



Lighthouse Probe Technology

Enabling
PAT

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Niro Pharma Systems has joined forces with J&M GmbH to create a compact and cleanable in-process optical probe for use in powder processing equipment.

The result is the novel Lighthouse Probe™, which can be used with a range of spectroscopic techniques, including NIR and UV/vis, to overcome the traditional problem of product sticking to observation windows.

The probe is compact and easy to install and makes it possible to take a reliable in process measurement of quality critical product characteristics including:

- Material and active content identification
- Active content uniformity during high shear blending operations
- Moisture content and end-point during drying processes
- Coat growth during coating processes

Optical methods such as UV/Vis or NIR spectroscopy can be very powerful tools for analysing a range of product characteristics, but in processes involving wet and sticky powders it is necessary to ensure that the system has a clear view of the product. Conventional windows used in process equipment such as fluid bed systems or high shear granulators, have always suffered from the risk of window fouling. The new NPS & J&M Lighthouse Probe™ has overcome this problem.

In addition to in-process cleaning, to ensure a clear optical path, the Lighthouse Probe™ has been designed

to enable the probe and wash system, including the critical product seal area, to be fully Cleaned in Place at the end of the process.

The novel design also includes a self calibration facility which can be used to positively confirm that the seven observation windows have not become contaminated and also to regularly check the calibration of the spectrometer.

The Lighthouse Probe™ uses a combination of fibre optics and mirrors to give an exceptionally compact design suitable for simple mounting on the smallest processors without disrupting the process. At the same time it offers the ability to ensure that the analysed sample volume is consistent with the scale of scrutiny required with respect to a unit dosage.

Niro Pharma Systems will now offer the Lighthouse Probe Technology as part of its process equipment and will continue to use its extensive background in process engineering to develop new applications. This will enable NPS to offer world-class solutions to meet the demands for pharmaceutical production in the 21st century.

Options to retrofit this latest innovative technology to existing process equipment will be available.



In process measurement position
The probe is inserted into product ready to take multipoint measurement.



Clean and calibrate position
The probe is retracted in order to clean window and check calibration.



CIP position at end of process
The probe is completely retracted to enable complete cleaning of wash chamber and seal.

GEA
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