Fiber Optic Reflex / Fluo Probes

art photonics



Reflection & Fluorescence Fiber Optic Probes form **FlexiSpec®** product line are designed to measure Diffuse and Specular Reflectance, Backscatter, or Fluorescence of solid, liquid, and powder samples. Reflection and Backscatter measurements provides important quantitative information about chemical composition of a sample.

art photonics GmbH offers a large variety of specially designed Reflection & Fluorescent Probes. Based on Bifurcated or Multi Channel Furcated Fiber Optic Bundles with *"Illuminating"* Leg to carry light from a source to a sample – and *"Reading"* Leg to carry reflected light to a Spectrometer.

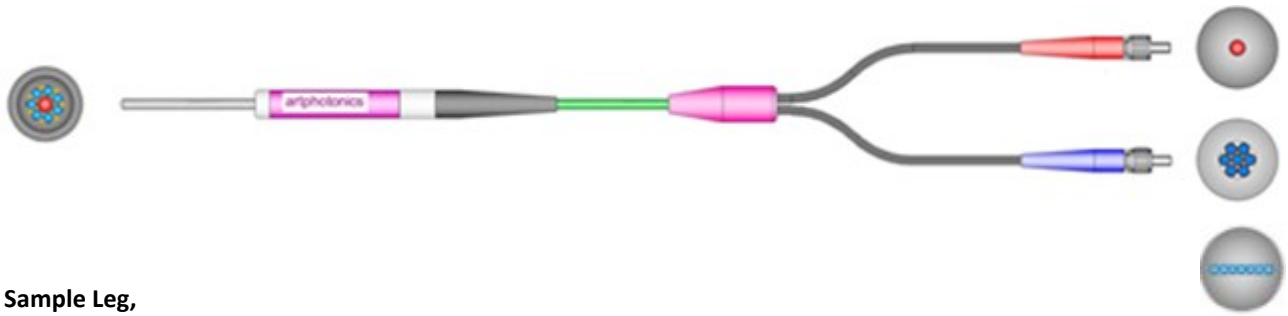
Unlike traditional reflection probes, which have "*6-around-1*" – fiber bundle configuration, our probes have "*7 around 1*", and "*9 around 1*" design. That's because in such configurations reflected and backscattered signals are much higher than in traditional ones.

For special applications we provide < 7 + 12 > design: 7 randomized *illuminating* fibers with 12 randomized *reading* fibers.

All Illuminating Fibers of our Reflection Probes are with ***metal coating clad*,** that why cross-talk between the illuminating fibers is blocked, and in result – Signal/Noise ratio is higher than in similar probes with fiber polymer coatings. Our Reflection Fiber Probes are available with two, three or four fiber legs, and Round-to-Round (R/R) or Round-to-Line (R/L) construction .

Reflex/Fluo Fiber Probe, 7 +1 design

Spectrometer Leg
SMA 905, 1 fiber



Sample Leg,
Special ferrrule
1+7 fibers

Light Source Leg
SMA 905, 7 fibers

Technical Specifications	(7+1) 100/100	(7+1) 200/200	(7+1) 200/300
Probe Fiber Bundle:	7 illumination fibers - 100/110/125P around one **Al coated** read fiber - 100/110/140Al NA = 0.22 ± 0.02	7 illumination fibers - 200/220/245P around one **Al coated** read fiber - 200/220/290Al NA = 0.22 ± 0.02	7illumination fibers - 200/220/245P around one **Al coated** read fiber - 300/330/360Al NA = 0.22 ± 0.02
Probe ferrule Diameter:	0.6—1.5 mm	1.2—2.5 mm	1.4—3.0 mm
Probe ferrule length:	2.5-100 mm		
Probe ferrule material:	Stainless steel, Titanium + PEEK Composition		
Jacketing	Metal coated PVC +Kevlar reinforced Tubing, ø3.2 mm		
Connectors:	SMA 905 with knurled ferrule (available FC/PC or ST connectors)		
Total Length: Leg_1, Leg_2	2m (available up to 20m) 0.5m		
Breakout:	Y-cross point of assembly at 1.5 meter		
Wavelength range:	190-1300 nm (UV/VIS) or 350-2200 nm (VIS/NIR)		
Operating temperature:	-20 °C to 80 °C (version with PEEK Tubing: -70 °C to +200 °C)		
Bend radius:	120mm long term		
Pressure:	10 bar		

Selection of the fiber diameter is caused by the input parameters of the spectroscopic instrument.