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A **DURAVANT** COMPANY

MATRIX

Food Processing Software

MATRIX

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Introduction

Thanks to MARELEC's long-term partnerships and close contact with food processors worldwide, we are able to keep track of the continuously changing needs and processing trends in the industry.

With our flexible and modular MATRIX Software, MARELEC offers Processing Solutions adapted to fit the individual needs of each customer - whether that is the processing of production data for reporting from a stand-alone MARELEC device, overall process monitoring or controlling the entire food-processing plant.

Food processors rely on data analysis to decide where to make improvements in their processes. Therefore, real-time monitoring and controlling of Key Performance Indicators (KPIs) such as yield, throughput, giveaway, quality and uptime are crucial for the competitiveness and profitability of their operations.

MATRIX offers solutions for:

- Real-time monitoring
- Remote control
- Reporting
- Maximizing Yield
- Maximizing Capacity
- Minimizing Giveaway
- Advanced Order Management
- Labeling
- Traceability

MATRIX digitally transforms your entire process and takes it to the highest level.

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MATRIX PRO

1 // RECEIVING

Raw materials arrive at the plant. A bar code is attached and read before processing. This is the starting point for MATRIX to fully trace the goods.

2 // FLOWSCALE

One flowscale weighs the flow of products before trimming and another flowscale measures the flow after trimming. MATRIX monitors the yield by comparing the weights on both scales. By monitoring the yield, the Overall Equipment Efficiency can be determined, and machine settings can be fine-tuned to optimize production.

3 // TRIMMING

Raw product is weighed before being assigned to an operator who will trim the product. By monitoring the weight of the trimmed end-product and the side-product, it is possible to individually evaluate operators for yield and throughput.

4 // PORTIONING

Value is added by portioning products to fixed weights or to produce multiple portions with individual higher values. MATRIX keeps track of all portions produced and generates production reports showing yield and throughput.

8 // ORDER PICKING & DISPATCH

Palletizing in a blink of an eye. MATRIX routes the packed product to the packing station for box packing and/or palletizing. With an HMI, the order progression and assigned packing stations can be monitored and adjusted.

7 // LABELING

The MATRIX Label Manager is the ultimate tool for private labeling. It ranges from a single printer to complete inline print & apply solutions, ensuring transparent traceability.

6 // PACKING

MATRIX interfaces with third-party solutions to route batches or trays to the packing machines. MATRIX communicates between devices so it stays fully in control and guarantees complete traceability throughout the process while managing the entire flow of the order.

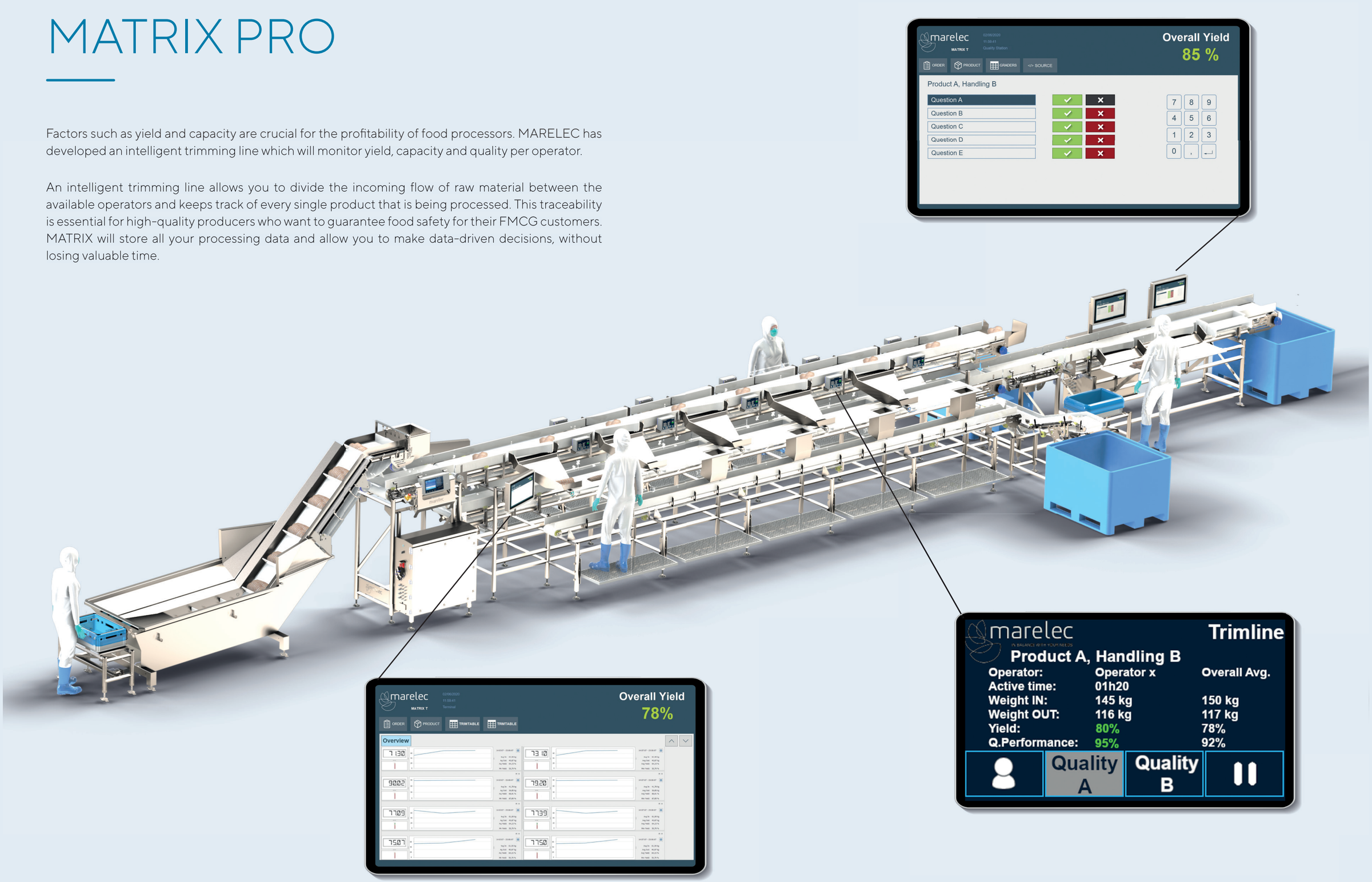
5 // GRADING

The intelligent software in MARELEC graders ensures that batches are created at target weight with a minimum of giveaway. This improves your profitability. MATRIX produces production reports with detailed information on all batches produced.

MATRIX PRO

Factors such as yield and capacity are crucial for the profitability of food processors. MARELEC has developed an intelligent trimming line which will monitor yield, capacity and quality per operator.

An intelligent trimming line allows you to divide the incoming flow of raw material between the available operators and keeps track of every single product that is being processed. This traceability is essential for high-quality producers who want to guarantee food safety for their FMCG customers. MATRIX will store all your processing data and allow you to make data-driven decisions, without losing valuable time.



Features

PROCESS CONTROL

Real-time data processing and remote control of your equipment from a centralized point. MATRIX allows you to monitor your process and make on-the-fly adjustments at the quickest response time.

ORDER PROCESSING AND PLANNING

By using MATRIX Advanced Order Processing in combination with the Planning tool, MATRIX can be left unsupervised without worrying about order quantities, so additional valuable time is generated to focus on other profitable aspects of production management.

MATRIX intelligently navigates your products through the process flow, minimizing handling, ensuring longer shelf-life and prioritizing orders to ensure spot-on delivery times.

LABELING AND TRACEABILITY

Traceability is a must in the food processing and packaging industry. Integrating 1D/2D code readers in MATRIX ensures traceability all the way from the incoming raw material right through to the finished product delivered to your customer.

WEIGHING

Using the MATRIX Weighing Terminal makes it easy to switch between product and packaging definitions for manual box-weighing registrations. A color-check indication visualizes the current batch weight versus target weight to minimize the giveaway. It offers follow-up order progression of each order item and prints the customer's private label.

QUALITY MANAGEMENT

The MATRIX Quality Terminal registers internal inspection reports. MATRIX helps to save paper and improves quality by following up digitally over time.

FLEXIBILITY

MARELEC invests continuously in the development and expansion of MATRIX modules to create the best possible work environment for the customer, while maintaining harmony in a busy workspace. Through the integration of MARELEC devices and interfacing with third-party equipment such as 1D/2D code readers and printers, the modular design of MATRIX offers a flexible processing solution. Orders from the customer's ERP can be loaded into MATRIX, while production data and order information is shared with the ERP for finalizing the shipment documents and invoicing.

KEY PERFORMANCE INDICATORS

Monitor per device, lane or operator to improve the global performance of your production process.

Use MATRIX Dashboard for making decisions based on real-time data analysis on throughput, yield and giveaway. Take a look at the KPI view to analyze day by day or use the reporting module for long-term analysis.

OVERALL EQUIPMENT EFFECTIVENESS MONITORING

Monitor the availability and performance of your equipment to improve your productivity. Use the event log as an indicator for preventive maintenance planning to ensure greater up-time.

Scan to watch
our MATRIX video

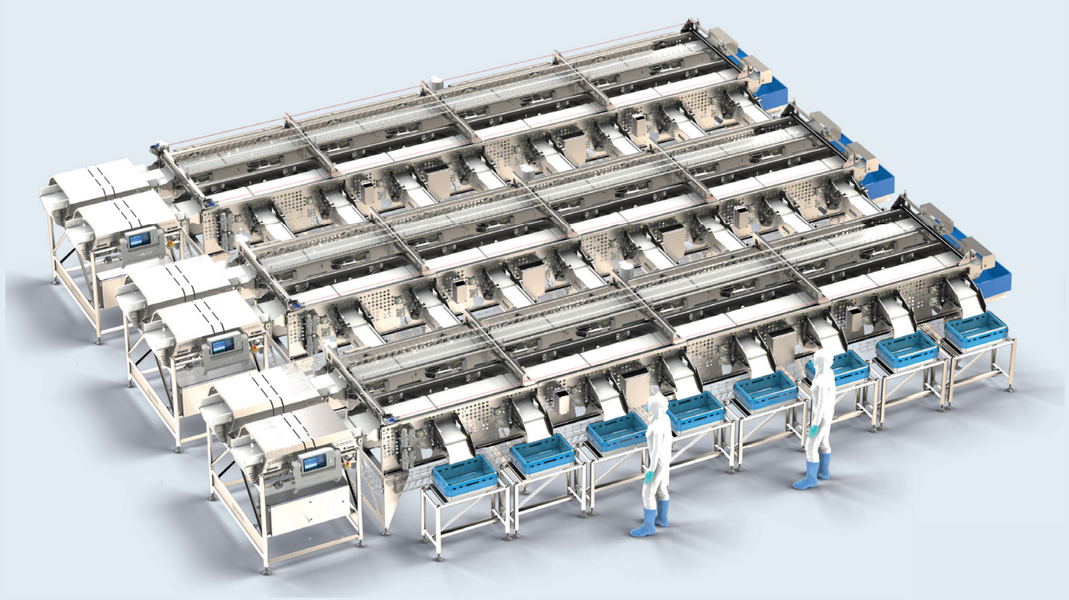
MATRIX G

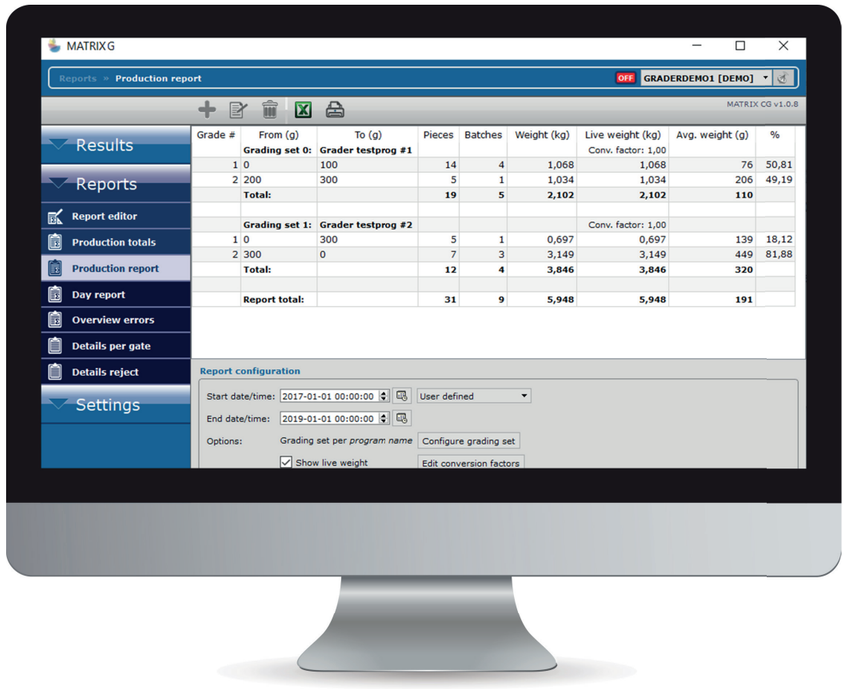
MATRIX G will register all data generated by the graders when sorting or batching products (weight of the product, delivered station, weight of each batch, etc.). It is of the utmost importance for processors to monitor these KPIs - for example, giveaway can be monitored so adjustments can be made on the fly, leading to cost improvement.

The software consists of two main parts:

- MATRIX G backoffice: This part of the software will make sure all data generated by the grader is stored on a database in the server.
- MATRIX G client version: This allows the production manager to monitor each recorded weight from an office PC. The throughput of the grader can be represented visually. The client version enables the creation of tailor-made reports. This part also allows the grader to be controlled remotely.

With the MATRIX G, it is also possible to design customized labels and control an optional label printer.





// DATA ACCESSIBLE THROUGH A STANDARD DATABASE

All the collected data is saved in an SQL-database, which is a commonly used database across the world. This offers easy access to the data for possible integration with third-party software.

// CLIENT VERSION

The client version enables the gathered data to be used to generate tailor-made reports.

// REMOTE CONTROL

With the MATRIX G, it is possible to connect to the grader with a computer. The module allows you to take over the screen of the grader. This also allows you to benefit from the best remote support from MARELEC.

// OPTIONAL LABEL PRINTING

With the MATRIX G, it is possible to design customized labels, and control a label printer to print labels to be attached to the batches. The labels will include a station number, so the operator knows which batch the label should be attached to.

// EVENT LOG

All steps during production are logged, for instance, when the machine starts/stops, running time and downtime.

MATRIX P

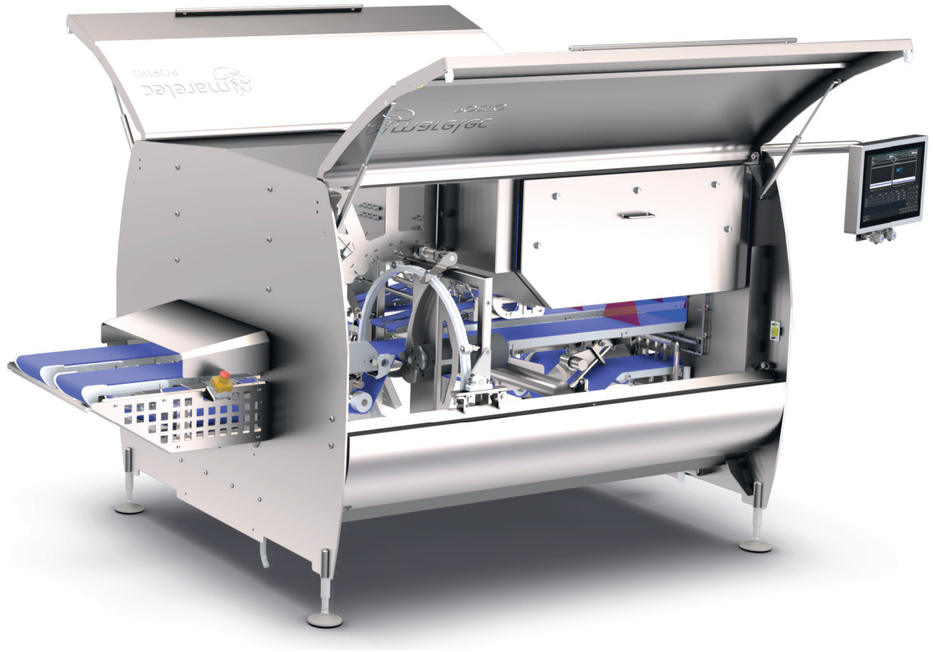
MATRIX P will register all data generated by the PORTIO while cutting (weight of the primal, weight of each cut, thickness of the cut,etc.)

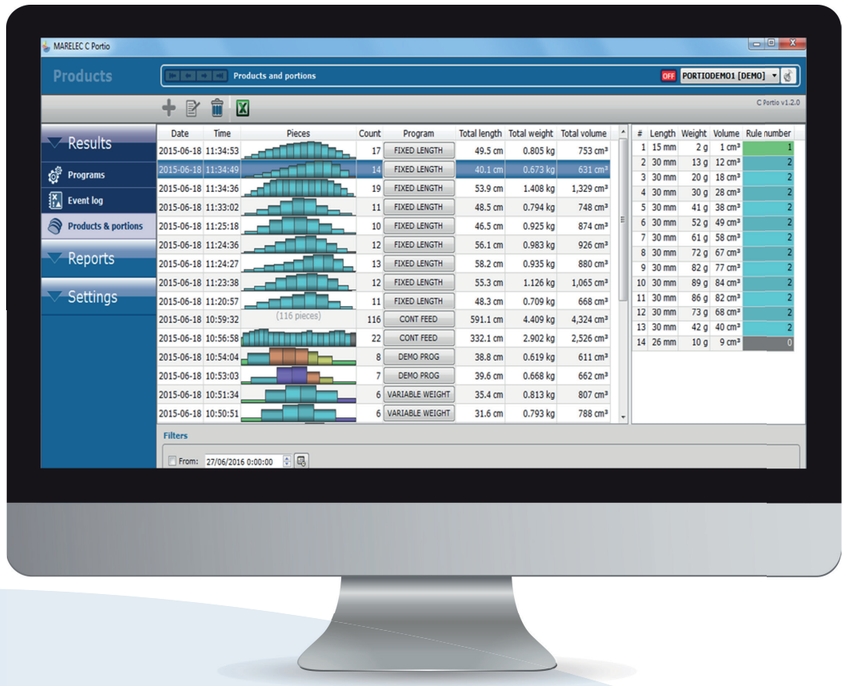
The software consists of two main parts:

- MATRIX P backoffice: This part of the software will make sure all generated data is stored in a database on the server.
- MATRIX P client version: This allows the production manager to monitor each recorded weight from an office PC. The products and portions are represented visually. The client version enables the creation of tailor-made reports. This part also allows the PORTIO to be controlled remotely.

The MATRIX P can also backtrack changes that were made in the cutting programs. The reporting module offers the possibility to create customized reports to show whether the changes had the desired effect.

The software is an enormously powerful tool for monitoring numbers and KPIs of your cutting operation.





// DATA ACCESSIBLE THROUGH A STANDARD DATABASE

All the collected data is saved in an SQL-database, which is a commonly used database across the world. This offers easy access to the data for possible integration with third-party software.

// CLIENT VERSION

The client version allows the gathered data to be used to generate tailor-made reports. The client version can also generate a visual representation of the cut products.

// REMOTE CONTROL

The MATRIX P makes it possible to connect to the portion cutter with the computer. The module allows you to take over the screen of the portion cutter. This also allows you to provide the best remote support from MARELEC.

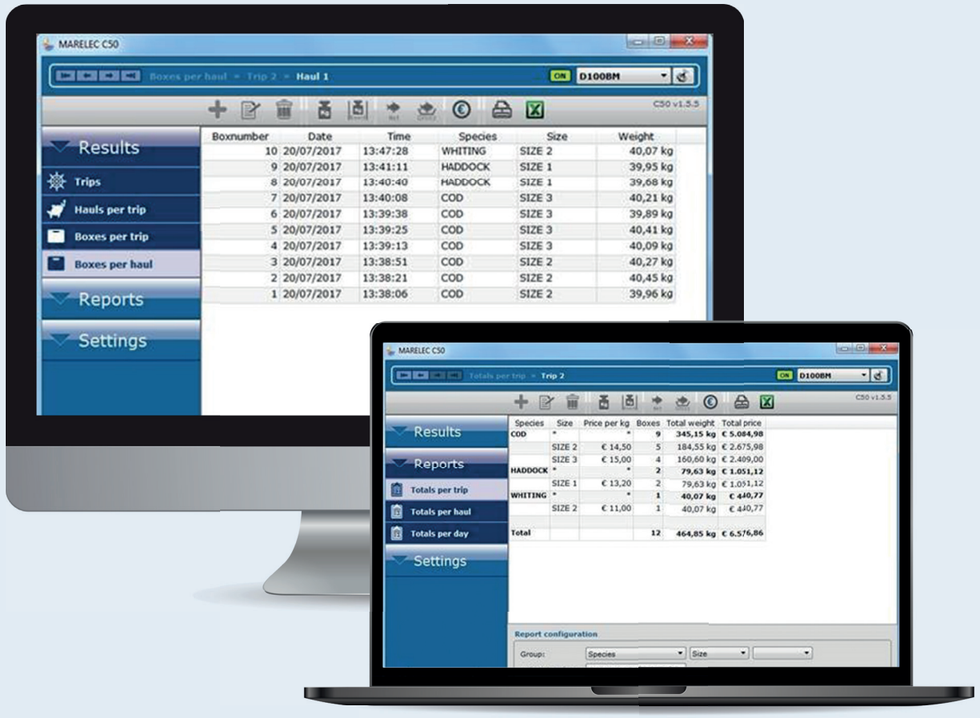
// EVENT LOG

All steps during production are logged, for instance, when the machine starts/stops, running time and any downtime.

Marine

// MATRIX C50

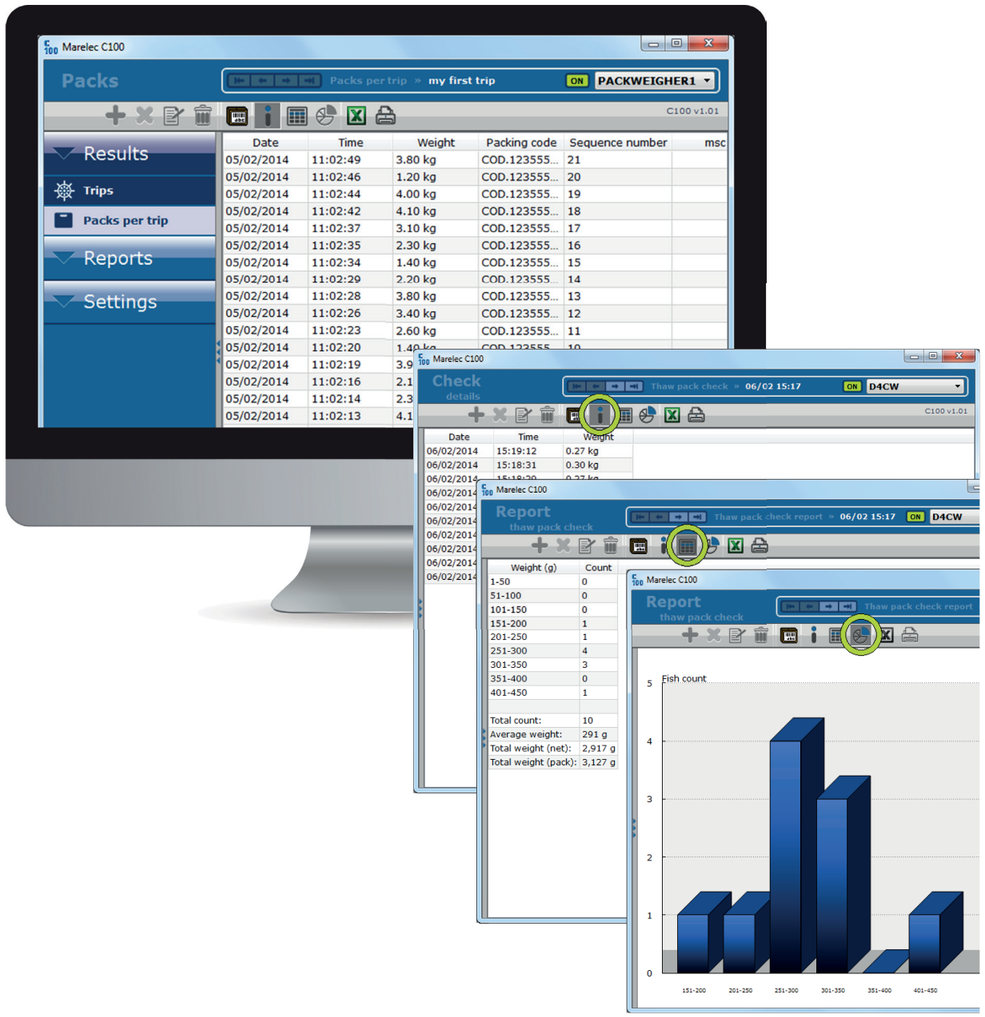
The MATRIX C50 is used to monitor catch results from fishing. Its data comes from MARELEC D100 scales, which are used to weigh boxes of fish. MATRIX C50 can also create reports, such as the totals per species and size on a certain trip or day. These reports can be connected to spreadsheet and ‘electronic log book’ software.



// MATRIX C100

The MATRIX C100 software is primarily used to monitor catch results from factory trawlers. Its data comes from MARELEC pack weighers. Each weighed pack on the pack weigher is assigned a packing code, which has a certain customizable format. A list of valid packing codes to be used during a trip can be created using the MATRIX C100 software. The active packing code can then be selected in the software or directly on the pack weigher. If any packing codes were forgotten, they can also be created manually on the pack weigher.

Additionally, MATRIX C100 software can be used in combination with MARELEC check weighers to perform thaw pack checks. In this check, a pack is weighed thawed, and then each individual fish from the pack is weighed. The data from the performed check can be viewed in MATRIX C100. The software can also create reports, such as the total pack count and weight per packing code, for a specified trip or day. These reports can be displayed, printed or exported to spreadsheet-software.



MARELEC Food Technologies
Redanweg 15 - 8620 Nieuwpoort - Belgium - T +32 58 222 111 - sales@marelec.com