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Raman Probes

B&W Tek Raman Probes are designed and tested to work with B&W Tek Portable Raman spectrometer systems to get the best Raman signal/result for sample measurements.

Industrial Immersion Probe Shaft Options



The industrial immersion probes on B&W Tek's portable Raman instruments feature a stainless steel probe body along with a stainless steel or hastelloy probe shaft. They are immersible in liquids, slurries, powders, and solids under pressure up to 6000 psi and temperatures up to 300 °C for hastelloy (200 °C for stainless steel).

Part Number	Model	Max Operating Temperature (°C)	Max Operating Pressure (psi)	Length	Diameter	Shaft Wall Thickness	Material of Construction
BWT-840000608	BAC101-SS-532	200	6000 (413 bar)	203.2mm (8")	12.7mm (0.5")	3.27 mm (0.109")	316 stainless steel body and shaft and an epoxied sapphire ball lens
BWT-840000607	BAC101-HS-532	300				1.65 mm (0.065")	316 stainless steel body, hastelloy C-276 shaft and an gold-sealed sapphire ball lens
BWT-840001114	BAC101-SS-532-HT	200				3.27 mm (0.109")	316 stainless steel body and shaft and an epoxied sapphire ball lens
BWT-840000606	BAC101-SS-785	200				3.27 mm (0.109")	316 stainless steel body and shaft and an epoxied sapphire ball lens
BWT-840000605	BAC101-HS-785	300				1.65 mm (0.065")	316 stainless steel body, hastelloy C-276 shaft and an gold-sealed sapphire ball lens
BWT-840000905	BAC101-SS-785-HT	200				3.27 mm (0.109")	316 stainless steel body and shaft and an epoxied sapphire ball lens
BWT-840000989	BAC101-SS-1064-HT	200				3.27 mm (0.109")	316 stainless steel body and shaft and an epoxied sapphire ball lens

Immersion Probe Shaft Options



The standard probes on B&W Tek's portable Raman instruments (models BAC102-xxx and BAC100B) come with standard aluminum shafts that are 3" (76.2 mm) in length with a diameter of 0.371" (9.42 mm), operable up to 80°C for non-immersive use (model RSS100-xxx). In addition, the shafts on these probes are user-replaceable, giving the flexibility to adapt to different working environments.

Part Number	Model	Max Operating Temperature (°C)	Max Operating Pressure (psi)	Length	Diameter	Material of Construction
Low-cost immersion shafts for BAC100B and BAC102 probes:						
BWT-840000130	RIS100-FS	200	14	76.2 mm (3")	12.0 mm (0.472")	316 L stainless steel body and fused silica window.
BWT-840000131	RIS100-SA	200	14	76.2 mm (3")	12.0 mm (0.472")	316L stainless steel body and sapphire window
High pressure high temperature immersion shafts :						
BWT-840001084	RIS101-HS-785	250	6000	279.4 mm (11")	12.7 mm (0.5")	Hastelloy C-276 shaft and a gold- sealed sapphire ball lens
BWT-840001202	RIS100-HS-785-08	250	6000	203. 2 mm (8")	12.7 mm (0.5")	Hastelloy C-276 shaft and a gold- sealed sapphire ball lens
BWT-840001203	RIS100-SS-785-08	200	6000	203. 2 mm (8")	12.7 mm (0.5")	Stainless steel shaft and an epoxied sapphire ball lens
BWT-840001204	RIS100-HS-532-08	250	6000	203. 2 mm (8")	12.7 mm (0.5")	Hastelloy C-276 and an epoxied sapphire ball lens
BWT-840001205	RIS100-SS-532-08	200	6000	203. 2 mm (8")	12.7 mm (0.5")	Stainless steel shaft and an epoxied sapphire ball lens
BWT-840001206	RIS100-HS-1064-08	250	6000	203. 2 mm (8")	12.7 mm (0.5")	Hastelloy C-276 and an epoxied sapphire ball lens
BWT-840001207	RIS100-SS-1064-08	200	6000	203. 2 mm (8")	12.7 mm (0.5")	Stainless steel shaft and an epoxied sapphire ball lens
Hot melt extrusion shafts: (stainless steel shafts that fit into standard Dynisco ½-20 UNF ports. The same shaft can be used with both 532 nm and 785 nm excitations.)						
BWT-840001214	RHS100-SSG-08	350	6000	203. 2 mm (8")	12.7 mm (0.5")	Stainless steel with gold-sealed sapphire ball lens
BWT-840001215	RHS100-SSE-08	180	6000	203. 2 mm (8")	12.7 mm (0.5")	Stainless steel with epoxy- sealed sapphire ball lens

Large Area Probes for i-Raman® Prime or PTRam Systems



B&W Tek also offers a large area probe with increased penetration depth that can be used with our 785 or 1064 i-Raman Prime or PTRam systems. With the 4 mm diameter measurement area, bulk property measurements of heterogeneous samples can be made. These ST probes, when used with our BWID software, give the ability for see-through identification of material in opaque packaging.

Model #	BAC102-785-ST	BAC102-1064-ST	BAC102-1064-ST-5M
Part Number	BWT-840000910	BWT-840001006	BWT-840001007
Main Body Material	Aluminum		
Excitation WL	785 nm	1064 nm	1064 nm
Raman Cut-off	150 cm ⁻¹	100 cm ⁻¹	100 cm ⁻¹
Mechanical shutter	Yes		
Rayleigh Rejection	>OD6		
Shaft Material	304 SS		
Shaft Window Material	Flat quartz		
Shaft Length	3" (76.2 mm)		
Shaft Diameter	0.371" (9.42 mm)		
Shaft Operating Temperature	Room Temperature (Max 80°C)		
Shaft Chemical Compatibility	NA		
Fiber Length	1.5 m in total, 1.0 m at common end and 0.5 m on each branch		5 m in total ; 4.5 m at common end and 0.5 m on each branch
Fiber for Excitation (FC/PC terminated)	105 µm core, FC/PC terminated		
Fiber for Collection	300 µm core, FC/PC terminated		
Usage	Large area measurements of heterogeneous solids; see through measurement through barrier layers		

Zoom Lens Options



Replacing the shaft of a BAC102 or BAC100B probe with an RTS20x series zoom lens allows for stand-off Raman measurement. The lenses have adjustable working distances making them suitable for different environments such as measurement inside thick-walled glass reactors or non-contact high temperature, high pressure measurements.

Model	Part Number	Name	Suitable Raman excitation range, nm	Working distance (adjustable)	Aperture diameter (mm)
RTS200-VIS-NIR	BWT-840000679	Zoom Lens 20-60 mm	500 to 850	20 – 60 mm	23
RTS200-NIR	BWT-840000711	Zoom Lens 20-60 mm NIR	785 to 1064		
RTS201-VIS-NIR	BWT-840000680	Long working distance zoom lens 60 – 600 mm	500 to 850	60 - 600 mm	48
RTS201-NIR	BWT-840000712	Long working distance zoom lens 60 – 600 mm NIR	785 to 1064		
RTS202-VIS-NIR	BWT-840000681	Telescope zoom lens 0.6 – 6 m	500 to 850	0.6 – 6 m	70

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