QUATRO MATIC

QuatroPBC

AI-based control system for pavement brick production

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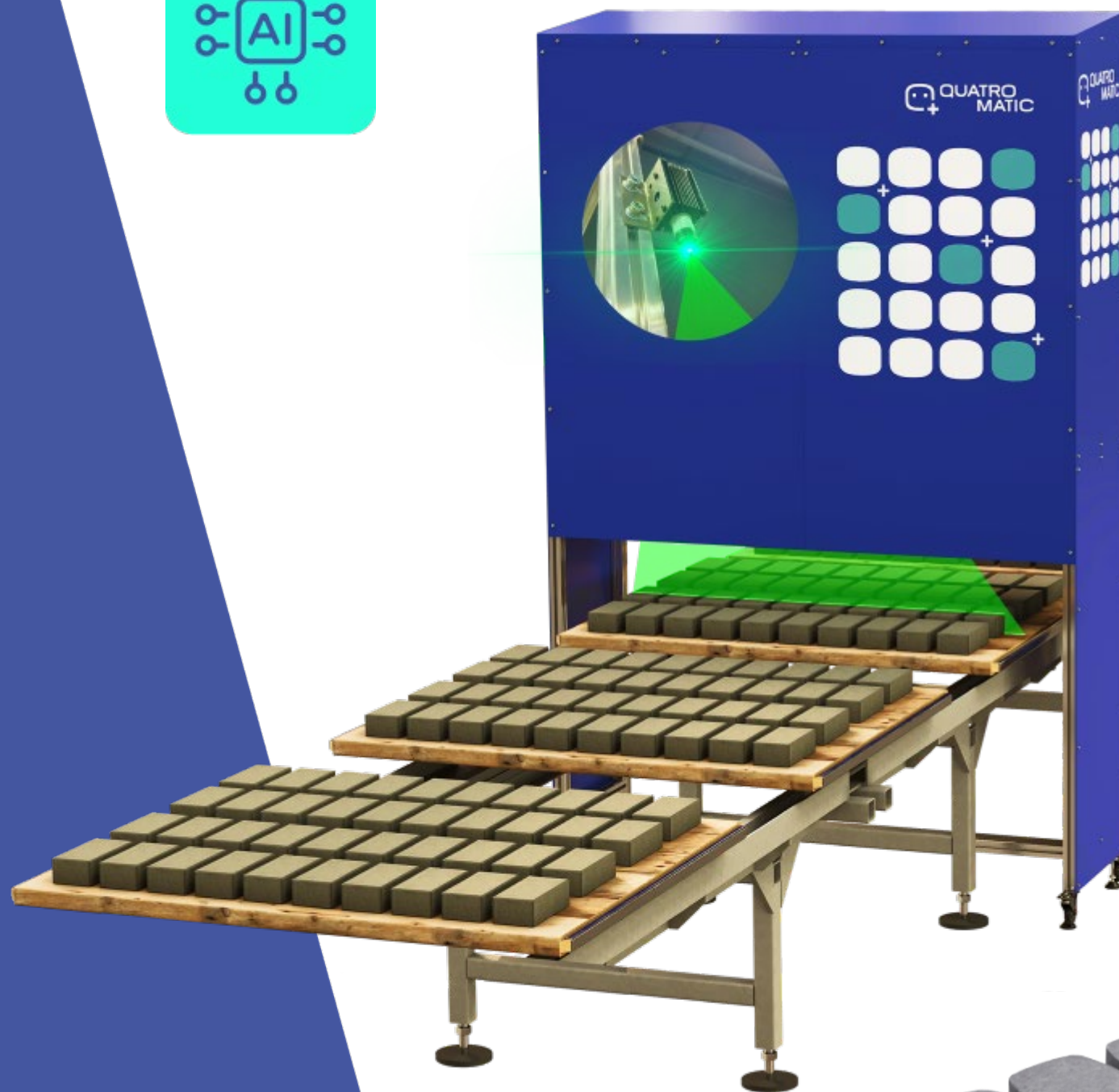
Industry now

+ Impossible to setup equipment once and for all

+ Strong influence of **human factor** on the production process

+ No tools available for continuous **automated** production **control** and data tracking

+ Low level of adoption of **Industry 4.0*** technologies

* A new approach to production based on the mass introduction of information technology into industry, automation of business processes and the spread of artificial intelligence

QuatroPBC

Automatic quality control system for paving tile production based on artificial intelligence

It can be installed in the **existing production** without stopping the production process

Works with the conveyor line of **any manufacturer**, without modifications to the equipment

Functions in production:

+ Reduces production losses

+ Improves overall product quality

+ New level of automation and control of the production process

How does **QuatroPBC** work?

1. **QuatroPBC** is installed on the wet side after the vibropress and before the curing chamber without interfering with the production process

2. Laser scans and photographs the board with the product, detecting height deviations and defects of the face layer: cracks, pits, stains, inclusions

3. Displays a real-time photo of the board on the operator's screen, highlighting with a colored border the different types of deviations for each item, allowing the operator to prevent the production of faulty products

4. Saves and accounts for all pallets produced for further batch analysis
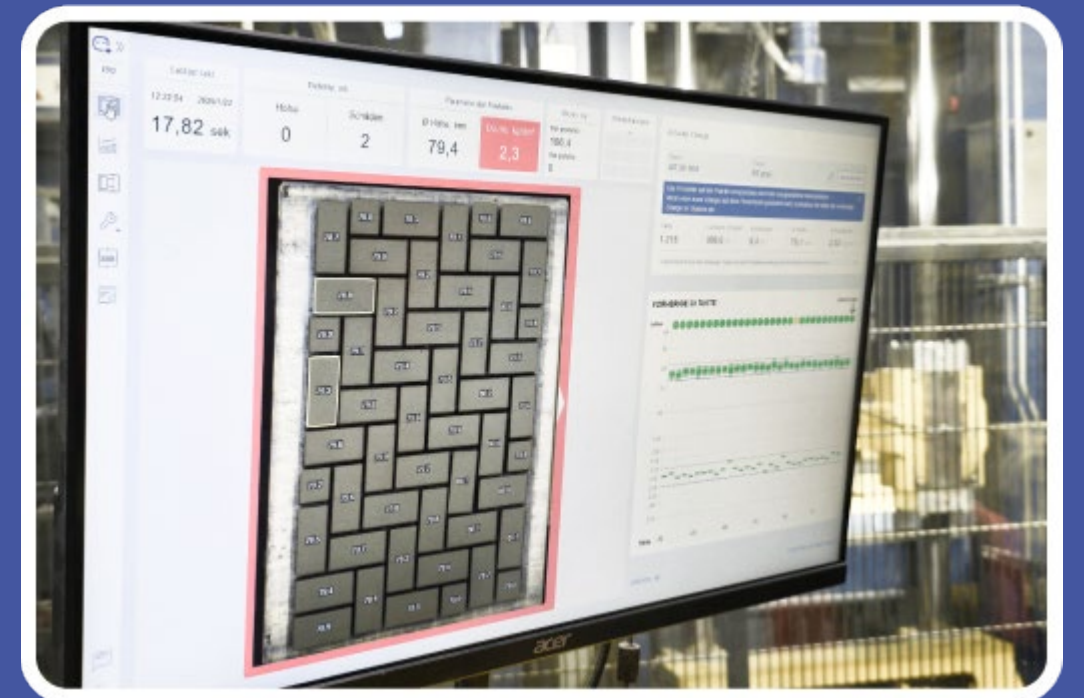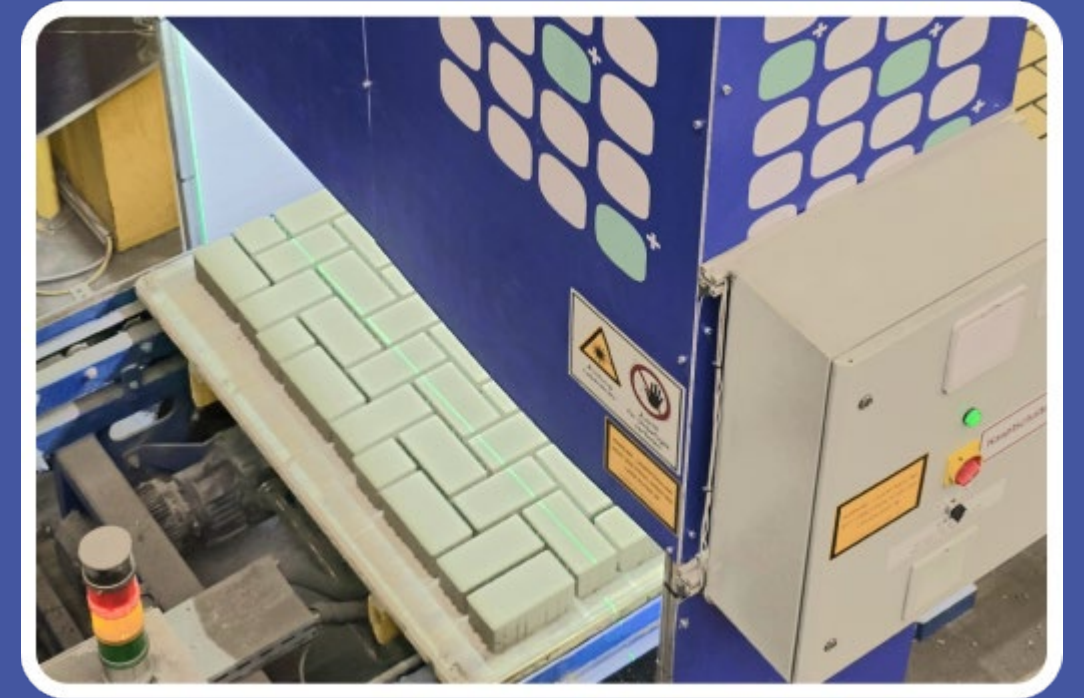
QuatroPBC Key Features

+ Measurement of product height and density

+ Detection of defects in the face surface

+ Classification of paving tile colors

+ Collection and analysis of production statistics

+ Active feedback to the factory

+ Remote monitoring **24/7** from anywhere in the world
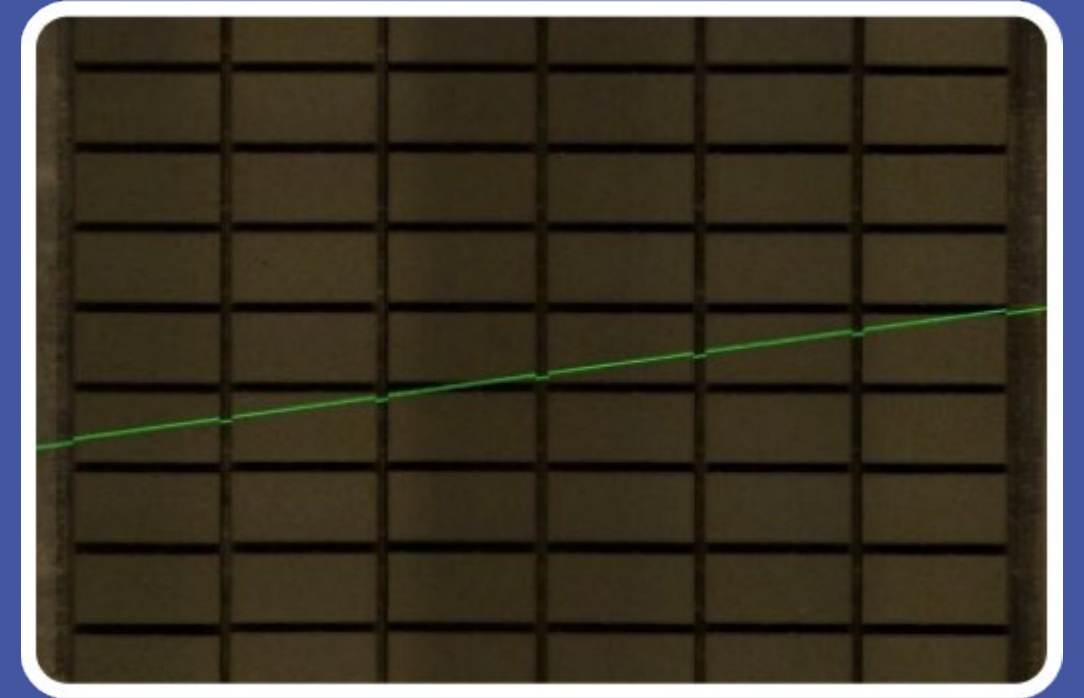
Thorough inspection of each tile

Height measurement

Using a high-precision laser, **QuatroPBC** measures the height of all products on the board with an accuracy of **0.5 mm**

This precision allows you to control the average height of the items and produce at the lowest permissible height, which significantly reduces raw material costs
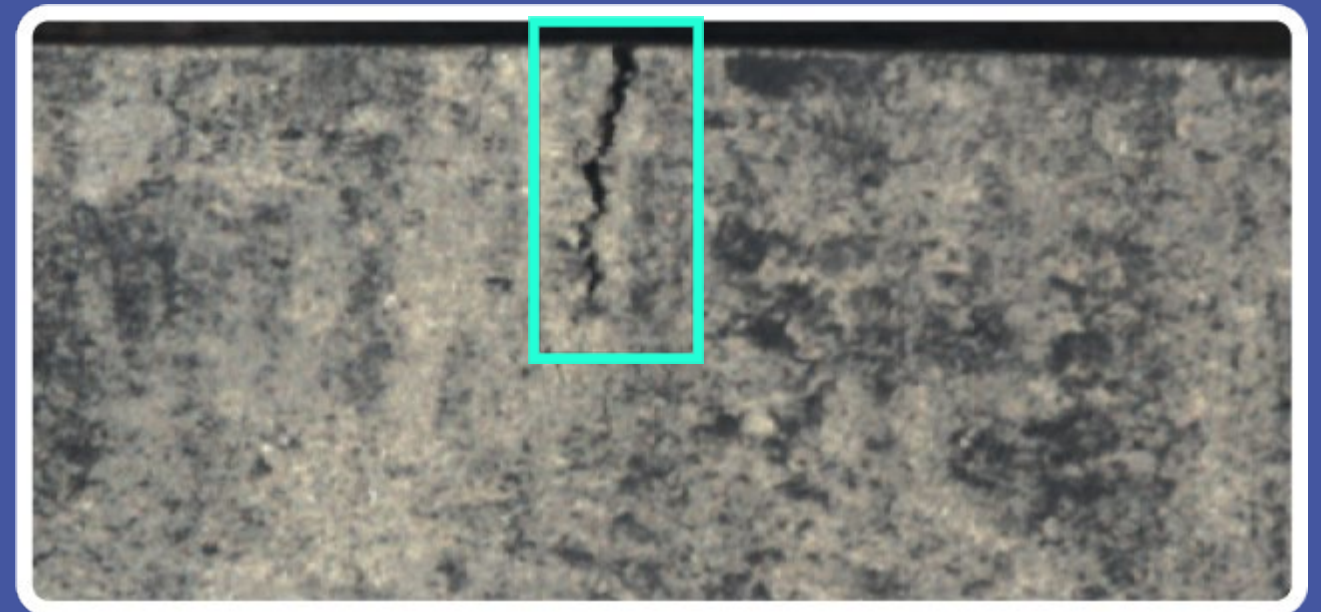
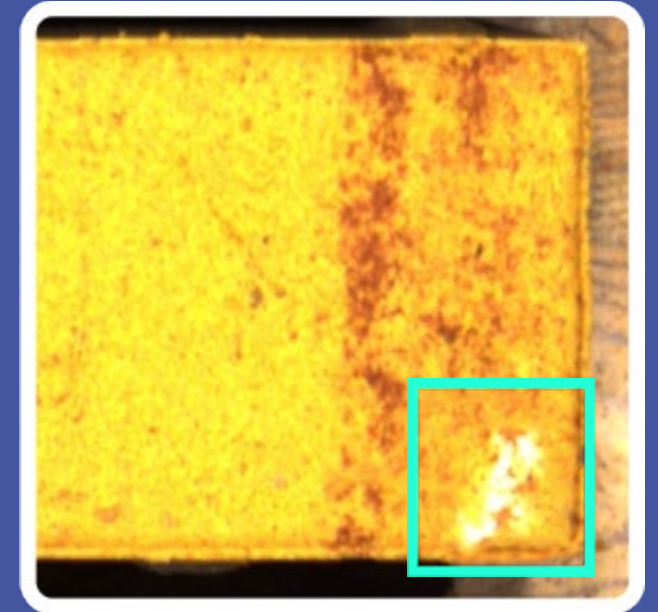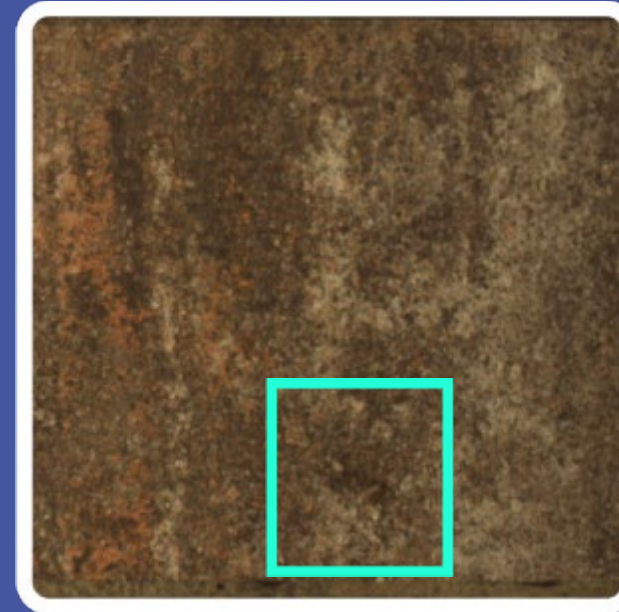**Savings on raw materials** **3-5%**

Defect detection

QuatroPBC recognizes **95%** of defects in the face surface of products, such as:

+ Stains
+ Cracks
+ Pits
+ Inclusions

Detected defects are displayed in the operator interface in real time

Timely detection of defects reduces the share of defective products **by 50%**
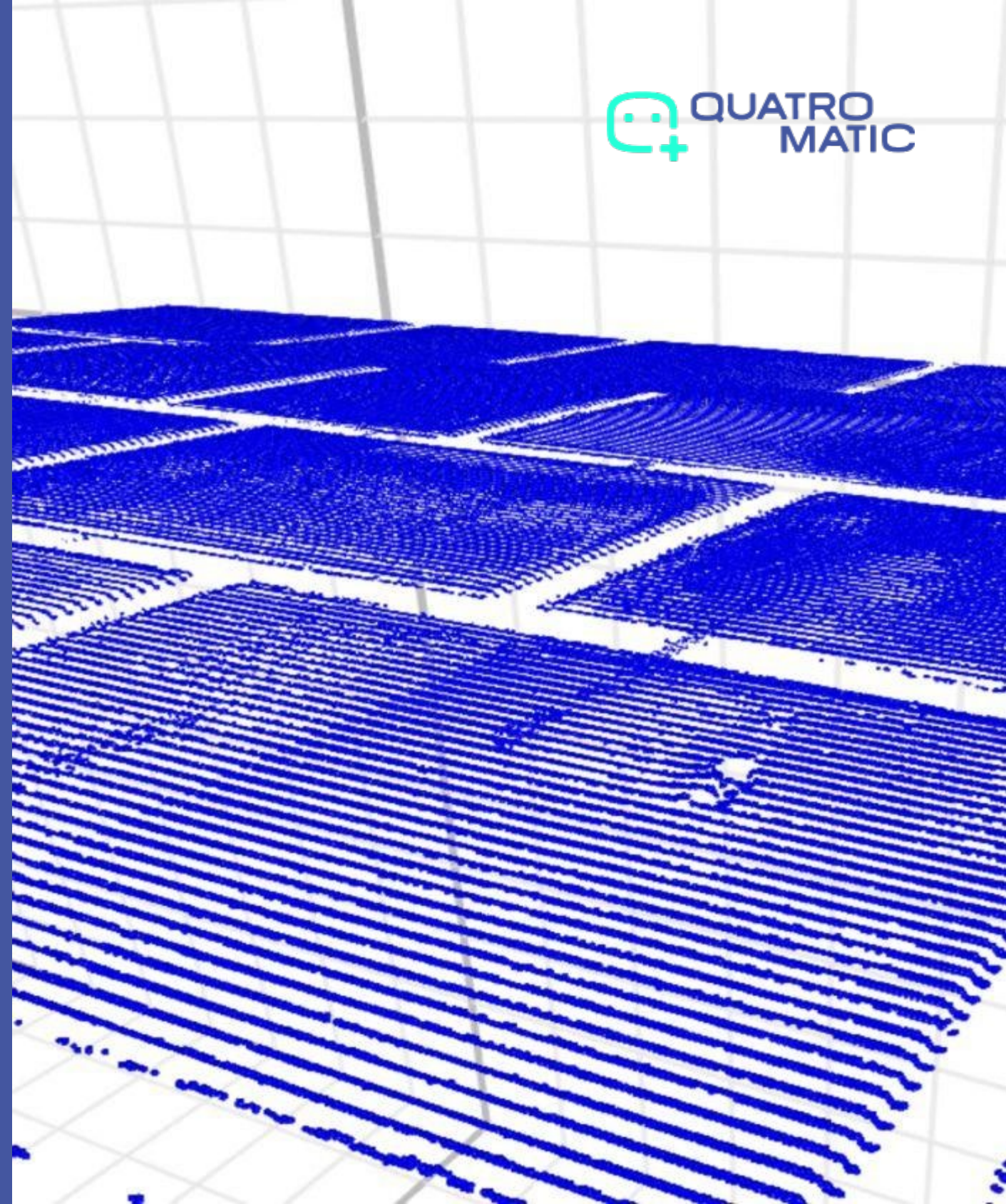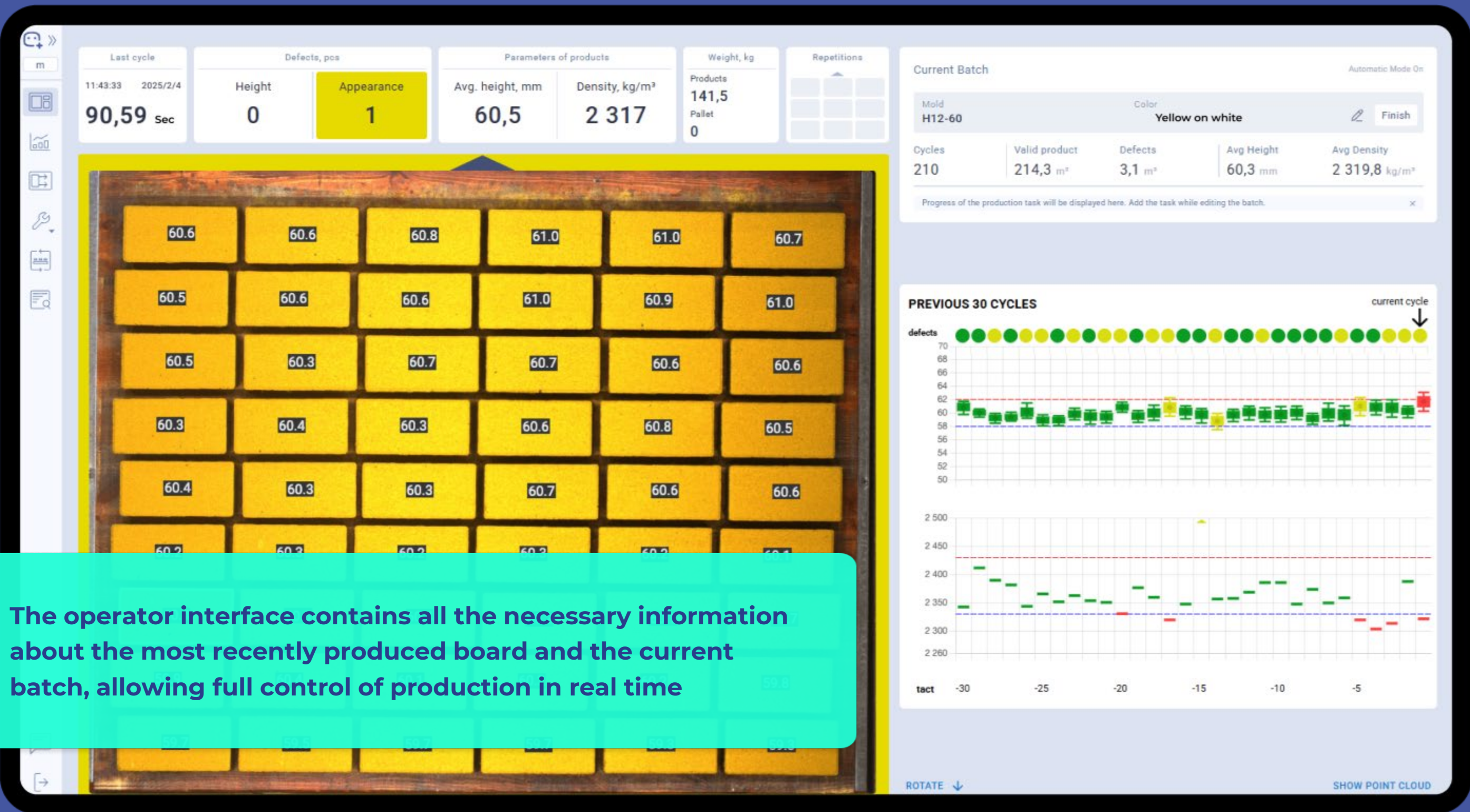
Density calculation

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1. QuatroPBC measures the height of huge
amount of points on each tile

2. Calculates the volume of each tile and
all products on the board with high accuracy

3. Determines the exact density by dividing
the mass by the resulting volume
(scales must be installed on the conveyor)

The operator interface contains all the necessary information about the most recently produced board and the current batch, allowing full control of production in real time
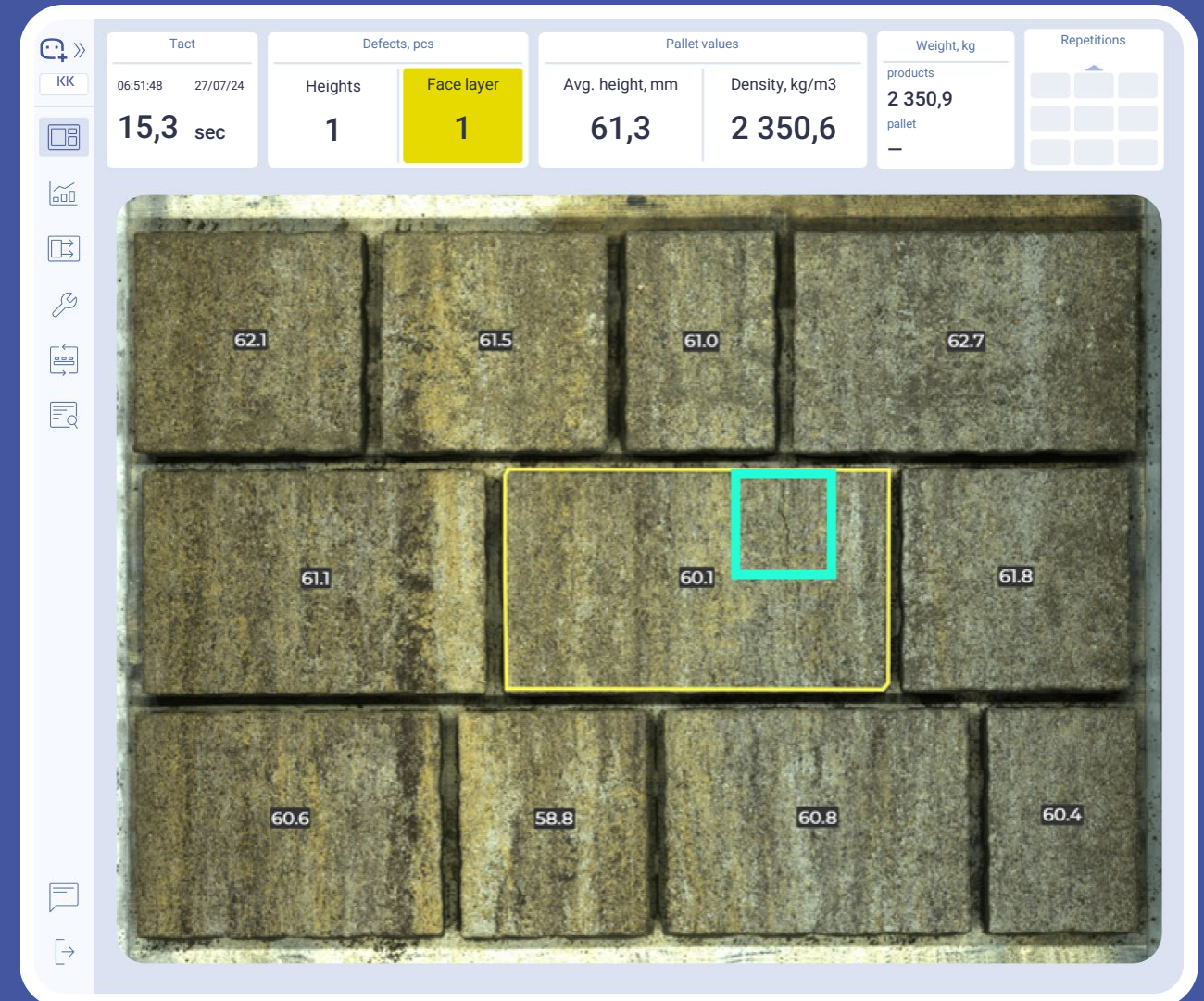
Active feedback to the factory

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Wet side

+ Signal to the operator interface when problems are detected: face layer defects, height and density deviations, recurring defects

+ Reporting recurring molding problems to the chatbot

+ Sending a signal to the conveyor controller to stop the conveyor and prevent the production of defective products

100% Reducing the impact of the human factor

Active feedback to the factory

Dry side

+ Possibility to stop the conveyor when a defective product comes out

+ Hint to the sorterman indicating the item needs to be replaced

+ Predicting the time after which the pallet with the defective product will be released

+ Possibility to transmit the coordinates of the defective product to the sorting robot

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Production statistics

+ Automatic accounting for all batches produced with comprehensive information on each batch

+ Filtering the entire batch history by operator, mold, color

+ Photo archive of each batch containing all detected defects with the possibility of filtering by any parameter

+ Display of all idle times in the batch

100% Accuracy in production indicators
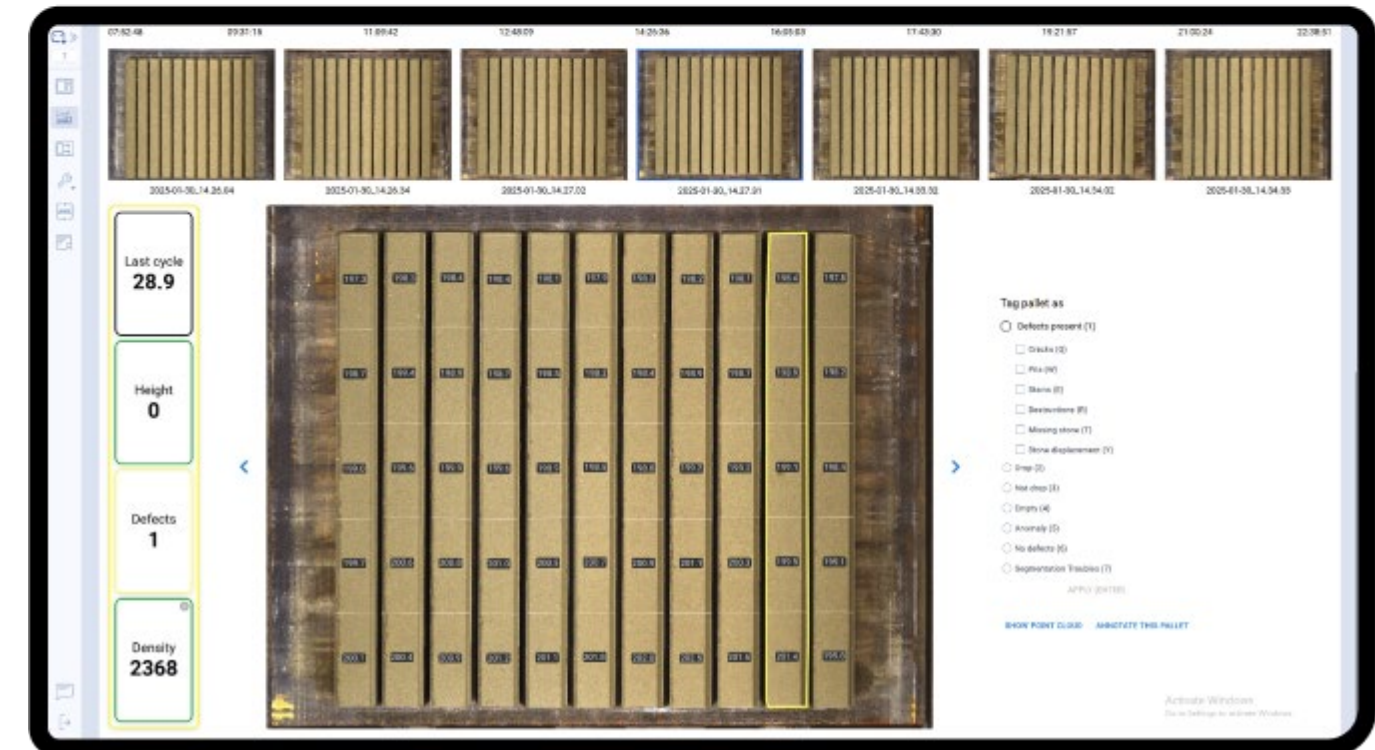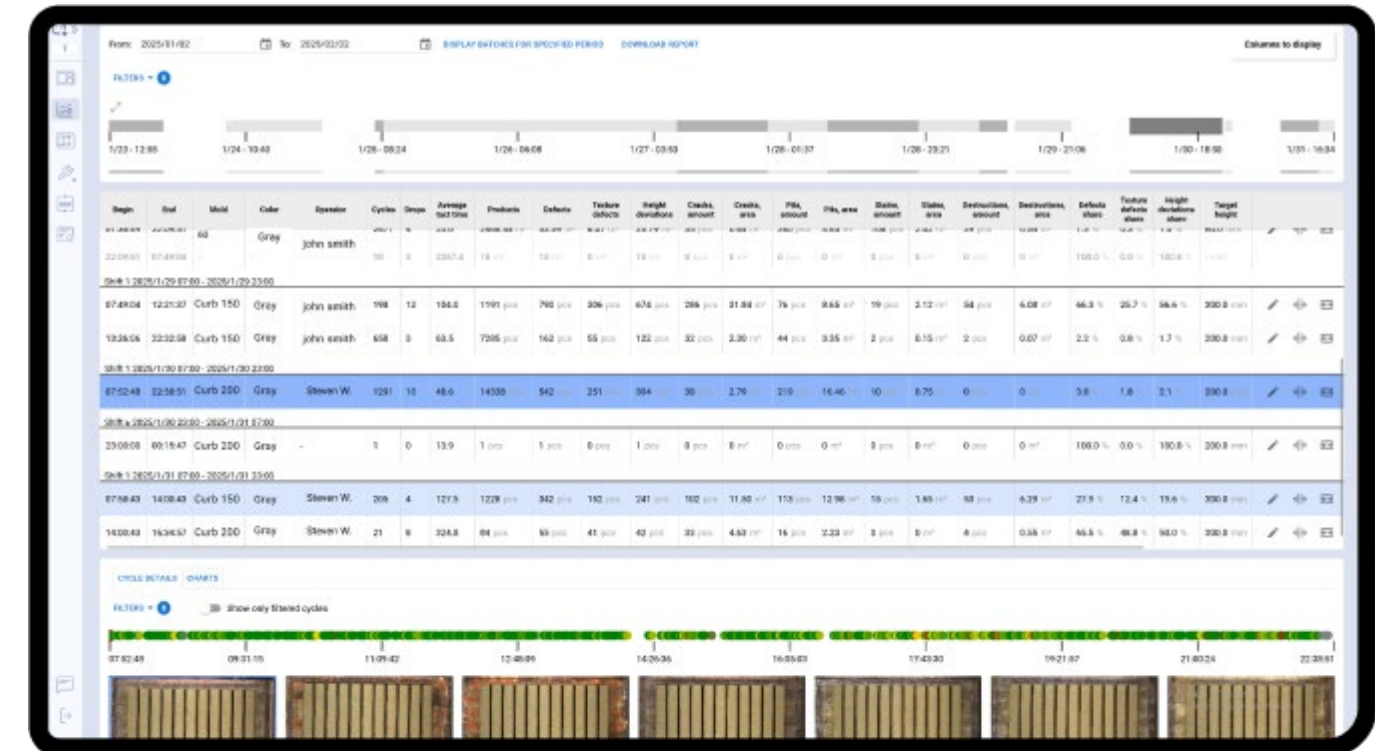
QuatroPBC reduces production costs

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Reduction of losses from production of defective products	by 80%	QuatroPBC detects face layer defects on the wet side in **95% of cases**
Material savings	3-5%	QuatroPBC measures the height of all products with an accuracy of 0.5 mm, can be molded to the **lower tolerance limit**
Reduction of overproduction	by 80%	QuatroPBC detects deviations and **alerts the operator in real time**, so that the required number of mixes can be predicted more accurately
Automatic collection of production statistics and report generation	by 100%	QuatroPBC classifies **colors and molds**, and automatically keeps track of products by batch

Contacts

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Video that
makes it all clear