Compact diffuse reflectance probe
with seven measurement spots

SentroProbe DR MS7 NIR

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The SentroProbe DR MS7 NIR was developed to reduce the measurement interval of the PAT installation for continuous product streams with a slow material exchange. The measurement spot size is significantly increased through the use of seven individual spots each with a diameter of 5 mm. As a result, the time required to analyze a unit dose equivalent is reduced significantly.

Individual or merged detection
Depending on the purpose of the installation and the requirements of the PAT application the probe can be installed with either a merged detection fiber or with seven individual detection fibers. With the dedicated SentroPAT FO version the measurement interval for the merged detection is typically below 1 second. The sequential measurement of the seven individual measurement spots is completed within 2 seconds.

Dedicated light source connector
In order to achieve the best possible signal-to-noise ratio, all versions of the SentroProbe DR MS7 NIR are configured with a special ferrule to connect to an optimized light source either installed in the SentroPAT FO or as an individual module operated independently from the spectrometer system. Fiber bundles of 24 single fibers with a diameter of 200 µm are packed in a flexible optical cable and used for illumination in order to increase the signal throughput to the measurement spot.

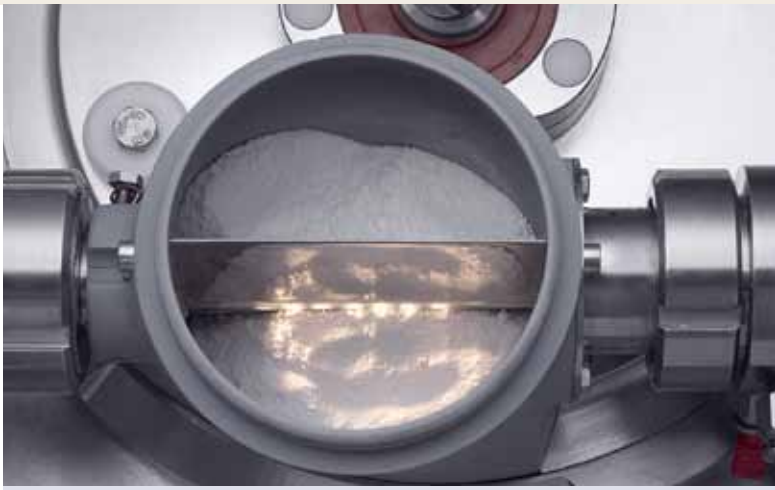
Highest mechanical accuracy
Initially developed for installation with GEA's light house system, the probe is manufactured to tight tolerances to ensure proper installation with the automated referencing and cleaning system of GEA's light house system. The probe is manufactured using stainless steel and sapphire glass. The comprehensive material documentation and the full mechanical testing ensure a smooth installation in a GMP facility.

Dedicated accessories
The qualification of the SentroProbe DR MS 7 NIR is supported by certified standards and custom designed standard holders. This results in a robust system validation routine and calibration in compliance with pharmacopeia requirements such as USP<1119> or EP 2.2.40.

Each of the seven measurement spot covers an area with a diameter of 5 mm.

Technical Parameters

Measurement design	Diffuse reflectance at 7 measurement spots Combined into 1 detection fiber or 7 individual detection fibers
Probe diameter	12 mm
Materials and design	Stainless Steel 1.4404 – Sapphire – Stainless Steel 1.4404 Rounded shape
Sapphire tube length	60 mm
Surface quality of 1.4404	Ra < 0.4 µm
Sealing	Use of sealing rings or glue compliant with FDA requirements
Single spot size	approx. 5 mm
Expected back reflection	< 2 %; typical < 1 % Average value between 1200 and 2100 nm
Signal variation	< 15 %
Fiber cable setup	7 x 24 x 200 µm fibers for illumination 7 x 200 µm separate detection fibers or merged with a fiber taper to 1 x 400 µm FSMA 905 terminated Illumination fiber bundles with a 6 mm ferrule type connector
Fiber cable length and design	Y-shaped cable with a total length of 3 m Extension up to 5.5 m in 0.5 m steps Splitted section approx. 500 mm
Fiber cable protection	Stainless steel tube with silicone made overcoat to ease cleaning

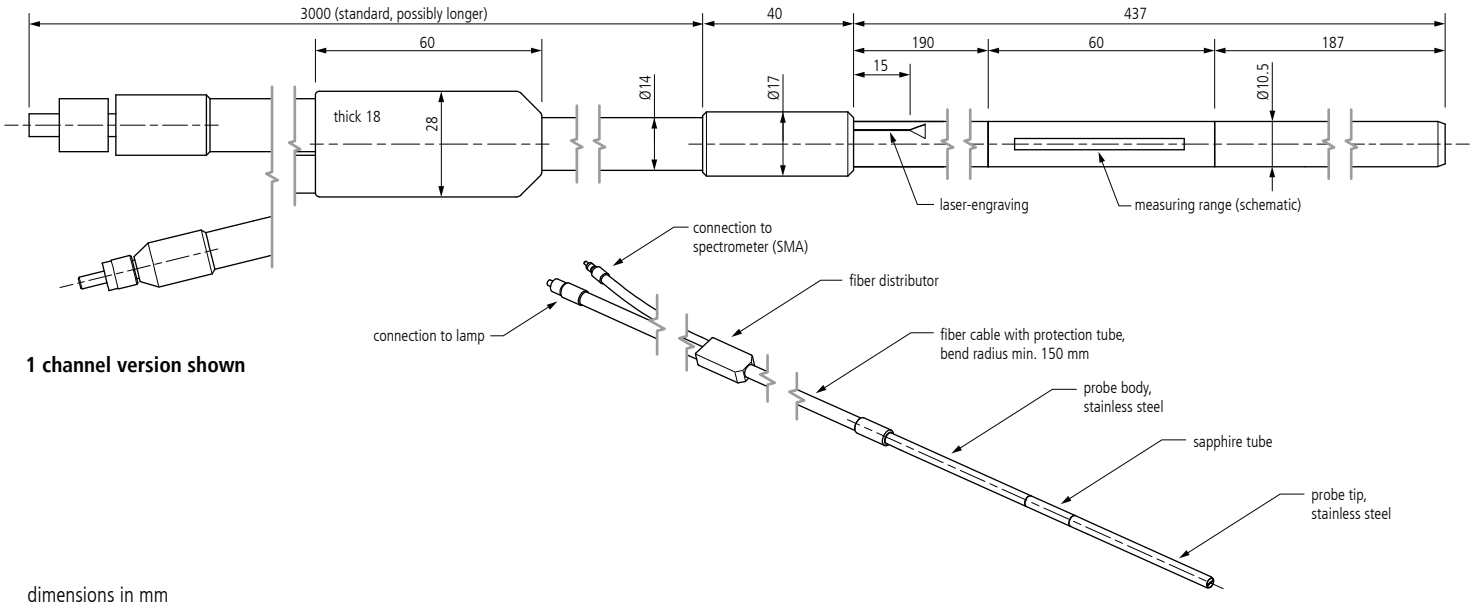


SentroProbe DR MS7 NIR installed in transfer section of a ConsiGma® line.
Photo courtesy GEA Group

Versions of SentroProbe DR MS7 NIR

Product number	Product Name	Detection fibers
2530800902139	SentroProbe DR MS7 NIR 1ch	1
2530800603128	SentroProbe DR MS7 NIR	7

Dimensions



1 channel version shown

dimensions in mm

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