

# POTATOES

**MAXIMUM YIELD  
CONSISTENT QUALITY**

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Innovative optical sorting solutions  
for potato processors

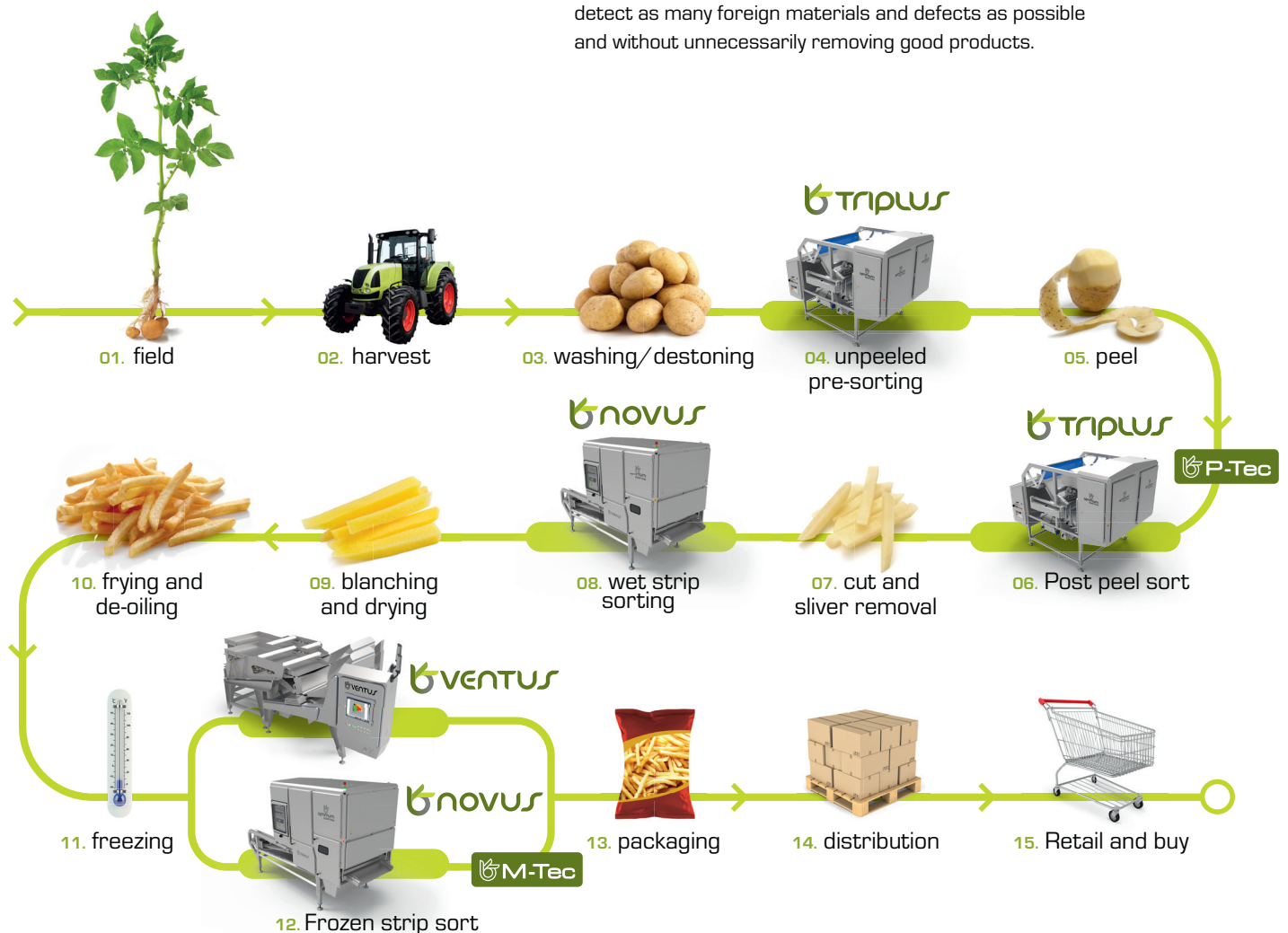


## YOUR CHALLENGE:

How to  
optimize yield?

The world population is rising and the demand for potato products is keeping pace. However, increasing pressure on prices demands greater efficiency. Moreover, the rules on food safety are being tightened worldwide and consumers have also become more demanding. The presence of foreign materials or inferior products is not only a matter of food safety - in times of growing competition, quality problems can be downright harmful to your reputation. At the same time, you want to limit your ecological footprint and deal as carefully as possible with what Mother Nature gives us. You want to be left with as much as possible from the 100 tons of potatoes and satisfy your customers and the customers of your customers, the consumer.

In short, it's important to optimize your sorting process; to detect as many foreign materials and defects as possible and without unnecessarily removing good products.



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**PERFECTION  
SORTED DOWN TO  
THE VERY LAST POTATO**

## YOUR OPERATIONAL RELIABILITY = OUR SERVICE



### Integration

To integrate your solution, we rely on our network of specialized partners. After all, every production line is different and requires a tailor-made approach.



### Training

We train your operators at your place, at the installation site or in our offices, so that they can optimally use your sorting systems.



### Remote access

Our service engineers can be reached 24/7, by phone or E-mail. Thanks to secure remote access, they can quickly make a diagnosis and if necessary, immediately decide to arrange an on-site intervention.



### Customized SLA

No maintenance contracts are needed to make sure you get the best available service for your installed sorters.

### OUR SOLUTION

A chain is only as strong as its weakest link. You can be sure of one thing: Optimum Sorting systems will never be the bottleneck in your production line.

With the NOVUS, VENTUS and TRIPLUS you have solutions for different steps in the production process, whether it's for whole potatoes, raw french fries, frozen french fries, chips, potato flakes, whatever; in other words, whichever potato products you want to offer.

These optical sorting machines are the result of extensive research and development. They use a sophisticated com-

bination of advanced cameras and lasers, with multidimensional image processing for superior quality, size and length sorting. High-resolution cameras detect discoloration and size and shape deviations, while laser sensors detect foreign objects and 'sugar ends' extremely accurately. Special lasers sort by biological characteristics, such as the presence of solanine (fluorescence lasers), acrylamides and water (SWIR or Short Wave InfraRed lasers). InGaAs camera technology offers an alternative to SWIR lasers.

Our sorting systems easily adapt to the required quality specifications and you can choose between two-way or three-way sorting. Using a unique, 2400 mm maximum scan width, they not only offer greater capacity than other systems, the extra width ensures that the products to be sorted are more distributed across the inspection zone, allowing defective ones to be removed more accurately and reducing the risk of false rejections.

You want accurate sorting, according to the quality specifications of your customers, but not at the expense of your yield, yes? Then choose Optimum Sorting. Guaranteed ROI!



### INTERESTED IN A FREE DEMO?

Contact our sales team to explore the possibilities for your application and visit one of our demo centers for a comprehensive test on your own product. This way, you'll see exactly what our machines can do for you.



## **OPTIMUM SORTING**

### **MULTIDIMENSIONAL IMAGE PROCESSING**

Most image processing algorithms reduce the RGBi signal of a colour camera from four to two dimensions. This may result in the loss of valuable information. All signals, both from the cameras and from the different lasers, are interpreted simultaneously by means of our algorithms, resulting in a more accurate detection of foreign objects and defects, plus a lower risk of false detections.

### **PRECISION EJECTION SYSTEM**

Accurate defect detection is pointless without an equally accurate ejection system. The distance between our air ducts, centre-to-centre is 7.5 mm instead of the usual 10 mm. Thus there are more ducts that are able to blow more effectively and that improves the ejection accuracy. There is also a high-resolution valve system with a centre-to-centre distance of 5 mm for specific applications. Optionally, also a double reject system is available resulting into a 3-way sort.

### **DATA VIEW**

Why not use the data recorded by the cameras to adjust your sorting process where necessary? An optional module that filters data to parameters of your choice - length, shape, colour, defect level, etc. - and makes them available to your operators in a clear numerical or graphical way, so that they can intervene if desired. This module lays the basis for 'sort to spec'.

## **EXCEPTIONAL USER-FRIEND- LINESS**

### **VISUAL CALIBRATION**

Setting acceptance thresholds is often time-consuming and complex. This is not the case with Optimum Sorting systems. Your operators no longer have to work with graphs or formulae themselves. Our machines are able to calibrate themselves by using images of acceptable and unacceptable products.

### **INTUITIVE GUI**

Operating our sorting machines is child's play, thanks to an intuitive GUI. Your operators see all relevant information at a glance.

### **REMOTE CONTROL**

If you want to operate your sorting machines centrally, then no problem! Our solutions are easily integrated into your network, so that your operators and supervisors can keep an eye on things from any network computer.

## **SUPERIOR HYGIENE AND EFFICIENCY**

Optimum Sorting systems are made from stainless steel and all components to be cleaned are easily accessible. This way hygiene is guaranteed and cleaning costs you hardly any time and effort. Moreover our machines are designed in such a way that any contamination has no impact on the sorting.

Furthermore, they excel in stability, which means that your sorting process requires virtually no manual intervention. You can switch from one product to another or from one specification to another with just one press of a button. And finally, their sturdy construction offers you a maximum uptime with minimum maintenance.



**SORTING SMARTER  
WASTING LESS  
SHAPING TOMORROW**





## VENTUS

VENTUS is the ideal solution for the precision sorting of frozen potato products.

This double-sided, free-fall laser sorter comes in various scan widths up to 1800 mm and can be equipped with up to 16 lasers and 32 laser detectors. By combining different lasers with specific wavelengths, VENTUS can sort with remarkable precision based on colour, shape, structure and biological properties.

With an impressive scan rate of more than 4000 scans per second, VENTUS offers the highest resolution of any laser on the market, effortlessly detecting even the smallest impurities. Our multi-dimensional laser system (MDL) processes all laser signals simultaneously, resulting in the highly accurate detection of foreign materials and defects and a reduced risk of false rejections. This sets VENTUS apart from other systems. Rejected products can be categorised into different classes, such as 'foreign materials', 'colour' or 'shape'. VENTUS can distinguish up to 8 defect classes and process them accordingly. With the Advanced Fluo Module, VENTUS optimises the fluorescence of the sorted products.

For finer sorting needs, such as detecting small contaminants like stems or wood splinters, the VENTUS can be fitted with ultra-fast, compact ejection valves with a centre-to-centre distance as small as 7.5 mm.

- Widest double-sided free-fall laser sorter
- Robust, advanced lasers
- Sorting based on colour, shape, structure and biological properties
- Superior resolution
- Advanced AI-based sorting software



## NOVUS

NOVUS is an optical belt sorter specifically designed to sort both dry products (e.g. potato chips and flakes) and wet products (e.g. raw and frozen fries). With a maximum scan width of 2400 mm, this is the largest optical belt sorter on the market. Depending on the width and application, it can be equipped with 3, 6 or 9 advanced high-resolution cameras for optimal defect detection and superior sorting accuracy. Optional laser sensors for detecting foreign objects further enhance its sorting precision, with up to 8 laser beams processed multispectrally.

Moreover, NOVUS can be expanded with a unique camera configuration specifically designed for sorting fries. Additional cameras are positioned to capture five of the six sides of each fry, providing a perpendicular view of every angle. Thanks to strategic IR lighting from below, measurements are not affected by belt contamination or shadowing, resulting in significantly improved sorting efficiency and accuracy.

- Widest optical belt sorter
- Excellent sorting accuracy
- Sort-to-spec capabilities
- Unique camera configuration for fries
- Expandable with laser and metal detection



## TRIPLUS

The TRIPLUS is the only true freefall sorter on the market, ideal for optically sorting whole potatoes and IQF french fries (Individually Quick Frozen). It is available in different scan widths up to 2400 mm, and is equipped with durable and energy-efficient LED lighting that produces little heat. Depending on the width and application, it's equipped with 4, 6 or 8 advanced high-resolution cameras for optimum defect detection and achieving an excellent good-to-bad ratio in the reject stream. Optional laser sensors (up to 8 laser signals) or InGaAs cameras maximise its defect detection and sorting accuracy.

As a freefall sorter, the TRIPLUS is extremely compact. It has few moving components and therefore requires even less maintenance. Moreover, while falling, products may be viewed along two opposite sides, resulting in more accurate sorting.

- Robust free-fall sorter
- Sorting based on colour, shape and structure
- Sustainable LED lighting
- Advanced cameras and laser
- Excellent sorting accuracy



## MODULAR DESIGN

Customization is no problem! Their modular design means that our sorting systems may easily be adapted to your specific requirements. Moreover, they are field-upgradable so that they can grow with the needs and opportunities of your organization, together with our latest technology.

■ standard    ○ option    × not available

		VENTUS	NOVUS	TRIPLUS
Type		Freefall lasersorter	Belt sorter	Freefall sorter
Application		French fries and other frozen potato products	Raw and frozen fries, chips, potato flakes French fries	Whole potatoes, frozen french fries
Width		600 mm, 900 mm, 1200 mm or 1800 mm	600 mm, 1200 mm, 1800 mm or 2400 mm	800 mm, 1200 mm or 1800 mm
Camera	MC, RGB,IRGB	×	■	■
	InGaAs	×	○	○
Laser	IR, SWIR, VIS, Fluorescence	■	○	○
French fry configuration		×	○	×
Sorting mode		Two-way or three-way	Two-way or three-way	Two-way or three-way
Air valves	5,25 mm	○	○	×
	7,5 mm	■	■	○
	10 mm	○	○	■
Mechanische flippers		○	○	○
Data view *		○	○	○
M-Tec		×	○	×
P-Tec		×	×	○

\* This module is being continuously developed. Contact us for an up-to-date overview of the functionalities.



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