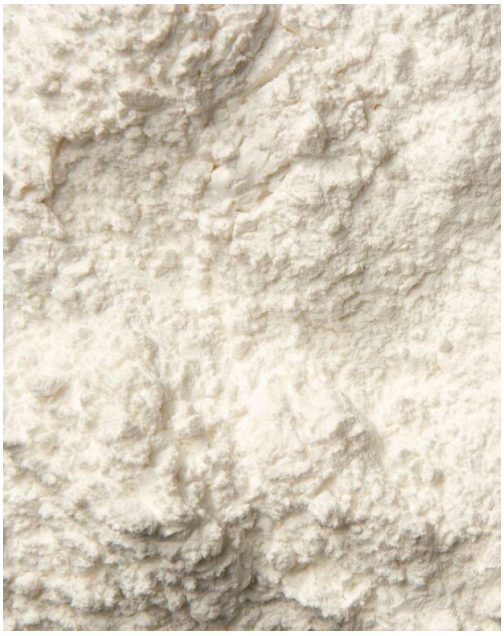
FOSS

NIRS™ DS2500 flour analyser

The NIRS™ DS 2500 analyser helps millers to boost yield by giving unique levels of accuracy regarding ash as well as highly accurate measurements of protein, moisture and colour.

Robustness coupled with groundbreaking performance in near infrared (NIR) guarantees highly accurate ash measurements by anyone, anywhere, at anytime. It is ideal for routine testing of flour in the laboratory or in the production environment.

Sample	Parameters
Direct measurements of flour samples	Protein, Moisture, Ash, Starch, Wet gluten and many more



New NIR reveals value that other analysers cannot see

Ash – it's your main indicator of yield, so why compromise on measurement accuracy?

The advanced near infrared technology behind the NIRS DS2500 allows you to measure ash and other key parameters such as moisture protein and colour across a broad wavelength range of 400 to 2500nm. A unique signal-to-noise ratio gives an ultimate measure of ash and other low level parameters in need of accuracy. In addition, a combination of cup rotation and sub-scans measures different points in your sample. You can be confident that your results will be within acceptable deviation ranges, every time.

Other factors contribute to the precision of measurements including the borosilicate glass used throughout the unit. A disc is cut from the highest quality glass rod and polished for a uniform thickness and finish. The glass eliminates light distortion, protects vital optics and internal standards from the elements and ensures that analysis conforms with international standards.

Start improving today

With the NIRS DS2500 by your side, you can hit targets precisely for a profitable production. Seeing those small margins that other analysers can't, the NIRS DS2500 helps you to fine-tune your production for even better results. More precision in your production also helps to avoid expensive rework and realise the quality potential of your production. And, by getting just 0.1% closer to target on ash content, you can expect a return on investment in under a year.

It's simple to get started. You can use ready-to-use global ANN calibrations for wide variety of flour types based on a comprehensive database built-up over years of partnership with millers around the globe. Or, if you want to make use of your existing NIR calibration data, the NIRS DS2500 is 100% backwards compatible to InfraXact, NIRSsystem II and FOSS XDS instruments. The compatibility makes it easy to leverage the calibration data using straightforward migration paths without any loss of performance.

Multiple instruments can easily use the same calibrations without any modifications

Ash accuracy by anyone, anywhere, anytime

The NIRS DS2500 has been designed for high performance in the hardest production environments. It is IP65 certified and boasts outstanding environmental specs: ambient temperature 5-40 °C, storage temperature -20 °C to 70 °C and ambient humidity <93% RH.

Temperature stability is further ensured by the sealed liquid cooling system around the lamp and detector. In-built measurement standards control performance over time and across units while the internal reference is protected from environment and temperature variations by a BK7 glass.

Anyone can do reliable tests with the NIRS DS2500 with low risk of operator error. Users just place some sample in the sample cup, push the button and wait a minute for results to appear on screen via the intuitive ISIscan Nova software.

Technology

Stable monochromator performance

The new generation monochromotor technology used in the NIRS DS2500 (comparable with the FOSS NIRS XDS instrument) ensures versatility and stability across the full spectral range from 400 to 2500 nm.

The spectrometer is equipped with internal standards for control of light intensity, bandwidth and wavelength position. Its stability can be validated to ensure that data transfer is continuously seamless, even over time. Designed to deliver ongoing exceptional performance, the NIRS DS2500 monochromator will not normally need recalibration. However, internal as well as external standards can be used for automatic recalibration and quality control of the spectrometer.

Online remote instrument management

FOSS Mosaic networking software allows you to connect your NIRS DS2500 to the internet for remote instrument management.

Once connected, either a FOSS NIR specialist or your in-house team can manage and optimise the performance of your instrument(s) online without interrupting routine operations.

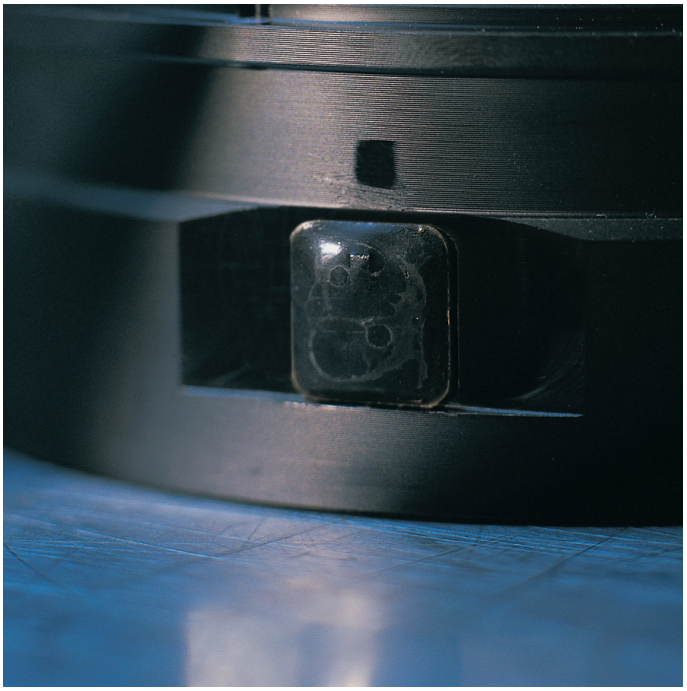
With Mosaic you can manage all the settings on your instrument(s) and can carry out task such as:

- Instrument and calibration surveillance
- Instrument diagnostics for QC management
- Calibration adjustment
- Calibration updates and optimisation
- Central reporting
- Protection of valuable data and calibrations
- Online technical support

Mosaic software also allows the user to remotely set up and monitor an instrument locally (LAN) without an internet connection.

NIRS DS2500 key features

- Unmatched optical performance across the full wavelength range (400 - 2500 nm)
- Factory standardised for seamless calibration transfer
- 100% compatible with earlier FOSS solutions such as InfraXact and XDS
- Consistent results even in harsh environments
- Ready to use calibrations for flour
- Suitable for networking using LAN (local) or
- WAN (internet)
- New predispersive monochromator
- Wide range of cups and accessories



Operational and calibration development software

FOSS NIRS DS2500 operates on the user-friendly ISIscan Nova software that supports the latest calibration technologies, as well as networking options. Its many features include:

- Automatic database storage of results
- Supported regression methods: LOCAL and
- FOSS-ANN modules
- Real-time outlier detection for each constituent
- Graph and trend analysis display
- Product control with control limits, target values
- and reports
- User-defined fields for tracking sample information
- LIMS compatibility (export only)
- Customer support available online

Improved traceability with RFID tags

A range of sample cups fitted with RFID tags (Radio Frequency Identification) can be used with the NIRS DS2500.

In multi-product environments, this allows plant operators to significantly improve traceability by making sure that the right sample cups are used by all operators. Not only does this minimise risk of error, it also simplifies operation.

Proven calibration development

Calibration development is supported by proven WinISI calibration software for monitoring of calibrations and straightforward development of new ones.

WinISI can also be integrated with FOSS Mosaic networking software for remote calibration management. Simply create or adjust your product calibrations using WinISI and distribute them to your instruments using Mosaic. Mosaic can also collect sample data from your production plants for calibration development.

Global ANN calibrations

FOSS global calibrations are based on extensive samples from different regions and countries collected over the years. This means they are robust, low maintenance and easy to use already from day one, and full calibration support is available using our remote networking software Mosaic.

Part of a complete high performing solution

Whether you are new to NIR or an experienced user, FOSS offers a complete and customised support program* for your NIRS DS2500.

- On site preventive maintenance visits
- Preventive maintenance parts
- Software updates
- Remote instrument surveillance
- On-line and off-line calibration support
- Self maintenance training and video on demand support
- Priority support response

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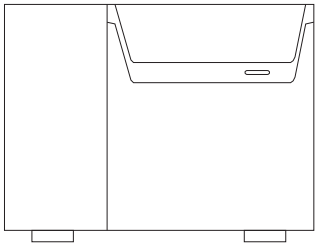

Specifications

Feature	Specification
Dimensions (W x D x H)	375 x 490 x 300 mm
Weight	27 kg
Degree of protection	IP 65
Measurement mode	Reflectance or transflectance (for liquids)
Wavelength range	400 - 2500 nm
Detector	Silicon (400 - 1100 nm), Lead Sulfide (1100 - 2500 nm)
Optical bandwidth	8.75 ±0.1 nm
Spectral resolution	0.5 nm
Number of data points	4200
Absorbance range	Up to 2 AU
Analysis time	<1 minute*
Wavelength accuracy	<0.05 nm
Wavelength precision (Based on a single analyser)	<0.005 nm
Wavelength precision instrument-to-instrument (Based on a group of analysers)	<0.02 nm
Photometric noise**	400 - 700 nm < 50 micro au 700 - 2500 nm < 20 micro au

* Adjustable

** Noise = RMS for 10 co-added, 10 second scans

Installation requirements

NIRS™ DS2500	
Voltage supply	100-240 V AC *, frequency 50-60 Hz, Class 1, protective earth
Ambient temperature	5 - 40°C
Storage temperature	-20 to 70°C
Ambient humidity	< 93% RH
Mechanical environment	Stationary during use
EMC environment	Laboratory use, Industry requirements
* Mains supply voltage fluctuations not exceeding ±10% of the rated voltage.	

Legal data

The equipment is CE labelled and complies with the following directives:

- EMC (ElectroMagnetic Compatibility) Directive 2004/108/EC
- LVD (Low Voltage Directive) 2006/95/EC
- Packing and Waste Directive 94/62/EC
- RoHS Directive 2002/95/EC
- WEEE Directive 2002/96/EC
- REACH Directive 1907/2006/EC

PC requirements

Contact your local FOSS representative for information.

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