

Reflection Probes with multiple legs

For some measurements, a reflection probe is needed that can be coupled to two spectrometers and a light source. A good example is a reflection measurement in the UV/VIS and NIR range. For these situations, Avantes offers our reflection probes with multiple legs.

The light from a light source is coupled into a fiber bundle, consisting out of 17 illumination fibers which transport the

light to the end of the probe. The reflected light is uniformly reflected into the two read fibers, each of which is connected to a spectrometer. In the example of a UV/VIS and NIR configuration a mix of high OH UV/VIS fiber and low OH VIS/NIR fibers are used for the respective light wavelengths and spectrometer types.

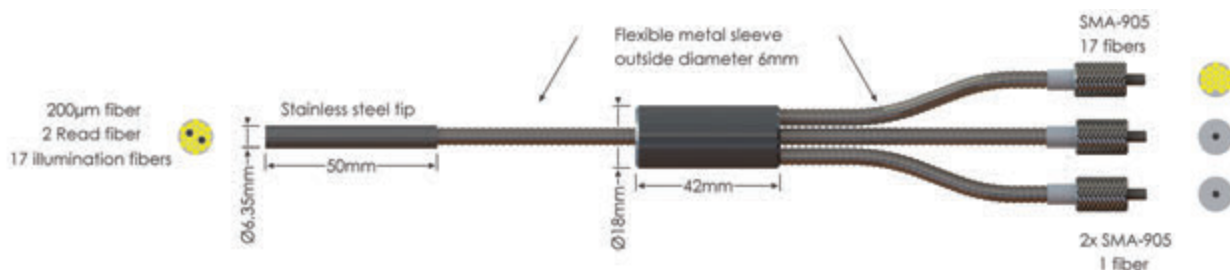
For measurements under a 90° angle, the FCR-90-Option has been developed. It is an

adapter with a mirror mounted at 45° and can be easily mounted to the tip of these reflection probes.

To accurately focus a small measurement spot from a higher distance, the FCR-COL adjustable US/VIS/NIR collimating/focusing lens is available and can be mounted to the tip of these probes.

Technical Data

Fibers	19 fibers 200 µm core, 17 light-fibers, 2 read fibers in 2 separate legs, N.A.= 0.22. Standard 2 m length, splitting point in the middle.
Wavelength range	200-800 nm (UV/VIS), 350-2500 nm (VIS/NIR) or 250-2500 nm (UV/VIS/NIR)
Connectors	SMA-905 connectors (3x)
Probe end	Stainless steel 316 cylinder, 50 mm long x 6.35 mm diameter. Optionally -PK for PEEK or -HY for Hastelloy® C276
Jacketing	The optical fibers are protected by a silicon inner tube and a flexible stainless steel (BX, O.D. 6.0 mm) or chrome plated brass (ME, 5.0 mm) outer jacket. The jacketing also gives stress relieve.
Temperature	-30°C to 100°C. (-HT version 200°C, -HTX version 500°C)
Pressure	Probe head 50 bar @ 25°C
Bending	Minimum bend radius: Short term (few seconds) 20 mm, long term: 120 mm



Ordering Information

FCR-19UV200-2-BX/ME*	• Reflection probe UV/VIS, 17 x 200 µm UV/VIS illumination fibers, 2 read UV/VIS fibers in separate legs, 2 m length, 3 SMA term.
FCR-19IR200-2-BX/ME*	• As FCR-19UV200-2-BX/ME, but for VIS/NIR
FCR-19UVIR200-2-BX/ME*	• Reflection probe UV/VIS/NIR, 17 x 200 µm UV/VIS/NIR illumination fibers, 2 read UV/VIS/NIR fibers in separate legs, 2 m length, 3 SMA term.
FCR-90-Option	• 90° Reflection add-on reflector for use with all 1/4" reflection probes
FCR-COL	• Adjustable UV/VIS/NIR Collimating/focusing lens FCR probes

* please specify jacket material

Options

-HT	• High Temperature version (up to 200°C)
-HTX	• Extreme High Temperature version (up to 500°C)
-PK	• PEEK probe material replaces Stainless Steel
-HY	• Hastelloy® C276 Probe material replaces Stainless Steel