

Blending Uniformity

Luminar 4090, Lightweight and Affordable AOTF-NIR

Brimrose is proud to introduce the Luminar 4090. This new AOTF-NIR spectrometer is compact and economical, designed to easily mount to blenders and fluid bed dryers.

Proper blending is vital to assure batch uniformity and the integrity of drug products. It is important that the Active Pharmaceutical Ingredient (API), excipients, and lubricants in each batch are uniform and homogenous. A batch that is not fully blended can affect bioavailability in the end product and potentially harm the consumer.

The most common method of blending uniformity (BU) is through the use of timing and random sampling. Traditionally, the blend is run for a certain amount of time with samples taken and run through an HPLC to confirm proper ratios.

Timing methods with random sampling results in increased blend times, slower product turnovers, and wasted product.



A Better Method

AOTF-NIR Spectrometers are non-destructive, rapid test devices for determining BU. The technique has been proven to prevent over or under blending, providing manufacturers with total control over the process.

- Monitor Blending for Every Batch: The flexible design allows you to move the unit from blender to blender.
- Control Your Blending: Continuous monitoring provides accurate control of your blend.



A Proven Benefit

Successful implementation of a Brimrose Luminar 4090 results in:

- Ensured Quantitative & Qualitative Accuracy
- Faster product turnover
- Reduced Blend Time
- Less Waste Product
- Assured Uniformity

Technical Data Specification

Name	Specification (General)
Spectral Range Options	1100-2300 nm
Measurement Modes	Diffuse Reflectance
Spectral Resolution	2-10 nm
Wavelength Accuracy	± 0.5 nm
Wavelength Repeatability	± 0.01 nm over more than 5 years' service
Wavelength Increment	Software Selectable 1-10 nm
Ambient Light Rejection	>10 ⁶
S/N at 70% Range	< 30μabs, for <5 seconds integration time
Photometric Range	3.5 AU
Linearity	Better than 0.15%
Sampling Speed	16,000 wavelengths/sec
Sampling Area	3-10 mm (custom)
Sampling Distance	20-100 mm (custom)
Internal Diagnostic	10 Built-in monitoring sensors
Power Supply	30Watts, 14.8V Lithium Ion Battery (~6hrs with 140Wh capacity)
Communication	TCP/IP and Wireless
Software Package	Windows-based analytical software for data acquisition
Enclosure	Environmentally sealed NEMA IP65
Unit Weight	10 lbs
Unit Dimensions	200 mm x 150 mm x 81 mm