

GEA LightHouse Probe™* - DAD

Online Process Monitoring High Shear Granulation Endpoint Detection



LightHouse Probe™ is a fibre optic probe with fully automated process-interface, which can be used for real-time monitoring of chemical and pharmaceutical processes and provide inprocess window cleaning at any time, recalibration during the process, full CIP (cleaning) of wash housing and seal, and a clear view inside – even in difficult conditions

Main benefits of LightHouse Probe™ – DAD (diode array detector)

- NIR spectra contain physical and chemical information about the measured product, allowing good correlations with traditional granulation parameters like density, particle size etc.
- Using the Lighthouse Probe™ – DAD sensor for endpoint determination will give more consistency between batches in granule properties, enabling optimisation of subsequent processing steps.
- Less waste thanks to a more consistent quality of the batches. Real-time availability of the product data like moisture content and density will decrease risks and reduce waiting time for the finished batch to be released to the next processing step.
- Because of the fast moving product during granulation, short measurement cycles are needed. The latest Diode Array Detectors can take spectra in only a few milliseconds, allowing the customer to take chemical images of very small quantities of material or, by averaging these spectra over time, to adjust the measured volume of product to what is normally used in offline measurements. Other configurations are possible but speed of measurement is traded-off against the gain in resolution.
- More accurate modelling thanks to the possibility to clean the probe prior to taking a reference measurement for modelling.
- Enhanced reliability thanks to the automation of the system. The LightHouse Probe™ – DAD will perform a health check prior to usage to guarantee a correct measurement during process. This health check can also run online during production to ensure correct endpoint determination.

Suggested configuration for the LightHouse Probe™ – DAD

For initial test work or for mobile test equipment, a manual probe is suggested while automated wash and CIP probes are designed for production. For single pot processing including drying, a CIP probe is advised combined with an complete integration to change models between granulation and drying regime.

The LightHouse Probe™ fits on a standard 2" port, standard adaptor or weld-in ports can be provided. It is available as manual probe, automated wash probe and automated CIP probe.

Test Opportunities

A manual probe is available for rental. An automated CIP probe is available at our test lab in Wommelgem.

* Patented (US 7869028B2 ; EP 1907822 ; EP 1927847)

Highlights:

Suitable for monitoring blend homogeneity, moisture, density, particle size by correlating spectra;

More consistent batches resulting in better tablets;

Non-destructive and direct online analysis of granule quality;

Very fast spectroscopic technology using Diode Array Detector (other spectroscopic technologies possible);

Reliable and robust process interfacing to guarantee representative measurements.

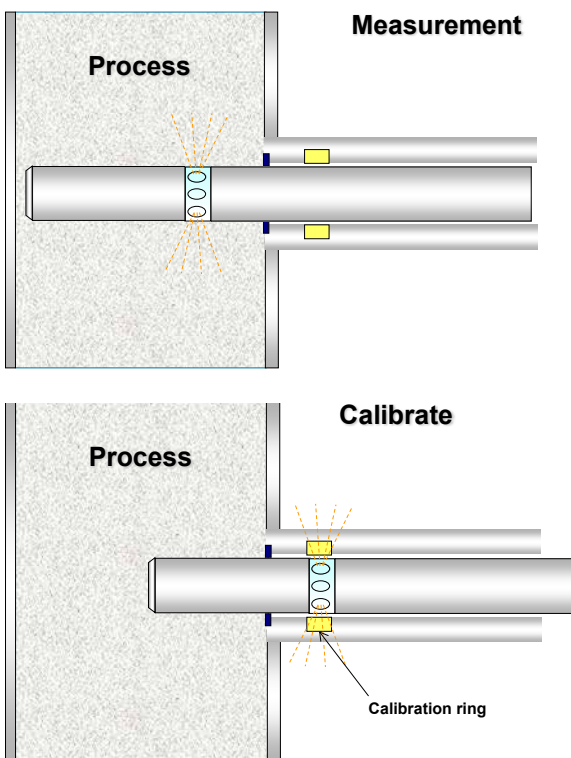
Available Product Range for LightHouse Probe™

	Measurements	Dry Clean	Reference	Automated wash & dry	Automated reference	Automated CIP
Probe static operation	•					
Probe manual operation	•	•	•			
Probe automated	•			•	•	
Probe fully automated	•			•	•	•

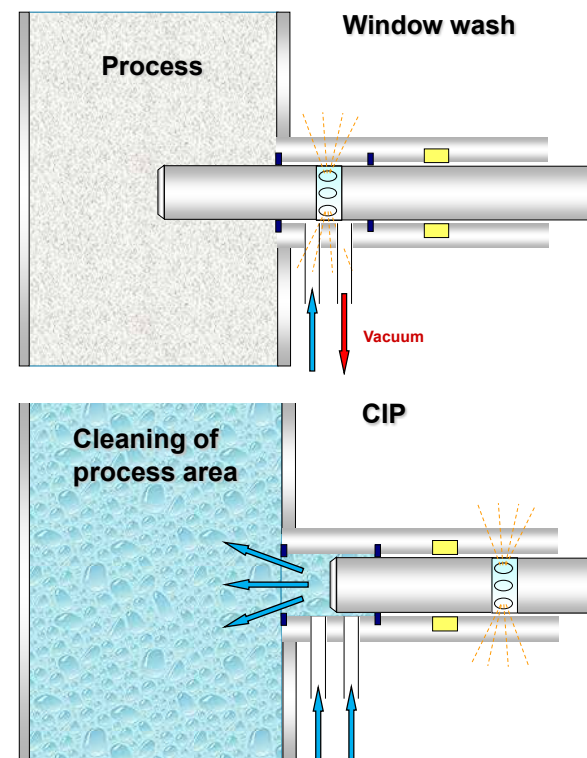
The LightHouse Probe™ is designed to be upgradeable from manual to fully automated probe, so you can adjust the system to your needs and available budget.

Functional Principle

Manual and Automated Probe Positions

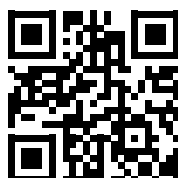


Additional Automated Probe Positions



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