Maximum yield
Consistent quality

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**Innovative optical sorting solutions for
vegetable processors and the lettuce industry**
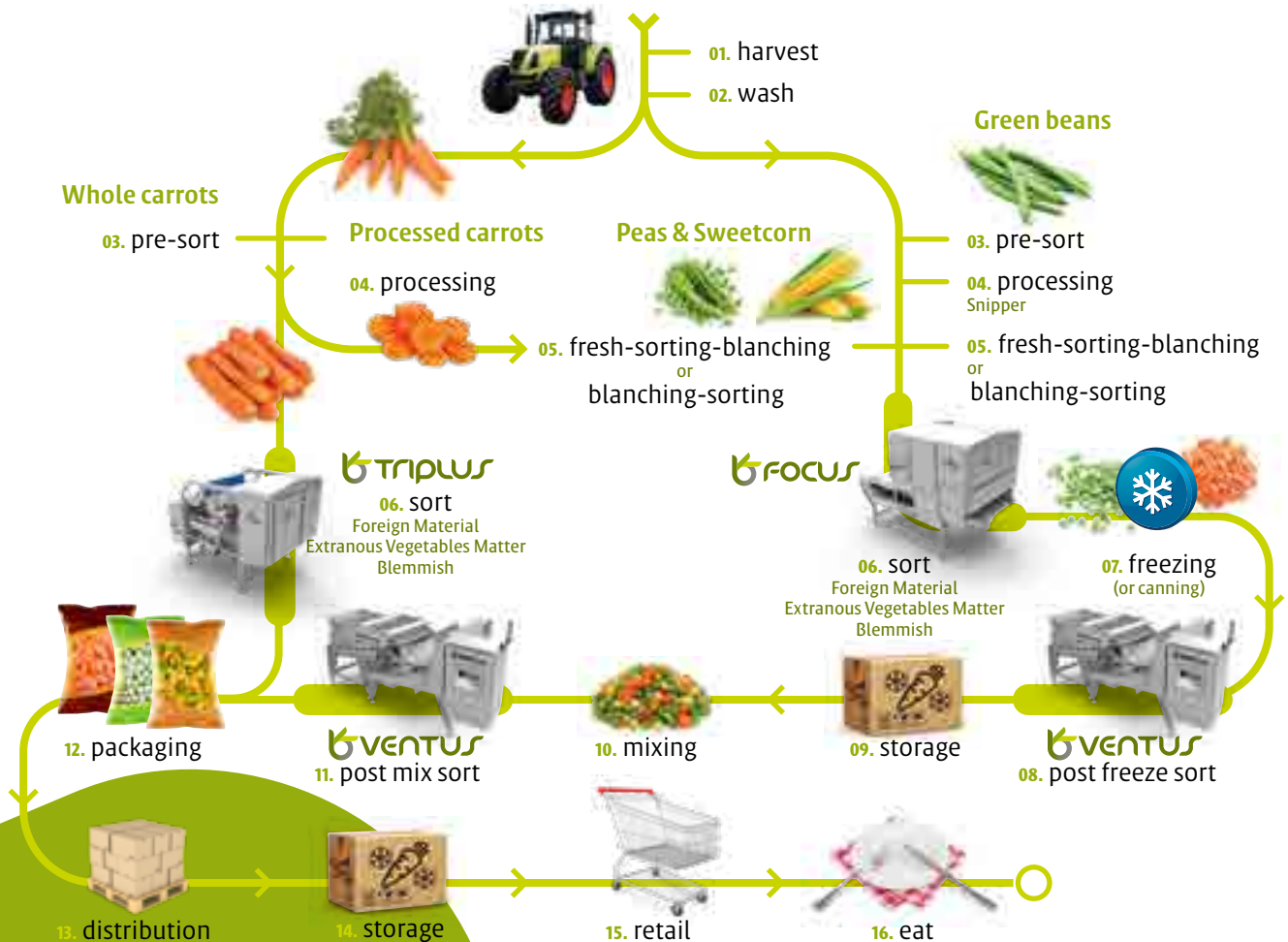
optimum
SORTING

OPTIMUM SORTING

YOUR CHALLENGE

All kinds of tuberous vegetables, green beans, peas, leeks, cauliflower, broccoli, spinach, lettuce, young shoots etc. Whole or cut, fresh or frozen. You want to offer as wide a range as possible, but use as few as possible different machines.

Lost twigs and leaves? A rotten onion? The rules on food safety are being tightened worldwide, and consumers too have become much 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 are downright harmful to your reputation. Unfortunately, you don't have control of the quality of the vegetables. One season is not the same as the other. Yet you want to deliver consistent quality to your customers.

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

01. harvest

02. wash

Green beans

Whole carrots

03. pre-sort

Processed carrots

04. processing

Peas & Sweetcorn

03. pre-sort

04. processing
Snipper

05. fresh-sorting-blanching
or
blanching-sorting

05. fresh-sorting-blanching
or
blanching-sorting

TRIPLUS

06. sort
Foreign Material
Extranous Vegetables Matter
Blemmish

FOCUS

06. sort
Foreign Material
Extranous Vegetables Matter
Blemmish

07. freezing
(or canning)

12. packaging

VENTUS

11. post mix sort

10. mixing

09. storage

VENTUS

08. post freeze sort

13. distribution

14. storage

15. retail

16. eat

OUR SOLUTION

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

All kinds of tuberous vegetables, green beans, peas, leeks, cauliflower, broccoli, spinach, lettuce, young shoots etc. Whole or cut, fresh or frozen. Whatever vegetable products you want to offer, with VENTUS, FOCUS and TRIPLUS you have solutions for different steps in the production process.

These optical sorting machines are the result of extensive research and development. They use a sophisticated combination 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 shortwave infrared lasers). InGaAs camera technology offers an alternative to SWIR lasers.

Our sorting systems adapt easily 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 spread out, allowing them 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!

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, both at your site or our offices, so that they can optimally use your sorting systems.

Remote access

Our service engineers are available 24/7 by phone. Thanks to secure remote access, they can quickly make a diagnosis and, if necessary, immediately decide to intervene.

Customized SLA

A maintenance contract is actually superfluous. Our service is adapted to the needs of your organization.

VENTUS

FOCUS

TRIPLUS

The VENTUS is your workhorse for sorting all sorts of frozen vegetables and fruit.

This double-sided freefall laser sorter is available in various scan widths, up to 1800 mm. The VENTUS may be equipped with up to 16 lasers (and 32 laser detectors). Thanks to the combination of different lasers with specific wavelengths, it sorts extremely accurately on the basis of color, shape, structure and biological characteristics.

Using an impressive laser scanning speed of more than 4000 scans per second, the VENTUS offers the highest resolution of all laser sorters on the market. It also easily detects the smallest impurities. Furthermore, all different laser signals are processed simultaneously by our Multi Dimensional Laser System (MDL) system, resulting in a more accurate detection of foreign objects and deviations, and a lower risk of erroneous rejections, whereby the VENTUS outstrips other systems. Unacceptable products may be categorized in different classes, such as 'foreign material' 'color' or 'shape'. The VENTUS is able to differentiate 8 classes of deviations and process them as necessary.

In order to get an excellent good-to-bad ratio even for the smallest products and impurities such as stalks and wood splinters, the VENTUS may be equipped with ultra-fast and small exhaust valves with a center-to-center distance of 4.6 mm.

- double-sided freefall laser sorter
- multidimensional laser detection
- extra fine exhaust valves
- ultra-stable and reliable
- excellent good-to-bad ratio

The FOCUS is an optical belt sorter that is ideally suited for sorting fresh vegetables in the wet state, cut or whole, such as carrots and other tuberous vegetables, beans, peas and spinach, as well as the entire range of frozen (IQF = Individual Quick Frozen) vegetables. With a maximum scan width of 2400 mm, it is the largest optical belt sorter on the market. Depending on the width and the application, it is standardly equipped with 3, 6 or 9 advanced high-resolution cameras for optimum defect detection and an excellent good-to-bad ratio. Using the optional laser sensors for detecting foreign objects, among other things, you can increase its sorting accuracy even further (up to 8 laser signals that are processed multispectrally).

But that's not all: the FOCUS can be expanded with a unique camera configuration, specially developed for the sorting of diced carrots or other tuberous vegetables. The additional cameras are arranged in such a way that five of the six sides of each cube are always shown perpendicularly. And thanks to smart use of IR lighting along the underside, the measurements are not disturbed by possible contamination on the conveyor belt. The result: a significant improvement in your sorting efficiency and good-to-bad ratio.

- widest optical belt sorter
- excellent good-to-bad ratio
- unique camera configuration for diced carrots or other tuberous plants
- extended with laser option
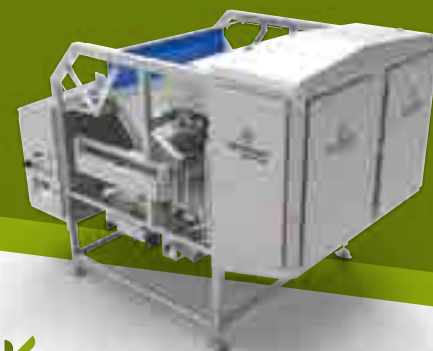
The TRIPLUS is the only true freefall sorter on the market, ideal for optically sorting whole tuberous vegetables and frozen (IQF) vegetables. It's available in different scan widths, up to 1800 mm, and is equipped with durable and energy-efficient LED lighting that produces little heat. Depending on the width and the application, it is standardly equipped with 4, 6 or 8 advanced high-resolution cameras for optimum defect detection and an excellent good-to-bad ratio. Optional laser sensors (up to 8 laser signals) or In-GaAs cameras including for the detection of foreign objects, maximize its sorting accuracy.

For a freefall sorter, the TRIPLUS is extremely compact. It has fewer moving components and therefore requires even less maintenance. Moreover, during their fall, products may be viewed along two opposite sides, resulting in more accurate sorting.

- compact freefall sorter
- durable LED lighting
- advanced cameras and lasers
- excellent good-to-bad ratio

OPTIMUM SORTING

Multidimensional image processing
Most image processing algorithms reduce the RGBi signal of a color camera from four to two dimensions, resulting in 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 erroneous rejections.

Precision ejection system
Accurate defect detection is pointless without an equally accurate ejection system. The distance between our air ducts, center-to-center 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 center-to-center distance of 5 mm for specific applications.

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, color, 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 already provides the basis for automatic sorting to your particular specifications.

EXCEPTIONAL USER-FRIENDLINESS

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. Using images of acceptable and unacceptable products, our machines calibrate themselves.

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

Remote control
Do you want to operate your sorting machines centrally? No problem. Our solutions can easily be 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 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. With one press of a button, you can switch from one product to another, or from one specification to another. And finally, their sturdy construction offers you a maximum uptime with minimum maintenance.

MODULAR DESIGN

Customization is no problem! Thanks to their modular design, 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, and our latest technology.

■ standard   ○ option   ✕ not available

		VENTUS	FOCUS	TRIPLUS
Type		Freefall laser sorter	Belt sorter	Freefall sorter
Application		Frozen (IQF) vegetables and fruit	Whole or cut fresh vegetables and frozen (IQF) vegetables	Whole tuberous vegetables and frozen (IQF) vegetables
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	RGB	✕	■	■
	iRGB	✕	■	○
	InGaAs	✕	○	○
Laser	IR, SWIR, VIS, Fluorescence	■	○	○
Special camera configuration		✕	○	✕
Sorting mode		Two way or three way	Two way or three way	Two way or three way
		DRS	DRS	✕
Exhaust valves	4,60 mm	○	✕	✕
	5,26 mm	○	✕	✕
	5,00 mm	✕	○	○
	7,50 mm	■	■	○
	10,00 mm	○	✕	■
Data view *		○	○	○

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

More information?

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