FOSS

FoodScan™ for meat

FoodScan™ Meat Analyser is an easy-to-use routine analysis instrument for analysing all stages of meat production - from checking incoming raw material to final product control. Using near infrared transmission technology to penetrate the meat sample it delivers accurate results in just 50 seconds. The FoodScan is pre-calibrated with unique ANN calibrations that has received national approvals for the measurement of key quality parameters.

Sample	Parameters
Any type of ground or homogenized meat sample	Fat, moisture, protein, collagen and salt. + other parameters such as ash, starch, pH, carbohydrates, etc. when special calibrations are developed

Dedicated Analytical Solutions

The rapid solution that has become a standard

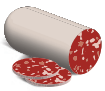
FoodScan has set new standards in speed and analysis efficiency and today is used by more than a thousand meat producers around the world. It is fast, accurate and straightforward to use. It allows a regular flow of results for key control parameters – helping you to:

- Optimise use of expensive raw materials
- Standardize production batches
- Make laboratory operations more time and cost effective
- Improve production efficiency, for instance, by minimizing production stops
- Build brand recognition through consistent quality products

Rapid control of a range of products

Raw materials:
Beef, pork, lamb, mutton, chicken and turkey

Filling materials:
For example, fillings for sausage, mortadella, polony



Cooked, cured finished products:
Examples: sausages (incl. poultry and turkey), dry sausages, salami, ground beef, pork patties, cured ham, cooked meat, liver sausages, luncheon meat, liver patés

Cost effective analysis

The rapid, low cost tests open a number of control opportunities, for instance, in cutting and deboning. FoodScan™ can be used to check fat percent in meat trimmings, processed meat products and incoming raw material and control the composition of final products.

Added to the payoff from better raw material utilization alone, come a series of benefits that optimise the efficiency of your production process:

- Ready to use – it comes pre-calibrated
- Accurate – proven performance of the artificial neural network calibrations
- Fast – results are delivered in 50 seconds
- Versatile – one calibration for many products
- Easy – Little or no sample preparation
- Cost effective – no consumables used and low cost of operation
- Network ready – local network or networked across sites
- Non destructive – you can retest or use the sample for additional testing
- Multiparameter – one analysis, multiple parameters

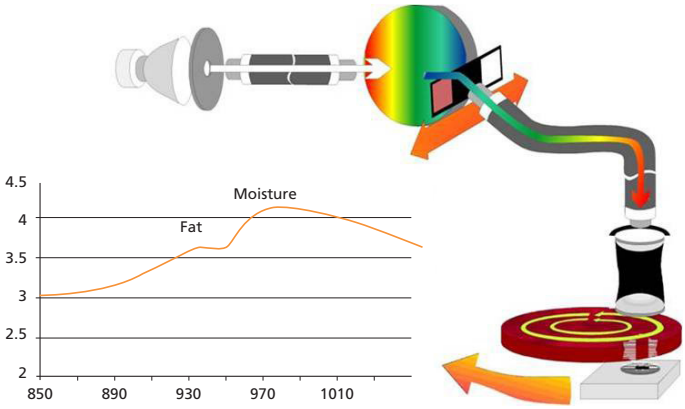
The only rapid method with approvals – AOAC, AQIS and Polska Norma

FoodScan™ has become the first near infrared (NIR) analyser for key control parameters to receive official method status by AOAC– valuable for any laboratory and others required to use officially approved methods. FoodScan™ is approved by The Australian Quarantine and Inspection Service (AQIS) and Polska Norma in Poland.

Technology

The FoodScan technology is based on Near Infrared Transmittance, NIT, which is an advantage when measuring in-homogeneous products. The NIT-principle, where light is transmitted through the sample, is a major reason for FoodScan's success. The NIT-principle secures a higher accuracy at analysis of meat, compared to methods, where the result is based on light reflected from the surface of the meat.

The data (absorbencies at different wavelengths) generated by FoodScan are subjected to a mathematical function, a calibration model, in order to calculate the predicted value.



- *NIR Transmittance 850-1048 nm on a rotating sample*
- *1-40 sub samples*
- *45-60 seconds*

FOSS ANN meat calibration - the key to reduced calibration costs

FoodScan is equipped with an artificial neural network (ANN) calibration making it a "plug & play" solution. It is ready to run immediately so there is no need for gathering many samples required for a typical PLS calibration. The ANN calibration covers nearly all type of meat and meat products, from raw meat to finished products.

The calibration has a huge advantage compared to other calibration techniques. A very robust calibration can be developed, with no limit as to how many samples can be included in the calibration. With one ANN calibration it is possible it is possible to cover many different products, where you traditionally need to develop and maintain several calibrations. This means reduced calibration development and maintenance costs, as less reference analyses are required.

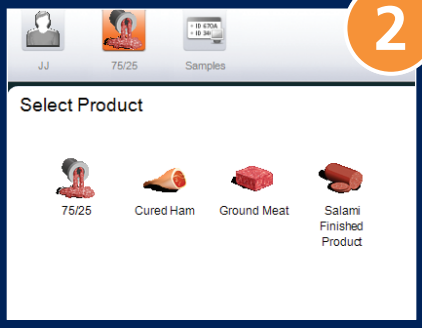
The ANN Meat calibration covering the parameters Fat, Moisture, Protein and Collagen was developed using approximately 20,000 spectra collected globally from the more than 1.000 FOSS dedicated meat analysers installed worldwide since 1989. The huge number of spectra makes the FOSS ANN Meat calibration very robust and offers excellent transferability between instruments. The scope of the calibration is shown in the following table.

Component	Repeatability (s_r)	Typical Accuracy
Fat	< 0.2%	0.4 - 0.8%
Moisture	< 0.2%	0.4 - 0.8%
Protein	< 0.2%	0.3 - 0.6%
Collagen	< 0.2%	0.2 - 0.4%
Salt	< 0.05%	0.1 - 0.2%

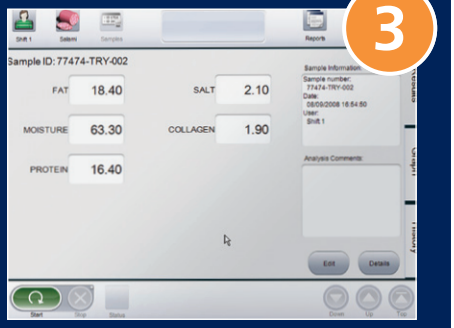
Easy to use

Anyone can make measurements with the FoodScan.
Just how easy it is to use.

Fill the sample cup and place it in the instrument

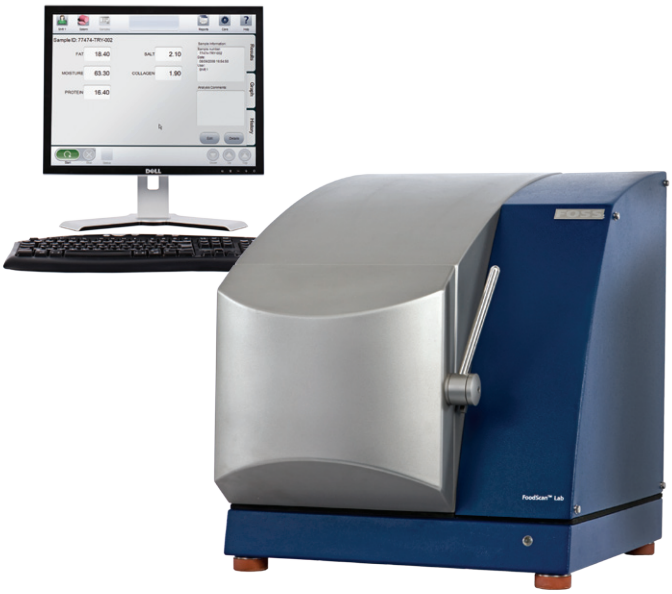


Choose product and press start



The results for all parameters are displayed within 50 sec.

FoodScan™ – two dedicated solutions



Laboratory

FoodScan™ Lab helps you to optimise routine analysis by delivering accurate and fast results when you need them and where you need them – LIMS or customized reports. It is operated from an external PC.

At line

Rugged and robust and operated with a built-in touch PC, FoodScan™ Pro is ideal for use right at the production line. Featuring an IP65 protection class enclosure.

Specifications

Performance data	
Measuring range:	850 - 1050 nm
Wavelength accuracy	< 0.5 nm
Wavelength precision < 0.01 nm	< 0.01 nm

Instrument data	
Dimensions (H x W x D)	Pro: 75 x 42 x 62 cm, Lab: 45 x 42 x 62 cm
Space requirements:	Approx. 1 m working space in front of the instrument.
Weight, operating:	Pro: 56 kg, Lab: 37 kg
Power Supply:	100 - 240 VAC +/- 10%, 50 - 60 Hz
Fuse:	2.0 A-m
Installation category:	II
Power Consumption:	Max 175 VA
Ambient temperature:	5 - 35 °C
Ambient Humidity:	Pro: 93% RH, Lab: 80% RH
Degree of protection:	Pro: IP 65, Lab: IP 20
Pollution degree:	2
Noise level:	< 70 dB(A)

PC Requirements

FoodScan Lab requires a dedicated PC as instrument controller. The minimum requirements to the instrument controller are documented in a separate FOSS PC datasheet.

Operating system: Windows 7, 32 and 64 bit
Communication: FoodScan Lab: as pr. PC.
FoodScan Pro: USB, TCP/IP

Standards and Approvals

FoodScan is CE labeled and complies with the following directives:
EMC (Electromagnetic Compatibility) Directive 89/336/EEC
LVD (Low Voltage Directive) 73/23/EEC

Patents

FoodScan is covered by the following patents.

Country	Patent number
US	US 4, 944, 589
SE	SE 459767B
EP, DE, ES, FR, GB, IT	EP 320477
DE	DE 3887664

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