optimum SORTING

VENTUS



THE MOST EFFICIENT DOUBLE-SIDED FREE-FALL SORTER

Step into the future of sorting with our Ventus sorter. This revolutionary double-sided free-fall sorter is specially designed for small products such as nuts, dried fruits, and frozen vegetables and fruits.







AflaSort™ makes the invisible visible

Aflatoxins are potentially carcinogenic. They are microscopic in size and therefore invisible to the naked eye. In addition, they also cannot be detected by changes in odor or taste. Using AflaSort™ you prevent contaminated products from reaching the consumer. This option uses UV laser light and the fluorescent properties of certain aflatoxin residues. This is because different types of residue fluoresce a different color under UV light. Products without aflatoxin contamination remain invisible to AflaSort™. Our laser technology is so sensitive that even minimal traces of residue are intercepted.

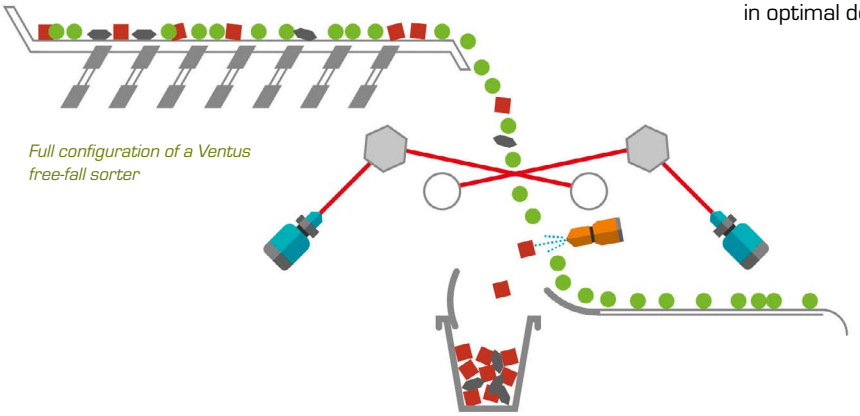
INSPECTION ON BOTH SIDES

This free-fall laser sorter is available in various scanning widths, up to 1800 mm (71 in). The products to be sorted are transported to the free-fall plate at high speed via a feed vibrator. This controlled, vibrating feed ensures that the products to be sorted are better distributed, allowing them to be analyzed more accurately and reducing the risk of false rejections. During their free-fall, the products are inspected with the aid of lasers, along one side, or along two opposite sides.

MULTISPECTRAL LASER DETECTION

The Ventus can be equipped with up to 16 lasers (and 32 laser detectors). Thanks to the combination of different lasers with specific wavelengths, the Ventus is able to sort extremely accurately on the basis of color, shape, structure and biological characteristics. A brown shell fragment in between brown hazelnuts? Structure sorting extracts it without problems. Fluorescence lasers detect the chlorophyll content or the presence of harmful substances such as aflatoxin in nuts and dried fruits. SWIR (Short Wave Infrared) lasers see the difference between aqueous and non-aqueous products, ideal for finding foreign objects between vegetables and fruit.

By working with different specific wavelengths, you always have the full power of the light source in question available at the optimum wavelength. In the case of multi- or hyperspectral systems based on white (halogen or LED) light, on the other hand, the entire spectrum (and therefore also the power) is divided, so that you have less useful information. Because the Ventus uses lasers with a higher output, the contrast between good and bad products is also much clearer, resulting in optimal defect detection and excellent good-to-bad ratio.



Full configuration of a Ventus free-fall sorter





SORTING SMARTER
WASTING LESS
SHAPING TOMORROW

SUPERIOR RESOLUTION

The Ventus has an impressive laser scanning speed of up to 3,333 scans per second, resulting in an optical resolution of 0.3 mm (0.012 in), the highest resolution of any laser sorter on the market. It therefore easily detects the smallest impurities such as stalks (cap-stems) in raisins, shell fragments in nuts and even glass splinters.

MULTIDIMENSIONAL IMAGE PROCESSING

All different laser signals are processed simultaneously by our Multi-Dimensional Laser System (MDL), so that defects and foreign objects are detected more accurately and the risk of erroneous rejections is reduced. The result: an excellent good-to-bad ratio that leaves other systems behind.

PRECISION EJECTION SYSTEM

Deviating products are removed from the flow of good products using compressed air. Using an optional second ejection mechanism, you may also apply three-way sorting in addition to two-way. In order to get an excellent good-to-bad ratio even for the smallest products, the Ventus may be equipped with a high-resolution valve system: ultra-fast and small ejection valves with a center-to-center distance of 4.6 mm (0.18 in).

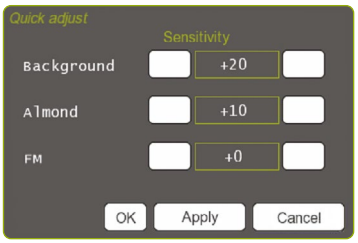
THE VENTUS IN A NUTSHELL

- Widest double-sided free-fall laser sorter
- Robust, advanced lasers
- Excellent good-to-bad ratio
- Sorting on the basis of color, shape, structure and biological characteristics
- Superior resolution
- Advanced sorting software using AI
- Optimal flexibility and integration options
- Perfect hygiene
- Fast product switching
- 24/7 (remote) service

THE VENTUS IS SUITABLE FOR SORTING NUTS, DRIED FRUITS, FROZEN VEGETABLES AND FRUITS

ARTIFICIAL INTELLIGENCE

The Ventus is able to differentiate multiple product & defect classes and, if necessary, process them differently. Its advanced sorting software uses AI (artificial intelligence): it learns to identify products & defects on the basis of images of the objects passing through the machine. During the sorting process, the algorithm autonomously decides which products are removed. If your operators still detect errors, they can easily adjust the algorithm by classifying extra object images or via Quick adjust.



*With **Quick adjust,** adjusting the detection sensitivity is child's play.*

OPTIMAL HYGIENE, FLEXIBILITY AND INTEGRABILITY

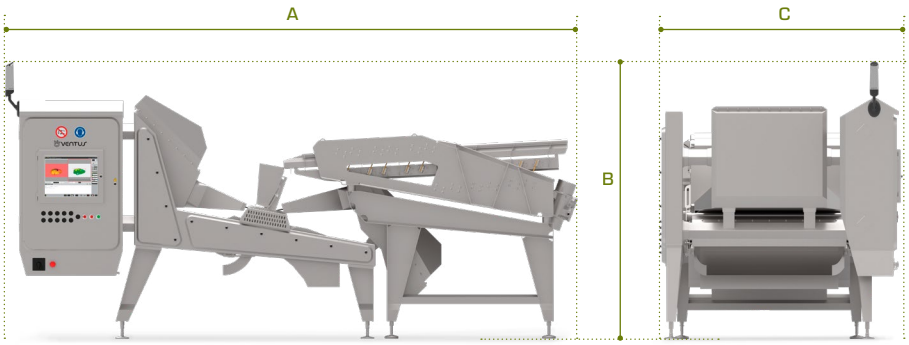
The design of the base frame of the Ventus meets the strictest hygiene standards and machine guidelines. Furthermore, it's modular, so that the Ventus cannot only be easily configured according to your needs, but can also be expanded with the same flexibility after installation. To facilitate its integration into existing production lines, the Ventus 1800 has a separate control cabinet. In addition, the Ventus uses the CUMULUS platform for its operating and sorting software, just like all our other machines. Designed for easy integration across all your systems.



SCAN OR CLICK

INTERESTED IN A FREE DEMO?

Get in touch with the sales team of Optimum Sorting and have your products tested at one of our demo centers around the globe. Experience firsthand the benefits our machines can bring to your business!



VENTUS

mm *inch*	A length	B height	C width
Ventus 600	**3540** *139*	**1970** *78*	**1750** *69*
Ventus 900	**4700** *185*	**2405** *95*	2100 *83*
Ventus 1200	**5002** *197*	**2405** *95*	**2100** *83*
Ventus 1800	**6000** *236*	**2405** *95*	**2900** *114*

The dimensions are indicative.
Detailed drawings are available on request

■ standard ○ option

		VENTUS			
Type		600	900	1200	1800
Machine type		Free-fall laser sorter			
Inspection width		600 mm • *24 in*	900 mm • *35 in*	1200 mm • *47 in*	1800 mm • *71 in*
Network		Ethernet			
Laser class		3R	3R	3R	3R
Lasers	Red	■	■	■	■
	Green	○	○	○	○
	Blue	○	○	○	○
	NIR	■	■	■	■
	SWIR	○	○	○	○
	UV	○	○	○	○
	Other	○	○	○	○
Detection modes	Color	■	■	■	■
	Shape	■	■	■	■
	Structure	■	■	■	■
	Fluorescence	○	○	○	○
	Aflasort	○	○	○	○
	Metal detection	○	○	○	○
Sorting modus (two-way)		■	■	■	■
Reject valves	Pitch 4.6 mm • *0.18 in*	○ (128)	○ (192)	○ (256)	○ (384)
	Pitch 7.5 mm • *0.29 in*	■ (80)	■ (120)	■ (160)	■ (240)
Noise level		75-85 dB(A)			
Electrical supply	Voltage	400 Vac			
	Phases	3F + N + Earth			
	Frequency	50 Hz / 60 Hz			
	Power	6.5 kW	7 kW	7.5 kW	8.3 kW
Cooling	Quality	Chiller, closed circuit with Glycol			
	Temperature	15°C • *59°F*			
	Pressure	1-3 bar • *15-60 PSI*			
Compressed air	Quality	ISO norm 8573-1:2010			
	Class	1.4.2 Norm			
	Filter	0,1 µ - dried			
	Air connection	1"	1"	1"	1,5"
	Incomming pressure	2-8 bar • *29-116 PSI*			
	Average consumption	800 L/min *28 CFM*	1200 L/min *42 CFM*	1500 L/min *53 CFM*	2300 L/min *81 CFM*
Frame	Material	Stainless steel 304			
	Protection class	IP65			
	Dimensions	See drawing			
Infeed shaker (flatbed)		■	■	■	■
Rejected product	Conveyor belt	○	○	○	○
	Shaker	○	○	○	○
Accepted product	Conveyor belt	○	○	○	○
	Shaker	○	○	○	○

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USA +1 (720) 586 6545
Belgium +32 (0)11 71 80 20
info@optimum-sorting.com
www.optimum-sorting.com

More info?

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