

# SEA TRUER

ELECTRONIC SORTING 





# IN A FAST-MOVING WORLD, THE FULL-COLOR TECHNOLOGY ALWAYS TELLS YOU THE TRUTH



## SEA TRUER

SEA TRUE becomes SEA TRUER, bringing life to a new series of sorters with features never seen before.

For the benefit of our customers, this range of machines combines the extremely high production capacity with a multispectral vision system of RGB full-color and infrared technologies.

SEA TRUER determines and separates even the smallest color and shade differences from almost any bulk commodity, to meet even the strictest food hygienic and healthy requirements of end-products.

Ideal for almost any commodity, SEA TRUER can combine the Full-Color vision system with the NIR and InGaAs technologies

Fruit of 50 years' experience on color sorting technology, SEA TRUER comes to cover the high market segment, whilst keeping reduced the investments.

The name SEA TRUER underlines once more the high professionalism and reliability of our company, whose focus has always been the development of the best technology for automated and intelligent sorting.

CIMBRIA, SEA, AGCO. We are proud to operate in the name of the most reliable brands in the industry, worldwide recognized for their restless innovation and technical excellence.

## OUR TECHNOLOGY RUNS FAST

### THE ADVANTAGES OF BEING ALWAYS A STEP AHEAD

Based on Full-Color technology, the SEA TRUER range grants the highest yield and quality on applications such as grains, seeds, coffee, nuts, and other food or industrial products.

Every day our sorting specialists are committed to finding and implementing new solutions to improve the quality of bulk products.

- True Full-Color vision system
- RGB smart cameras
- 0.06 mm optical resolution
- RGB standard version can combine NIR and/or InGaAs
- Best sorting performance
- Most concentrated rejects
- Customized recipe set-up
- Machine adaptability to existing working plants
- Operational reliability
- Minimal maintenance
- Cost-effective technology
- Versatile technology and user-friendly interface

### FULL-COLOR RGB SMART CAMERAS

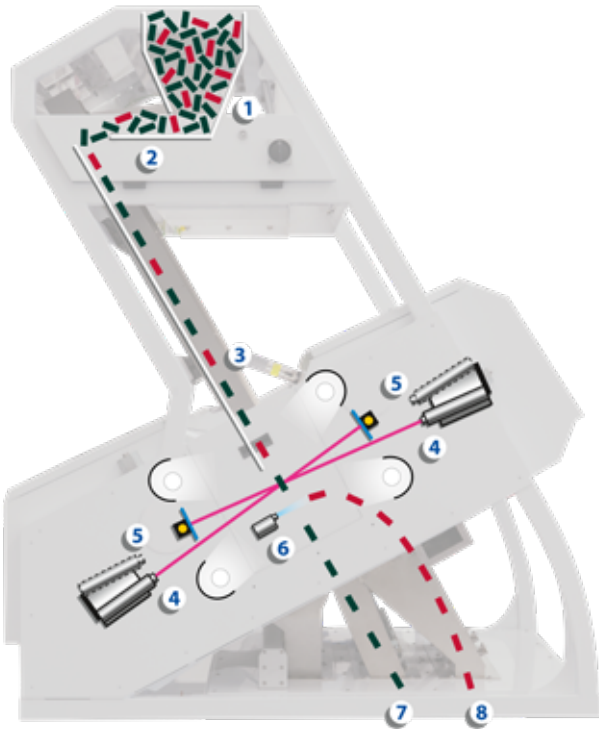
- SEA TRUER is equipped with the ultimate Full-Color smart cameras, having Red, Green and Blue (RGB) sensors with 0.06 mm optical resolution on color and shade differences
- By means of photographic acquisition, the sorter image processing system compares the object to user-defined accept or reject elements
- SEA Full-color cameras recognize 16 million individual colors, offering the highest optical resolution on market at the fastest possible speed
- The vision system can convert the RGB values into an HSI color space to "see" the products like the human eye

### NIR AND INGAAS

- SEA TRUER sorters can be equipped with additional NIR and/or InGaAs cameras, according to the sorting target. In the electronic sorting world, these technologies indicate the infrared area in which the image sensor is performing.
- The NIR cameras optimize the separation of foreign bodies having a similar color of the conforming product, such as stones, sticks, glass and plastic in seeds, grains and coffee.
- The InGaAs technology allows the separation of defects which cannot be visually distinguished, such as the removal of seeds infected by fusarium, contaminated with sclerotium or the separation of hulled and unhulled grains or shells out of nut kernels.



# PROCESS OVERVIEW



## 0.06 MM OPTICAL RESOLUTION

- 1 Product in-feed hopper
- 2 Vibrating feeder
- 3 Sloping chute
- 4 Full-Color RGB cameras
- 5 Optional additional NIR and/or InGaAs cameras
- 6 Ejectors
- 7 Accept
- 8 Reject

SEA TRUER sorters can be separated in up to 4 different sections.

The accepted or rejected product can be conveyed to another section of the SEA TRUER to undergo the sorting process additional times.

Reverse sorting and resort versions available.

CONFIGURATIONS	T+T	T+TN	T+TR	TN+TN	TR+TR	TN+TR
SEA TRUER						
RGB Full-Color cameras with 0.06 mm resolution	√	√	√	√	√	√
InGaAs additional cameras and InGaAs lighting			√		√	√
NIR (Near Infrared) additional cameras and NIR lighting		√		√		√
Remote access and service	√	√	√	√	√	√



## MACHINE RANGE AND TECHNICAL DATA

MODEL	TRUER 1	TRUER 1.5	TRUER 2	TRUER 3	TRUER 4	TRUER 5	TRUER 6	TRUER 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	78	108	162	216	270	324	378

\* Data refers to standard configurations.

MODEL	TRUER 1		TRUER 1.5		TRUER 2		TRUER 3	
DIMENSIONS (mm/in)	mm	in	mm	in	mm	in	mm	in
WIDTH	1000	39,37	1000	39,37	1600	62,99	1600	62,99
DEPTH	1690	66,54	1690	66,54	1690	66,54	1690	66,54
HEIGHT	2100	82,68	2100	82,68	2100	82,68	2100	82,68
WEIGHT (kg/lbs)	kg	lbs	kg	lbs	kg	lbs	kg	lbs
	700	1544	750	1654	950	2095	1000	2205
POWER CONS kW	1.5		1.5		1.5		1.5	
AIR CONS AT 4 bar l/sec	8.4		12.6		16.8		25.2	

MODEL	TRUER 4		TRUER 5		TRUER 6		TRUER 7	
DIMENSIONS (mm/in)	mm	in	mm	in	mm	in	mm	in
WIDTH	2050	80,71	2050	80,71	2580	101,57	2580	101,57
DEPTH	1690	66,54	1690	66,54	1690	66,54	1690	66,54
HEIGHT	2100	82,68	2100	82,68	2100	82,68	2100	82,68
WEIGHT (kg/lbs)	kg	lbs	kg	lbs	kg	lbs	kg	lbs
	1150	2536	1200	2646	1350	2977	1400	3087
POWER CONS kW	2.5		2.5		3.5		3.5	
AIR CONS AT 4 bar l/sec	33,6		42,0		50,4		58,8	

All the technical data are indicative and may be subject to change. We reserve the right to change them at any time, without prior notice.



## MAIN FEATURES

### MAXIMUM EMPOWERED PRODUCTION CAPACITY

- Available from 1 to 7 chutes to meet any production capacity needs.
- SEA TRUER can be divided in up to 4 different sections working independently
- Reversible chutes with smooth and channeled surfaces

### CIMBRIA SEA: SPECIALISTS IN THE USE OF THE MOST ADVANCED ELECTRONIC

- The SEA TRUER hardware is organized in easily replaceable electronic boards
- Self-control functions, such as auto-diagnosis and auto-calibration keep consistent sorting performances
- Several custom-made sorting recipes can be stored on board
- Software backup possible through USB port

### CONNECTIVITY AND USER-FRIENDLY

- The Windows 7 embedded graphic interface assures an easy connection to company networks and to remote assistance systems
- Intuitive software interface with 15-inch multi touch color display

### ULTRA RAPID-FIRING EJECTORS

- State-of-the-art ejectors guarantee the most accurate precision and expulsion, producing highly concentrated rejects.
- SEA TRUER ejectors are guaranteed for more than 2 billion

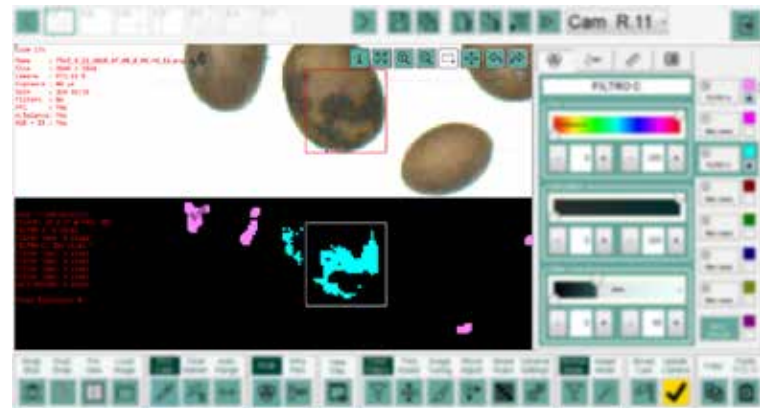
operating cycles

### MECHANICAL DESIGN

- Pressurized and conditioned optical boxes prevent dust entering
- An airtight structure prevents dust and product outflow
- Easy product collection and sampling
- Tilting optical boxes for proper cleaning and maintenance
- Pre-arrangement for additional aspiration system

### OTHER

- Customized color (optional)
- CE certification of conformity standard
- Stainless steel versions available



EUROPEAN TECHNOLOGY  
MADE IN ITALY

## CIMBRIA SEA CUSTOMER CARE



### YOUR NEEDS, OUR PRIORITIES

CIMBRIA SEA solutions and support ensure that your optical sorter performances are constantly granted at the top level. Our Customer Care offers a wide range of services and spare parts kits for customers who want to be ready for any need at any time.

#### SERVICE THINKING OF YOU FIRST

We know the importance of the perfect and continuous operation of your optical sorter in the processing line. For this reason, we have set up our new PRO ("Protection") Maintenance projects, offering 3 service packages to ensure our customers the full protection of their investment. Thanks to our expert service engineers, we grant the best suitable intervention to prevent any possible technical issues that may affect productivity and quality.

#### TECHNICAL ASSISTANCE 24 | 7 | 365 YOUR RELIABLE SUPPORT.

Introducing CIMBRIA SEA technical assistance 24/7 tailored on customers' needs.

Our strong support team offers a permanent remote assistance 24 hours a day, 7 days a week, all year round, on our dedicated Hot Line Number (HLN), providing timely and accurate support. This service is subject to subscription.

#### SPARE PARTS KITS ENJOY | MAINTAIN | EXTEND - SPARE PARTS ADDITIONAL KIT (SPAK)

For the user's maximum peace of mind, we have created 2 kits (Kit 1: Basic and Kit 2: Advanced) and we suggest our customers to keep them onsite as readily available original spares parts.

Thanks to our spare parts kits you enjoy the easy way to resolve a problem, your sorter maintains its value and you extend its lifecycle ensuring that the machine warranty remains valid.

Service and spare parts centers available in several countries.

#### UPGRADE KITS OUR VALUABLE FLEXIBILITY

The upgrade kits represent the flexibility of CIMBRIA SEA sorting technology. Whether it is the addition of an extra chute or of a new facility, our expert service team will work with you to find the most suitable solution.



**A/S CIMBRIA**

Faartoftvej 22  
P.O. Box 40, 7700 Thisted  
DENMARK  
Phone: +45 96 17 90 00  
[cimbria.holding@agcocorp.com](mailto:cimbria.holding@agcocorp.com)  
[www.cimbria.com](http://www.cimbria.com)

**CIMBRIA S.R.L.**

Via Colombarotto 2  
40026 Imola BO  
ITALY  
Phone: +39 0542 361423  
[seainfo@agcocorp.com](mailto:seainfo@agcocorp.com)  
[www.seasort.com](http://www.seasort.com)

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TOGETHER.**