

BIOMETIC

Making the invisible visible

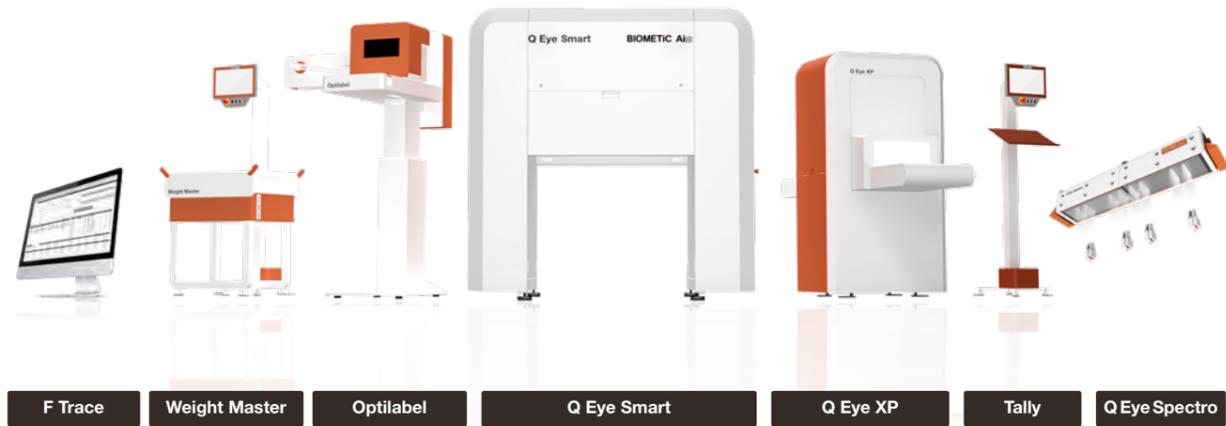
Innovative Fruit Scanning Solutions





Make your Sorting Process Smart

Your Partner for Grading, Sorting, Dynamic Production Control,
and Process Optimization for the Fruit and Vegetable Processing Industry



FRUIT LOGISTICA
**INNOVATION
AWARD '23
NOMINEE**



NEW Q EYE SMART

The only optical sorting scanner for
the fruit and vegetable industry fully
based on artificial intelligence

BIOMETiC Ai



ORIGINS

Who we are

BIOMETiC emerges in 2012 as spin-off from **MiCROTEC**, the world's leading provider of measurement systems and development of automated processes for the wood industry.

With **over 40 years of expertise** in real-time biometric scanning and high-speed process optimization, BIOMETiC is the reliable provider of innovative solutions for the automation and optimization of production processes in the fruit and vegetable industry to **increase the added value of your end produce**.

Our main goal is to ensure **your success and satisfaction** so that you can guarantee **top-quality produce** to your international customers.

PRODUCTS AND SERVICES

What we do

BIOMETiC **innovative and customizable solutions and systems** can be adapted to the fruit and vegetable industry's various quality and sorting needs to ensure **consistent quality of the distributed products** and **efficiency of the production lines**: From apples and oranges to exotic fruits such as avocados and pomegranates.

The new **BIOMETiC Q Eye Smart** is the only optical sorting scanner fully based on artificial intelligence (**BIOMETiC Ai**). This innovative, unique technology guarantees you as a producer a **high-precise, efficient, and sustainable sorting process for top-quality produce**. This, while reducing your production costs and waste.

With our **Customer Support Team**, we guarantee you and your company comprehensive technical support. Our team is **available 24/7, 365 days** a year, ready to assist you anytime, anywhere.





COMPANY

Corporate Identity

VISION

- ✓ We are the **global trusted partner** providing the most **innovative scanning**, support, and business solutions to all of our customers, powered by a **passionate team** dedicated to the **evolution** of our industries.

MISSION

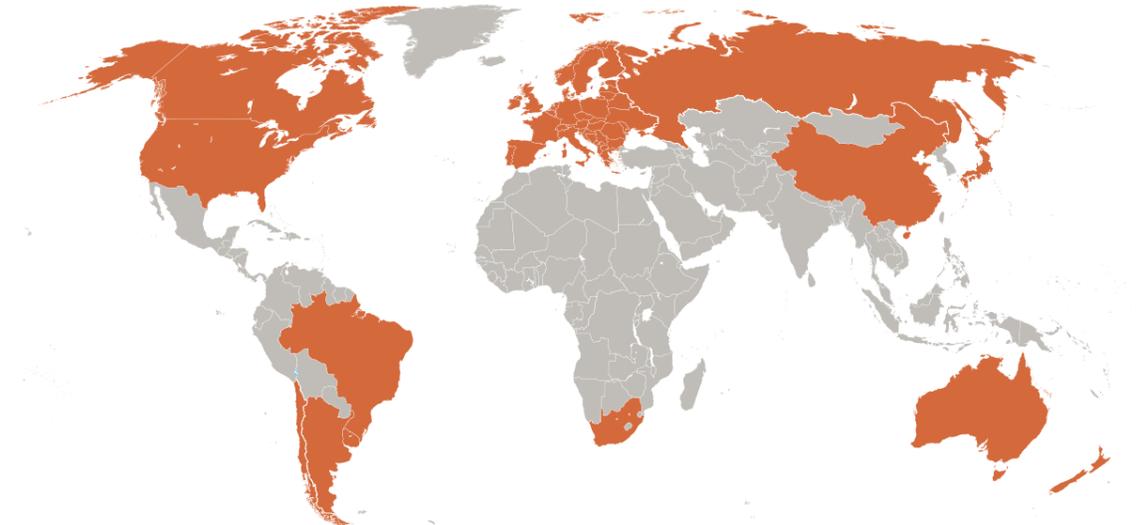
- ✓ We partner with our **customers** to continually enhance their business.
- ✓ We continuously invest in **development** of people, technology, services, and support to earn and keep the **trust of the customer** by providing excellent solutions.
- ✓ We have **passion**, we believe in what we do, and we share the **common goal** to deliver great results.
- ✓ We create **success** and **accomplishments** among our customers, our employees and our company, providing long term growth, profitability and development.

CORE VALUES

- ✓ We are dedicated to our customers; **Their success** is the **foundation** of our **success**.
- ✓ **Innovation** keeps us on the forefront of technology and in the lead of our industry.
- ✓ **Integrity** builds mutual trust among customers, employees and other business partners.
- ✓ **Respect** for one another is the basis of successful relationships. Through **collaboration** we achieve more.
- ✓ We are **reliable** and **dependable**; **we deliver what we promise**.
- ✓ Our **passion for excellence** is the engine that drives us forward, keeping us a step ahead

COMPANY

Worldwide References



EXTERNAL QUALITY

Q Eye Smart

Q Eye Smart scans, grades and classifies your produce for an optimized sorting

Q Eye Smart is the only scanner entirely based on artificial intelligence (BIOMETIC Ai). Its innovative technology **substantially upgrades the entire sorting process.**

When integrated into the production line, Q Eye Smart inspects your fruits and vegetables with extremely **high precision** and **repeatability**, assuring **top-quality produce** and a general **reduction of production costs and waste.**

Q Eye Smart relies on **BIOMETIC Ai platform** and **advanced image processing** specially designed to deliver **superior performance** by analyzing and processing quality data about fruits.



Q Eye Smart's **user-friendly software interface** allows the producer to **freely decide the customized produce quality parameters** and get detailed statistical and quality reports.

Q EYE SMART

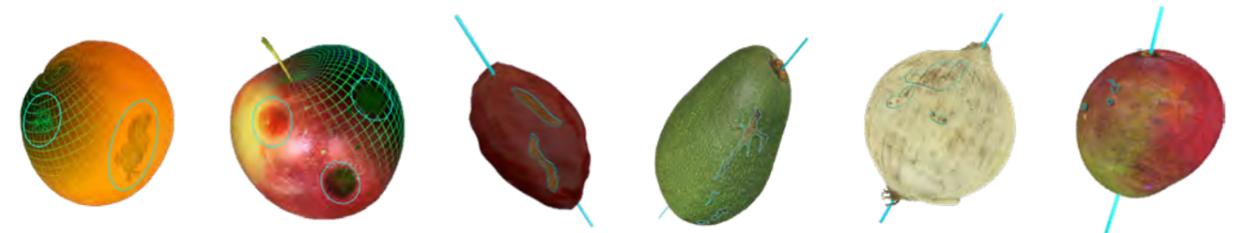
The Only Quality Scanner entirely based on Artificial Intelligence

Q Eye Smart: Customer Benefits

- ✓ Detection of quality factors, including external defects, shape, color, and weight
- ✓ Continuous identification of complex fruit characteristics and defects
- ✓ Creation of personalized quality classes with customized sorting
- ✓ Significant reduction of production costs and waste
- ✓ Sustainable production through reclamation and reuse of produce containing unacceptable defect levels for the international market

Q Eye Smart: Features

- ✓ Extensive and constantly updated BIOMETIC Ai Platform, customizable for fruit and vegetable type, variety and defect
- ✓ Multi-Sensor Quality Scanner with in-house developed HD cameras
- ✓ Smart engineering, advanced electronic sensors, and ultra-high-speed image processing
- ✓ Uses Tally Fruit Sorter to automate the sorting process
- ✓ Surface mapping at 360 degrees
- ✓ Active rotation control



Technical features

Versions	500 mm rotation for smaller fruits, e.g. apples, dates, onions, ... 800 mm rotation for bigger fruits, e.g. mangoes, pomelos, avocados, ...
Resolution	0.1 mm/pixel
Cameras	In-house developed Crometic Cameras with ultra-high-speed acquired full HD images
Lighting	Multispectral LED, UV

Q EYE SMART

BIOMETiC Ai

The latest BIOMETiC Ai platform is integrated into Q Eye Smart, assuring an optimized and customized sorting that is **flexible**, continuously **up-to-date** and **time-responsive** to any market needs.

Some application examples

- | | |
|----------------|----------------|
| ✓ Apples | ✓ Onions |
| ✓ Citrus | ✓ Dates |
| ✓ Avocados | ✓ Stone fruits |
| ✓ Pomegranates | ✓ Pears |
| ✓ Mangos | ✓ ... |

Technology advantages

- Precise location and labeling of difficult-to-detect fruit and vegetable defects
- Customized quality parameters for each fruit and vegetable variety
- Continuous improvement of fruit quality detection by adding new features
- Easy and quick addition of new fruit and vegetable varieties

CROMETiC Digital Camera

Q Eye Smart technology is combined with the Q Eye CROMETiC cameras designed and developed in-house. Moreover, through BIOMETiC's 3D rotation control software, the analysis is carried out by making sure that each fruit or vegetable rotates 360° and **every part is scanned, including the calyx and stem areas.**



INTERNAL QUALITY

Q Eye Spectro

BIOMETiC's newly released in-line Q Eye Spectro enables **non-destructive evaluation** of fruits' and vegetables' **internal quality with high accuracy.**



Q Eye Spectro: Customer Benefits

- ✓ Real-time detection of complex internal quality factors through non-destructive method
- ✓ Creation of personalized quality classes with customized sorting
- ✓ Significant reduction of production costs and waste
- ✓ Sustainable production through reclamation (and reuse) of produce containing unacceptable defect levels for the international market

Q Eye Spectro: Features

- ✓ Extensive and constantly updated BIOMETiC Ai Platform, customizable for fruit and vegetable type, variety and defect
- ✓ Smart engineering, advanced electronic sensors, and ultra-high-speed image processing
- ✓ Relies on advanced transmittance and reflection technologies
- ✓ Fast and accurate calibration
- ✓ Low production maintenance effort

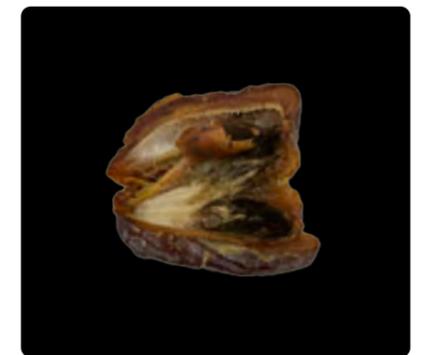
SOME APPLICATION EXAMPLES



- ✓ Internal Rot
- ✓ Internal Browning
- ✓ ...



- ✓ Dry Matter Content
- ✓ ...

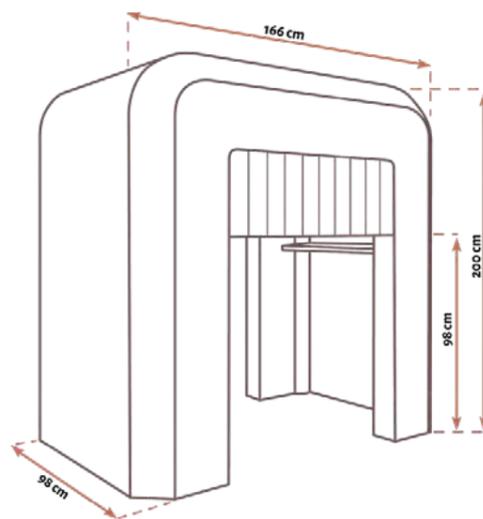


- ✓ Aspergillus
- ✓ Humidity Level
- ✓ ...

Q EYE SMART

Quality Detection

Q Eye Smart classifies the single product taking into account the different characteristics of each fruit found after scanning. This, in order to classify the fruit to be in a certain **quality-range** and assign it to the appropriate **quality class**.

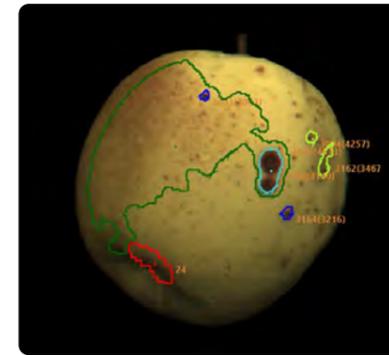


Q EYE SMART

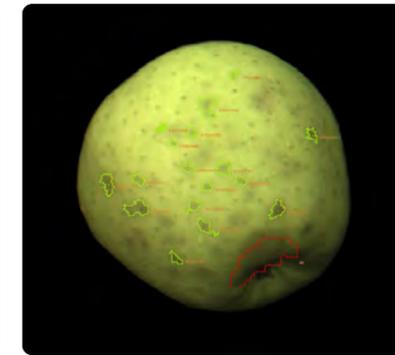
Scanning Results

SOME APPLICATION EXAMPLES

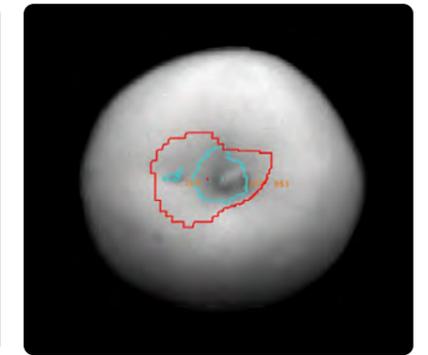
Apples



- ✓ Hail damage
- ✓ Finger pressure
- ✓ Leaf detection



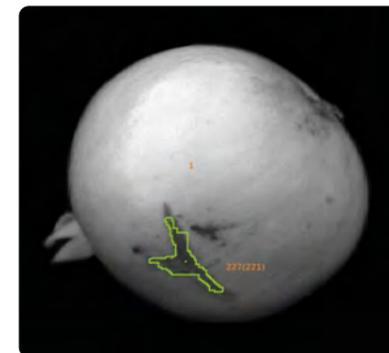
- ✓ Rot at calyx and stalk
- ✓ Scab
- ✓ Stalk damage



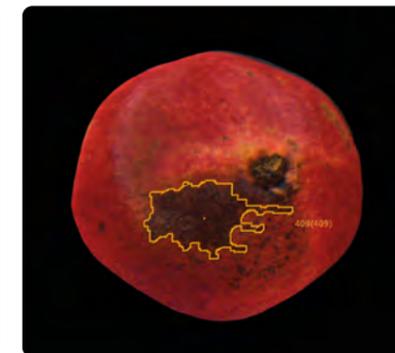
- ✓ Cut in the stem cavity
- ✓ Stalk absence
- ✓ ...

SOME APPLICATION EXAMPLES

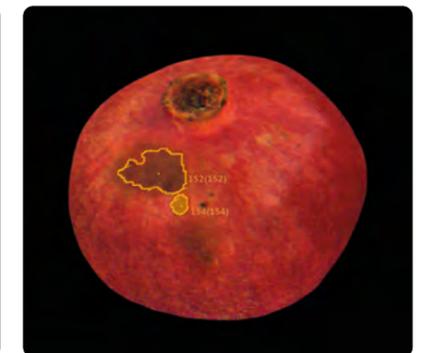
Pomegranates



- ✓ Dark and black spots
- ✓ Color variations
- ✓ Russet and rubbing



- ✓ Cracks
- ✓ Sunburn
- ✓ Stalk corking



- ✓ External rot
- ✓ Dark and black spots
- ✓ ...

Scanning Results

SOME APPLICATION EXAMPLES

Onions



- ✓ Sprout
- ✓ Mechanical damages
- ✓ Misshaped
- ✓ Internal browning

- ✓ Rotten parts
- ✓ Single and multiple cracks
- ✓ Root disease

- ✓ Stained
- ✓ Half or fully skinned
- ✓ Internal rot
- ✓ ...

SOME APPLICATION EXAMPLES

Dates



- ✓ Shape
- ✓ Weight

- ✓ Yellow ring
- ✓ Loose skin
- ✓ Sour

- ✓ Humidity
- ✓ Aspergillus
- ✓ ...

Scanning Results

SOME APPLICATION EXAMPLES

Citrus



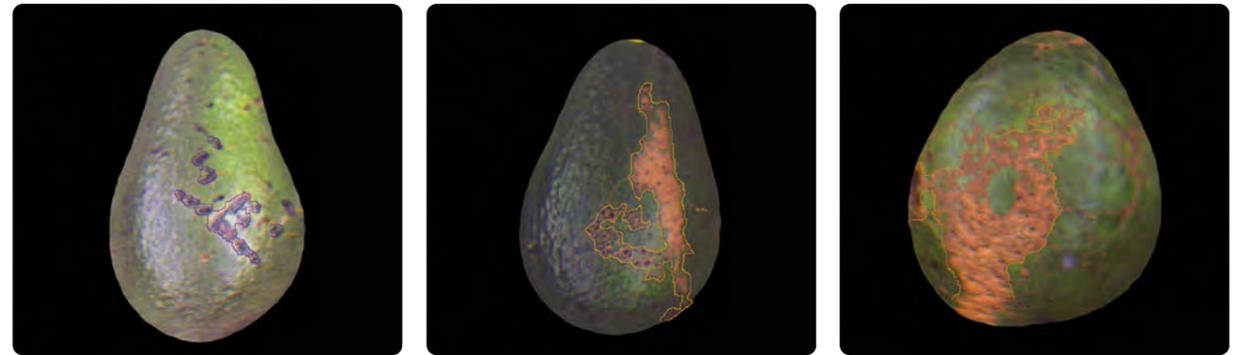
- ✓ Rot
- ✓ Punctures
- ✓ Frost and storm damages
- ✓ Rust
- ✓ Silver scurf

- ✓ Green, black and red dots
- ✓ Sunburn
- ✓ Skin cracks
- ✓ Calyx cut
- ✓ Torn-stem

- ✓ Scale insect damage
- ✓ Alternaria
- ✓ Skin texture (smooth or rough)
- ✓ Rings
- ✓ ...

SOME APPLICATION EXAMPLES

Avocados



- ✓ Sunburn (yellow, red and black)
- ✓ Corkiness
- ✓ Wound
- ✓ Rubbing (black and brown)

- ✓ Cheek (black and red)
- ✓ Damaged skin
- ✓ Scale
- ✓ Mold

- ✓ Moth
- ✓ Ground contact
- ✓ Yellow fruit
- ✓ Dry Matter content
- ✓ ...

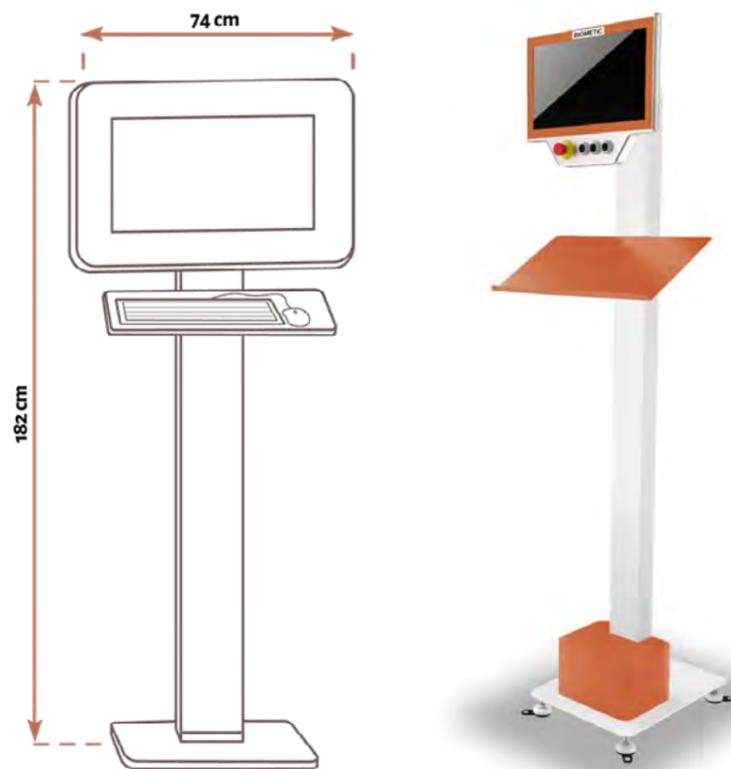


DYNAMIC SORTING OPTIMIZER

Tally

Tally is the solution that **controls** and **automates** your grading and sorting line.

Its **software centralizes** and **evaluates** all the information of your fruits and vegetables (*weight, size, volume, shape, and quality*), so you can have a continuous optimization of quality, weight, and quantity as well as immediate savings.



We have developed Tally, a **fruit and vegetable sorting optimizer** that guarantees **quality, weight, and target quantity** of fresh fruit and vegetables. A single solution to enter and manage orders and control, as well as automate your sorting line.

Tally allows dynamic allocation of exits and management of orders as they are entered into the system. It works on any sorting machine, manages production in real-time as needed, and centralizes each product's information. This way, product quality is automatically established.

TALLY

A Single Solution for Dynamic Selection Optimization

Tally: Customer Benefits

- ✓ Complete process control with management of several sorting lines selection, exits, and packaging tables
- ✓ Processing and synchronization of incoming order data
- ✓ Automatic quality assignment to the packages with the determination of weight and quantity
- ✓ Secure automation and time control of processes
- ✓ Easy integration with all major input/output systems and devices

Tally: Features

- ✓ 100% control of your sorting process
- ✓ Data elaboration and synchronization with incoming orders
- ✓ Dynamic box assignment with target quality, weight, and quantity
- ✓ Safe process automation and time control with BIOMETiC time-triggered technology
- ✓ Extensive interfaces with all major systems in input/output devices

Technical features

Selection speed	up to 40 fruits/sec
Ejectors piloting	24 V o 48 V
Number of ejectors	up to 512 per control unit
Weight acquisition	DAC 20 bit, 1 kHz, with conditioner for load cells with 4 or 6 wires
Number of lines	flexible

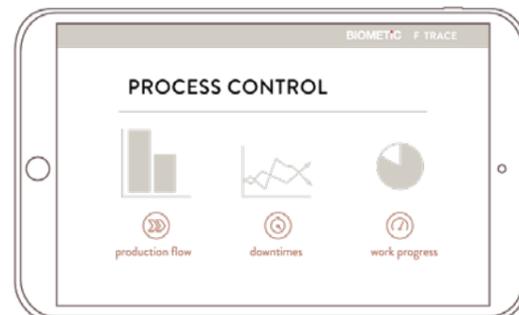
FOOD TRACEABILITY SOFTWARE

F Trace

Traceability, process control, and warehouse management

We have developed F Trace to **improve production processes** and ensure maximum traceability, quality, and safety of products.

F Trace is a single solution that can be integrated into all production lines, guaranteeing **complete traceability of your produce**. It optimizes processes, providing real-time data of the different production phases, processing times, and shipment of your products.



F-TRACE

Complete Traceability, from Fresh Produce to Distribution

F Trace: Customer Benefits

- ✓ Increased product safety. You know exactly where your produce comes from
- ✓ Adaptable to your products and needs
- ✓ Ensures significant savings
- ✓ Protects brand reputation
- ✓ Optimizes your production processes
- ✓ Simple and intuitive to use
- ✓ Can be used in any production process
- ✓ Tracks products with high accuracy
- ✓ Flexible, can be used in any production process

F Trace: Features

- ✓ Ensures a complete overview of your food products at all stages of production
- ✓ Guarantees complete traceability from harvesting to distribution
- ✓ Interacts with all machines and technologies, from the beginning to the end of your line
- ✓ Monitors, evaluates, and optimizes in real-time the processes in your line
- ✓ Has an intuitive online interface with sorting machines and ERP solutions
- ✓ Is flexible and customizable and can also be integrated into lines with non-BIOMETIC solutions

Technical features

F Trace is a **modular system for traceability and optimization of the production process**.

The various modules are tailored to the customer and cover the following **process areas**:

- ✓ Complete Traceability
- ✓ Incoming products / Delivery
- ✓ Calibration / Selection
- ✓ Warehouse and stock management
- ✓ Optimization and production statistics
- ✓ Packing and Packaging
- ✓ Weighting / Labeling
- ✓ Palletizing
- ✓ Quality control of outgoing goods
- ✓ Shipping / Outgoing products

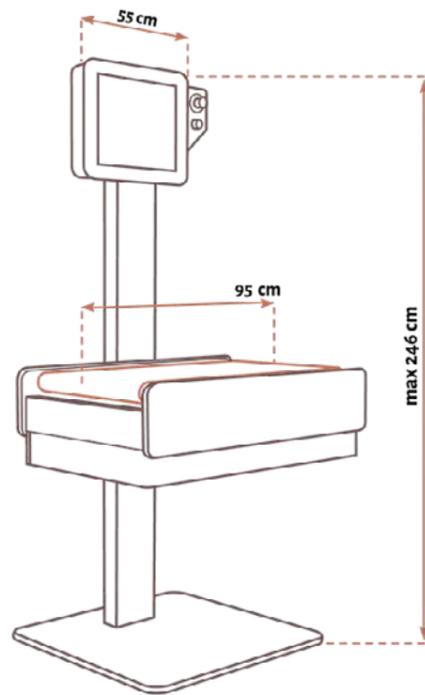


DYNAMIC HIGH-PRECISION CHECKWEIGHER

Weight Master

The in-line checkweigher for fruit and vegetable boxes

Weight Master is the **automatic checkweigher** that guarantees *dynamic, precise, and efficient weight control to the fruit and vegetable cooperatives*. Weight Master is an automated solution that stands out for its robustness, precision, and flexibility.



Weight Master in your production line

Weight Master, BIOMETIC's **in-line checkweigher**, allows the producers to save time and costs by combining maximum accuracy and industrial speed in one solution, thus protecting the brand's reputation. Another important benefit is the **limitation and elimination of waste** within the production chain.

By integrating Weight Master with other BIOMETIC solutions, such as **F Trace**, you are able to **optimize the entire production flow and achieve maximum production efficiency across the whole line**.

WEIGHT MASTER

What distinguishes Weight Master from Other Checkweighers

Why our customers choose Weight Master:

- ✓ Increases food transparency together with F Trace
- ✓ Adaptable to products and producer needs
- ✓ Delivers significant savings
- ✓ Protects brand reputation and optimizes production
- ✓ Simple and intuitive to use also by remoted management
- ✓ Easily integrable into existing lines as a stand-alone system or in combination with F Trace and Optilabel for a complete fruit tracing solution



Technical features

Model	WM-15L	WM-30L	WM-15/30L
Maximum capacity (max)	< 15 kg	< 30 kg	< 15/30 kg
Minimum capacity (min)	100 g	200 g	100/200 g
Weight accuracy (e)	5 g	10 g	5/10 g
Max. number of weighting intervals (n)	3000	3000	3000
Automatic Tare Management	yes	yes	no
Power supply	230 V AC 50/60 Hz	230 V AC 50/60 Hz	230 V AC 50/60 Hz



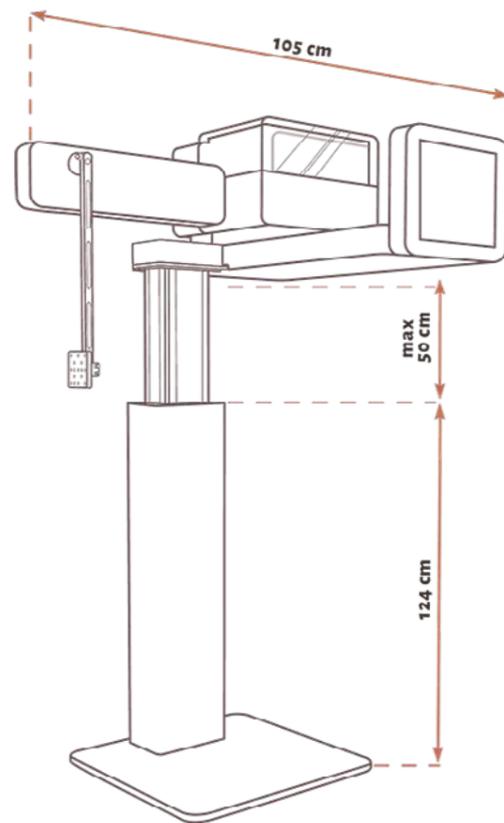
IN-LINE LABELING SYSTEM

Optilabel

The automatic and flexible labeling system for fruit and vegetable products

We have developed Optilabel to guarantee companies **safe and efficient labeling** to facilitate product recall operations and ensure maximum transparency, quality, and food safety.

An **automatic labeling machine** that stands out for its robustness, precision, and flexibility.



With **Optilabel**, the labeling process is **completely automated**. The labels, printed and applied on the boxes, contain all the information needed to trace your fruit and vegetable boxes.

By integrating **Optilabel** with other BIOMETiC solutions, such as **F Trace**, you are able to **optimize the entire production flow and achieve maximum production efficiency across the whole line**.

OPTILABEL

What distinguishes Optilabel from Other Labelers

Why our customers choose Optilabel:

- ✓ Stand-alone system or combined with BIOMETiC's F Trace solution for 360 degrees process optimization
- ✓ Automates the labeling process while minimizing human errors
- ✓ Precise application of labels with the necessary information to trace the boxes
- ✓ Customizable labels for each customer (graphics, layouts, and fonts)
- ✓ Delivers significant savings
- ✓ Easily integrable into existing lines as a stand-alone system or in combination with F Trace and Weight Master for a complete fruit tracing solution



Technical features

Selection speed	max 20 boxes/min
Height of boxes	from 6 to 40 cm
Compressed air	5-8 bar / 5l / min



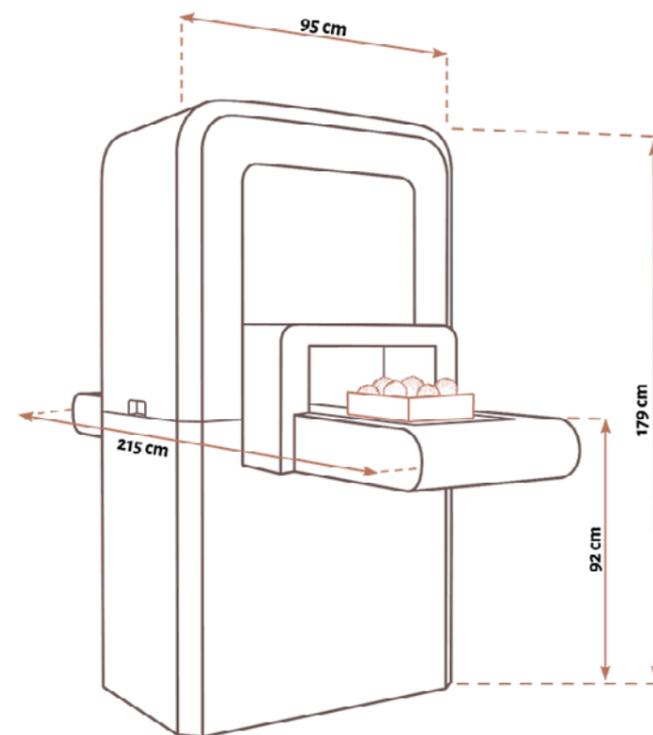
IN-LINE X-RAY SYSTEM FOR INTERNAL QUALITY

Q Eye XP

X-ray vision scanner for seeing inside your produce

Q Eye XP is an **internal fruit quality scanner** that scans already packed products for **internal fruit defects**.

The inspection is carried out with the help of **X-rays**, a perfectly safe and non-destructive technology, using an in-house developed high-sensitive sensor. It analyzes the inside of the fruits, detecting **all internal defects**.



Q Eye XP is designed for **packaging lines** and large-scale retail trade, precisely allowing the producers and retailers to perform final food safety and quality checks before the product reaches the consumer, thus protecting the brand's reputation. Another important challenge we have overcome is **limiting and eliminating waste** within the production chain.

Q EYE XP

What distinguishes Q Eye XP from Other Inspection Systems

Why our customers choose Q Eye XP:

- ✓ It performs the final safety and quality checks before the product reaches the consumer
- ✓ Adaptable to all types of boxes of fruit and vegetables
- ✓ Detects internal quality and safety defects in your products
- ✓ Ensures optimized and more sustainable production
- ✓ Reduces waste and complaints
- ✓ It can be integrated into packaging lines or used as a stand-alone system in retail stores

SOME APPLICATION EXAMPLES

Q Eye XP



- ✓ Seed
- ✓ Empty Spaces
- ✓ Internal Holes
- ✓ Rot
- ✓ ...

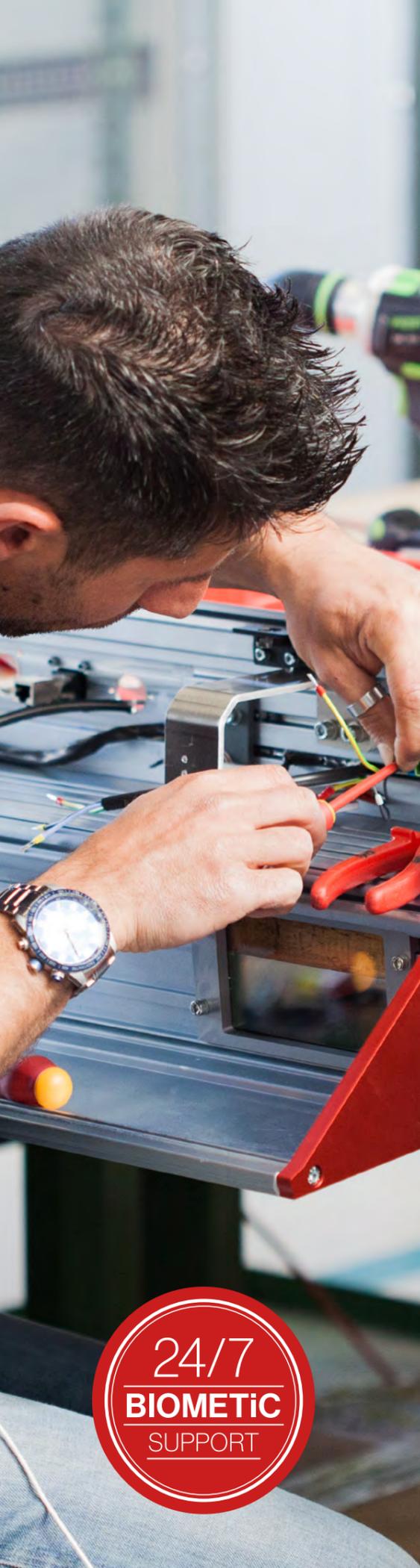


- ✓ Alternaria
- ✓ Rot
- ✓ ...



Technical features

Selection speed	up to 40 m /min
Resolution	0.8 mm/pixel
Height of Boxes	from 30 to 60 cm, modular



24/7 SUPPORT & SERVICES

We are Close to our Customers

With our **Customer Support Team**, we guarantee you and your company comprehensive technical support. Our team is available **24/7, 365 days a year**, ready to assist you anytime, any-where.

Request assistance now at support@biometric.com
And if you need immediate support,
call us at [+39 0472 273 610](tel:+390472273610)

MAINTENANCE AND SUPPORT PROGRAM

With our comprehensive Maintenance Program, you get maximum efficiency from your food production.

Our **After-Sales Team** supports you with a range of services to ensure the correct and smooth operation of your BIOMETiC solution, preventing any problems that may cause downtime:

- ✓ Defect detection upgrade and optimization with the latest Artificial intelligence algorithms
- ✓ Evaluation and design of new customized upgrades and implementation of ad hoc algorithms
- ✓ Hardware upgrades with the inclusion of the latest developments
- ✓ Packages of original and high-quality spare parts, packed and shipped with care
- ✓ On-site preventive maintenance and optimization visits by our experts
- ✓ Remote and on-site training sessions for your operators

While each service can be **purchased** separately, they work in combination, **providing full support**, which ensures that your BIOMETiC solutions deliver the **maximum inspection performance and value**.

Request now your customized Maintenance Program at after.sales@biometric.com



WHEN INNOVATION MEETS DESIGN

Awards for our Commitment to Quality



At BIOMETiC, we continuously invest in researching and developing technologies to **provide excellent and innovative solutions to our customers**.

The care we put into combining **food quality** and **production process optimization** with **high-quality design** has allowed us to achieve **significant results**. This is why, so far, our solutions have been awarded the world's most important **design and technology awards**:

- ✓ Interpoma Technology Award – Category “Post Harvest”
- ✓ iF Design Award
- ✓ ADI Design Index Prize





COMPANY

Our Offices



BIOMETiC
Bressanone

Julius-Durst, 98
39042 Bressanone
Italy



BIOMETiC
Venezia

Miranese, 56
30171 Venice
Italy

GLOBAL PRESENCE

From our corporate offices, we reach our customers everywhere, thus guaranteeing our support globally.

COMPANY

We are BIOMETiC



Federico Giudiceandrea
President and Founder



Frank Jöst
Chief Executive Officer



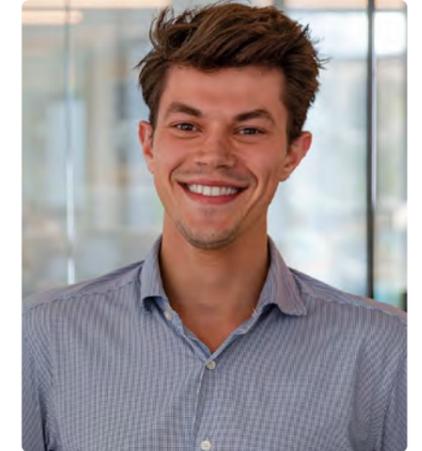
Arianna Giudiceandrea
Chief Sales Officer

+39 0472 273 765
+39 348 07 50 244
arianna.giudiceandrea@biometric.com



Davide Prandini
Sales Account Manager

+39 0472 273 700
+39 331 63 19 460
davide.prandini@biometric.com



Petar Marijokovic
Sales Account Manager

+39 0472 273 724
+39 337 13 13 038
petar.marijokovic@biometric.com

CONTACT BIOMETiC

For general inquiries, please write to sales@biometric.com



BIOMETiC

Making the invisible visible



 **BIOMETiC Srl GmbH**
Julius-Durst 98
39042 Bressanone (BZ)
Italy

 +39 0472 273 760

 +39 0472 273 760

 contact@biometric.com

 www.biometric.com