| GB |

SEA TRUE

ELECTRONIC SORTING

CONVEYING | DRYING | SEED PROCESSING | ELECTRONIC SORTING | STORAGE | TURNKEY | SERVICE

SIMPLY THE TRUE FULL-COLOR TECHNOLOGY

SEA TRUE

Colour sorting cannot be considered true colour sorting if it does not make use of genuine full-colour inspection devices, as these are required to provide the best detection and removal of unwanted elements in products to be sorted.

Utilizing true Full-Colour RGB cameras, the SEA TRUE sorter is able to determine and separate the smallest colour or shade differences in almost any bulk commodity in order to ensure that the strictest food hygiene and health requirements of end-products are met.

Ideal for almost all commodities, SEA TRUE can combine its Full-Colour vision system with NIR and InGaAs technologies. The fruit of almost 50 years' experience of colour sorting technology, SEA TRUE covers the high-end segment of the market, whilst keeping investment to a minimum. Cimbria test centres are at our clients' disposal in several different countries.

ADVANTAGES AND VISION SYSTEM

ADVANTAGES

Based on Full-Colour technology, SEA TRUE completes the range of Cimbria SEA products, providing the highest yield and quality on standard commodities and applications such as grains, seeds, coffee, nuts and other food or industrial products.

- True Full-Colour vision system with 0.06mm optical resolution
- Best sorting performance on any standard commodities
- Most concentrated rejects
- Can be equipped with additional NIR and/or InGaAs cameras
- Customised recipe set-up
- Versatile and user-friendly technology
- Machine adaptability to existing working plants
- Operational reliability
- Minimal maintenance required
- Cost-effective technology

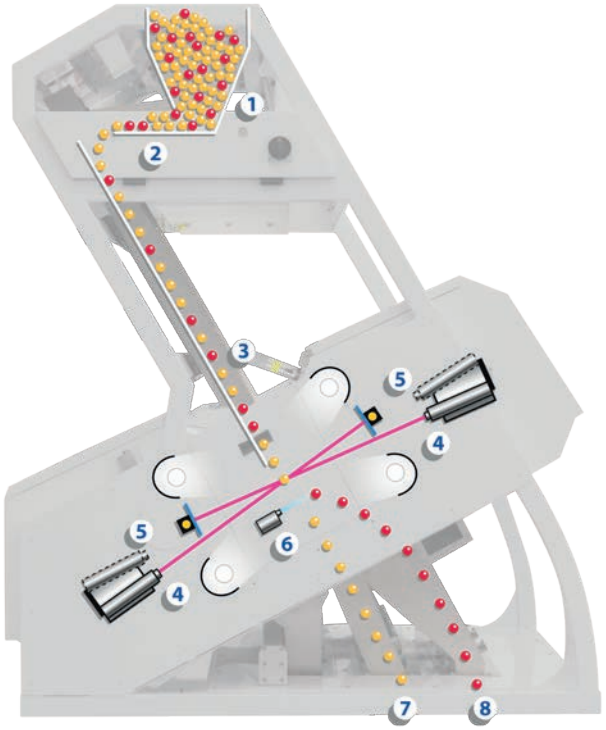
FULL-COLOUR RGB SMART CAMERAS

- SEA TRUE sorters are equipped with ultimate Full-Colour smart cameras, featuring red, blue and green (RGB) sensors with 0.06 mm optical resolution on differences in colour and shade.
- By means of photographic acquisition, the sorter image processing system compares the object to user-defined accept or reject elements.
- The vision system “sees” the product to be sorted almost as effectively as the human eye, with the ability to recognize up to 8 families of defects.
- SEA Full-colour cameras recognize 16 million individual colours, offering the highest optical resolution.

NIR AND INGAAS CAMERAS

- SEA TRUE sorters can be configured with additional NIR and/or InGaAs cameras according to the sorting target. In electronic sorting, these technologies indicate the infrared area in which the image sensor performs.
- NIR cameras optimize the separation of foreign bodies that have a similar colour to the conforming product, such as stones, sticks, glass and plastic in seeds, grains and coffee.
- InGaAs technology allows for the separation of defects which cannot be distinguished visually, such as the removal of seeds affected by sclerotium or the separation of hulled and unhulled grains or shells from nut kernels.

PROCESS OVERVIEW



OPERATION

The product is spread by the in-feed shaker into a mono-layer, before it drops down and is guided by the slide through the inspection area. The product is illuminated by SEA custom LED lighting. The optical lens projects the reflected light onto a Full-Colour RGB camera. The reflected light is broken down into the different colours. The SMART camera collects all these information, which are analysed by dedicated software to determine if the element has to be discarded. If so, the ejectors are activated and reject the element.

1 Product in-feed hopper
2 Vibrating feeder
3 Sloping chute
4 Full-Colour RGB cameras
5 Optional additional NIR or InGaAs cameras
6 Ejectors
7 Accepted product discharge hopper
8 Reject product discharge hopper

SEA TRUE sorters can be separated in up to 4 different sections. The accepted or rejected product can be conveyed to another section of the SEA TRUE to undergo additional passes through the sorting process. Re-sort and re-resort versions are available.

MACHINE RANGE AND CONFIGURATIONS

MODEL	TRUE 1	TRUE 1.5	TRUE 2	TRUE 3	TRUE 4	TRUE 5	TRUE 6	TRUE 7
CONFIGURATION								
VIBRATOR	1	2	2	3	4	5	6	7
CHUTE	1	1.5	2	3	4	5	6	7
CAMERAS*	2 to 4	2 to 4	4 to 8	6 to 12	8 to 16	10 to 20	12 to 24	14 to 28
EJECTORS	54	77	108	162	216	270	324	378

* Data refers to standard configurations.

MODEL		TRUE 1	TRUE 1.5	TRUE 2	TRUE 3	TRUE 4	TRUE 5	TRUE 6	TRUE 7
DIMENSIONS	mm								
WIDTH		1000	1000	1600	1600	2050	2050	2580	2580
DEPTH		1690	1690	1690	1690	1690	1690	1690	1690
HEIGHT		2100	2100	2100	2100	2100	2100	2100	2100
WEIGHT	kg.	700	750	950	1000	1150	1200	1350	1400
POWER CONS	kW	1.5	1.5	1.5	1.5	2.5	2.5	3.5	3.5
AIR CONS AT 4 bar	l/sec	8.4	12.6	16.8	25.2	33.6	42.0	50.4	58.8

The dimensions and technical data specified above are indicative and may be subject to change.
We reserve the right to change the specifications at any time without prior notice.

SEA TRUE

MAIN FEATURES

HIGH CAPACITY FEEDING CHUTES

- Available with 1 to 7 chutes to meet any production capacity needs.
- Multiple chute models can be divided into different sections to perform automatic additional sorting passes.
- Chutes are reversible to enable any variety of products to be used with the same feeding system.

LED LIGHTING SYSTEM

- LED lighting ensures the most accurate performance, longevity and reliability (over 100,000 hours of operation) with low heat dissipation.

15-INCH MULTI-TOUCH COLOUR DISPLAY

- The Windows 7 embedded graphic interface ensures easy connection to company networks and to remote assistance systems.

ELECTRONICS

- SEA TRUE hardware is organized in easily replaceable electronic boards using the ultimate in SMD and FBGA technology.
- Self-control functions, such as auto-diagnosis and auto- calibration, maintain consistent sorting performance.
- Up to 100 different custom-made sorting recipes can be stored on board.
- Software backup is possible through the USB port on the front panel of the PC.

ULTRA RAPID-FIRING EJECTORS

- State-of-the-art ejectors guarantee the most accurate precision and expulsion, producing highly concentrated rejects.
- SEA TRUE ejectors are guaranteed for more than 2 billion operating cycles and can easily be repaired or replaced.

MECHANICAL DESIGN

- Pressurized and conditioned optical boxes prevent dust entering sensitive sections of SEA TRUE sorters.
- An airtight structure prevents dust and product outflow.
- Product collection and sampling are made easy.
- Proper cleaning and maintenance thanks to folding optical boxes.
- Pre-arrangement for the additional aspiration system is available.

OTHER

- Customized colour (optional)
- CE certification of conformity as standard
- ATEX 22 certification (optional)

EUROPEAN
TECHNOLOGY
MADE IN ITALY

AFTER-SALES SERVICE

START-UP & TRAINING

- Experienced Cimbria SEA engineers duly train operators during the start-up phase.

REMOTE ASSISTANCE

- SEA TRUE sorters can be accessed remotely through Teamviewer.
- By means of internet connection, Cimbria SEA operators can control, modify and memorize program data through an in-house service station.

SERVICE

- Onsite service is performed by specialized multilingual Cimbria SEA technical engineers.
- Cimbria SEA offers a variety of annually-based service contracts for the peace of mind of our customers.

SPARE PARTS

- The user manual provides instructions and codes for spare parts requests to Cimbria SEA.
- Cimbria has servicing and spare parts centres in several countries.

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