Process Raman analysis

MarqMetrix 0.375 in. Process BallProbe Sampling Optic

0.375 in. diameter for demanding laboratory and process applications, utilizing our patented TouchRaman Immersion Technology

Designed for harsh environments

The Thermo Scientific™ MarqMetrix™ 0.375 Process BallProbe™ Sampling Optic is our most robust TouchRaman™ immersion contact probe. This 0.375 in. (9.5mm) diameter Hastelloy C-276 probe features a gold-compression seal with a pressure design condition of 6,000psi, allowing the probe to be used in extremely challenging chemical, pressure, and temperature conditions.

The use of corrosion resistant Hastelloy C-276, gold, and sapphire as the only wetted materials allow the MarqMetrix Process BallProbe Sampling Optic to withstand the harshest chemical environments.

Simply touch & measure

MarqMetrix BallProbe technology utilizes an exclusively sourced, high-grade spherical sapphire lens. The short focal length of the spherical optic allows for TouchRaman Immersion Technology — where users simply touch the probe to the sample—yielding highly reproducible sampling of liquids, solids, slurries, powders and heterogeneous mixtures.

The simplicity of design is especially important in process applications where measurement accuracy and reproducibility are mission critical.

Users simply touch the probe to the sample — yielding highly reproducible sampling

Features and benefits

- Immersion contact probe for touch measurements
- Measures liquids, solids, slurries, powders, and heterogeneous mixtures
- Simple design for measurement accuracy and reproducibility
- Designed to withstand challenging chemical, pressure, and temperature conditions

Applications

- Biopharmaceutical manufacturing
- Pharmaceutical manufacturing
- Food and beverage processing
- Polymer and plastic manufacturing
- Hazardous chemical applications

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The MarqMetrix 0.375 in. Process BallProbe Sampling Optic was inserted in 350°C hydrothermal vents at the bottom of the Pacific Ocean to obtain Raman data for the monitoring of biomass conversion in supercritical fluids.

The curvature of the UV-grade sapphire ball facilitates material exchange near the surface of the lens, preventing the buildup of materials that interfere with spectral acquisition.

The form factor and 'self-cleaning' properties make the MarqMetrix 0.375 in. Process BallProbe Sampling Optic an ideal choice for process flow applications.

The utility of the MarqMetrix 0.37 5in. Process BallProbe Sampling Optic is optimized when paired with the Thermo Scientific™ MarqMetrix™ Fiber BallProbe™ Sampling Optic—a complete sampling solution for accurate and repeatable Raman measurements. However, any BallProbe can be purchased as a standalone product for use with existing probes or open-optic configurations.

Wetted materials	
Probe body	0.375 in. (9.5mm) OD Hastelloy C-276
Immersion Optics	6.00mm diameter UV-grade sapphire ball
Sealing materials	Gold

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

Related products

Thermo Scientific™ MarqMetrix™ All-In-One Process Raman Analyzer

Thermo Scientific™ MarqMetrix™ Performance BallProbe™ Sampling Optic

Thermo Scientific™ MarqMetrix™ Fiber BallProbe™ Sampling Optic filtered fiber optic interface specifically designed for the MarqMetrix BallProbe and MarqMetrix All-In-One Process Raman Analyzer

Thermo Scientific™ MarqMetrix™ Proximal Probe Sampling Optic

Specifications	
Probe immersion length	8.5 in. (216mm)
Probe OD (Outside Diameter)	0.375 in. (9.5mm)
Sample working distance	TouchRaman (Sample contacts BallProbe lens)
Continuous operating temperature range	-20°C to 300°C
Pressured design condition	6,000psi (413 bar)
Compatible wavelengths	500-1100nm

Learn more at **thermofisher.com/MarqMetrixAIO**

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