

# Fiber Optic Raman Probe



art photonics

## FlexiSpec<sup>®</sup>

Ball lens sealed at sensing tip of  
3mm dia. shaft

Optical filters deposited on fiber  
ends by patented process

Metal coated fibers used to block  
cross-talk and suppress fluores-  
cence from polymer jacket

Compact immersible probe with  
high S/N to use for in-situ real-time  
contact analysis of liquids, tissues  
and powders

Multilayer filters design for laser  
excitation in a broad range of  
wavelength 690-785nm

Ball-lens Raman fiber-optic probe is a new addition to art photonics' FlexiSpec<sup>®</sup> product line.

The technology of direct deposition of the dielectric filters at the fiber end faces enables miniaturization of the fiber-optic probe head without compromising its performance. It makes possible to develop a cost-effective Raman probe for endoscopic and other applications.

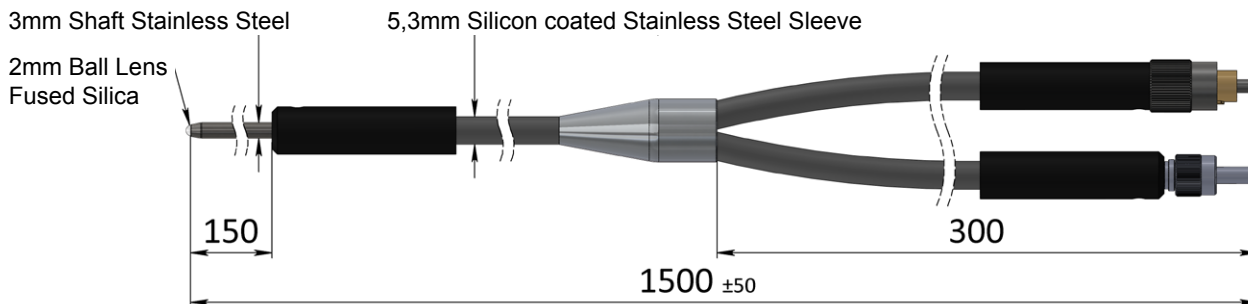
The fiber optic Raman probe is produced for multiwave excitation in the range 690-785nm, e.g. @785nm – "Finger print" spectral range with fluorescence reduction, and @690nm – "High wavenumber" spectral range for conventional Raman spectrometers.

### Applications:

- Biomedical
- Biotechnology
- Material Analysis
- Food and Drink
- Chemical
- Pharmaceutical
- Petrochemical
- R & D

broad spectra fiber solutions

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1x 9 Fiber bundle  
Dielectric filters  
for excitation and  
detection channels  
directly deposited  
on fiber ends.



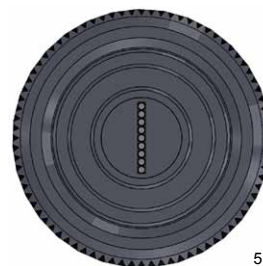
10:1

1x Excitation Fiber  
NIR200/ 220/AL/FC/PC



5:1

9x Detection Fiber  
NIR200/ 220/AL  
SMA905 (line bundle)



5:1

### Specification

<b>Laser Wavelength:</b>	690-785nm
<b>Available Spectral Range:</b>	2000-3800 $\text{cm}^{-1}$ (690nm), 200-2000 $\text{cm}^{-1}$ (785nm),
<b>Fibers</b>	1+ 9 (one excitation & 9 collection fibers with 200 $\mu\text{m}$ core dia.)
<b>Long-pass filter transmission range</b>	810-950nm (>90%)
<b>Long-pass filter blocking range</b>	690-800nm (OD>6)
<b>Short-pass filter transmission range</b>	690-790nm (>90%)
<b>Short-pass filter blocking range:</b>	810-950nm (OD>6)
<b>Ball Lens</b>	2mm diameter silica
<b>Total Length</b>	1.5m
<b>Shaft (needle) Length</b>	150mm
<b>Shaft (needle) Diameter</b>	3mm
<b>Length of Legs</b>	0.3m
<b>Minimal Bending Radius</b>	130mm
<b>Input / Output Connectors</b>	Excitation – FC/PC; Detection – SMA905
<b>Shaft</b>	Stainless Steel
<b>Protective tubing</b>	Silicon coated Stainless Steel Conduit
<b>Temperature range</b>	-40 to 150°C
<b>Pressure limits</b>	0-7 Bar (100 PSI)

