



Applications for meat processing industry



Meat processors and producers face many challenges that require accurate, reliable and fast analysis to control the raw material, prefabricated products and ensure the quality of the final product.

Lumex Instruments developed universal ready-to-use calibrations for the method of determination of fat, protein and moisture in samples of minced meat by FT-NIR high performance transmittance spectroscopy using InfraLUM FT-12 NIR analyzer.

The cost-effective solution we present provides fast, accurate and simple analysis for meat industry. Just one calibration for fat, protein and moisture is needed to work with all types of meat.



1 minute analysis time



Low analysis cost



No sample preparation

How analysis can improve the efficiency of meat processing

- Control the raw products
- Optimize the production process
- Control the final product quality
- As a result, maximize the profit

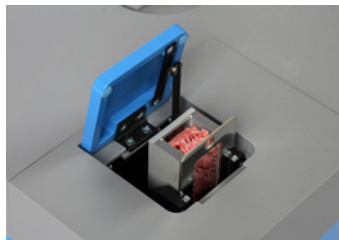
Rapid and accurate results for cost-efficient analysis

- Rapid analysis (simultaneous determination of all parameters in less than 1,5 minutes).
- Universal calibration for all types of meat: there is no need to change the settings if you need to analyse another type of sample
- The highest accuracy of measurements is provided by the Fourier-Transform NIR transmission spectrometry: the instrument reads the spectrum of the light transmitted through a sample unlike just the surface information the reflectance methods use
- Simple measurement procedure
- No sample preparation needed: only homogenization
- Low cost per analysis: no reagents and consumables are needed
- No special qualification of operating personnel is required
- Multilanguage user interface

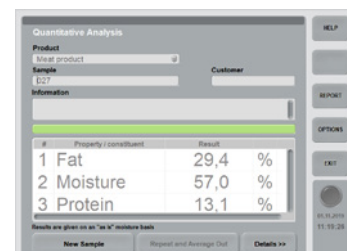
Extremely simple measurement



1 Fill the sample cell



2 Put the cell into the InfraLUM FT-12 analyzer, choose the analyzed product in the menu, and start the measurement



#	Property / constituent	Result
1	Fat	29,4 %
2	Moisture	57,0 %
3	Protein	13,1 %

3 Result obtained in 1.5 minutes

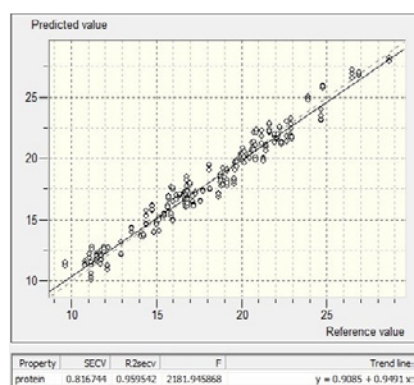
Ready-to-use calibrations

The universal ready-to-use calibrations can be used for any meat. Pork, beef, lamb – just put the sample in and get the result.

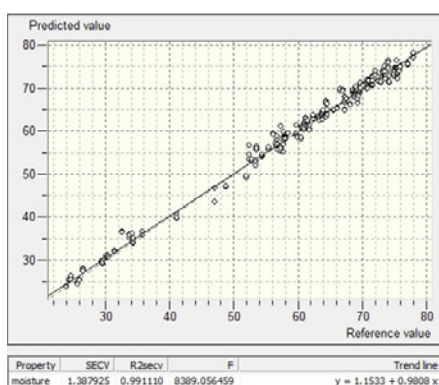
Our factory standard calibrations work exactly the same way on different instruments. This enables the same quality standard between different production facilities or departments.

Component	Measurement range, %	Typical standard deviation, %
Fat	0,5–15	0,4
	15–90	1,0
Protein	4–26	0,7
Moisture	10–80	1,0

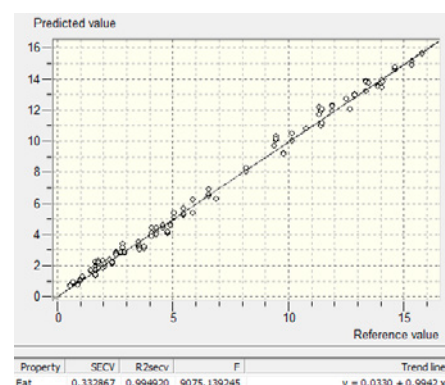
As an example, the results of cross-validation of calibration for the determination of protein, moisture, and fat in low-fat meat products are given below.



Protein



Moisture



Fat

Despite the differences in the products included in the calibration, the results show high correlation and accuracy.

Other calibrations

The following calibrations are available:

- Salt
- Ash
- Carbohydrates
- Collagen
- Carrageenan
- Soy
- Wheat flour
- Powdered milk
- Starch

Other calibrations can be developed upon request.

The instrument software SpectraLUM allows the user to develop, localize, and update calibration profiles to ensure the highest accuracy of analysis. Moreover, with InfraLUM FT-12 it is possible to extend the list of objects and parameters that were not present in the database by creating new calibration profiles and customizing the calibrations for a specific user.

Scope of supply

- InfraLUM FT-12 NIR Analyzer
- Cells for the selected type of sample
- Personal computer with SpectraLUM/Pro software operating under Windows OS 7/8/10



Find your local Lumex Instruments distributor:
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