SEA CHROME
ELECTRONIC SORTING
COLOR AT FIRST SIGHT

SEA-CHROME

The SEA-Chrome colour sorter is the highest production capacity RGB tri-chromatic sorter on the market using chute feeders. Equipped with Full-color RGB cameras and LED lighting system, the optical system of SEA-CHROME can determine even the smallest colour or shade differences.

This system perfectly suits the needs of modern food and non-food processing systems that demand the optical sorters ability to detect and reject products of similar colours but with different shades. Machine adjustment can be carried out easily due to the real image setting, and as all SEA sorters, the SEA-CHROME allows Internet connection for remote control.

As a result of over 40 years of experience with optical sorting equipment, the technical features make the SEA-CHROME sorter one of the best performing solutions available on the market.
WORKING PROCESS

OPERATION
1. Product in-feed hopper
2. Vibrating plate
3. Sloping chute
4. Full-color RGB CCD cameras
5. Eventual additional NIR or InGaAs cameras
6. Ejectors
7. Discharging hopper for sorted product
8. Reject products discharging hopper.

In automatic re-pass versions, the sorted or rejected product is automatically conveyed to another section of the machine for undergoing an identical process.

RGB CCD CAMERA
SEA tri-chromatic sorters have R (red) G (green) and B (blue) sensors offering 0.1 mm resolution on color and shade differences.

SEA SOFTWARE
The HSI system perceives the images detected by the RGB system almost as seen by human eye. This system allows an easier programming compared to any RGB system signal management.

SETTING THE DAMAGE AREA SIZE
The SEA sorters software allows the user to set the size of the defect in order to identify it as a real defect to reject or a grain to be saved in the accept product.

SETTING THE SHAPE
The software of the SEA-CHROME sorters allows the separation of elements presenting different geometric characteristics.

PROGRAM SETTING
SEA software can recognize up to 16 families of defect.
MACHINE RANGE AND CONFIGURATIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CHROME 1</th>
<th>CHROME 1.5</th>
<th>CHROME 2</th>
<th>CHROME 3</th>
<th>CHROME 4</th>
<th>CHROME 5</th>
<th>CHROME 6</th>
<th>CHROME 7</th>
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<tbody>
<tr>
<td>CONFIGURATION</td>
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<tr>
<td>VIBRATOR</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>CHUTE</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>CCD CAMERAS*</td>
<td>2 to 4</td>
<td>2 to 4</td>
<td>4 to 8</td>
<td>6 to 12</td>
<td>8 to 16</td>
<td>10 to 20</td>
<td>12 to 24</td>
<td>14 to 28</td>
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<tr>
<td>EJECTORS</td>
<td>54</td>
<td>77</td>
<td>108</td>
<td>162</td>
<td>216</td>
<td>270</td>
<td>324</td>
<td>378</td>
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* Data referred to standard configurations.

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<tr>
<td>DIMENSIONS mm</td>
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<tr>
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<td>1.5</td>
<td>1.5</td>
<td>2.5</td>
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<td>3.5</td>
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<td>AIR CONS AT 4 BAR l/sec</td>
<td>8.4</td>
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<td>42.0</td>
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The dimensions and technical data herein mentioned are indicative and can be subject to changes. We reserve the right to change them at any time without prior notice.

SEA CHROME
ULTIMATE FULL COLOR RGB CAMERAS
- The front and rear optical system, composed by 4096 pixel RGB full-color cameras, allows to identify any defect at 360° perspective with a resolution of 0.1mm.
- Defect size can also be controlled and adjusted according to needs. The system allows the user to determine whether a spot on a grain is to be considered an element to reject or to keep as an accept, based on the defect size.
- The separation of elements presenting different geometric characteristics is also possible, due to the SEA-CHROME specific software.

LED LIGHTING AND BACKGROUND SYSTEM
- The LED lighting system, exclusively designed for SEA, allows the most precise focusing of the beam on the inspection line;
- The LED lighting allows long lasting and reliability (over 100.000 h) and low heat dissipation.

1 TO 7 CHUTES
- The SEA-CHROME sorter is available with 1 to 7 chutes to satisfy any production capacity requirement;
- Re-resorting and reverse sorting configurations are available on multiple chute models.

HIGH CAPACITY FEEDING CHUTES
- The SEA-CHROME sorter chutes undergo a special treatment in order to facilitate a smooth flow of the product.
- All SEA-CHROME chutes are reversible: flat on one side and with channels of 5 or 15 mm. on the other side.

VERSATILE CONFIGURATION
- Multiple and resort sorting passes are available in models with 2 to 7 chutes;
- Program setting and adjustment are extremely flexible and user-friendly due to the image acquisition using HSI technology;
- Up to 100 different custom-made sorting programs available on board.

ELECTRONICS – HARDWARE
- The SEA-CHROME sorter hardware makes use of ultimate microprocessors of the latest generation;
- Self-control functions, such as auto-diagnosis and auto-calibration keep consistent sorting performance.
- Back-up of the operating software is possible by USB port on front panel PC.
- The high speed signal elaboration and communication to the expulsion system allow an excellent performance.

SHAPE-SIZING INTEGRATED INTO THE SYSTEM

SEA Chrome offers the near human eye vision color sorting technology.
OTHER CHARACTERISTICS

EJECTION SYSTEM
- State-of-the-art ejectors guarantee the most accurate precision and expulsion rapidity, producing highly concentrated rejects;
- The extremely fast ejectors are guaranteed for more than 2 billion operating cycles and they can easily be repaired or replaced;
- Blowers are directly placed on the ejectors pneumatic lung to prevent delays and pressure drops.

NEW 15 INCHES COLOUR TOUCH-SCREEN DISPLAY
- The Windows 7 embedded graphic interface assures an easy connection to company networks and to remote assistance systems.

MECHANICAL DESIGN
- Pressurized and conditioned optical boxes prevent dust from entering the sensible part of the SEA-CHROME sorters;
- Airtight structure prevents dust and product outflow;
- SEA-CHROME is equipped with easy product sampling collection;
- The folding optical boxes enable the full opening of the sorter, facilitating its cleaning and maintenance;
- SEA-CHROME sorters are provided with standard flanges for de-dusting systems;
- Additional pre-arrangement for aspiration system is available as option.

RELIABILITY
- Remote control and on-line assistance from our servicing centers;
- Prompt technical interventions on site;
- Programmed technical service contracts;
- Servicing and spare parts centers in several Countries;
- Best references in the international markets.

OTHER
- CE certification of conformity can be combined with ATEX 22 certification (option)
- Customized color (option)
- Stainless steel (AISI 316L) version available (option)
Best optical resolution
- Minimum rejects
- High production capacities.

The SEA sorter range includes models with production capacity from 500 kg/h up to 50 ton/h, with the possibility of production upgrading even after installation and start-up.

Testing centers are available in different countries for free of charge industrial tests.