

Raman bioprocess measurement

# Probes for a range of applications

A wide range of probes are available for the Thermo Scientific™ Ramina™ Process Analyzer.



Specifications	Process BallProbe™ – 0.5 in.	FlowCell with BallProbe technology	Bioreactor BallProbe with TouchRaman immersion technology
Dimensions	Immersion length: 10 in (254mm) OD: 0.5 in (12.7mm)	Body dimensions: 25mm(W) x 20mm (W) x 13mm (D)	Probe length: 220mm (immersion) OD: 0.472 in. (12.0mm)
Fluid Connectors		Compatible with 1/8 in. Swagelok or Parker A-lok fittings	
Sample working distance	TouchRaman™ (Sample contacts BallProbe lens)		TouchRaman (sample contacts BallProbe lens)
Continuous operating range	-20°C to 300°C	-20°C to 300°C with gold seal	-20°C to 150°C
Pressured design conditions	6,000psi (413 bar)		6,000psi (413 bar)
Individual pressure test rating		2500psi (170 bar) with gold seal	
Path Flow volume		~100µL	
Fittings		Swagelok 1/8" tube fittings	pg13.5, with beveled Teflon washer and viton O-ring
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		
	Avoid exposure to aqua regia	Avoid exposure to aqua regia	Avoid exposure to aqua regia, heated formic acid, mixed acid TFAA.
Wetted Materials			
Probe body	Hastelloy C276	Hastelloy C276	316L Stainless Steel Sanitary finish 15Ra
Optical interface		UV-grade sapphire spherical lens	
Immersion optics	UV-grade sapphire spherical lens		UV-grade sapphire spherical lens
Sealing materials	Gold	Gold	High-temperature epoxy
Optical properties	Optimized for use with the Fiber BallProbe Made with high purity UV-grade sapphire ball lens aligned along the C-axis, eliminating response variability due to birefringence.		

To learn more about our range of probes, visit [thermofisher.com/ramina](https://thermofisher.com/ramina)

