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A **DURAVANT** COMPANY

X-RAY VISION

Intelligent X-Ray

Introduction

In 2024, Marelec and Multiscan, under the Duravant umbrella, are proud to present a groundbreaking portfolio of X-ray and vision equipment tailored specifically for the protein processing industry. This unique collaboration combines Marelec's extensive experience in the protein sector with Multiscan's cutting-edge expertise in X-ray and vision technology.

Multiscan brings a wealth of knowledge from its broad experience in vision technology, particularly in the sorting and inspecting of fruits and vegetables for the agribusiness. Recognizing the potential for innovation in the protein industry, Multiscan and Marelec began their partnership in 2023. Together, they have developed a suite of X-ray and vision systems designed to meet the specific needs of the fish, meat, and poultry sectors.

Marelec is renowned in the protein industry for its technical expertise, seamless integration, project management, and commitment to operational excellence. By leveraging these strengths, we ensure that every project within our portfolio is executed to the highest standards and achieves outstanding success.

We invite you to explore our brochure to learn more about the diverse models and applications we offer. This brochure highlights our unique selling points and focuses on providing solutions tailored to the various needs of our customers in the protein sectors.

Our dedicated sales team is always available to answer any questions you may have. When you choose Marelec – a global leader in the protein industry – you are partnering with a company that prioritizes service, listens to your specific needs, and offers flexibility with a personal touch. We look forward to a mutually beneficial collaboration and helping you achieve your operational goals with our innovative equipment.

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Overview

// MXV OVERVIEW

Product	MXV-Pack*	MXV-Meat*	MXV-Slim*
Applications			
Models	4015 & 5025	6025	4010 & 6010
Features	Rejection system Fat detection Salt detection Foreign material detection	Fat detection Salt detection Foreign material detection	Weight detection Foreign material detection

*model name: xxyy (xx = belt widthin cm, yy = maximum product height in cm)

MXV- SLIM

The MXV-Slim is designed to excel in uncovering foreign objects within unpacked, low-profile protein products. Employing cutting-edge Ultra High-Definition X-ray technology, it adeptly identifies dense contaminants within the products. Furthermore, it specializes in pinpointing residual calcified bones, firmly establishing its market-leading ability to detect even the minutest bone fragments within poultry products.

Available in two slimline models sporting 400mm/16inch or 600mm/24inch wide belts, the MXV-Slim facilitates the simultaneous processing of multiple product streams.
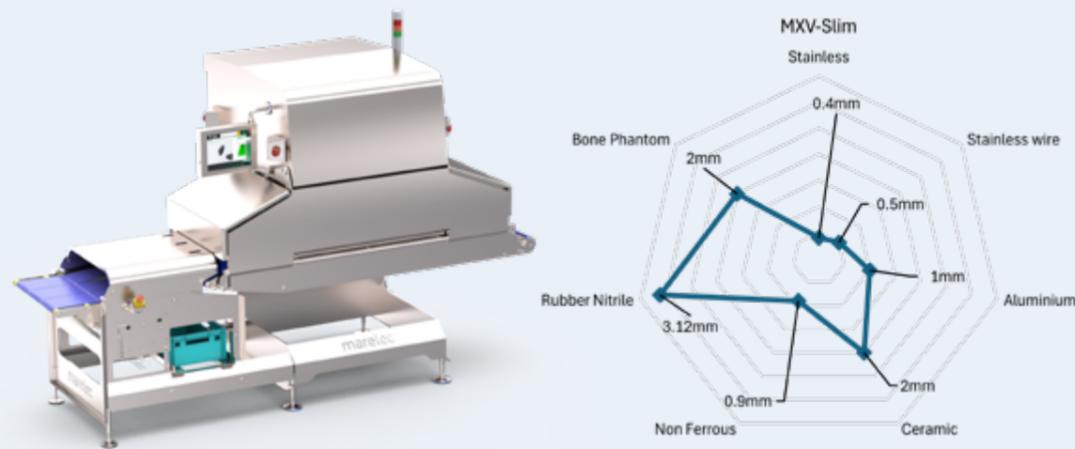

	MXV-Slim-4010	MXV-Slim-6010
Max. product dimensions W x H	390 x 50 mm 15,35 x 2 inches	600 x 80 mm 24 x 3,15 inches
Capacity*	125 ppm x 2 lanes	125 ppm x 3 lanes
X-ray beam	Vertical	
Cooling requirement	15°C - 20°C tap water with flow rate ≥ 40l/ 11 gal per hour or usage of recirculation cooling unit	
Belt speed	35m/min 115 ft/min	35m/min 115 ft/min
IP protection	69K	69K
X-ray source	80KV@350W UHD	80KV@500W UHD
Supply Voltage	230 Vac. ±10% single phase, 50/60 Hz	230 Vac. ±10% single phase, 50/60 Hz**
Weight	650 kg/ 1433 lb	944 kg/ 2081 lb
H x W x L	1844 x 1100 x 2180 mm 73 x 43 x 86 inches	2333 x 1289 x 2380 mm 92 x 51 x 94 inches

*Subject to product type
**Contact us for alternative connection types

When a product with contaminants or bone fragments is detected, Marelec offers different setups to reject that specific product, deliver it to an operator for manual inspection and then re-enter it into the stream for a final inspection to make sure no contaminants are left in the item.
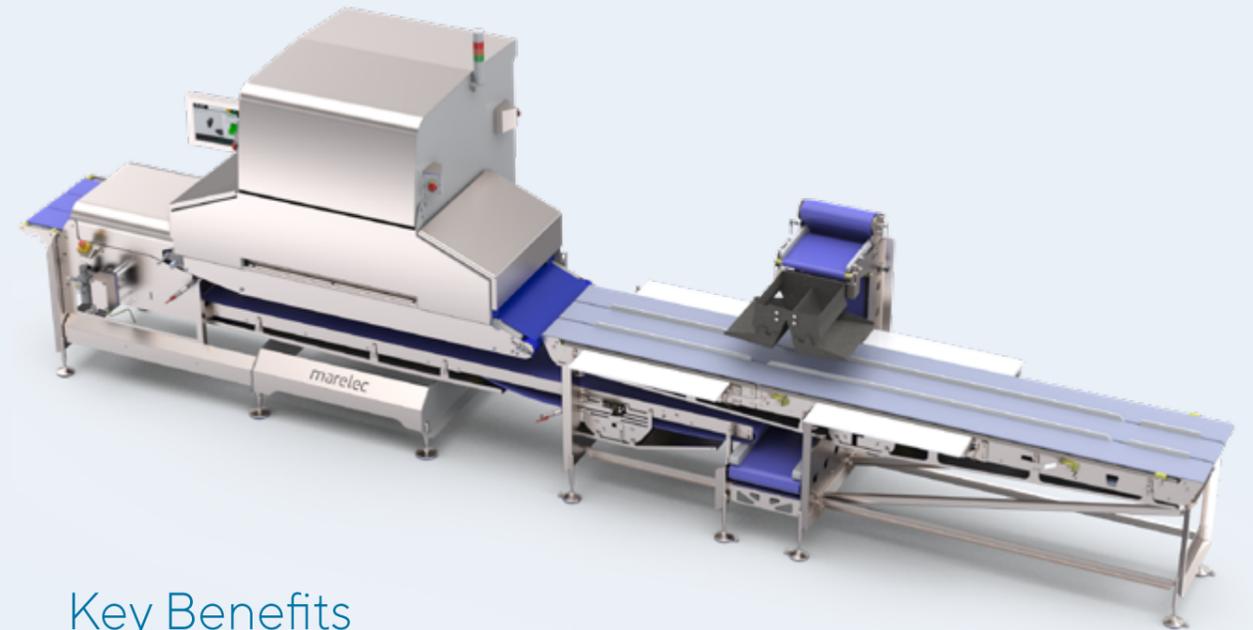

Key Benefits

- **Ultra-High-Definition X-ray technology**: Marelec provides a diverse range of options for detecting foreign bodies, using Ultra High-Definition X-ray technology tailored to each customer's specific requirements. It particularly shines in its capability to detect poultry bone remnants as small as 2mm/0,08 inches with a very low false rejection rate, reducing the number of operators needed to check incorrectly rejected products.

- **Weight detection**: The MXV-Slim can replace a weighing conveyor in a grading setup, offering the added benefit of performing foreign body detection and weighing all in one step.

- **Unique belt inclination principle**: This supports a more hygienic working process – with no risk of curtains touching products up to 80 mm/ 3 inches high, cross-contamination between products can be avoided.

- **Enhanced vision technology**: Marelec can also provide advanced vision technology integrated with the existing X-ray technology, enabling precise detection of non-dense materials on the product's surfaces.

- **High capacity**: The 600 mm (24-inch) belt width offers a unique configuration in the market. Depending on the customer's product, it can accommodate either three lanes running at 125 pieces per minute or two lanes for larger items at 100 pieces per minute.

- **Advanced hygiene and maintenance accessibility**: The MXV-Slim features an IP69K rating for robust water resistance, double labyrinth sealings at electrical cabinet doors, and an open structure for easy cleaning and quick belt removal.

MXV- MEAT

Introducing our state-of-the-art MXV-meat machine, featuring revolutionary X-ray vision technology. Designed to detect foreign bodies in large meat pieces and/or E2-crates, this machine offers adjustable detection levels to suit customers' budgets and needs. What sets it apart in the industry is its unique capability to combine X-ray technology with fat or salt percentage detection in the product.

In fact, the MXV-meat machine can process large quantities of meat while simultaneously tracking the fat/meat percentage throughout the process. This ensures that your package, at the end of the line, maintains the desired meat percentage necessary for creating your desired products. With its highest detection level and specially designed software, the MXV-meat machine can identify even the smallest hypodermic needle fragments within products, making it truly exceptional in its field.
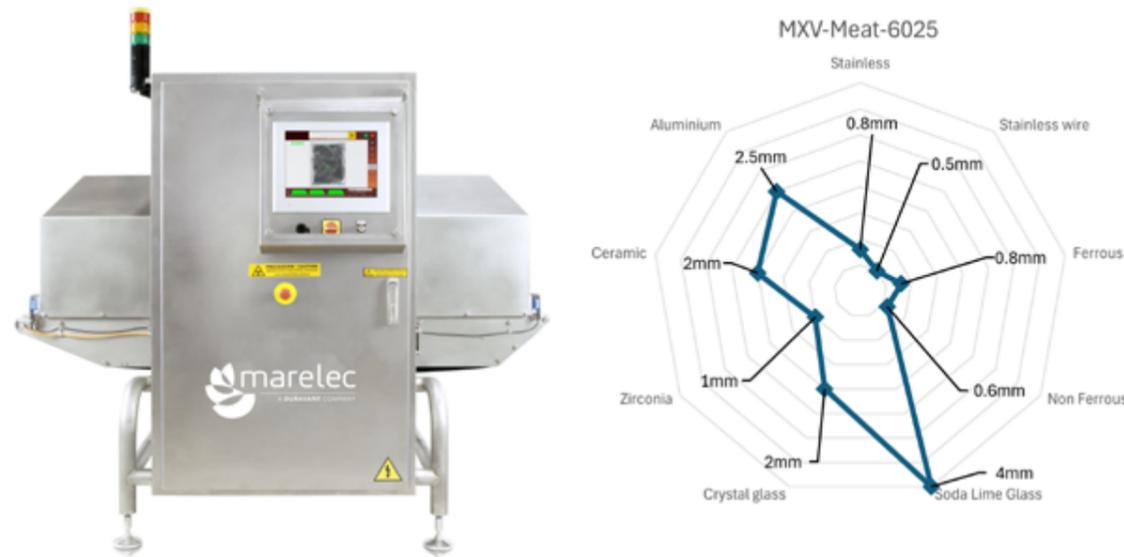
MXV-Meat-6025

	MXV-Meat-6025 UHD
Max. product dimensions W x H	600 x 250 mm 24 x 10 inches
Capacity	3000 E2 crates/hour
X – Ray beam	Vertical
Cooling requirement	15°C – 20°C tap water with flow rate ≥ 200l/ 53 gal per hour or usage of recirculation cooling unit
Belt speed	High Definition Models: 35m/ min, 82 ft/ min
IP protection	67K
X-ray source	150KV@500W HD
Supply Voltage	230 Vac. ±10% single phase, 50/60 Hz
Weight	800 kg/1764 lb
H x W x L	1973 x 1375 x 2100 mm 78 x 54 x 83 inches

Unique features

// X RAY IN COMBINATION WITH PORTIO
Integration with a PORTIO unit enables precise detection of bone within meat products. This capability is utilized for automated cutting processes, and is particularly useful to cut meat between the ribs. This integration can reduce the need for up to 8 people in a production area by automating the bone-detection and cutting process, thus optimizing manpower and improving operational efficiency.

// FAT/LEAN MEASUREMENTS IN COMBINATION WITH FOREIGN BODY DETECTION
The MXV-meat excels in detecting foreign bodies, such as 0,6-0,8 mm/0,02-0,03 inches stainless steel, inside E2 crates (600x400x200 mm/24x16x8 inches). Simultaneously, it performs accurate measurements of fat/lean content in the meat products passing through the machine. This dual functionality is facilitated by advanced software that accumulates the weights and fat/lean ratios of the inspected crates.

// DETECTION OF HYPODERMIC NEEDLES
Utilizing Ultra High-Definition technology and specialized software, the MXV-Meat can detect hypodermic needles within boxes of meat, regardless of whether they contain bone. This feature ensures comprehensive safety checks and compliance with food safety regulations.

Key Benefits

- **High scanning capacity**: The MXV-meat boasts the impressive capability of scanning up to 3000 E2 crates of raw meat per hour.

- **Versatility**: Handles various formats, including E2 boxes of meat, raw pieces, blocks, and packaged products, and can be integrated in-line for trimming processes. Possibility to determine the percentage of salt or fat in all kinds of (packaged) products.

- **Cost of ownership:** Integration of state-of-the-art, durable X-ray generator and camera minimizes maintenance and ownership expenses.

- **Easy maintenance**: Marelec has opted to use highly reputed international brands for electrical, safety and other components. All motors are situated away from the wet area, which ensures a long lifetime. There are limited lubrication points. This results in the lowest operational cost.

MXV- PACK

The MXV-Pack delivers comprehensive analysis of your packaged products, excelling in the detection of various foreign bodies such as metals, stones, crystals, and dense plastics. Designed for end-of-line applications, it efficiently inspects packaged products in dry areas.

In addition to detecting contaminants, the MXV-Pack accurately measures fat and salt percentages within your products. It also identifies anomalies in product packaging, ensuring correct styling and the proper quantity in each tray. If a package will fail to meet customer requirements, the MXV-Pack implements rejection methods that comply with quality certification standards.

	MXV-Pack-4015	MXV-Pack-5025
Max. product dimensions W x H	400 x 150 mm 16 x 6 inches	500 x 250 mm 20 x 10 inches
X – Ray beam	Vertical	
Cooling requirement	No cooling requirements	
Belt speed	35 m/min, 115 ft/min	
IP protection	55K	55K
X-ray source	80KV@350W UHD	80KV@210W UHD
Supply Voltage	230 Vac. ±10% single phase, 50/60 Hz	230 Vac. ±10% single phase, 50/60 Hz
Weight	650 kg/1433 lb	670 kg/1478 lb
H x W x L	1822 x 1097 x 1300 mm 72 x 43 x 51 inches	1822 x 1197 x 1300 mm 72 x 47 x 51 inches

Key Benefits

- **Intelligent Anomaly Detection Software**: The MXV-Pack features intelligent software that allows users to easily train the machine to detect anomalies in packaged products. This ensures that correct styling and product quantities meet high industry standards consistently.

- **Ultra-High-Definition X-ray technology**: With UHD, Marelec offers the highest resolution image in the industry, allowing the software to detect anomalies with a resolution of 0.1mm/0.003 inches per pixel. This allows the machine to detect up to 0,3 mm /0,01 inches stainless steel in packaged products.

- **Superior Performance in Challenging Applications**: The MXV-Pack stands out from the standard market by excelling in demanding applications that require a higher detection rate and software adjustments.
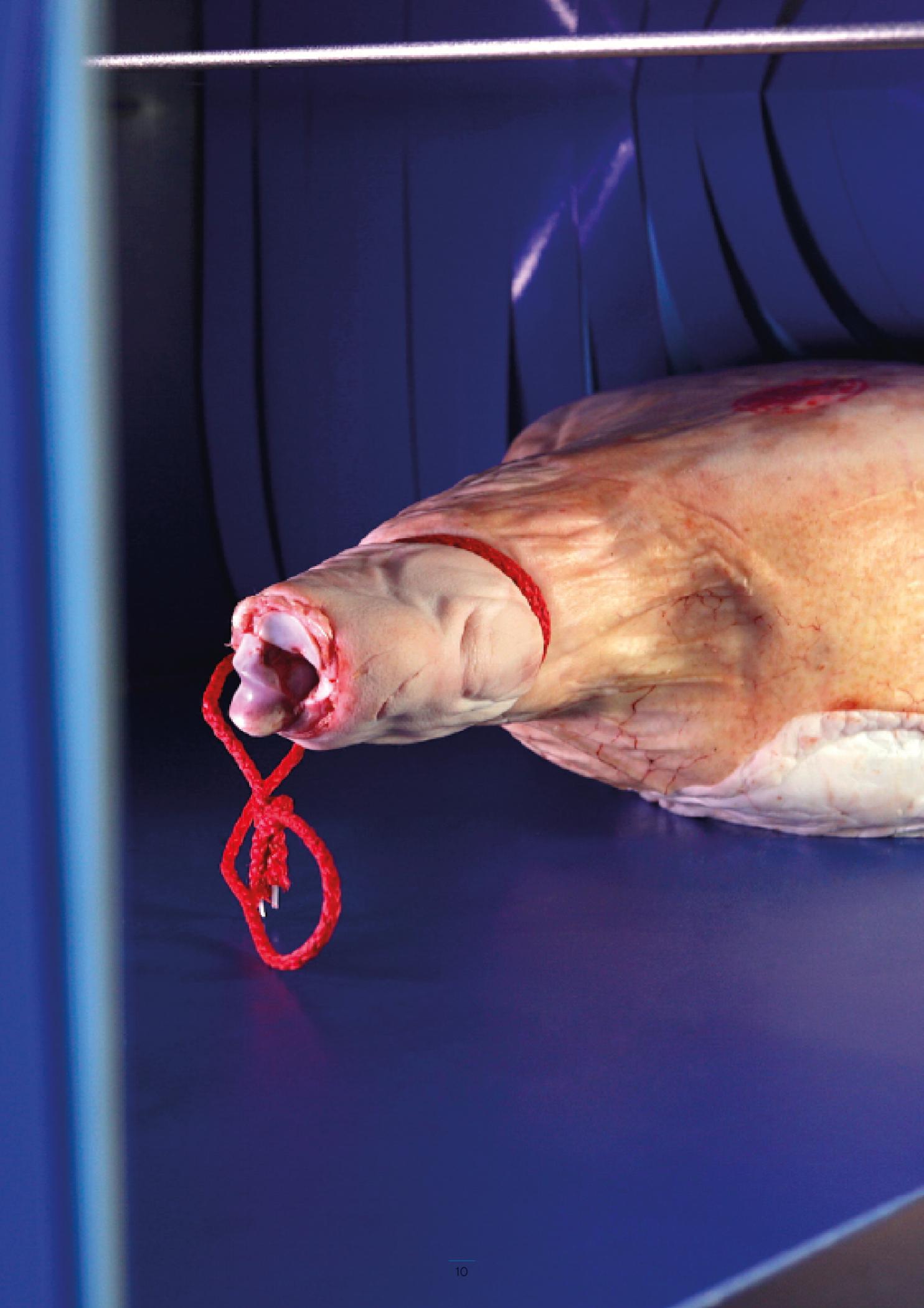
Demo

// SEEING IS BELIEVING

MARELEC has created a state-of-the-art demonstration room, fitting it with all the equipment necessary to film and stream online live demonstrations. Of course, customers are very welcome to visit the MARELEC headquarters in Nieuwpoort, Belgium, to test with their own products. Another possibility is for MARELEC experts to undertake trials in the production facilities of our customers.

Please contact the MARELEC sales team to make an appointment. They will then make sure the ideal machine for your application will be available for a successful demonstration.

MARELEC Food Technologies

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