IRIS-7 Probe

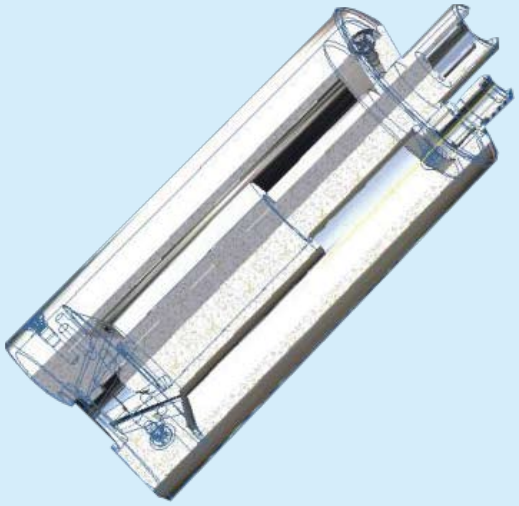
IRIS-7 Reflection probe - *diffuse reflectance in the VIS - NIR*

A well established method in process analysis is the measurement of diffuse reflectance in the Vis- and NIR- range of materials like powder or granulates.

With the IRIS-7 reflection probe J&M introduces a measuring head with a variable measuring spot for the first time.

The diameter of the measuring spot depends on the distance of the light source to the measuring window and can be varied. At 9 mm of distance e.g. the diameter of the measuring spot is 5 mm, it is 10 mm at a distance of 12 mm or the measuring spot has a diameter of 20 mm at 16.5 mm.

A light source placed in the center of the IRIS-7 probe provides the best illumination of the sample and guarantees a maximum energy of the reflected light.This makes the probe ideal for low reflecting materials. The illumination of the sample can also be done by the use of lightfibers. This enables the use of external light sources and therefore also UV applications.



Seven lightfibres are placed circular around the light source to collect te reflected light. These fibers are connected to the spectrometer. The IRIS-7 probe can be optimized for the use in the Vis- and in the NIR-area as well or also in combination of both.

Fig.1: Measurement head with light source for reflection spectroscopy.

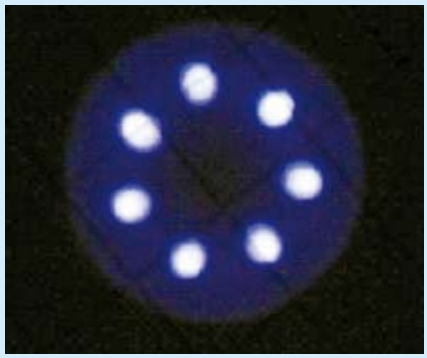


Fig.2: Placement of the light-guiding fibres in an IRIS-7 probe.

Fig.3: Installation of an IRIS-7 with spectrometer mounted to a blend system

The seven circular placed lightfibers are bent by 27.5° to the centre of the measuring spot and so focus on the point of the optimal illumination. The lightfibers are visualized in Fig.2. For a better illustration, the window of the probe was covered with a sheet of paper and the lightfibers were illuminated from the backside. The aperture angle generates an oval lightspot.

Applications

Diffuse reflectance of solid surfaces, determination of layer thickness, size and homogeneity of the particles, humidity, concentration of active agents e.g. in the pharmaceutical, chemical and biochemical industry, food industry, papermaking industry and many more. The changeability of the IRIS-7 probe opens an extremely various use.

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IRIS-7 Reflection probe - *technical specifications*

Fig.4: IRIS-7 (on the right) with process spectrometer and battery pack, in special housings.

Specifications IRIS-7:

Optical Data	
- Spectral range	400 nm - 2200 nm
- Lightsource	Tungsten lamp 5V; 7,5 W (altervative: 2,2 W)
- Measuring spot diameter	6 - 14 mm
- Numerical Aperture	2,5 mm
Lightguiding fibres	
- Core- Material	depents on application
- Core- Diameter	400 µm - 600 µm
- Fibercladding	depents on application
- Protective sheathing	depents on application
- Max. (long term) bent radius	depents on application
Connections	
- Light	SMA
- Power supply	Twisted pair
- Protctive sheathing	Possible (customer specific)
General details	
- Length x Diameter	72 mm x 34 mm
- Probe ferrule	SS 316L
- Sealing	up to IP 67
-Accessories	Calibration set, protective sheathing
- Price	On request

Please note: Due to technological progress all specifications can be changed without a further note.