

Lenz Instruments

Ham-Inspector™



- Accurate determination of fat percentage and weight in only 4 seconds
- Primal cut sorting in deboning rooms
- Optimization of the dry-cured ham process

Ham-Inspector™

PRODUCT DESCRIPTION

HAM-INSPECTOR™ is an in-line equipment that allows the fast and precise characterisation and sorting of primal cuts, particularly hams and shoulders, in function of the weight and fat content.

For the control of the salting process in dry-cured hams and shoulder, the equipment permits to determine the total salt content in the meat piece

TECNOLOGY

The equipment employs a contactless inspection method to preserve the integrity and physical characteristics of the meat. The method, developed in collaboration with SSICA (Parma) and IRTA (Spain) is based on the different response of fat and lean tissues to a low intensity magnetic field. An integrated conveyor belt passes the meat through the machine, to perform the inspection in less than 4 seconds.



MAIN APPLICATIONS

- In-line sorting of ham and shoulder in deboning rooms.
- Quality control of the raw meat in ham producers
- Optimisation of the salting process
- Monitoring of the salt intake during the salting process (in a 2 stages salting process)
- Optimisation of the dry-curing process (yield control)
- Sorting of products with reduced salt content

Ham-Inspector™

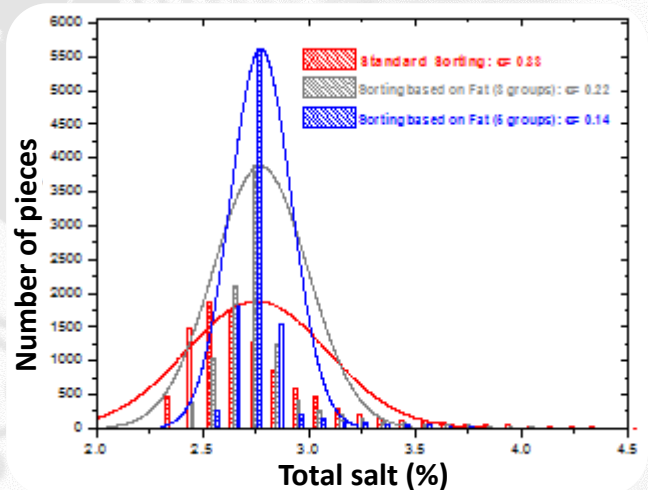
Applications: Optimisation of the salting process



Fat percentage and weight are the main parameters of the fresh ham that affects the variation in the salt uptake and yield in the elaboration of dry-cured ham.

Ham-Inspector™ allows a fast classification and sorting of the raw meat at the reception stage. The sorting of the raw meat in groups of fat and weight significantly improves the homogeneity of the salting process (See picture on the right) and reduce yield variations in the final product.

Ham-Inspector™ also offers the possibility to develop and implement new strategies to reduce the salt uptake in the final product, without compromising its microbiological safety.



Ham-Inspector™

Technical Specifications

General Description

Ham-Inspector™ machine determines the fat content in fresh meat pieces. The machine includes a dynamic weighting system capable to weight the meat piece with an accuracy of $\pm 10g$. An additional sensing module (optional) allows the determination of salt content in meat pieces after the salting process.

Both parameters of fat and salt are key for the elaboration of cured products, particularly to optimise and control the dry-curing process.

This fat and salt analyser has been designed as an autonomous system for the in-line inspection of entire meat pieces (e.g. ham, shoulder and belly) and, is equipped with a conveyor belt capable to scan up to 1,000 pieces/hour. The system includes a communication interface adaptable to specific customer requirements.

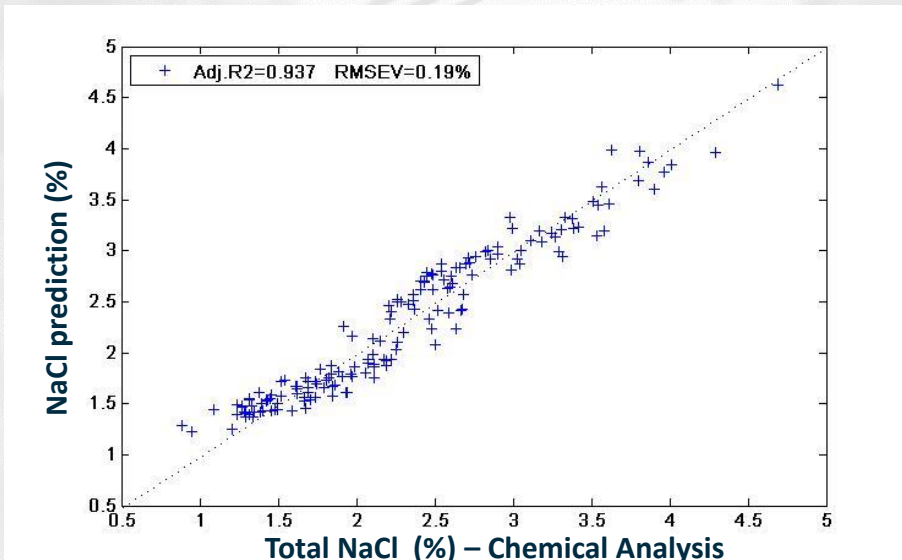
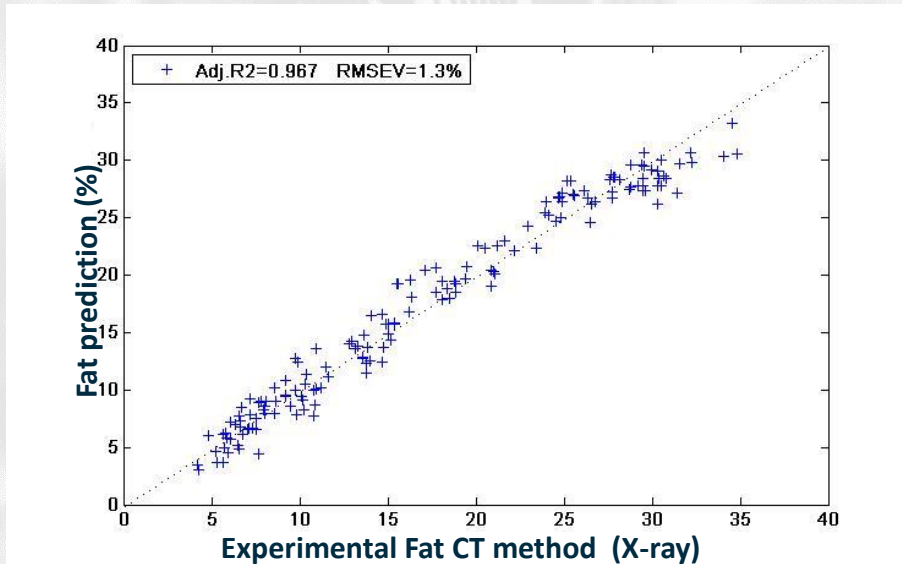


- Control via PLC
- Dynamic weighting system
- Graphic User Interface
- Bar code reader
- Industrial bus interconnection
- Industrial Ethernet

Ham-Inspector™

Accuracy

Maximum weight/Accuracy ³	30 kg/± 10g
Accuracy ¹ in the prediction of % Fat	1.5%
Accuracy ² in the prediction of salt content	0.2%



¹ Accuracy obtained in fresh hams: Serrano, Iberian and Parma type in a fat range of 5%-35%.

² Accuracy obtained in hams: Serrano, Iberian and Parma type after the salting stage, in a range of salt from 1%-5%.

³ Weight range: 5-30kg

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Technical specifications

Weight	400 kg
Dimensions	150cm (Lenght) x 116cm (Wide) x 176cm (Height)
Tunnel aperture	450mm (Wide) x 270mm (Height)
Power supply	Monophasic 230V, 50Hz
Electric Power	≤1kW
Working Temperature	0°C – 35°C
Humidity	0% - 95% (without condensation)
Construction details	Mechanical structure made on Stainless steel AISI-304. all the parts forming the system are suitable for food use including the conveyor belt and the inspection tunnel
Index Protection	IP-65
Conveyor driver	3 Phase Inverter, drum motor (IP66), stainless steel body (Interroll España, S.A.).
Conveyor belt	Modular band made with materials suitable for food use, HDPE (Habasit Hispánica, S.A.)
User interface	Tactile screen (IP-65)
Data conection	Ethernet 10/100, OPC

Standards

Lenz Ham-Inspector™ is CE marked has been designed to comply with the following directives:

- EMC (Electromagnetic Compatibility) Directive 2004/108/EEC
- LVD (Low Voltage Directive) 2006/95/EEC
- MD (Machine Directive) 2006/42/EEC

About LENZ INSTRUMENTS S.L.

Lenz Instruments S.L. is a technology-based company focused on the development and commercialization of instruments and systems for industrial applications, as well as on providing engineering services in fields related to process optimization and monitoring, process control, electronic design, software, and automation. Our key fields of expertise include non-destructive or contactless inspection technologies based on electromagnetic sensors, vision systems, ultrasound and optical spectroscopy.

Created in 2011, the company is part of an international group of Applied Research and technology transfer employing over 100 engineers, scientists, and consultants.



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