path body only). The 3/8" version is shown with the plug installed.

Designed for harsh environments

Constructed from Hastelloy and sapphire, the Removable FlowCell Sampling Optic is built to withstand challenging chemical and physical conditions. It performs reliably in a wide range of environments, including cryogenic temperatures or concentrated acids and solvents.

Specifications

Fluid connectors	Compatible with Swagelok or Parker A-lok fittings
Body dimensions	Dimensions vary slightly between models; these are close approximations: 3.5" from Fiber Head to base of FlowCell 3" between made up flow path fittings 1" wide
Fiber probe interface	Standard tapered fitting compatible with standard MarqMetrix FiberHead
Continuous operating temperature range	-20°C to 350°C with gold seal
Individual pressure test rating	Full assembly (individually pressure tested to 4000psi (170 bar))
Compatible wavelengths	500-1100nm
Flow path volume	1/8 in: 200uL 1/4 in: 730uL 3/8 in: 2.0mL 1/2 in: 3.4mL Tri-clamp: 7.0mL

Wetted materials

Probe body	Hastelloy C276
Optical interface	6mm diameter UV-grade sapphire ball BallProbe
Sealing materials	Gold for higher operating pressure applications

Optical properties

Made with high purity UV-grade sapphire ball lens aligned along the C-axis, eliminating response variability due to birefringence

Operating conditions

Suitable for continuous exposure to dilute and concentrated acids (hot & cold), bases and most organic solvents including ethanol, THF, ethyl acetate, acetone, DCM, toluene, pentane and acetonitrile

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