



PS-FDR-700-N-(11-4-16)

FDR-700 Series Contact Diffuse Reflectance Probes

Robust Fiber-optic Coupled Probes for Diverse Applications. ... Near-IR through UV



FDR-798 Retractable Probe

The FDR-700 Series Diffuse Reflectance Probes have been developed to provide for the spectroscopic analysis of optically scattering materials such as pharmaceutical powders, polymers, and food products. Key characteristics of these probes are high collection efficiency, low stray light, robust construction, and excellent chemical resistance. The use of Integral fiber-optic cables with SMA 905 connectors allows FDR-700 Series probes to be used with most near-IR and UV-visible spectrometers. The standard models share the same optical specifications but have different mechanical structures, as described below.

FDR-755R EXTRUDER PROBE

The FDR-755 Diffuse Reflectance Probe provides for the spectroscopic analysis of materials such as polymers and food products during extrusion. Its extreme robustness is assured by the use of a sapphire window, stainless construction, and

Axiom's proprietary welded seal design employing a Grafoil sealant. It is suitable for use at high temperatures and pressures and in aggressive chemical processes. It can be fitted to any extruder equipped with a 1/2 -20 UNF, Dynisco-compatible sensor port.

FDR-795R PROCESS PROBE

The FDR-795 is similar in performance to the FDR-755 but employs a longer, straight body structure, compatible with a wide range of process applications.

FDR-798R RETRACTABLE PROBE

The FDR-798 is provided with an integral hand operated retraction mechanism suitable for use with bioreactors and other small reaction vessels. It is fitted with a standard sanitary fitting and a flush chamber to allow periodic cleaning of the probe tip.

CUSTOM MODIFICATIONS

In addition to the standard FDR-700 Series probes, Axiom can provide custom probes with features such as custom fittings or a built-in spray nozzle for in-situ cleaning of the probe window.

FDR-700 SERIES FEATURES:

- Compatible with high temperatures and pressures
- Suitable for use with most chemicals
- High collection efficiency
- Low stray light
- Compatible with most near-IR and UV-visible spectrometers
- Optimized for use with highly scattering samples
- Available with long fiber-optic cables for remote operation





FDR-700 SERIES CONTACT DIFFUSE REFLECTANCE PROBE:

Model Designation:	FDR-7xxR-L
Spectral Response:	
R = N	400 – 2200 nm
R = U	200 – 800 nm
Illuminated Spot Diameter:	5 mm (nominal)
Depth of Field (1/2 signal)	3 mm
Maximum Stray Light:	0.5 %
Maximum Temperature:	250 °C (180 °C for FDR-798)
Maximum Pressure:	200 bar (10 bar for FDR-798)
Window Material:	
R = N	Sapphire
R = U	UV Fused Silica
Window seal:	Grafoil™ in permanent welded structure
Illumination and Receiving Fiber-Optic Cables (integral):	39 fiber bundles, 1.7 mm diam. active area
Cable Length (L):	L = 2 meters, standard
Connectors:	Male SMA-905, standard
Body Type:	
FDR-755	½ -20 UNF fitting
FDR-795	Straight, 12.7 mm diameter
FDR-798	Integral retraction mechanism
Insertion Length:	
FDR-755	Flush with extruder bore
FDR-795	Up to 30 cm (dependent on vessel attachment)
FDR-798	15 cm from inside of sanitary fitting