

FOSS

NIRS™ DS3 A for Feed

Automated NIR for better feed lab flow



ANALYTICS BEYOND MEASURE

3 ways innovation adds value

- Efficiency of operations is improved by optimising the analytical workflow
- New levels of confidence in analytical data are achieved through consistent high performance
- Improved uptime ensures that critical analysis data for decision-making is more available than ever

DRIVING EFFICIENCY IN FEED LABS: MEETING MODERN DEMANDS WITH SMARTER SOLUTIONS

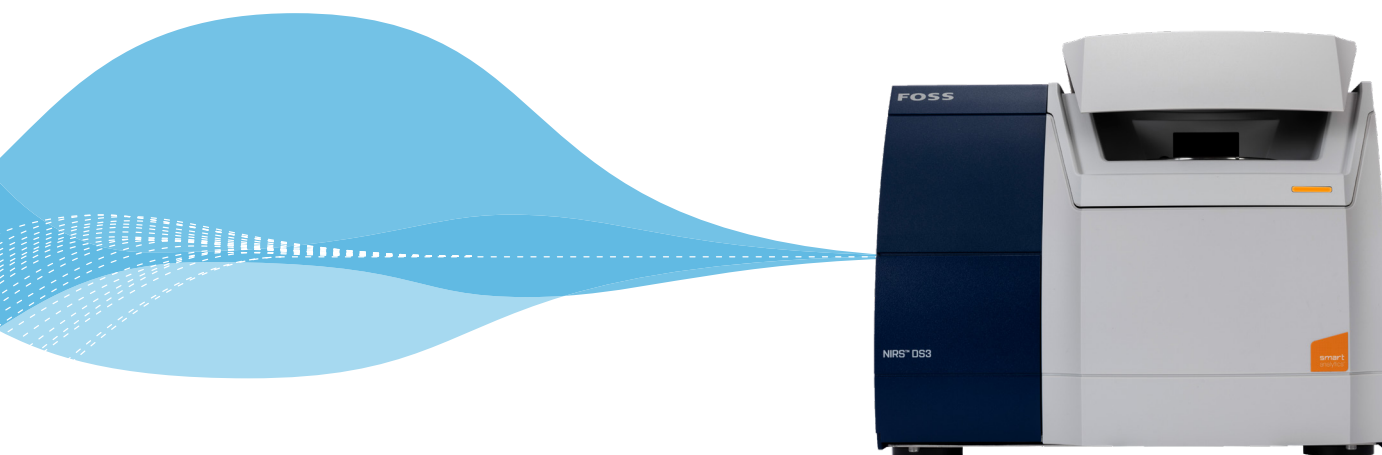
While traditional wet chemistry remains a cornerstone of feed analysis, the landscape of feed laboratories is evolving rapidly. Increasing pressure from growing sample volumes, tighter turnaround times, workforce shortages, and shrinking margins means labs must prioritize operational efficiency more than ever before.

To stay competitive, many feed labs are turning to rapid methods and automation to maintain accuracy while increasing throughput. Near-Infrared (NIR) spectroscopy, in particular, is emerging as a key technology for modern feed labs. Its ability to deliver fast, non-destructive, and reliable results makes it ideal for high-volume environments. By preserving sample integrity and reducing chemical waste, NIR also supports labs in achieving both operational and sustainability goals.

Beyond speed and environmental benefits, NIR offers scalability and adaptability - meeting the changing needs of feed labs dealing with diverse sample types and regulatory demands.

Automated solutions further enhance lab performance by reducing manual handling, minimizing human error, and increasing consistency. High-throughput automation systems enable feed labs to process more samples with greater precision and reproducibility - freeing up valuable staff time for higher-level tasks and driving overall productivity.

In this new era for feed labs, integrating rapid methods like NIR and automation is not just an upgrade - it's a necessity for sustainable growth and competitive advantage.





ELEVATE YOUR OPERATIONS WITH A COMPLETE SOLUTION

The NIRSTM DS3 offers renowned FOSS accuracy and industry leading analytics combined with automated sample handling and high throughput in one solution.

The NIRS DS3 A is an advanced and versatile solution for testing a range of parameters such as protein, moisture, fat, ash, fiber, and starch in under a minute. The NIRS DS3 A can perform automated tests on ground and unground samples, while manual tests can be performed on ground, unground or liquid material with no or very limited sample preparation.

The simple and robust autosampler, allows the operator to walk away and do other tasks while the solution automatically loads, analyzes, and unloads the samples.

Armed with this winning combination, busy feed labs can optimize efficiency and deliver rapid, cost-effective, and trustworthy analytical results.

A versatile solution to suit your needs

- The NIRSTM DS3 A can measure a broad range of sample types with or without automated sample handling
- Automated analysis of ground and unground samples
- Manual analysis of ground, unground or liquid material





RAPID, EFFICIENT, AND EASY-TO-USE ANALYTICS

Always ready-to-test, the uptime of the NIRST[™] DS3 A is assured with robust performance based on decades of analytical technology development. This advanced technology ensures that laboratories can analyze a wide range of samples quickly and with the highest repeatability, enhancing productivity and reducing operational costs.

Elevate your operations with NIR analysis

The NIR DS3 A offers rapid, efficient and non-destructive NIR analysis that is safe and easy to use, requires minimal training and no chemicals, making it very low cost to run. It is a simple and robust solution designed for continuous operation under challenging conditions.

At the same time, smart features in the NIRST[™] DS3 A make it simpler than ever to gain more insight into your business through reliable and easily accessible analytical data.

- Easy to get started with seamless installation
- Intuitive user interface minimizes the need for training
- Results in 2 minutes per sample
- Start measuring immediately with Smart Start function
- Schedule diagnostics before the shift starts



NIRST[™] DS3 A is an advanced and versatile solution for rapid measurement of a wide range of food and feed matrices, plant materials and more - the list of many diverse applications for the superbly versatile NIR DS3 A continues.

Smart Start



The Smart Start function ensures that your NIRST[™] DS3 A is ready to measure when the shift starts. Schedule your diagnostics to start as soon as warm-up is completed. Just start the shift and start measuring.

Simple and robust autosampler

The autosampler is easy to use and maintain due to a simple and robust design that uses gravity to load each sample and a built-in sample ejector. This simplicity ensures that the system remains reliable and easy to operate, even with minimal training. The small footprint of the autosampler enables automation without taking up additional space, making it an ideal solution for laboratories with limited bench space.

Combined with automated sample handling, the NIRS™ DS3 A allows busy feed labs to deliver rapid, cost-effective, and trustworthy analytical results with maximum efficiency.

- The autosampler is easy to attach and detach as needed
- Small footprint enables trouble free automation without taking up extra space
- Robust design based on gravity

Scalable and sustainable solution

The NIRS DS3 A is scalable to meet the diverse and evolving needs of the industry and handle the increasing volume and diversity of incoming samples faced by busy feed labs today. This versatile solution covers a broad variety of parameters and analytics packages, while automated sample handling tools, such as the sample magazines and sample collector, allow you to process more samples at a time.

Integrating a NIR solution in your workflow helps you work towards sustainability objectives such as reducing the use of chemicals and energy to minimize your environmental impact. This makes the NIRS DS3 A not only a cost-effective choice but also an environmentally responsible one.





Autosampler accessories

- 20 sample cups
- Lid with built in sample ejector
- Sample cup holder
- Sample magazine
- Sample collector

INCREASE THROUGHPUT AND REDUCE TURN-AROUND-TIME

Keeping up pace to continuously and profitably deliver accurate and analytical testing on a large scale, is a serious challenge for any lab manager. Turnaround time is critical, and the larger the lab, the greater the risk of error.

For solid sample types, the NIRSTM DS3 A provides automated sample measurement, enabling operators to walk away and do other tasks while the solution automatically loads, analyzes, and unloads the samples. Risk of error is reduced, and full traceability of results is ensured thanks to smart features such as sample registration at a separate workspace, barcode scanner, and sample matching.

Optimize sample handling

The NIRSTM DS3 A significantly improves sample handling. With a capacity of 20 cups per batch you can run up to 60 samples per hour.

- Prepare samples at a separate workspace
- Easy transportation of samples using detachable sample magazines
- Sample magazine and sample collector holding up to 20 sample cups
- Minimize registration errors with barcode scanner and registration software
- Automated transfer of sample ID and analytical results to data management systems

Enhanced efficiency with automated processes

Automated sample handling relieves operators from manual and cumbersome workflows, ensuring increased throughput capacity and allowing laboratory staff to focus on other critical tasks.

Automated sample loading and handling separates sample preparation from the analysis work area. This reduces the risk of human error and ensures consistent, high-quality results.

- Increased daily throughput capacity
- More efficient use of operator resources and increased walk away time
- Improved data quality due to improved traceability and reduced operator errors
- Fast, automated loading and unloading with portable magazines

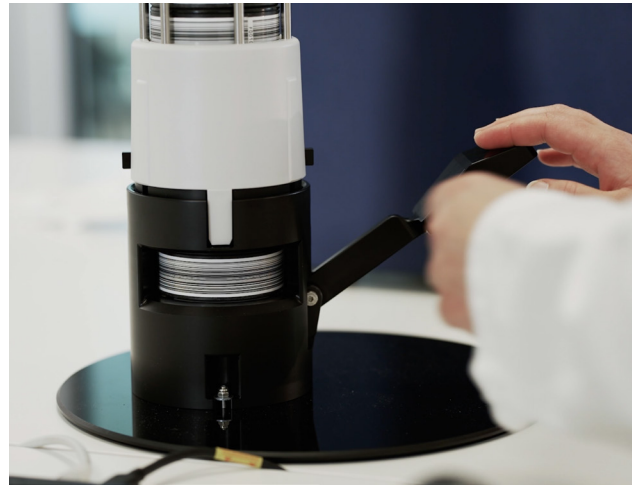


Detachable Magazines for Easy Transportation

The autosampler's detachable magazines facilitate easy transportation of samples and optimized workflow. This feature ensures that samples can be efficiently managed and processed, further enhancing laboratory productivity and reducing turn-around time.



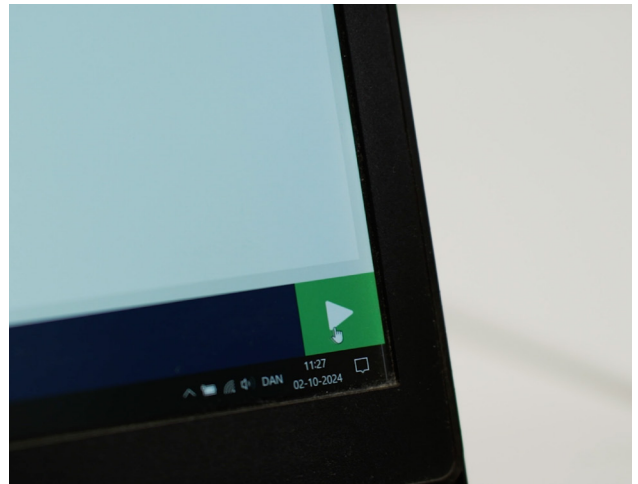
1. The sample cups are registered using the barcode on the side of the cup and then loaded into the magazine.



2. Up to 20 cups are loaded into the magazine from the bottom up. The first cup loaded is the last one to be measured.



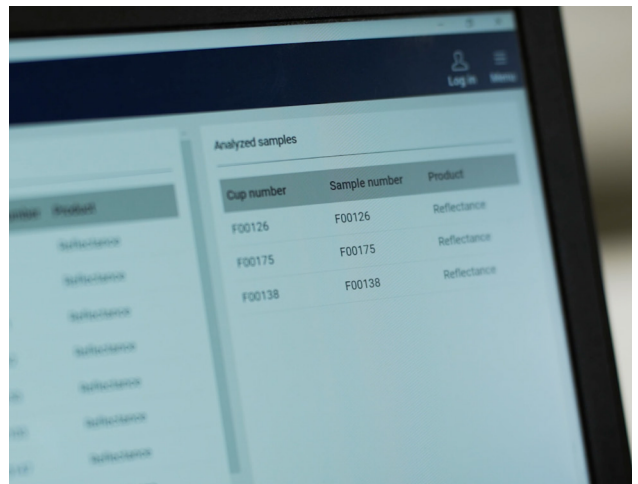
3. The magazine is moved from the loading station to the autosampler.



4. The measurements are started via the PC.



5. The sample cup is ejected into the collector after the measurement is completed. The next cup in the magazine is then loaded into the instrument.



6. The measured sample is moved from the "registered samples" column to the "measured samples" column.

AVOID HUMAN ERROR WITH TRUSTWORTHY AND TRACEABLE RESULTS

Automation not only improves efficiency but also enhances the reliability and traceability of analytical data, making the NIRSTM DS3 A an indispensable tool for modern laboratories.

The NIRS DS3 A provides accurate and reliable data for decision-making by exploiting the latest in both hardware and software technology. It's a complete solution that covers all the points of the analytical compass from sample handling and measurement to calibration. The option to create statistical reports based on data from multiple, connected instruments adds further insight into the performance of individual units or a whole fleet of instruments.

Superior measurement quality

The NIRS DS3 A ensures superior measurement quality with low signal-to-noise ratios and high spectral resolution. This precision guarantees that laboratories can rely on the accuracy and consistency of their analytical results, which is crucial for maintaining high standards of quality control.

The NIRS DS3 A applies NIR reflectance for dry samples or NIR transmittance for liquid samples ensuring the best possible accuracy no matter what type of samples you are running. At the heart of the solution, the capability to scan across a wide spectral range of 400 - 2,500 nm makes for a versatile instrument that is ideally suited for a broad variety of food and feed samples.

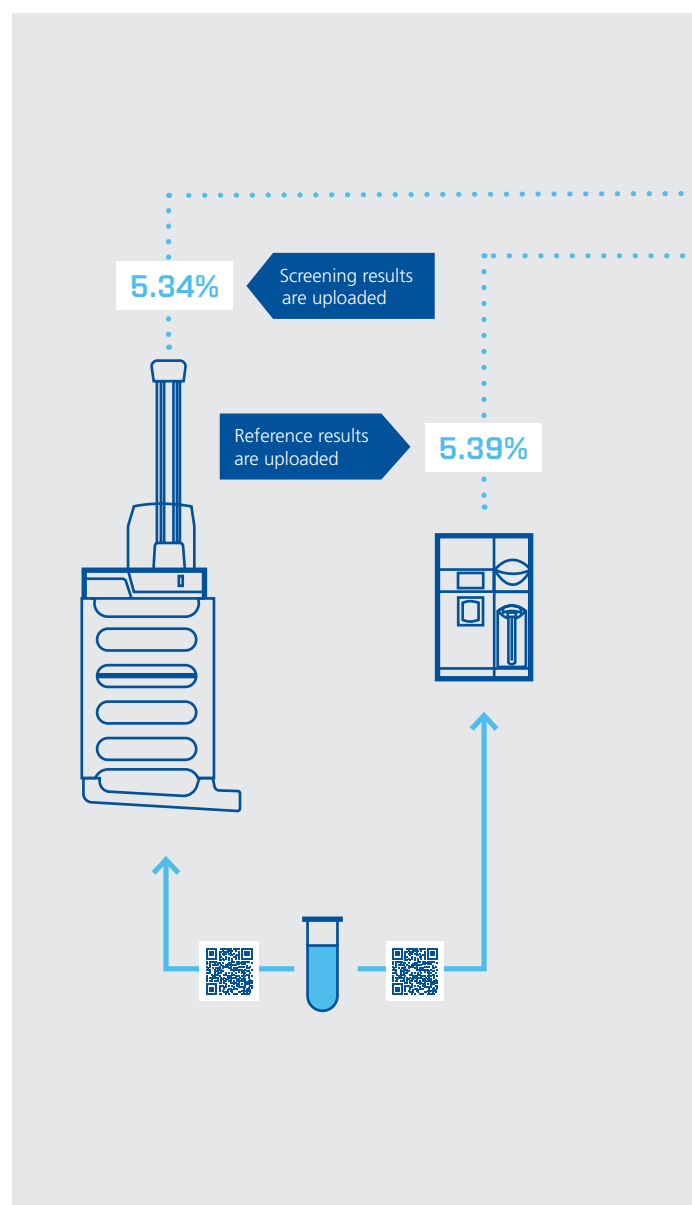
Smart features for improved data quality

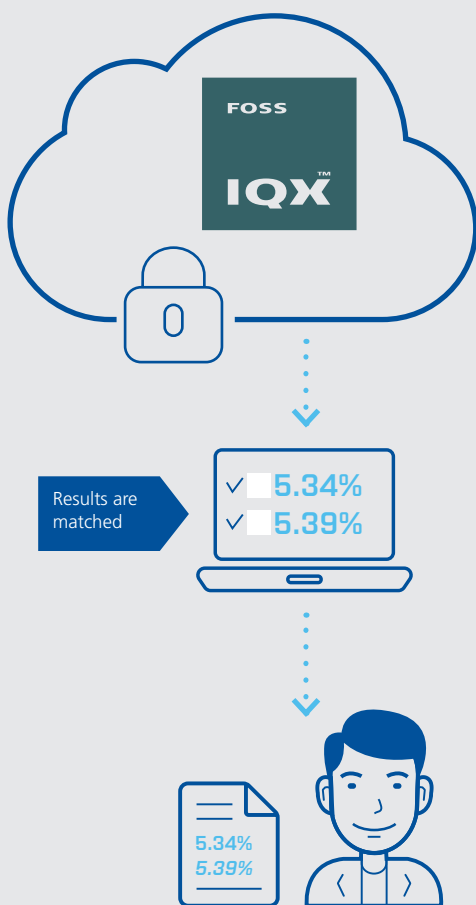
The NIRS DS3 A is equipped with smart features that reduce the risk of error and ensure traceable results, improving overall data quality and reliability.

Ensure full traceability with barcode scanner, registration software and automated sample matching

service. Pre-registration and preparation of samples in magazines at a separate workstation enables busy feed labs to perform automated analysis without losing track of analysis data.

Additionally, features such as sample matching and automatic transfer of analysis data to ERP/LIMS eliminates the hassle and risk of error associated with manual registration and handling of result, making it easier to exploit the benefits of NIR in the laboratory.





Responsible personnel checks the results and makes a conclusion if everything is OK or actions are needed.

Improve quality control with sample matching

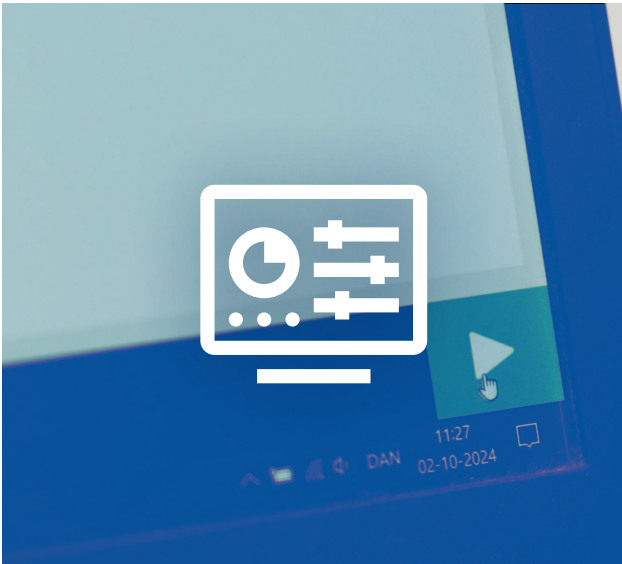
Sample matching makes it easy to match and compare results from your NIRS™ DS3 A with Kjeltec™ 9 analysis results. Automatic registration via integration and connectivity services

Results from your NIRS DS3 A and reference method are easily integrated, using sample matching. The samples measured by your NIRS DS3 A and reference method respectively are registered automatically to eliminate the risk of error and secure optimal performance. Using integration and connectivity, analysis results from both instruments are matched and saved via cloud for evaluation and reporting purposes using digital services.



ALWAYS READY WITH FULL CONFIDENCE IN RESULTS

To safeguard the reliability of your analytical data, the NIR5™ DS3 A includes scheduled diagnostics and industry-leading digital services. These optional services ensure that the instrument performs optimally and is backed by support from FOSS's global service team, providing laboratories with peace of mind and consistent performance.



Scheduled diagnostics

Ensure that your instrument is already ready during working hours with full confidence in your results. Scheduled diagnostics allow you to check instrument health before problems arise, while actionable error messages provide you with easy solutions if small problems should arise.



Manage and monitor various devices

Effectively oversee, optimize, and configure your essential measurement devices through a unified software platform from FOSS IQX™. This device management solution centralizes fleet management to ensure that all your data is in a safe, unified location.



Keep your instrument up and running

Eliminate downtime with preventive maintenance visits. With a FOSS service solution, you have access to expert service technicians and engineers who will help replace components before they wear out. Receive high-priority service and emergency on-site support in case of breakdowns.



Analytics packages dedicated to your needs

New products mean different analytical needs. If your operation is expanding into new or unknown sample types, ensuring that the correct analytical model is in place is crucial for maintaining accurate results. FOSS offers a broad selection of dedicated analytics packages to suit your needs as they evolve.

FOSS

FOSS
Nils Foss Allé 1
DK-3400 Hilleroed
Denmark

Tel.: +45 7010 3370
Fax: +45 7010 3371

info@foss.dk
www.fossanalytics.com
September 2025, GB